

European business

Facts and figures

Part 1:

Energy, water and
construction

Data 1998-2002



EUROPEAN
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THEME 4
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**European business,
Facts & figures**

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Guide to the publication

CONTENTS OF THE PUBLICATION

European business aims to provide a standard set of information for industrial and service activities within the EU. The data provided in European business present a snapshot of output (in terms of value added and turnover), employment and external trade. The commentaries concentrate largely on the two- and three-digit level of the NACE Rev. 1 classification of economic activities ⁽¹⁾.

Publication format

The publication is available as a paper and electronic product (CD-ROM). The CD-ROM also contains a NewCronos database application with many additional series (longer time-series and breakdowns by Member State). The underlying statistics can be easily viewed using Eurostat's NewCronos software that is a dedicated database browser.

When the CD-ROM is started, two separate applications are launched. The first is an HTML application with the analysis and information, most of which is identical to the paper publication. The second application is the NewCronos database server, which launches a local server window from its start and close page. The start and close page should be left open at all times while using the product and should also be used to close a session when using the database application. If the start and close page or the server window are closed by accident then they can be located on the CD-ROM within the NC subdirectory (folder). This folder contains a file called setup.exe - by double-clicking on this icon the database application can be relaunched. Within NewCronos it is possible to extract and export data for manipulation within a database or spreadsheet application.

⁽¹⁾ Published by Eurostat, ISBN 92-826-8767-8, available from the usual outlets for Commission publications.

The CD-ROM also provides a large amount of additional background information on the underlying legislation, sources and classifications that have been used, as well as a glossary of terms. These can be found within the INFO component of the product.

Structure of the publication

The analysis component of the European business CD-ROM and the paper publication are divided into three main sections:

1. The first provides a general overview of the structure of the EU's business economy, looking at changes in output, employment and external trade;
2. The second provides a sectoral breakdown of industrial activities and is divided into 15 separate chapters, each of which contains a number of subchapters usually based on the three-digit level of the NACE classification. Each chapter concludes with a statistical annex presenting structural business statistics;
3. The third provides a sectoral breakdown of service activities and is divided into nine separate chapters (again with subchapters and a statistical annex, usually based on structural business statistics or alternatively a functional database specific to the subject area).

The chapters in European business are structured on the basis of their NACE coverage, starting with energy and the extractive industries and finishing with business services, the information society and media. Each chapter begins with a preliminary section explaining the sectoral coverage of the data presented.

NACE is a hierarchical classification made up of sections (one-letter codes), subsections (two-letter codes), divisions (two-digit codes), groups (three-digit codes) and classes (four-digit codes). NACE establishes a direct link between the European classification and the internationally recognised ISIC Rev. 3 developed under the auspices of the United Nations. These two classifications are directly compatible at the two-digit level and the lower levels of ISIC Rev. 3 can be calculated by aggregating the more detailed levels of NACE. Note that NACE has recently been revised, but the new NACE Rev. 1.1 classification is not yet being used for the main data sources that are presented in this publication. The external trade data are based on the CPA (classification of products by activity) rather than NACE, and this uses the 2002 version of the CPA.

The compilation of industrial data has followed a different historical development to that of other sectors of the business economy. It is generally easier to compile activity and product statistics about goods/merchandise than it is to collect information, for example, relating to knowledge or information-based services. Hence, the balance of this publication reflects to some degree the information that is currently available from official statistical sources. There has, however, been a rapid improvement in data availability for service sectors during the last few years and most EU Member States now compile annual statistics for these activities. As in previous years the proportion of the publication dedicated to services has been expanded.

For the energy and services sectors, data are often available from Eurostat's specialist databases and these have been used to complement the general sources used in most chapters.

Differences compared with the 2003 edition

This edition of European business continues the efforts made in recent years to focus this publication increasingly on official sources of information, as the European statistical system continues to make advances.

Although the activity definition of some subchapters has changed compared with previous editions, the main changes in 2004 are not in the structure, as in previous years, but in the coverage and the sources used. The most notable change is the transition from EU-15 to EU-25 as the main focus of analysis. The enlargement of the EU is presented in a special analysis on page 2 of the overview of the EU's business economy. The second change in relation to coverage is that the structural business statistics (SBS) data used in the manufacturing chapters covers enterprises of all sizes, rather than just those with 20 or more persons employed, as was the case in the past. This puts the size-class coverage of these chapters on the same basis as the services chapters which have always used this coverage, and the energy, mining and quarrying, water and construction chapters that moved to this coverage over the course of the last two editions. In terms of sources, the main change has been to stop using the SBS Ent_I database for the manufacturing chapters and to use only the SBS Enter database; this has resulted in the improvement in the size-class coverage mentioned above, but has had the drawback of reducing the time-series available. To make up for this loss of time-series, short-term business statistics (STS) have been used to show the development of industrial production in the industrial chapters and turnover in the services chapters, supplemented in some cases by an analysis of employment. As in previous years, STS is also used for an analysis of the development of domestic output prices.

GUIDE TO THE STATISTICS

Two main data sources should be distinguished when using this publication: those originating from official sources (collected normally by the national statistical institutes in each Member State) and those provided by professional trade associations (representative organisations of manufacturers and service providers) and other non-official bodies. Tables and graphs presenting data from non-official sources are easily recognised as they always appear in a shaded box.

Time frame

The majority of the data within this publication was extracted from various Eurostat databases during the first two weeks of February 2004. Fresher data is available on the CD-ROM. The accompanying text was written during the first and second quarters of 2004.

Data are generally available for 2001 from SBS and Prodcorn, for 2002 from external trade and the labour force survey (LFS), and for either 2002 or 2003 from STS depending on the activity and the indicator.

Exchange rates

All data are reported in ECU/EUR terms, with national currencies converted using average exchange rates prevailing for the year in question. As of 1 January 1999, 11 of the Member States entered into an economic and monetary union (EMU). These countries formed what has become known as the euro-zone. Technically data available prior to that date should continue to be denominated in ECU terms, while data available afterwards should be denominated in euro. However, as the conversion rate was ECU 1 = EUR 1, for practical purposes the terms may be used interchangeably and this publication denotes all such monetary series in euro. On 1 January 2001, Greece also became a member of the euro-zone.

While the conversion to a common currency of data originally expressed in national currencies facilitates comparison, large fluctuations in currency markets are partially responsible for movements identified when looking at the evolution of a series in euro terms (especially at the level of an individual country). For the exchange rates used, please refer to Table 22 in the statistical annex of the overview chapter.

Geographical coverage

EU-15 totals cover the Member States up to the end of April 2004, and EU-25 totals the Member States from 1 May 2004.

It should be noted that all EU aggregates, both EU-15 and EU-25 for SBS data for services (NACE Sections G to K), exclude Greece. A footnote is added to tables, figures or analyses when a partial total is created from an incomplete set of country information.

Figures for Germany are on a post-unification basis, unless otherwise stated.

Non-availability

The colon (:) is used in tables to represent data that is not available, either because it has not been provided to Eurostat or because it is confidential. In figures (charts), missing information is footnoted as not available.

OFFICIAL DATA SOURCES

SBS

The main part of the analysis contained within European business statistics (SBS). These data have been collected within the legal framework provided by the SBS regulation⁽²⁾. Structural business statistics for the 10 new Member States and the candidate countries were collected on a comparable basis, although data were provided to Eurostat on the basis of specific agreements rather than with a legal basis. With their accession on 1 May 2004, this situation changed for the 10 new Member States and new data will be transmitted on the basis of the requirements of the SBS regulation.

There are two main SBS data sets that have been used in this publication. The first is SBS Enter⁽³⁾ which covers enterprises of all sizes and the data generally start in 1995. Not all Member States have transmitted data relating to this population. In particular, some Member States have only provided data for units with employment above a certain size threshold. Table 1 presents the main deviations from the standard population as laid down in the SBS regulation (all enterprises, regardless of their level of employment).

⁽²⁾ Council Regulation (EC, EURATOM) No 58/97 of 20 December 1996 concerning structural business statistics.

⁽³⁾ Public access to data for the Member States is available via Eurostat's NewCronos database.

Table 1

Country	Statistical unit and coverage used from 1995 onwards			
	Industry (NACE Sections C - E)	Construction (NACE Section F)	Trade (NACE Section G)	Services (NACE Sections H - K)
The Czech Republic	Sampling errors at 3-digit level are significant (due to low coverage). The 3-digit level is only an estimation based on the sample, but the sample differs between years. The sample is only representative for data at the 2-digit level 2001: several activities at the 3-digit level include results for enterprises that have only been classified at the 2-digit level, thus potentially overestimating these activities and underestimating other activities within the same 2-digit activity, but ensuring coherency between the results for the 2- and 3-digit levels			
Denmark	No major deviations	1995 to 1998: Class 45.21 includes data for Classes 45.23 and 45.24; Class 45.31 includes data for Class 45.34	No major deviations	
Germany	2001 for Sections D to F: major change in source for enterprises with less than 20 persons employed		No major deviations	1998 onwards: Class 60.24 data are not comparable with previous years 1999 for Sections I to K: the number of enterprises and turnover come from a different source than the other variables and the two groups of variables can not be compared 1999: for production value and value added Class 60.21 includes Class 60.23, Class 74.13 includes Class 74.14, Class 74.11 includes Classes 74.12 and 74.15 2000 for Sections I and K: data are not comparable with previous years
Estonia	1995: Section D data at the 2-digit level cover enterprises with 20 and more employees, except investment data which cover enterprises with 50 and more employees; data at the Section level cover all enterprises	No major deviations		1995: Division 71 includes Division 72
Greece	No data available		Covers only enterprises with a turnover of 15 million GRD or more	
Spain	1995 to 1998: enterprises with 1 employee or more	No major deviations	1995 to 1998: enterprises with 1 employee or more	
France	1995: Section D excludes Divisions 16 and 37; Subsection DA excludes Division 16; Subsection DN excludes Division 37	No major deviations		In some transport activities within Group 61.2 the coverage is only enterprises with 6 employees or more
Ireland	Enterprises with 3 persons employed or more 1995: Subsection DN includes Subsection DF	No data available	No major deviations	
Italy	Turnover from the principal activity at the 4-digit level: this data is supplied only for enterprises with 200 employees or more		No major deviations	
Cyprus	2001: Class 14.11 includes Class 14.12; Class 14.22 includes Group 14.3; Class 15.13 includes Group 15.2; Class 15.71 includes Class 15.72; Class 15.91 includes Classes 15.93 and 15.96; Class 17.21 includes Class 17.54 and Group 17.6; Class 17.71 includes Class 17.72; Group 19.1 includes Group 19.2; Class 20.51 includes Class 20.52; Class 22.22 includes Classes 22.11 and 22.15; Class 24.11 includes Class 24.13 and Group 24.2; Class 24.41 includes 24.42; Class 24.62 includes Class 24.66; Class 26.11 includes Classes 26.13 and 26.15; Class 27.22 includes Classes 27.42 and 27.44; Class 28.21 includes Group 28.3; Class 28.61 includes Class 28.62; Class 28.74 includes Class 28.75; Class 29.53 includes Class 28.54; Group 31.4 includes Class 31.62; Group 32.2 includes Group 32.3; Group 33.1 includes Groups 33.2 and 33.3; Class 36.21 includes Class 36.22; Group 36.3 includes Group 36.5 and Class 36.61; Class 55.21 includes Class 55.22			

Table 1 continued

Country	Statistical unit and coverage used from 1995 onwards			
	Industry (NACE Sections C - E)	Construction (NACE Section F)	Trade (NACE Section G)	Services (NACE Sections H - K)
Latvia	No major deviations		It is recommended not to use 4-digit level data as the sampling plan for the survey was designed at the 3-digit level only	No major deviations
Luxembourg	1996 onwards: kind-of-activity units with 1 person employed or more	No major deviations		1995 to 1998: Class 66.01 includes Class 66.02
Hungary	Covers only enterprises with 5 or more persons employed			
The Netherlands	Number of enterprises: data for this variable are rounded to multiples of 5; a 0 therefore means 2 or less enterprises			
	Covers only enterprises with 20 employees or more for Section E; total intramural R&D expenditure and total number of R&D personnel cover only enterprises with 10 employees or more	No major deviations		Class 74.15: enterprises with 5 employees or more
Portugal	1995: Subsection DN and Section D exclude Division 37	No major deviations		
Slovakia	1995 to 1998: covers enterprises with 20 or more persons employed as well as enterprises with less than 20 persons employed which were considered statistically important			
The United Kingdom	1996: Class 14.12 includes Class 14.13; Class 15.94 includes Class 15.95; Class 17.15 includes Class 17.14; Class 17.16 includes Class 17.17; Class 21.11 includes Class 21.12 1997: Group 10.3 includes Group 10.2; Group 13.2 includes Group 13.1; Class 14.12 includes Class 14.13; Class 17.15 includes Class 17.14; Class 17.16 includes 17.17; Class 21.12 includes Class 21.11 1998: Group 10.3 includes Group 10.2; Class 14.12 includes Class 14.13; Class 51.35 includes Classes 51.36 and 51.37			
Bulgaria	1996 to 1999: investment not representative below the 2-digit level			

The second collection covers information broken down by employment size-class. Again, not all Member States have transmitted data to Eurostat that relates to this statistical unit or population. In particular, some Member States have only provided data for units with employment above a certain size threshold. Table 2 summarises the main deviations from the standard statistical unit and coverage.

Table 2

Country	Statistical units and coverage			
	Industry (NACE Sections C - E)	Construction (NACE Section F)	Trade (NACE Section G)	Services (NACE Sections H - K and M - O)
The Czech Republic	Sampling errors at 3-digit level are significant (due to low coverage). The 3-digit level is only an estimation based on the sample, but the sample differs between years; the sample is only representative for data at the 2-digit level 2001: several activities at the 3-digit level include results for enterprises that have only been classified at the 2-digit level, thus potentially overestimating these activities and underestimating other activities within the same 2-digit activity, but ensuring coherency between the results for the 2- and 3-digit levels			
Germany	1995 onwards: enterprises with 20 persons employed or more		No major deviations	
Estonia	1995: Section D data at the 2-digit level cover enterprises with 20 and more employees, except investment data which cover enterprises with 50 and more employees; data at the Section level cover all enterprises; 1995 to 1999: employment size classes are defined in terms of employees; 1995 to 1998: data for size class 500-999 includes data for size class 1000+; 1996 to 1999: the size class total is not equal to the sum of the size classes published as the total also includes data for the size class 0 employees	1995 to 1999: employment size classes are defined in terms of employees; 1995 to 1998: data for size class 500-999 includes data for size class 1000+ as well; 1996 to 1999: data for size class 1-9 employees also includes data for size class 0 employees	1995 to 1999: employment size classes are defined in terms of employees 1995 to 1998: data for size class 500-999 includes data for size class 1000+ as well 1996 to 1999: size classes 0 and 1-9 employees are provided instead of size classes 1, 2-4 and 5-9 employees; data for size class 0 are published under the size class 1 and data for size class 1-9 are published under the size class 5-9	1995 to 1999: employment size classes are defined in terms of employees; 1995 to 1998: data for size class 500-999 includes data for size class 1000+ as well; 1996 to 1999: size classes 0 and 1-9 employees are provided instead of size classes 1-4 and 5-9 employees; data for size class 0 are published under the size class 1-4 and data for size class 1-9 are published under the size class 5-9; 1995: Division 71 also includes Division 72
Spain	1995 onwards: enterprises with 1 employee or more	No major deviations		
France	1995: enterprises with 20 employees or more		No major deviations	
Ireland	1995 onwards: enterprises with 3 persons employed or more	1995 onwards: enterprises with 20 persons employed or more	No major deviations 1997: Group 60.1 includes Classes 60.21, 60.22 and 60.23; Group 74.6 includes Group 74.7	
Cyprus	2001: data for size class 500-999 includes data for size class 1000+; data for size class 100-249 includes data for size class 250-499; Group 14.2 includes Group 14.3; Group 15.1 includes Group 15.2; Group 17.2 includes Groups 17.5 and 17.6; Group 19.1 includes Group 19.2; Group 24.1 includes Group 24.2; Group 27.2 includes Group 27.4; Group 28.2 includes Group 28.3; Group 31.4 includes Group 31.6; Group 32.2 includes Group 32.3; Group 33.1 includes Groups 33.2 and 33.3; Group 36.3 includes Groups 36.5 and 36.6			
Hungary	1998 to 2001: enterprises with 5 persons employed or more; data for size class 1-9 persons employed are not available; data for size class 5-9 persons employed have been provided; data for the total of the size classes refer to enterprises with 5 persons employed or more		1998 to 2001: enterprises with 5 persons employed or more; data for the total of the size classes refer to enterprises with 5 persons employed and more	
The Netherlands	1999 onwards: employment size classes are defined in terms of employees; size class 1-9 has been approximated with size class 0-9 employees; size class 500-999 includes size class 1000+		1999 onwards: employment size classes are defined in terms of employees; size class 1 has been approximated with size class 0 employee; size class 2-4 has been approximated with size class 1-4 employees; size class 500-999 includes size class 1000+	
Portugal	1996 onwards: employment size classes are defined in terms of employees; size class 1-9 has been approximated with size class 0-9 employees		1996 onwards: employment size classes are defined in terms of employees	
Slovenia	1995 to 1998: employment size classes are defined in terms of employees, and exclude enterprises with 0 employees			
Slovakia	1995 to 1998: size classes are defined in terms of employees; data for the total of the size classes refer to enterprises with 20 and more employees			
Sweden	1996: employment size classes are defined in terms of employees; size class 1-9 has been approximated with size class 0-9 employees		No major deviations	
The United Kingdom	1995: enterprises with 20 persons employed or more; 1997: Group 10.3 includes Group 10.2; Group 13.2 includes Group 13.1		1995: enterprises with 20 persons employed or more No major deviations	

Standard definitions of variables have been laid down. As such, the data presented are largely comparable across activities and countries. There are nevertheless some known divergences from the standard definitions. Until the reference year 1994 inclusive, EU-15 Member States transmitted their data to Eurostat according to either the legal basis preceding the SBS regulation for industry or on a voluntary basis for services. As far as possible Eurostat and the Member States worked to convert these data in line with the variable definitions as implemented following the adoption of the SBS regulation. However, the results of the conversion may not be of the same quality as the data collected from the 1995 reference year onwards. For France, this conversion is applied until the reference year 1995 inclusive. For Greece, this conversion is applied until the reference year 1996 inclusive. Table 3 presents the main discrepancies with respect to the standard variable definitions as regards data from Member States and the candidate countries.

Estimates

EU-15 and EU-25 data are estimated. Estimates are made using individual country information and short-term indicators such as indices of production and employment. The individual country estimates are not published. Data in this publication are generally available at the three-digit NACE level, while more detailed information is often available within the SBS Enter table at the four-digit NACE level. EU-15 aggregates are generally available at the four-digit level in SBS Enter and at the three-digit level in SBS Enter size-class, while EU-25 aggregates are generally available at the three-digit level in SBS Enter and at the two-digit level in SBS Enter size-class.

Table 3

SBS Enter			
Country	Year	Variable	Discrepancy
Belgium	1995-1998	Production value	The purchase of goods and services for resale are not removed, resulting in the values being overestimated
The Czech Republic	1995-1998	Number of enterprises	Average number of enterprises calculated on the basis of the length of the activity of the unit during the year; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage (3 months=0.25 enterprises)
	1995-1998	Personnel costs and social security costs	Non-standard definitions
Germany	1999	Sections I to K: value added at factor cost	Does not include subsidies
Spain	1995-1998	Gross investment in tangible goods	Gross investment in land and gross investment in machinery and equipment
Ireland	1998-2000	Sections H, I and K: personnel costs	Wages and salaries
	1998/1999	Number of enterprises	Break in series due to a change in estimation method.
Cyprus	1995-1998	Change in stocks of finished products and work in progress manufactured by the unit	Includes change in stocks of all goods and services
Hungary	1998	Number of employees	Estimated as a fixed percentage (99.5%) of the number of persons employed
	2001	Total investment in tangible goods	Is inconsistent with its components as some investment is not included in the components, only in the total
Slovenia	1995-1998	Value added and wages and salaries	Non-standard definitions
Finland	1995	Value added at factor cost	Value added at market prices
		Gross operating surplus	Value added at market prices - personnel costs
Sweden	1995-1996	Number of persons employed	The number of persons employed and the number of employees are very close as self-employed persons are not included and for enterprises with less than 10 employees the number of employees is collected in full time equivalent units.
The United Kingdom	1996-1998	Gross investment in existing buildings and structures	Includes gross investment in land
	1997	Turnover from trading and intermediary activities	Turnover from trading activities of purchase and resale
Bulgaria	1996-1998	Changes in stocks	Concerns only changes in stocks of goods, and therefore excludes changes in stocks of services
	1996-1999	Investment in existing buildings and structures	Includes also investment in construction and alteration of buildings
	1999	Turnover and production value	Does not include duties and taxes on services invoiced by the unit
	2000-2001	Investment in construction and alteration of buildings	Includes also investment in existing buildings and structures
Norway	1996-1997	For Sections C and D: investment	The definitions of variables 15 13 0 and 15 14 0 (concerning investment) are non-standard, however their sum is conform with the standard definitions
SBS Enter size class data			
Country	Year	Variable	Discrepancy
The Czech Republic	1995-1998	Number of enterprises	Average number of enterprises calculated on the basis of the length of the activity of the unit during the year; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage (3 months=0.25 enterprises)
Denmark	1995-1996	Sections C to G: number of employees	Employees in full-time equivalents
Hungary	1998	Sections C to F: number of employees	Estimated as a fixed percentage (99.5%) of the number of persons employed
Slovenia	1995-1998	Value added	Non-standard definition
Slovakia	1995-1998	Sections G to K: number of persons employed	Number of employees
Sweden	1996	Sections C to E: number of persons employed	The number of persons employed and the number of employees are very close as self-employed persons are not included and for enterprises with less than 10 employees the number of employees is collected in full time equivalent units.
		Sections H to K: number of persons employed Sections C to F: social security costs	Is in fact the number of employees Non-standard definition

Prodcom

In previous editions of this publication, Prodcom data was sourced from NewCronos. Recently Prodcom has been added to the Comext reference database, and the Prodcom tables on NewCronos are no longer updated. For this reason the Comext version of the database was preferred for this year's edition. As part of the move to Comext, a reprocessing of data was carried out, and for some Prodcom headings EU-15 totals are no longer available, although they were published on NewCronos. At the present time there are no EU-25 aggregates in Prodcom, as two of the new Member States do not yet compile Prodcom statistics. The legal basis of the Prodcom data is Council Regulation (EEC) No 3924/91 on the establishment of a Community survey of industrial production (Prodcom regulation). This regulation requires that production be recorded according to the product headings of the Prodcom list. The list is based on the Community's external trade classification, the Combined Nomenclature (CN). The list does not, however, cover all products. The list is divided into divisions corresponding to the (two-digit) divisions of NACE. Each Prodcom code is identified by an eight-digit code. The first six digits are the CPA code ('classification of products by activity'). The last two digits normally provide a reference to the Combined Nomenclature (CN), although there are exceptions to this rule.

The physical volume and the value of production are normally recorded for the products in the Prodcom list. Different production concepts are used in the survey, namely:

- production sold during the survey period;
- actual production (total production) during the survey period. This includes any production which is incorporated into the manufacture of other products. Such production is normally taken to mean own products which are either processed into another product or fitted into another product in the reporting unit itself, in another plant belonging to it, or under contract in another unit;
- production during the survey period which is intended for sale.

The value of production sold/production intended for sale should be calculated on the basis of the ex-works selling price obtained/obtainable during the reporting period. It also includes packaging costs, even if they are charged separately. However, the following are not included: any turnover tax and consumer tax charged; separately charged freight costs; any discounts granted to customers.

The particular physical units of the CN classification have normally been adopted for recording the volume of production. In exceptional cases a different and/or supplementary unit is recorded. All units belonging to the individual Prodcom headings are specifically indicated in the data set.

Prodcom statistics normally cover all enterprises/local units which manufacture products contained in the Prodcom list. Among the rules on representativeness, the regulation stipulates that all enterprises in Sections C, D and E of NACE Rev. 1 employing at least 20 persons must be included. In addition, at least 90 % of production in each (four-digit) class of NACE Rev. 1 must also be recorded.

External trade

EU external trade statistics are available in the Comext database, and can be compiled according to various classifications. For the purpose of this publication the classification of products by activity (CPA) has been used. The analysis focuses on external trade data for 2002 (while fresher data for reference year 2003 are included in the DATABASE application). No estimates are made for external trade statistics, although it is possible that subsequent revisions may occur. The data are processed by summing together product statistics (using a conversion table from CN to CPA - note that there have been extensive changes to the Combined Nomenclature (CN) between reference years 2001 and 2002.). The data for EU-25 are reported in terms of trade flows with the rest of the world, in other words extra-EU trade. However, for the individual Member States total trade flows are used (in other words intra-EU and extra-EU trade). All trade figures are given in current EUR terms.

The calculation of EU-25 trade flows has been done by subtracting the value of trade of the EU-15 with the 10 new Member States from the total trade of the EU-15 with all 'extra-EU-15' partners.

Short-term business statistics

Tracking the business cycle is indispensable for many economic actors. Short-term business statistics provide politicians, government agencies, bankers, business owners, consumers and trade unionists with information that is crucial when making decisions on whether industries grow, stagnate or decline. The legal base of the European system of quantitative short-term business statistics is Council Regulation (EC) No 1165/98, which was adopted on 19 May 1998.

Several variables from the EBT database are presented in this publication. To measure output the following are used: the industrial production index, the index of production in construction, the index of retail trade volume of sales, the services' turnover index. In manufacturing the domestic output price index is presented and in construction the construction costs index is also available. An employment index is available for many activities within industry, construction and services. In addition, indices are also available on new car registrations and on building permits.

Indices for the EU-15 and for the EU-25 have been estimated for several indicators for many activities.

Industrial production index

In line with traditional practice in business statistics, the production index should show the evolution of value added at factor cost, at constant prices. Value added at factor cost can be calculated from turnover (excluding VAT), 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 and taxes linked to production. This index of production should take account of:

- variations in type and quality of the commodities and of the input materials;
- changes in stocks of finished goods and work in progress;
- changes in technical input-output relations (processing techniques); and
- services such as the assembling of production units, mounting, installations, repairs, planning, engineering, creation of software.

Turnover

The objective of the turnover index is to show the evolution of the market for goods and services. Turnover comprises the totals invoiced by the observation unit during the reference period. This corresponds to market sales of goods or services supplied to third parties. It includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover.

Employment

The number of persons employed is defined as the total number of persons working in an observation unit (inclusive of working proprietors, 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 (for example, sales representatives, delivery personnel, repair and maintenance teams). It includes persons absent for a short period (for example sick leave, paid leave or special leave), and also those on strike, but not those absent for an indefinite period. It also includes part-time workers who are regarded as such under the laws of the country concerned and who are on the payroll, as well as seasonal workers, apprentices and home workers on the payroll. The number of persons employed excludes manpower supplied to the unit by other enterprises, persons carrying out repair and maintenance work in the observation unit on behalf of other enterprises, as well as those on compulsory military service.

Domestic output prices

All price-determining characteristics of the products should be taken into account when compiling these indices, including the quantity of units sold, transport provided, rebates, service conditions, guarantee conditions and destination. The specification must be such that in subsequent reference periods, the observation unit is able to identify the product and to provide the appropriate price per unit. The appropriate price is the ex-factory price that includes all duties and taxes on the goods and services invoiced by the unit but excludes VAT invoiced by the unit vis-à-vis its customer and similar deductible taxes directly linked to turnover.

