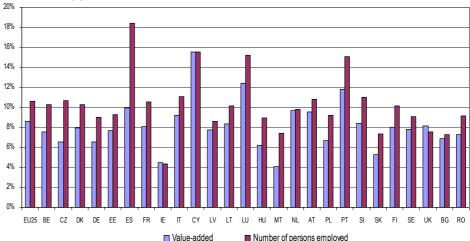
# The construction industry in the European Union, 2002

#### Overview

The construction industry in the EU employed 12 million people in 2002, accounting for 10.6 % of the total number employed in the non-financial business economy as a whole.

However, although this industry is a major employer, a look at the valueadded it generated (based on 2001 EU aggregates) shows that construction accounted for about 8.6 % of total value-added generated in the whole nonfinancial business economy, thus indicating a relatively high level of labour intensity (Graph 1).

Graph 1: Importance of the construction industry (NACE F) in the nonfinancial business economy as a whole (NACE C-K, excl. J), in terms of value-added and number of persons employed, EU-25, 2002



Note: EU-25 estimates partially based on 2001 and 2000 data – 2001 data for BE, CZ (sectors F-K), DE (sector E), FR and FI (sector G), FR (sectors H, I and K for employment), LV, MT and UK – IE and MT (excl. sector E); CY (excl. sector K) – EL: not available – IE data covers only enterprises employing 20 persons or more. Source: Eurostat (SBS)

The weight of construction in Member States' economies varied substantially across the EU. It was especially important in Cyprus, Luxembourg and Portugal for both value-added and employment, and in Spain for employment. At the other end of the spectrum came Ireland, Malta and Slovakia.

The UK was the main contributor to EU value-added, followed by Germany and France. As the EU's largest countries in terms of population, they also contributed most to the sub-sectors of construction: the UK for 'buildings and civil engineering' and 'renting of equipment', Germany for 'building installation', and France for 'site preparation' and 'building completion'. Despite the fact that Spain was the fifth most important contributor to the EU's value-added, it held first place in terms of employment, ahead of Germany.

**NACE F**: Construction includes site preparation, buildings and civil engineering, building installation, building completion and renting of equipment. Other activities related to construction such as architectural services or landscaping are not covered in this publication.

**EU**: The 'European Union' covers the 25 Member States (EU-25).

Data do not include estimates for the "black economy".

in Focus

Statistics

## INDUSTRY, TRADE AND SERVICES

### 26/2005

Author Ville TOLKKI

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Construction in labour-intensive sectors	than other



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#### Table 1: Importance of the construction industry (NACE section F) in the EU and in the Member States, 2002

	Total EU employment	Total EU value-added (in	Main contributor to EU	Member State in which this sector is $\!\!\!\!\!\!*$			
	(in 1000)	EUR million), 2001	value-added	most important	least important		
Site preparation (F451)	359	12 749	France	Finland	Poland		
Buildings, civil engineering (F452)	6 545	227 147	UK	Cyprus	Malta		
Building installation (F453)	2 892	90 840	Germany	Luxembourg	Ireland		
Building completion (F454)	2 210	58 155	France	Denmark	Estonia		
Renting of equipment (F455)	65	3 068	UK	Slovenia	Germany		
Construction (F)	12 070	391 958	UK	Cyprus	Malta		
Total enterprise sector (C to K excl. J)	113 719	4 544 277			·		

Note: EU estimates partially based on 2001, 2000 data – 2001 data for BE, CZ, DE (sector E), FR and FI (sector G), FR (sectors H,I and K for employment), LV, MT and UK – IE and MT (excl. sector E); CY (excl. sector K) – 'See Methodological Notes (degree of specialisation) Source: Eurostat (SBS)

#### 'Buildings, civil engineering': the main generator of jobs and value-added

More than half of all construction work was in buildings, roads and other kinds of infrastructure: the sub-sector 'buildings and civil engineering' (NACE 452) provided jobs for 6.5 million people. It was also the largest in terms of value-added, accounting for 58 % of the total generated by construction (Graph 2).

