

Specialisations within EU manufacturing

The EU-27 manufacturing sector generated EUR 1 711 billion of value added in 2006 and employed 34 million persons, according to Structural Business Statistics (SBS). This was equivalent to 30 % of the value added and 27 % of the employment in the non-financial business economy (NACE Sections C to I and K). Manufacturing's importance (in value added terms) was highest in Hungary, Slovenia and Finland where it contributed more than two fifths of non-financial business economy value added.

Manufacturing output in the EU-27 increased by 1.3 % per annum on average between 2000 and 2008, while employment fell by 0.9 % per annum. At the subsection level, the fastest output growth during this period was for EU-27 machinery and equipment manufacturing, while the strongest falls were recorded for the manufacture of textiles and textile products, and leather and leather products.

In 2006 the manufacturing sector contributed around 30 % of non-financial business economy value added in the EU-27. Among the Member States this contribution was generally between 20 % and 40 %: although the share was lower in Cyprus (16 %) and Luxembourg (19 %), as it was in Norway (16 %), while it was highest in Hungary and Slovenia (both 41 %) – see Figure 1.

The manufacturing sector's contribution to non-financial business economy employment in the EU-27 was 27 % in 2006, 3 percentage points lower than its value added share: this indicates an apparent labour productivity in manufacturing that was above the average for the whole of the non-financial business economy. Nevertheless, several of the Member States that joined the EU in 2004 or 2007 reported that manufacturing accounted for a higher share of non-financial business economy employment rather than value added, the exceptions being the Czech Republic, Hungary, Poland and Slovenia – each of which followed the pattern for the EU as a whole and for all of the EU-15 Member States.

Figure 1: Value added and employment in manufacturing, Member States and Norway, 2006 (1)
Share in the non-financial business economy (%)



(1) Malta, not available.
Source: Eurostat ([ebd_all](#))

Manufacturing subsectors

Overall, 34 million persons worked in the EU-27 manufacturing sector in 2006. The two largest workforces among the 14 NACE subsections were in metals and metal products manufacturing, and the manufacture of food, beverages and tobacco (Subsections DJ and DA).

The EU-27 manufacturing sector generated EUR 6 816 billion of turnover in 2006, of which EUR 1 712 billion was value added. On average, EUR 49 700 of value added in manufacturing was generated by each person employed. The subsector with by far the highest apparent labour productivity was the manufacture of coke, refined petroleum

products and nuclear fuels (DF), while the lowest productivity, by this measure, was recorded for the manufacture of textiles and textile products, and for leather and leather products (DB and DC). The employment measure used for these calculations is based on a simple head count: activities with a high incidence of part-time employment record relatively low levels of apparent labour productivity. Total investment by the EU-27 manufacturing sector was valued at EUR 238 billion in 2006, equivalent to almost 14 % of the manufacturing sector's value added.

Table 1: Structural profile of manufacturing by subsection, EU-27, 2006

Activity	Number of persons		Turnover (EUR million)	Value added (EUR 1000)	Apparent labour product. (EUR 1000)	Gross operating rate (%)	Invest. rate
	Number of enterprises (1 000)	employed					
Manufacturing [D]	2 310	34 413	6 816 112	1 711 786	49.7	9.4	13.9
Food, beverages & tobacco [DA]	309	4 700	942 435	196 666	42.0	9.0	18.0
Textiles & textile products [DB]	223	2 449	188 110	52 820	21.6	8.7	11.9
Leather & leather products [DC]	44	549	47 235	11 929	21.7	8.3	8.9
Wood & wood products [DD]	197	1 269	133 766	37 155	29.3	10.7	17.6
Pulp, paper, publish. & print. [DE]	239	2 540	424 766	137 930	54.3	12.2	12.9
Coke, petrol. prod. & nucl. fuel [DF]	1	170	440 002	38 515	227.2	6.3	17.8
Chemicals, chemical products [DG]	34	1 888	658 650	178 460	94.5	12.0	13.7
Rubber & plastic products [DH]	65	1 750	274 621	78 375	44.8	9.6	15.1
Other non-metallic mineral prod. [DI]	107	1 587	242 196	79 824	50.3	14.2	19.1
Metals & metal products [DJ]	418	5 081	863 744	244 404	48.1	10.8	13.7
Machinery & equipment n.e.c. [DK]	174	3 650	621 319	192 559	52.8	9.2	9.1
Electrical & optical equipment [DL]	203	3 668	710 431	202 905	55.3	9.6	10.1
Transport equipment [DM]	46	3 152	945 417	194 970	61.9	5.4	16.2
Manufacturing n.e.c. [DN]	251	2 000	218 164	61 498	31.0	9.6	13.0