Labour force survey

The methodological basis and the contents of this survey are described in the publication Labour Force Survey - Methods and definitions, 2001 edition. The main statistical objective of the labour force survey is to divide the population of working age (generally 15 years and above) into three mutually exclusive and exhaustive groups - persons in employment, unemployed persons, and inactive persons - and to provide descriptive and explanatory data on each of these categories. Respondents are assigned to one of these groups on the basis of the most objective information possible, obtained through a survey questionnaire, which relates principally to their actual activity within the reference period.

It is important to note that the information is not collected from enterprises (as with the SBS database) but through a survey addressed to individual households. The national statistical institutes are responsible for selecting the sample, preparing the questionnaires, conducting the interviews and forwarding the results to Eurostat in accordance with a common coding scheme. Eurostat devises the programme for analysing the results and is responsible for processing and disseminating the information.

The Community labour force survey ⁽⁴⁾, is based upon a sample of the population. The results are therefore subject to the usual types of errors associated with sampling techniques. Eurostat implements basic guidelines intended to avoid the publication of figures which are statistically unreliable (see Table 4). Figures below these thresholds are not published. A second threshold is applied to data that may only be published with a warning concerning their reliability. For the purpose of this publication these data have also been omitted.

EU-25 aggregates are available for LFS data; however, the analysis of these data by NACE is only possible at the section level. EU-15 aggregates are available for most subsections and divisions.

⁽⁴⁾ Council Regulation (EC) No 577/98 of 9 March 1998 on the organisation of a labour force sample survey in the Community.

Table 4

	A	B
EU-25 (1)	90 000	-
EU-15 (1)	61 500	-
Belgium	2 500	4 500
The Czech Republic	1 000	-
Denmark (2)	3 500	7 500
Germany	8 000	-
Estonia (3)	5 000	10 000
Greece	2 500	4 500
Spain	2 500	5 000
France (4)	7 000	21 000
Ireland	2 500	4 500
Italy	3 500	7 500
Cyprus	500	1 500
Latvia (5)	4 500	7 500
Lithuania	5 000	-
Luxembourg	500	1 500
Hungary	2 500	4 500
Malta	1 500	3 000
The Netherlands	4 500	10 000
Austria	2 000	-
Poland	5 000	20 000
Portugal	7 500	15 000
Slovenia	1 000	10 500
Slovakia	2 500	4 500
Finland	2 500	4 500
Sweden (6)	2 500	-
The United Kingdom	10 000	-
Bulgaria	5 500	10 000
Romania	2 000	-
Turkey	:	:

A: threshold for publishing data.
B: threshold for reliable data.

- (1) The A limits applicable to data prior to 2003 are the sum of the country limit.
- (2) The limits applicable to data between 1983 and 1993 are A 2 500, B 4 500.
- (3) The limits applicable to data for 1997 are A 4 000, B 8 000; for 1998 and 1999 they are A 1 500, B 3 000.
- (4) The limits applicable to data between 1983 and 2002 are A 3 500, B 8 500.
- (5) The limits applicable to data prior to 1998 are A 2 500, B 4 500.
- (6) The limits applicable to data between 1995 and 2000 are A 9 000, B -.

National accounts

The European system of national and regional accounts (1995 ESA, or simply ESA) is an internationally compatible accounting framework for a systematic and detailed description of a total economy (that is a region, country or group of countries), its components and its relations with other economies.

The 1995 ESA replaces the European system of integrated economic accounts published in 1970 (1970 ESA; a second, slightly modified, edition appeared in 1978).

The 1995 ESA is fully consistent with the revised world-wide guidelines on national accounting, the system of national accounts (1993 SNA, or simply SNA; these guidelines have been produced under the joint responsibility of the United Nations, the IMF, the Commission of the European Communities, the OECD and the World Bank). However, the ESA is focused more on the circumstances and data needs of the European Union. Like the SNA, the ESA is harmonised with the concepts and classifications used in many other, social and economic statistics. Cases in point are statistics on employment, statistics on manufacturing and statistics on external trade. The ESA can therefore serve as the central framework of reference for the social and economic statistics of the European Union and its Member States.

The ESA framework consists of two main sets of tables:

- the sector accounts;
- the input-output framework and the accounts by industry.

The sector accounts provide, by institutional sector, a systematic description of the different stages of the economic process: production, generation of income, distribution of income, redistribution of income, use of income and financial and non-financial accumulation. The sector accounts also include balance sheets to describe the stocks of assets, liabilities and net worth at the beginning and the end of the accounting period.

The input-output framework and the accounts by industry describe in more detail the production process (cost structure, income generated and employment) and the flows of goods and services (output, imports, exports, final consumption, intermediate consumption and capital formation by product group).

GLOSSARY OF TERMS

There follows a brief list of the main terms employed within this publication:

Annual average growth rate: constant rate of growth that would be required in each year to achieve the same overall growth rate as that observed between two periods.

Apparent labour productivity: value added at factor cost/number of persons employed (expressed in thousand EUR per person employed); care should be taken in the interpretation of this ratio between different activities and countries because of the use of a simple head count for the labour input measure, as a proxy for the volume of work done; values may exceptionally be negative.

Average personnel costs: personnel costs/number of employees (expressed in thousand EUR per employee).

Constant prices: data presented with the effect of price fluctuations over time removed from them (deflated series); note that, as these are expressed in EUR, time series are influenced by fluctuations in the exchange rate.

Cover ratio: exports/imports (expressed as a percentage).

Current prices: data presented including the effects of price changes.

Domestic output price index: an index of the prices of commodities produced and sold within any given country in national currency terms; output price indices are often used to deflate production and value added data (in value) in order to obtain production and value added in constant price terms; this index shows the change in ex-works selling prices of all products sold on domestic markets, excluding VAT and similar deductible taxes.

Employees: are defined as those persons who work for an employer and who have a contract of employment and receive compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind; employees include part-time workers, seasonal workers, persons on strike or on short-term leave, but exclude those persons on long-term leave and voluntary workers.

Enterprise: an 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.

Extra-EU exports: goods which leave the statistical territory of a Member State bound for a non-Community country.

Extra-EU imports: goods which enter the statistical territory of a Member State from a non-Community country.

Gross operating surplus: is the surplus generated by operating activities after the labour factor input has been recompensed; it can be calculated from value added at factor cost less personnel costs.

Gross operating rate: gross operating surplus/turnover (profitability measure, expressed as a percentage).

Local unit: the local unit is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place. At or from this place economic activity is carried out for which - save for certain exceptions - one or more persons work (even if only part-time) for one and the same enterprise.

Number of persons employed (employment): is defined as the total number of persons who work in the observation unit (inclusive of working proprietors, 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 persons absent for a short period (e.g. sick leave, paid leave or special leave), and also those on strike, but not those absent for an indefinite period; it also includes part-time workers who are regarded as such under the laws of the country concerned and who are on the pay-roll, as well as seasonal workers, apprentices and home workers on the pay-roll.

Personnel costs: the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home workers) in return for work done by the latter during the reference period; personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions.

Production value: measures in value the amount actually produced by the unit, based on sales adjusted for changes in stocks and the resale of goods and services; the production value is defined as turnover, plus or minus the changes in stocks of finished products, work in progress and goods and services purchased for resale, minus the purchases of goods and services for resale, plus capitalised production, plus other operating income (excluding subsidies).

Simple wage adjusted labour productivity: value added at factor cost/personnel costs * 100 (expressed as a percentage).

Trade balance: exports - imports.

Turnover: comprises the totals invoiced by the observation unit during the reference period, corresponding to market sales of goods or services supplied to third parties; turnover includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover; it also includes all other charges (transport, packaging, etc.) passed on to the customer, even if these charges are listed separately in the invoice; reductions in prices, rebates and discounts as well as the value of returned packing must be deducted.

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; alternatively it can be calculated from gross operating surplus by adding personnel costs; income and expenditure classified as financial or extra-ordinary in company accounts is excluded from value added.

Value added specialisation: relative index that compares the value added share of a given manufacturing activity in total manufacturing value added for a given country with the same ratio for the EU (expressed as a percentage - if a country displays a ratio above 100 then it is relatively more specialised than the average for the EU).

Wage adjusted labour productivity: (value added at factor cost/personnel costs) * (number of employees/number of persons employed) * 100 (expressed as a percentage).

NON-OFFICIAL SOURCES AND ABBREVIATIONS

Professional trade associations

ACEA	European Automobile Manufacturers Association
ACI	Airports Council International (European Region)
AEA	Association of European Airlines
AECMA	European Association of Aerospace Industries
AESGP	Association of the European Self-Medication Industry
AISE	International Association of the Soap & Detergent industry
APEAL	Association of European Producers of Steel for Packaging
APME	Association of Plastics Manufacturers in Europe
AWES/CESA	Committee of European Shipbuilders Association
CAEF	Committee of European Foundry Associations
CAOBISCO-IOCCC	Association of the Chocolate, Confectionery, Biscuit industries of the EU
CBMC	The Brewers of Europe
CECCM	Confederation of European Community Cigarette Manufacturers
CEPE	European Council of the Paint, Printing Inks and Artists' Colours Industry
CEPI	Confederation of European Paper Industries
CIAA	Confédération des Industries Agro-alimentaires de la CE (Confederation of the Food and Drink Industries of the EU)
CPDP	Association of oil refiners
EAO	European Audiovisual Observatory
EDA	European Dairy Association
EMF	European Mortgage Federation
EPF	European Panels Federation
ESBG	European Savings Bank Group
ESOMAR	European Society for Opinion and Marketing Research
ESTA	European Security Transport Association
EURATEX	European Apparel and Textile Organisation
EUROFINAS	European Federation of Finance House Associations
FBE	European Banking Federation
FEDIOL	EC Seed Crushers' and Oil Processors' Federation
FEDSA	Federation of European Direct Selling Associations
FEFSI	European Federation of Investment Funds
FEP	European Federation of Associations of the Parquet Industry
FESE	Federation of European Securities Exchanges
FIBV	International Federation of Stock Exchanges
FIEC	European Construction Industry Federation
GEBC	European Association of Cooperative Banks
IISI	International Iron and Steel Institute
IMACE	International Margarine Association of the Countries of Europe
STD	Swedish Federation of Consulting Engineers and Architects (Svensk Teknik och Design)
UIC	International Union of Railways
UNAFPA-UNIPI	Union of Organisations of Manufacturers of Pasta Products in the European Community
UNESDA-CISDA	Union of EU Soft Drinks Associations

Other organisations and publications

EITO	European Information Technology Observatory
EPO	European Patent Office
FAO	Food and Agriculture Organisation of the UN
IISI	International Iron and Steel Institute
LME	London Metal Exchange Limited
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
UN	United Nations
USGS	US Geological Survey
WTO	World Trade Organization
WTO	World Tourism Organization
Hotels Magazine	
Meat Processing Global	
Media Salles	
PricewaterhouseCoopers	
The London Metal Exchange Limited	

Statistical abbreviations

AUVIS	Audiovisual Services
CIS	Community Innovation Survey
CIS	Commonwealth of Independent States
CN	Combined Nomenclature
CPA	Classification of Products by Activity
CVTS	Continual Vocational Training Survey
ECHP	European Community Household Panel
FDI	Foreign Direct Investment
LFS	Labour Force Survey
NACE	Nomenclature statistique des Activités économiques dans la Communauté Européenne (Statistical classification of economic activities in the European Community)
n.e.c.	not elsewhere classified
PRODCOM	PRODucts of the European COMmunity
SBS	Structural Business Statistics
STS	Short-Term Statistics
SME	Small and medium-sized enterprises

Other abbreviations

ADSL	Asymmetric Digital Subscriber Line
AM	After-Market
ATMs	Automatic teller machines
BER	Block Exemption Regulations
BME	Bolsas y Mercados Españoles
BSE	Bovine Spongiform Encephalopathy (Mad-cow disease)
B2B	Business-to-Business
B2C	Business-to-Consumer
CAP	Common Agricultural Policy
CDs	Compact discs
CD-ROM	Compact disc read-only memory
CFP	Common Fisheries Policy
CPD	Construction Products Directive
CPO	Competing Postal Operators
DTP	Desk-top Publishing
DVD	Digital Versatile Disc
EAMs	European Approvals of Materials
ECSC	European Coal and Steel Community
EDI	Electronic Data Interchange
EIB	European Investment Bank
FSAP	Financial Services Action Plan
F/OSS	Free and Open Source Software
GDP	Gross Domestic Product
ICT	Information and Communications Technologies
IT	Information Technology
JIT	Just In Time
JRC	Joint Research Centre
LAN	Local Area Network
LIFFE	London International Financial Futures and Options Exchange
MDF	Medium Density Fibreboard
MP3	MPEG-1/2 Audio Layer 3 (audio compression algorithm)
NASDAQ	National Association of Securities Dealers' Quotation System
NYSE	New York Stock Exchange
OE	Original Equipment
OJ	Official Journal (of the European Communities)
OPA	Other Postal Agents
OSB	Oriented Strand Board
PC	Personal Computer
PWS	Public Water Supply
R & D	Research and Development
REACH	System of Registration, Evaluation, and Authorisation of Chemicals
SARS	Severe Acute Respiratory Syndrome
SMS	Short Message Service
TV	Television
UCITS	undertakings for collective investment in transferable securities
USPs	Universal Services Providers
VAT	Value Added Tax

Guide to the publication

VCR	Videocassette Recorder
VHS	Video Home System

Weights and measures

DWT	Dead-weight-tonnes
GRT	Gross Registered Tonnage
GW	Gigawatt (10 ⁶ kW)
Kg	Kilogram(s)
kgoe	Kilogram of oil equivalent
Km	Kilometre
Km ²	Square kilometre
MW	Megawatt (10 ³ kW)
PPS	Purchasing Power Standard
pkm	Passenger-kilometre
t	Tonnes
tkm	tonnes-kilometre
TEU	Twenty Foot Equivalent Unit
Toe	Tonne of Oil Equivalent (41 868 kilojoules net calorific value per kilogram)
tU	Tonnes of contained Uranium
TW	Terawatt (10 ⁹ kW)
TWh	Terawatt per hour (10 ⁹ kW)

Countries

EU-25	25 Member States of the European Union
EU-15	BE, DK, DE, EL, ES, FR, IE, IT, LU, NL, AT, PT, FI, SE and UK
10 NMS	Ten new Member States
BE	Belgium
CZ	the Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	the Netherlands
AT	Austria
PL	Poland
PT	Portugal
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	the United Kingdom
EEA	European Economic Area
BG	Bulgaria
RO	Romania
TR	Turkey
CN	China
HK	Hong Kong
JP	Japan
RU	Russia
US	United States (of America)

Currencies

EUR	Euro
BEF/LUF	Belgian Franc
CZK	Czech Koruna
DKK	Danish Krone
DEM	German Mark
EEK	Estonian Kroon
GRD	Greek Drachma
ESP	Spanish Peseta
FRF	French Franc
IEP	Irish Pound
ITL	Italian Lira
CYP	Cyprus Pound
LVL	Latvian Lats
LTL	Lithuanian Litas
HUF	Hungarian Forint
MTL	Malta Lira
NLG	Dutch Guilder
ATS	Austrian Schilling
PLN	New Polish Zloty
PTE	Portuguese Escudo
SIT	Slovenian Tolar
SKK	Slovak Koruna
FIM	Finnish Markka
SEK	Swedish Krone
GBP	Pound Sterling
BGN	New Bulgarian Lev
ROL	Romanian Leu
TRL	Turkish Lira
JPY	Japanese Yen
USD	United States dollar

Symbols

:	not available
-	not applicable

Overview - the EU's business economy

INTRODUCTION

The Lisbon European Council of 23–24 March 2000 set the EU the objective of becoming 'the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth with more and better jobs and greater social cohesion'.

In response, the European Commission laid out a proposal for a multiannual programme for enterprise policy, which was adopted by the European Council at the end of 2000. In a communication ⁽¹⁾ entitled *Industrial policy in an enlarged Europe*, the European Commission outlined a three-pronged strategy to improve the competitiveness of the EU:

- by increasing efforts in the areas of education, vocational training and research, to spread knowledge, increase the use of new technologies and endow the labour force with necessary skills;
- by encouraging innovation to improve efficiency and competitiveness, as enterprises initiate, refine and improve their products, services and processes;
- by developing an entrepreneurial spirit and encouraging people to take risks and start new businesses, so as to stimulate innovative ideas and create employment opportunities.

⁽¹⁾ COM(2002) 714 final.

The topics of business demography (the creation, survival and death of enterprises) is treated in the second part of this overview, while the final section deals with information and communication technologies (ICTs) and intangibles, identified above as key elements for improving the competitiveness of the EU.

However, besides the challenge of stimulating economic growth, the EU also faces another major challenge during 2004, namely the smooth transition of moving from 15 to 25 Member States. The enlargement process is the first subject treated within this overview. The data presented concentrate on a comparative analysis of EU-15 and EU-25 data, looking at changes within the business economy ⁽²⁾ that resulted out of the accession of the 10 new Member States in May 2004.

⁽²⁾ Defined for the purposes of this publication as NACE Sections C to K, covering mining and quarrying, manufacturing, electricity, gas and water supply, construction, distributive trades, hotels and restaurants, transport, storage and communications, financial intermediation, real estate, renting and business activities.

THE EFFECTS OF ENLARGEMENT

Rapid economic integration between the EU-15 and most of the 10 new Member States ⁽³⁾ started at the beginning of the 1990s, when market reforms were accompanied by the realignment of external trade relations. Up until this point the majority of the 10 new Member States (as well as Bulgaria and Romania) had planned economic systems and were characterised by geographic specialisation that focused on traditional, heavy industrial sectors, with ownership largely in the hands of the State.

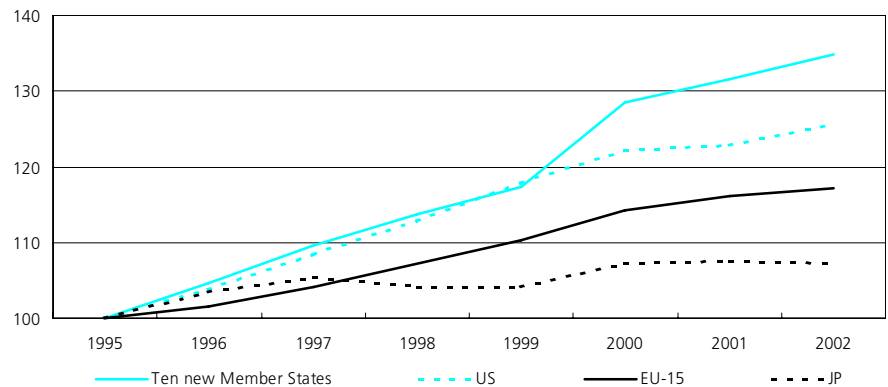
During the 1990s the new Member States faced two challenges: privatisation of existing production structures (which had formerly been publicly owned) and providing economic stimuli to encourage the creation of new enterprises. Privatisation programmes were initiated alongside investment liberalisation, the elimination of administered prices and the creation of institutions to promote a business-orientated economy. The scale of these programmes was unparalleled, often covering thousands of enterprises. Frequently foreign direct investment (FDI) was seen to speed up this process of structural change, in particular in the Czech Republic, Hungary and Poland.

During the same period, there were increasing links between enterprises from EU-15 Member States and those in the new Member States. The predominant feature of cooperation agreements during the early 1990s was the outward processing of labour-intensive activities by EU-15 enterprises, allowing them to obtain substantial cost reductions and to remain competitive ⁽⁴⁾. This strategy also benefited local producers from the 10 new Member States who obtained knowledge and technology transfers. Nevertheless, most commentators agree that as wages in the new Member States start to converge (at least to some degree) with those in the EU-15, standardised labour-intensive tasks will probably be driven to re-localise further east to countries such as the Ukraine and other members of the Commonwealth of Independent States (CIS). As a result, new economic models are starting to emerge regarding the industrial organisation of enterprise groups that have interests both in the EU-15 and the new Member States.

⁽³⁾ Excluding Cyprus and Malta, and to a lesser degree Slovenia.

⁽⁴⁾ For more information on foreign ownership, see *Characteristics of foreign-controlled enterprises*, Statistics in Focus 21/2004, Eurostat, KS-NP-04-021-EN-N..

Figure 1
Development of GDP in constant prices (1995=100)



Source: Eurostat, National Accounts - Breakdowns by branch of activity (theme2/aggs).

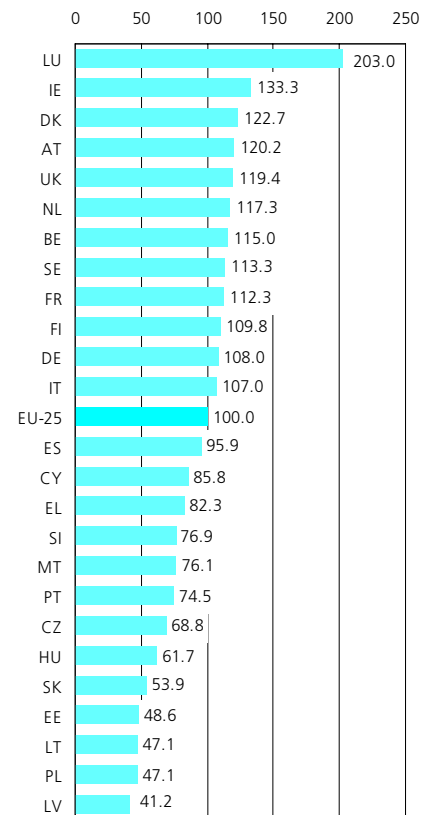
GDP AND POPULATION

EU-15 gross domestic product (GDP) in market prices was forecast at EUR 9 582 billion in 2004. The addition of the 10 new Member States added a further EUR 467 billion, such that EU-25 GDP was estimated to have totalled EUR 10 049 billion in 2004. This figure was just higher than the forecast for GDP in the United States, while it was more than 2.5 times greater than the forecast for GDP in Japan.

Constant price data for the period 1994–2004 show that GDP rose at an annual average rate of 2.1 % per annum in the EU-15, while the 10 new Member States reported average growth of 4.3 % per annum (see Figure 1). There were only five EU-15 Member States that reported GDP growth below the EU-15 average during the period considered; they were Belgium, Germany, France, Italy and Austria. The Baltic States and Poland were the only countries to report above average GDP growth among the 10 new Member States.

There were an estimated 380.7 million inhabitants in the EU-15 at the start of 2004 compared with 74.1 million within the 10 new Member States. As such, the 10 new Member States represented 16.3 % of the total EU-25 population, slightly less than the share recorded by Germany (18.1 %). The number of inhabitants in the EU-15 grew by 0.3 % between January 2003 and January 2004, while there was a contraction of 0.1 % in the number of inhabitants in the 10 new Member States. Poland had by far the largest population of the 10 new Member States, some 38.2 million persons (or 51.5 % of the total for the new Member States), while the Czech Republic and Hungary were the only other countries to report double-digit shares (just under 14 %).

Figure 2
GDP per inhabitant in relation to the EU average, 2004 (EU-25=100) (1)



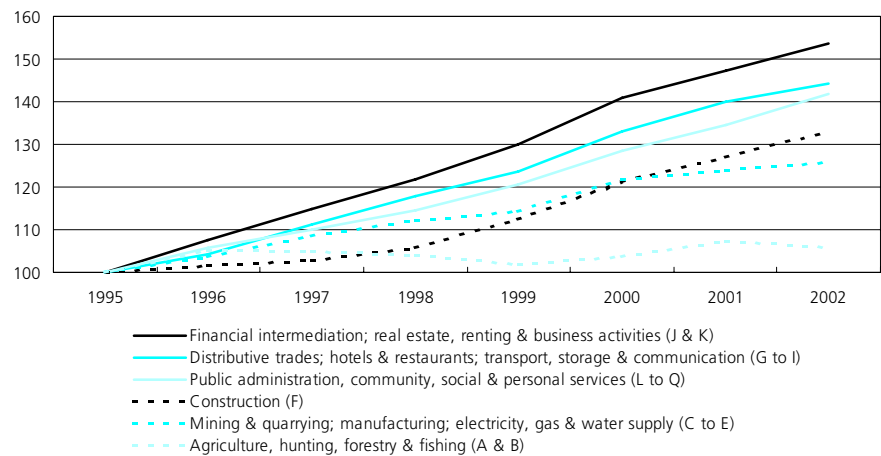
(1) At current market prices using PPS; estimates. Source: Eurostat, National Accounts - ESA95 - aggregates (theme2/aggs).

The level of GDP per inhabitant expressed in terms of purchasing power standards (PPS) is often used to compare the living standards of different countries. This indicator was forecast to be approximately twice as high in the EU-15 Member States (PPS 24 990) as in the 10 new Member States (PPS 12 330) in 2004. There were wide variations in living standards in the EU-15, from a high of PPS 46 560 in Luxembourg to PPS 17 100 in Portugal (see Figure 2). As such, GDP per inhabitant in Luxembourg was forecast to be 2.7 times more than in Portugal in 2004, while the same comparison made some ten years earlier in 1994 showed that living standards were 2.5 times higher in Luxembourg. Within the 10 new Member States the range in living standards was forecasted to be between PPS 19 690 in Cyprus and PPS 9 460 in Latvia. A similar analysis of the ratio of highest to lowest GDP per inhabitant reveals that between 1994 and 2004 the gap in living standards was reduced from 2.9 times higher to 2.1 times higher.

The economic structure of output has experienced marked changes in the last few decades within Europe. A complete time-series for EU-25 is only available back to the mid-1990s. However, even over this relatively short period, the share of the services sector (NACE Sections G to P) in EU-25 total value added increased from 67.6 % in 1995 to 70.7 % by 2002. Financial intermediation, real estate, renting and business activities (NACE Sections J and K) reported the most rapid growth of value added (see Figure 3). On the other hand, the relative importance of the industrial sector (NACE Sections C to E) declined from 24.1 % of total value added to 21.7 % during the same period.

The rate at which the structure of the economies of the 10 new Member States changed was even more rapid. The share of services in total value added rose by 7.8 percentage points to 64.9 % between 1995 and 2002, while the relative share of the industrial sector contracted by 5.1 percentage points to 25.3 %. The changes in the new Member States could also be associated with rapid growth within the business services sector. This was likely to have resulted from an increase in outsourcing, as well as changes in the business paradigm, whereby the creation of value added is increasingly linked to the use of intangible assets.

Figure 3
Breakdown of development of GDP in current prices, EU-25 (1995=100)



Source: Eurostat, National Accounts - Breakdowns by branch of activity (theme2/brkdowns).