If we include other indicators not shown here, the significance of this sub-sector ranged from 41 % (% of the total number of construction enterprises) to 63 % (% of total construction turnover). Given this, it is worth inspecting the sub-sector in more detail.

Variations in the weight of 'buildings and civil engineering' impact upon the size of the construction industry overall across the EU (Table 2). This explains, for example, why in Spain, where

 Table 2: Main indicators of the construction industry (NACE F), 2002

construction was the leading contributor to employment, the sub-sector accounted for 11 % of the total employed in construction EU-wide, whereas in Poland, a country equal in size to Spain and with apparently fewer persons employed in construction, it accounted for just 4 %.

The sub-sectors 'building installation' (encompassing activities such as plumbing, insulation and electrical cabling) and 'building completion' (e.g. plastering and painting) provided some five million jobs and accounted for 38 % of the sector's value-added in the EU. In contrast, the sub-sectors 'site preparation' and 'renting of equipment' were of minor significance. This pattern repeated itself across the EU.

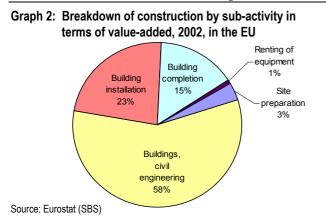
	EU-25	BE	cz	DK	DE	EE	EL	ES	FR	IE	п	CY	LV	LT
Value added at factor cost - in millio	n EUR													
Total value-added in construction	391 958	9 493	2 475	7 500	63 805	300	3 433	36 760	54 028	3 062	49 586	794	428	421
Share in total EU-25 value-added	100%	2.4%	0.6%	1.9%	16.3%	0.1%	0.9%	9.4%	13.8%	0.8%	12.7%	0.2%	0.1%	0.1%
Site preparation (F451)	12 749	337	85	140	1 735	6	101	1 217	3 550	55	1 194	:	4	12
Buildings, civil engineering (F452)	227 147	5 195	1 772	3 361	33 433	209	3 056	24 178	23 213	2 338	30 737	666	296	305
Building installation (F453)	90 840	2 149	447	1 975	17 033	73	244	6 360	13 686	531	11 376	82	77	68
Building completion (F454)	58 155	1 747	161	1 969	11 524	4	31	4 850	13 400	105	6 189	31	50	32
Renting of equipment (F455)	3 068	65	11	55	81	7	:	154	179	35	89	:	1	5
Persons employed														
Total persons employed in construction	12 070 200	252 850	376 042	172 076	1 824 337	34 080	92 167	2 189 273	1 470 596	39 961	1 574 979	27 314	42 772	72 480
Share in total EU-25 persons employed	100%	2.1%	3.1%	1.4%	15.1%	0.3%	0.8%	18.1%	12.2%	0.3%	13.0%	0.2%	0.4%	0.6%
Site preparation (F451)	359 400	6 239	18 017	3 085	45 097	894	3 753	53 502	83 789	1 141	35 726	:	817	2 806
Buildings, civil engineering (F452)	6 544 700	128 252	243 039	68 407	851 909	22 998	76 125	1 317 111	618 440	25 802	804 821	22 203	25 445	50 355
Building installation (F453)	2 891 500	58 425	68 898	46 741	512 229	8 661	10 645	412 144	370 486	10 625	435 306	3 254	8 958	11 061
Building completion (F454)	2 210 000	58 956	45 062	53 080	413 709	878	1 644	401 066	393 554	1 813	296 418	1 351	7 247	7 181
Renting of equipment (F455)	64 700	978	1 026	763	1 393	649	:	5 450	4 327	577	2 708	:	305	1 077
Apparent labour productivity (value-added per person employed) - in thousand EUR														
Total labour productivity in construction	33.2	37.5	6.6	43.6	35.0	8.8	38.3	16.8	36.7	76.6	31.5	29.1	10.0	5.8
Site preparation (F451)	36.8	54.1	4.7	45.3	38.5	6.9	26.7	22.8	42.4	47.8	33.4	:	5.3	4.1
Buildings, civil engineering (F452)	35.4	40.5	7.3	49.1	39.2	9.1	41.5	18.4	37.5	90.6	38.2	30.0	11.6	6.1
Building installation (F453)	31.7	36.8	6.5	42.3	33.3	8.5	23.4	15.4	36.9	50.0	26.1	25.2	8.6	6.1
Building completion (F454)	27.8	29.6	3.6	37.1	27.9	4.7	17.5	12.1	34.0	58.0	20.9	23.2	6.9	4.4
Renting of equipment (F455)	49.2	66.6	10.4	72.2	57.9	10.6	:	28.2	41.4	59.8	33.0	:	3.6	5.0