Source: Eurostat ([sbs_na_2a_dade](#), [sbs_na_2a_dfdn](#))

**Table 2: The most specialised Member States (1)
Share of non-financial business economy value added, 2006**

Activity	Most specialised		Second most specialised		Third most specialised	
	Country	(%)	Country	(%)	Country	(%)
Manufacturing [D]	Hungary	40.9	Slovenia	40.8	Finland	40.3
Food, beverages & tobacco [DA]	Ireland	7.0	Poland	5.9	Bulgaria	5.7
Textiles & textile products [DB]	Bulgaria	4.4	Romania	3.5	Portugal	3.1
Leather & leather products [DC]	Romania	1.0	Italy	0.9	Portugal	c
Wood & wood products [DD]	Latvia	3.8	Estonia	3.7	Lithuania	2.1
Pulp, paper, publish. & print. [DE]	Finland	6.4	Ireland	5.4	Sweden	3.8
Coke, petrol. prod. & nucl. fuel [DF]	Bulgaria	c	Hungary	2.8	Greece	1.5
Chemicals, chemical prod. [DG]	Ireland	12.8	Belgium	7.5	Slovenia	6.0
Rubber & plastic products [DH]	Luxembourg	3.2	Czech Republic	2.7	Slovenia	2.6
Other non-metal. mineral prod. [DI]	Czech Republic	2.7	Cyprus	2.5	Bulgaria	2.5
Metals & metal products [DJ]	Slovakia	9.0	Slovenia	7.5	Czech Republic	6.7
Machinery & equipment n.e.c. [DK]	Germany	6.1	Italy	4.9	Finland	4.7
Electrical & optical equipment [DL]	Finland	9.7	Hungary	9.1	Ireland	9.0
Transport equipment [DM]	Germany	6.8	Czech Republic	5.9	Hungary	5.6
Manufacturing n.e.c. [DN]	Lithuania	2.1	Slovenia	1.9	Estonia	1.8

(1) Malta, not available.

Source: Eurostat ([sbs_na_2a_dade](#), [sbs_na_2a_dfdn](#))

Tables 2 and 3 provide information on the manufacturing sectors in the Member States. Unsurprisingly Germany had the largest manufacturing sector with EUR 459.4 billion of value added in this sector in 2006. In value added terms Germany was the largest Member State in most manufacturing NACE Subsections, the exceptions being the manufacture of textiles and textile products as well as leather and leather products (Subsections DB and DC) where Italy was larger, and the manufacture of coke, refined petroleum products and nuclear fuel (DF) where Spain was larger.

Analysing for each Member State the share of a particular activity within the non-financial business economy gives an idea of which countries are the most or least specialised in a certain activity, regardless of whether the country or the activity considered are large or small. As such, in terms of the contribution of manufacturing to the total value added of the non-financial business economy, Hungary, Slovenia and Finland were the most specialised in manufacturing as a whole. Specialisations in particular activities may, for example, be due to historical traditions, the natural or man-made environment, or the availability of resources. Some manufacturing activities involve first processing stages of agricultural, fishing, forestry or mining and quarrying products, and these activities may also often be located close to the source of raw materials. Examples of this include the processing of agricultural and maritime products in Ireland, or wood, wood products, pulp and paper products in several of the Baltic and Nordic Member States.

