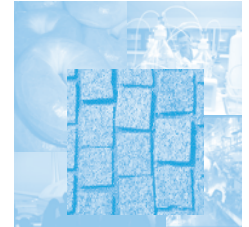


Other non-metallic mineral products



The processes of transforming mineral raw materials such as clay, lime, sand or stone into other non-metallic mineral products (for use, among others, by the construction industry, food and beverages sector, or households in the form of consumer durables) tend to be energy intensive and lead to gas emissions.

Recent policy initiatives of key importance to other non-metallic mineral enterprises have tended to focus on energy strategies, the environment and health and safety. Regarding energy strategies, recent developments (further described in Chapter 13) include ensuring the availability of energy at affordable prices, the need to minimise energy waste and reduce energy use as well as emissions targets. Developments also include the second period for emissions trading (and the implications of possibly incorporating nitrogen and sulphur oxides emissions targets), pollution prevention (existing installations being brought into compliance by 30 October 2007), the start of the classification of chemical substances (REACH) in June 2007 (see Chapter 5), and the December 2006 regulation of the European Commission on the good manufacturing practice for materials and articles that come into contact with food ⁽¹⁾.

Other developments include new free trade agreements, such as that agreed in April 2007 with India, Korea and the ASEAN countries ⁽²⁾, offering potential tariff and non-tariff barrier

reductions on various ceramic and glass products and further discussions in the Council on the proposal for a regulation on origin marking ⁽³⁾.

STRUCTURAL PROFILE

The other non-metallic mineral products manufacturing (NACE Division 26) sector created EUR 72.9 billion of value added across the EU-27 in 2004 (see Table 6.1), which corresponded to 1.4 % of the value added generated across the EU-27's non-financial business economy (NACE Sections C to I and K). There were 101 500 enterprises which employed 1.6 million people in the other non-metallic mineral products manufacturing sector across the EU-27, which represented a similar proportion (1.3 %) of the non-financial business economy workforce as for value added.

The value added generated by the activities of cement and concrete manufacturing (NACE Groups 26.5 and 26.6, see Subchapter 6.3) in the EU-27 was EUR 31.0 billion in 2004, which was the largest contribution (42.5 %) to the sectoral total. The activities of glass manufacturing (NACE Group 26.1, see Subchapter 6.1) generated a further EUR 16.0 billion of value added (22.0 % of the sectoral total), with ceramic goods and clay products manufacturing (NACE Groups 26.2 to 26.4, see Subchapter 6.2) generating a further EUR 15.0 billion, and stone and miscellaneous non-metallic mineral products (NACE Groups 26.7 and 26.8, see Subchapter 6.4) the remaining EUR 10.6 billion.

This chapter focuses on the manufacture of other non-metallic mineral products (NACE Division 26), which consists of glass manufacturing (NACE Group 26.1); the manufacture of ceramic and clay products (NACE Groups 26.2 to 26.4); the manufacture of cement and concrete (NACE Groups 26.5 and 26.6); and the working of stone and miscellaneous non-metallic mineral products (NACE Groups 26.7 and 26.8). Note that the quarrying of non-metallic mineral products is covered in Chapter 12.

NACE

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

⁽¹⁾ 2023/2006/EC.

⁽²⁾ Philippines, Malaysia, Singapore, Thailand, Indonesia, Brunei, Vietnam, Laos, Myanmar and Cambodia.

⁽³⁾ 2107/2005/EC.

Persons employed in the manufacture of non-metallic mineral products (NACE Subsection DI) as a proportion of those employed in the non-financial business economy (NACE Sections C to I and K)

2004 – NUTS 2

- ≤ 0.5 %
- > 0.5 % and ≤ 1.2 %
- > 1.2 % and ≤ 2.5 %
- > 2.5 %
- Data not available

Greece, Luxembourg and Malta: not available
 Bulgaria: based on pre-accession NUTS
 Cyprus: total employment excludes real estate (NACE Division 70) and research and development (NACE Division 73)
 Cyprus: data based on enterprises instead of local units
 Norway: total employment excludes water supply (NACE Division 41)

Statistical data: Eurostat Database: REGIO
 © EuroGeographics, for the administrative boundaries
 Cartography: Eurostat – GISCO, 05/2007

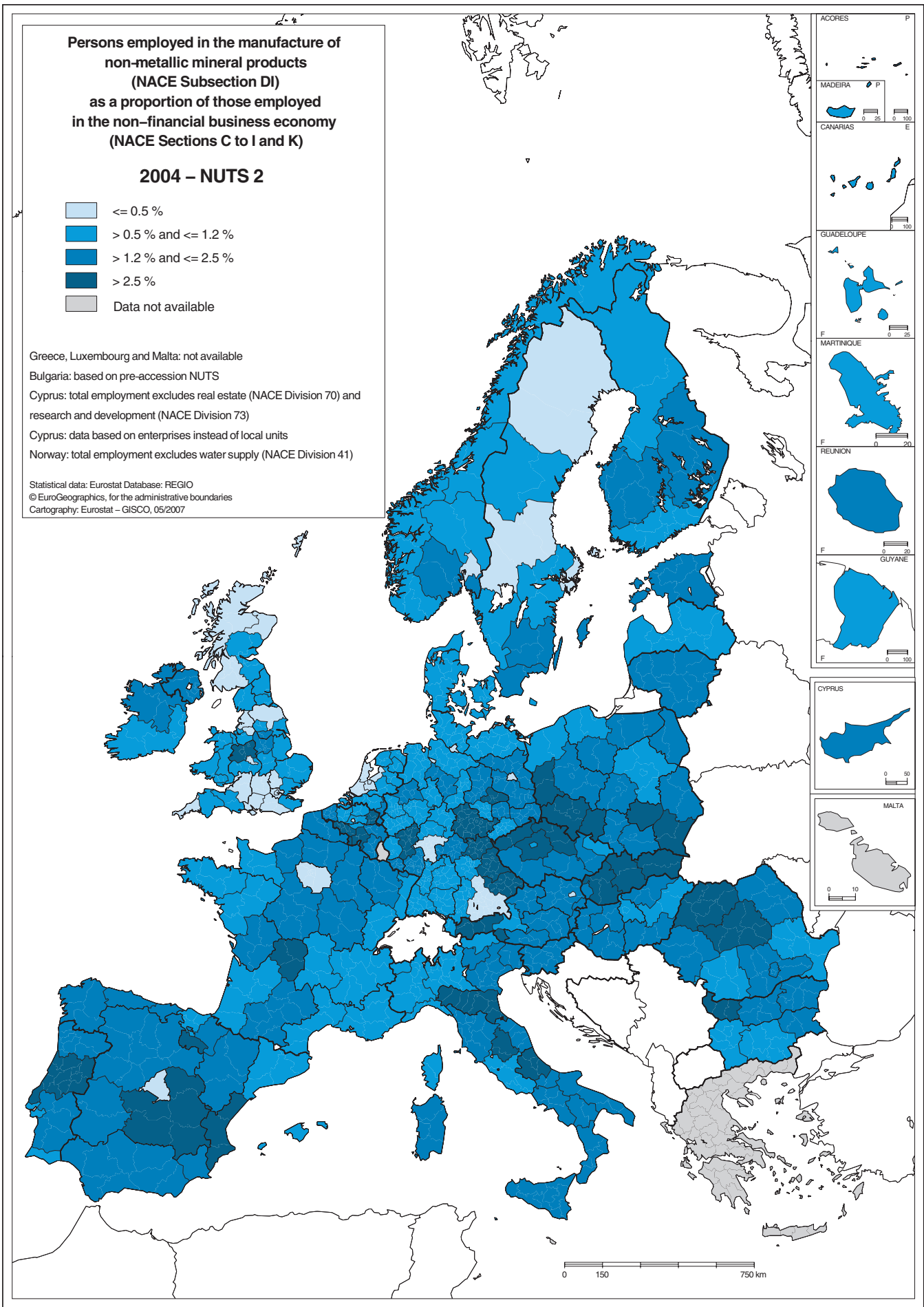


Table 6.1
Manufacture of other non-metallic mineral products (NACE Subsection DI)
Structural profile, EU-27, 2004 (1)