Note: 2001 data for EU-25 aggregates for value-added and apparent labour productivity, and for individual countries: BE, CZ, LV, MT and UK.

Source: Eurostat (SBS)



#### Construction in general more labour-intensive than other sectors



As indicated, construction was relatively labour intensive. With an average value-added of EUR 33 200 per person employed (2001 data), construction was approximately 25 % less productive than the non-financial business economy as a whole in 2002, and was generally below this benchmark at the national level. Only in the UK and Ireland was the opposite true.

Labour productivity ranged from EUR 5 800 in Lithuania to almost 14 times that figure in Ireland, at EUR 76 600 (it should be noted that data for Ireland covers only enterprises employing 20 persons or more), followed by the UK at EUR 55 900. Slightly over half of the countries were around or above the EU average, but a group of countries had very low values, especially the new Member States (notably the largest: the Czech Republic, Hungary and Poland), and Spain and Portugal.

Caution should be exercised, however, when studying the value-added potential of construction, for the aggregates mask an interesting difference: the only sub-sector of construction that was more productive than the average for the whole nonfinancial business economy as well as other construction sub-sectors, was 'renting of equipment'. Although it was the most productive (EUR 49 200) in the EU, it was also the smallest in absolute terms in both employment and value-added (both 1 %), which reflects the low labour intensity and high value-added capacity of what is essentially a rental service.

'Renting of equipment' was followed by 'site preparation' (EUR 36 800), 'buildings and civil engineering' (EUR 35 400), 'building installation' (EUR 31 700), and finally 'building completion' (EUR 27 800), the least productive sub-sector.

Construction orders up: gross operating surplus up, personnel costs down

Analysis of the cost structure can also throw light on the shape and vigour of the construction sector. By comparing selected turnover indicators (see Graph 3), it is possible to develop a more focussed picture of costs in construction. According to available data for 1998-2002 for a selection of EU countries, and using 1998 as a basis for comparison (1998=100), it can be seen that the most striking evolution was in gross operating surplus, which increased overall in relation to turnover by 17 % between 1998 and