ECONOMIC STRUCTURE OF THE EU-25'S BUSINESS ECONOMY BREAKDOWN BY ACTIVITY

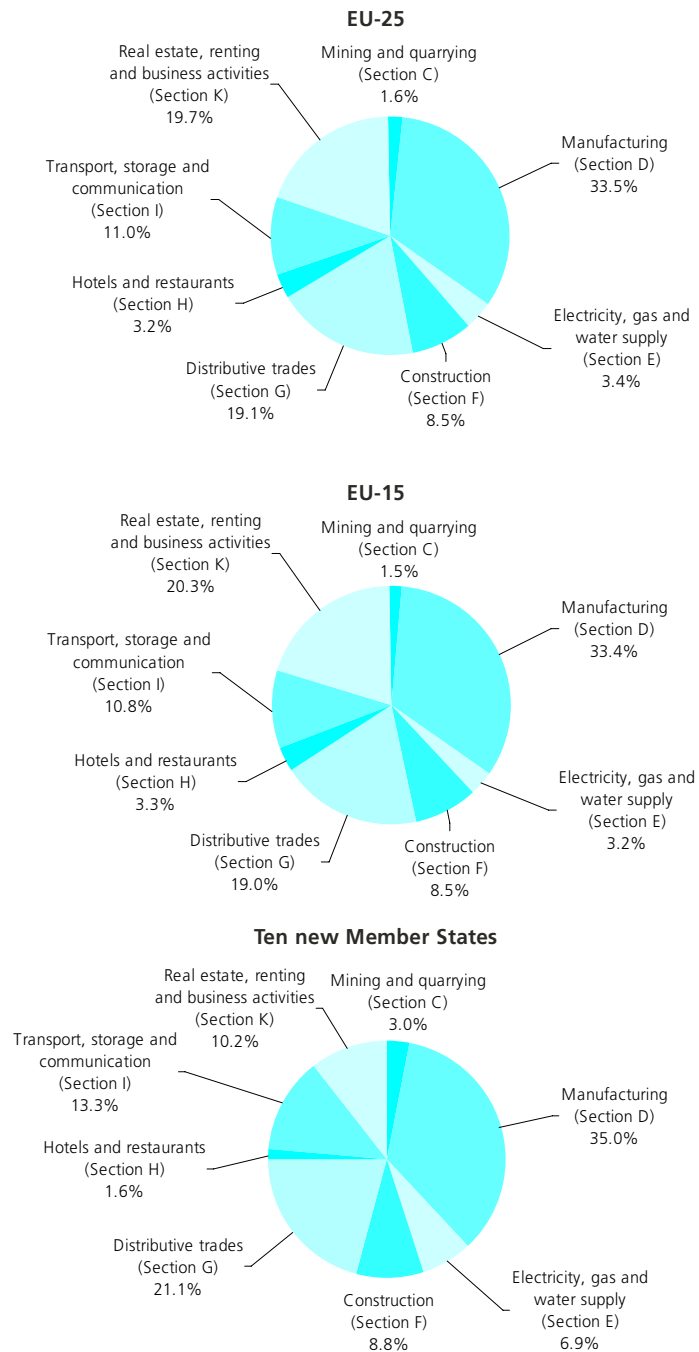
Value added in the EU-25's non-financial business economy (as defined by NACE Sections C to I and K) totalled EUR 4 585 billion in 2001. This figure could be broken down into EUR 4 341 billion among the EU-15 Member States (or 94.7 % of the EU-25 total) and EUR 244 billion among the 10 new Member States (or 5.3 % of the EU-25 total).

After more than a decade of reorganisation, the economic structure of the 10 new Member States resembled more closely those of the EU-15 Member States than they had done at the start of the 1990s. Nevertheless, there were still some notable differences that emerged when comparing the composition of value added in the non-financial business economies of the EU-15 and the 10 new Member States. Figure 4 provides a snapshot of the breakdown of value added in 2001. The 10 new Member States reported a higher proportion of their total value added being generated in six of the eight NACE sections for which data are available, when compared with the corresponding shares for the EU-15. The largest difference was recorded in the electricity, gas and water supply sector (Section E), where 6.9 % of total value added was generated in the non-financial business economy in the 10 new Member States (compared with 3.2 % in the EU-15). Transport, storage and communication (Section I), and real estate, renting and business activities (Section K) were the two NACE sections that were comparatively under-represented in the economies of the 10 new Member States. They accounted for 1.6 % and 10.2 % of total value added in the non-financial business economy in the 10 new Member States, compared with shares of 3.3 % and 20.3 % in the EU-15.

Looking at the importance of the largest mining and manufacturing sectors, it is possible to conclude that industrial activity was more diversified within the 10 new Member States than it was within the EU-15. The top five mining and manufacturing NACE subsections in the 10 new Member States accounted for 51.8 % of total mining and manufacturing value added in 2001, compared with a share of 56.1 % in the EU-15.

A more detailed comparison of the industrial structures of the EU-15 and new Member States economies reveals that industrial specialisation in several of the new Member States was centred on highly labour-intensive sectors. This was the case, for example, in the activities of mining and quarrying, the processing of food, beverages and tobacco, as well as the manufacture of textiles, wood products, and other non-metallic mineral products (see Figure 5). On the other hand, the EU-15 Member States reported a relatively high contribution to value added from the activities of

Figure 4 Breakdown of value added, 2001 (% share of non-financial business economy) (1)



(1) Based on NACE Sections C to I and K; estimates. Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

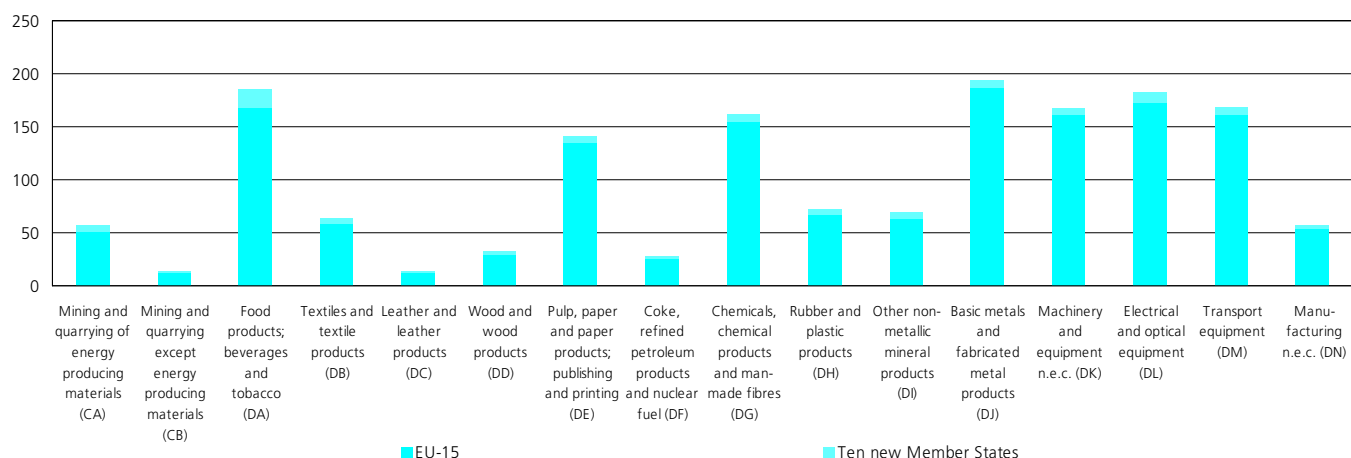
chemicals, basic metals and fabricated metal products, machinery and equipment, and transport equipment.

Although it did not generate the highest amount of value added in the EU-25 in 2001, the food products, beverages and tobacco sector was the largest single mining and manufacturing NACE subsection in 11 of the 25 Member States in 2001. There were six Member States where the basic metals and fabricated metal products sector was largest in 2001 and these helped make this

sector the largest mining and manufacturing NACE subsection in the EU-25 in 2001. Electrical and optical equipment was the largest sector in three countries, and chemicals, chemical products and man-made fibres in two countries. Three Member States reported a unique activity as their largest contributor to mining and manufacturing value added: they were Germany with the transport equipment sector, Portugal with textiles, and Sweden with pulp, paper, publishing and printing.

Figure 5

Breakdown of value added in mining and manufacturing sectors of the EU, 2001 (EUR billion)



Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Table 1

Three largest manufacturing sectors, 2001 (1)

	Largest	Second largest	Third largest
EU-25	Basic metals and fabricated metal products	Food products; beverages and tobacco	Electrical and optical equipment
BE	Chemicals, chemical products and man-made fibres	Basic metals and fabricated metal products	Food products; beverages and tobacco
CZ	Basic metals and fabricated metal products	Transport equipment	Electrical and optical equipment
DK (2)	Food products; beverages and tobacco	Machinery and equipment n.e.c.	Electrical and optical equipment
DE	Transport equipment	Machinery and equipment n.e.c.	Electrical and optical equipment
EE (2)	Food products; beverages and tobacco	Textiles and textile products	Wood and wood products
EL	Food products; beverages and tobacco	Basic metals and fabricated metal products	Coke, refined petroleum products and nuclear fuel
ES	Food products; beverages and tobacco	Basic metals and fabricated metal products	Chemicals, chemical products and man-made fibres
FR	Food products; beverages and tobacco	Electrical and optical equipment	Transport equipment
IE (3)	Chemicals, chemical products and man-made fibres	Electrical and optical equipment	Food products; beverages and tobacco
IT	Basic metals and fabricated metal products	Machinery and equipment n.e.c.	Electrical and optical equipment
CY	Food products; beverages and tobacco	Other non-metallic mineral products	Pulp, paper and paper products; publishing and printing
LV (4)	Food products; beverages and tobacco	Wood and wood products	Textiles and textile products
LT (2)	Food products; beverages and tobacco	Textiles and textile products	Electrical and optical equipment
LU	Basic metals and fabricated metal products	Rubber and plastic products	Other non-metallic mineral products
HU (2)	Food products; beverages and tobacco	Electrical and optical equipment	Transport equipment
MT (5)	Electrical and optical equipment	Food products; beverages and tobacco	Textiles and textile products
NL	Food products; beverages and tobacco	Pulp, paper and paper products; publishing and printing	Chemicals, chemical products and man-made fibres
AT (2)	Basic metals and fabricated metal products	Electrical and optical equipment	Machinery and equipment n.e.c.
PL (6)	Electrical and optical equipment	Transport equipment	Machinery and equipment n.e.c.
PT (7)	Textiles and textile products	Food products; beverages and tobacco	Other non-metallic mineral products
SI (2)	Basic metals and fabricated metal products	Electrical and optical equipment	Chemicals, chemical products and man-made fibres
SK (2)	Basic metals and fabricated metal products	Transport equipment	Electrical and optical equipment
FI	Electrical and optical equipment	Pulp, paper and paper products; publishing and printing	Machinery and equipment n.e.c.
SE	Pulp, paper and paper products; publishing and printing	Transport equipment	Basic metals and fabricated metal products
UK	Food products; beverages and tobacco	Pulp, paper and paper products; publishing and printing	Transport equipment

(1) Based on value added for NACE Subsections within Section D.

(2) NACE Subsections DC and DF, not available.

(3) NACE Subsections DF and DN, not available.

(4) NACE Subsections DA, DC and DF, not available.

(5) NACE Subsections DA and DF, not available.

(6) NACE Subsections DA and DI, not available.

(7) NACE Subsections DF and DH, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Table 1 confirms that several of the new Member States (in particular, the Baltic States, Cyprus and Malta) were reliant on traditional manufacturing sectors such as food processing, textiles, and wood processing. On the other hand, the Czech Republic, Hungary, Poland, Slovenia and Slovakia all had economic structures that more closely resembled that of the EU-15, with basic metals and fabricated metal products, electrical and optical equipment, and transport equipment often among the largest mining and manufacturing NACE subsections.

Relative specialisation ratios go a step further by looking within a particular country at the contribution of each activity to total manufacturing value added and comparing this to the same ratio for the whole of the EU-25 (in this case at the NACE group level). Table 2 shows that as well as being the largest sectors in a number of the new Member States, food processing, textiles, and wood processing

activities also recorded some of the highest specialisation ratios; this was particularly true in the Baltic States. Hungary reported a relatively high degree of specialisation (compared with the EU-25 average) in the lighting equipment and electric lamps sector, and the manufacture of TV and radio receivers, sound or video recording equipment sector. Slovenia was relatively specialised in the manufacture of domestic appliances.

Among the EU-15 Member States, a similar pattern was seen, with the largest sector (in terms of value added) often one of the activities in which a country was most specialised. For example, Germany was relatively specialised in the manufacture of motor vehicles in 2001, while both Finland and Sweden were specialised in paper and wood activities. The three mining and manufacturing activities where Spain recorded its highest relative specialisation were all from the other non-metallic minerals sector. Italy and Portugal were

both relatively specialised in the manufacture of leather products, while Portugal was also specialised in the textiles sector. As regards high-technology sectors, Finland was specialised in the manufacture of TV and radio transmitters and telephone apparatus and the United Kingdom was specialised in the manufacture of aircraft and spacecraft.

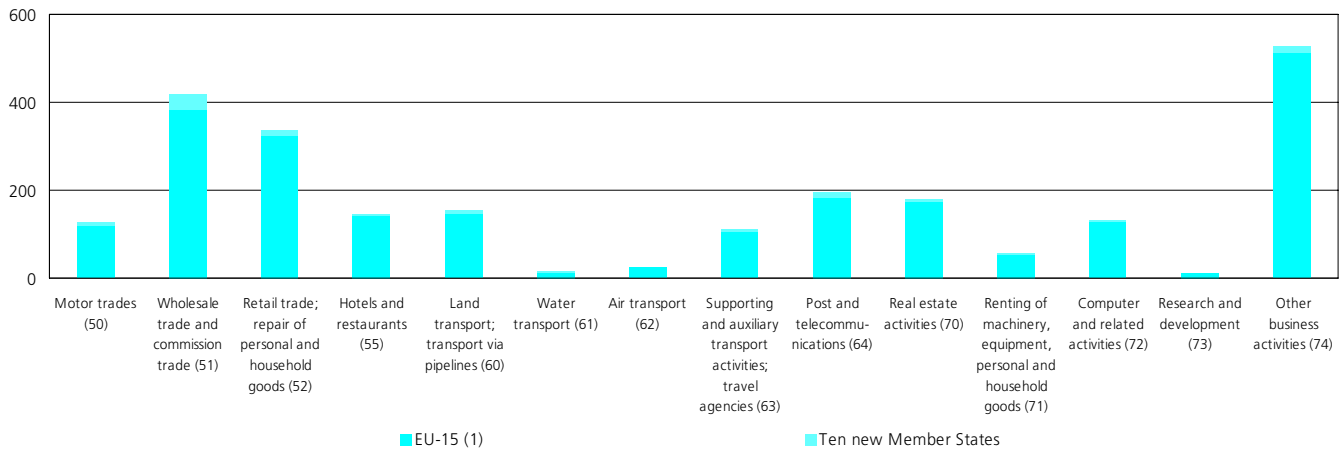
Table 2
Relative specialisation ratios for value added in the manufacturing sector, 2001 (1)

BE Other textiles Other first processing of iron and steel non-ECSC ferro-alloys TV and radio receivers, sound or video recording	CZ Railway, tramway locomotives, rolling stock Glass and glass products Textile weaving	DK Processing and preserving of fish and fish products Electric motors, generators and transformers Optical instruments and photographic equipment
DE Electricity distribution and control apparatus Machine-tools Motor vehicles	EE Sawmilling and planing of wood Processing and preserving of fish and fish products Veneer sheets and boards	ES Ceramic tiles and flags Cutting, shaping and finishing of stone Cement, lime and plaster
FR Steam generators, except central heating hot water boilers Industrial process control equipment Soaps, detergents, cleaning products and toiletries	IT Tanning and dressing of leather Footwear Ceramic tiles and flags	CY Cement, lime and plaster Builders' carpentry and joinery Jewellery and related articles
LV Sawmilling and planing of wood Veneer sheets and boards Processing and preserving of fish and fish products	LT Knitted and crocheted articles Processing and preserving of fish and fish products Sawmilling and planing of wood	LU Other textiles Basic iron and steel and of ferro-alloys (ECSC) Rubber products
HU Lighting equipment and electric lamps TV and radio receivers, sound or video recording Vegetable and animal oils and fats	MT Games and toys Electronic valves and tubes and other electronic components Building and repairing of ships and boats	NL Building and repairing of ships and boats Vegetable and animal oils and fats Prepared animal feeds
AT Sports goods Sawmilling and planing of wood Basic iron and steel and of ferro-alloys (ECSC)	PL Veneer sheets and boards Processing and preserving of fruit and vegetables Building and repairing of ships and boats	PT Footwear Knitted and crocheted fabrics Other products of wood; cork, straw and plaiting materials
SI Made-up textile articles Domestic appliances n.e.c. Tanning and dressing of leather	SK Other first processing of iron and steel non-ECSC ferro-alloys Man-made fibres Railway, tramway locomotives, rolling stock	FI TV and radio transmitters and telephone apparatus Pulp, paper and paperboard Sawmilling and planing of wood
SE Pulp, paper and paperboard Sawmilling and planing of wood Tubes	UK Processing of nuclear fuel Aircraft and spacecraft Miscellaneous manufacturing n.e.c.	

(1) Three most specialised manufacturing activities per country; based on NACE Groups and their specialisation ratios in terms of value added at factor cost; only NACE Groups with a share > 0.5% of national manufacturing are included; table based on available NACE for each country; Greece and Ireland, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Figure 6

Breakdown of value added in the non-financial services sector, EU, 2001 (EUR billion)



(1) 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

The EU-25 generated EUR 2 430 billion of value added in the non-financial services sector in 2001; some 95.4 % of this total was accounted for by the EU-15. Within the services sector (see Figure 6) the five largest non-financial services' divisions contributed 74.1 % to total non-financial services' value added in the 10 new Member States in 2001, compared with 67.9 % in the EU-15. This result was in contrast to that of the mining and manufacturing sector where there was more diversification in the 10 new Member States. The biggest difference was the comparatively high contribution of the wholesale trade sector to the non-financial services' total value added within the 10 new Member States and the relatively low contribution of other business activities within the economies of the 10 new Member States.

Within the EU-25 the largest services sectors (at the NACE division level) in 2001 were other business activities, wholesale trade, and retail trade (see Table 3). These activities often appeared among the three largest services sectors when looking at the largest sectors in each country. Indeed, this was the case in all but three of the EU-15 Member States for which data are available (5). The exceptions were Denmark and Sweden, where real estate activities generated more value added than the retail trade sector and Luxembourg, where post and telecommunications generated more value added than the retail trade sector. This same sector (post and telecommunications) also played a relatively important role in the generation of value added in the non-financial services sector of 5 of the 10 new Member States. It was the largest non-financial services sector in Hungary in 2001, the second largest services sector in Latvia and Slovakia, and the third largest in the Czech Republic and Lithuania. The other main divergence in the

Table 3

Three largest non-financial services sectors, 2001 (1)

	Largest	Second largest	Third largest
EU-25 (2)	Other business activities	Wholesale trade	Retail trade
BE	Other business activities	Wholesale trade	Retail trade
CZ	Wholesale trade	Other business activities	Post and telecommunications
DK	Wholesale trade	Other business activities	Real estate activities
DE (3)	Other business activities	Wholesale trade	Retail trade
EE (4)	Wholesale trade	Auxiliary transport activities	Retail trade
EL	:	:	:
ES	Wholesale trade	Other business activities	Retail trade
FR	Other business activities	Retail trade	Wholesale trade
IE (5)	Other business activities	Retail trade	Wholesale trade
IT	Other business activities	Wholesale trade	Retail trade
CY (6)	Hotels and restaurants	Wholesale trade	Retail trade
LV	Wholesale trade	Post and telecommunications	Retail trade
LT	Wholesale trade	Land transport	Post and telecommunications
LU	Other business activities	Wholesale trade	Post and telecommunications
HU	Post and telecommunications	Wholesale trade	Land transport
MT (2) (7)	Hotels and restaurants	Wholesale trade	Air transport
NL (8)	Other business activities	Wholesale trade	Retail trade
AT	Wholesale trade	Other business activities	Retail trade
PL (9)	Wholesale trade	Other business activities	Land transport
PT	Wholesale trade	Retail trade	Other business activities
SI (10)	Wholesale trade	Other business activities	Retail trade
SK (4)	Wholesale trade	Post and telecommunications	Other business activities
FI	Wholesale trade	Other business activities	Retail trade
SE	Other business activities	Wholesale trade	Real estate activities
UK	Other business activities	Wholesale trade	Retail trade

(1) Based on value added for NACE Divisions within Sections G, H, I and K. (2) NACE Division 73, not available.

(3) 2000. (4) NACE Divisions 61 and 62, not available. (5) NACE Divisions 61, 62 and 63, not available.

(6) NACE Divisions 70, 71, 72, 73 and 74, not available. (7) NACE Division 71, 2000.

(8) NACE Division 73, 2000. (9) NACE Divisions 61, 62, 63 and 64, not available.

(10) NACE Divisions 60 and 61, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

ranking of services sectors among the new Member States was the elevated position of the hotels and restaurants sector in the two Mediterranean islands of Cyprus and Malta.

Indeed, the hotels and restaurants sector was the largest contributor to non-financial services' value added in 2001 in both of these countries.

(5) Greece, not available.

Specialisation ratios can also be produced for the services sector, looking at the proportion of non-financial services' value added accounted for by a particular activity within each country and comparing this to the same ratio for the whole of the EU-25 in 2001. The most specialised activities (at the NACE group level) in the majority of countries were within the distributive trades sector, spread across the activities of motor trades, wholesale trade, and retail trade. However, the data presented in Table 4 confirm the importance of the hotels and restaurants sector in Cyprus and Malta (as well as in Spain and Austria). The highest degree of specialisation in the services sector in Hungary was recorded for the telecommunications sector, which registered the third highest specialisation ratio in Slovakia.

Table 4
Relative specialisation in the non-financial services sector, 2001 (1)

BE Wholesale of machinery, equipment and supplies Labour recruitment and provision of personnel Wholesale of household goods	CZ Other wholesale Retail sale of automotive fuel Wholesale of non-agricultural intermediate products	DK Wholesale of machinery, equipment and supplies Wholesale of agricultural raw materials, live animals Real estate activities
EE Supporting and auxiliary transport activities; travel agencies Retail sale of automotive fuel Wholesale of non-agricultural intermediate products	ES Retail sale of food, beverages, tobacco in specialized stores Hotels; camping sites, other short-stay accommodation Restaurants; bars; canteens and catering	FR Labour recruitment and provision of personnel Retail sale of pharmaceuticals, cosmetics & toiletries Wholesale of agricultural raw materials, live animals
IE Wholesale of food, beverages and tobacco Computer and related activities Hotels; camping sites, other short-stay accommodation	IT Wholesale on a fee or contract basis Maintenance and repair of motor vehicles Industrial cleaning	CY (2) Hotels; camping sites, other short-stay accommodation Restaurants; bars; canteens and catering Air transport
LV Wholesale of non-agricultural intermediate products Retail sale of automotive fuel Retail sale not in stores	LT Retail sale of automotive fuel Transport via railways Sale of motor vehicle parts and accessories	LU Air transport Inland water transport Transport via railways
HU Other wholesale Telecommunications Retail sale of automotive fuel	MT Air transport Hotels; camping sites, other short-stay accommodation Supporting and auxiliary transport activities; travel agencies	NL Inland water transport Wholesale of agricultural raw materials, live animals Wholesale of machinery, equipment and supplies
AT Hotels; camping sites, other short-stay accommodation Wholesale of agricultural raw materials, live animals Wholesale of machinery, equipment and supplies	PL Other wholesale Retail sale of automotive fuel Wholesale of food, beverages and tobacco	PT Air transport Wholesale of household goods Wholesale of food, beverages and tobacco
SI Wholesale on a fee or contract basis Other wholesale Retail sale of automotive fuel	SK Wholesale on a fee or contract basis Other wholesale Telecommunications	FI Wholesale of machinery, equipment and supplies Other land transport Air transport
SE Real estate activities Retail sale of automotive fuel Computer and related activities	UK Miscellaneous business activities n.e.c. Air transport Labour recruitment and provision of personnel	

(1) Three most specialised non-financial services sectors per country; based on specialisation ratios in terms of value added at factor cost; only NACE with a share >0.5% of national non-financial services (NACE Sections G, H, I and K) are included; NACE Groups 60.3, 61.1, 74.2, 74.3 and 74.6 and NACE Division 73, not available; NACE 55.1 and 55.2 and NACE 55.3 to 55.5 are aggregated; no breakdown available for NACE Divisions 62, 63, 70, 71 and 72; table based on available NACE for each country; Germany and Greece, not available.

(2) Excluding NACE Section K.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Table 5

Breakdown of activity by enterprise size-class, EU-25, 2001 (% share of value added and employment in each NACE Section) (1)

NACE label (NACE Section)	Value added				Employment			
	Micro (1 to 9 persons employed)	Small (10-49 persons employed)	Medium (50-249 persons employed)	Large (250 or more persons employed)	Micro (1 to 9 persons employed)	Small (10-49 persons employed)	Medium (50-249 persons employed)	Large (250 or more persons employed)
Mining and quarrying (C)	11.3	8.7	17.5	62.5	4.6	13.7	13.2	68.5
Manufacturing (D)	7.3	15.8	22.0	54.9	9.6	20.6	25.2	44.5
Electricity, gas and water supply (E)	5.3	4.1	11.5	79.1	1.9	5.0	13.6	79.5
Construction (F)	31.5	32.2	17.8	18.5	30.4	36.0	18.3	15.3
Distributive trades (G)	26.8	24.4	17.9	30.8	39.6	21.2	12.4	26.8
Hotels & restaurants (H)	38.4	24.3	12.7	24.6	45.7	24.4	10.2	19.7
Transport, storage & communication (I)	11.1	11.9	10.6	66.4	17.0	14.4	11.7	56.9
Real estate, renting & business activities (K)	32.9	19.9	18.7	28.5	31.9	18.0	16.7	33.4

(1) Data are provided for the non-financial business economy (NACE Sections C to I and K); NACE Sections C to F, employment data relates to the number of employees instead of the number of persons employed.

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass).

ECONOMIC STRUCTURE OF THE EU-25'S BUSINESS ECONOMY BREAKDOWN BY SIZE CLASS

There is, a priori, no optimum structure for the size of an enterprise. During the mid-1900s most economists agreed that economic modernisation was linked to increasing economies of scale. However, the subsequent rapid growth of the services sector, often on the back of an enterprise structure that was dominated by small and medium-sized enterprises (SMEs), led to a revision of these theories. The link between scale economies and increased productivity and competitiveness was further questioned when a large number of industrial conglomerates re-focused on their core activities during the 1980s and 1990s, while at the same time the complexity of production structures evolved, as industrial subcontracting and outsourcing emerged as new economic models alongside 'Just-in-Time' (JIT) production methods. However, it is clear that in some activities, particularly those characterised by network provision (for example, electricity supply or transport and communications), a minimum efficient scale of production exists.

Table 5 provides information on the breakdown of value added and employment according to enterprise size-class. While the vast majority of enterprises in the EU-25 are small (with less than 50 persons employed), they do not account for the majority of value added or employment. In 2001, large enterprises (with 250 or more persons employed) generated a majority of the value added in the mining and quarrying, manufacturing, electricity, gas and water supply, and transport, storage and communications sectors, their share of total value added rising as high as 79.1 % for electricity, gas and water supply. Large enterprises usually accounted for a lower proportion of total employment and as such it is possible to say that they were generally more productive than smaller enterprises. However, this relationship was not valid in three of the NACE sections for which data are available in Table 5: mining and quarrying, electricity, gas and water supply, and real estate, renting and business activities.

A more detailed breakdown of value added is presented in Table 6, with data provided at the level of NACE divisions. On average, large enterprises generated 43.3 % of the total value added generated in 2001 in the EU-25 within the non-financial business economy. This was considerably above the proportion of value added that was associated with each of the three other size-classes, which were all situated within the narrow range of 18 to 20 % of total value added.