	No. of enterprises		Turnover		Value added		Employment	
	(thousands)	(% of total)	(EUR million)	(% of total)	(EUR million)	(% of total)	(thousands)	(% of total)
Other non-metallic mineral products	101.5	100.0	211 281	100.0	72 875	100.0	1 600.0	100.0
Glass and glass products	17.8	17.6	44 000	20.8	16 000	22.0	390.7	24.4
Ceramic goods and clay products	20.0	19.7	38 000	18.0	15 000	20.6	400.0	25.0
Cement and concrete	26.0	25.6	94 000	44.5	31 000	42.5	530.0	33.1
Stone and miscellaneous non-metallic mineral products	37.2	36.6	33 000	15.6	10 600	14.5	290.0	18.1

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

Source: Eurostat (SBS)

Table 6.2
Manufacture of other non-metallic mineral products (NACE Subsection DI)
Structural profile: ranking of top five Member States, 2004

Rank	Share of non-financial business economy					
	Value added (EUR million) (1)	Employment (thousands) (2)	No. of enterprises (3)	Turnover (3)	Value added (3)	Employment (4)
1	Germany (13 235)	Italy (249.5)	Lithuania (1.0 %)	Czech Republic (1.9 %)	Czech Republic (3.0 %)	Slovakia (2.5 %)
2	Italy (12 609)	Germany (248.3)	Portugal (0.8 %)	Spain (1.7 %)	Portugal (2.6 %)	Czech Republic (2.3 %)
3	Spain (10 116)	Spain (191.7)	Slovakia (0.8 %)	Slovakia (1.7 %)	Slovakia (2.5 %)	Portugal (2.1 %)
4	France (8 427)	France (143.7)	Poland (0.8 %)	Portugal (1.7 %)	Romania (2.5 %)	Poland (1.8 %)
5	United Kingdom (8 344)	Poland (137.2)	Czech Republic (0.8 %)	Italy (1.6 %)	Bulgaria (2.3 %)	Slovenia (1.8 %)

(1) Greece and Malta, not available; Luxembourg, 2003.

(2) Greece and Malta, not available; Luxembourg and Slovenia, 2003.

(3) Ireland, Greece, Cyprus and Malta, not available; Luxembourg, 2003.

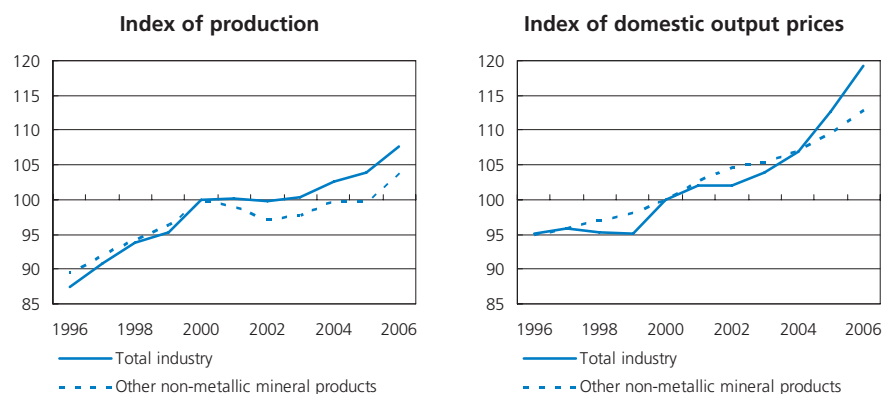
(4) Ireland, Greece, Cyprus and Malta, not available; Luxembourg and Slovenia, 2003.

Source: Eurostat (SBS)

Germany and Italy were the largest producers of other non-metallic mineral products among the Member States, generating EUR 13.2 billion and EUR 12.6 billion of value added respectively in 2004 (see Table 6.2); together they contributed a little over one third (35.5 %) of the value added generated by this sector across the EU-27 in 2004. However, the Czech Republic, Portugal, Slovakia and Romania were the Member States that were the most specialised in the manufacture of other non-metallic mineral products in value added terms; the proportion of the value added generated by each of their respective non-financial business economies which came from this sector being between 2.5 % and 3.0 %.

The map on page 124 shows the contribution of the other non-metallic mineral products manufacturing sector to employment within the non-financial business economy of each region in 2004. Many regions in Germany and Italy, as well as in Poland, Belgium, the Czech Republic, Slovakia and Spain, were specialised in this sector in terms of employment, as well as regional pockets in a number of other Member States among which the Centro region of Portugal showed the highest regional specialisation among all the regions of the EU-27.

Figure 6.1
Manufacture of other non-metallic mineral products (NACE Subsection DI)
Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

During the ten years through until 2006, there was a strong similarity between the development of the output of other non-metallic mineral products and that of the output of industry as a whole (see Figure 6.1); in both cases the strong growth came to an end in 2000 before resuming some time later. Where the two production indices differentiated concerned the fact that the output of other non-metallic mineral products declined moderately in 2001 and 2002 whereas

industrial output stabilised. It was not until 2006 that the output of other non-metallic mineral products surpassed the level that had been reached in 2000.

There was a continuous rise in the domestic output price index for other non-metallic mineral products manufacturing during the ten years through until 2006 (an average rise of 1.8 % per annum). The steadiness of this increase contrasted with the domestic output

price index for industry as a whole, which had some periods of relatively unchanged prices (1996 to 1999 and 2001 to 2002), that were followed by sharper price rises. Furthermore, there was a much stronger rise in the industrial output price index in 2005 and 2006 than for other non-metallic mineral products.

A small majority (52.0 %) of the value added generated within the EU-27's other non-metallic mineral products manufacturing sector came from small and medium-sized enterprises (employing less than 250 people) in 2004. This majority was less strong than that (57.0 %) across the non-financial business economy. The greatest contrast between the SMEs concerned the relative contribution made by micro-enterprises employing less than ten people; they contributed 6.9 % of other non-metallic mineral products manufacturing value added in 2004 but 20.2 % of the value added of the non-financial business economy. Lithuania stood apart from other Member States regarding the importance of SMEs within the other non-metallic mineral products manufacturing sector, as they accounted for 71.8 % of sectoral value added in 2004, a much higher proportion than the average SME contribution across the Lithuanian non-financial business economy (56.7 %).

EMPLOYMENT CHARACTERISTICS

The proportion of men in the workforce of the other non-metallic mineral products manufacturing sector across the EU-27 was considerably higher than across the non-financial business economy workforce (76.4 % in 2006 compared to 65.0 % - see Figure 6.2). This characteristic was common across almost all of the Member States, but particularly evident in Lithuania and Bulgaria. The only exception ⁽⁴⁾, where the proportion of men was below the non-financial business economy average (albeit moderately so), was the Czech Republic.

Full-time employment was much more common within the other non-metallic mineral products manufacturing workforce in 2006 (94.7 %) than it was across the non-financial business economy as a whole (85.6 %). This was a characteristic common to all of the Member States for which information was available ⁽⁵⁾, with the exception of Lithuania.

The proportion of workers in the sector under the age of 30 (19.1 %) was notably smaller than the proportion (24.1 %) across the non-financial business economy, the difference largely accounted for by the higher proportion of workers aged between 30 and 49 years old (58.6 % and 54.2 % respectively). These characteristics were common to the vast majority of Member States. In Romania and Slovenia was the proportion of young workers in the sector only a little more than half the average across the national non-financial business economy.

According to structural business statistics there was relatively little self-employment within the other non-metallic mineral products manufacturing sector; employees (paid workers) accounted for 94.8 % of the number of persons employed in 2004, a notably higher share than that (86.2 %) for the non-financial business economy as a whole.