#### Table 2: Main indicators of the construction industry (NACE F), 2002 (continued)

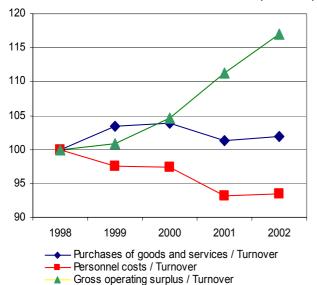
	LU	ни	мт	NL	AT	PL	PT	SI	sĸ	FI	SE	UK	BG	RO
Value added at factor cost - in million E	UR													
Total value added in construction	1 269	1 908	99	23 141	11 062	6 503	7 018	852	527	5 452	10 252	76 354	406	1 186
Share in total EU-25 value added	0.3%	0.5%	0.03%	5.9%	2.8%	1.7%	1.8%	0.2%	0.1%	1.4%	2.6%	19.5%		
Site preparation (F451)	21	62	4	:	396	72	138	11	:	579	906	1 276	9	12
Buildings, civil engineering (F452)	747	1 307	55	12 911	6 337	4 539	5 476	564	390	3 098	4 888	48 032	334	870
Building installation (F453)	308	406	22	5 715	2 722	1 533	974	147	85	1 211	3 076	16 067	38	258
Building completion (F454)	192	119	17	:	1 584	295	397	112	26	466	1 251	9 666	23	24
Renting of equipment (F455)	2	14	1	:	24	64	32	19	:	98	132	1 313	2	21
Persons employed														
Total persons employed in construction	27 678	240 748	8 099	474 767	250 043	686 791	433 916	65 588	65 924	122 321	236 503	1 366 627	117 913	354 490
Share in total EU-25 persons employed	0.2%	2.0%	0.1%	3.9%	2.1%	5.7%	3.6%	0.5%	0.5%	1.0%	2.0%	11.3%		
Site preparation (F451)	517	10 649	221	13 216	7 393	8 227	6 172	861	:	11 588	19 949	20 714	1 974	3 207
Buildings, civil engineering (F452)	14 768	133 473	3 866	237 048	122 618	455 455	321 445	42 147	51 379	68 708	103 615	791 168	91 729	262 223
Building installation (F453)	7 271	61 317	1 850	128 394	71 448	155 184	67 343	10 361	8 001	28 219	72 966	335 339	14 056	73 026
Building completion (F454)	5 076	34 421	2 082	87 892	48 251	60 020	37 815	10 557	4 292	12 042	37 188	196 531	9 327	9 475
Renting of equipment (F455)	46	888	80	8 217	333	7 905	1 141	1 662	:	1 764	2 785	22 875	827	6 559
Apparent labour productivity (value-added per person employed) - in thousand EUR														
Total labour productivity in construction	45.9	7.9	12.2	48.7	44.2	9.5	16.2	13.0	8.0	44.6	43.3	55.9	3.4	3.3
Site preparation (F451)	40.8	5.8	15.7	:	53.5	8.7	22.3	12.2	:	49.9	45.4	61.6	4.4	3.8
Buildings, civil engineering (F452)	50.6	9.8	14.3	54.5	51.7	10.0	17.0	13.4	7.6	45.1	47.2	60.7	3.6	3.3
Building installation (F453)	42.3	6.6	12.0	44.5	38.1	9.9	14.5	14.1	10.6	42.9	42.2	47.9	2.7	3.5
Building completion (F454)	37.8	3.5	8.1	:	32.8	4.9	10.5	10.6	6.1	38.7	33.6	49.2	2.4	2.6
Renting of equipment (F455)	41.0	16.0	15.6	:	70.5	8.1	28.4	11.2	:	55.8	47.5	57.4	2.6	3.2



2002, maintaining constant growth. Over the same period, the share of personnel costs decreased by almost 7 %, while that of goods/services purchases rose by 2%.

On closer inspection, purchases of goods and services and personnel costs (still as a ratio to turnover) developed in opposite directions between 1998 and 1999, the former increasing and the latter decreasing. These diverging trends levelled off by 2000, only then to turn simultaneously downwards, which for personnel costs meant a further drop. Both indicators then stabilised by 2001 to continue their almost symmetrical paths very slightly upwards.

Graph 3: Evolution of selected cost indicators and gross operating surplus in construction, as a ratio to turnover, 1998-2002, in 10 EU countries (1998=100)



Note: Aggregates based on available data for AT, EE, FR, HU, IT, LU, PT, SE, SI and SK. Source: Eurostat (SBS)

A good indicator of sector dynamics can be obtained by comparing the number of new enterprises with the number of closures, i.e. births and deaths (Table 3). From available data, it is possible to establish that births exceeded deaths in Denmark, Finland, Luxembourg, the Netherlands, Portugal and Sweden. Only in the United Kingdom was this trend reversed. In Italy, births and deaths were pretty much in equilibrium.

When compared with equivalent figures for the whole business economy (this time excluding management of holding activities), the birth rate was generally higher in construction, and the death rate lower. These trends were significantly reversed only in Luxembourg, Sweden and the United Kingdom for births and in Italy for deaths.

