9

Metals and metal products

NACE Divisions 27 and 28 cover the manufacture of basic metals and fabricated metal products (except machinery and equipment, which is covered separately in Chapter 10). The manufacture of basic metals (NACE Division 27) includes activities such as the manufacture of iron, steel and ferro-alloys, as well as basic precious and non-ferrous metals; it also includes first processing stages of metal manufacturing (such as the manufacture of tubes, bars, strips, wires, and sheets of metal, as well as casting). The downstream activity of the manufacture of fabricated metal products (NACE Division 28) covers the production of structural metal products; boilers, metal containers and steam generators; forging, pressing, stamping and roll forming of metal; the treatment and coating of metal and general mechanical engineering (such as turning, milling, or welding); the manufacture of cutlery, tools and general hardware; and the manufacture of other fabricated metal products (such as metal drums, metal packaging, wire products, and household articles of metal).

Note that there are no external trade statistics for a number of industrial services covered in this chapter, namely foundry work services (CPA Group 27.5), forging, pressing, stamping and roll forming metal services (CPA Group 28.4) and treatment and coating of metal services and general mechanical engineering services (CPA Group 28.5).

The metals and metal products manufacturing sector is part of a diverse and interwoven economic network that incorporates upstream sectors and large downstream segments of manufacturing such as the transport equipment manufacturing and construction sectors. The challenges faced by the EU's metals and metal products manufacturing sector therefore have direct and indirect consequences on many other parts of the economy. Looking ahead, a Communication [1] from the European Commission to the Council and the European Parliament on the competitiveness of the metals industries was adopted in February 2008, and highlighted the challenges to be faced.

The EU-27 is largely dependent on imports of ore and concentrates for steel, ferro-alloys and non-ferrous metals production; it produces only 1.7 % of the world's nickel, 2 % of its iron ore and 5 % of its copper [2]. Access to minerals and secondary raw materials at competitive prices is important, especially given the exhaustion of certain deposits in the EU-27 over time or their absence, and supply constraints that have been exacerbated by the strong growth in international demand from emerging economies such as China and India. This concern was part of a raw materials initiative of the European Commission [3].

Parts of the metals and metal products manufacturing sector are highly energy-intensive. Energy costs for the EU-27's metals and metal products manufacturing sector accounted for 4.4 % of purchases of goods and services in 2006, which was the third joint highest proportion among the industrial activities described in Chapters 2 to 15 of this publication, albeit well behind non-energy mining and quarrying (10.1 %) and other non-metallic mineral products (9.5 %). Within this sector, however, energy costs in the casting of metals subsector accounted for 7.2 % of purchases of goods and services in 2006 and in the first processing of ferrous metals as much as 7.9 %. This level of energy consumption has important implications for energy and environmental (particularly climate change) policy.

The metals and metal products manufacturing sector is covered by a Directive on Integrated Pollution Prevention and Control (IPPC) and REACH. A proposal from the European Commission on the review of EU Emissions Trading Scheme (ETS) adopted in January 2008 [4] foresees the inclusion of non-ferrous metals from 2013 onwards, along with some transitional measures to avoid 'carbon leakage'.

Structural profile

There were 417.7 thousand enterprises throughout the Member States for which metal and metal products manufacturing (NACE Subsection DJ) was their principal activity in 2006. In terms of both the number of persons employed and value added generated the EU-27's metals and metal products manufacturing sector was the largest sector among the industrial (NACE Sections C to E) sectors presented in Chapters 2 to 15 of this publication. The sector employed almost 5.1 million persons across the EU-27 in 2006, corresponding to 3.9 % of the workforce within the non-financial business economy (NACE Sections

(1) COM(2008) 108.
(2) SEC(2007) 771.
(3) COM(2008) 699.
(4) COM(2008) 30.

Table 9.1: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Structural profile, EU-27, 2006 (1)

	Enterprises		Turnover		Value added		Persons employed	
	(thousand)	(% of total)	(EUR million)	(% of total)	(EUR million)	(% of total)	(thousand)	(% of total)
Basic metals & fabricated metal products	417.7	100.0	863 744	100.0	244 404	100.0	5 080.5	100.0
Basic metals	17.0	4.1	395 000	45.7	79 400	32.5	1 100.0	21.7
Iron, steel & ferro-alloys; tubes; other first processing of iron & steel	6.7	1.6	237 132	27.5	49 550	20.3	612.6	12.1
Precious & non-ferrous metals	3.6	0.9	120 298	13.9	17 845	7.3	221.5	4.4
Casting of metals	6.7	1.6	37 570	4.3	11 787	4.8	270.0	5.3
Fabricated metal products	400.0	95.8	469 000	54.3	165 000	67.5	4 000.0	78.7
Structural metal products	121.7	29.1	123 086	14.3	40 839	16.7	1 116.7	22.0
Tanks, reservoirs & containers; central heating radiators & boilers; steam generators	14.8	3.5	42 820	5.0	14 207	5.8	316.3	6.2
Forming of metal; powder metallurgy; teatment & coating of metals; general mechanical engineering	158.0	37.8	162 220	18.8	60 156	24.6	1 430.2	28.2
Cutlery, tools & hardware; other fabricated products	106.3	25.5	141 004	16.3	49 677	20.3	1 113.0	21.9

(1) Rounded estimates based on non-confidential data.

Source: Eurostat (SBS)

Table 9.2: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Structural profile: ranking of top five Member States, 2006

	Highest value added (1)			Largest number of persons employed (1)			Most specialised: share in the non-financial business economy (%)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Value added (2)	Persons employed (3)
1	Germany	64 894	26.6	Germany	1 046.6	20.6	Slovakia (9.0)	Slovenia (7.2)
2	Italy	39 835	16.3	Italy	843.9	16.6	Slovenia (7.5)	Slovakia (6.3)
3	France	29 097	11.9	France	529.4	10.4	Czech Republic (6.7)	Czech Republic (6.3)
4	United Kingdom	24 032	9.8	Spain	449.4	8.8	Italy (6.3)	Italy (5.6)
5	Spain	21 841	8.9	United Kingdom	405.8	8.0	Finland (6.3)	Finland (5.1)

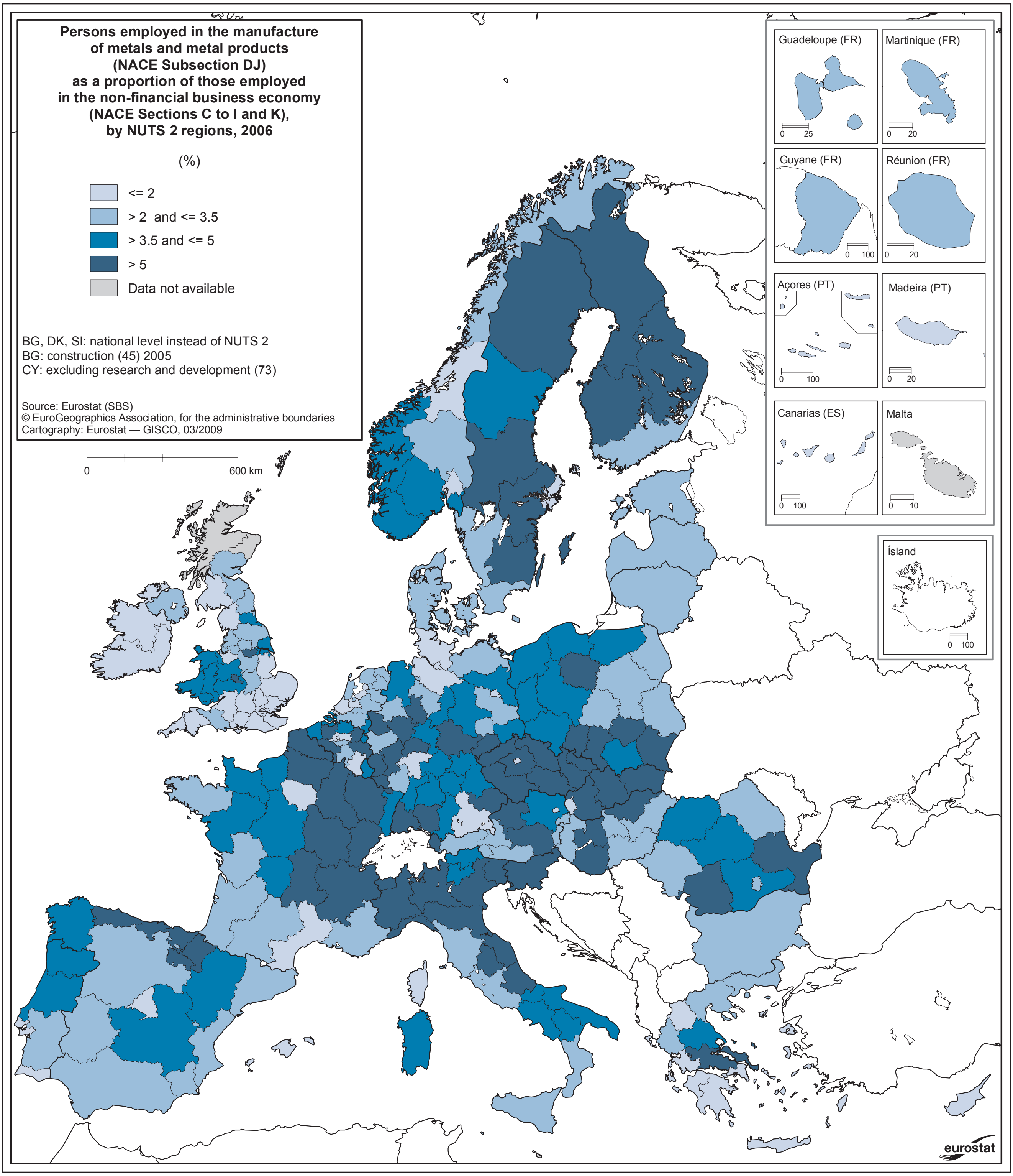
(1) Malta, not available; the Netherlands and Poland, 2005.
(2) Malta and the Netherlands, not available; Bulgaria, Cyprus, Poland and Romania, 2005.
(3) Malta, not available; Bulgaria, Cyprus, the Netherlands, Poland and Romania, 2005.

Source: Eurostat (SBS)

C to I and K). The proportion of paid employees among the number of persons employed by the metals and metal products manufacturing sector was 92.2 % in 2006, a higher proportion than across the non-financial business economy as a whole (86.5 %). From a turnover of EUR 863.7 billion in 2006, the EU-27's metal and metal products sector created EUR 244.4 billion of added value, a 4.3 % contribution towards the value added of the non-financial business economy.

The largest subsector (in terms of the activity headings given in Subchapters 9.1 to 9.7) was other metal processing (NACE Groups 28.4 and 28.5, as presented in Subchapter 9.6), which contributed about one quarter of value added (24.6 %) and employment (28.2 %). The manufacture of miscellaneous fabricated metal products (NACE Groups 28.6 and 28.7, as presented in Subchapter 9.7) subsector and the first processing of ferrous metal (NACE Groups 27.1 to 27.3, as presented in Subchapter 9.1) each provided a further one fifth

Map 9.1: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Persons employed in the manufacture of metals and metal products (NACE Subsection DJ) as a proportion of those employed in the non-financial business economy (NACE Sections C to I and K) (%)



Source: Eurostat (SBS)

(in both cases 20.3 %) of the value added within this sector in 2006, although the former was much larger than the latter in terms of employment (21.9 % of the metals and metal products workforce compared with 12.1 %). The second largest subsector in terms of employment was the manufacture of structural metal products (NACE Group 28.1, as presented in Subchapter 9.4), which accounted for a little over one fifth of all employment (22.0 %), although it was only the fourth largest subsector in terms of value added (accounting for 16.7 %). The other subsectors presented in Subchapters 9.2, 9.3 and 9.5 each accounted for less than 7.5 % of sectoral employment or value added.