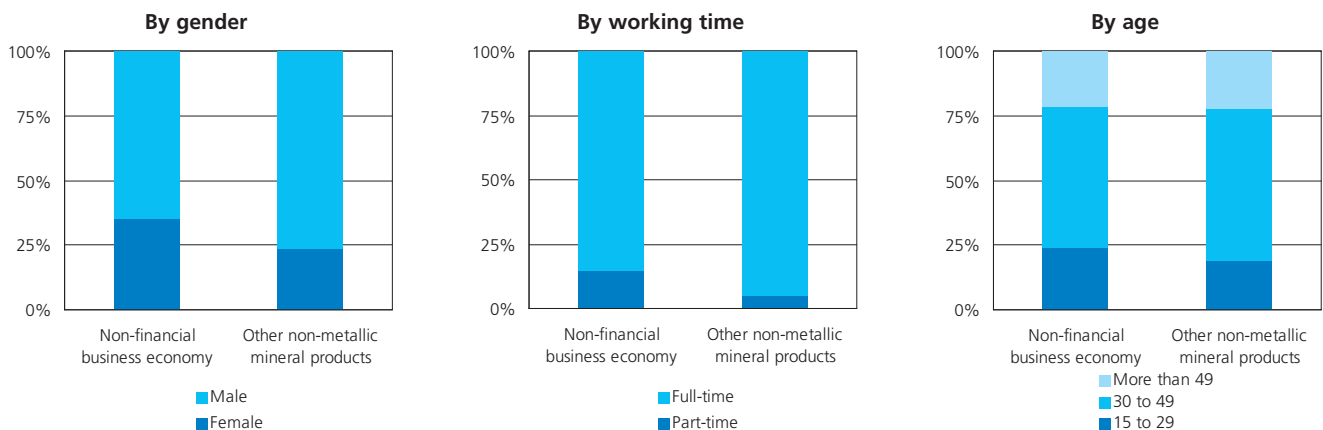
COSTS, PRODUCTIVITY AND PROFITABILITY

As a proportion of total expenditure within the other non-metallic mineral products manufacturing sector in 2004, investment accounted for a relatively high share (6.3 %) when compared to the average across the non-financial business economy (4.9 %). Similarly, the proportion of total expenditure in the sector accounted for by personnel costs was also relatively high (22.0 %) when compared to the average across the non-financial business economy (16.4 %). This situation occurred despite the fact that average personnel costs in the sector (EUR 28 500 per employee) were only marginally higher than the average across the non-financial business economy as a whole. The labour intensive nature of the sector was particularly apparent for the ceramic and clay products manufacturing subsector (see Subchapter 6.2) and the glass manufacturing subsector (see Subchapter 6.1), where personnel costs accounted for 26.3 % and 24.5 % respectively of their total expenditure, despite slightly lower (ceramic and clay products) or broadly similar (glass) average personnel costs per employee to that of the non-financial business economy as a whole.

⁽⁴⁾ Estonia, Latvia and Malta, not available.

⁽⁵⁾ Luxembourg, 2003; Estonia, Latvia and Malta, not available.

Figure 6.2
Manufacture of other non-metallic mineral products (NACE Subsection DI)
Labour force characteristics, EU-27, 2006



Source: Eurostat (LFS)

Table 6.3
Manufacture of other non-metallic mineral products (NACE Subsection DI)
Productivity and profitability, EU-27, 2004 (1)

	Apparent labour productivity (EUR thousand)	Average personnel costs (EUR thousand)	Wage adjusted labour productivity (%)	Gross operating rate (%)
Other non-metallic mineral products	46.0	28.5	160.0	14.2
Glass and glass products	41.0	28.0	147.0	12.9
Ceramic goods and clay products	40.0	26.0	150.0	14.5
Cement and concrete	58.0	31.0	180.0	15.0
Stone and miscellaneous non-metallic mineral products	37.0	27.0	135.0	11.0

(1) Rounded estimates based on non-confidential data.
 Source: Eurostat (SBS)

Table 6.4
Other non metallic mineral products (CPA Subsection DI)
External trade, EU-27, 2006

	Extra-EU exports		Extra-EU imports		Trade balance (EUR million)	Cover ratio (%)
	(EUR million)	(% share of industrial exports)	(EUR million)	(% share of industrial imports)		
Other non metallic mineral products	17 595	1.6	10 382	0.8	7 213	169.5
Glass and glass products	5 783	0.5	3 438	0.3	2 345	168.2
Ceramic goods and clay products	6 427	0.6	3 059	0.2	3 368	210.1
Cement and concrete	1 636	0.2	1 192	0.1	444	137.3
Stone and miscellaneous non-metallic mineral products	3 748	0.3	2 692	0.2	1 056	139.2

Source: Eurostat (Comext)

The apparent labour productivity of the other non-metallic mineral products manufacturing sector was EUR 46 000 per person in 2004 (see Table 6.3), which was 12.5 % more than the average across the non-financial business economy as a whole. Within the sector, the lowest level of apparent labour productivity (EUR 37 000 per person) in 2004 was for the stone and miscellaneous non-metallic mineral products (NACE Groups 26.7 and 27.8), with the highest (EUR 58 000 per person) being recorded for cement and concrete (NACE Groups 26.5 and 26.6).

The wage adjusted labour productivity ratio for the EU-27's other non-metallic mineral products manufacturing sector (160.0 %) was also moderately higher than the average ratio for the non-financial business economy (148.0 %) in 2004. Among the Member States, however, the most notable differences between these two ratios were in Bulgaria (the ratio for the sector being 96.8 percentage points higher than the non-financial business economy average) and Romania (59.4 percentage points higher); these two Member States, as well as the Czech Republic, Estonia, Cyprus, Latvia, Poland and Slovakia reported wage adjusted labour productivity ratios between 200 % and 300 %, meaning that apparent labour productivity was between double and triple average personnel costs.

The gross operating rate of the EU-27's other non-metallic mineral products manufacturing sector was 14.2 % in 2004, considerably higher than the average of the non-financial business economy as a whole (11.0 %). This characteristic was noted for most of the Member States⁽⁶⁾, exceptions being in Denmark, Germany and Sweden.

EXTERNAL TRADE

Two thirds (67.0 %) of the exports of other non-metallic mineral products by EU-27 Member States was to other Member States, in other words intra-EU trade. With non-member countries, the EU-27 had a trade surplus of EUR 7.2 billion in the trade of other non-metallic mineral products (CPA Division 26) in 2006 (see Table 6.4), based on exports that were valued at EUR 17.6 billion (representing 1.6 % of industrial – CPA Sections C to E - exports) and imports valued at EUR 10.4 billion (representing 0.8 % of industrial imports).

The United States was the principal export market, accounting for about one quarter (25.1 %) of the EU-27's exports. China was the main source of imports, accounting for a little over one third (34.4 %) of all EU-27 imports of other non-metallic mineral products.

⁽⁶⁾ Ireland, Greece, Cyprus and Malta, not available.

All four CPA aggregates within other non-metallic mineral products – as defined by the subchapters in this publication – recorded a trade surplus in 2006. The largest of these (EUR 3.4 billion) was registered for ceramic goods and clay products (CPA Groups 26.2 to 26.4) and the next largest (EUR 2.3 billion) for glass and glass products (CPA Group 26.1).

Among the Member States, the largest exporters (intra- and extra-EU trade) of other non-metallic mineral products in 2006 were Germany (EUR 10.3 billion) and Italy (EUR 9.6 billion), with Italy recording by far the largest trade surplus (EUR 6.2 billion). The largest trade deficit in other non-metallic mineral products was recorded for the United Kingdom (EUR 1.5 billion).

6.1: GLASS

NACE Group 26.1 covers the manufacture of glass and glass products, such as flat glass, container glass, glass fibres or specialised glass.

Glass comes in a range of forms for a range of functions; according to the Standing Committee of the European Glass Industries ⁽⁷⁾ container glass (bottles and jars used for preserving and packaging drinks, food and perfumes among other products) accounts for the majority of glass production, followed by flat glass (principally float glass for buildings and automotive vehicles in the form of windows and windscreens), filament glass fibre (principally for the reinforcement of composite materials), domestic glass (for example, drinking glasses and oven dishes), and special glass (for example, optical glass, electrical equipment screens and lighting glass).