# Table 3: Birth and death rates of construction enterprises for available countries, 2000, %

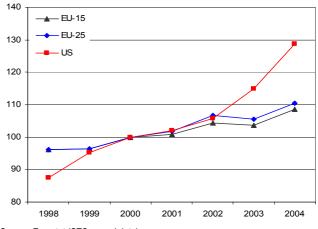
		Births	D	leaths
	Construction	in whole non- financial business economy	Construction	in whole non- financial business economy
DK	10.3%	10.0%	7.5%	9.7%
IT	9.0%	7.7%	8.9%	7.3%
LU	9.1%	12.4%	6.2%	9.2%
NL	11.4%	9.5%	7.5%	10.3%
PT	10.0%	7.5%	4.4%	4.7%
FI	8.3%	7.1%	6.7%	6.7%
SE	6.0%	6.1%	4.6%	5.2%
UK	8.0%	8.9%	9.7%	10.6%
Average	8.8%	8.1%	8.5%	8.1%

Note: FI, IT and PT: 2001; SE: 2002 – Average is weighted by number of enterprises. Source: Eurostat (SBS / Business Demography)

A look at trends in new orders can also provide a valuable measure of the state of the construction sector. Graph 4 below, which shows an indexed evolution of new orders (2000=100), confirms that they increased over the 1998-2004 period in the EU, climbing by over 14 percentage points in the EU-25 and by slightly less in the EU-15.

By comparison, growth in the United States was 46 percentage points during the 1998-2004 period. Noteworthy is also the country's steeper upswing from 2002 onwards.

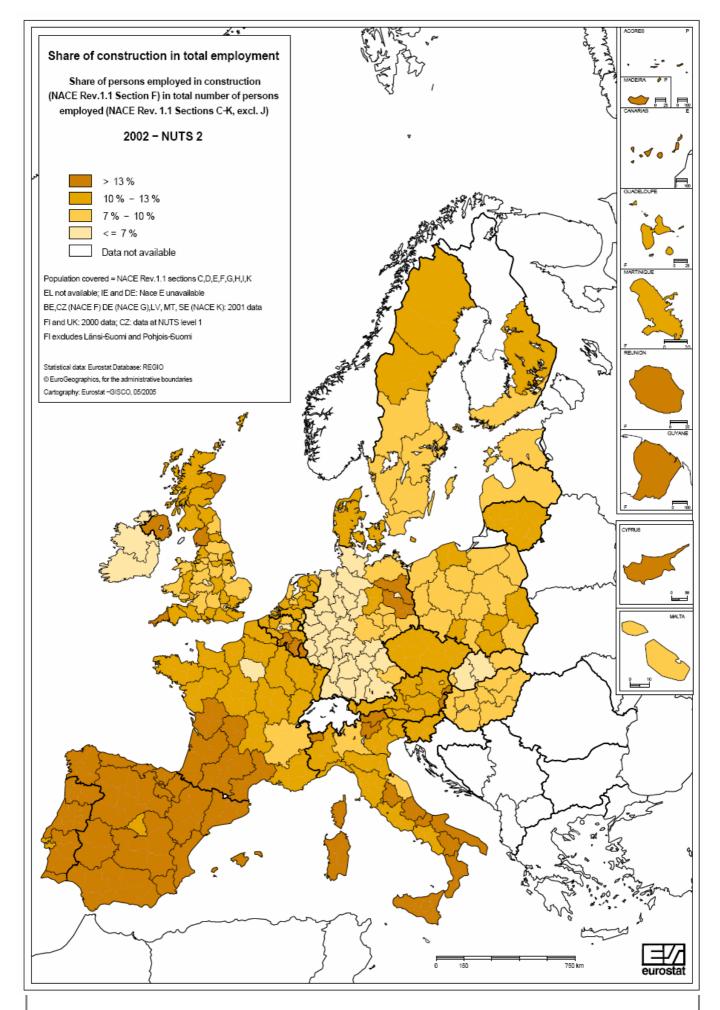
Graph 4: Evolution of new orders in construction in EU-15, EU-25 and the USA (2000=100), 1998 – 2004