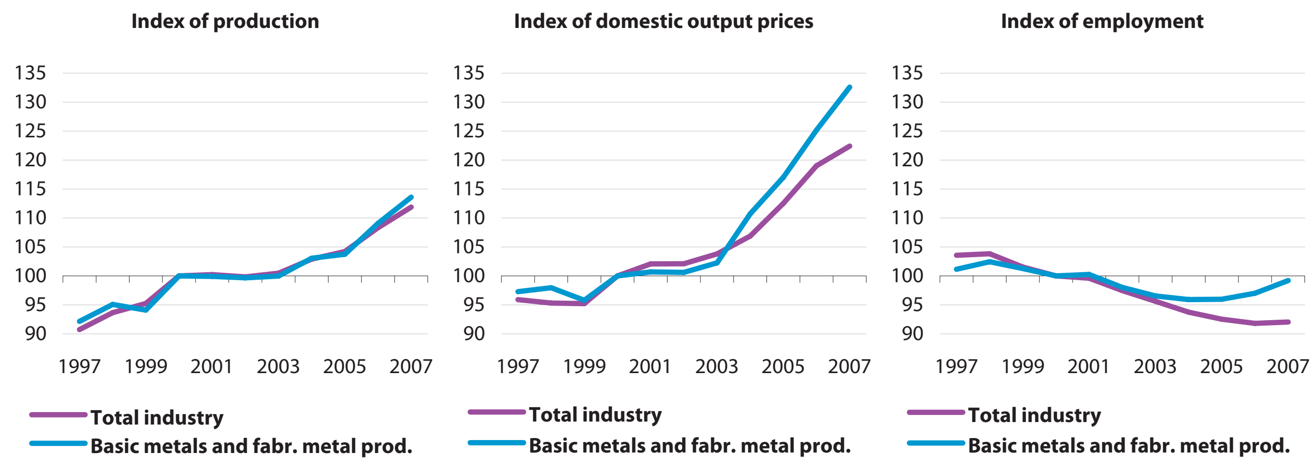
Among the Member States, the metals and metal products manufacturing sector in Germany was the largest, generating EUR 64.9 billion of added value in 2006, a little over one quarter (26.6 %) of the EU-27 total. In these terms, the metals and metal products manufacturing sectors were next largest in Italy (16.3 % of EU-27 value added) and France (11.9 %). The Member State most specialised in the manufacture of metals and metal products was Slovakia, however, where the contribution of metals and metal products manufacturing to the total value added of the non-financial business economy was 9.0 % in 2006, just over twice the EU-27 average. There was also strong specialisation in this activity in Slovenia and the Czech Republic.

The metal and metal products manufacturing sector provided relatively high levels of employment in a number of regions across the EU-27 in 2006; representing more than one in every ten workers within the regional non-financial business economies of Norra Mellansverige (Sweden), Arnsberg, Gießen and Saarland (all Germany), Moravskoslezsko (the Czech Republic), Východné Slovensko (Slovakia) and País Vasco (Spain). There were several countries where a large share of the regions were relatively specialised in these activities.

The annual development of the EU-27 production index for metals and metal products manufacturing during the ten years through until 2007 was very similar to the development of output for industry (NACE Sections C to E) as a whole; between 1997 and 2007, the average rate of growth in both indices was 2.1 % per annum.

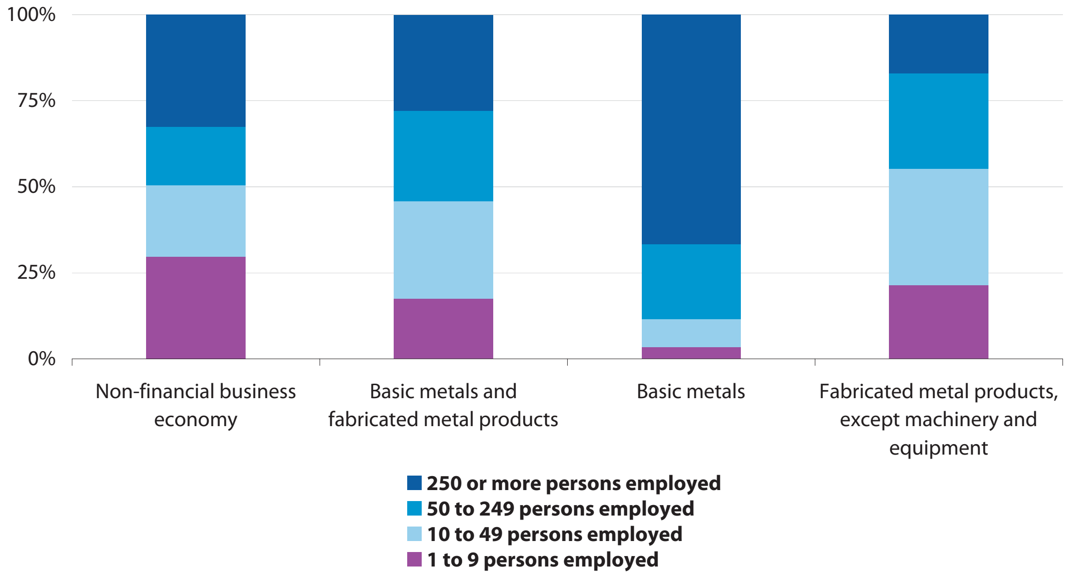
The average EU-27 rate of growth in the output of the manufacture of fabricated metal products (NACE Division 28) during the ten years through until 2006 was much stronger (2.7 % per annum) than that (1.1 % per annum) recorded for the manufacture of basic metals (NACE Division 27). Among the dozen NACE groups that comprise metal and metal products manufacturing, the strongest rates of growth in output concerned the two other metal processing activities (see Subchapter 9.6); the annual average rate of growth in the output of the treatment and coating of metal and general mechanical engineering (NACE Group 28.5) was 4.4 % per annum and that of the forging, pressing, stamping and roll forming of metals (NACE Group 28.4) was 4.2 % per annum.

Figure 9.1: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

Figure 9.2: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Share of employment by enterprise size class, EU-27, 2006



Source: Eurostat (SBS)

The development of the EU-27's domestic output price index for metals and metal products manufacturing during the ten years between 1997 and 2007 reflected three distinct periods; firstly, there were relatively stable prices between 1997 and 1999, secondly, there was a rise in 2000 to a new plateau that was maintained through 2001 and 2002, and finally there was a strong upsurge in prices through until 2007. This was also the broad development for industrial output prices as a whole. The rise in the domestic output price index for metals and metal products between 1997 and 2002 averaged 0.7 % per annum but the index rose on average by 5.7 % per annum in the last five years of the period under review, partly reflecting price increases for raw materials and energy. The rise in the domestic output price of basic metals (NACE Division 27) was particularly strong, rising 9.6 % per annum on average in the five years through to 2007.

Against this background of strongly rising output and domestic output prices for metals and metal products in the period between 2003 and 2007, there was a partial reversal in the downward trend in the index of employment for metals and metal products manufacturing. Over the ten years through to 2007, the EU-27 index of employment for metals and metal products manufacturing declined by an average 0.2 % per annum, which was much less than the average rate of decline (-1.2 % per annum) across the whole of industry. Indeed, nearly every other industrial NACE subsection reported a stronger fall in the employment index over this period, with the low growth (0.7 %) in rubber and plastics manufacturing (NACE Subsection DH) and no change in transport equipment manufacturing (NACE Subsection DM) the only exceptions.

Small and medium-sized enterprises (SMEs), which employ less than 250 persons, generated the majority (61.2 %) of value added in the EU-27's metals and metal products manufacturing sector in 2006. Within the sector, however, there was a distinct difference between the dominance of large enterprises (that employ 250 persons or more) in the manufacture of basic metals (accounting for 74.2 % of the value added generated by this activity) and the dominance of SMEs in the manufacture of fabricated metal products (accounting for 78.3 % of value added). This dichotomy placed these two activities at odds with the average situation across the non-financial business economy, for which SMEs contributed a relatively small majority (57.9 %) of value added. These structural differences were also apparent in terms of relative shares of employment.

Employment characteristics

In 2007, a little more than eight in every ten workers (84.5 %) within the EU-27's metals and metal products manufacturing sector were male, a much higher share than that across the non-financial business economy as a whole (64.9 %). This was a characteristic that was noted across all of the Member States for which information is available [5]. An above average proportion of those working (94.7 %) in the EU-27's metals and metal products manufacturing sector were in full-time employment, a characteristic that was more similar to the situation across industry as a whole (an average of 92.7% being male) than the non-financial business economy (an average of 85.7 %). This was also a characteristic generally noted among the Member States.

The proportion of young workers aged 15 to 29 years old in the metals and metal products manufacturing sector was somewhat lower than the average across the EU-27's non-financial business economy (21.6 % compared with 24.3 %), the difference being made up for in the proportion of workers aged 50 or more (24.5 % compared with 21.9 %). Among the Member States, the share of young workers in the metals and metal products manufacturing sector was disproportionately low in the Netherlands, Romania and the United Kingdom, being about one third less than the corresponding share of this age group within their respective non-financial business economies.

Expenditure, productivity and profitability

Four fifths (80.8 %) of operating expenditure in the EU-27's metals and metal products manufacturing sector went on goods and services in 2006, although this was a little less than the average share (83.9 %) across the non-financial business economy. The remaining share (19.2 %) of operating expenditure went on personnel costs, however, there were stark differences between the two metals and metal products manufacturing NACE divisions; personnel costs in the EU-27's manufacture of fabricated metal products activity accounted for just over a quarter (25.8 %) of

(5) Malta, not available.

Table 9.3: Manufacture of basic metals and fabricated metal products (NACE Subsection DJ)
Expenditure, productivity and profitability, EU-27, 2006 (1)

	(EUR million)			(EUR thousand per person)		(%)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs	Wage adjusted labour productivity	Gross operating rate
Basic metals & fabricated	150 949	635 585	33 351	48.1	32.2	149.3	10.8
Basic metals	42 800	325 000	13 518	72.2	39.6	182.1	9.3
Iron, steel & ferro-alloys; tubes; other first processing of iron & steel	25 152	193 169	9 233	80.9	42.2	191.5	10.5
Precious & non-ferrous metals (2)	9 304	105 454	2 316	80.6	42.7	188.5	7.1
Casting of metals	8 579	26 377	1 690	43.7	33.0	132.3	8.5
Fabricated metal products	108 000	311 000	19 800	41.3	29.9	137.9	12.1
Structural metal products	26 286	84 754	4 156	36.6	26.3	139.1	11.8
Tanks, reservoirs & containers; central heating radiators & boilers; steam generators	10 594	30 019	1 230	44.9	34.5	130.1	8.4
Forming of metal; powder metallurgy; teatment & coating of metals; general mechanical engineering	40 160	103 925	8 188	42.1	31.1	135.0	12.3
Cutlery, tools & hardware; other fabricated products (2)	31 341	92 074	5 584	44.6	30.9	144.3	13.3

(1) Rounded estimates based on non-confidential data.
(2) Investment in tangible goods, 2005.

Source: Eurostat (SBS)

operating expenditure in 2006, more than twice the proportion (11.6 %) recorded for the EU-27's manufacture of basic metals activity, despite the fact that average personnel costs in the former were about EUR 10.0 thousand per employee less than the average for the manufacture of basic metals (EUR 39.6 thousand per employee in 2006). In this way, the metals and metal products manufacturing sector comprised one relatively capital-intensive activity and one relatively labour-intensive, low-paid activity. Average personnel costs in the EU-27's metals and metal products manufacturing sector were EUR 32.2 thousand per employee in 2006, some 11.8 % more than the non-financial business economy average.