STRUCTURAL PROFILE

The glass and glass products manufacturing sector (NACE Group 26.1, hereafter referred to as glass manufacturing) was one of the larger activities within other non-metallic mineral products manufacturing (NACE Division 26); it generated EUR 16.0 billion of value added in 2004, which represented 22.0 % of the value added generated by the activities of this chapter. The sector had approximately 17 800 enterprises which employed 390 700 people across the EU-27, the equivalent of one in four (24.4 %) of all those working in other non-metallic mineral products manufacturing activities.

⁽⁷⁾ <http://www.cpivglass.be>.

Table 6.5
Manufacture of glass and glass products (NACE Group 26.1)
Structural profile, EU-27, 2004 (1)

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Glass and glass products	17.8	44 000	16 000	390.7
Flat glass	1.7	6 300	:	34.0
Shaping and processing of flat glass	7.9	13 400	4 320	114.0
Hollow glass	3.1	13 700	5 400	140.0
Glass fibres	:	4 050	1 440	24.0
Other glass	4.7	6 550	2 800	74.0

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

Within the EU-27's glass manufacturing sector, the manufacture of hollow glass (NACE Class 26.13) was the largest subsector, accounting for a little over a third of the value added generated (33.8 %) and its workforce (35.8 %), followed by the shaping and processing of flat glass (NACE Class 26.12) which accounted for a little over one quarter (27.0 %) of the value added generated and a slightly higher proportion (29.2 %) of the workforce (see Table 6.5).

Germany, France and Italy had the largest glass manufacturing sectors in the EU ⁽⁸⁾ in 2004 (see Table 6.6), providing together a little over one half (50.9 %) of the value added generated in the EU-27. However, the Czech Republic was by far the most specialised Member State in the manufacture of glass, the sector's share of the value added generated across the national non-financial business economy (NACE Sections C to I and K) being three and a half times the average share across the EU-27.

⁽⁸⁾ Greece, Luxembourg and Malta, not available.

As with the output of other non-metallic mineral products in general, there were also three distinct developments in the output of glass (see Figure 6.3) in the ten years through until 2006. Between 1996 and 2000, there was a strong and continuous rise in the index of glass production, at an average rate (4.3 % per annum) that was much faster than the average rate (2.8 % per annum) for other non-metallic mineral products as a whole. Between 2000 and 2005, in contrast, there was almost no change in the output of glass, before a sharp growth in output in 2006.

The development of the domestic output price index for glass during the period 1996 to 2006 contrasted with the steady upward trend noted for other non-metallic mineral products. The price index for glass was relatively stable between 1996 and 2000, after which it rose quite sharply to a relative peak in 2002 before slipping back and stabilising once more through until 2005. The output price index for glass rose again in 2006, although at a slower rate than the average for other non-metallic mineral products.

Table 6.6
Manufacture of glass and glass products (NACE Group 26.1)
Structural profile: ranking of top five Member States, 2004

Rank	Share of EU-27 value added (%) (1)	Share of EU-27 employment (%) (2)	Value added specialisation ratio (EU-27=100) (3)	Employment specialisation ratio (EU-27=100) (4)
1	Germany (21.1)	Germany (16.1)	Czech Republic (360.6)	Czech Republic (309.2)
2	France (16.3)	France (12.8)	Slovakia (233.1)	Slovakia (271.5)
3	Italy (13.5)	Italy (11.8)	Austria (194.5)	Poland (180.3)
4	United Kingdom (11.6)	Poland (10.8)	Poland (192.7)	Slovenia (160.8)
5	Spain (8.4)	Czech Republic (8.8)	Estonia (165.8)	Romania (153.8)

(1) Greece, Luxembourg and Malta, not available.

(2) Greece, Luxembourg and Malta, not available; Slovenia, 2003.

(3) Ireland, Greece, Cyprus, Luxembourg and Malta, not available.

(4) Ireland, Greece, Cyprus, Luxembourg and Malta, not available; Slovenia, 2003.

Source: Eurostat (SBS)

Table 6.7

Production of selected products - glass and glass products (CPA Group 26.1), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Multiple-walled insulating units of glass	26.12.13.30	4 573	506 718	m ²
Bottles of coloured glass of a nominal capacity < 2.5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather; infant's feeding bottles)	26.13.11.34	2 968	29 623 730	units
Bottles of colourless glass of a nominal capacity < 2.5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather; infant's feeding bottles)	26.13.11.28	2 119	18 218 567	units
Laminated safety glass, n.e.c.	26.12.12.70	1 672	94 651	m ²
Non-wired sheets of float glass and surface ground/polished glass, having an absorbent/reflecting layer, not otherwise worked, thickness > 3.5 mm excluding horticultural sheet glass	26.11.12.17	1 431	341 396	m ²
Toughened safety glass for use in motor vehicles	26.12.12.15	1 416	72 837	m ²
Laminated safety glass for use in motor vehicles	26.12.12.55	1 155	403 359	kg
Glass containers for beverages and foodstuffs of a nominal capacity < 2.5 litres (excluding bottles; flasks covered with leather or composition leather; domestic glassware; vacuum flasks and vessels)	26.13.11.40	1 153	13 517 576	units
Nonwoven glass fibre webs; felts; mattresses and boards	26.14.12.50	931	577 193	kg
Table/kitchen glassware (excluding drinking), toughened glass	26.13.13.90	757	689 843	units

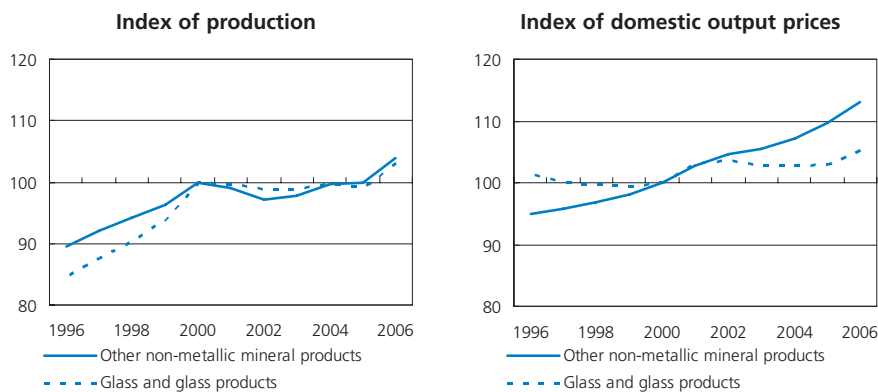
(1) Estimated.

Source: Eurostat (PRODCOM)

Figure 6.3

Manufacture of glass and glass products (NACE Group 26.1)

Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

Table 6.8

Manufacture of glass and glass products (NACE Group 26.1)

Productivity and profitability, EU-27, 2004 (1)

	Apparent labour productivity (EUR thousand)	Average personnel costs (EUR thousand)	Wage adjusted labour productivity (%)	Gross operating rate (%)
Glass and glass products	41.0	28.0	147.0	12.9
Flat glass	:	:	:	:
Shaping and processing of flat glass	37.8	28.1	135.0	10.0
Hollow glass	37.3	25.8	145.0	12.8
Glass fibres	60.0	37.1	162.0	13.8
Other glass	37.8	25.8	146.0	15.5

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

Source: Eurostat (SBS)

COSTS, PRODUCTIVITY AND PROFITABILITY

Investment within the glass manufacturing sector accounted for an even higher proportion of total expenditure than for other non-metallic mineral products manufacturing as a whole (6.8 % compared with 6.3 %). This was also the case with the share of total expenditure accounted for by personnel costs (24.5 compared with 22.0 %).

The wage adjusted labour productivity ratio for those working in the glass manufacturing sector was 147.0 % in 2004, somewhat lower than the average ratio for other non-metallic mineral products manufacturing as a whole but very similar to the ratio for the non-financial business

economy. The gross operating rate for the glass manufacturing sector was 12.9 % in 2004, below the average rate for other non-metallic mineral products manufacturing (14.2 %) but above that of the non-financial business economy (11.0 %). Data are available for four of the five NACE Classes that make-up the glass manufacturing sector (see Table 6.8). Among these, the wage adjusted labour productivity ratio rose as high as 162.0 % for the manufacture of glass fibres (NACE Class 26.14), while the highest gross operating rate (15.5 %) was recorded for the manufacture of other glass (NACE Class 26.15).