While Germany was the largest Member State in 11 of the 14 manufacturing subsections it was among the three most specialised Member States only for the manufacture of machinery and equipment and transport equipment (Subsections DK and DM). In two of the manufacturing NACE subsections the most specialised Member States showed very high specialisations relative to the next most specialised countries, namely, Ireland for chemicals and chemical products manufacturing (DG)¹, and Bulgaria and Hungary for the manufacture of coke, refined petroleum products and nuclear fuel (DF). A similar situation was observed in the small activity of leather and leather products manufacturing (DC) where the three most specialised Member States, namely Romania, Italy and Portugal, were much more specialised than any other Member State.

An analysis of specialisation can be done at more detailed levels of the activity classification. For example, at the NACE group level (3-digit codes), it can be seen that the Lithuanian specialisation in the heterogeneous subsection of other manufacturing not elsewhere classified (DN) is in fact due to a very high specialisation in furniture

manufacturing (Group 36.1). At this level, the manufacturing NACE groups where the largest Member States were most specialised in 2006 were: Germany in the manufacture of electricity distribution and control apparatus (31.2); Spain in the manufacture of ceramic tiles and flags (26.3); France in the manufacture of steam generators, except central heating hot water boilers (28.3); Italy in the tanning and dressing of leather (19.1); the United Kingdom in the manufacture of weapons and ammunition (29.6).

Table 3: Manufacturing in the Member States and Norway, 2006 (1)

	Number of persons employed	Turnover	Value added
	(1 000)	(EUR million)	
EU-27	34 412.8	6 816 112	1 711 786
BE	608.5	244 008	50 682
BG	663.8	20 598	3 581
CZ	1 354.2	117 734	26 490
DK	415.1	86 908	27 368
DE	7 108.9	1 767 561	459 393
EE	132.2	7 442	1 910
IE	220.1	118 641	35 498
EL	400.1	55 437	15 825
ES	2 589.6	528 508	132 370
FR	3 657.5	950 036	215 482
IT	4 576.8	931 347	218 775
CY	36.5	3 461	1 135
LV	163.8	6 289	1 781
LT	267.9	12 967	2 615
LU	37.0	25 202	2 756
HU	778.1	83 547	17 171
NL	778.7	284 533	60 128
AT	624.4	143 756	44 701
PL	2 590.9	196 702	45 438
PT	830.1	76 908	18 773
RO	1 552.2	49 383	10 867
SI	235.9	23 249	6 433
SK	412.2	38 485	6 940
FI	406.6	140 515	33 226
SE	798.5	190 416	53 858
UK	3 141.2	710 251	217 891
NO	261.8	83 828	22 598

(1) Malta, not available.

Source: Eurostat ([ebd_all](#))

Foreign-controlled enterprises generated a greater proportion of value added in manufacturing than in the non-financial business economy as a whole in 14 of the 15 Member States for which 2005 or 2006 data were available: the only exception was Latvia. For example, in 2005 in France, some 32 % of manufacturing value added was generated in foreign-controlled enterprises, compared with an average of 20 % for the whole of the French non-financial business economy².

¹ The high proportion of Irish manufacturing value added that is accounted for by the manufacture of Basic chemicals may reflect foreign ownership of enterprises, outsourcing of activities, and the accounting practices of some multinational enterprises.