Tangible investment across the EU-27 in the metals and metal products manufacturing sector was EUR 33.4 billion in 2006, which corresponded to 3.2 % of all tangible investment in the EU-27's non-financial business economy. This proportion was less than the equivalent proportion in value added terms, resulting in an investment rate within the metals and metal products manufacturing sector (13.6 %) that was well below the average for the non-financial business economy (18.4 %).

Each person employed within the EU-27's metals and metal products manufacturing sector generated an average EUR 48.1 thousand of value added in 2006, about a tenth more than within the non-financial business economy as a whole. Although the apparent labour productivity of this sector more than covered its average personnel costs, the wage adjusted labour productivity ratio of 149.3 % was a little lower than that recorded for the whole of the non-financial business economy (151.1 %). Within the metals and metal products manufacturing sector, the wage adjusted labour productivity ratio of the EU-27's basic metals manufacturing activity (182.1 %) was much higher than the ratio for the fabricated metal products activity (137.9 %) in 2006.

The gross operating rate shows the relationship between the gross operating surplus (value added minus personnel costs) and turnover in percentage terms, and is a measure of operating profitability. The gross operating rate of the EU-27's metals and metal products manufacturing sector was 10.8 % in 2006, the same average rate as recorded for the non-financial business economy. Within this sector, the operating profitability of the fabricated metal products activity (12.1 %) was substantially higher than the rate for the basic metals manufacturing activity (9.3 %).

External trade

Total (intra- and extra-EU) exports of metal and fabricated metal products (CPA Subsection DJ) by the EU-27 Member States were valued at EUR 393.3 billion in 2007, while imports were larger, a total of EUR 409.9 billion. Exports (intra- and extra-EU) of metals and fabricated metal products from Germany were valued at EUR 94.7 billion in 2007, accounting for a little less than one quarter (24.1 %) of all exports of these products by EU-27 Member States. Among the Member States, Germany also had the largest trade surplus (EUR 9.1 billion) in metal and fabricated metal products, although it was much lower than the surplus it had recorded two years earlier (EUR 13.3 billion). Other sizeable trade surpluses in 2007 were recorded for Belgium (EUR 4.5

Table 9.4: Basic metals and fabricated metal products (CPA Subsection DJ)
External trade, EU-27, 2007

	Value (EUR million)			Share of industrial exports (%)	Share of industrial imports (%)
	Extra-EU exports	Extra-EU imports	Trade balance		
Basic metals & fabricated metal products	102 115	126 887	-24 772	8.8	9.5
Basic metals	68 714	100 899	-32 185	5.9	7.6
Iron, steel & ferro-alloys; tubes; other iron, steel & ferro-alloys	41 572	43 586	-2 014	3.6	3.3
Precious & non-ferrous metals	27 142	57 313	-30 170	2.3	4.3
Fabricated metal products	33 401	25 988	7 413	2.9	2.0
Structural metal products	5 985	2 220	3 764	0.5	0.2
Tanks, reservoirs & containers; central heating radiators & boilers; steam generators	3 720	1 121	2 599	0.3	0.1
Cutlery, tools & hardware; other fabricated products	23 696	22 647	1 049	2.0	1.7

Source: Eurostat (Comext)

billion), Sweden, the Netherlands, Austria, Slovakia, Luxembourg and Finland (all between EUR 1.2 billion and EUR 2.3 billion). In contrast, Spain and Italy had the largest trade deficits for these products (EUR 8.0 billion and EUR 6.5 billion respectively). It is also worth noting that the share of metals and fabricated metal products exports in national industrial (CPA Sections C to E) exports was highest in Bulgaria (26.1 %), where such goods accounted for the highest proportion of industrial exports (at the level of CPA subsections), and Luxembourg (25.8 %), where they accounted for the second highest proportion of industrial exports after electrical and optical equipment (CPA Subsection DL).

Almost three quarters (74.0 % based on export values) of Member States' trade in metal and metal products was with other Member States (so-called intra-EU trade), which represented a much higher proportion than the average (67.6 %) for all industrial products.

Focusing on trade with non-member countries (so-called extra-EU trade), the EU-27 recorded a trade deficit of EUR 24.8 billion for metals and fabricated metal products in 2007. This trade deficit reflected a significant turnaround from the situation in 2005 when the EU-27 had reported a trade surplus of EUR 3.3 billion. The underlying feature of this turnaround was the growth in the value of imports from non-member countries from EUR 72.9 billion in 2005 to EUR 126.9 billion in 2007, the highest shares of which came from China (leaping to 16.3 % in 2007) and Russia (down to 11.1 %). This growth was much stronger than that for the value of EU-27 exports of metals and fabricated metal products, which increased to EUR 102.1 billion in 2007, accounting for 8.8 % of industrial exports.

The EU-27's trade deficit in metals and fabricated metal products in 2007 was dominated by the trade deficit of EUR 32.2 billion for basic metals (CPA Division 27), there being a trade surplus of EUR 7.4 billion for fabricated metal products (CPA Division 28).

9.1: First processing of ferrous metals

This subchapter includes information on NACE Groups 27.1 to 27.3. The first of these covers the manufacture of basic iron and steel and ferro-alloys (NACE Group 27.1). The manufacture of tubes (be they of iron or steel) is included in NACE Group 27.2, while other first processing activities associated with iron and steel (drawing, rolling, forming, wire drawing) are covered by NACE Group 27.3. The aggregate covering all three of these activities is hereafter referred to as the first processing of ferrous metals.

The first processing of ferrous metals sector is one that requires very large investments in technology and equipment. Due to these significant capital requirements, large enterprises (groups) tend to dominate the market. Global consolidation and restructuring has intensified in recent years. Within the European Union, enterprise groups have moved from a national base to a Europe-wide base and more recently have reinforced their global nature through acquisitions outside Europe, or have themselves been acquired by companies of non-European background (such as the takeover of Estonia's Galvex by ArcelorMittal in March 2008). The merger of Mittal Steel and Arcelor in 2006 created the world's largest steel producing enterprise group; in 2007 it produced

Table 9.5: Manufacture of basic iron and steel and of ferro-alloys (ECSC); manufacture of tubes; other first processing of iron and steel and production of non-ECSC ferro-alloys
Largest global steel producing enterprise (groups) (million tonnes of crude steel output)

	2006	2007
Arcelor Mittal	117.2	116.4
Nippon Steel	34.7	35.7
JFE	32.0	34.0
POSCO	30.1	31.1
Baosteel	22.5	28.6
Tata steel (1)	6.4	26.5
Anshan-Benxi	22.6	23.6
Jiangsu Shagang	14.6	22.9
Tangshan	19.1	22.8
U.S. Steel	21.2	21.5

(1) 2007 includes Corus.

Source: World Steel Association (worldsteel), http://www.worldsteel.org

116.4 million tonnes of crude steel output, over three times the output of the second largest enterprise group, Nippon Steel. After the buy-out of the Corus Group in 2007, Tata steel became the sixth largest global steel producing enterprise group.

Table 9.6: Manufacture of basic iron and steel and of ferro-alloys (ECSC); manufacture of tubes; other first processing of iron and steel and production of non-ECSC ferro-alloys (NACE Groups 27.1, 27.2 and 27.3)
Structural profile, EU-27, 2006 (1)

	Enterprises (thousand)	Turnover (EUR million)	Value added (EUR million)	Persons employed (thousand)	Share in total (%) Value added	Share in total (%) Persons employed
First processing of ferrous metals	6.7	237 132	49 550	612.6	100.0	100.0
Basic iron and steel and of ferro-alloys	2.2	178 944	35 964	409.9	72.6	66.9
Tubes (2)	1.9	30 250	9 000	129.9	18.2	21.2
Other first processing of iron and steel	2.5	22 599	4 586	72.8	9.3	11.9

(1) Rounded estimates based on non-confidential data.
(2) Turnover, 2005.

Source: Eurostat (SBS)

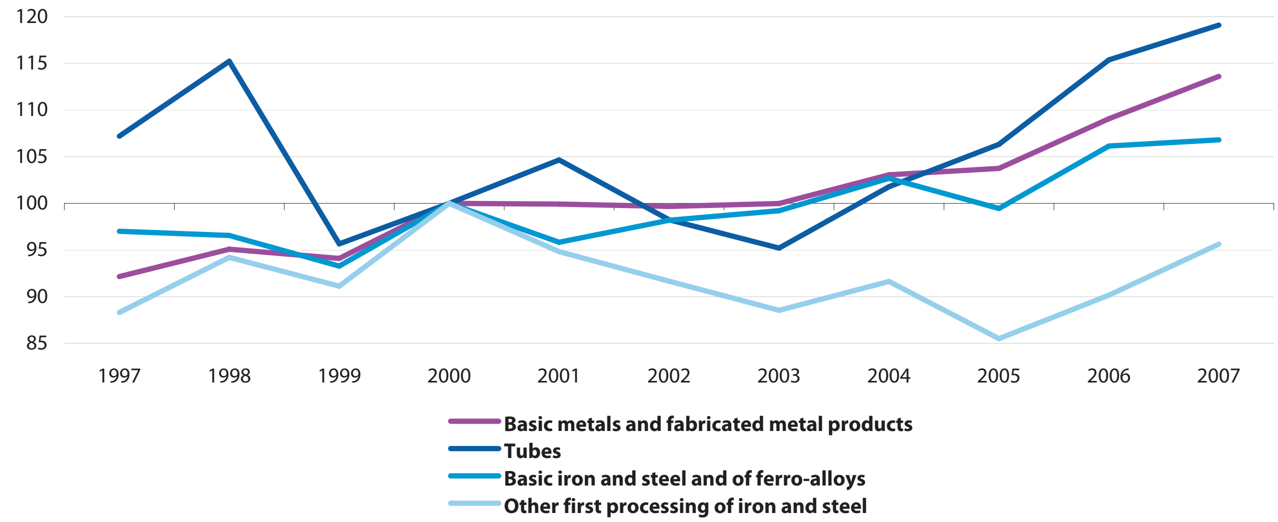
Table 9.7: Manufacture of basic iron and steel and of ferro-alloys (ECSC); manufacture of tubes; other first processing of iron and steel and production of non-ECSC ferro-alloys (NACE Groups 27.1, 27.2 and 27.3)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (2)			Most specialised: share in non-financial business economy (%) (3)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Country	Value added
1	Germany	12 280	24.8	Germany	124.2	20.3	Slovakia	5.3
2	Italy	7 158	14.4	Italy	78.0	12.7	Czech Republic	2.0
3	France	4 952	10.0	France	50.9	8.3	Finland	1.8
4	Spain	4 209	8.5	Romania	43.1	7.0	Belgium	1.8
5	United Kingdom	3 027	6.1	United Kingdom	39.3	6.4	Austria	1.8

(1) Estonia, Cyprus, Latvia, Luxembourg and Malta, not available; the Netherlands, Poland, Portugal and Finland, 2005.
(2) Estonia, Cyprus, Luxembourg, Malta and the Netherlands, not available; Poland, Portugal and Finland, 2005.
(3) Estonia, Cyprus, Latvia, Luxembourg, Malta and the Netherlands, not available; Bulgaria, Poland, Portugal, Romania and Finland, 2005.

Source: Eurostat (SBS)

Figure 9.3: Manufacture of basic iron and steel and of ferro-alloys (ECSC); manufacture of tubes; other first processing of iron and steel and production of non-ECSC ferro-alloys (NACE Groups 27.1, 27.2 and 27.3)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

Structural profile

There were 6.7 thousand enterprises throughout the EU-27 for whom the first processing of ferrous metals (NACE Groups 27.1 to 27.3) was their main activity in 2006. This corresponded to only 1.6 % of all enterprises in the metals and metal products manufacturing (NACE Subsection DJ) sector. The first processing of ferrous metals sector was much larger, however, in terms of employment and value added. It employed 612.6 thousand persons in the Member States, corresponding to a little less than one in every eight (12.1 %) of the metals and metal products manufacturing workforce. From a turnover of EUR 237.1 billion in 2006, the sector generated EUR 49.6 billion of added value, just over one fifth (20.3 %) of the total value added of metals and metals products manufacturing in the EU-27.