Table 6

Breakdown of value added by enterprise size-class, EU-25, 2001 (% share of value added in each NACE Division) (1)

NACE label (NACE Division)	Micro (1 to 9 persons employed)	Small (10-49 persons employed)	Medium (50-249 persons employed)	Large (250 or more persons employed)
NON-FINANCIAL BUSINESS ECONOMY (Sections C to I and K)	19.5	19.0	18.2	43.3
Mining of coal and lignite; extraction of peat (10)	1.4	1.7	4.8	92.1
Extraction of crude petroleum and natural gas (11)	13.7	3.2	17.9	65.2
Mining of metal ores (13)	0.2	0.6	6.5	92.6
Other mining and quarrying (14)	11.8	36.0	27.6	24.6
Manufacture of food products and beverages (15)	8.7	15.1	23.0	53.1
Manufacture of tobacco products (16)	0.2	11.5	5.8	82.6
Manufacture of textiles (17)	9.8	23.8	35.4	31.0
Manufacture of wearing apparel; dressing; dyeing of fur (18)	17.4	28.4	27.3	26.9
Tanning, dressing of leather; manufacture of luggage (19)	17.5	30.3	28.6	23.6
Wood and products of wood and cork, except furniture (20)	22.1	31.3	25.3	21.2
Pulp, paper and paper products (21)	2.5	9.5	24.3	63.7
Publishing, printing, reproduction of recorded media (22)	13.9	22.7	23.7	39.7
Coke, refined petroleum products and nuclear fuel (23)	0.5	3.0	3.9	92.6
Chemicals and chemical products (24)	1.4	5.6	16.7	76.3
Rubber and plastic products (25)	5.1	18.4	32.5	44.0
Other non-metallic mineral products (26)	7.1	18.1	26.4	48.3
Basic metals (27)	1.6	7.5	19.7	71.2
Fabricated metal products, except machinery and equipment (28)	14.1	34.3	29.0	22.6
Machinery and equipment n.e.c. (29)	6.2	17.1	27.4	49.3
Office machinery and computers (30)	5.1	7.0	12.1	75.9
Electrical machinery and apparatus n.e.c. (31)	4.4	11.8	19.7	64.1
Radio, television and communication equipment and apparatus (32)	3.6	7.0	12.1	77.2
Medical, precision and optical instruments, watches and clocks (33)	10.7	18.1	24.1	47.1
Motor vehicles, trailers and semi-trailers (34)	0.8	3.1	8.1	88.0
Other transport equipment (35)	2.7	5.3	10.6	81.4
Furniture; manufacturing n.e.c. (36)	17.9	25.8	28.2	28.2
Recycling (37)	21.5	41.1	25.9	11.5
Electricity, gas, steam and hot water supply (40)	5.2	3.4	10.6	80.8
Collection, purification and distribution of water (41)	6.4	9.4	18.6	65.5
Construction (45)	31.5	32.2	17.8	18.5
Sale, maintenance and repair of motor vehicles (50)	27.6	27.9	20.6	23.9
Wholesale trade and commission trade (51)	24.0	29.2	22.1	24.7
Retail trade (52)	30.1	17.3	11.7	41.0
Hotels and restaurants (55)	38.4	24.3	12.7	24.6
Land transport (60)	22.5	21.2	14.3	42.0
Air transport (62)	1.7	2.9	10.6	84.8
Supporting and auxiliary transport activities; travel agencies (63)	12.4	18.7	18.7	50.2
Post and telecommunications (64)	1.7	1.3	2.0	95.0
Real estate activities (70)	53.3	18.1	16.9	11.6
Renting of machinery and equipment (71)	27.9	22.2	24.8	25.1
Computer and related activities (72)	20.7	17.8	20.2	41.3
Research and development (73)	8.0	9.2	27.9	54.9
Other business activities (74)	30.1	21.0	18.0	31.0

(1) Data are provided for the non-financial business economy (NACE Sections C to I and K); NACE Divisions 12 and 61, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass).

OUTPUT AND PRICE TRENDS

To study the evolution of the industrial economy over time, the short-term statistics (STS) database can be used to obtain annual indices for industrial production, output prices and turnover. These two concepts are linked to the production of branches and not to the production of sectors.

EU-25 industrial output (NACE Sections C to E) rose by 0.6 % between 2002 and 2003 (based on annual averages for both of these years), having recorded a contraction of 0.6 % in 2002 and a modest increase of 0.2 % in 2001 (see Figure 7). These figures could be contrasted with those for the period 1995 to 2000, when in four of the six years considered industrial output rose by upwards of 3 %, the highest growth rate being reported in 2000 when EU-25 industrial production grew by 4.8 %.

Industrial output in the 10 new Member States generally rose at a faster pace in recent years compared with the EU-15 Member States. Taking the five-year period from 1998 to 2003, industrial output rose, on average, by at least 3.9 % in Ireland, Estonia, Lithuania, Poland and Finland. There followed a group of three countries where industrial output rose on average by between 2.0 and 3.0 % over the same period: Latvia, Luxembourg and Slovenia. The United Kingdom was the only Member State to report declining industrial output during the period 1998 to 2003 ⁽⁶⁾.

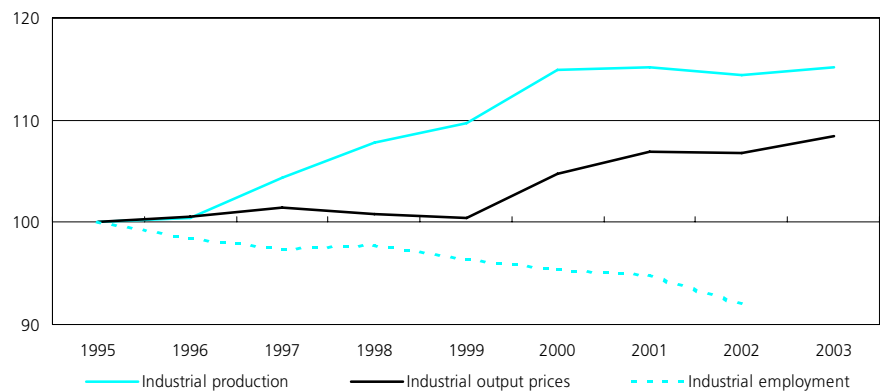
⁽⁶⁾ The Czech Republic, Greece, Cyprus, Hungary, Malta, Austria and Slovakia, not available.

The evolution of EU-25 production across different manufacturing subsections showed wide variations (see Table 7). The fastest expanding sectors (with annual average growth of between 3.3 to 4.2 % during the period 1995 to 2003) included chemicals, chemical products and man-made fibres, electrical and optical equipment, and transport equipment. There was also fairly high growth (2.2 %) recorded in the rubber and plastic products sector. Moderate growth (of between 1.0 and 1.5 %) per annum was recorded for pulp, paper and paper products, publishing and printing, food products, beverages and tobacco, basic metals and fabricated metal products, wood and wood products, as well as machinery and equipment. At the other end of the range, textiles and textile products, and leather and leather products both reported annual average declines of close to 4 % during the period 1995 to 2003. The coke, refined petroleum products and nuclear fuels sector was the only other manufacturing NACE subsection to report that output fell.

Industrial output prices rose overall by 8.4 % between 1995 and 2003 within the EU-25. Having fallen by 0.1 % for both the EU-25 and the EU-15 in 2002, industrial output prices rose by 1.6 % in the EU-25 and by 1.5 % in the EU-15 in 2003. Between 2002 and 2003 prices fell in Lithuania (0.7 %) and the Czech Republic (0.3 %), while they increased by 4.0 % or more in Slovakia, Sweden, Hungary, the Netherlands and Luxembourg.

Manufacturing (NACE Section D) prices rose at an almost identical pace to industrial prices (8.2 %) during the period 1995 to 2003; this was equivalent to a 1.0 % increase per annum over the period considered. Over the same period the mining and quarrying sector (NACE Section C), and the electricity, gas and water supply sector (NACE Section E) had much higher price increases (22.0 % and 18.2 % respectively in the EU-25). The price of oil played an important role in determining prices in both of these sectors.

Figure 7
Evolution of main indicators for total industry (NACE Sections C to E), EU-25 (1995=100)



Source: Eurostat, European Business Trends.

Table 7
Development of industrial production, EU-25, growth rates (%)

NACE label (NACE code)	1995	1996	1997	1998	1999	2000	2001	2002	2003
TOTAL INDUSTRY (C-E)	3.2	0.5	3.9	3.3	1.7	4.8	0.2	-0.6	0.6
Mining and quarrying (C)	2.3	1.6	-2.2	-0.9	1.3	-2.8	-4.1	1.0	-3.1
Manufacturing (D)	3.2	0.1	4.5	3.6	1.6	5.2	0.2	-0.9	0.6
Food products; beverages and tobacco (DA)	1.5	1.5	3.1	0.9	1.3	0.9	1.1	1.9	0.8
Textiles and textile products (DB)	-1.9	-4.4	0.6	-2.3	-7.0	-1.4	-3.6	-7.5	-4.6
Leather and leather products (DC)	1.0	-3.4	1.1	-5.4	-3.9	-3.3	-4.0	-7.8	-8.7
Wood and wood products (DD)	-0.9	-3.4	4.4	3.3	2.6	5.4	-3.0	0.6	0.8
Pulp, paper and paper products; publishing and printing (DE)	-1.4	-0.7	4.2	3.5	3.2	2.4	-1.2	0.2	0.4
Coke, refined petroleum products and nuclear fuel (DF)	1.7	-0.2	-2.1	1.9	-5.6	2.4	-0.2	-2.5	2.1
Chemicals, chemical products and man-made fibres (DG)	3.6	2.7	6.4	3.2	4.6	5.2	2.8	4.8	2.1
Rubber and plastic products (DH)	3.0	-0.9	5.8	4.5	2.5	4.8	-0.7	0.1	1.7
Other non-metallic mineral products (DI)	2.0	-2.7	2.9	2.3	2.3	3.8	-0.9	-1.9	1.3
Basic metals and fabricated metal products (DJ)	5.1	-1.3	4.7	3.1	-0.7	5.8	0.1	-1.2	-0.1
Machinery and equipment n.e.c. (DK)	7.7	0.3	2.9	2.7	-2.5	5.7	1.6	-1.3	-1.1
Electrical and optical equipment (DL)	5.5	1.5	5.6	6.4	5.9	14.2	-1.4	-5.3	0.7
Transport equipment (DM)	3.1	2.4	8.0	9.0	3.9	5.7	1.9	-0.3	3.2
Manufacturing n.e.c. (DN)	-0.2	-0.9	1.9	5.1	2.7	2.9	0.1	-4.2	-2.1
Electricity, gas and water supply (E)	3.4	3.3	0.6	2.5	2.1	3.3	2.4	0.4	3.2

Source: Eurostat, European Business Trends.

Table 8
Development of domestic output prices, EU-25, growth rates (%)

NACE label (NACE code)	1995	1996	1997	1998	1999	2000	2001	2002	2003
TOTAL INDUSTRY (C-E)	4.3	0.5	0.9	-0.6	-0.4	4.3	2.0	-0.1	1.6
Mining and quarrying (C)	:	-2.1	4.1	0.2	0.2	8.8	5.5	1.1	2.7
Manufacturing (D)	4.8	1.1	0.6	-0.7	0.1	4.5	1.1	0.2	1.1
Food products; beverages and tobacco (DA)	:	2.3	1.4	-0.2	-0.7	1.7	4.0	1.1	1.6
Textiles and textile products (DB)	4.1	1.0	0.8	0.9	-0.1	1.2	1.5	0.4	0.5
Leather and leather products (DC)	4.7	2.0	1.5	1.3	0.3	2.0	4.4	2.2	0.7
Wood and wood products (DD)	5.0	-1.0	1.3	0.7	-0.6	0.9	0.9	-0.1	0.7
Pulp, paper and paper products; publishing and printing (DE)	:	-0.8	-1.1	0.9	-0.3	4.9	1.9	0.0	0.2
Coke, refined petroleum products and nuclear fuel (DF)	3.6	7.7	2.4	-10.4	10.9	36.0	-5.0	-2.2	3.5
Chemicals, chemical products and man-made fibres (DG)	7.4	-1.3	0.9	-1.7	-0.7	6.4	1.5	-0.7	1.9
Rubber and plastic products (DH)	6.7	0.0	-0.5	-0.7	-0.9	2.2	1.1	0.0	0.4
Other non-metallic mineral products (DI)	2.7	1.0	1.0	1.1	1.3	1.9	2.5	1.7	0.7
Basic metals and fabricated metal products (DJ)	:	-0.9	0.5	0.7	-2.2	4.3	0.4	-0.1	1.7
Machinery and equipment n.e.c. (DK)	3.3	2.7	1.5	1.1	0.8	1.0	1.5	1.3	0.9
Electrical and optical equipment (DL)	:	-0.9	-1.6	-2.3	-1.9	-0.8	-1.6	-1.4	-1.7
Transport equipment (DM)	:	1.9	0.2	0.9	0.6	0.3	0.6	1.2	0.8
Manufacturing n.e.c. (DN)	:	3.0	1.0	1.1	1.0	1.3	1.6	1.7	1.7
Electricity, gas and water supply (E)	:	-0.3	1.9	-2.1	-3.4	6.6	7.9	-0.3	7.4

Source: Eurostat, European Business Trends.

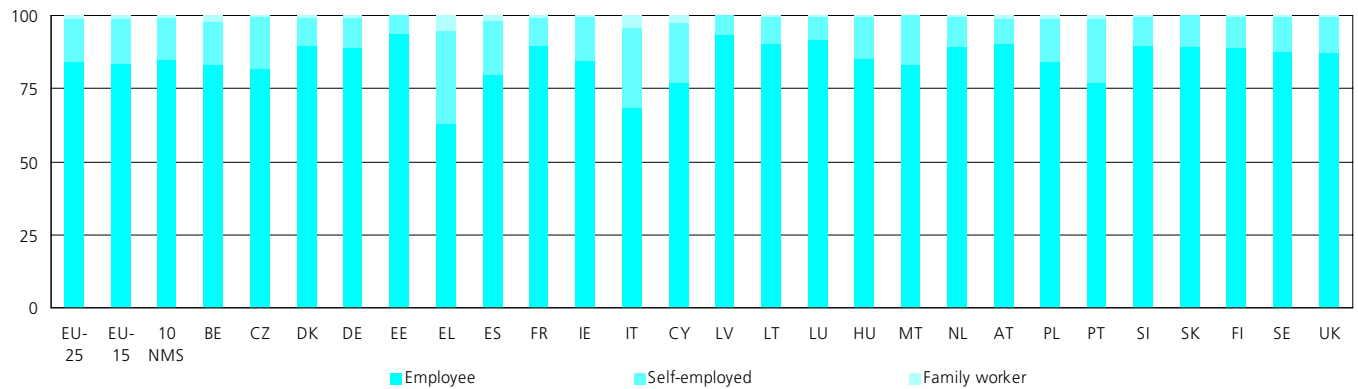
With the exception of the coke, refined petroleum products and nuclear fuels sector (NACE Subsection DF), where price increases averaged 4.6 % per annum between 1995 and 2003 in the EU-25, none of the manufacturing subsections reported that output prices rose by more than 2 % per annum. Electrical and optical equipment was the only sector to report that output prices for the EU-25 fell, down by more than 11 % between 1995 and 2003 (see Table 8).

Lengthy time-series for annualised short-term statistics only exist for a limited number of service sectors, mainly within the area of distributive trades. These show that turnover in the EU-25 rose, on average, by 2.9 % per annum in the wholesale trade sector and by 3.4 % per annum in the hotels and restaurants sector between 1995 and 2002. Note that these growth rates are not deflated and hence include price changes. The index of the volume of sales (deflated turnover) in the retail trade

sector (excluding repair of household goods) rose, on average, by 1.9 % per annum between 1995 and 2003.

Figure 8

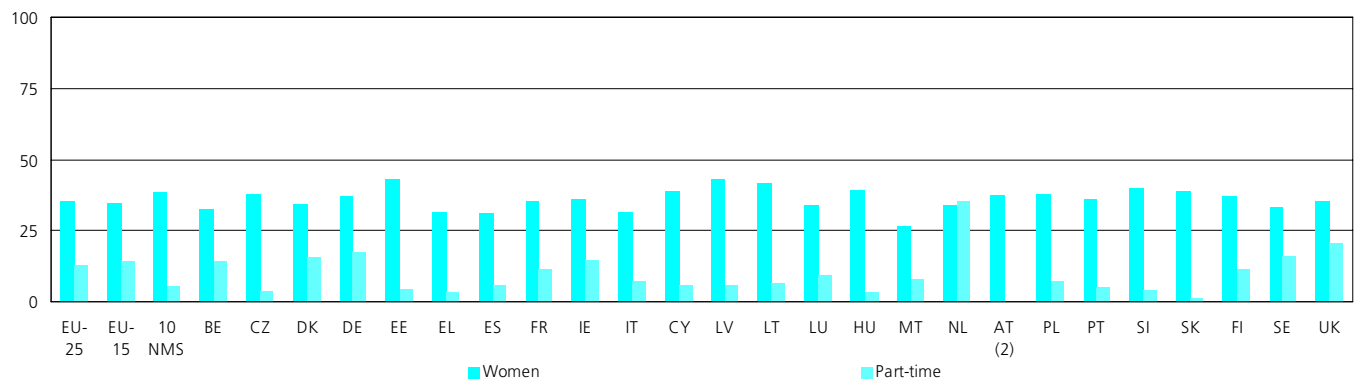
Labour force characteristics in the business economy (NACE Sections C to K) by employment status, 2002 (share of persons aged 15 or more) (%) (1)



(1) Non-response, not considered; 10 NMS, average for the ten new Member States.
Source: Eurostat, Labour Force Survey.

Figure 9

Labour force characteristics in the business economy (NACE Sections C to K), 2002 (% share of those employed aged 15 or more) (1)



(1) Non-response, not considered; 10 NMS, average for the ten new Member States.
(2) Part-time employment, not available.
Source: Eurostat, Labour Force Survey.

EMPLOYMENT TRENDS AND CHARACTERISTICS

According to the Labour Force Survey, in 2002 there were 192 million persons that made up the EU-25 workforce. The contribution of the 10 new Member States to this total was 15.1 %. Note that these figures cover the whole economy (NACE Sections A to Q). Restricting the analysis to the business economy activities (NACE Sections C to K), the EU-25 workforce was composed of 125 million persons. Of these, some 83.9 % were paid employees, 14.7 % were self-employed and the remaining 1.4 % were family workers (see Figure 8).

The main difference in the composition of the EU-15 and the 10 new Member States' workforces in terms of employment characteristics was the apparently low proportion (0.8 %) of family workers in the business economy workforce (NACE Sections C to K) of the 10 new Member States. However, closer inspection of the data reveals that the share of family workers in the 10 new Member States was not atypical. Rather, the difference was due to the relatively high proportion of family workers in the four southern EU-15 Member States of Greece, Spain and Portugal (where family workers accounted, on average, for 3.3 % of the total workforce). If these four countries are removed from the EU-15 aggregate, then the proportion of family workers in the total workforce of the 10 new Member States was identical to the other EU-15 Member States (0.8 %).

A breakdown by gender reveals that there were 81.1 million men and 43.9 million women working in the EU-25's business economy in 2002. As such, women accounted for 35.1 % of the business economy workforce, compared with 43.4 % within the whole economy (NACE Sections A to Q). This could be explained by a higher proportion of women working in areas such as education, health and social work, community and personal services. The 10 new Member States generally reported that women made up a higher proportion of the business economy workforce than in the EU-15 Member States, some 38.5 % compared with 35.1 % (see Figure 9). The Baltic States were the only Member States where the proportion of women in the business economy workforce rose to above 40 %. Malta was the only country where the proportion of women fell below 30 %, although Greece, Spain and Italy all registered shares that were between 30 and 32 %.

There were relatively large differences between the EU-15 and the 10 new Member States as regards the propensity to employ on a part-time basis (see again Figure 9). Some 14.3 % of the business economy workforce in the EU-15 had a part-time work contract in 2002, compared with just 5.3 % of the workforce in the 10 new Member States. All 10 of the new Member States had a part-time employment rate that was below 10 %, as did Greece, Spain, Italy, Luxembourg and Portugal. At the other end of the range, the Netherlands stood out as having by far the highest proportion of persons with a part-time work contract (35.1 %), followed by the United Kingdom (20.7 %).

According to structural business statistics (SBS), there were 113 million persons ⁽⁷⁾ working in the EU-25's non-financial business economy in 2001 (as covered by NACE Sections C to I and K). Of these, some 32.1 % were working in the industrial sector (NACE Sections C to E), while 10.5 % were working in the construction sector (NACE Section F) and the remaining 57.3 % in the non-financial services sector (NACE Sections G to I and K) - see Table 9. The 10 new Member States had a higher share of total EU-25 employment within the industrial sector (18.1 %) as compared with the construction (12.7 %) or non-financial services sectors (11.9 %).

This pattern of relatively high proportions of the total number of persons employed within industrial activities was repeated in 9 of the 10 new Member States. Indeed, Cyprus was the only one of the new Member States to report a higher proportion of EU-25 persons employed in the non-financial services sector. Within the EU-15 Member States it was common to find a higher proportion of the EU-25 workforce within the non-financial services sector; this was particularly the case in the Benelux countries, Denmark, France, Austria and the United Kingdom. Spain and Portugal reported a relatively high proportion of the EU-25 workforce within the construction sector, while Germany accounted for 21.8 % of the industrial workforce compared with 15.7 % of the non-financial services workforce.

⁽⁷⁾ Slovenia, number of employees; Cyprus, excluding NACE Section K; Malta, excluding NACE Section E.

Table 9
Number of persons employed in the non-financial business economy, 2001 (1)

NACE label (NACE Section)	10																
	EU-25	EU-15	NMS	BE	CZ	DK	DE (2)	EE	EL (3)	ES	FR	IE (4)	IT	CY (5)			
Non-financial business economy (C to I and K)																	
Number of persons employed (thousands)	112 955	97 175	15 780	2 485	3 535	1 714	20 089	356	349	11 462	14 027	887	14 022	176			
Share of EU-25 (%)	100.0	86.0	14.0	2.2	3.1	1.5	17.8	0.3	:	10.1	12.4	:	12.4	0.2			
Mining and quarrying; manufacturing; electricity, gas and water supply (C to E)																	
Number of persons employed (thousands)	36 294	29 736	6 559	709	1 518	498	7 917	140	257	2 762	4 312	271	5 003	39			
Share of EU-25 (%)	100.0	81.9	18.1	2.0	4.2	1.4	21.8	0.4	0.7	7.6	11.9	0.7	13.8	0.1			
Construction (F)																	
Number of persons employed (thousands)	11 900	10 385	1 515	278	376	184	1 988	31	92	1 953	1 458	:	1 529	27			
Share of EU-25 (%)	100.0	87.3	12.7	2.3	3.2	1.5	16.7	0.3	0.8	16.4	12.3	:	12.8	0.2			
Non-financial services (G to I and K)																	
Number of persons employed (thousands)	64 761	57 054	7 707	1 499	1 640	1 027	10 184	186	:	6 747	8 257	582	7 490	110			
Share of EU-25 (%)	100.0	88.1	11.9	2.3	2.5	1.6	15.7	0.3	:	10.4	12.7	0.9	11.6	0.2			
	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI (6)	SK	FI	SE	UK			
Non-financial business economy (C to I and K)																	
Number of persons employed (thousands)	496	699	179	1 665	108	5 027	2 215	7 254	2 813	549	942	1 216	2 617	18 145			
Share of EU-25 (%)	0.4	0.6	0.2	1.5	0.1	4.4	2.0	6.4	2.5	0.5	0.8	1.1	2.3	16.1			
Mining and quarrying; manufacturing; electricity, gas and water supply (C to E)																	
Number of persons employed (thousands)	174	281	36	828	32	972	668	2 811	952	255	480	457	831	4 092			
Share of EU-25 (%)	0.5	0.8	0.1	2.3	0.1	2.7	1.8	7.7	2.6	0.7	1.3	1.3	2.3	11.3			
Construction (F)																	
Number of persons employed (thousands)	43	69	27	117	8	496	235	709	382	62	74	126	237	1 367			
Share of EU-25 (%)	0.4	0.6	0.2	1.0	0.1	4.2	2.0	6.0	3.2	0.5	0.6	1.1	2.0	11.5			
Non-financial services (G to I and K)																	
Number of persons employed (thousands)	280	350	116	719	68	3 559	1 312	3 735	1 479	232	387	633	1 549	12 687			
Share of EU-25 (%)	0.4	0.5	0.2	1.1	0.1	5.5	2.0	5.8	2.3	0.4	0.6	1.0	2.4	19.6			

(1) 10 NMS, ten new Member States.

(2) NACE Section G, 2000.

(3) Excluding NACE Sections G to I and K.

(4) NACE Section F, not available.

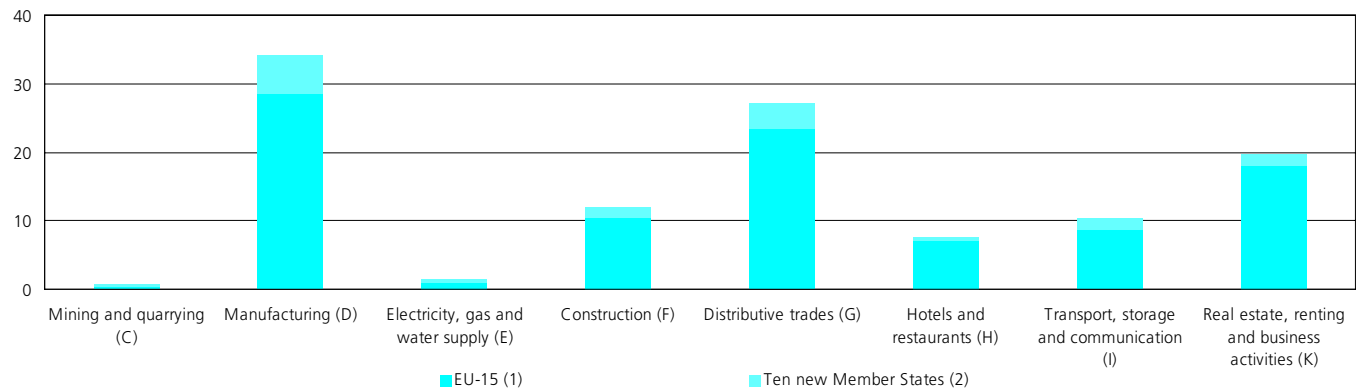
(5) NACE Section K, not available.

(6) Number of employees.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Figure 10

Breakdown of the number of persons employed in the non-financial business economy, 2001 (millions)



(1) Excluding Greece, NACE Sections G to I and K.
 (2) Excluding Cyprus, NACE Section K; SI, number of employees.
 Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

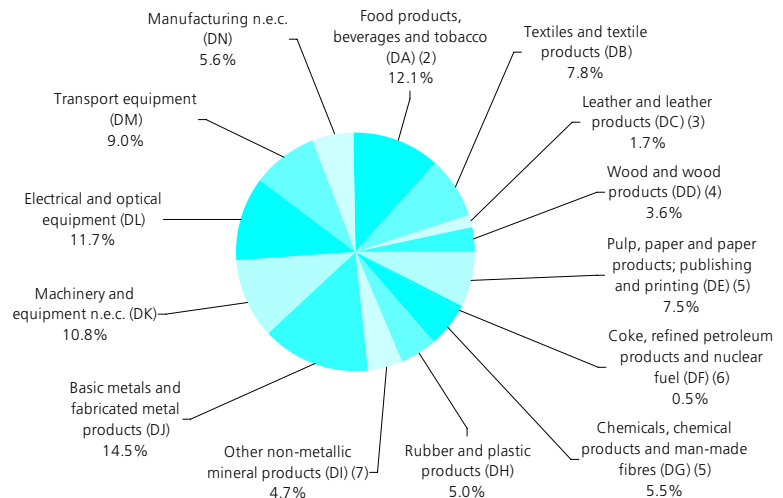
Figure 10 shows in more detail the breakdown of employment between the EU-15 and the 10 new Member States. The two NACE sections where the 10 new Member States had by far their highest share of total EU-25 employment were the activities of mining and quarrying (NACE Section C) and electricity, gas and water supply (NACE Section E). In these two sectors, the 10 new Member States accounted for 46.6 % and 32.2 % respectively of EU-25 employment in 2001, with the next highest proportion recorded in the manufacturing sector (NACE Section D), where the 10 new Member States occupied 16.9 % of the EU-25 workforce. Two services sectors stood out at the lower end of the ranking; they were real estate, renting and business activities (NACE Section K) and hotels and restaurants (NACE Section H), where the 10 new Member States occupied less than 1 in 10 of the EU-25's workforce (8.7% and 7.6 % respectively).