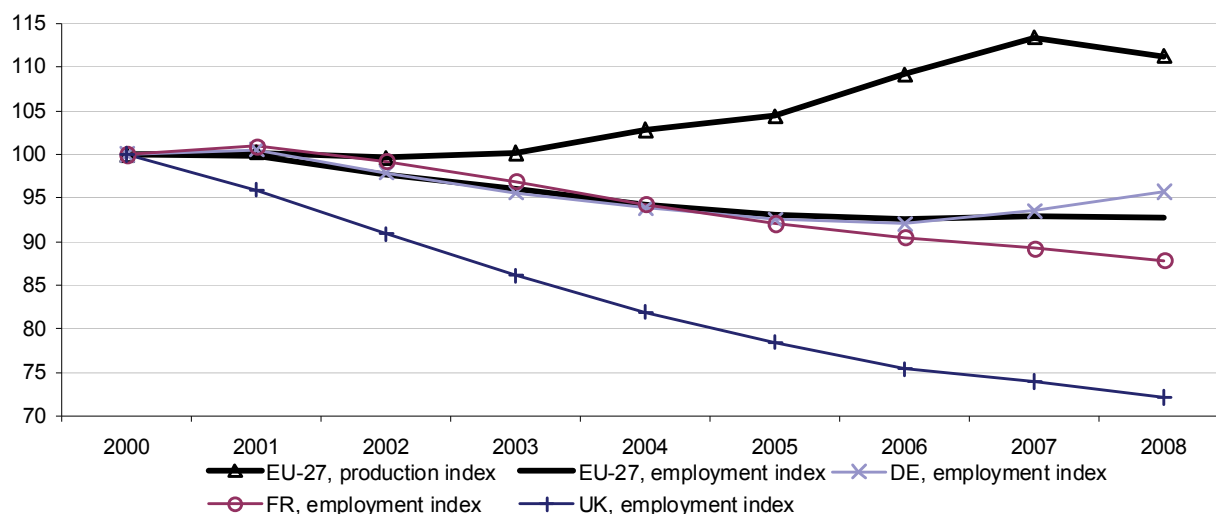
² See Statistics in Focus number 30/2008 (Foreign-controlled enterprises in the EU) for more information.

Increased production while employment fell

Manufacturing output in the EU-27 increased (in real terms) by 1.3 % per annum between 2000 and 2008. The fastest growth was for machinery and equipment manufacturing (Subsection DK), while the manufacture of electrical and optical equipment, chemicals and chemical products, and transport equipment (DL, DG and DM) all grew on average by at least 2 % per annum. The largest falls in output were recorded for leather and leather products manufacturing (DC) and textiles and textile products manufacturing (DB).

Manufacturing employment in the EU-27 fell, on average, by 0.9 % per annum between 2000 and 2008, with only three subsections posting a small increase in employment: the manufacture of rubber and plastic products, metals and metal products, and transport equipment (DH, DJ and DM). As with output, the largest falls in employment were recorded for the manufacture of textiles and textile products, and leather and leather products. Particularly big reductions in textile and textile products manufacturing employment were recorded in Malta, Hungary, the Czech Republic and Cyprus, where the employment index more than halved between 2000 and 2008.

Figure 2: Production and employment indices in manufacturing, selected Member States, 2000-2008 (2000=100)



Source: Eurostat ([sts_inpr_a](#), [sts_inlb_a](#))

Table 4: Production and employment, EU-27, 2000-2008
Annual average rate of change (%)

Activity	Index	
	Production	Number of persons employed
Manufacturing [D]	1.3	-0.9
Food, beverages & tobacco [DA]	1.1	-0.3
Textiles & textile products [DB]	-4.2	-5.5
Leather & leather products [DC]	-6.3	-4.2
Wood & wood products [DD]	0.0	-1.1
Pulp, paper, publish. & print. [DE]	0.3	-1.6
Coke, petrol. prod. & nucl. fuel [DF]	1.0	-2.1
Chemicals, chemical products [DG]	2.4	-1.1
Rubber & plastic products [DH]	1.0	0.4
Other non-metal. mineral prod. [DI]	0.1	-1.4
Metals & metal products [DJ]	1.3	0.1
Machinery & equipment n.e.c. [DK]	3.0	-0.2
Electrical & optical equipment [DL]	2.5	-0.9
Transport equipment [DM]	2.0	0.1
Manufacturing n.e.c. [DN]	-0.6	-0.8

Source: Eurostat ([sts_inpr_a](#), [sts_inlb_a](#))