By far the largest of the three NACE group activities covered by the first processing of ferrous metals sector was the manufacture of basic iron and steel (NACE Group 27.1); it accounted for just under three quarters (72.6 %) of value added and two thirds (66.9 %) of employment in 2006. The next largest activity was the manufacture of tubes (NACE Group 27.2), which generated a little less than one fifth (18.2 %) of sectoral value added and accounted for about one in every five persons employed (21.2 %). The smallest activity was other first processing of iron and steel (NACE Group 27.3).

About one quarter (24.8 %) of the value added generated by the first processing of ferrous metals sector across the EU-27 came from Germany, the next largest contributions coming from Italy (14.4 %) and France (10.0 %). However, it was Slovakia that was by far the most specialised Member State in the first processing of ferrous metals sector; this activity contributing 5.3 % to non-financial business economy value added in 2006, which was just over six times the EU-27 average (0.9 %). In these terms, the Czech Republic, Finland, Belgium, Austria and Romania (2005) were also relatively specialised in this activity - as each of these countries reported that the first processing of ferrous metals sector contributed between 1.8 % and 2.0 % of the value added in their respective non-financial business economies.

The production indices of all three of the NACE group activities within the first processing of ferrous metals fluctuated more than the overall index for metals and metal products manufacturing during the period between 1997 and 2007. This was particularly the case regarding the manufacture of tubes and the other first processing of iron and steel activities. Without strong upswings in 2006 and 2007, the production indices of both these activities would have been below 1997 levels and well below their respective peaks (1998 for tubes and 2000 for the other first processing of iron and steel activities). However, the rises in output at the end of this ten-year period pushed the production indices for the EU-27 above 1997 levels; on average, the output of tubes manufacturing rose by 1.1 % per annum between 1997 and 2007 and that of the other first processing of iron and steel activities by 0.8 % per annum. The upward trend in the production index for the manufacture of basic iron and steel was clearer, particularly from a relative trough in 1999, despite cutbacks in 2001 and 2005. Over the ten years through to 2007, basic iron and steel output in the EU-27 increased by an average 1.0 % per annum.

Expenditure and productivity

Tangible investment in the EU-27's first processing of ferrous metals sector was EUR 25.2 billion in 2006, representing about over one quarter (27.7 %) of all investment made in the metals and metal products manufacturing sector. This level of tangible investment corresponded to an investment rate of 18.6 %, which was significantly higher than the average rate (13.6 %) across metals and metal products manufacturing as a whole, and marginally above the average rate for the non-financial business economy.

Within the EU-27's first processing of ferrous metals sector a much higher proportion of operating expenditure went on the purchase of goods and services (88.5 %) than was the case (80.8 %) for metals and metal products manufacturing as a whole. Although the proportion of operating expenditure going on personnel costs in the first processing of ferrous metals sector was relatively low (11.5 %), average personnel costs of EUR 42.2 thousand per employee in 2006 were relatively high, being about EUR 10.0 thousand per employee more than the average across metals and metal products manufacturing.

Each person employed in the EU-27's first processing of ferrous metals sector contributed added value of EUR 80.9 thousand in 2006, about two thirds more than the average across metals and metal products manufacturing. This relatively high level of apparent labour productivity was close to twice the level of average personnel costs. The resulting wage adjusted labour productivity ratio of 191.5 % for the EU-27's first processing of ferrous metals sector in 2006 was notably higher than the ratio (149.3 %) for the whole of the metals and metals products manufacturing sector. This characteristic was common to most of the Member States with the notable exceptions of Sweden, the United Kingdom and particularly Bulgaria, where the wage adjusted labour productivity ratio was almost 100 percentage points lower than for metals and metal products manufacturing as a whole.

Table 9.8: Manufacture of basic iron and steel and of ferro-alloys (ECSC); manufacture of tubes; other first processing of iron and steel and production of non-ECSC ferro-alloys (NACE Groups 27.1, 27.2 and 27.3)
Expenditure, productivity and profitability, EU-27, 2006 (1)

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
First processing of ferrous metals	25 152	193 169	9 233	80.9	42.2
Basic iron and steel and of ferro-alloys	17 420	146 865	7 371	87.7	42.8
Tubes (2)	5 000	22 977	1 235	69.3	41.9
Other first processing of iron and steel	2 733	18 418	627	63.0	39.5

(1) Rounded estimate based on non-confidential data.
(2) Purchases of goods and services, 2005.

Source: Eurostat (SBS)

9.2: Basic precious and non-ferrous metals

NACE Group 27.4 covers the manufacture of a wide range of metals other than iron and steel, including precious metals (such as gold, silver and platinum) and common metals (aluminium, lead, zinc, tin, copper, chrome, nickel and manganese), hereafter referred to as basic precious and non-ferrous metals manufacturing.

Structural profile

There were 3.6 thousand enterprises in the EU-27's basic precious and non-ferrous metals manufacturing (NACE Group 27.4) sector, which generated EUR 17.8 billion of value added and employed 221.5 thousand persons in 2006, making it one of the smaller activities within the metals and metal products (NACE Subsection DJ) manufacturing sector; it accounted for 7.3 % of value added and 4.4 % of employment within metals and metal products manufacturing.

By far the largest of the five NACE class activities within the EU-27's basic precious and non-ferrous metals manufacturing sector was the aluminium production subsector (NACE Class 27.42), which generated EUR 9.1 billion of added value in 2006. The copper production subsector (NACE Class 27.44) was the next largest, creating added value across the EU-27 of EUR 3.9 billion, the equivalent of just over a fifth (21.8 %) of the total within the activities of basic precious and non-ferrous metals.

As with metals and metal products manufacturing as a whole, Germany had the largest basic precious and non-ferrous metals manufacturing sector in the EU-27; it contributed over one quarter (28.1 %) of the value added generated by basic precious and non-ferrous metals manufacturing in the Member States in 2006. In relation to its non-financial business economy, the basic precious and non-ferrous metals manufacturing sector of Bulgaria (1.3 %) generated by far the highest value added in 2006, approaching five times the average contribution within the EU-27.

There was a distinct parting of the developments in the production indices for basic precious and non-ferrous metals manufacturing and metals and metal products manufacturing as a whole after 2000. Whereas the output of metals and metal products manufacturing stabilised in the period between 2000 and 2003 before rising strongly through until 2007, the output of basic precious and non-ferrous metals manufacturing declined steadily through until 2003 after which there was a muted and uncertain rebound to a level in 2007 that remained 3.5 % below its relative peak of 2000.

Table 9.9: Manufacture of basic precious and non-ferrous metals (NACE Group 27.4)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (1)			Most specialised: share in non-financial business economy (%) (2)	
	Country	(EUR million)	(% of EU-27)	Country	(thou-sand)	(% of EU-27)	Country	Value added
1	Germany	5 021	28.1	Germany	61.9	28.0	Bulgaria	1.3
2	France	2 025	11.3	Italy	23.3	10.5	Slovakia	0.7
3	Spain	1 900	10.6	France	18.9	8.5	Austria	0.5
4	Italy	1 652	9.3	United Kingdom	17.4	7.8	Hungary	0.5
5	United Kingdom	1 569	8.8	Spain	14.9	6.7	Belgium	0.5

(1) Estonia, Cyprus, Luxembourg and Malta, not available; the Netherlands, Poland, Portugal and Finland, 2005.
(2) Estonia, Cyprus, Luxembourg, Malta and the Netherlands, not available; Bulgaria, Poland, Portugal, Romania and Finland, 2005.

Source: Eurostat (SBS)

Table 9.10: Manufacture of basic precious and non-ferrous metals (NACE Group 27.4)
Expenditure, productivity and profitability, EU-27, 2006

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Basic precious and non-ferrous metals (1)	9 304	105 454	2 316	80.6	42.7
Precious metals production (2)	447	8 141	60	95.7	46.6
Aluminium production	5 120	41 086	1 654	73.9	42.2
Lead, zinc and tin production	863	9 450	296	95.2	37.2
Copper production	2 071	41 365	432	83.1	44.8
Other non-ferrous metal production	803	5 412	150	91.6	45.9

(1) Investment in tangible goods, 2005.
(2) Rounded estimates based on non-confidential data.

Source: Eurostat (SBS)

Expenditure and productivity

Tangible investment in the EU-27's basic precious and non-ferrous metals manufacturing sector was EUR 2.3 billion in 2005, corresponding to 8.5 % of total tangible investment in the metals and metal products manufacturing sector. When compared with the value added generated by this sector, this produced an investment rate of 15.8 % in 2005, notably higher than the rate (12.2 %) across the whole of the metals and metal products manufacturing sector in the same year.

The proportion of operating expenditure accounted for by personnel costs in the basic precious and non-ferrous metals sector was low (8.1 % in 2006), less than half the average across metals and metal products manufacturing (19.2 %) and among the lowest rates for any of the industrial activities covered in this publication. This was despite average personnel costs being about EUR 10.5 thousand per employee higher in 2006 than the metals and metal products manufacturing average.

Each person employed in the EU-27's basic precious and non-ferrous metals sector contributed an average of EUR 80.6 thousand of value added in 2006, about EUR 32.5 thousand per person employed more than the average for metals and metal products manufacturing. This relatively high level of apparent labour productivity more than covered high average personnel costs, resulting in a wage adjusted labour productivity ratio of 188.5 % for the EU-27's basic precious and non-ferrous metals sector in 2006, much higher than the ratio (149.3 %) for metals and metal products manufacturing as a whole. This was a characteristic noted in the vast majority of Member States, but particularly so in Bulgaria, Latvia, Lithuania, Spain and Slovakia. The principal exceptions were Ireland and Portugal (2005), where wage adjusted labour productivity ratios of the basic precious and non-ferrous metals sector were below metals and metal products manufacturing averages.

9.3: Casting

NACE Group 27.5 covers the casting of metals (including iron, steel, light metals and other non-ferrous metals). As such, this activity specialises in the manufacture of semi-finished castings for downstream customers. The information presented does not include the manufacture of standardised, finished products (such as tubes, see Subchapter 9.1) or boilers or radiators (see Subchapter 9.5).

Foundry work consists of pouring a molten metal alloy into a mould to obtain a part with the same shape as the mould after it solidifies, and uses casting procedures appropriate for the alloy used, the number of parts to be made, and their shape and weight. Main downstream activities for casting enterprises include machinery and equipment and transport equipment manufacturers, as well as the construction and telecommunications sectors.

Structural profile

The activity of the casting of metals (NACE Group 27.5) was carried out by 6.7 thousand enterprises across the EU-27 in 2006. From a turnover of EUR 37.6 billion, these enterprises generated EUR 11.8 billion of added value in 2006, which was the smallest contribution (4.8 %) to the value added of the metals and metal products manufacturing (NACE Subsection DJ) sector from any of the activities presented in Subchapters 9.1 to 9.7. The casting of metals sector employed an estimated 270.0 thousand persons in the Member States in 2006, about one in every twenty (5.3 %) of the EU-27's metals and metal products manufacturing workforce which was a slightly higher share than that recorded for basic precious and non-ferrous metals (NACE Group 27.4).

The casting of iron (NACE Class 27.51) and the casting of light metals (NACE Class 27.53) were the two largest activities within the casting of metal, together providing about three quarters (73.3 %) of the EU-27's value added in 2006.

Germany generated more value added than any other Member State for most of the activities presented in Subchapters 9.1 to 9.7; its share of EU-27 value added was highest, however, for the casting of metals (36.8 %). By way of comparison, this was almost exactly the same share of value added as came from the next three largest Member States combined – Italy (16.2 % of EU-27 value added), France (10.6 %) and Spain (10.1 %). However, the proportional contribution made by this sector to non-financial business economy value added in 2006 was highest in Slovenia (0.8 %), where it was almost four times the average size within the EU-27. In these terms, the Czech Republic and then Germany were the next most specialised Member States [6] for the casting of metals.