A breakdown of EU-25 employment in the manufacturing sector by NACE subsection is provided in Figure 11. This shows (as with the analysis of value added) that the largest manufacturing sector in the EU-25 in 2001 was the activity of basic metals and fabricated metal products (NACE Subsection DJ), which employed around 4.8 million persons, or 14.5 % of the non-financial business economy. The second and third largest activities in the EU-25's manufacturing sector, as measured by the number of persons employed, were also identical to the ranking by value added, namely, food products, beverages and tobacco (NACE Subsection DA) and electrical and optical equipment (NACE Subsection DL).

The main differences were recorded in the chemicals, chemical products and man-made fibres sector (NACE Subsection DG) which was the sixth largest in terms of value added (with a

Figure 11

Breakdown of the number of persons employed in the manufacturing sector, EU-25, 2001 (1)



(1) All NACE Subsections for Slovenia, number of employees.
 (2) Excluding Poland; Slovakia, 2000.
 (3) Excluding Estonia and Slovenia; Lithuania and Hungary, 1999; Latvia, number of employees.
 (4) Malta, 2000.
 (5) Excluding Poland.
 (6) Excluding Estonia, Lithuania, Malta, Poland, Slovenia and Slovakia; Hungary, 1999; Latvia, number of employees.
 (7) Poland, number of employees.
 Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

10.6 % share of the manufacturing total), but the ninth largest in terms of employment (5.5 %). This resulted in the chemicals, chemical products and man-made fibres sector recording by far the highest apparent labour productivity in the EU-25's manufacturing sector, almost EUR 89 000 per person employed. On the other hand, the textiles and textile products sector (NACE Subsection DB) occupied 7.8 % of those employed in manufacturing, while generating 4.1 % of manufacturing value added. As such, each person employed generated an average of EUR 24 100, less than 3.5 times the level in the

chemicals sector. It should be noted that employment data in SBS are a simple head count and that there may be large differences in the number of part-time employees between different sectors. As such, employment can be overestimated in sectors that display a high propensity to employ on a part-time basis, as employment levels in these sectors would be considerably lower if expressed as full-time equivalents.

EXTERNAL TRADE

The enlargement of the EU to 25 Member States resulted in approximately 75 million potential new customers within the single market, with the total number of customers rising to approximately 455 million with the accession of the new Member States. External trade statistics are based on products, as defined by the CPA (Classification of Products by Activity).

EU-25 exports of goods with non-Community countries (often called extra-EU trade, in other words, all trade with countries outside of the 25 Member States) totalled EUR 903 billion in 2002, which could be compared to EUR 942 billion of imports (see Table 10). It should be noted that, for many goods, the amount of trade that takes place within the EU is considerably higher than the flows that leave to or arrive from non-Community countries (for example, perishable goods, or goods with a low price/weight ratio). Furthermore, the data presented refer to the aggregate of all traded goods, (generally within CPA Sections A to E); as such, the data do not include trade in services, which have become an increasingly important part of the current account in most countries. The EU-25 ran a trade deficit of almost EUR 39 billion with non-Community countries in 2002, as exports covered imports by 95.9 %. The trade deficit in goods of the new Member States alone (with non-Community countries) was EUR -29 billion in 2002.

Some 80.7 % of the EUR 161 billion of exports made by the 10 new Member States in 2002 were destined for one of the other 25 Member States, while 68.9 % of the EUR 195 billion of the imports made by the new Member States originated from one of the other 25 EU countries. The growing importance of external trade between the new Member States and the EU-15 Member States means that, in particular, enterprises from the 10 new Member States are increasingly affected by economic developments within the EU-15, and vice versa, as the two economies become increasingly entwined.

Germany had the largest share of trade by EU Member States in 2002, accounting for 23.5 % of the goods that were exported (intra- and extra-EU trade combined). France, the United Kingdom, Italy, the Netherlands and Belgium all reported shares of between 13 and 8 %, while no other country had a share of more than 5 % of exports. Germany also reported the highest share of imports of goods (again from intra- and extra-EU partners), some 19.3 % of the total; the United Kingdom (13.6 %) and France (12.9 %) followed.

Table 10

External trade flows of all goods (CPA Sections A to E), 2002 (EUR million)

	Exports	Share in EU total (%)	Imports	Share in EU total (%)	Trade balance	Cover ratio (%)
EU-25 (1)	903 314	~	942 138	~	-38 824	95.9
BE	228 609	8.3	210 321	7.8	18 287	108.7
CZ	40 682	1.5	43 005	1.6	-2 323	94.6
DK	60 802	2.2	53 215	2.0	7 587	114.3
DE	651 259	23.5	518 488	19.3	132 771	125.6
EE	3 638	0.1	5 079	0.2	-1 441	71.6
EL	10 946	0.4	33 065	1.2	-22 118	33.1
ES	132 918	4.8	174 603	6.5	-41 685	76.1
FR	350 803	12.7	348 205	12.9	2 598	100.7
IE	93 337	3.4	55 429	2.1	37 909	168.4
IT	269 064	9.7	261 226	9.7	7 838	103.0
CY	449	0.0	3 903	0.1	-3 454	11.5
LV	2 417	0.1	4 279	0.2	-1 862	56.5
LT	5 537	0.2	7 958	0.3	-2 422	69.6
LU	10 814	0.4	13 907	0.5	-3 093	77.8
HU	36 503	1.3	39 927	1.5	-3 424	91.4
MT	2 144	0.1	2 799	0.1	-654	76.6
NL	258 099	9.3	231 879	8.6	26 220	111.3
AT	83 199	3.0	82 804	3.1	395	100.5
PL	43 499	1.6	58 480	2.2	-14 981	74.4
PT	28 098	1.0	42 414	1.6	-14 316	66.2
SI	10 962	0.4	11 574	0.4	-612	94.7
SK	15 234	0.6	17 517	0.7	-2 283	87.0
FI	47 742	1.7	36 187	1.3	11 556	131.9
SE	86 090	3.1	70 731	2.6	15 358	121.7
UK	296 315	10.7	366 240	13.6	-69 925	80.9

(1) Trade with non-Community countries only.
Source: Eurostat, Comext.

Among the new Member States the highest share of EU-25 trade was accounted for by Poland, which registered a 1.6 % share of all exports by EU Member States and a 2.2 % share of all imports. The only other new Member States that recorded more than 1 % of total EU exports or imports were the Czech Republic and Hungary. Every one of the 10 new Member States registered a trade deficit in goods in 2002, with only the Czech Republic, Hungary and Slovenia recording cover ratios (the ratio of exports to imports) above 90 %.

Table 11 presents information that relates uniquely to manufactured products (as covered by CPA Section D). The information presented concerns data for external trade flows with non-Community countries only. It shows that the largest sectors of the EU-25 economy as measured by value added (classified by NACE) were not always those for which the equivalent product groups (according to the CPA) had the largest trade flows. For example, the shares of food products, beverages and tobacco, and basic metals and fabricated metal products in EU-25 exports and imports of manufactured goods were considerably lower than the corresponding shares of the equivalent activities in manufacturing value added. On the other hand, there was a relatively high degree of importance for exports and imports of chemicals, and electrical and optical equipment when compared with the size of their equivalent activities in terms of value added.

A comparison of the breakdown of total manufactured imports and exports (CPA Section D) between the EU-25 and the new Member States shows that there was a higher propensity for the new Member States to export food products, beverages and tobacco, rubber and plastic products, other non-metallic mineral products, and basic metals and fabricated metal products. The EU-15 Member States were relatively specialised (in comparison with the new Member States) in exporting chemicals, chemical products and man-made fibres, machinery and equipment, and transport equipment.

In terms of imports, the new Member States imported a much higher share of electrical and optical equipment, while the EU-15 Member States imported relatively more textiles and textile products, transport equipment, and manufacturing goods not elsewhere classified (a division that includes jewellery, musical instruments, games and toys and sports goods).

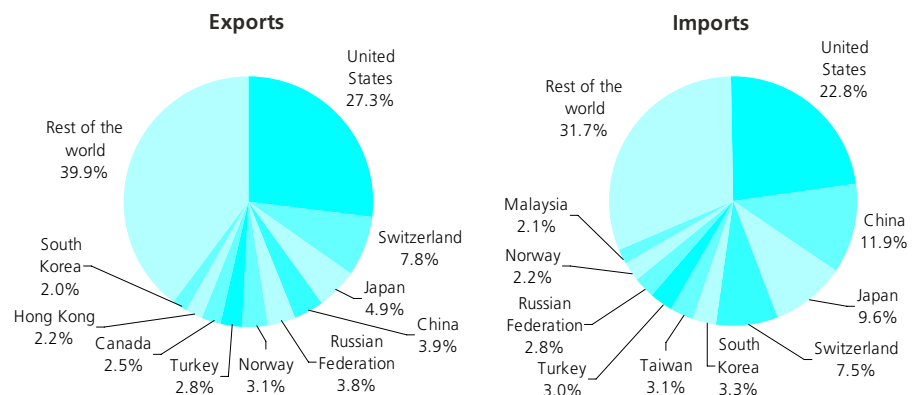
Figure 12 provides information concerning the most important destinations and origin of EU-25 exports and imports of manufactured goods (CPA Section D) in 2002. These figures cover extra-EU trade with non-Community countries and do not take account of trade flows between the Member States. EU-25 exports were somewhat more diversified as the top five export partners represented 47.6 % of total exports, compared with 55.1 % for imports.

Table 11
EU-25 external trade flows with non-Community countries
(% share of all manufactured products)

CPA label (CPA Subsection)	EU-25		Ten new Member States	
	Exports	Imports	Exports	Imports
Food products, beverages and tobacco (DA)	5.7	5.3	9.7	4.9
Textiles and textile products (DB)	4.3	9.0	4.4	6.7
Leather and leather products (DC)	1.5	2.4	1.1	2.0
Wood and wood products (DD)	0.9	1.2	2.6	1.0
Pulp, paper and paper products; publishing and printing (DE)	2.7	1.9	4.3	1.4
Coke, refined petroleum products and nuclear fuel (DF)	2.1	3.0	1.4	3.7
Chemicals, chemical products and man-made fibres (DG)	16.3	11.3	11.0	10.0
Rubber and plastic products (DH)	2.3	2.2	4.4	2.6
Other non-metallic mineral products (DI)	1.9	1.0	4.3	1.1
Basic metals and fabricated metal products (DJ)	6.6	8.4	10.1	7.7
Machinery and equipment n.e.c. (DK)	14.9	7.8	9.5	7.5
Electrical and optical equipment (DL)	18.6	28.4	18.8	39.8
Transport equipment (DM)	18.8	13.6	14.2	9.3
Other manufactured goods n.e.c. (DN)	3.5	4.6	4.4	2.2

Source: Eurostat, Comext.

Figure 12
Destination and origin of EU-25 manufactured (CPA Section D) exports and imports, 2002



Source: Eurostat, Comext.

The United States stood out as being by far the most important trading partner of the EU-25 for manufactured goods (CPA Section D). The United States was the destination for over a quarter (27.3 %) of the EU-25's exports of manufactured goods in 2002 and was the origin of 22.8 % of the EU-25's imports. The EU-25 ran a trade surplus for manufactured goods of EUR 61.3 billion with the United States in 2002, which was more than five times the size of the next most important surpluses that were recorded with the United Arab Emirates, the Russian Federation, Australia, Saudi Arabia, Mexico, Norway, Switzerland and Hong Kong.

China was the second most important origin of imports of manufactured goods into the EU-25, with an 11.9 % share of total manufactured imports. This figure was 8 percentage points higher than China's share of EU-25 manufactured exports (3.9 %), evidence of a large trade surplus for China with the EU-25 in terms of manufactured goods (EUR 54.3 billion). Japan reported a similar pattern, accounting for 9.6 % of the EU-25's imports, compared with 4.9 % of the EU-25's exports and hence recorded a trade surplus with the EU-25 of EUR 29.7 billion. The EU-25 also ran trade deficits (for manufactured goods) of at least EUR 5 billion in 2002 with Taiwan, Malaysia, Korea (Republic of), the Philippines, Indonesia and Thailand.

BUSINESS DEMOGRAPHY

Data are available for a limited number of Member States for enterprise demography indicators (covering the birth, death and survival of enterprises). This limited data set currently reports data for 10 of the EU-15 Member States and Norway, although it has recently been expanded to include several of the new Member States (this information will become available shortly).

Business demography is of interest to policy makers as it provides measures that can be used to study entrepreneurship. Most commentators believe that new enterprises stimulate economic growth by creating jobs and making economies more dynamic. Many new enterprises are created to fill market niches. These can take the form of product markets, or alternatively, geographical markets.

For this data set the business economy is defined as NACE Sections C to K (excluding NACE Class 74.15). The birth rate in the EU ⁽⁸⁾ was 8.4 % in 1999, rising to 8.5 % in 2000, before declining to 8.3 % in 2001. This figure is derived as the ratio of the number of enterprise births to the total number of active enterprises in each reference period. There are some quite large discrepancies between countries, as birth rates in 2001 ranged between 6.6 % in Sweden and 12.2 % in Luxembourg (see Table 12).

Given that the stock of active enterprises does not vary greatly over time, it is not surprising to find that death rates are also roughly the same magnitude as birth rates. Hence, the number of enterprises that went out of business in the EU was similar in magnitude to the number of enterprises that were created. In 1998, some 7.2 % of enterprises in the EU's business economy died, a figure that fell to 7.0 % in 1999, before climbing once more to 7.3 % in 2000. There were again quite large differences between countries, as Sweden recorded the lowest death rates (5.5 % of enterprises died in that country in 2000), while the highest rates were registered in the United Kingdom, where 10.6 % of the total number of enterprises died in 2000 (see Table 13).

⁽⁸⁾ For the whole of this section on business demography, the EU data refer to an average for Denmark, Spain, Italy, Luxembourg, the Netherlands, Finland and Sweden.

Table 12
Birth rates within the business economy (NACE Sections C to K) (enterprise births as a proportion of the total number of enterprises, %) (1)

	1998	1999	2000	2001
EU (2)	:	8.4	8.5	8.3
BE	:	:	7.0	:
DK	10.1	10.9	10.0	9.3
ES	9.7	9.6	9.7	9.1
IT	11.4	7.6	7.8	7.7
LU	13.2	13.4	12.4	12.2
NL	:	9.6	9.4	9.6
PT (3)	9.5	8.0	7.6	7.5
FI	8.5	7.6	7.3	7.2
SE	:	6.3	7.0	6.6
UK	9.1	9.6	8.9	:
NO	12.3	11.4	10.3	10.1

(1) Excluding NACE Class 74.15.

(2) Average for Denmark, Spain, Italy, Luxembourg, the Netherlands, Finland and Sweden only.

(3) Break in series, 2001, from when the data exclude sole proprietors.

Source: Eurostat, Structural Business Statistics (theme4/sbs/bus_demo).

Table 13
Death rates within the business economy (NACE Sections C to K) (enterprise deaths as a proportion of the total number of enterprises, %) (1)

	1997	1998	1999	2000
EU (2)	:	7.2	7.0	7.3
BE	:	6.7	8.7	:
DK	8.1	8.3	8.1	9.7
ES	7.7	8.0	6.9	7.2
IT	9.3	6.5	7.1	7.0
LU	8.7	9.0	9.4	9.2
NL	:	7.7	8.1	10.2
PT	7.0	6.5	6.3	:
FI	6.7	8.0	6.8	7.3
SE	7.1	5.9	5.1	5.5
UK	9.7	10.5	10.4	10.6
NO	:	:	7.6	8.3

(1) Excluding NACE Class 74.15.

(2) Average for Denmark, Spain, Italy, Luxembourg, the Netherlands, Finland and Sweden only.

Source: Eurostat, Structural Business Statistics (theme4/sbs/bus_demo).

Table 14
Survival rates within the business economy (NACE Sections C to K) (enterprises surviving as a proportion of the total number of enterprise births, %) (1)

	Enterprises born in 1998 that survived to:			Enterprises born in 1999 that survived to:	
	1999	2000	2001	2000	2001
EU (2)	:	:	:	85.2	73.6
BE	:	:	:	:	:
DK	80.6	63.8	53.5	79.7	61.9
ES	82.8	69.3	61.6	80.6	70.1
IT	83.3	71.3	62.3	88.4	76.6
LU	89.4	77.2	66.2	89.3	77.2
NL	:	:	:	84.6	71.0
PT	94.1	71.6	:	95.9	:
FI	83.0	68.4	59.2	84.2	70.6
SE	:	:	:	98.7	89.3
UK	91.8	77.8	:	93.4	:
NO	85.1	74.8	66.9	82.6	70.2

(1) Excluding NACE Class 74.15.

(2) Average for Denmark, Spain, Italy, Luxembourg, the Netherlands, Finland and Sweden only.

Source: Eurostat, Structural Business Statistics (theme4/sbs/bus_demo).

The business demography data set also allows a cohort of enterprises to be tracked over time, plotting the survival rates of a particular subset of enterprises. Table 14 shows the survival rates within the business economy of enterprises born in either 1998 or 1999. These rates are given as a proportion of the initial number of enterprise births in each of the years. As such, from the cohort of enterprises that were born in 1999 in the EU, some 85.2 % survived to the

following year and by 2001 there 73.6 % of those initially born in 1999 were still surviving. For the cohort of enterprises that were born in 1998, only slightly more than half had survived to 2001 in Denmark (53.5 %), while the ratio was somewhat higher in Finland (59.2 %) Spain (61.6 %) and Italy (62.3 %), with the highest survival rates being registered in Luxembourg (66.2 %).

INFORMATION SOCIETY AND INTANGIBLES

The final section looks at the development of the knowledge-based society. Vocational training, research, innovation and the use of modern technologies are some of the ways that efficiency gains can be made in a modern economy, thus improving competitiveness. These topics have been addressed by the European Commission under various initiatives that are directed at moving the EU towards the Lisbon goal of becoming 'the most competitive and dynamic knowledge-based economy in the world' by 2010.

ICT AND E-COMMERCE USAGE AMONG ENTERPRISES

There was rapid change in the business economy during the 1990s, as telecommunications liberalisation, coupled with the growth of the Internet, led to the birth of the information society. While the buoyant growth of the ICT sector was halted abruptly in 2001, partnerships between enterprises, suppliers and consumers have continued to develop and e-business continues to provide opportunities for enterprises to access new markets.

The eEurope 2005 action plan was launched at the Seville European Council in June 2002. Its aim was to develop modern public services and 'a dynamic environment for e-business through the widespread availability of broadband access at competitive prices with a secure information infrastructure across the EU'.

The ICT usage and e-commerce survey of enterprises ⁽⁹⁾ shows that 95 % of enterprises in the EU-15 used a computer at the start of 2002, while four out of five (81 %) of these used the Internet as a working tool during 2001.

The most popular online application used by enterprises was e-banking (68 % of all enterprises using the Internet), while enterprises that had a web presence at the start of 2002 favoured using the Internet as a marketing tool (80 %) ⁽¹⁰⁾. The supply of and the demand for web-based services generally increased with the average size of an enterprise (see Table 15).

⁽¹⁰⁾ Note that this means the enterprise used the Internet to provide information concerning the goods or services they offered, while there was no direct attempt to make sales over the Internet.

⁽⁹⁾ The Community survey on ICT usage in enterprises was conducted in 2002. The target population for this survey was enterprises with 10 or more persons employed within the following activities: NACE Sections D and G, Groups 55.1 and 55.2, Section I, Division 67 and Section K. EU averages cover all EU-15 Member States except Belgium, France and the United Kingdom. Any additional divergences from the standard activity, size coverage or variable definitions for any of the individual Member States that are used to compile EU averages are also present in the EU averages. The results presented exclude NACE Division 67 for Denmark, Germany, Ireland and Italy, while they include NACE Divisions 65 and 66 and Groups 55.3 to 55.5 for the Netherlands. Size class data for the Netherlands are based on the distinction between medium-sized enterprises and large enterprises being made at 200 persons employed (and not the standard threshold of 250 persons that is used in the other Member States).

Table 15
Proportion of enterprises using ICT (%)

	EU (1)	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
Proportion of enterprises using computers at the start of 2002																
All sizes	95	:	98	95	88	95	:	95	95	97	94	93	84	99	99	89
SME	94	:	98	94	88	95	:	95	95	97	94	93	84	99	99	88
Large	100	:	100	100	99	100	:	98	100	97	97	100	99	100	100	100
Proportion of PC-equipped enterprises that used the Internet during 2001																
All sizes	81	:	95	84	64	83	:	83	74	79	85	85	69	96	95	54
SME	81	:	95	83	64	82	:	82	74	78	85	84	68	96	95	53
Large	98	:	100	98	96	98	:	96	95	96	95	100	98	100	100	86
Enterprises using the Internet during 2001: proportion using the following Internet services																
For market monitoring (2)	46	:	44	41	77	54	:	40	38	55	63	66	43	61	53	:
To receive digital products	35	:	45	42	15	21	:	30	33	62	27	26	18	60	65	:
To obtain after-sales services	:	:	:	50	15	23	:	22	15	31	30	16	14	36	70	:
For banking and financial services (2)	68	:	72	65	60	78	:	69	52	54	78	68	71	85	75	:
Enterprises using the Internet during 2001: proportion with a web-site or homepage																
	67	:	80	78	52	46	:	64	62	65	68	75	55	72	84	100
Enterprises with a web-site or homepage in 2001: proportion offering the following Internet services																
Market products	80	:	96	82	97	54	:	90	88	69	88	88	58	86	97	:
Facilitate access to product catalogues & price lists (2)	45	:	39	40	43	60	:	45	43	51	40	47	58	42	43	:
Deliver digital products (3)	9	:	11	11	7	6	:	12	5	20	20	7	5	11	4	:
Provide after-sales support	26	:	27	45	11	18	:	18	7	23	30	12	16	31	35	:
Provide mobile Internet services	4	:	2	6	6	2	:	7	3	5	:	4	2	5	5	:

(1) Excluding Belgium, France and the United Kingdom.

(2) Sweden, wording of these services was different in the survey questionnaire.

(3) Denmark, wording of these services was different in the survey questionnaire.

Source: Eurostat e-commerce survey, 2002.

Table 16

Enterprise use of e-commerce

	EU (1)	BE	DK (2)	DE	EL (3)	ES	FR	IE	IT	LU	NL (4)	AT	PT (5)	FI	SE	UK
Enterprises having used the Internet during 2001: proportion that purchased products via the Internet in 2001																
All sizes	29	:	49	45	17	8	:	46	10	29	37	37	24	54	62	47
SME	29	:	48	45	16	8	:	45	10	29	37	36	24	53	62	47
Large	40	:	80	41	27	15	:	62	15	23	54	56	30	70	83	45
Enterprises having used the Internet during 2001: proportion that received orders via the Internet in 2001																
All sizes	14	:	25	19	14	3	:	26	5	15	40	25	11	17	14	19
SME	14	:	25	19	14	3	:	26	5	15	40	25	10	17	14	19
Large	20	:	36	18	17	7	:	33	7	13	47	29	27	27	27	22

(1) Excluding Belgium, France and the United Kingdom.

(2) Limited to purchases from web-sites; limited to own web-site for receiving orders.

(3) Only covers enterprises that made at least 1% of purchases via the Internet or generated at least 1% of turnover via the Internet.

(4) Includes transactions by all types of electronic networks.

(5) For orders received, only covers enterprises that generated at least 1% of turnover via the Internet; estimates.

Source: Eurostat e-commerce survey, 2002.

Three out of every 10 (29 %) enterprises using the Internet in the EU-15 made use of e-commerce in 2001 to purchase at least some of the products they needed for their activity (see Table 16). Enterprises within the services sector (particularly those within the business services sector) generally reported a higher recourse to Internet purchasing than enterprises within the manufacturing sector.

Data that relate to e-sales refer to both business-to-business (B2B) and business-to-consumer (B2C) markets. The survey shows that EU-15 enterprises were generally less active in the domain of e-selling as compared with e-purchasing, as just 14 % of the enterprises in the EU-15 that used the Internet during 2001 declared having received orders for their products or services via the Internet. A somewhat higher proportion of large enterprises recorded using e-sales (20 %), although this share was half the proportion of large enterprises that made some form of e-purchase (40 %).

INNOVATION

Innovation activity is thought to be one of the main driving forces that increases knowledge and the use of technology within an economy. Innovation changes the pace of economic growth by opening up potentially new markets, be they for goods, services or industrial processes. Innovations may result in cost advantages for the enterprises that introduce them. Alternatively, when introducing products that are new to the market, it is likely that enterprises with innovation activity will, at least for a limited period of time, benefit from a monopolistic position. In both cases the enterprise that innovates benefits in relation to its competitors.

One important aspect of the innovation process is that it spreads information and knowledge. Often the costs of making this knowledge available to many users are considerably lower than the costs incurred by the enterprise introducing the innovation. As a result, many governments put in place policies that protect intellectual property rights, for example patents, copyrights and trademarks (see the following section for more information on patents). Without these forms of protection, some enterprises would likely cease to carry out their innovation activities for fear that they would never re-coup their costs, in terms of time and expenditure. This is particularly true when innovations are related to basic research where the potential use of an innovation is unclear (for example, a scientific discovery that could be used in a number of different fields). However, it is in these very areas that the public benefits of innovation can potentially be at their greatest (for example, medical discoveries). As such, many governments provide public funding for basic research activities.

Every four years a major innovation survey is conducted across Europe, called the Community innovation survey. The last time this took place was in 2000 and aggregated results of this exercise are available for 13 of the EU-15 Member States ⁽¹¹⁾. Results from the third Community innovation survey (CIS3) show that there were 233 200 enterprises with 10 or more employees within the business economy ⁽¹²⁾ that had some form of innovation activity during the period 1998–2000, some 43 % of the all enterprises. It is possible to provide a breakdown of this figure according to different types of innovator. This shows that enterprises were most likely to be both product and process innovators (23 % of all enterprises), while 10 % were product only innovators and 7 % were process only innovators. The survey also distinguished enterprises with only on-going and/or abandoned innovation activity; these accounted for 3 % of all enterprises (see Table 17).

⁽¹¹⁾ Data for Ireland and Luxembourg were not taken into account when creating EU aggregates. Hence, all EU data in this section refers to a sum or an average for the 13 remaining EU-15 Member States.

⁽¹²⁾ For the purpose of this section on innovation the business economy is defined as NACE Sections C to E (industry) and NACE Division 51, Sections I and J, Divisions 72 and 73 and Groups 74.2 and 74.3 (services).

Table 17

Typology of innovators in the EU's business economy, 1998-2000 (1)

	Total number of enterprises (thousands)	Proportion of total number of enterprises (%)	Proportion of total number of industrial enterprises (%)	Proportion of total number of enterprises in the services sector (%)
Total	546.8	100	100	100
Enterprises with innovation activity	233.2	43	45	39
Successful innovators	212.3	41	42	34
Product only innovators	58.3	10	10	12
Process only innovators	39.2	7	9	5
Product and process innovators	114.7	23	23	17
Enterprises with only on-going and/or abandoned innovations	31.7	3	5	6
Enterprises without innovation activity	313.6	56	55	61

(1) Excluding Ireland and Luxembourg; business economy defined as NACE Sections C to E (industry) and NACE Division 51, Sections I and J, Divisions 72 and 73 and Groups 74.2 and 74.3 (services).