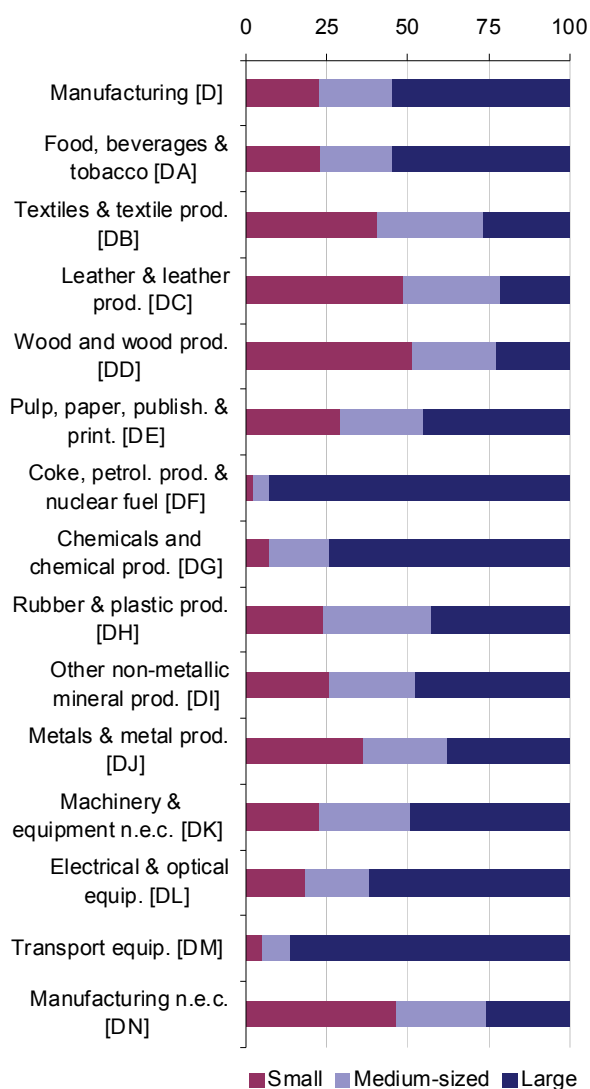
Among the largest Member States, the average annual fall in manufacturing employment from 2000 to 2008 was 0.5 % in Germany, 1.6 % in France and 4.0 % in the United Kingdom. Denmark, Romania, Portugal and Malta recorded falls in manufacturing employment averaging 2 % or more per annum, while Slovakia and Bulgaria recorded increases of at least 1 % per annum.

In both of the subsections where the EU-27 recorded its largest reductions in employment, the Czech Republic, Cyprus, Malta and the United Kingdom recorded overall employment losses of more than 50 % between 2000 and 2008 (United Kingdom, to 2007). Hungary also recorded a fall of more than 50 % in its workforce for textile and textile products manufacturing, while similar losses were recorded for leather and leather products manufacturing in Denmark, Latvia and Lithuania. Among the other larger Member States, France recorded an overall reduction of more than one third for both subsections, while this was also the case in Germany for textiles and textile products manufacturing.

Manufacturing dominated by large enterprises

The manufacturing sector as a whole is characterised by a predominance of large enterprises, as enterprises with 250 or more persons employed generated 55 % of all manufacturing value added in the EU-27. The role of large enterprises was particularly evident in the manufacture of coke, refined petroleum products and nuclear fuels, as well as transport equipment manufacturing (Subsections DF and DM). In contrast, small enterprises generated more than half the value added within wood and wood products manufacturing (DD).

Figure 3: Value added in manufacturing by subsection and size class, EU-27, 2006
Share of sectoral value added (%)



Source: Eurostat ([sbs_sc_2d_dade02](#), [sbs_sc_2d_dfdn02](#))

The predominance of large enterprises in manufacturing was observed in most but not all of the Member States. Among the 26 Member States with data available for 2006 a total of 17 recorded large enterprises generating more than half of all manufacturing value added, with Hungary, Luxembourg and Ireland recording shares above two thirds. The nine Member States where less than half of manufacturing value added was generated by large enterprises included the Baltic Member States, the Netherlands, and several southern Member States: Cyprus, Italy, Portugal, Greece and Spain. The share of large enterprises in manufacturing value added was particularly low in Cyprus, where it was just 14 %, and this was the only Member State where small enterprises (with less than 50 persons employed) accounted for more than half of manufacturing value added.