EXTERNAL TRADE

The value of EU-27 exports of glass and glass products (CPA Group 26.1) grew to EUR 5.8 billion in 2006. Among glass and glass products, a little over two thirds (68.2 %) of the value of exports were accounted for by hollow glass (CPA Class 26.13, EUR 2.1 billion) and by other processed glass, including technical glassware (CPA Class 26.15, EUR 1.8 billion). For the third successive year, imports of glass and glass products rose strongly (up 29.5 % overall between 2003 and 2006) and reached EUR 3.4 billion in 2006. These developments led to the EU trade surplus for glass products in 2006 being sustained at broadly the same level (EUR 2.3 billion) noted since 2002.

6.2: CERAMIC AND CLAY PRODUCTS

This subchapter includes information on three NACE groups: the manufacture of non-refractory ceramic goods other than for construction purposes and of refractory ceramic products (NACE Group 26.2) hereafter called ceramic goods other than for construction; the manufacture of ceramic tiles and flags (NACE Group 26.3); the manufacture of clay bricks and tiles, as well as other construction products made of clay (NACE Group 26.4) hereafter called clay construction products.

The market for ceramic and clay products is principally driven by the construction sector, for which bricks and tiles are used during the general construction phase and wall and floor tiles, as well as sanitary ware in completion and installation stages (see Table 6.10 for an overview of the production value of selected ceramic goods and clay products). The infrastructure for housing projects tends to be the responsibility of

local authorities, and the ceramic and clay products sector provides clay pipes for sewerage purposes. The demand for tableware, ornamentalware and kitchenware tends to come from households, hospitals and schools as well as the hotel and catering activities. Refractory products are used in high-temperature production processes, with changes in demand reflecting, among others, changes in the production levels of users. Technical ceramics tend to be used by industrial sectors like the aerospace, automobile and electrical sectors.

STRUCTURAL PROFILE

Some 20 000 enterprises were classified within ceramic and clay products manufacturing (NACE Groups 26.2 to 26.4) in the EU-27, together they generated EUR 15.0 billion of value added in 2004 and employed 400 000 people, 20.6 % of the value added generated by the activities of other non-metallic mineral products manufacturing (NACE Division 26) and one in every four people within its workforce. The

largest subsector in value added terms was the manufacture of ceramic goods other than for construction (NACE Group 26.2), accounting for 42.0 % of sectoral value added in 2004 while the manufacture of ceramic tiles and flags (NACE Group 26.3) generated a further 30.0 % and the manufacturing of clay construction products (NACE Group 26.4) the remaining 28.0 %.

A little less than one quarter (24.3 %) of the value added generated by the ceramic and clay products manufacturing sector across the EU-27 in 2004 came from Italy, with the next largest contributions coming from Spain (17.7 %) and Germany (16.4 %). Among those Member States with available data ⁽⁹⁾, Portugal, Italy and Slovakia were the countries that were most specialised in ceramic and clay products manufacturing in value added terms.

⁽⁹⁾ The Czech Republic, Denmark, Estonia, Ireland, Greece, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Austria, Romania and Slovenia, not available.

Table 6.9
Manufacture of ceramic goods and clay products (NACE Groups 26.2 to 26.4)
Structural profile, EU-27, 2004 (1)

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Ceramic goods and clay products	20.0	38 000	15 000	400.0
Ceramics other than non-refractory for construction	15.0	16 000	6 300	200.0
Ceramic household and ornamental articles	12.4	4 030	1 900	100.0
Ceramic sanitary fixtures	0.3	4 680	1 730	37.0
Ceramic insulators and insulating fittings	:	:	:	:
Other technical ceramic products	0.3	815	411	8.4
Other ceramic products	1.4	685	303	9.2
Refractory ceramic products	1.1	5 180	1 750	44.0
Ceramic tiles and flags	1.8	13 000	4 500	:
Bricks, tiles and construction products	3.0	9 602	4 202	84.3

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

Table 6.10

Production of ceramic goods and clay products (CPA Groups 26.2 to 26.4), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Glazed stoneware flags and paving; hearth or wall tiles; with a face of > 90 cm ²	26.30.10.73	4 004	591 759	m ²
Non-refractory clay roofing tiles	26.40.12.50	2 416	3 219 650	units
Glazed ceramic flags and paving, hearth or wall tiles excluding double tiles of the spaltplatten type, stoneware, earthenware or fine pottery flags, paving or tiles with a face of not > 90 cm ²	26.30.10.79	2 176	289 093	m ²
Glazed earthenware or fine pottery ceramic flags and paving; hearth or wall tiles; with a face of > 90 cm ²	26.30.10.75	2 020	364 263	m ²
Ceramic sinks... and other sanitary fixtures, of porcelain of china	26.22.10.30	1 864	51 007	units
Porcelain or china tableware and kitchenware (excluding electro-thermic apparatus, coffee or spice mills with metal working parts)	26.21.11.30	1 190	270 084	kg
Refractory cements; mortars; concretes and similar compositions (including refractory plastics, ramming mixes, gunning mixes) (excluding carbonaceous pastes)	26.26.13.00	1 098	2 589 879	kg
Refractory ceramic constructional goods containing >50 % of MgO, CaO or Cr ₂ O ₃ including bricks, blocks and tiles excluding goods of siliceous fossil meals or earths, tubing and piping	26.26.12.10	720	1 119 220	kg
Refractory bricks, blocks..., weight > 50 % Al ₂ O ₃ and/or SiO ₂ ; others	26.26.12.37	573	432 634	kg
Ceramic tableware, other household articles : earthenware or fine pottery	26.21.12.50	500	185 545	kg

(1) Estimated.

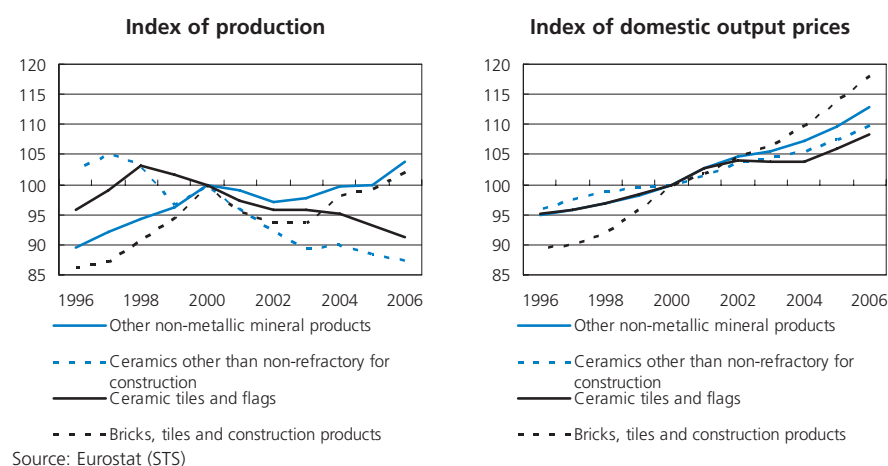
Source: Eurostat (PRODCOM)

There were contrasting developments in the production indices of the three NACE groups that comprise ceramic and clay products manufacturing (see Figure 6.4). There was a sharp downward trend in the output of ceramic goods other than for construction purposes in the EU-27 between 1996 and 2006 (an average decline of 1.6 % per annum). From 1999 there was also a steady decline in the output of ceramic tiles and flags, with an average decline of 0.5 % per annum over the ten years to 2006. The development of the production index for clay construction products, however, was similar to the development for other non-metallic mineral products as a whole, albeit with a sharper rate of increase in output between 1996 and 2000, a greater fall in 2001 and 2002, and a more pronounced rebound through until 2006.