Source: Eurostat, Third Community Innovation Survey (theme9/innovat/inn_cis3).

A higher proportion of enterprises in the EU-15's industrial sector (45 %) engaged in innovation activities during the period 1998–2000, compared with those in the services sector (39 %). The difference was most noticeable among large enterprises, where 78 % of all enterprises in the industrial sector had some form of innovation activity, while the corresponding figure for services was 63 %. While the economic sector appears to explain some of the differences in the propensity to innovate, the average size of an enterprise also appeared to be an important factor. An increasing proportion of enterprises reported innovation activity as the average size of the enterprise grew in both the industrial and the services sector (see Table 18).

In order to measure the relative performance of enterprises with innovation activity, it is perhaps more revealing to look at the proportion of turnover or employment that is accounted for by enterprises with innovation activity. Enterprises with innovation activity in the EU-15⁽¹³⁾ accounted for 44 % of the total population of enterprises between 1998 and 2000; however, in contrast, their share of total employment and turnover reached 72 % and 75 % in 2000. The CIS3 survey provides one way of studying innovation output over time, by measuring the turnover growth of enterprises. This measure reveals that turnover grew on average by 9 % per annum during the period 1998–2000 among enterprises with innovation activity, compared with average annual growth of 3 % among enterprises without innovation activity. This pattern was reproduced in both the industrial and services sectors.

⁽¹³⁾ All data in this paragraph also excludes the United Kingdom (in other words EU-15 excluding Ireland, Luxembourg and the United Kingdom).

Table 18

Proportion of enterprises with innovation activity in the EU, 1998-2000 (1)

	Industry	Services
All sizes	45	39
Small	39	35
Medium-sized	61	51
Large	78	63

(1) Excluding Ireland and Luxembourg; industry defined as NACE Sections C to E; services defined as NACE Division 51, Sections I and J, Divisions 72 and 73 and Groups 74.2 and 74.3.

Source: Eurostat, Third Community Innovation Survey (theme9/innovat/inn_cis3).

RESEARCH AND DEVELOPMENT

The Barcelona Council set the ambitious target of raising R & D expenditure within the EU to 3 % of GDP by 2010. The European Commission has initiated a number of policies to promote R & D expenditure, including cooperation with the European Investment Bank (EIB). This has resulted in an increase in the means with which the EIB can support research and innovation. The Commission is also working on extending the block exemption of State aid for R & D to SMEs, which should make access to finance for R & D more simple and efficient.

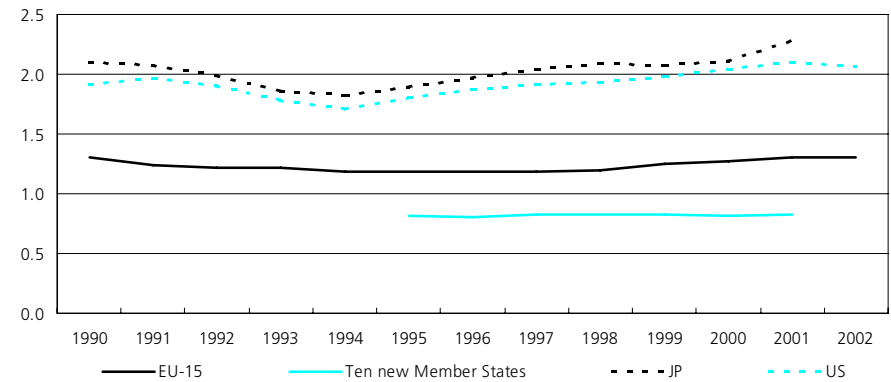
In 2002, R & D expenditure in the EU-15, relative to GDP, was 1.99 %; this was the same ratio that had been recorded in 1990. Within the EU-25, the ratio was slightly lower at 1.93 % in 2001. At the time of writing (spring 2004), there were only two Member States that had attained the Barcelona objectives, namely, Sweden (where R & D accounted for a 4.27 % share of GDP in 2001) and Finland (3.49 % in 2002). The next best-placed country to reach the 3 % threshold was Germany (2.51 % in 2002). Among the new Member States there were just two countries where the share of R & D expenditure rose above 1 % of GDP; they were Slovenia (1.57 % in 2001) and the Czech Republic (1.30 %). At the bottom end of the range, Greece, Spain and Portugal reported that their R & D expenditure accounted for less than 1 % of GDP, while among the 10 new Member States, Latvia and Cyprus recorded rates below 0.5 %⁽¹⁴⁾.

⁽¹⁴⁾ Malta, not available.

In absolute terms, the EU-15 reported that EUR 119 billion of R & D expenditure was made in the business enterprise sector (which is defined by the OECD as including all firms, organisations and institutions whose primary activity is the market production of goods or services (other than higher education) for sale to the general public at an economically significant price, and private non-profit institutes serving them) in 2002, compared with EUR 105 billion in Japan in 2001 and EUR 225 billion in the US in 2002. Practically the whole of the R & D investment gap (relative to GDP) between the EU-15 and the two other members of the Triad could be attributed to the relative under-performance of the business enterprise (or private) sector (see Figure 13). Indeed, a comparison of the levels of expenditure that are recorded in the governmental and the higher educational sectors shows that EU-15 expenditure in these sectors was almost identical to the levels recorded in Japan or the US (see Table 19).

Tracing the development of business enterprise R & D expenditure (again as a proportion of GDP) over time shows that this ratio rose in the EU-15 from 1.19 % to 1.30 % between 1995 and 2001. Within the 10 new Member States there was almost no change in the relative importance of R & D expenditure made by the business enterprise sector, which accounted for 0.82 % of GDP in 1995 and 0.83 % in 2001. On the other hand, expenditure by the business enterprise sector rose from 1.89 % of GDP in Japan in 1995 to 2.28 % by 2001, while there was also growth in the US (1.80 % in 1995 to 2.06 % by 2002).

Figure 13
Business enterprise research and development expenditure (% of GDP) (1)



(1) Estimates.
Source: Eurostat, Research and Development expenditure and personnel (theme9/rd_ex_p/rd_nat/nat_exp and theme9/rd_ccc/r_d/).

As such, it is perhaps not surprising to find that one of the main conclusions that came out of the Barcelona summit was that the Heads of State or Government asked for increased involvement from the private sector towards R & D funding. The gap in business enterprise sector funding may result from a lack of R & D investment by SMEs within Europe. Indeed, very large EU-15 enterprises performed comparably to the R & D expenditure performance of large enterprises from the US or Japan. Large enterprises in the EU-15 accounted for a growing share of R & D expenditure among the top 300 international enterprises in terms of R & D investment. It is important to note, however, that an increasingly important share of R & D expenditure that was made by large European enterprises was made outside of the EU-15 (for example, in Asia or in the US).

Table 19
Research and development expenditure in the EU, 2002 (EUR million) (1)

	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV
Total R&D expenditure	182 387	5 515	744	4 265	51 539	37	:	6 227	33 414	1 339	:	25	38
Of which:													
Business enterprise sector	119 000	4 062	381	2 934	36 350	9	:	3 261	20 779	917	6 870	4	11
Government sector	23 949	331	331	503	6 923	22	:	989	5 664	128	2 657	16	16
Higher education sector	38 197	1 059	4	796	8 266	1	:	1 925	6 506	294	:	0	:
Private non-profit sector	1 240	62	5	32	:	1	:	52	465	:	:	1	:
	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
Total R&D expenditure	73	:	405	:	8 090	4 217	1 197	1 038	297	143	4 873	10 459	30 501
Of which:													
Business enterprise sector	:	:	153	:	4 712	:	390	330	159	78	3 447	8 118	19 683
Government sector	:	33	201	:	1 194	:	759	216	119	61	521	297	3 683
Higher education sector	:	2	:	:	2 184	:	20	381	1	1	905	2 033	6 724
Private non-profit sector	:	:	1	:	44	:	5	112	0	0	:	10	412

(1) Estimates; Belgium, Denmark, Germany, Spain, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Sweden, 2001; the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Poland, Slovenia and Slovakia, 2000.
Source: Eurostat, Research and Development expenditure and personnel (theme9/rd_ex_p/rd_nat/nat_exp and rd_ccc/r_d/gerdfund).

PATENTS

The previous sections on innovation and R & D have dealt with the measurement of two phenomenon that are often cited as being highly important within the context of the knowledge-based economy. A related issue is the protection of any innovations and research discoveries that are made.

Intellectual property rights are a key element in the transformation of knowledge into economic value and as such are an important dimension of European research policy. The protection of intellectual property rights has become an increasingly strategic issue for enterprises, universities and public research organisations that invest in research and innovation. Property rights provide an incentive for invention and the subsequent market development of new ideas.

A patent is a legal entitlement of property that grants the owner the exclusive rights to exploit an innovation commercially. This right usually refers to a specific geographical area and is granted for a limited period of time. In return for this exclusive right, its technical details are published hence, allowing the knowledge associated with the innovation to circulate freely even if the idea itself cannot be commercially developed.

In 2001, the EU-25 applied for 61 458 patents to the European Patent Office (EPO) - see Table 20. There were a significant number of patent applications made to the EPO in the same year from Japan (22 226) and the US (47 202). Patent applications at the EPO from Japan and the United States were particularly high within the field of high-technology applications, which accounted for more than 20 % of total patent applications from these two countries, whereas the corresponding proportion in the EU-25 was just over 10 %.

When expressed as a ratio per million inhabitants, Japan recorded the highest relative number of patent applications to the EPO (174.7), followed by the United States (169.8) and the EU-25 (161.1). Note that the number of patent applications is likely to be higher within the national territory than abroad and hence, the figures for both Japan and the United States are relatively high considering they relate to applications for patents within Europe.

As with the indicators presented for innovation and research, there were wide disparities between the levels of patent applications among the Member States. Germany had the highest number of patent applications in 2001 (25 489 or 41.9 % of the EU-15 total). However, in relative terms the highest ratios for patent applications per million inhabitants were reported in Finland and Sweden (the two countries that also recorded the highest R & D expenditure). Sweden (366.6), Finland (337.8) and Germany (309.9) were the only three Member States to make more than 300 patent applications to the EPO per million inhabitants in 2001.

Among the 10 new Member States the highest absolute number of patent applications made at the EPO was recorded by Hungary (190), followed by the Czech Republic (110). However, in relative terms the highest number of applications per million inhabitants was registered in Slovenia (40.7), followed by Hungary (19.0).

Table 20
Patent applications to the European Patent Office

	1995	1996	1997	1998	1999	2000	2001
Total number of patent applications (units)							
EU-25	34 487	36 465	43 230	49 084	53 301	60 328	61 458
EU-15	34 205	36 180	42 894	48 671	52 896	59 754	60 890
10 NMS (1)	282	284	337	414	405	574	568
JP	11 084	12 641	14 342	15 500	16 649	20 250	22 226
US	25 246	28 130	31 225	35 035	38 552	45 778	47 202
Patent applications per million inhabitants (units)							
EU-25	77.2	81.4	96.3	109.2	118.3	133.6	135.7
EU-15	92.1	97.1	114.8	130.0	141.0	158.7	161.1
10 NMS (1)	3.7	3.8	4.5	5.5	5.4	7.7	7.6
JP	88.3	100.7	115.1	122.9	131.7	159.5	174.7
US	96.5	106.5	117.2	130.2	141.9	166.2	169.8
High-technology patent applications (units)							
EU-25	3 902	4 385	5 695	7 321	8 759	11 126	12 017
EU-15	3 880	4 367	5 674	7 281	8 718	11 048	11 928
10 NMS (1)	23	18	21	39	42	78	89
JP	2 464	2 787	3 361	3 678	4 096	5 085	5 707
US	5 275	6 252	7 329	8 623	10 118	14 140	15 839

(1) 10 NMS: ten new Member States.

Source: Eurostat, European patenting systems (theme9/patents/pat_eu/pat_nat/nat_tot and nat_ht).

Table 21

Main indicators for training, 1999 (% of all enterprises)

	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV
Proportion of enterprises providing training	62	70	69	96	75	63	18	36	76	79	24	:	53
Continuing vocational training	54	48	61	88	67	47	9	28	71	56	23	:	26
Other forms of training	53	67	59	87	72	57	15	27	41	75	22	:	50
Proportion of enterprises providing training (breakdown by enterprise size-class)													
Small	56	66	62	95	71	58	11	31	70	75	20	:	49
Medium-sized	81	93	84	98	87	85	43	58	93	98	48	:	70
Large	96	100	96	100	98	96	78	86	98	100	81	:	91
	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK
Proportion of enterprises providing training	43	71	37	:	88	72	39	22	48	:	82	91	87
Continuing vocational training	21	50	24	:	82	71	26	11	33	:	75	83	76
Other forms of training	39	65	30	:	70	27	36	20	46	:	72	78	83
Proportion of enterprises providing training (breakdown by enterprise size-class)													
Small	37	67	32	:	85	68	36	17	35	:	78	88	85
Medium-sized	60	83	51	:	96	91	52	46	72	:	97	99	91
Large	80	99	79	:	98	96	63	78	96	:	99	99	98

Source: Eurostat, Continuing Vocational Training (theme3/training/cvts/cvts2/tentn/tent03n and tents/tent03s).

TRAINING

As well as raising competitiveness, the Lisbon European Council also called for sustained economic growth with more and better jobs and greater social cohesion. To ensure their contribution to the Lisbon strategy, the ministers for education adopted, in 2001, a report on the future objectives of education and training systems within the EU. They agreed on three major goals to be achieved by 2010:

- to improve the quality and effectiveness of EU education and training systems;
- to ensure that these systems were accessible to all;
- to open up education and training to the wider world.

It was also agreed that the policies needed in each country would vary according to the circumstances encountered and as such would be developed according to national contexts and traditions, being driven forward through cooperation and shared experiences.

The European Commission adopted on 11 November 2003 a communication ⁽¹⁵⁾ that presented an interim evaluation of the implementation of the *Education and training 2010* programme. The communication stated that, 'if the Union as a whole is currently underperforming in the knowledge-driven economy in relation to some of its main competitors, this is due partly to an overall level of investment which is comparatively too low in human resources'.

The last reference year for the Continuing vocational training survey (CVTS) is 1999. This survey concerned enterprises with 10 or more employees. Table 21 presents some of the main results, namely, that training seemed to be more common in the northern Member States and that it was also more customary in large enterprises (as compared with SMEs).

⁽¹⁵⁾ *Education and training 2010 - The success of the Lisbon strategy hinges on urgent reforms*, COM(2003) 685 final.

On average, 65 % of all enterprises in the EU-15 provided some form of training to their employees in 1999. This ranged from highs of more than 90 % of all enterprises in Denmark and Sweden, to less than one quarter of all enterprises in Greece, Italy and Portugal.

While just over half (56 %) of the small enterprises (10–49 employees) in the EU-15 provided some form of training in 1999 to their employees, this proportion rose as high as 96 % among large enterprises (with 250 or more employees). This pattern of an increasing propensity to provide training, as the average size of an enterprise grew, was reproduced in every country for which data are available.

Statistical annex

There follows a short set of tables giving some general information which may be of use in interpreting the data that follows in the remaining chapters. This data is generally of a macro-economic nature and may prove relevant for a number of chapters.

Table 22
Exchange rates, annual average rates (1 ECU/EUR=... national currency) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
BEF/LUF	40.4713	39.6565	38.5519	39.2986	40.5332	40.6207	40.3399	40.3399	40.3399	-	-
CZK	34.1690	34.1509	34.6960	34.4572	35.9304	36.3196	36.8843	35.5995	34.0680	30.8040	31.8460
DKK	7.59359	7.54328	7.32804	7.35934	7.48361	7.49930	7.43556	7.45382	7.45210	7.43050	7.43070
DEM	1.93639	1.92453	1.87375	1.90954	1.96438	1.96913	1.95583	1.95583	1.95583	-	-
EEK	15.4911	15.3962	14.9900	15.2763	15.7150	15.7530	15.6466	15.6466	15.6466	15.6466	15.6466
GRD	268.568	288.026	302.989	305.546	309.355	330.731	325.820	336.678	340.750	-	-
ESP	149.124	158.918	163.000	160.748	165.887	167.184	166.386	166.386	166.386	-	-
FRF	6.63368	6.58262	6.52506	6.49300	6.61260	6.60141	6.55957	6.55957	6.55957	-	-
IEP	0.799952	0.793618	0.815525	0.793448	0.747516	0.786245	0.787564	0.787564	0.787564	-	-
ITL	1 841.23	1 915.06	2 130.14	1 958.96	1 929.30	1 943.65	1 936.27	1 936.27	1 936.27	-	-
CYP	0.582941	0.583931	0.591619	0.591904	0.582628	0.577418	0.578850	0.573924	0.575890	0.575300	0.584090
LVL	0.793600	0.664101	0.689537	0.699605	0.659401	0.660240	0.625601	0.559227	3.582300	3.459400	3.452700
LTL	5.08682	4.73191	5.23203	5.07899	4.53616	4.48437	4.26405	3.69516	0.56010	0.58100	0.64070
HUF	107.611	125.030	164.545	193.741	211.654	240.573	252.767	260.045	256.590	242.960	253.620
MTL	0.447021	0.448852	0.461431	0.458156	0.437495	0.434983	0.425773	0.404138	0.403000	0.408900	0.426100
NLG	2.17521	2.15827	2.09891	2.13973	2.21081	2.21967	2.20371	2.20371	2.20371	-	-
ATS	13.6238	13.5396	13.1824	13.4345	13.8240	13.8545	13.7603	13.7603	13.7603	-	-
PLN	2.12217	2.70153	3.17049	3.42232	3.71545	3.91784	4.22741	4.00817	3.67210	3.85740	4.39960
PTE	188.370	196.896	196.105	195.761	198.589	201.695	200.482	200.482	200.482	-	-
SIT	132.486	152.766	154.880	171.778	180.996	185.958	194.473	206.613	43.300	42.694	41.489
SKK	36.0317	38.1182	38.8649	38.9229	38.1061	39.5407	44.1229	42.6017	217.9797	225.9772	233.8493
FIM	6.69628	6.19077	5.70855	5.82817	5.88064	5.98251	5.94573	5.94573	5.94573	-	-
SEK	9.12151	9.16308	9.33192	8.51472	8.65117	8.91593	8.80752	8.44519	9.25510	9.16110	9.12420
GBP	0.779988	0.775903	0.828789	0.813798	0.692304	0.676434	0.658735	0.609478	0.621870	0.628830	0.691990
BGN	0.03231	0.06439	0.08787	0.22515	1.90157	1.96913	1.95584	1.94792	1.94820	1.94920	1.94900
ROL	885.8	1 971.6	2 661.8	3 922.2	8 111.5	9 984.9	16 345.2	19 921.8	26 004.0	31 270.0	37 551.0
TRL	12 879	35 535	59 912	103 214	171 848	293 736	447 237	574 816	1 102 425	1 439 680	1 694 851
JPY	130.148	121.322	123.012	138.084	137.077	146.415	121.317	99.475	108.680	118.060	130.970
USD	1.17100	1.18952	1.30801	1.26975	1.13404	1.12109	1.06578	0.92194	0.89560	0.94560	1.13120

(1) National currencies marked as not applicable were replaced by the euro on 1 January 2002.

Source: Eurostat, Exchange rates (theme2/exint/exchrt/eurer/eurer_an).

Table 23

Population, as of 1 January (thousands)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-15	368 935	370 323	371 442	372 476	373 487	374 345	375 277	376 482	:	:	:
BE	10 068	10 101	10 131	10 143	10 170	10 192	10 214	10 239	10 263	10 310	10 356
CZ	10 326	10 334	10 333	10 321	10 309	10 299	10 290	10 278	10 267	10 206	10 203
DK	5 181	5 197	5 216	5 251	5 275	5 295	5 314	5 330	5 349	5 368	5 384
DE	80 975	81 338	81 539	81 817	82 012	82 057	82 037	82 163	82 260	82 440	82 537
EE	1 527	1 507	1 492	1 476	1 462	1 454	1 446	1 372	1 367	1 361	1 356
EL	10 349	10 410	10 443	10 465	10 487	10 511	10 522	10 554	:	:	:
ES	39 057	39 136	39 197	39 249	39 308	39 388	39 519	39 733	40 122	40 409	:
FR	57 369	57 565	57 753	57 936	58 116	58 299	58 497	58 749	59 043	59 342	59 630
IE	3 569	3 583	3 598	3 620	3 652	3 694	3 735	3 777	3 826	3 900	3 964
IT	56 960	57 138	57 269	57 333	57 461	57 563	57 613	57 680	57 844	:	:
CY	714	723	730	736	741	746	752	755	698	706	715
LV	2 606	2 566	2 530	2 502	2 480	2 458	2 439	2 380	2 364	2 346	2 331
LT	3 736	3 724	3 718	3 712	3 707	3 704	3 701	3 699	3 487	3 476	3 463
LU	395	401	407	413	418	424	429	436	440	444	448
HU	10 310	10 277	10 246	10 212	10 174	10 135	10 092	10 043	10 200	10 175	10 142
MT	363	366	369	371	374	377	379	380	391	395	:
NL	15 239	15 342	15 424	15 494	15 567	15 654	15 760	15 864	15 987	16 105	16 193
AT	7 962	8 015	8 040	8 055	8 068	8 075	8 083	8 103	8 021	8 039	8 067
PL	38 418	38 505	38 581	38 609	38 639	38 660	38 667	38 654	38 644	38 632	38 219
PT	9 965	9 983	10 013	10 041	10 070	10 108	10 150	10 198	10 263	10 329	10 407
SI	1 994	1 989	1 989	1 990	1 987	1 985	1 978	1 988	1 990	1 994	1 995
SK	5 314	5 336	5 356	5 368	5 379	5 388	5 393	5 399	5 379	5 379	5 379
FI	5 055	5 078	5 099	5 117	5 132	5 147	5 160	5 171	5 181	5 195	5 206
SE	8 692	8 745	8 816	8 837	8 844	8 848	8 854	8 861	8 883	8 909	8 941
UK	58 099	58 293	58 500	58 704	58 905	59 090	59 391	59 623	59 863	:	:
BG	8 485	8 460	8 427	8 385	8 341	8 283	8 230	8 191	7 929	7 892	7 846
RO	22 779	22 748	22 712	22 656	22 582	22 526	22 489	22 455	22 430	21 833	21 773
TR	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, Demography - population (theme3/demo/dpop/pjan).

Table 24

Gross domestic product in constant prices, annual rate of change (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003 (1)
EU-15	-0.4	2.8	2.4	1.6	2.5	2.9	2.8	3.4	1.5	1.0	0.7
BE	-1.0	3.2	2.4	1.2	3.6	2.0	3.2	3.7	0.8	0.7	0.8
CZ	0.1	2.2	5.9	4.3	-0.8	-1.0	0.5	3.3	3.3	2.0	2.9
DK	0.0	5.5	2.8	2.5	3.0	2.5	2.3	3.0	1.0	1.0	0.0
DE	-1.1	2.3	1.7	0.8	1.4	2.0	2.0	2.9	0.6	0.2	-0.1
EE	:	-2.0	4.3	3.9	9.8	4.6	-0.6	7.1	5.0	6.0	4.8
EL	-1.6	2.0	2.1	2.4	3.6	3.4	3.6	4.2	4.1	3.9	4.7
ES	-1.0	2.4	2.8	2.4	4.0	4.3	4.2	4.2	2.7	2.0	2.4
FR	-0.9	2.1	1.7	1.1	1.9	3.4	3.2	3.8	1.8	1.2	0.2
IE	2.7	5.8	9.9	8.1	10.9	8.8	11.1	10.0	5.7	6.9	1.2
IT	-0.9	2.2	2.9	1.1	2.0	1.8	1.6	2.9	1.8	0.4	0.3
CY	0.7	5.9	6.2	1.9	2.5	5.0	4.8	5.2	4.1	2.0	2.0
LV	-14.9	0.6	-1.6	3.7	8.4	4.8	2.8	6.8	7.7	6.1	7.4
LT	-16.2	-9.8	3.3	4.7	7.3	5.1	-3.9	3.8	5.9	6.8	8.9
LU	4.2	3.8	1.3	3.7	7.7	7.5	6.0	8.9	1.0	1.3	1.8
HU	:	:	1.5	1.3	4.6	4.9	4.2	5.2	3.7	3.5	2.9
MT	4.5	5.7	6.2	4.0	4.9	3.4	4.1	4.8	-0.4	1.7	0.4
NL	0.9	2.6	3.0	3.0	3.8	4.3	4.0	3.3	1.3	0.2	-0.8
AT	0.4	2.6	1.6	2.0	1.6	3.9	2.7	3.5	0.7	1.4	0.7
PL	:	:	:	6.0	6.8	4.8	4.1	4.0	1.1	1.4	3.7
PT	-2.0	1.0	4.3	3.5	3.9	4.5	3.5	3.5	1.7	0.4	-1.3
SI	2.8	5.3	4.1	3.5	4.6	3.8	5.2	4.6	3.0	2.9	2.3
SK	:	5.2	6.5	5.8	5.6	4.0	1.3	2.2	3.3	4.4	4.2
FI	-1.1	4.0	3.8	4.0	6.3	5.3	4.1	6.1	0.7	2.3	1.9
SE	-1.8	4.1	3.7	1.1	2.1	3.6	4.5	3.6	1.2	2.1	1.6
UK	2.5	4.7	2.9	2.6	3.4	2.9	2.4	3.1	2.0	1.6	2.2
BG	-1.5	1.8	2.9	-9.4	-5.6	4.0	2.3	5.4	4.0	4.8	4.3
RO	1.5	3.9	7.1	3.9	-6.1	-4.8	-1.2	1.8	5.3	4.9	4.9
TR	8.0	-5.5	7.2	7.0	7.5	3.1	-4.7	7.4	-7.4	7.8	5.8

(1) Forecasts for Belgium, Estonia, Ireland, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovenia, Slovakia, Bulgaria and Turkey.
Source: Eurostat, National Accounts - Aggregates (theme2/aggs/aggs_gdp/a_gdp_k).

Table 25

Gross domestic product in constant prices in the EU-15, annual rate of change (%)

NACE label (NACE code)	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total (A to Q)	-0.3	2.5	2.4	1.7	2.5	3.0	2.7	3.7	1.8	1.1
Agriculture, hunting, forestry and fishing (A & B)	-0.6	-0.5	2.2	4.1	0.5	1.7	2.6	-0.9	-2.0	-0.1
Mining & quarrying; manufacturing; electricity, gas & water supply (C to E)	-3.5	4.3	3.1	0.0	3.0	3.0	1.1	3.8	0.6	0.4
Construction (F)	-4.1	2.2	0.0	-1.1	-1.3	0.8	2.4	2.3	-0.1	0.1
Distributive trades; hotels & restaurants; transport, storage & comm. (G to I)	0.1	2.7	2.2	1.6	3.4	4.0	4.6	4.9	2.8	1.5
Financial intermediation; real estate, renting & business activities (J & K)	1.9	1.9	3.5	3.7	3.7	4.1	3.7	4.6	3.0	2.0
Public administration, community, social & personal services (L to Q)	1.4	1.6	1.4	1.7	1.0	1.6	1.5	1.9	1.4	0.8

Source: Eurostat, National Accounts - Breakdowns by branch of activity (theme2/brkdowns/b_a06_k).