The predominance of large enterprises within the manufacturing sector was less evident when analysing employment, as large enterprises accounted for two fifths (41 %) of manufacturing employment in the EU-27 in 2006. It should be noted that this is a situation that is common for many activities, and is not specific to manufacturing. Furthermore, in every manufacturing subsection the employment share of large enterprises was lower than the value added share. The most notable differences were for food, beverages and tobacco manufacturing, wood and wood products manufacturing, and pulp, paper, publishing and printing (Subsections DA, DD and DE), where the employment share of large enterprises was approximately 30 % lower than their share of value added.

In large manufacturing enterprises in the EU-27 average value added per person employed was EUR 66 950 in 2006, double the productivity of EUR 33 094 per person employed for small manufacturing enterprises. In every Member State large manufacturing enterprises recorded a higher level of apparent labour productivity than small manufacturing enterprises. Ireland recorded the largest differential in labour productivity, as large manufacturing enterprises were able to generate 5.8 times as much value added per person employed as did small manufacturing enterprises. In nearly all Member States large enterprises also had a higher apparent labour productivity than medium-sized enterprises, the only exceptions being in the three Baltic Member States. On average, for the EU-27 as a whole, large enterprises generated 50 % more value added per person employed than medium-sized enterprises.

High levels of trade with big differences in trade performance

It is difficult to relate the data on external trade directly to the SBS data on value added, mainly because enterprises responsible for exports and imports are not necessarily in manufacturing. Nevertheless, an indication of the importance of external trade in this area can be gained by relating manufacturing exports and imports to total trade flows.

The 27 Member States of the EU exported manufactured goods to the value of EUR 3 512 billion in 2007, and imported manufactured goods valued at EUR 3 360 billion. Just over two thirds of this trade was between EU Member States. Extra-EU trade in manufactured goods resulted in a trade surplus of EUR 107 billion in 2007.

Four of the manufactured goods CPA subsections accounted for 10 % or more of EU-27 extra-EU exports in 2007 – see Table 5 – and together these four made up just over two thirds of such exports.

Concerning imports of manufactured goods, more than one quarter of the total was made up of electrical and optical equipment (Subsection DL). Unsurprisingly the EU recorded its largest trade deficit for electrical and optical equipment, EUR 67.8 billion. Deficits in excess of EUR 10 billion were also recorded for textiles and textile products, basic metals and fabricated metal products, and other manufactured goods (Subsections DB, DJ and DN), the latter including games and toys.

The largest trade surpluses in 2007 were recorded for machinery and equipment, transport equipment, and chemicals and chemical products, each in excess of EUR 50 billion. The largest trade surplus in manufactured goods was recorded by Germany at EUR 247 billion, while the largest trade deficit was recorded in the United Kingdom at EUR 116 billion. Among the Member States, Malta was the only one that exported more manufactured goods to non-member countries than to other EU Member States, extra-EU exports accounting for 51 % of the total. In contrast, Slovakia and Luxembourg had the lowest shares of exports to non-member countries, both below 15 %.