Source: Eurostat (STS annual data)

Turning now to regional data, it is possible to locate regional divergences or hotspots. The map on page 5 shows that employment in construction exceeds 13 % (see legend) in a number of European regions, particularly in southern Europe and especially in Spain. Perhaps more interestingly, this 13 % level is also exceeded in one or more regions in Belgium, Germany (north and south Brandenburg),







Luxembourg and the UK (including Cumbria, Cornwall and Northern Ireland). In Germany the share of construction increases as we move east, a finding that is all the more interesting given that construction is relatively small in this country.

#### Many micro-enterprises in the construction sector, especially in southern Europe

Based on value-added, the share of microenterprises (1-9 persons employed) varied a great deal in the EU's construction industry, as illustrated by Graph 5. Averaging about 33 % (based on data available for 22 EU countries, Bulgaria and Romania), the share is highest in Italy (58 %) and lowest in Lithuania (6 %).

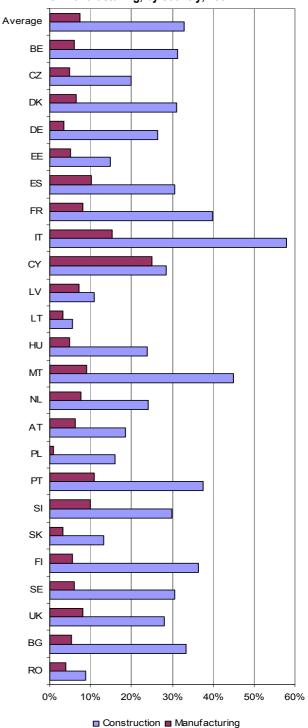
In fact, looking across the EU map, it is possible to detect, with certain exceptions, an emerging geographical pattern with a continuum going from higher shares for countries in southern Europe to lower ones the further north and east we look.

When comparing construction with the manufacturing sector, the share of micro-enterprises was generally much larger in construction. On average, micro-enterprises accounted for 33 % of total enterprises in construction, i.e. 26 percentage points more than their share in manufacturing (7 %).

This difference was all the greater in countries where micro-enterprises were relatively numerous in construction (Italy and Malta) and smaller in those where the opposite was true (Lithuania and Latvia). Cyprus was an exception to this rule, since the shares of micro-enterprises in construction and manufacturing were both substantial and similar (29 % and 25 % respectively).

Poland's situation is noteworthy in relative terms. There, 16 % of construction firms were microenterprises, compared with only 1 % in manufacturing.

Graph 5: Share of micro-enterprises (1-9 persons employed) in construction (based on value-added), compared with manufacturing, by country, 2002



Note: BE, CZ, LV, PL, MT and UK: 2001 – Average is weighted by total valueadded in the sector – EL, IE and LU: not available. Source: Eurostat (SBS)



#### ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

EU: European Union, including the 25 Member States (EU-25): Belgium (BE), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Greece (EL), Spain (ES), France (FR), Ireland (IE), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

#### SYMBOLS

":" non available or confidential.

#### DEFINITIONS

#### Division by sector of activity

Employment and other indicators in the Structural Business Statistics (SBS) are divided into sectors of activity according to the NACE Rev. 1.1 system of classification. This classifies activity by section (1-letter codes), subsection (2-letter codes), division (2-digit codes), groups (3digit codes) and classes (4-digit codes). All activities of the construction industry are included in section F. The construction sector analysed in this publication includes the following divisions and groups: (F Construction, F451 Site preparation, F452 Building of complete constructions or parts thereof; civil engineering, F453 Building installation, F454 Building completion and F455 Renting of construction and demolition equipment with operator)

The non-financial business economy also mentioned includes the sectors C (Mining and quarrying), D (Manufacturing), E (Electricity, gas and water supply), F (Construction), G (Wholesale and retail trade), H (Hotels and restaurants), I (Transport, storage and communication) and K (Real estate, renting and business activities).