COSTS, PRODUCTIVITY AND PROFITABILITY

Investment in the ceramic goods and clay products sector accounted for 6.4 % of total expenditure in 2004, a similar proportion to that across other non-metallic mineral products as a whole: this investment share reached 10.7 % in the manufacturing of clay construction products subsector, almost twice the share recorded in the other activities within the sector. Personnel costs within the ceramic goods and clay products sector accounted for a little more than one quarter (26.3 %) of the total expenditure (gross operating and tangible investment expenditure) in 2004, considerably more than the share (16.4 %) across the non-financial business economy as a whole, despite the fact that average personnel costs of EUR 26 000 per employee were a little less than the non-financial business economy average.

Figure 6.4 Manufacture of ceramic goods and clay products (NACE Groups 26.2 to 26.4) Evolution of main indicators, EU-27 (2000=100)



The apparent labour productivity of those working in the manufacture of ceramic goods and clay products in the EU-27 was EUR 40 000 per person in 2004 and the wage adjusted labour productivity ratio was 150 %, both measures of productivity being similar to the averages for the non-financial business economy. However, wage adjusted labour productivity ranged from 130.0 % for the manufacture of ceramic goods other than for construction purposes to 197.6 % for the manufacture of clay construction products.

The gross operating rate in ceramic goods and clay products manufacturing was 14.5 % in 2004, although this ratio rose as high as 22.2 % for the manufacture of clay construction products subsector.

EXTERNAL TRADE

The EU-27 had a trade surplus of EUR 3.4 billion in the trade of ceramic and clay products (CPA Groups 26.2 to 26.4) in 2006. Trade surpluses were recorded in 2006 for each of the three CPA groups that comprise ceramic and clay products, with that for ceramic tiles and flags (CPA Group 26.3) being by far the largest at EUR 2.4 billion, although the strongest widening of trade surplus concerned ceramic goods other than for construction (CPA Group 26.2).

6.3: CEMENT AND CONCRETE

This subchapter covers the manufacture of cement, lime and plaster (NACE Group 26.5), as well as the manufacture of articles made from concrete, plaster and cement (NACE Group 26.6).

The production of cement is a two-step process that involves producing a „clinker“ from raw materials (mainly limestone and clay) that are heated within a kiln that is set at an intense heat, before being cooled at 100°C – 200°C. In a second step, gypsum and sometimes additions like coal fly ash are added to the clinker and ground to a fine cement powder. Concrete is a solid material that is made of cement, mixed with water, aggregates, sand and usually some admixtures. The products that are manufactured by cement and concrete manufacturers range from construction products that are prefabricated or precast, to mortars and fibre cements (see Table 6.12).

STRUCTURAL PROFILE

There were 26 000 enterprises in the cement and concrete manufacturing sector (NACE Groups 26.5 and 26.6) across the EU-27 which generated EUR 31.0 billion of value added in 2004 (see Table 6.11), representing 42.5 % of the value added generated by the activities of other non-metallic mineral products manufacturing (NACE Division 26). In terms of employment, the sector was smaller; the 530 000 workers in the sector across the EU-27 represented one in every three (33.1 %) workers in other non-metallic mineral products manufacturing activities in 2004.

Table 6.11 Manufacture of cement, lime and plaster; manufacture of articles of concrete, plaster, cement (NACE Groups 26.5 and 26.6)
Structural profile, EU-27, 2004

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Cement and concrete (1)	26.0	94 000	31 000	530.0
Cement, lime and plaster	1.2	22 616	9 316	86.4
Articles of concrete, plaster, cement (2)	25.0	70 000	22 000	440.1

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

(2) Rounded estimates based on non-confidential data; employment, 2003.

Source: Eurostat (SBS)

Among the Member States for which data are available ⁽¹⁰⁾, the cement and concrete manufacturing sector in Germany was the largest, contributing 16.3 % of the value added generated by the sector across the whole of the EU-27 in 2004. Other large contributions came from Italy (14.8 %), Spain (14.2 %), the United Kingdom (12.6 %) and France (12.1 %). Romania and Bulgaria were relatively specialised in the manufacture of cement and concrete, the contribution of sectoral value added to the value added generated across their respective non-financial business economies being a little more than double the average across the EU 27. In the absence of structural business statistics for recent years, Greece and Cyprus also appear to be relatively specialised on the basis of their exports (see the section on external trade below).

⁽¹⁰⁾ Slovenia, 2003; Denmark, Estonia, Ireland, Greece, Latvia, Luxembourg, Malta, the Netherlands and Austria, not available.

Between 1996 and 2000 there were similar rates of growth in the production indices of cement, lime and plaster and of articles of concrete, plaster and cement. Since 2000, however, the production indices for these two activities have diverged. Despite a contraction in output in 2002, there was further growth in the output of cement, lime and plaster through until 2006 (see Figure 6.5), at a similar average annual rate of increase to that recorded between 1996 and 2000. In contrast, the production index of articles of concrete, plaster and cement did not exceed the output level of 2000 until 2006, after a contraction in output in 2005 had stifled the partial recovery witnessed in 2003 and 2004 from the relative low in 2002.

There were steady increases in the domestic output price indices of both cement, lime and plaster manufacturing (an average 2.4 % per annum, despite a slight decline in 2003) and articles of concrete, plaster and cement (an average 1.9 % per annum), at slightly faster rates than the average (1.8 % per annum) for other non-metallic mineral products manufacturing.

Table 6.12 Production of selected products - cement, lime and plaster; articles of concrete, plaster and cement (CPA Groups 26.5 and 26.6), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Ready-mixed concrete	26.63.10.00	26 336	884 225 928	kg
Grey Portland cement (including blended cement)	26.51.12.30	17 320	216 023 151	kg
Prefabricated structural components for building, ..., of cement ...	26.61.12.00	14 673	108 133 935	kg
Tiles; flagstones and similar articles of cement; concrete or artificial stone (excluding building blocks and bricks)	26.61.11.50	8 806	75 566 235	kg
Pipes and other articles of cement, concrete or artificial stone, and accessories	26.60.13.21	4 430	19 957 566	kg
Building blocks and bricks of cement; concrete or artificial stone	26.61.11.30	4 391	94 186 373	kg
Articles of cement; concrete or artificial stone for non-constructural purposes (including vases; flower pots; architectural or garden ornaments; statues and ornamental goods)	26.66.12.00	2 815	8 778 571	kg
Boards, sheets, panels, tiles, similar articles of plaster/compositions based on plaster, faced/reinforced with paper/paperboard only, excluding articles agglom. with plaster, ornamented	26.62.10.50	2 785	1 534 504	m ²
Prefabricated buildings of cement	26.61.20.00	2 623	-	-
Quicklime	26.52.10.33	2 443	21 665 092	kg

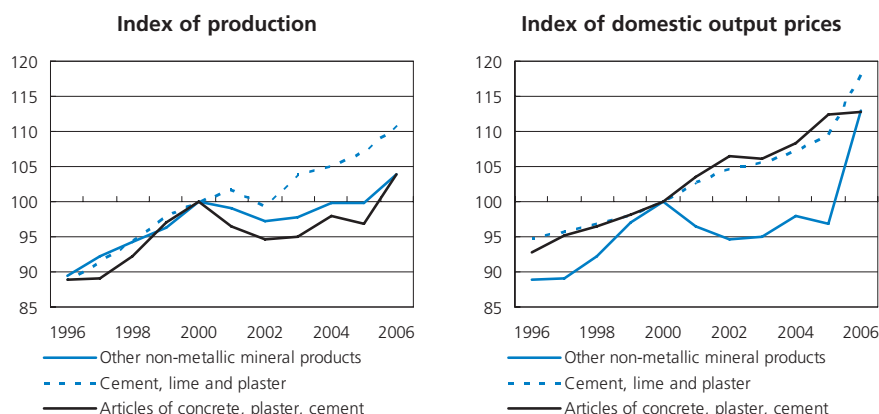
(1) Estimated.