Table 5: Profile of external trade in manufactured products and comparison with value added, EU-27, 2007 (% of manufactured products)

	External trade (1)			Value added (3)
	Intra-EU trade (2)	Extra-EU imports	Extra-EU exports	
Food, beverages & tobacco [DA]	7.8	5.1	5.0	11.5
Textiles & textile products [DB]	3.8	7.8	3.1	3.1
Leather & leather products [DC]	1.1	2.1	1.1	0.7
Wood & wood products [DD]	1.2	1.2	0.9	2.2
Pulp, paper & paper products; recorded media & print. services [DE]	3.2	1.6	2.4	8.1
Coke, refined petroleum products & nuclear fuel [DF]	3.5	5.5	4.8	2.2
Chemicals, chemical products & man-made fibres [DG]	16.2	11.7	15.8	10.4
Rubber & plastic products [DH]	3.7	2.4	2.4	4.6
Other non-metallic mineral products [DI]	1.6	1.2	1.6	4.7
Basic metals & fabricated metal products [DJ]	12.2	12.3	8.9	14.3
Machinery & equipment n.e.c. [DK]	9.8	8.2	16.9	11.2
Electrical & optical equipment [DL]	15.6	25.9	17.5	11.9
Transport equipment [DM]	18.1	10.7	16.8	11.4
Other manufactured goods [DN]	2.3	4.6	2.8	3.6

(1) External trade data is presented for the Subsections within CPA Section D. (2) Based on imports; calculated as the sum of intra-EU imports of the 27 EU Member States. (3) Value added data is presented for Subsections within NACE Section D.

Source: Eurostat ([external trade](#))

METHODOLOGICAL NOTES

The sources for the data presented in this publication are Eurostat's structural business statistics (SBS), short-term business statistics (STS), and external trade. Business statistics are available from Eurostat's database within the industry, trade and services theme, while external trade data is in its own theme.

SBS data have been collected within the legal framework provided by [Council Regulation No 58/97](#) of 20 December 1996 concerning structural business statistics, which aims to provide data which is comparable between the Member States on the structure, activity, competitiveness and performance of businesses. Note that SBS data for the EU-27 may be rounded estimates. Data for 2005 has been used in cases where data for 2006 were not available or were confidential.

Definitions

The **number of enterprises** is a count of enterprises active during at least a part of the reference period.

The **number of persons employed** is all persons who work in the observation unit (inclusive of working proprietors and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it. Part-time, seasonal and home workers on the payroll are included, as well as apprentices.

Turnover comprises the totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties.

Value added (at factor cost) can be calculated from turnover, plus capitalised production, plus other operating income, plus or minus the changes in stocks, minus the purchases of goods and services, minus other taxes on products which are linked to turnover but not deductible, minus the duties and taxes linked to production.

Apparent labour productivity is calculated as value added divided by the number of persons employed.

The **gross operating rate** is the gross operating surplus divided by turnover, expressed as a percentage. Gross operating surplus is calculated as value added less personnel costs.

The **investment rate** is gross tangible investment divided by value added expressed as a percentage. Gross tangible investment includes new and existing capital goods bought or produced for own use having a useful life of more than one year, and includes also land.

The **production index** should show the evolution of value added at constant prices. Among other things, this index should take account of: variations in type and quality of the commodities and of the input materials.

The **employment index** shows the evolution of the number of persons employed.

STS: forms of indices

The basic form of an index is its gross (also known as unadjusted) form and this is the form used for the employment index in this publication. The production index has been adjusted for working day effects, to adjust for the impact of calendar effects (such as weekdays/weekends, official holidays) on the index.

Classifications

The classification of activities is NACE Rev. 1.1. For the purposes of this publication the non-financial business economy is defined as Sections C to I and K. For external trade data the 2002 version of the classification of products by activity (CPA) has been used.

The following employment size classes are used: small enterprises (including micro) 1-49 persons employed; medium-sized enterprises 50-249 persons employed; large enterprises 250 or more persons employed.

Abbreviations and symbols

EU-27	European Union of 27 Member States
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
NO	Norway
c	confidential

For more information

A parallel Statistics in Focus publication (61/2009) presents the non-financial services sector. A wide-ranging analysis of the non-financial business economy can be found in European business – Facts and figures, available at:

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/publications/facts_figures

Further information

Data: [Eurostat Website: http://ec.europa.eu/eurostat](http://ec.europa.eu/eurostat)

Data on "Structural business statistics ":

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database

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Data on "Short-term business statistics ":

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