Table 26

Long-term interest rate for government bond yields following the Maastricht Treaty, annual average rates (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-15	8.3	8.5	8.9	7.5	6.3	4.9	4.7	5.4	5.0	4.9	4.2
BE	7.2	7.8	7.5	6.5	5.8	4.8	4.8	5.6	5.1	5.0	4.2
DK	7.3	7.8	8.3	7.2	6.3	4.9	4.9	5.6	5.1	5.1	4.3
DE	6.5	6.9	6.9	6.2	5.6	4.6	4.5	5.3	4.8	4.8	4.1
EL	23.3	20.7	17.0	14.5	9.9	8.5	6.3	6.1	5.3	5.1	4.3
ES	10.2	10.0	11.3	8.7	6.4	4.8	4.7	5.5	5.1	5.0	4.1
FR	6.8	7.2	7.5	6.3	5.6	4.6	4.6	5.4	4.9	4.9	4.1
IE	7.7	7.9	8.3	7.3	6.3	4.8	4.7	5.5	5.0	5.0	4.1
IT	11.2	10.5	12.2	9.4	6.9	4.9	4.7	5.6	5.2	5.0	4.3
LU	6.9	7.2	7.2	6.3	5.6	4.7	4.7	5.5	4.9	4.7	3.3
NL	6.4	6.9	6.9	6.2	5.6	4.6	4.6	5.4	5.0	4.9	4.1
AT	6.7	7.0	7.1	6.3	5.7	4.7	4.7	5.6	5.1	5.0	4.2
PT	11.2	10.5	11.5	8.6	6.4	4.9	4.8	5.6	5.2	5.0	4.2
FI	8.8	9.1	8.8	7.1	6.0	4.8	4.7	5.5	5.0	5.0	4.1
SE	8.5	9.7	10.2	8.0	6.6	5.0	5.0	5.4	5.1	5.3	4.6
UK	7.6	8.2	8.3	7.9	7.1	5.6	5.0	5.3	5.0	4.9	4.6

Source: Eurostat, Interest rates (theme2/exint/intrt/govyield/mcby/mcby_a).

Table 27

Harmonised consumer price indices, annual rate of change (%)

	1993 (1)	1994 (1)	1995 (1)	1996 (2)	1997 (2)	1998	1999	2000	2001	2002	2003
EU-15	3.4	2.8	2.8	2.4	1.7	1.3	1.2	2.1	2.2	2.1	2.0
BE	2.5	2.4	1.3	1.8	1.5	0.9	1.1	2.7	2.4	1.6	1.5
CZ	:	:	:	9.1	8.0	9.7	1.8	3.9	4.5	1.4	-0.1
DK	0.9	1.8	2.0	2.1	1.9	1.3	2.1	2.7	2.3	2.4	2.0
DE	:	:	:	1.2	1.5	0.6	0.6	2.1	1.9	1.3	1.0
EE	:	:	:	19.8	9.3	8.8	3.1	3.9	5.6	3.6	1.4
EL	:	:	:	7.9	5.4	4.5	2.1	2.9	3.7	3.9	3.4
ES	4.9	4.6	4.6	3.6	1.9	1.8	2.2	3.5	2.8	3.6	3.1
FR	2.2	1.7	1.8	2.1	1.3	0.7	0.6	1.8	1.8	1.9	2.2
IE	:	:	:	2.2	1.2	2.1	2.5	5.3	4.0	4.7	4.0
IT	4.5	4.2	5.4	4.0	1.9	2.0	1.7	2.6	2.3	2.6	2.8
CY	:	:	:	:	3.3	2.3	1.1	4.9	2.0	2.8	4.0
LV	:	:	:	:	8.1	4.3	2.1	2.6	2.5	2.0	2.9
LT	:	:	:	24.7	8.8	5.0	0.7	0.9	1.3	0.4	-1.1
LU	:	:	:	1.2	1.4	1.0	1.0	3.8	2.4	2.1	2.5
HU	:	:	:	23.5	18.5	14.2	10.0	10.0	9.1	5.2	4.7
MT	:	:	:	:	:	:	:	:	:	:	:
NL	1.6	2.1	1.4	1.4	1.9	1.8	2.0	2.3	5.1	3.9	2.2
AT	3.2	2.7	1.6	1.8	1.2	0.8	0.5	2.0	2.3	1.7	1.3
PL	:	:	:	:	15.0	11.8	7.2	10.1	5.3	1.9	0.7
PT	5.9	5.0	4.0	2.9	1.9	2.2	2.2	2.8	4.4	3.7	3.3
SI	:	:	:	9.9	8.3	7.9	6.1	8.9	8.6	7.5	5.7
SK	:	:	:	5.8	6.0	6.7	10.4	12.2	7.2	3.5	8.5
FI	3.3	1.6	0.4	1.1	1.2	1.4	1.3	3.0	2.7	2.0	1.3
SE	4.8	2.9	2.7	0.8	1.8	1.0	0.6	1.3	2.7	2.0	2.3
UK	2.5	2.0	2.7	2.5	1.8	1.6	1.3	0.8	1.2	1.3	1.4
BG	:	:	:	:	:	18.7	2.6	10.3	7.4	5.8	2.3
RO	:	:	:	38.8	154.9	59.1	45.8	45.7	34.5	22.5	15.3
TR	:	:	:	:	:	:	:	:	:	:	:

(1) EU-15, Belgium, Denmark, Spain, France, Italy, Portugal, Finland, Sweden and the United Kingdom, estimates.

(2) EU-15 and Ireland, estimates.

Source: Eurostat, Harmonized indices of consumer prices (theme2/price/hicp/haind and theme1/cc/cc_b/b_pri_cc/bpri02cc).

Table 28

Consumer confidence (balance) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-15	-25.7	-13.5	-8.0	-14.8	-10.2	-3.8	-2.5	1.2	-4.3	-8.8	-15.2
BE	-24.7	-10.3	-8.6	-13.1	-12.8	1.7	2.6	13.5	0.6	-2.7	-10.8
CZ	:	:	-7.8	-7.2	-26.3	-28.8	-31.0	-19.6	-3.5	-6.6	-15.7
DK	-2.6	11.3	14.3	8.0	14.0	10.3	4.3	11.3	9.2	8.8	3.5
DE	-25.3	-10.9	-6.0	-19.9	-18.0	-5.1	-1.6	2.9	-3.3	-11.4	-18.6
EE	:	-32.9	-22.0	-23.7	-27.2	-24.2	-35.8	-33.8	-21.8	-7.2	-8.7
EL	-31.1	-29.6	-37.3	-27.3	-29.9	-34.8	-27.0	-15.3	-26.6	-27.8	-39.7
ES	-30.9	-16.3	-12.8	-9.4	-2.9	0.1	1.7	2.2	-4.0	-11.6	-13.7
FR	-29.9	-18.6	-13.8	-29.8	-21.5	-11.6	-8.7	-2.8	-11.1	-15.8	-24.7
IE	-20.8	-10.3	-4.6	-0.2	11.7	12.4	14.0	12.5	-1.6	-7.5	-15.7
IT	-31.9	-13.1	-5.3	-12.0	-14.1	-7.7	-9.9	-7.6	-2.8	-8.6	-14.3
CY	:	:	:	:	:	:	:	:	:	-23.3	-25.4
LV	-13.3	-28.0	-33.0	-37.0	-32.8	-2.2	:	:	:	-12.6	-13.5
LT	:	:	:	:	:	:	:	:	:	-20.4	-10.3
LU	:	:	:	:	:	:	:	:	:	7.4	0.0
HU	:	-28.8	-51.4	-43.3	-31.8	-15.4	-27.6	-29.8	-20.0	-5.3	-23.8
MT	:	:	:	:	:	:	:	:	:	:	:
NL	-15.6	-2.3	7.2	7.9	19.5	23.2	19.3	24.4	3.8	-1.6	-14.9
AT	:	:	-6.7	-12.7	-9.2	-1.7	4.7	5.9	3.0	4.4	-3.3
PL	:	:	:	:	:	:	:	:	:	-35.0	-33.0
PT	-33.2	-30.9	-22.8	-25.1	-13.7	-14.8	-14.1	-18.0	-24.2	-33.7	-42.5
SI	:	:	:	:	:	:	:	:	-32.8	-30.3	-34.8
SK	:	:	:	:	:	:	:	:	:	:	:
FI	-8.3	8.8	11.8	12.0	18.3	18.2	17.4	19.7	11.9	13.2	11.4
SE	:	:	2.0	-4.8	4.4	10.0	12.4	21.8	5.0	9.6	4.9
UK	-17.8	-15.8	-10.4	-5.5	3.2	-1.8	-3.6	-3.8	-4.6	-3.8	-6.3
BG	:	:	:	:	:	:	:	:	:	:	:
RO	:	:	:	:	-20.2	-22.0	-20.3	-15.1	-13.9	-20.4	-19.8
TR	:	:	:	:	:	:	:	:	:	:	:

(1) Average of monthly seasonally adjusted data.

Source: Directorate-General for Economic and Financial Affairs, Business and consumer surveys (theme1/euroind/bs/bssi_m).

Table 29

Gross fixed capital formation as a percentage of GDP (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003 (1)
EU-15	19.9	19.8	19.8	19.6	19.4	19.9	20.2	20.6	20.2	19.4	19.0
BE	20.0	19.5	19.9	19.9	20.4	20.6	20.9	21.2	20.9	19.8	19.4
CZ	28.4	28.7	32.0	32.0	30.6	29.1	27.8	28.3	27.5	25.9	26.0
DK	17.1	17.3	18.6	18.6	19.6	20.6	20.3	21.7	20.3	20.6	19.4
DE	23.0	23.1	22.4	21.8	21.4	21.4	21.5	21.6	20.3	18.6	17.7
EE	24.2	26.8	25.9	26.7	28.1	29.6	24.9	25.4	26.5	28.5	30.2
EL	20.3	18.6	18.6	19.5	19.8	21.1	21.7	22.6	23.9	23.9	26.0
ES	21.3	21.1	22.0	21.6	21.9	22.8	24.1	25.3	25.4	25.2	25.6
FR	19.4	19.1	18.8	18.5	18.0	18.4	19.2	20.1	20.1	19.5	19.3
IE	15.5	16.5	17.5	19.1	20.7	22.2	23.7	24.1	23.5	22.1	22.3
IT	18.4	18.0	18.3	18.3	18.3	18.5	19.1	19.8	19.7	19.8	19.1
CY	:	:	19.2	20.4	19.0	19.2	18.1	17.6	17.3	18.8	17.0
LV	13.8	14.9	15.2	18.3	18.8	27.3	25.2	26.5	27.0	26.4	25.3
LT	23.1	23.1	23.0	23.0	24.4	24.3	22.1	18.5	20.2	20.4	20.8
LU	23.7	22.4	21.6	21.3	22.3	22.6	24.0	20.5	22.9	22.5	21.7
HU	18.9	20.1	20.1	21.4	22.2	23.6	23.9	24.2	23.5	23.4	22.0
MT	29.5	29.7	31.9	28.7	25.3	24.5	23.4	26.3	4.4	5.0	5.4
NL	20.7	20.3	20.3	21.1	21.5	21.5	22.5	22.5	21.7	20.7	20.1
AT	23.2	23.5	23.3	23.3	23.6	23.6	23.5	23.9	23.2	22.1	22.7
PL	15.9	17.9	18.6	20.7	23.5	25.2	25.5	24.9	20.7	19.0	18.4
PT	22.2	22.3	22.8	23.3	25.6	26.9	27.4	28.6	27.1	24.6	22.1
SI	18.8	20.1	21.4	22.5	23.4	24.6	27.4	26.7	24.0	22.6	23.0
SK	30.4	26.6	25.2	32.4	34.3	36.2	30.3	29.3	28.8	27.6	25.8
FI	16.4	15.5	16.3	17.0	18.0	18.7	19.0	19.2	20.5	19.0	18.0
SE	15.3	15.1	15.5	15.7	15.2	16.0	17.0	17.3	17.5	16.7	15.7
UK	15.7	15.9	16.3	16.5	16.5	17.6	17.0	16.7	16.8	16.3	16.2
BG	13.0	13.8	15.3	13.5	11.0	13.0	15.1	15.7	18.2	18.1	19.4
RO	17.9	20.3	21.4	23.0	21.2	18.2	17.7	18.9	20.5	21.1	22.3
TR	26.5	24.6	23.8	25.1	26.4	24.6	21.9	22.4	18.2	16.7	17.7

(1) Belgium, France, Ireland, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovenia, Bulgaria, Romania and Turkey, forecasts.

Source: Eurostat, National Accounts - ESA95 - aggregates (theme2/aggs).

Table 30

Business enterprise expenditure on R&D relative to GDP (%) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
EU-15	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3
BE	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.6	1.6
DK	1.0	:	1.1	1.1	1.2	1.3	1.3	1.5	1.7	:
DE	1.6	1.5	1.4	1.5	1.6	1.6	1.7	1.7	1.8	1.7
EL	0.1	:	0.1	0.1	0.1	:	0.2	:	:	:
ES	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	:
FR	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
IE	0.8	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.8	:
IT	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	:
LU	:	:	:	:	:	:	:	1.6	:	:
NL	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	:
AT	0.8	:	:	:	:	1.1	:	:	:	:
PT	:	:	0.1	:	0.1	:	0.2	:	0.3	:
FI	1.4	1.5	1.4	1.7	1.8	2.0	2.2	2.4	2.4	2.5
SE	2.2	:	2.5	:	2.7	2.8	2.8	:	3.3	:
UK	1.4	1.4	1.3	1.2	1.2	1.2	1.3	1.2	1.3	1.2

(1) Estimates.

Source: Eurostat, R&D expenditure at the national level (theme9/rd_ex_p/rd_nat/nat_exp/nat_exp).

Table 31

Industrial confidence indicator (balance) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-15	-24.8	-3.6	-1.8	-14.5	-2.9	-2.7	-8.0	3.3	-10.1	-11.6	-11.1
BE	-28.8	-6.3	-9.1	-17.8	-2.9	-7.8	-8.6	1.9	-14.0	-11.9	-15.0
CZ	:	-7.2	2.9	-0.8	3.8	-8.7	-10.5	15.3	3.0	-0.5	2.8
DK	-9.5	12.5	5.4	-8.7	5.5	-0.8	-12.9	5.7	-1.7	-4.0	-6.4
DE	-31.6	-10.3	-6.5	-19.8	-7.4	-4.3	-13.4	-2.6	-16.2	-18.3	-16.8
EE	-4.1	8.1	7.2	-2.8	6.7	7.9	-7.5	3.5	9.7	13.5	11.2
EL	-6.0	-0.1	3.8	-2.4	3.6	4.3	1.3	8.8	4.3	3.1	-0.4
ES	-34.8	-8.7	-3.3	-14.4	-1.4	1.4	-3.1	3.2	-4.2	-5.7	-0.9
FR	-34.4	-3.3	-2.3	-17.5	-5.3	5.3	-2.2	11.8	-4.0	-9.2	-8.6
IE	-12.8	2.5	7.1	-1.1	3.3	3.2	5.0	9.8	-7.7	-7.2	-8.8
IT	-16.4	2.8	5.7	-12.5	1.0	-0.8	-2.8	11.8	-4.3	-3.5	-3.9
CY	:	:	:	:	:	:	:	:	0.3	1.9	1.3
LV	:	-23.1	-18.3	-18.8	-12.3	-15.7	-17.3	-9.0	-1.8	1.1	3.8
LT	:	-25.8	-6.9	-16.3	-17.8	-22.7	-26.0	-14.9	-7.6	-8.8	-10.2
LU	-25.0	-7.7	9.7	-22.0	4.2	6.7	-11.0	5.3	-15.5	-22.5	-16.9
HU	:	:	:	-2.1	4.3	0.8	-6.9	2.3	-4.3	-6.8	-6.4
MT	:	:	:	:	:	:	:	:	:	:	:
NL	-10.3	-0.9	1.5	-2.4	2.5	1.7	-0.4	4.1	-3.5	-4.8	-8.3
AT	-27.2	-7.5	-12.2	-23.9	-9.5	-8.6	-13.8	-2.8	-13.3	-15.8	-11.0
PL	:	:	:	:	:	-14.6	-20.0	-13.2	-21.8	-20.0	-13.2
PT	-24.8	-3.9	-3.9	-9.6	0.4	2.2	-4.3	2.1	-5.8	-12.0	-15.9
SI	:	:	:	-11.7	-0.1	-3.8	-8.5	7.0	-2.3	-4.6	-4.4
SK	2.8	4.5	1.6	2.7	1.6	6.4	-3.0	9.5	6.7	5.3	6.4
FI	-4.5	18.2	7.8	-11.3	11.2	2.0	-3.8	17.4	-6.8	-5.7	-5.8
SE	:	:	:	:	-0.9	3.1	-7.1	10.8	-18.7	-13.1	-6.8
UK	-10.9	1.8	2.6	-5.1	-1.4	-15.5	-14.3	-6.6	-15.6	-14.6	-17.2
BG	:	:	:	:	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:	:	:	:	:

(1) Average of monthly seasonally adjusted data.

Source: Directorate-General for Economic and Financial Affairs, Business and consumer surveys (theme1/euroind/bs/bssi_m).

Table 32

Capacity utilisation rates for total industry (%) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU-15	78.0	79.9	83.0	80.9	81.8	83.3	82.2	84.1	82.9	81.1	80.7
BE	74.8	77.6	80.9	79.5	81.4	82.7	80.9	84.0	82.3	79.6	78.7
CZ	76.2	78.5	80.4	81.6	82.8	82.6	81.5	84.6	85.7	83.3	85.1
DK	77.7	81.8	83.4	81.7	83.3	85.5	82.2	82.5	82.8	81.2	80.6
DE	78.8	82.6	84.8	82.0	84.5	85.7	84.7	86.4	84.4	82.3	82.0
EE	:	56.8	56.8	57.4	62.4	68.3	63.5	66.7	72.6	74.5	73.7
EL	76.0	74.5	76.6	75.6	74.4	75.8	75.7	78.1	77.6	77.0	76.5
ES	72.8	74.5	78.4	77.1	78.3	80.3	79.7	80.6	79.6	77.2	78.9
FR	81.4	80.4	85.4	83.5	82.3	83.8	85.3	87.5	87.4	85.3	84.8
IE	73.6	74.9	79.9	77.6	75.9	76.6	75.9	78.6	78.4	75.9	75.1
IT	74.4	75.2	78.1	76.5	76.4	78.5	76.0	78.8	78.9	77.3	76.3
CY	:	:	:	:	:	:	:	:	:	68.9	68.7
LV	:	48.1	50.3	53.7	56.2	61.8	57.1	59.4	63.3	71.0	69.9
LT	51.8	49.5	44.3	46.4	50.6	53.0	51.5	53.6	60.6	63.6	66.9
LU	80.1	81.3	82.9	79.0	82.4	88.0	84.9	87.8	88.7	85.1	84.7
HU	:	:	:	77.4	79.9	79.9	78.6	82.0	81.7	78.8	79.4
MT	:	:	:	:	:	:	:	:	:	:	:
NL	81.0	82.4	84.4	83.9	84.4	85.3	84.0	84.7	84.6	82.9	81.7
AT	:	:	:	80.2	82.0	83.7	81.9	84.5	83.1	80.2	80.0
PL	:	:	:	:	76.5	76.7	73.6	72.4	69.3	69.9	72.9
PT	73.9	77.3	79.7	78.9	80.9	81.4	80.8	81.2	81.7	79.4	79.0
SI	:	:	:	77.5	78.8	80.4	77.9	79.7	80.9	81.0	80.9
SK	:	74.3	74.0	78.0	80.0	82.3	79.5	84.5	84.9	78.4	74.2
FI	82.3	86.9	87.7	83.2	87.2	88.9	86.1	86.8	85.7	82.7	81.9
SE	:	:	:	85.0	85.7	85.1	85.8	87.5	83.6	83.1	83.6
UK	80.0	82.8	84.4	82.5	83.8	83.7	79.4	81.3	79.7	79.0	78.2
BG	:	:	:	:	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:	:	:	:	:
TR	:	:	:	:	:	:	:	:	:	:	:

(1) Average of quarterly seasonally adjusted data.

Source: Directorate-General for Economic and Financial Affairs, Business and consumer surveys (theme1/euroind/bs/bsin_q).

Table 33

Labour force characteristics, Q2-2002 (1)

	EU-25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Number of persons employed (thousands)															
Total	124 987	2 576	3 415	1 635	24 531	398	2 402	11 336	14 716	1 174	14 723	213	553	777	118
Male	43 914	839	1 289	558	9 087	171	753	3 537	5 182	423	4 640	83	237	322	40
Female	81 073	1 737	2 127	1 077	15 444	227	1 649	7 799	9 534	751	10 082	130	316	455	78
Full-time and part-time work (% share of persons employed)															
Full-time	87.0	86.0	96.2	84.6	82.4	95.5	97.0	93.9	88.8	85.6	92.5	94.0	94.1	93.4	90.8
Part-time	13.0	14.0	3.8	15.4	17.6	4.5	3.0	6.1	11.2	14.4	7.5	6.0	5.9	6.6	9.2
Unemployment rate (% share of labour force aged 15-64) (2)															
Total	7.7	6.9	7.1	4.3	8.6	9.6	9.8	11.1	8.7	4.3	9.3	3.4	13.4	13.2	2.6
Male	6.9	6.3	5.8	4.3	8.8	10.4	6.4	7.7	7.8	4.7	7.1	2.7	15.1	13.4	1.9
Female	8.7	7.8	8.6	4.4	8.3	8.9	14.9	16.3	9.8	3.8	12.7	4.2	11.7	13.0	3.6
	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR	
Number of persons employed (thousands)															
Total	2 633	105	4 687	2 612	8 001	3 298	633	1 435	1 502	2 606	18 910	1 833	4 565	:	
Male	1 032	28	1 581	978	3 026	1 192	252	556	557	871	6 681	804	1 873	:	
Female	1 600	77	3 106	1 634	4 975	2 107	381	879	945	1 735	12 229	1 028	2 693	:	
Full-time and part-time work (% share of persons employed)															
Full-time	96.9	92.4	64.9	:	92.9	94.9	95.9	98.4	88.5	84.1	79.3	98.1	98.2	:	
Part-time	3.1	7.6	35.1	:	7.1	5.1	4.1	1.6	11.5	15.9	20.7	1.9	1.8	:	
Unemployment rate (% share of labour force aged 15-64) (2)															
Total	5.6	:	3.7	4.2	20.2	4.8	18.7	8.6	10.5	5.0	5.1	18.3	8.8	:	
Male	6.1	:	3.8	3.7	19.6	4.1	18.7	7.0	10.7	5.4	5.6	19.0	9.1	:	
Female	5.1	:	3.5	4.8	21.0	5.7	18.8	10.5	10.2	4.7	4.4	17.5	8.3	:	

(1) NACE Sections C to K; France, Q1-2002.

(2) For the total population, not just those employed in NACE Sections C to K.

Source: Eurostat, Labour Force Survey.

Table 34

Average number of hours usually worked per week by persons aged 15-64, Q2-2002 (hours) (1)

NACE label (NACE Section(s))	EU-25	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Industry and services (C to K)	38.5	38.2	41.8	36.0	38.1	41.0	44.0	39.4	38.6	38.0	37.3	38.7	43.6	40.1	39.7
Mining and quarrying (C)	40.9	:	39.2	:	40.4	:	41.3	39.1	39.5	:	36.3	:	:	:	:
Manufacturing (D)	38.5	37.1	40.0	35.9	38.2	40.0	42.5	38.8	38.1	38.6	36.4	37.6	42.9	39.6	39.4
Electricity, gas & water supply (E)	38.5	35.1	39.9	:	39.5	:	38.8	38.2	36.5	:	35.7	:	42.2	39.6	:
Construction (F)	40.4	39.1	45.3	37.3	40.8	41.2	41.7	39.6	39.9	41.3	37.8	37.0	45.4	40.8	40.5
Distributive trades (G)	37.6	39.1	42.8	34.1	35.8	42.2	45.1	39.8	38.5	35.3	39.1	39.8	44.3	40.3	39.2
Hotels and restaurants (H)	39.2	43.2	44.7	31.5	39.1	:	49.1	42.8	42.2	34.9	41.4	42.7	44.8	40.7	42.0
Transport, storage & communication (I)	40.0	38.3	42.6	37.8	40.4	42.4	45.6	40.1	38.1	40.9	37.1	39.3	44.0	41.7	40.5
Financial intermediation (J)	37.1	36.4	41.1	36.2	38.5	:	39.5	38.0	38.1	37.0	34.5	35.2	:	:	39.1
Real estate, renting & business activities (K)	37.1	37.7	41.8	37.6	37.2	40.9	42.1	36.9	38.2	37.3	35.4	37.5	42.1	38.4	39.0
NACE label (NACE Section(s))	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR	
Industry and services (C to K)	41.7	40.7	32.0	38.0	41.9	40.4	40.2	41.0	36.9	35.5	37.1	41.7	42.9	:	
Mining and quarrying (C)	41.6	45.5	:	38.5	40.7	:	:	39.0	:	:	47.5	40.3	40.6	:	
Manufacturing (D)	40.7	41.4	33.2	38.0	41.3	39.2	39.5	39.9	37.5	35.7	39.6	40.9	41.6	:	
Electricity, gas & water supply (E)	41.2	40.2	33.5	38.9	40.0	:	39.1	39.8	35.8	34.7	39.0	39.9	41.3	:	
Construction (F)	43.2	41.5	36.7	39.3	44.4	40.0	42.1	43.1	39.5	36.9	41.8	41.9	45.8	:	
Distributive trades (G)	41.7	40.4	29.2	36.1	42.7	40.9	40.3	41.4	35.8	34.9	32.7	43.0	45.2	:	
Hotels and restaurants (H)	42.8	38.9	28.1	40.4	41.2	48.2	41.3	42.4	34.9	34.6	29.8	43.2	45.0	:	
Transport, storage & communication (I)	42.9	40.9	34.3	39.9	43.0	41.1	42.1	41.6	38.6	36.6	40.9	41.6	43.2	:	
Financial intermediation (J)	40.5	39.5	31.8	37.4	39.7	36.1	38.5	40.3	34.9	34.1	35.9	40.6	41.2	:	
Real estate, renting & business activities (K)	42.2	40.7	32.1	37.1	40.0	37.5	40.1	42.1	35.1	34.8	36.9	41.1	42.4	:	

(1) France, Q1-2002.

Source: Eurostat, Labour Force Survey (theme3/lfs/worktime/ewhana).

Energy



The internal market for energy products has undergone major changes in recent years, and the functioning of these markets is an issue still under review. Access to markets for suppliers and choice for consumers are key issues. Other major policy issues affecting the energy sector are energy efficiency, the security of supply of fuels, the environmental impact of the energy sector, the related role of renewable energy sources, and safety, particularly with respect to nuclear energy.

STRUCTURAL PROFILE

In 2001 the energy sector generated in excess of EUR 200 billion of gross value added, equivalent to almost 5 % of the wealth created by the EU-25's non-financial business sector (total of NACE Sections C to I and K). By comparison, at 1.1 million persons, employment in the EU-15 energy sector accounted for just 1.2 % of employment in the non-financial business sector.

The energy sector is essentially made up of three very different parts, namely extraction, processing and distribution - see Table 1.1 overleaf. The mining and extraction of energy products (NACE Divisions 10 to 12) generated 26.3 % of EU-25 value added in the energy sector in 2001, compared with 25.7 % for EU-15: the main difference was the higher importance of the mining of hard coal (NACE Division 10) in the new Member States. Fuel processing (NACE Division 23) accounted for 12.7 % of the EU's value added in the energy sector, both before and after enlargement, although there was a shift in emphasis within this sector as enlargement left the value added of nuclear fuel processing (NACE Group 23.3) unchanged at EUR 3.4 billion, while the manufacture of coke oven products (NACE Group 23.1) tripled, albeit to only EUR 0.3 billion. The network supply of electricity, gas, steam and hot water (NACE Division 40) was the largest segment within the energy sector, generating just over 60 % of value added in both the EU-15 and EU-25.