There was a very close match between the development of the EU-27's production index for metals and metal products manufacturing and that for the casting of metals in the period between 1997 and 2007. Over the ten-year period as a whole, the output of the casting of metals in the EU-27 rose by an average 1.8 per annum.

(6) Bulgaria, Cyprus, Poland, Portugal and Romania, 2005; Latvia, Malta and the Netherlands, not available.

Table 9.11: Casting of metals (NACE Group 27.5)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (2)			Most specialised: share in non-financial business economy (%) (3)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Country	Value added
1	Germany	4 339	36.8	Germany	71.6	26.5	Slovenia	0.8
2	Italy	1 912	16.2	Italy	34.9	12.9	Czech Republic	0.4
3	France	1 249	10.6	France	30.1	11.2	Germany	0.4
4	Spain	1 187	10.1	Poland	22.3	8.2	Italy	0.3
5	United Kingdom	881	7.5	Spain	21.2	7.9	Austria	0.3

(1) Latvia and Malta, not available; the Netherlands, Poland and Portugal, 2005.
(2) Malta and the Netherlands, not available; Poland and Portugal, 2005.
(3) Latvia, Malta and the Netherlands, not available; Bulgaria, Cyprus, Poland, Portugal and Romania, 2005.

Source: Eurostat (SBS)

Expenditure and productivity

Although tangible investment of EUR 1.7 billion in the casting of metal sector represented only 5.1 % of tangible investment across all metals and metal products manufacturing activities in 2006, this was a higher proportion than this sector's contribution to value added. In these relative terms, therefore, the EU-27 investment rate (14.3 %) for the casting of metals sector was slightly higher than the rate (13.6 %) for metals and metal products manufacturing.

Average personnel costs in the EU-27's casting of metals sector were EUR 33.0 thousand per employee in 2006, an almost identical figure to the average for all metals and metal products manufacturing. As a proportion of operating expenditure, however, personnel costs in the casting of metals sector accounted for a relatively high share (24.5 %) both in comparison to metals and metal products manufacturing (19.2 %) and more particularly the non-financial business economy (16.1 %).

The average amount of added value generated by each person in the EU-27's casting of metals sector was EUR 43.7 thousand in 2006, about one tenth (9.3 %) less than the average for the whole of the metals and metal products manufacturing sector. With similar average personnel costs in 2006, the wage adjusted labour productivity ratio (132.3 %) for the casting of metals sector remained a similar proportion below the ratio (149.3 %) for all metals and metal products manufacturing. This relatively low wage adjusted labour productivity ratio was a feature of the four NACE classes within the casting of metals sector. It was also a characteristic common to the majority of the Member States, the principal exception being in Ireland where the ratio for the casting of metals sector was significantly higher than the ratio across all metals and metal products manufacturing.

Table 9.12: Casting of metals (NACE Group 27.5)
Expenditure, productivity and profitability, EU-27, 2006 (1)

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Casting of metals	26 377	8 579	1 690	43.7	33.0
Casting of iron	9 523	3 397	631	40.8	31.3
Casting of steel (2)	3 403	1 221	170	41.9	34.0
Casting of light metals	9 389	2 944	700	46.1	33.8
Casting of other non-ferrous metals	4 063	1 018	175	44.0	33.9

(1) Rounded estimates based on non-confidential data.
(2) Investment in tangible goods and apparent labour productivity, 2005.

Source: Eurostat (SBS)

9.4: Structural metal products

This subchapter includes information on NACE Group 28.1 that covers the manufacture of structural metal products. The vast majority of the products that are produced within this activity are destined for the construction sector (see Chapter 16), for example, as metal supports and structures, prefabricated buildings, metal doors, window frames, or shutters. Demand is therefore closely linked to developments in the construction sector for new housing, renovation and civil engineering projects.

Structural profile

Structural metal products manufacturing (NACE Group 28.1) was the core activity of 121.7 thousand enterprises in the Member States and provided employment to just over 1.1 million persons in the EU-27 or about one in every five workers (22.0 %) within the metals and metal products manufacturing (NACE Subsection DJ) sector in 2006. The structural metal products manufacturing sector in the EU-27 had a turnover of EUR 123.1 billion in 2006, almost one third (33.2 %) of which was retained as added value. Of the EUR 40.8 billion of value added generated by the EU-27's structural metal products sector in 2006, seven tenths (70.8 %) came from the manufacture of

Table 9.13: Manufacture of structural metal products (NACE Group 28.1)
Structural profile, EU-27, 2006

	Enterprises (thousand)	Turnover (EUR million)	Value added (EUR million)	Persons employed (thousand)	Share in total (%) Value added	Persons employed
Structural metal products	121.7	123 086	40 839	1 116.7	100.0	100.0
Metal structures and parts of structures	55.8	88 050	28 922	742.3	70.8	66.5
Builders' carpentry and joinery of metal	65.9	35 036	11 917	374.4	29.2	33.5

Source: Eurostat (SBS)

Table 9.14: Manufacture of structural metal products (NACE Group 28.1)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (1)			Most specialised: share in non-financial business economy (%) (2)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Country	Value added
1	Germany	9 179	22.5	Italy	198.6	17.8	Greece	1.2
2	Italy	6 703	16.4	Germany	179.9	16.1	Slovenia	1.1
3	Spain	5 570	13.6	Spain	170.7	15.3	Italy	1.1
4	United Kingdom	4 850	11.9	United Kingdom	81.2	7.3	Spain	1.0
5	France	2 856	7.0	Poland	72.3	6.7	Cyprus	1.0

(1) Malta, not available; the Netherlands and Poland, 2005.
(2) Malta and the Netherlands, not available; Bulgaria, Cyprus, Poland and Romania, 2005.

Source: Eurostat (SBS)

metal structures and parts of structures subsector (NACE Class 28.11), the remainder coming from the manufacture of builders' carpentry and joinery of metal subsector (NACE Class 28.12).

Germany had the largest structural metal products manufacturing sector within the EU-27, contributing a little over one fifth (22.5 %) of all the value added generated among the Member States. The second and third largest contributions were from Italy (16.4 % of the EU-27's value added) and Spain (13.6 %). In terms of the relative contribution of the value added generated by the structural metal products sector to the non-financial business economy, Greece was the most specialised Member State [7] in this activity, its contribution of 1.2 % being about two thirds more than the EU-27 average. In these terms, Slovenia and then Italy were the next most specialised Member States in structural metals products manufacturing.

The development of the production index for structural metals products manufacturing during the ten years through to 2007 was broadly similar to that for metals and metal products manufacturing, except that the period of relatively unchanged output that started in 2000 extended beyond 2003 to 2005. Either side of this period of stability, output growth was stronger for structural metals products manufacturing than for metals and metal products as a whole, which was reflected in a faster rate of output growth for structural metal products manufacturing over the ten years through to 2007 (an average rate of growth of 2.7 % per annum compared with 2.1 % per annum).

Expenditure and productivity

Tangible investment in the EU-27's structural metal products manufacturing sector was EUR 4.2 billion in 2006, accounting for an eighth (12.5 %) of all tangible investment in the activities of metals and metal products manufacturing. In comparison with value added generated, this level of tangible investment represented an investment rate of 10.2 % for the EU-27's structural metal products manufacturing activities in 2006, notably less than the average investment rate (13.6 %) for all metal and metal products manufacturing activities.

(7) Bulgaria, Cyprus, Poland and Romania, 2005; Malta and the Netherlands, not available.

Table 9.15: Structural metal products (CPA Group 28.1)
Production of selected products, EU-27, 2007 (1)

	Prodcom code	Production value (EUR million)	Rounding base (EUR million)	Volume of sold production (million)	Unit of volume
Prefabricated buildings, of iron or steel	28.11.10.30	14 350	70	-	-
Aluminium doors, thresholds for doors, windows and their frames	28.12.10.50	11 986	-	37	units
Iron or steel doors, thresholds for doors, windows and their frames	28.12.10.30	7 640	-	63	units

(1) Excluding products of a generic nature (other), sales of services such as repair, maintenance and installation; estimates; threshold of production value set at EUR 5 billion; the rounding base indicates the magnitude of the rounding employed to protect confidential cells (in the case of PRODCOM code 28.11.91.00, the value lies within the range +/- EUR 70 million of the reported value).

Source: Eurostat (PRODCOM)

Table 9.16: Manufacture of structural metal products (NACE Group 28.1)
Expenditure, productivity and profitability, EU-27, 2006

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Structural metal products	26 286	84 754	4 156	36.6	26.3
Metal structures and parts of structures	18 840	61 181	2 896	39.0	27.5
Builders' carpentry and joinery of metal	7 446	23 573	1 260	31.8	23.8

Source: Eurostat (SBS)

Average personnel costs within the EU-27's structural metal products manufacturing sector were EUR 26.3 thousand per employee in 2006, the lowest average among the dozen NACE groups that comprise metals and metal products manufacturing, and approaching one fifth lower (18.4 %) than the average for metals and metal products manufacturing activities. Nevertheless, personnel costs accounted for a higher proportion of operating expenditure in the structural metal products manufacturing sector than was the case across all metals and metal products manufacturing activities (23.7 % compared with 19.2 %), supporting the notion that this was a relatively low-cost, labour-intensive sector.

EU-27 apparent labour productivity of EUR 36.6 thousand per person employed in the structural metal products manufacturing sector was the lowest among the NACE groups within the metals and metal products manufacturing sector in 2006 and about one quarter (24.0 %) less than the average for all such activities. Productivity remained relatively low, even after adjustments for low average personnel costs; the wage adjusted labour productivity ratio for the EU-27's structural metal products manufacturing sector was 139.1 % in 2006 compared with a ratio of 149.3 % for all metals and metal products manufacturing activities. This was a characteristic noted across the vast majority of the Member States, exceptions being limited to Germany, Lithuania, Luxembourg and the United Kingdom.

9.5: Boilers, metal containers and steam generators

This subchapter covers NACE Groups 28.2 and 28.3 together, which are referred to as the boilers, metal containers and steam generators manufacturing sector. The first of the groups covered (NACE Group 28.2) includes the manufacture of metal tanks, reservoirs and containers, as well as central heating radiators and boilers, while the latter (NACE Group 28.3) covers the manufacture of steam generators, for example, vapour generators, condensers or nuclear reactors.

The manufacture of boilers, containers and steam generators supplies various downstream sectors, most notably the construction (see Chapter 16), fuel processing and chemicals (see Chapter 6), and network supply of electricity, gas and steam (see Chapter 14) sectors.

Structural profile

There were 14.8 thousand enterprises throughout the EU-27 for whom the manufacture of boilers, metal containers and steam generators (NACE Groups 28.2 and 28.3) was their principal activity and they provided employment for 316.3 thousand persons in the Member States in 2006 (the equivalent of 6.2 % of the workforce in metals and metal products manufacturing). The boilers, metal containers and steam generators manufacturing sector created EUR 14.2 billion of value added in 2006, corresponding to one third of its turnover, and this came in similar measure from its two subsectors.

France contributed the largest share (28.4 %) of EU-27 value added within the boilers, metal containers and steam generators manufacturing sector in 2006. Germany contributed the second highest amount (20.4 %), the only activity of those presented in Subchapters 9.1 to 9.7 in which Germany did not make the largest contribution to EU-27 output. The boilers, metal containers and steam generators manufacturing sectors in Finland and France both contributed 0.5 % of the value added generated within their respective non-financial business economies, more than any of the other Member States and about twice the EU-27 average.