Source: Eurostat (PRODCOM)

Figure 6.5

Manufacture of cement, lime and plaster; manufacture of articles of concrete, plaster, cement (NACE Groups 26.5 and 26.6)

Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

COSTS, PRODUCTIVITY AND PROFITABILITY

Investment expenditure in the cement, lime and plaster subsector (NACE Group 26.5) represented 9.7 % of total expenditure in 2004, a much higher proportion than the 5.9 % for the articles made from concrete, plaster and cement manufacturing subsector (NACE Group 26.6). Personnel costs as a proportion of total expenditure for both subsectors (see Table 6.13) were lower than the share for the manufacture of other non-metallic mineral products as a whole (22.0 %), despite the fact that average personnel costs in the cement, lime and plaster subsector (EUR 39 500 per employee) and in the manufacture of articles of concrete, plaster and cement manufacturing subsector (EUR 30 000 per employee) were higher than the average (EUR 28 500 per employee) across other non-metallic mineral products manufacturing activities as a whole.

The apparent labour productivity of those working in the EU-27's cement and concrete manufacturing sector was EUR 58 000 per person employed in 2004, which was 26.1 % higher than the average for those within other non-metallic mineral products manufacturing. Within the sector, the apparent labour productivity of those working in the manufacture of cement, lime and plaster subsector (EUR 107 800 per person) was the fourth highest among all industrial NACE groups for which 2004 data are available and more than double the level of apparent labour productivity of those working in the manufacture of articles of concrete, plaster and cement subsector (EUR 49 000 per person). The wage adjusted labour productivity ratio for the cement, lime and plaster manufacturing subsector (272.8 %) was also significantly higher than that for the manufacture of articles of concrete, plaster and cement subsector (170.0 %).

The gross operating surplus of the cement and concrete manufacturing sector was the equivalent of 15.0 % of turnover in 2004, a little higher than the average for other non-metallic mineral products manufacturing and also higher, therefore, than the average across the non-financial business economy (11.0 %). Within the sector, the gross operating rate of the cement, lime and plaster manufacturing subsector was 26.2 %, the fifth highest level of profitability (using this measure) among the NACE groups for which 2004 data are available.

EXTERNAL TRADE

In view of the contribution (42.5 %) made by the cement and concrete manufacturing sector to the value added of other non-metallic mineral products as a whole (see the structural profile above), the relatively small share (9.3 %) of EU-27 exports of cement and concrete (CPA Groups 26.5 and 26.6) in the value of total exports of other non-metallic mineral products (CPA Division 26) points to the fact that much of the supply and demand for cement and concrete products is local. EU-27 exports of cement and concrete were valued at EUR 1.6 billion in 2006. There was a relatively small trade surplus of EUR 444 million in 2006, although there was a trade deficit of EUR 337 million for cement, lime and plaster (CPA Group 26.5).

Exports of cement and concrete from Germany (both intra- and extra-EU trade combined) were of greater value than any other Member State, accounting for a little over one fifth (21.9 %) of the trade in these products by the EU-27 Member States combined. However, Greece and Cyprus were the most specialised Member States in exporting cement and concrete, as these products accounted for 1.2 % of their respective industrial exports, much higher than the 0.2 % average for the EU-27 Member States combined.

Table 6.13

Manufacture of cement, lime and plaster; manufacture of articles of concrete, plaster, cement (NACE Groups 26.5 and 26.6)

Total expenditure, EU-27, 2004

	Value (EUR million)				Share (% of total expenditure)		
	Total expenditure	Purchases of goods and services	Personnel costs	Investment in tangible goods	Purchases of goods and services	Personnel costs	Investment in tangible goods
Cement and concrete (1)	85 700	64 000	16 000	5 700	74.7	18.7	6.7
Cement, lime and plaster	18 630	13 441	3 385	1 804	72.1	18.2	9.7
Articles of concrete, plaster, cement (1)	68 000	51 000	13 000	4 000	75.0	19.1	5.9

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

Source: Eurostat (SBS)

6.4: STONE AND MISCELLANEOUS NON-METALLIC MINERAL PRODUCTS

This subchapter covers separately the activities of cutting, shaping and finishing stone (NACE Group 26.7), hereafter referred to as the working of stone, and the manufacture of other non-metallic mineral products (NACE Group 26.8), hereafter referred to as the manufacture of miscellaneous non-metallic mineral products; this latter group includes the production of abrasive products, non-metallic mineral yarns, and mineral insulating materials (be they for heat or sound insulation).

WORKING OF STONE

There were 33 600 enterprises engaged within the activities of cutting, shaping and finishing stone (NACE Group 26.7), together they generated EUR 5.7 billion of value added across the EU-27 in 2004 (see Table 6.14), accounting for 7.8 % of the value added generated by the manufacturing activities of other non-metallic mineral products (NACE Division 26). However, the 190 000 people employed in the working of stone in the EU-27 represented a much larger proportion of the other non-metallic mineral products workforce (11.9 %).

Italy accounted for the largest share (29.1 %) of the value added created by the working of stone across the EU-27 in 2004, the next largest contributions coming from Spain (22.3 %), and Germany (13.7 %). Among the Member States for which information was available ⁽¹⁾, Portugal was the most specialised Member State in this activity, followed by Italy and Spain, the contributions of working of stone to their respective non-financial business economies (NACE Sections C to I and K) being two and a half to three and a half times the EU-27 average.

⁽¹⁾ The Czech Republic, Ireland, Greece, Cyprus, Luxembourg and Malta, not available.

During the ten years through to 2006, the production index for the working of stone reached a high plateau in the years from 1996 to 1998, after which there was fluctuation along a downward trend (see Figure 6.6). There was a steep decline in output in 1999, with further declines between 2002 and 2004 more than offsetting the slight recovery in output in both 2000 and 2001. Although there were further rebounds in 2005 and 2006, the level of output in 2006 remained lower than the level of 2001.

Between 1996 and 2000, the upward evolution of the domestic output price index for the working of stone was similar to that for miscellaneous non-metallic mineral products manufacturing. However, the index for the working of stone subsequently continued to rise between 2001 and 2004, in contrast to the price index for the miscellaneous non-metallic mineral products manufacturing which remained relatively unchanged. The domestic output price index for miscellaneous non-metallic mineral products manufacturing once again started to increase in 2005 and 2006, while prices for the working of stone contracted in 2006.

The EU-27's trade surplus in monumental and building stone products (CPA Group 26.7) narrowed for the fifth consecutive year to a value of EUR 290 million in 2006 (down from EUR 1.1 billion in 2001). This narrowing of the trade surplus was principally due to a rising level of imports rather than a decline in the value of exports to non-member countries. The value of imports reached EUR 1.2 billion in 2006, almost half (48.5 %) of which were from China. Trade surpluses (intra- and extra-EU trade combined) in monumental and building stone products were limited to six Member States, among which those of Italy (EUR 1.5 billion) and Spain (EUR 0.5 billion) were by far the largest.

MANUFACTURE OF MISCELLANEOUS NON-METALLIC MINERAL PRODUCTS

The activities of miscellaneous non-metallic mineral products manufacturing (NACE Group 26.8), with some 3 500 enterprises which generated EUR 4.9 billion of value added across the EU-27 in 2004, accounting for 6.7 % of the value added generated by other non-metallic mineral products manufacturing (NACE Division 26). A little less than one third (31.7 %) of the value added generated by miscellaneous non-metallic mineral products manufacturing across the EU-27 as a whole came from Germany, the next largest contributions coming from Italy (11.2 %) and the United Kingdom (11.0 %). However, the relative contribution of this activity to the value added of the non-financial business economy was greatest in Slovakia (0.5 %), almost five times the average across the EU-27.

In comparison to the production index for other non-metallic mineral products manufacturing as a whole, the output of miscellaneous non-metallic mineral products manufacturing was somewhat more irregular during the period 1996 to 2006 (see Figure 6.6). Output in the miscellaneous non-metallic mineral products manufacturing rose sharply in 2001, since when the development of both production indices has been more similar.

The EU-27's trade surplus in miscellaneous non-metallic mineral products (CPA Group 26.8) widened further to EUR 766 million in 2006, with the increase in the value of exports outweighing the increase in the value of imports from non-member countries. Germany recorded the largest trade surplus (EUR 731 million, intra- and extra-EU trade combined), despite being the largest importer, accounting for a little under one fifth (19.2 %) of the imports of these products by EU-27 Member States.