Number of persons employed: defined as the total number of persons who work in the observation unit (inclusive of working proprietors and partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It includes part-time workers, seasonal workers, apprentices and home workers who are on the pay roll. The observation unit for aggregating data is the enterprise.

Enterprise: the enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit. Enterprises in this article are classified by their main activity.

The enterprise should not be confused with the local unit, which is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place.

Although the population of active enterprises is mainly affected by real enterprise births and deaths, other events account for the change of the population as well, such as split-offs, break-ups, mergers, takeovers, reactivations of dormant units, changes of activity or legal form, and restructuring of enterprise groups. This means that changes of the enterprise population do not necessarily indicate economic dynamism, but may partly be due to formal rather than genuine entry and exit of units.

gross income from operating activities after adjusting for operating subsidies and indirect taxes (including value-added tax).

Degree of specialisation: The most specialised Member State is the country for which the share of the value-added accounted for by Construction or a branch thereof is highest in relation to the total nonfinancial business economy of that country. The least specialised Member State is the country where this share is the lowest.

Birth and death rates: A birth (or death) amounts to the creation (or dissolution) of a combination of production factors with the restriction that no other enterprises are involved in the event. Births or deaths arising from mergers, break-ups, split-off or restructuring of a set of enterprises, or change of activity, are not included. Birth (death) rate: number of enterprise births (deaths) in the reference period (t) divided by the number of enterprises active in t.

New orders: An order is defined as the value of contract linking a producer and a third party in respect of the provision by producer goods and services. The order is accepted if, in the producer's judgment, there is sufficient evidence for a valid agreement.

#### DATA SOURCES

Structural Business Statistics (SBS): collected within the framework of Council regulation on structural business statistics (EC, EURATOM) No. 58/97 of December 1996. The SBS Regulation governs the transmission of data to Eurostat from the reference year 1995 onwards and covers all market activities in sections C to K of NACE Rev. 1.1. For further information, visit:

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

Short-Term Statistics (STS): collected under the Council regulation on short-term statistics No. 1165/98 of 19 May 1998), and include the industrial new orders index. For further information, visit: http://europa.eu.int/estatref/info/sdds/en/ebt/is\_base.htm

#### **INFORMATION RELATING TO THE MAP**

Source: Eurostat, REGIO (regional database) Population covered:

- NACE Rev.1.1 sections C, D, E, F, G, H, I, K at NUTS 2 level in 2002
- Data available at national (NUTS 1) level only: CZ.
- 2001 data for: BE, DE (section G), LV, SE (section K)
- 2000 data for: FI, UK.
- NACE sections not applicable: section E in: DE, IE, MT; section K in: CY.

#### Notes on NUTS 2 level data:

- 2001 data for: DE21, DE22, DE23, DE24, DE26: sections C and D; NL21: section E; AT11 and AT13: sections C and D; PLOA: section D
- 2000 data for: DE30, DE60, DE80, DEE1, DEE2: sections C and D; NL11: sections C and E; NL13: sections C and E; NL21: section C; NL22, NL23: section E, NL34: section C.
- NACE sections not applicable: section C: FR91, FR30, NL22, NL23, NL31, PL03, PL05; section E: NL31, NL34, UKK2 , UKK3, UKM1, UKM3

The source of all figures presented in this publication is Eurostat and reflects the state of data availability in Eurostat's reference database NewCronos as of May 2005.

Value-added: Value-added measured at factor cost, which is the



# Further information:

#### Databases

EUROSTAT Website/Industry, trade and services/Industry and construction/Annual enterprise statistics on industry and construction broken down by size classes/Construction broken down by employment size classes - NACE section F (annex 4 of the SBS regulation) - Reference year 2002 and onwards

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