The development of the production indices for the activities within the manufacture of boilers, metal containers and steam generators were rather different to that for metals and metal products as a whole in the period between 1997 and 2003, after which they were broadly similar. EU-27 output of boilers, reservoirs, containers and central heating radiators and boilers (NACE Group 28.2) fell relatively sharply from 1997, and despite an upsurge in 1999, to a relative low in 2001, after which there was a relatively steady and continuous rise in output through until 2007. Over the ten year period as a whole, the EU-27's production index for this activity rose by an average 0.7 % per annum. In contrast, the production index for the manufacture of steam generators (NACE Group 28.3) rose much more strongly (an average rate of 3.6 % per annum), with short-lived cutbacks only being recorded in 1999 and, more particularly, 2003.

Table 9.17: Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers; manufacture of steam generators, except central heating hot water boilers (NACE Groups 28.2 and 28.3)
Structural profile, EU-27, 2006 (1)

	Enterprises (thousand)	Turnover (EUR million)	Value added (EUR million)	Persons employed (thousand)	Share in total (%)	
					Value added	Persons employed
Boilers, metal containers and steam generators	14.8	42 820	14 207	316.3	100.0	100.0
Tanks, reservoirs and containers of metal; central heating radiators and boilers	6.7	24 435	7 391	168.4	52.0	53.2
Steam generators, except central heating hot water boilers	8.1	18 386	6 816	147.9	48.0	46.8

(1) Rounded estimates based on non-confidential data.

Source: Eurostat (SBS)

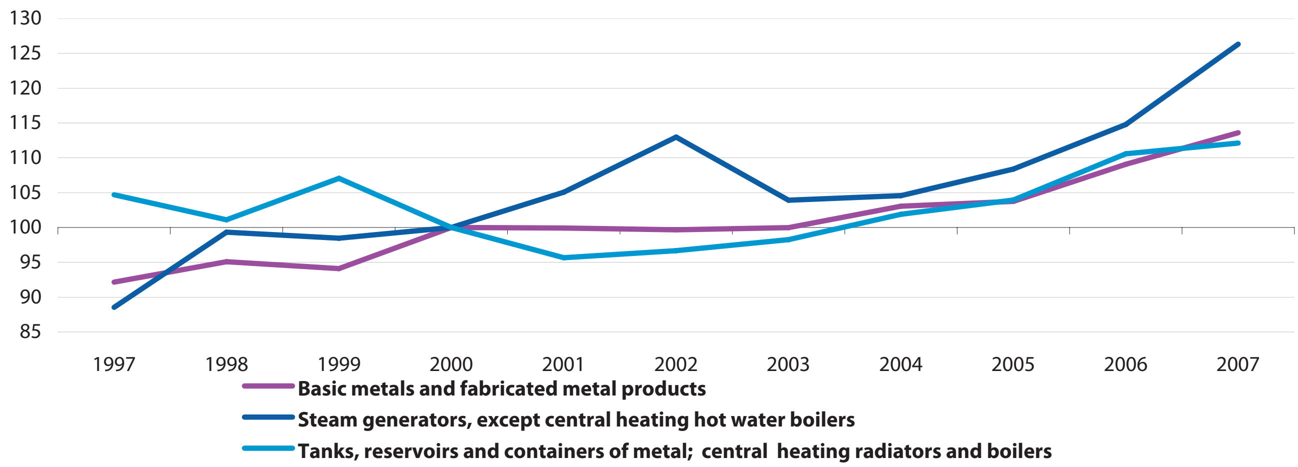
Table 9.18: Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers; manufacture of steam generators, except central heating hot water boilers (NACE Groups 28.2 and 28.3)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (2)			Most specialised: share in non-financial business economy (%) (3)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Country	Value added
1	France	4 033	28.4	France	84.8	26.8	Finland	0.5
2	Germany	2 899	20.4	Germany	47.5	15.0	France	0.5
3	Italy	1 521	10.7	Italy	26.9	8.5	Czech Republic	0.4
4	United Kingdom	1 427	10.0	Poland	25.7	8.4	Belgium	0.4
5	Spain	789	5.6	United Kingdom	19.4	6.1	Slovakia	0.3

(1) Denmark, Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta, not available; the Netherlands, Poland and Portugal, 2005.
(2) Denmark, Estonia, Cyprus, Lithuania, Luxembourg and Malta, not available; the Netherlands, Poland and Portugal, 2005.
(3) Denmark, Estonia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and the Netherlands, not available; Bulgaria, Poland, Portugal and Romania, 2005.

Source: Eurostat (SBS)

Figure 9.4: Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers; manufacture of steam generators, except central heating hot water boilers (NACE Groups 28.2 and 28.3)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

Expenditure and productivity

Tangible investment in the EU-27's boilers, metal containers and steam generators manufacturing sector was EUR 1.2 billion in 2006, which represented a much smaller share (3.7 %) of the tangible investment across metal and metal products activities than the contribution of this sector to value added (5.8 %). The corresponding investment rate (relating tangible investment to value added) of the boilers, metal containers and steam generators manufacturing sector was just 8.7 %, considerably less than the average for all metals and metal products manufacturing. The investment rate in the EU-27's manufacture of steam generators subsector was only 5.5 % in 2006, by far the lowest rate among the dozen NACE groups covered within the metals and metal products manufacturing sector and the second lowest rate among all industrial NACE groups in 2006, only a little higher than for the manufacture of industrial process control equipment (NACE Group 33.3).

Average personnel costs of EUR 34.5 thousand per employee in the EU-27's boilers, metal containers and steam generators manufacturing sector were a little higher than the average for all metals and metal products manufacturing in 2006. However, the proportion of operating expenditure accounted for by personnel costs in this sector was substantially higher (26.1 % compared with 19.2 %). Indeed, in the manufacture of steam generators subsector, personnel costs accounted for closer to one third (31.6 %) of all operating expenditure.

Table 9.19: Manufacture of tanks, reservoirs and containers of metal; manufacture of central heating radiators and boilers; manufacture of steam generators, except central heating hot water boilers (NACE Groups 28.2 and 28.3)
Expenditure, productivity and profitability, EU-27, 2006

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Boilers, metal containers and steam generators	10 594	30 019	1 230	44.9	34.5
Tanks, reservoirs and containers of metal; central heating radiators and boilers	4 950	17 777	853	43.9	30.5
Steam generators, except central heating hot water boilers	5 644	12 242	377	46.1	39.1

Source: Eurostat (SBS)

The average value added generated by each person employed in the EU-27's boilers, metal containers and steam generators manufacturing sector was EUR 44.9 thousand in 2006, which was 6.6 % less than the average for all metals and metal products manufacturing. The wage adjusted labour productivity ratio of the EU-27's boilers, metal containers and steam generators manufacturing sector was 130.1 % in 2006, the lowest rate among the seven subchapters contained within this publication under the heading of metals and metal products manufacturing. The wage adjusted labour productivity ratio of the boilers, metal containers and steam generators manufacturing sector was lower than the ratio for metals and metal products manufacturing as a whole in all Member States for which data is available [8], with the exception of Italy and the United Kingdom where it was very slightly higher.

[8] The Netherlands and Poland, 2005; Denmark, Cyprus, Latvia, Lithuania, Luxembourg and Malta, not available.

9.6: Other metal processing

Together, NACE Groups 28.4 and 28.5 are referred to as other metal processing. Both activities concern the transformation of metals, with NACE Group 28.4 covering forging, pressing, stamping and roll forming of metal, while NACE Group 28.5 covers the treatment and coating of metal and general mechanical engineering (such as turning, milling, welding or planing).

Structural profile

Among the activities presented in Subchapters 9.1 to 9.7, the EU-27's other metal processing sector (NACE Groups 28.4 and 28.5) was the largest in terms of enterprise numbers, persons employed and value added. The activities grouped within other metal processing were the principal activities of an estimated 158.0 thousand enterprises throughout the EU-27, providing employment for 1.4 million persons, about one in every four (28.2 %) of the metals and metal products (NACE Subsection DJ) workforce. The EU-27's other metal processing sector generated EUR 60.2 billion of added value in 2006, about one quarter (24.6 %) of the total value added for metals and metal products manufacturing. About three quarters (72.2 %) of the EU-27's value added in the other metal processing sector in 2006 came from the treatment and coating of metal and general mechanical engineering (NACE Group 28.5) subsector, the remaining share coming from the forging, pressing, stamping and roll forming of metal (NACE Group 28.4) subsector.

Germany made the largest contribution (23.7 %) to the value added created by the other metal processing sector across the EU-27 in 2006. It was only a little more than the contribution from Italy (22.1 %), the most specialised Member State in other metal processing, where these activities contributed 2.1 % of non-financial business economy value added in 2006, which was almost double the EU-27 average.

The development of the EU-27 production indices for the two NACE groups that make up other metal processing were very similar in the ten years through until 2007. They were also similar to the developments observed for metals

Table 9.20: Forging, pressing, stamping and roll forming of metal; powder metallurgy; teatment and coating of metals; general mechanical engineering (NACE Groups 28.4 and 28.5)
Structural profile, EU-27, 2006 (1)

	Enterprises (thousand)	Turnover (EUR million)	Value added (EUR million)	Persons employed (thousand)	Share in total (%)	
					Value added	Persons employed
Other metal processing	158.0	162 220	60 156	1 430.2	100.0	100.0
Forging, pressing, stamping and roll forming of metal; powder metallurgy	16.1	56 476	16 729	319.6	27.8	22.3
Treatment and coating of metals; general mechanical engineering	141.9	105 744	43 427	1 110.6	72.2	77.7

(1) Rounded estimate based on non-confidential data.

Source: Eurostat (SBS)

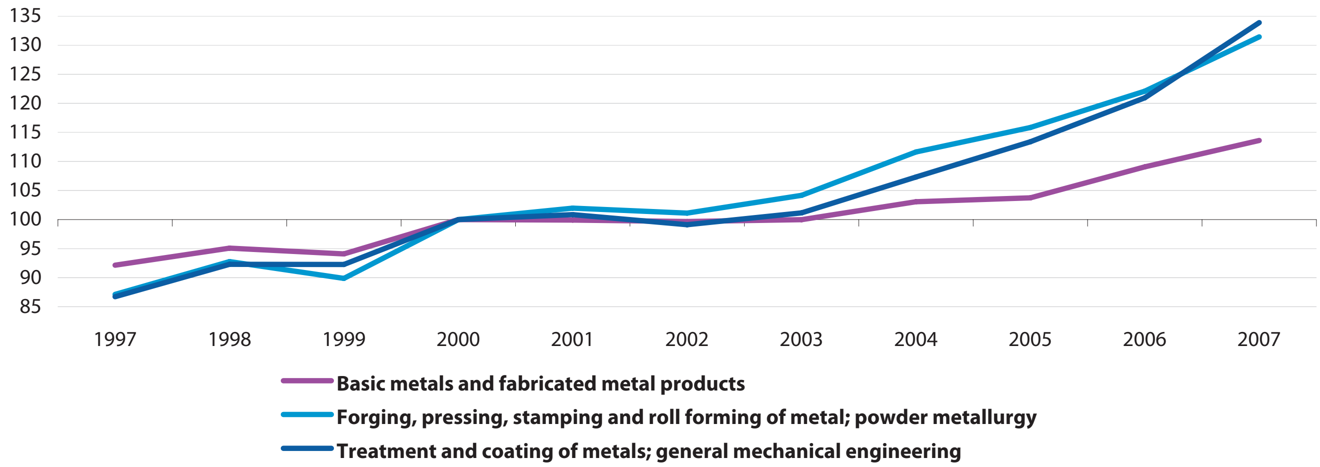
Table 9.21: Forging, pressing, stamping and roll forming of metal; powder metallurgy; teatment and coating of metals; general mechanical engineering (NACE Groups 28.4 and 28.5)
Structural profile: ranking of top five Member States in terms of value added and persons employed, 2006

	Highest value added (1)			Largest number of persons employed (2)			Most specialised: share in non-financial business economy (%) (3)	
	Country	(EUR million)	(% of EU-27)	Country	(thousand)	(% of EU-27)	Country	Value added
1	Germany	14 285	23.7	Italy	306.0	21.4	Italy	2.1
2	Italy	13 270	22.1	Germany	290.7	20.3	Slovenia	1.6
3	France	9 256	15.4	France	196.6	13.7	Czech Republic	1.3
4	United Kingdom	7 336	12.2	United Kingdom	143.5	10.0	Germany	1.2
5	Spain	4 745	7.9	Spain	109.8	7.7	Finland	1.2

(1) Estonia, Latvia, Luxembourg and Malta, not available; the Netherlands, Poland and Portugal, 2005.
(2) Estonia, Luxembourg and Malta, not available; the Netherlands, Poland and Portugal, 2005.
(3) Estonia, Latvia, Luxembourg, Malta and the Netherlands, not available; Bulgaria, Cyprus, Poland, Portugal and Romania, 2005.