Table 6.14

Cutting, shaping and finishing of stone; manufacture of other non-metallic mineral products (NACE Groups 26.7 and 26.8) Structural profile, EU-27, 2004 (1)

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Stone and miscellaneous non-metallic mineral products	37.2	33 000	10 600	290.0
Cutting, shaping and finishing of ornamental and building stone	33.6	15 300	5 700	190.0
Other non-metallic mineral products	3.5	18 000	4 900	96.0

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

Table 6.15

Production of selected products - stone and miscellaneous non-metallic mineral products (CPA Groups 26.7 and 26.8), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Bituminous mixtures based on natural and artificial aggregate and bitumen or natural asphalt as a binder	26.82.13.00	3 516	76 109 267	kg
Worked monumental or building stone and articles thereof, of granite excluding tiles, cubes and similar articles, largest surface area is < 7 cm ² , setts, kerbstones and flagstones	26.70.12.60	3 107	5 773 805	kg
Roofing or water-proofing felts based on bitumen (in rolls)	26.82.12.53	1 855	947 209	m ²
Slag wool; rock wool and similar mineral wools and mixtures thereof; in bulk; sheets or rolls	26.82.16.10	1 836	2 157 914	kg
Mixtures and articles of heat/sound-insulating materials n.e.c.	26.82.16.30	1 339	1 936 504	kg
Worked monumental or building stone and articles thereof (excluding of calcareous stone; granite or slate, tiles; cubes and similar articles; of which the largest surface area is < 7 cm ²)	26.70.12.80	827	3 709 089	kg
Natural stone setts; kerbstones and flagstones (excluding of slate)	26.70.12.10	744	3 542 603	kg
Articles of stone or other mineral substances, n.e.c.	26.82.16.90	674	5 653 007	kg
Products based on bitumen (excluding in rolls)	26.82.12.90	558	7 908 983	kg
Millstones, grindstones, grinding wheels and the like, without frameworks, of reinforced synthetic/artificial resin, with binder excluding millstones and grindstones for milling, grinding, pulping	26.81.11.30	409	118 706	kg

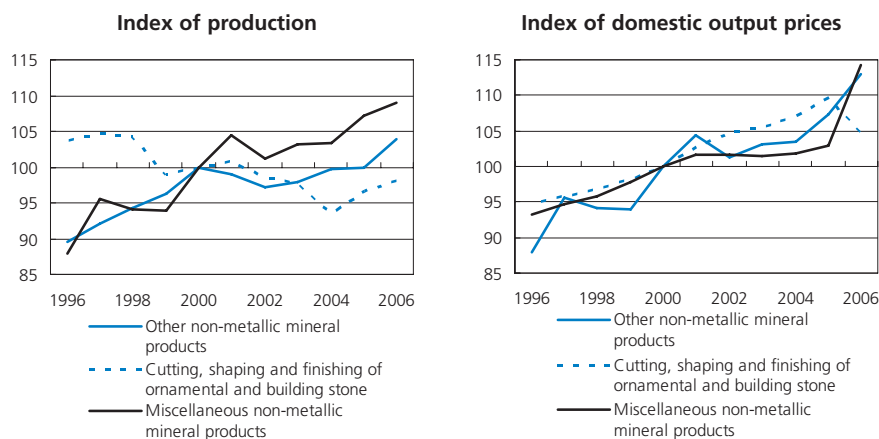
(1) Estimated.

Source: Eurostat (PRODCOM)

Figure 6.6

Cutting, shaping and finishing of stone; manufacture of other non-metallic mineral products (NACE Groups 26.7 and 26.8)

Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

Table 6.16

Manufacture of other non-metallic mineral products (NACE Subsection DI)

Main indicators, 2004

	EU-27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
No. of enterprises (thousands)	101.5	1.5	1.0	6.8	0.7	9.3	0.2	0.3	:	11.7	9.2	26.5	0.3	0.3	0.5
Turnover (EUR million)	211 281	7 513	670	4 460	2 737	38 557	307	2 066	:	29 336	27 063	39 541	430	191	273
Production (EUR million)	200 000	7 344	636	4 231	2 538	35 282	286	1 919	:	28 265	24 948	39 051	426	183	268
Value added (EUR million)	72 875	2 328	193	1 588	1 067	13 235	105	766	:	10 116	8 427	12 609	157	67	93
Gross operating surplus (EUR million)	29 943	875	128	908	308	3 516	60	361	:	4 807	2 761	5 756	86	41	42
Purchases of goods & services (EUR million)	140 025	5 187	501	2 995	1 716	25 291	208	1 291	:	19 952	18 272	27 497	285	134	184
Personnel costs (EUR million)	42 932	1 453	65	683	759	9 719	45	405	:	5 309	5 666	6 853	71	26	52
Investment in tangible goods (EUR million)	12 377	275	109	284	223	1 628	22	177	:	2 067	1 193	2 408	34	47	44
Employment (thousands) (1)	1 600	33	24	81	18	248	5	11	:	192	144	249	3	5	10
Apparent labour prod. (EUR thousand) (1)	46.0	70.1	8.1	19.6	60.9	53.3	21.5	70.7	:	52.8	58.6	50.5	48.8	12.3	9.1
Average personnel costs (EUR thousand) (1)	28.5	46.1	2.8	9.3	44.3	40.2	9.3	37.9	:	28.7	40.2	32.6	22.9	4.8	5.2
Wage adjusted labour productivity (%) (1)	160.0	151.9	286.7	211.1	137.6	132.5	230.8	186.6	:	184.0	146.0	155.3	212.8	254.2	175.5
Gross operating rate (%)	14.2	11.6	19.1	20.4	11.3	9.1	19.6	17.5	:	16.4	10.2	14.6	20.0	21.4	15.3
Investment / employment (EUR thousand) (1)	8.0	8.3	4.6	3.5	12.8	6.6	4.6	16.3	:	10.8	8.3	9.7	10.4	8.7	4.3
	LU (2)	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	NO	
No. of enterprises (thousands)	0.0	2.6	:	1.6	1.5	11.4	4.7	2.4	0.5	0.3	0.9	1.8	5.0	0.8	
Turnover (EUR million)	681	1 976	:	6 041	5 830	6 572	4 837	1 571	732	1 077	2 753	3 115	20 013	2 084	
Production (EUR million)	651	1 676	:	5 523	5 466	6 183	4 525	1 564	677	1 044	2 647	2 883	19 042	1 975	
Value added (EUR million)	230	586	:	2 093	2 468	2 381	1 675	531	252	332	1 002	1 030	8 344	701	
Gross operating surplus (EUR million)	90	301	:	767	935	1 506	758	323	100	169	406	268	3 927	220	
Purchases of goods & services (EUR million)	448	1 408	:	3 944	3 564	4 328	3 253	1 135	481	758	1 815	2 130	11 549	1 418	
Personnel costs (EUR million)	140	285	:	1 326	1 533	876	917	208	152	163	596	762	4 417	480	
Investment in tangible goods (EUR million)	154	260	:	241	331	609	416	319	53	181	142	163	966	105	
Employment (thousands) (3)	3	31	:	30	36	137	61	71	10	22	16	20	126	10	
Apparent labour prod. (EUR thousand) (3)	70.4	18.9	:	68.7	68.8	17.3	27.3	7.4	24.4	14.9	62.6	51.0	66.2	68.6	
Average personnel costs (EUR thousand) (3)	43.2	9.6	:	45.9	44.0	7.1	15.4	2.9	14.4	7.3	37.8	44.1	35.8	48.2	
Wage adjusted labour productivity (%) (3)	163.0	197.0	:	149.7	156.5	245.5	177.5	253.6	169.6	203.8	165.4	115.5	184.6	142.3	
Gross operating rate (%)	13.2	15.3	:	12.7	16.0	22.9	15.7	20.6	13.7	15.7	14.7	8.6	19.6	10.6	
Investment / employment (EUR thousand) (3)	47.2	8.4	:	7.9	9.2	4.4	6.8	4.5	3.6	8.1	8.9	8.1	7.7	10.3	

(1) EU-27, rounded estimate based on non-confidential data.

(2) 2003.

(3) Slovenia, 2003.

Source: Eurostat (SBS)