Source: Eurostat (SBS)

Figure 9.5: Forging, pressing, stamping and roll forming of metal; powder metallurgy; teatment and coating of metals; general mechanical engineering (NACE Groups 28.4 and 28.5)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

Table 9.22: Forging, pressing, stamping and roll forming of metal; powder metallurgy; teatment and coating of metals; general mechanical engineering (NACE Groups 28.4 and 28.5)
Expenditure, productivity and profitability, EU-27, 2006

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Other metal processing	40 160	103 925	8 188	42.1	31.1
Forging, pressing, stamping and roll forming of metal; powder metallurgy	11 027	40 636	2 254	52.3	35.8
Treatment and coating of metals; general mechanical engineering	29 133	63 290	5 934	39.1	29.7

Source: Eurostat (SBS)

and metal products as a whole until 2003, after which the rate of output growth was much faster for other metal processing. Over the period between 1997 and 2007, the average rate of growth in the output of forging, pressing, stamping and roll forming of metal was 4.2 % per annum for the EU-27, while the corresponding rate for the treatment and coating of metal and general mechanical engineering was 4.4 %.

Expenditure and productivity

One quarter (24.6 %) of the tangible investment made in the EU-27's metals and metal products manufacturing sector in 2006 was made in the other metal processing sector. In comparison with value added generated, the tangible investment of this sector (EUR 8.2 billion) corresponded to an investment rate of 13.6 %, identical to that recorded for metals and metal products manufacturing as a whole.

Although average personnel costs of EUR 31.1 thousand per employee in the EU-27's other metal processing sector were a little below the average for metals and metal products manufacturing in 2006, the proportion of operating expenditure accounted for by personnel costs was much higher (27.9 % compared with 19.2 %). This was the highest share among the activities covered in Subchapters 9.1 to 9.7, reflecting the industrial service nature of the sector.

The apparent labour productivity of those employed across the EU-27 in the other metal processing sector was EUR 42.1 thousand per person employed in 2006, which covered average personnel costs by 135.0 %. This wage adjusted labour productivity ratio was beneath the average for the whole of metals and metal products manufacturing (149.3 %), a characteristic that was noted in all Member States for which data is available [9], with the exception of Ireland where it was slightly higher.

(9) The Netherlands, Poland and Portugal, 2005; Estonia, Latvia, Luxembourg and Malta, not available.

9.7: Miscellaneous fabricated metal products

Together, NACE Groups 28.6 and 28.7 are referred to as miscellaneous fabricated metal products manufacturing. These two activities concern the manufacture of finished products for use in other industrial and construction activities, as well as final consumer markets. NACE Group 28.6 covers the manufacture of cutlery, tools and general hardware, such as locks and hinges, while NACE Group 28.7 covers the manufacture of other fabricated metal products, such as metal drums, light metal packaging, wire products, fasteners, baths and sinks, and household articles.

Structural profile

There were 106.3 thousand enterprises in the Member States for whom one of the miscellaneous fabricated metal products manufacturing activities (NACE Groups 28.6 and 28.7) was their main activity in 2006. These enterprises provided employment to 1.1 million persons in the EU-27, corresponding to just over one fifth (21.9 %) of all

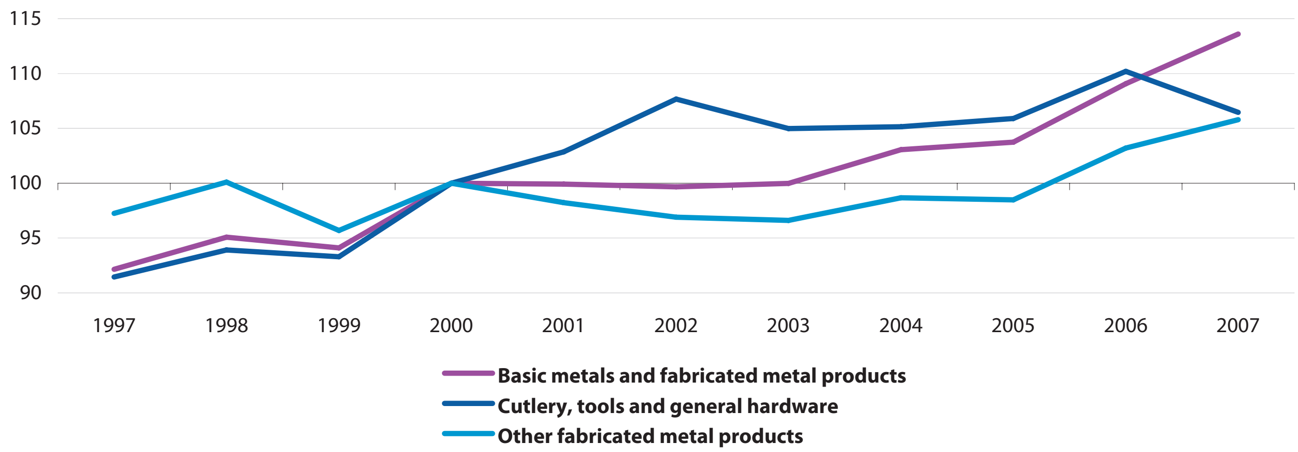
Table 9.23: Manufacture of cutlery, tools and general hardware; manufacture of other fabricated metal products (NACE Groups 28.6 and 28.7)
Structural profile, EU-27, 2006 (1)

	Enterprises (thousand)	Turnover (EUR million)	Value added (EUR million)	Persons employed (thousand)	Share in total (%) Value added	Share in total (%) Persons employed
Miscellaneous fabricated metal products	106.3	141 004	49 677	1 113.0	100.0	100.0
Cutlery, tools and general hardware	44.3	45 004	18 677	404.0	37.6	36.3
Cutlery (2)	1.9	2 227	1 062	24.0	2.1	2.2
Tools	15.2	22 467	10 055	200.0	20.2	18.0
Locks and hinges	27.0	20 309	7 560	172.9	15.2	15.5
Other fabricated metal products	62.0	96 000	31 000	709.0	62.4	63.7
Steel drums and similar containers	1.2	3 460	973	20.6	2.0	1.9
Light metal packaging	1.1	15 180	3 709	67.2	7.5	6.0
Other fabricated metal products n.e.c. (2)	50.5	50 000	17 000	432.5	34.2	38.9
Wire products	3.9	13 075	3 288	73.3	6.6	6.6
Fasteners, screw machine products, chain and springs	5.1	15 788	5 864	118.3	11.8	10.6

(1) Rounded estimates based on non-confidential data.
(2) Number of persons employed, 2005.

Source: Eurostat (SBS)

Figure 9.6: Manufacture of cutlery, tools and general hardware; manufacture of other fabricated metal products (NACE Groups 28.6 and 28.7)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

persons working in the metals and metal products manufacturing (NACE Subsection DJ) sector in 2006. The added value of EUR 49.7 billion generated by the EU-27's miscellaneous fabricated metal products manufacturing sector also contributed about one fifth (20.3 %) of the total value added within the metals and metal products manufacturing sector in 2006.

Looking in more detail, the manufacture of other fabricated metal products (NACE Group 28.7) subsector generated EUR 31.0 billion of value added in the EU-27 in 2006, about two thirds more than the manufacture of cutlery, tools and general hardware (NACE Group 28.6).

Miscellaneous fabricated metal products manufacturing activities in Germany created EUR 16.9 billion of value added, corresponding to about one third (34.0 %) of the value added generated in the EU-27 in 2006. The second highest level of activity was in Italy, although it generated less than

Table 9.24: Miscellaneous fabricated metal products (CPA Groups 28.6 and 28.7)
Production of selected products, EU-27, 2007 (1)

	Prodcom code	Production value (EUR million)	Rounding base (EUR million)	Volume of sold production (million)	Unit of volume
Base metal mountings, fittings &similar articles suitable for buildings (excluding hinges, castors, locks, keys, spy holes fitted with optical elements & key operated door bolts)	28.63.14.40	4 160	20	752	kg
Welded grill, netting & fencing manufactured from wire of a diameter of ≥ 3 mm, with mesh size of ≥ 100 cm² including with a backing of paper as used in cementing & plastering	28.73.13.20	3 078	-	5 155	kg
Cans used for preserving food & drink of iron or steel, < 50 l, food cans	28.72.11.33	3 053	-	36 735	units
Aluminium articles; inspection traps, gutters & gutter spouts, ladders & steps, thimbles, venetian blinds, cigarette cases, cosmetic/powder boxes & cases excluding of cast aluminium	28.75.27.55	3 000	300	576	kg
Pressing, stamping or punching tools for working metal (excluding work & tool holders for machines or hand tools)	28.62.50.33	2 954	-	202	kg
Closed-die forged	28.75.27.45	2 112	-	96 421	kg
Base metal mountings, fittings & similar articles suitable for furniture (excluding hinges, castors, locks & keys)	28.63.14.50	2 045	-	606	kg

(1) Excluding products of a generic nature (other), sales of services such as repair, maintenance and installation; estimates; threshold of production value set at EUR 2 billion; the rounding base indicates the magnitude of the rounding employed to protect confidential cells (in the case of PRODCOM code 28.63.14.40, the value lies within the range +/- EUR 20 million of the reported value).

Source: Eurostat (PRODCOM)

half of the value added created in Germany. As a proportion of non-financial business economy value added, however, the miscellaneous fabricated metal products manufacturing sector contributed its highest share (2.6 %) in Slovenia, three times the average across the EU-27 [10]. The Czech Republic was also relatively specialised in this activity in value added terms, as the contribution made by this sector was almost exactly double the EU-27 average.

The development in the EU-27's production indices for the manufacture of cutlery, tools and general hardware (NACE Group 28.6) and the manufacture of other fabricated metal products (NACE Group 28.7) were quite different from those recorded for metals and metal products as a whole – although, in the case of the former, differences were restricted to the period after 2000. In contrast to a relatively unchanged level of output for metals and metal products manufacturing between 2000 and 2003, the output of cutlery, tools and general hardware continued to increase sharply through until 2002 before a contraction in 2003 and a couple of years of relative stability, just as the output of metals and metal products manufacturing began to grow steadily again. Although, the output of cutlery, tools and general hardware rose sharply in 2006, this was almost completely overturned in 2007, when output fell back to beneath its index level of 2002. Over the ten years through to 2007, the EU-27's output of cutlery, tools and general hardware grew by an average 1.5 % per annum.

In broad terms, the output of other fabricated metal products was relatively stable (rising and falling within a narrow 5 % band) between 1997 and 2005. Output within the EU-27 grew on average by 0.8 % per annum over the ten years through to 2007 with the overall growth almost entirely due to the expansion in activity in 2006 and 2007.

([10]) Bulgaria, Poland and Romania, 2005; Denmark, Cyprus, Luxembourg, Malta and the Netherlands, not available.

Table 9.25: Manufacture of cutlery, tools and general hardware; manufacture of other fabricated metal products (NACE Groups 28.6 and 28.7)
Expenditure, productivity and profitability, EU-27, 2006 (1)

	(EUR million)			(EUR thousand per person)	
	Personnel costs	Purchases of goods & services	Investment in tangible goods	Apparent labour productivity	Average personnel costs
Miscellaneous fabricated metal products (2)	31 341	92 074	5 584	44.6	30.9
Cutlery, tools and general hardware (2)	12 341	26 674	2 084	46.2	33.4
Cutlery (3)	682	1 197	322	45.0	34.1
Tools	6 831	12 414	1 141	50.3	34.2
Locks and hinges	4 829	13 063	874	43.7	31.6
Other fabricated metal products	19 000	65 400	3 899	43.7	29.5
Steel drums and similar containers	569	2 534	144	47.2	29.3
Light metal packaging	2 433	11 515	623	55.2	36.6
Other fabricated metal products n.e.c. (4)	10 000	31 000	1 900	38.1	27.3
Wire products (2)	2 015	9 942	369	44.9	29.2
Fasteners, screw machine products, chain and springs	3 807	10 047	794	49.6	33.4

(1) Rounded estimates based on non-confidential data.
(2) Investment in tangible goods, 2005.
(3) Investment in tangible goods and apparent labour productivity, 2005.
(4) Apparent labour productivity, 2005.

Source: Eurostat (SBS)

Expenditure and productivity

Tangible investment in the EU-27's miscellaneous fabricated metal products manufacturing sector was EUR 5.6 billion in 2005, representing one fifth of the tangible investment made across metals and metal products manufacturing as a whole in the same year. In comparison to the value added generated by this sector in 2005, this corresponded to an investment rate of 11.7 %, a little lower than the corresponding rate (12.2 %) for metals and metal products manufacturing.

Despite average personnel costs of EUR 30.9 thousand per employee in the EU-27's miscellaneous fabricated metal products manufacturing sector in 2006 being about 4 % lower than the average across metals and metal products manufacturing, the proportion of operating expenditure accounted for by personnel costs was higher in the miscellaneous fabricated metal products manufacturing sector (25.4 % in comparison with 19.2 %), underlining the relatively labour-intensive nature of these activities.

The EU-27's miscellaneous fabricated metal products manufacturing sector generated an average EUR 44.6 thousand of value added per person employed in 2006, which was 7.2 % less than the average for all metals and metal products manufacturing activities. This difference in apparent labour productivity was narrowed when taking account of the lower average personnel costs in this sector, resulting in a wage adjusted labour productivity ratio for the EU-27's miscellaneous fabricated metal products manufacturing sector of 144.3 % in 2006 (in comparison with a ratio of 149.3 % for all metals and metal products manufacturing activities). In the majority of the Member States, the wage adjusted labour productivity ratio of the miscellaneous fabricated metal products manufacturing sector was lower than the ratio for metals and metal products as a whole (particularly so in Slovakia) but there were a few Member States, namely Belgium, Germany, Estonia, Ireland, Poland (2005), Sweden and the United Kingdom, where it was higher.

Table 9.26: Manufacture of basic metals (NACE Division 27)
Main indicators, 2006 (1)

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
Enterprises	0.3	0.2	0.7	0.2	2.2	0.0	0.1	1.9	1.5	1.1	3.7	0.0	0.0	0.0
Persons employed	33.8	22.5	57.5	5.4	257.7	0.4	2.5	13.8	73.6	100.0	136.2	0.4	3.6	0.9
Turnover	22 166	3 186	8 282	1 408	99 888	30	649	4 741	34 101	39 587	63 476	71	393	21
Production	22 186	3 235	8 290	1 408	94 252	29	625	4 986	34 319	39 349	63 138	72	379	24
Purch. of goods & serv.	18 649	3 168	6 988	1 068	79 031	23	514	4 133	27 958	32 871	54 492	49	304	16
Value added	3 705	379	1 762	389	21 640	8	140	1 091	7 296	8 225	10 723	27	100	8
Personnel costs	2 279	127	752	237	14 031	4	111	377	3 015	4 755	5 259	9	35	5
Average personnel costs	67.9	5.7	13.3	44.6	54.7	8.7	46.2	31.7	41.3	48.0	40.3	23.7	9.6	5.8
Gross operating surplus	1 426	252	1 010	152	7 609	4	29	714	4 281	3 470	5 463	18	65	3
Gross investment	1 954	142	278	50	2 291	1	167	154	1 092	1 283	2 124	3	17	2
Apparent labour prod.	109.5	16.9	30.6	72.4	84.0	19.3	56.9	79.3	99.1	82.3	78.7	72.9	27.7	8.9
Wage adj. labour prod.	161.2	295.3	231.0	162.4	153.5	220.8	123.1	249.9	240.1	171.4	195.3	307.2	287.3	155.3
Gross operating rate	6.4	7.9	12.2	10.8	7.6	14.8	4.4	15.1	12.6	8.8	8.6	25.3	16.6	13.8
Investment rate	52.7	37.4	15.7	12.8	10.6	12.5	119.6	14.1	15.0	15.6	19.8	11.9	16.5	26.3

	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	NO
Enterprises	0.0	0.3	:	0.3	0.2	0.8	0.4	0.4	0.1	0.1	0.2	0.5	1.7	0.2
Persons employed	6.1	19.2	:	21.0	33.2	66.9	9.7	60.8	9.1	26.5	18.3	46.9	73.1	11.7
Turnover	17 769	3 604	:	7 256	12 361	7 625	2 446	5 004	1 468	4 049	9 929	15 909	26 020	13 006
Production	3 616	3 134	:	7 121	12 262	7 335	2 368	4 936	1 477	3 740	10 062	15 757	24 538	8 542
Purch. of goods & serv.	17 357	3 080	:	5 128	9 208	6 138	2 139	4 008	1 168	2 957	7 693	12 874	20 783	11 094
Value added	546	652	:	2 206	3 540	1 646	472	969	327	1 128	2 697	3 331	5 477	1 980
Personnel costs	467	290	:	1 140	1 818	676	192	433	184	355	943	1 723	3 438	787
Average personnel costs	77.0	15.2	:	54.3	54.9	10.3	20.1	7.1	20.2	13.4	51.7	49.3	47.4	67.6
Gross operating surplus	79	363	:	1 066	1 722	970	280	536	144	773	1 754	1 541	2 039	1 193
Gross investment	257	146	:	164	667	307	57	380	112	195	171	485	634	234
Apparent labour prod.	90.1	34.0	:	105.3	106.8	24.6	48.8	15.9	35.9	42.5	147.7	71.1	74.9	169.7
Wage adj. labour prod.	117.0	223.8	:	193.8	194.5	239.7	243.1	223.6	177.4	317.7	285.9	144.2	157.9	251.0
Gross operating rate	0.4	10.1	:	14.7	13.9	12.7	11.4	10.7	9.8	19.1	17.7	9.7	7.8	9.2
Investment rate	47.0	22.3	:	7.4	18.8	18.7	12.1	39.2	34.2	17.2	6.4	14.5	11.6	11.8

(1) The Netherlands and Poland, 2005; unless otherwise stated, values refer to EUR million; number of enterprises and number of persons employed are given in thousands; average personnel costs and apparent labour productivity are given in EUR thousand per person; wage adjusted labour productivity, gross operating rate and investment are ratios expressed as percentages.

Source: Eurostat (SBS)

Table 9.27: Manufacture of fabricated metal products, except machinery and equipment (NACE Division 28)
Main indicators, 2006 (1)

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
Enterprises	6.2	3.7	34.0	4.3	37.9	0.8	0.6	14.1	43.4	30.1	96.6	1.1	0.7	1.4
Persons employed	67.9	41.7	167.1	47.4	788.9	12.9	13.1	40.3	375.8	429.4	707.7	3.8	9.7	18.4
Turnover	12 186	888	9 351	6 581	112 064	821	1 870	4 683	43 737	61 472	91 390	308	337	626
Production	11 953	803	9 198	6 449	107 690	749	1 775	4 484	42 754	59 157	93 137	297	330	609
Purch. of goods & serv.	8 511	744	7 129	4 155	68 986	669	1 220	3 333	30 389	40 543	65 131	201	251	486
Value added	3 790	193	2 783	2 614	43 254	205	657	1 552	14 546	20 872	29 112	113	102	168
Personnel costs	2 624	88	1 500	1 898	28 928	121	471	588	9 899	16 614	17 271	69	50	110
Average personnel costs	42.2	2.3	10.7	42.2	38.5	9.5	36.7	22.4	28.5	39.2	30.7	20.8	5.1	6.3
Gross operating surplus	1 166	104	1 283	716	14 326	84	187	963	4 647	4 258	11 841	44	52	59
Gross investment	517	96	520	298	4 245	47	56	527	1 788	2 048	4 129	13	36	45
Apparent labour prod.	55.8	4.6	16.7	55.1	54.8	15.8	50.1	38.5	38.7	48.6	41.1	29.6	10.5	9.1
Wage adj. labour prod.	132.1	203.0	155.1	130.7	142.2	166.9	136.8	172.4	136.0	123.8	134.0	142.1	203.9	145.0
Gross operating rate	9.6	11.7	13.7	10.9	12.8	10.3	10.0	20.6	10.6	6.9	13.0	14.2	15.5	9.5
Investment rate	13.7	50.0	18.7	11.4	9.8	23.0	8.5	34.0	12.3	9.8	14.2	11.3	34.9	27.0

	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	NO
Enterprises	0.2	9.4	:	7.1	4.3	29.1	17.6	6.3	4.5	1.4	4.7	11.6	27.4	2.4
Persons employed	4.3	74.6	:	91.2	71.7	248.1	88.2	102.8	34.1	34.5	46.1	85.1	332.6	20.5
Turnover	886	3 626	:	16 102	12 148	10 972	5 308	2 615	2 846	1 901	6 472	12 373	42 326	3 640
Production	889	3 065	:	15 483	11 570	10 072	5 137	2 488	2 606	1 784	6 385	12 067	40 815	3 497
Purch. of goods & serv.	619	2 745	:	11 047	7 888	7 585	3 786	2 035	2 073	1 454	4 098	8 043	23 773	2 315
Value added	303	979	:	5 146	4 643	3 325	1 680	700	856	498	2 506	4 478	18 555	1 405
Personnel costs	173	579	:	3 645	2 870	1 559	1 106	446	520	289	1 733	3 082	11 309	1 035
Average personnel costs	41.3	8.3	:	42.1	41.7	7.2	12.9	4.4	16.7	8.4	38.7	40.3	35.8	52.7
Gross operating surplus	131	400	:	1 501	1 773	1 766	574	254	336	209	773	1 288	7 246	370
Gross investment	23	196	:	410	559	666	301	350	243	135	273	531	1 396	117
Apparent labour prod.	71.4	13.1	:	56.4	64.7	13.4	19.0	6.8	25.1	14.4	54.3	52.6	55.8	68.4
Wage adj. labour prod.	172.7	158.8	:	133.9	155.2	185.5	147.6	155.3	150.1	171.7	140.6	130.5	156.0	129.9
Gross operating rate	14.8	11.0	:	9.3	14.6	16.1	10.8	9.7	11.8	11.0	11.9	10.4	17.1	10.2
Investment rate	7.7	20.1	:	8.0	12.0	20.0	17.9	50.0	28.4	27.2	10.9	11.9	7.5	8.3

(1) The Netherlands and Poland, 2005; unless otherwise stated, values refer to EUR million; number of enterprises and number of persons employed are given in thousands; average personnel costs and apparent labour productivity are given in EUR thousand per person; wage adjusted labour productivity, gross operating rate and investment are ratios expressed as percentages.

Source: Eurostat (SBS)