In employment terms the dominance of the network distribution part of the energy sector was even clearer, NACE Division 40 accounting for 74.1 % of employment in the EU-15's energy sector, with 838 000 persons employed in 2001. The processing of energy products (NACE Division 23) accounted for 12.4 % of the energy sector's employment, slightly less than the 13.5 % share of mining and extraction of energy producing materials (NACE Divisions 10 to 12).

This chapter describes the activities involved in the supply of energy, which include the mining and quarrying of energy producing materials (NACE Divisions 10 to 12), the manufacture of coke, refined petroleum products and nuclear fuel (NACE Division 23) and the supply of electricity, gas, hot water and steam (NACE Division 40). Unlike most of the chapters in this publication, this one focuses mainly on products, namely solid fuels, oil, gas and electricity.

NACE

- 10: mining of coal and lignite; extraction of peat;
- 10.1: mining and agglomeration of hard coal;
- 10.2: mining and agglomeration of lignite;
- 10.3: extraction and agglomeration of peat;
- 11: extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying;
- 11.1: extraction of crude petroleum and natural gas;
- 11.2: service activities incidental to oil and gas; extraction, excluding surveying;
- 12: mining of uranium and thorium ores;
- 23: manufacture of coke, refined petroleum products and nuclear fuel;
- 23.1: manufacture of coke oven products;
- 23.2: manufacture of refined petroleum products;
- 23.3: processing of nuclear fuel;
- 40: electricity, gas, steam and hot water supply;
- 40.1: production and distribution of electricity;
- 40.2: manufacture of gas; distribution of gaseous fuels through mains;
- 40.3: steam and hot water supply.

Table 1.1
Energy, key indicators, 2001

	Value added (EUR million)		Share of energy total (%)	
	EU-25	EU-15	EU-25	EU-15
Mining of coal and lignite; extraction of peat (NACE Division 10)	10 321	4 743	4.7	2.4
Extraction of crude petroleum and natural gas; excluding surveying (NACE Division 11)	47 347	47 021	21.6	23.3
Mining of uranium and thorium ores (NACE Division 12)	-2	1	0.0	0.0
Manufacture of coke oven products (NACE Group 23.1)	322	96	0.1	0.0
Manufacture of refined petroleum products (NACE Group 23.2)	24 238	22 232	11.0	11.0
Processing of nuclear fuel (NACE Group 23.3)	3 372	3 372	1.5	1.7
Electricity, gas, steam and hot water supply (NACE Division 40) (1)	133 928	124 212	61.0	61.6
Total	219 525	201 677	100.0	100.0

	Employment (thousands)		Share of energy total (%)	
	EU-25	EU-15	EU-25	EU-15
Mining of coal and lignite; extraction of peat (NACE Division 10)	:	105 748	:	9.4
Extraction of crude petroleum and natural gas; excluding surveying (NACE Division 11)	:	46 871	:	4.1
Mining of uranium and thorium ores (NACE Division 12)	:	105	:	0.0
Manufacture of coke oven products (NACE Group 23.1)	:	1 464	:	0.1
Manufacture of refined petroleum products (NACE Group 23.2)	:	106 139	:	9.4
Processing of nuclear fuel (NACE Group 23.3)	:	32 159	:	2.8
Electricity, gas, steam and hot water supply (NACE Division 40)	:	838 498	:	74.1
Total	:	1 130 984	:	100.0

(1) 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

The United Kingdom generated close to two thirds (63.6 %) of the EU-15's value added in 2001 in the mining and extraction of energy products sector, ahead of the Netherlands (10.8 %); in both of these countries the extraction of crude petroleum and/or natural gas from the North Sea was responsible for the highest shares. In employment terms, Germany's workforce of 70 200 accounted for 45.9 % of the EU-15 total, mainly from its coal and lignite mining sector. This sector was also significant (in employment terms) in Poland and the Czech Republic ⁽¹⁾.

In the fuel processing sector, Germany accounted for more than a quarter of the EU-15 value added and the United Kingdom close to one fifth. Greece was very highly specialised in this sector, generating more than EUR 1 billion of value added in 2001.

In electricity, gas, steam and hot water supply there was much less specialisation across the Member States, with Germany accounting for 24.0 % of EU-15 value added.

⁽¹⁾ Poland, incomplete data set; Slovenia, no recent data available.

LABOUR AND PRODUCTIVITY

The difference in terms of value added and employment shares accounted for by the mining and extraction of energy producing materials results from a relatively low level of employment in the extraction of crude petroleum and natural gas (and incidental services) and a relatively high level of employment in the mining of coal and lignite (and peat extraction). These differences are reflected in the apparent labour productivity figures. For EU-15, excluding the very small uranium and thorium ore mining division, these ranged from EUR 44 900 per person employed within coal and lignite mining, to over EUR 1 million per person employed in the extraction of crude petroleum and natural gas sector. Average personnel costs did not vary to the same extent, with the same two divisions recording the lowest (EUR 49 000 per employee) and the highest (EUR 83 300) values.

Table 1.2

Mining and quarrying of energy producing materials; manufacture of coke, refined petroleum products and nuclear fuel; electricity, gas, steam and hot water supply (NACE Divisions 10, 11, 12, 23 and 40)
Labour force characteristics, 2002

	Share of men (%)	Share of full-time (%)	Share of employees (%)
EU-25	:	:	:
EU-15	81.9	95.2	98.1
BE	80.9	97.5	99.7
CZ	79.3	99.0	97.4
DK	88.0	100.0	100.0
DE	82.6	95.6	99.0
EE	78.5	94.2	100.0
EL	86.6	98.7	99.4
ES	82.6	98.1	98.9
FR	79.5	91.6	99.8
IE	84.3	94.8	98.0
IT	82.7	96.7	95.5
CY	88.5	100.0	98.1
LV	80.0	98.5	100.0
LT	84.6	99.6	100.0
LU	83.9	95.0	100.0
HU	77.0	99.1	98.6
MT	85.5	100.0	96.5
NL	81.2	79.8	99.8
AT	86.1	:	99.4
PL	:	:	:
PT	82.2	97.9	96.3
SI	88.6	99.0	98.7
SK	86.3	99.4	96.7
FI	80.2	93.9	96.1
SE	77.4	92.3	98.1
UK	80.9	96.2	96.8

Source: Eurostat, Labour Force Survey.

PRODUCTION, EXTERNAL TRADE AND CONSUMPTION OF ENERGY PRODUCTS

DEFINITIONS

Primary production is the sum of energy extraction, heat produced in reactors as a result of nuclear fission and the use of renewable energy sources. Primary production, net imports (imports - exports) and stock changes combine to show gross inland consumption. This indicator corresponds to the amount of energy available for final consumption plus the sum of distribution and transformation losses and consumption by the energy branch itself. Energy available for final consumption is the energy placed at the disposal of consumers including non-energy consumption, for example the use of some energy products as raw materials by the chemical industry.

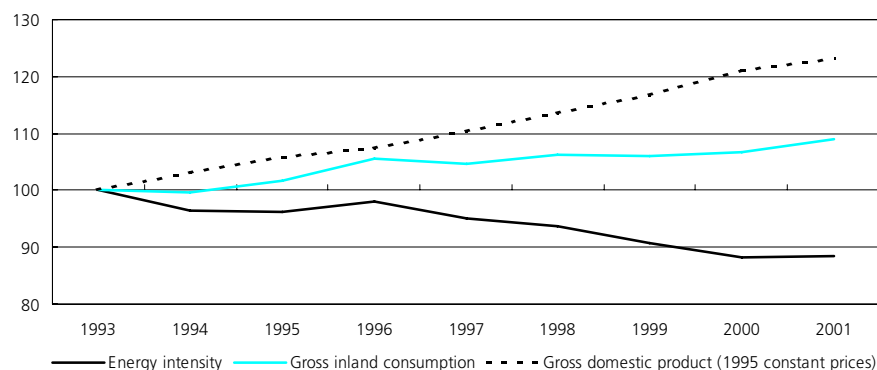
Primary energy production in the EU-25 increased by 3.4 % between 1993 and 2001 to reach 896 million toe (tonnes of oil equivalent). This rate of increase was slower than that recorded for gross inland consumption over the same period, namely a 9.1 % increase to 1.69 billion toe. Consequently the EU's dependency on energy imports has grown, net imports increasing by 17.9 % to 826 million toe in 2001, equivalent to more than 90 % of primary production. It should be noted that EU-15 net imports (766 million toe) were higher than primary production (757 million toe) in 2001.

Energy intensity measures the energy consumption of an economy and its overall energy efficiency, and is calculated by dividing gross inland energy consumption by GDP (at 1995 constant prices); this indicator is measured in kgoe (kilogram of oil equivalent) per thousand euro. Despite the increase in gross inland energy consumption, the energy intensity of the EU-25 economy declined from 239.9 kgoe per thousand euro in 1993 to 212.4 in 2001, meaning that less energy was required to produce the same amount of GDP (see Figure 1.1). While this fall in energy intensity within the EU-25 was stronger than the equivalent rate of change for the EU-15, energy intensity in the EU-25 was still 9.4 % higher than in the EU-15 (194.1 kgoe per thousand euro) in 2001.

The enlargement of the EU has had a major impact on the energy sector, mainly because of the different production and consumption profiles of several of the new Member States, notably Poland and the Czech Republic. Figures 1.2 to 1.4 (overleaf) show the product mix of the EU in terms of primary production, net imports and gross inland consumption.

The importance of solid fuels in primary production is significantly higher within an EU made up of 25 Member States as compared with 15. Poland alone produced 73.4 % as much solid fuels in 2001 as the EU-15, while production in the Czech Republic was equivalent to 26.1 % of the EU-15 total. The higher share of solid fuels in primary production in the EU-25 was at the expense of all other fuel types, but most notably crude oil and petroleum products, and gas.

Figure 1.1
Energy intensity, EU-25 (1993=100)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_100a); National accounts - Aggregates (theme2/aggs/aggs_gdp/a_gdp_k).

Enlargement had an impact on net imports in various ways. Firstly the high levels of production of solid fuels in some of the new Member States meant that they were net exporters of these products, contrasting with the net import situation in many of the EU-15 Member States. Furthermore, a high proportion of the net exports of the new Member States were the result of trade with the EU-15 Member States, and hence within the calculation of net imports for the EU-25 these cancel out. The enlargement to 25 Member States has in fact reduced the EU's net imports of solid fuels, from 119.1 million toe in the EU-15 in 2001 to only 103.5 million toe in the EU-25. Net imports of electricity were also lower for the EU-25 than for the EU-15. Overall the EU had higher net energy imports in 2001 with 25 Member States than it did with 15 Member States, mainly due to a larger deficit for gas in relative terms and for crude oil and petroleum products in absolute terms.

NOTE ON EXTERNAL TRADE

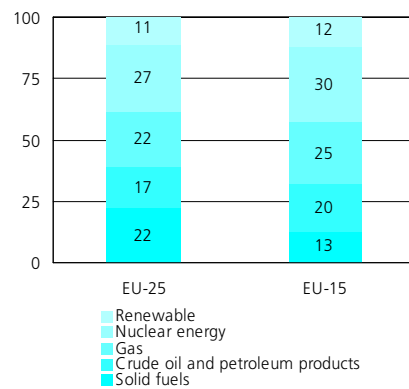
Note that unlike the rest of this publication the EU's imports and exports for energy products (from the Sirene database) are generally measured as the sum of the external trade of the Member States. In practical terms this means that internal trade between EU Member States is counted in the EU's total, rather than considering the EU as a whole and only counting extra-EU trade flows.

For the energy sector, the enlargement from 15 Member States to 25, by definition, therefore increases both the exports and imports of energy products, as the trade flows of the 10 newest Member States are simply added to those of the previous 15 Member States.

As a result of the contrasting positions with respect to primary production and net imports, the mix of fuels for gross inland consumption was less different between the EU-15 and the EU-25. Nevertheless, the dominant position of fossil fuels was reinforced, with solid fuels, oil and gas accounting for 79.4 % of EU-25 gross inland consumption in 2001, compared with 78.1 % in the EU-15. This net increase results from a higher use of solid fuels outweighing a lower use of crude oil and petroleum products, and gas.

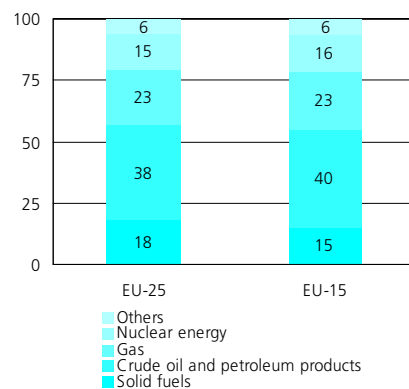
An analysis of the product mix of gross inland consumption over time shows a different picture (see Figure 1.5). Focusing on the EU-25 aggregate, the product mix in 2001 compared with 10 years earlier indicated a lower dependence on fossil fuels, and a higher use of other sources. Among the fossil fuels the importance of solid fuels fell the greatest over

Figure 1.2
Primary production by fuel type, 2001 (%)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

Figure 1.4
Gross inland consumption by fuel type, 2001 (%)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

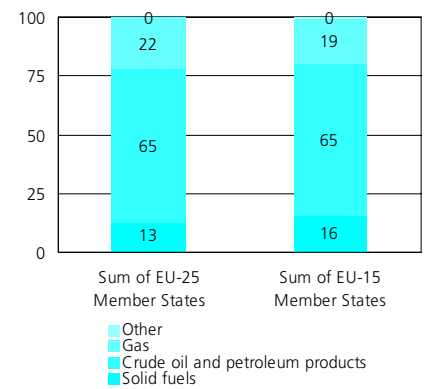
the 10 years, from 26.0 to 18.1 % in 2001. This was mainly compensated by an increase in the use of gas, rising from 17.4 to 22.8 % (and in the process overtaking solid fuels as the second most important energy source since 1997). This change has, to a large extent, been the result of changes in inputs for conventional thermal power stations.

The overall declining share of fossil fuels in gross inland consumption was balanced mainly by an increased use of nuclear energy and renewable energy sources⁽²⁾. The share of nuclear energy rose from 12.9 % in 1991 to 14.6 % of gross inland consumption in 2001. Renewable energy sources increased their share from 4.5 % of total gross inland consumption in 1991 to 6.0 % in 2001 - see Subchapter 1.2 for more information on the use of various energy sources within the domain of electricity generation.

Figure 1.6 provides an overview of the change in the destination of final energy use in the

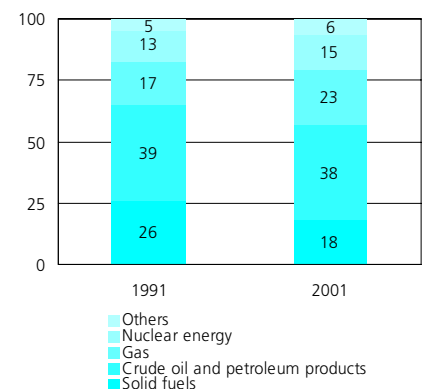
⁽²⁾ Hydroelectric, wind, solar, geothermal energy and biomass/waste.

Figure 1.3
Net imports by fuel type, 2001 (%)



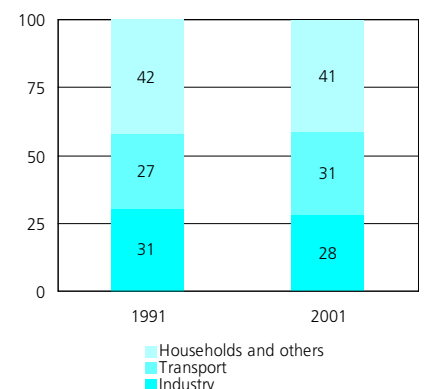
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

Figure 1.5
Gross inland consumption by fuel type, EU-25 (%) (1)



(1) Provisional.
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

Figure 1.6
Final energy consumption by end-use, EU-25 (%) (1)



(1) Excluding Austria; provisional.
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

years between 1991 and 2001. Most notably the share of energy used for transport in the EU-25 increased, while the share consumed by industry, households and other fell.

1.1: CRUDE OIL AND NATURAL GAS

This subchapter looks at crude oil, petroleum products and natural gas. Although the analysis is based on product statistics, the activities related to these products are covered by the extraction of crude petroleum and natural gas and related supporting services (NACE Division 11), the manufacture of refined petroleum products (NACE Group 23.2) and the manufacture and distribution of gas (NACE Group 40.2). The related activities of exploration and surveying are covered in Chapter 22 and the retail sale of automotive fuels is covered in Chapter 16.

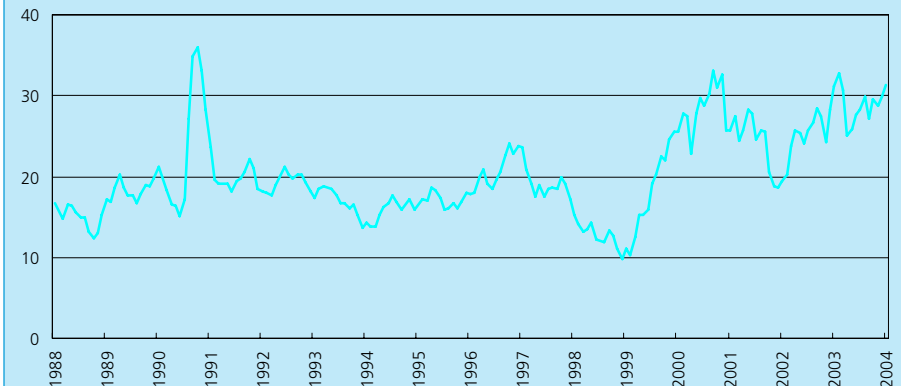
The gas market in the EU has been changing through the implementation of the 1998 Gas Directive⁽³⁾ which aimed to open up the market, focusing on transparency and non-discrimination. The directive allowed for a phased opening of markets, starting with gas fired power generators and large final customers in the first stage, and then moving in two further stages to smaller consumers. The impact of the implementation has been the subject of benchmarking exercises. Market developments, implementation choices and outstanding obstacles have motivated a replacement⁽⁴⁾ to the Gas Directive which was adopted in June 2003. Its aim is to have a gas market open for all non-household customers by July 2004, and for all customers by July 2007, as well as further unbundling the sector's supply and distribution enterprises. On 10 December 2003 the European Commission proposed a regulation⁽⁵⁾ on conditions for access to the gas transmission networks to provide a legal basis for existing voluntary rules.

⁽³⁾ Directive 98/30/EC of the European Parliament and of the Council concerning common rules for the internal market in natural gas.

⁽⁴⁾ Directive 2003/55/EC of the European Parliament and of the Council concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC.

⁽⁵⁾ Proposal for a regulation of the European Parliament and of the Council on conditions for access to the gas transmission networks, COM(2003) 741 final, 10 December 2003.

Figure 1.7 Brent Spot Price FOB (USD/barrel), unweighted monthly average



Source: http://www.eia.doe.gov/oil_gas/petroleum/info_glance/prices.html, Energy Information Administration (United States).

Table 1.3 Production and proven reserves of crude oil, 2002

	Production (million tonnes)	Proven reserves (million tonnes) (1)	Production capacity (years) (2)
North America	467.8	27 621	59.0
Latin America	517.8	15 167	29.3
Africa	376.5	10 563	28.1
Western Europe	308.0	2 469	8.0
Eastern Europe	454.8	10 827	23.8
Middle East	1 021.0	93 539	91.6
Far East & Oceania	380.8	5 281	13.9
World	3 526.7	165 468	46.9

(1) As of 1 January 2003.

(2) Ratio of reserves divided by production.

Source: CPDP.

Figure 1.7 shows a long time-series of oil prices. From a high above USD 37 in early September 2000, crude oil prices fell through to the end of the year and stabilised generally between USD 25 and 30 until the middle of September 2001 when they dropped below USD 20. Prices bottomed out at USD 16 in the middle of November 2001, since when they have returned to the range of USD 25 to 30, with a peak close to USD 35 shortly before the start of the Iraq war in the first quarter of 2003.

Table 1.3 shows world production and reserves of crude oil, from which it is clear that western Europe's production is less than 10 % of the world total, and its reserves relative to production are very low. It should be noted that Norway, which is a major oil producer, is included in the western European total.

PRODUCTION AND CONSUMPTION OF ENERGY PRODUCTS

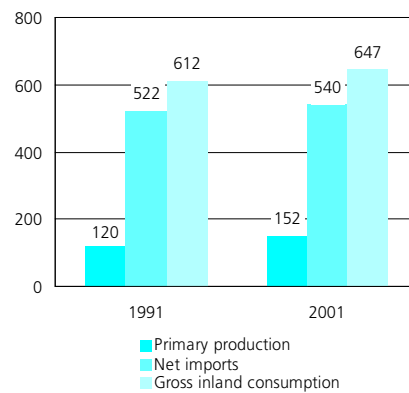
EU-25 primary production of crude oil, petroleum products and natural gas was 348.9 million toe in 2001, of which gas accounted for more than half. Among the Member States, the United Kingdom was by far the largest producer of hydrocarbons in the EU, contributing 77.9 % of EU-25's primary production of crude oil and petroleum products and 48.3 % of its natural gas in 2001. Denmark was the EU's second largest primary producer of crude oil and petroleum products with an 11.3 % share and the Netherlands was the only other Member State to have a share of primary natural gas production in excess of 10 %, accounting for 28.2 %. Among the new Member States, Poland (1.8 %) and Hungary (1.3 %) were the only ones to contribute more than 1 % to the EU-25's primary production of natural gas, and Hungary also provided 1.0 % of the EU-25's primary production of crude oil and petroleum products.

As can be seen in Figures 1.8 and 1.9 the origin of supply of gross inland consumption is very different for the two types of hydrocarbons, with primary production of natural gas exceeding net imports, while net imports of crude oil and petroleum were 3.6 times higher than primary production in 2001. Nevertheless, the importance of primary production of crude oil and petroleum products has increased as in 1991 primary production was equivalent to 19.7 % of gross inland consumption, a share that had risen to 23.4 % by 2001. The reverse was true for natural gas, where primary production was 51.4 % of gross inland consumption in 2001, 4.3 percentage points lower than 10 years earlier.

Gross inland consumption of these hydrocarbons increased from 886.1 million toe in 1991 to 1 031.1 million toe in 2001. Crude oil and petroleum provided two thirds of this total (62.8 %) in 2001, less than in 1991. This falling share was the result of slower growth in the gross inland consumption of crude oil and petroleum products (0.6 % annual average) compared with that for natural gas (3.4 % annual average) during the 10-year period considered.

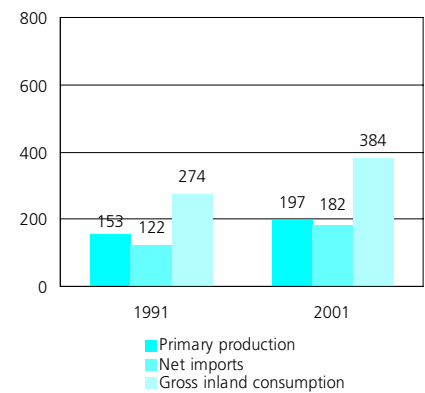
These two types of hydrocarbons are also strikingly different in their use. Crude oil is essentially a transformation input, while only one quarter of the gross inland consumption of natural gas is transformed.

Figure 1.8
Main indicators for crude oil and petroleum products, EU-25 (million toe)



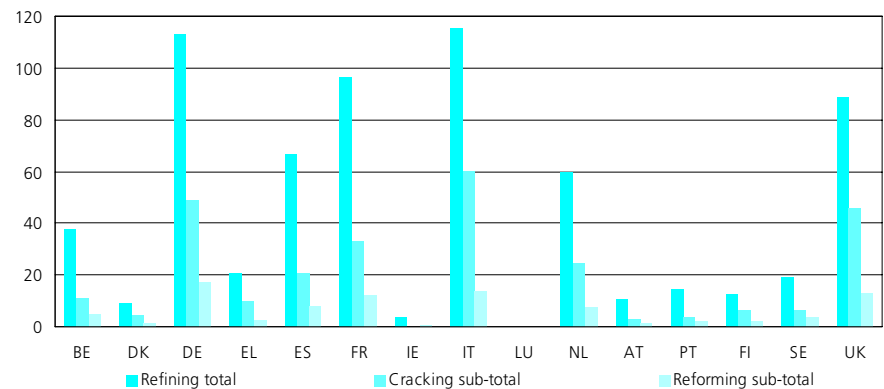
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_102a).

Figure 1.9
Main indicators for natural gas, EU-25 (million toe)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

Figure 1.10
Capacity for refining crude oil, 2000 (million tonnes/year)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_11/es_111a).

Analysing crude oil in more detail, EU-25 transformation reached 747 million tonnes in 2001, of which 5.0 % was for conventional thermal power stations, and 94.6 % was for refineries. Figure 1.10 provides an overview of refining capacity for crude oil in the EU-15 Member States, which shows the relatively high importance of these processes in Belgium and the Netherlands. EU-25 transformation output of all petroleum products was 696 million tonnes in 2001, split as follows: gas/diesel oil, 35.9 %; motor spirit, 21.9 %; residual fuel oils, 15.5 %; naphtha, 6.4 %; kerosene/jet fuels, 6.3 %; refinery gas, 3.6 %; liquefied petroleum gases (LPG), 3.1 %; and various other petroleum products, 7.2 %. Four fifths of the transformation output of petroleum products (80.8 %) was available for final consumption in 2001, with 84.5 % of this consumed as energy and 15.5 % for non-energy purposes.

In contrast an analysis of the gross inland consumption of natural gas shows that one quarter (25.3 %) was taken for transformation, of which nearly all (23.6 %) was for use in conventional thermal power stations and the remainder in district heating plants, essentially in Germany, the United Kingdom and the Nordic Member States. After consumption by the energy sector, the remaining 70.3 % of gross inland consumption was available for final consumption, with only a small part (3.4 % of gross inland consumption) used by the chemical sector for non-energy purposes. Households (29.4 % of gross inland consumption) and industry (24.6 %) were the main final energy users of natural gas.

Table 1.4

Crude oil and feedstocks**Trade indicators, sum of EU-25 Member States**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports (million tonnes)	67	68	76	98	96	94	96	100	111	117	105
Imports (million tonnes)	554	572	570	575	566	585	599	624	591	613	613
Trade balance (million tonnes)	-487	-504	-494	-477	-470	-491	-503	-525	-481	-497	-508
Cover ratio (%)	826.9	842.8	750.6	586.0	590.2	620.9	624.4	625.5	534.8	525.3	586.4

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_123a and es_133a).

Table 1.5

All petroleum products**Trade indicators, sum of EU-25 Member States**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports (million tonnes)	176	183	192	189	181	193	200	205	198	210	210
Imports (million tonnes)	211	205	208	201	203	213	212	219	223	233	242
Trade balance (million tonnes)	-34	-22	-16	-12	-21	-20	-12	-14	-25	-23	-33
Cover ratio (%)	83.8	89.3	92.5	94.0	89.6	90.5	94.4	93.8	89.0	90.0	86.6

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_123a and es_133a).

Table 1.6

Natural gas**Trade indicators, sum of EU-25 Member States**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports (thousand Terajoules)	1 488	1 605	1 656	1 662	1 609	1 926	1 820	1 717	1 927	2 273	2 589
Imports (thousand Terajoules)	7 182	7 243	7 105	7 255	7 880	8 834	8 984	9 241	10 175	10 781	11 056
Trade balance (thousand Terajoules)	-5 694	-5 638	-5 449	-5 593	-6 271	-6 908	-7 164	-7 524	-8 249	-8 508	-8 467
Cover ratio (%)	20.7	22.2	23.3	22.9	20.4	21.8	20.3	18.6	18.9	21.1	23.4

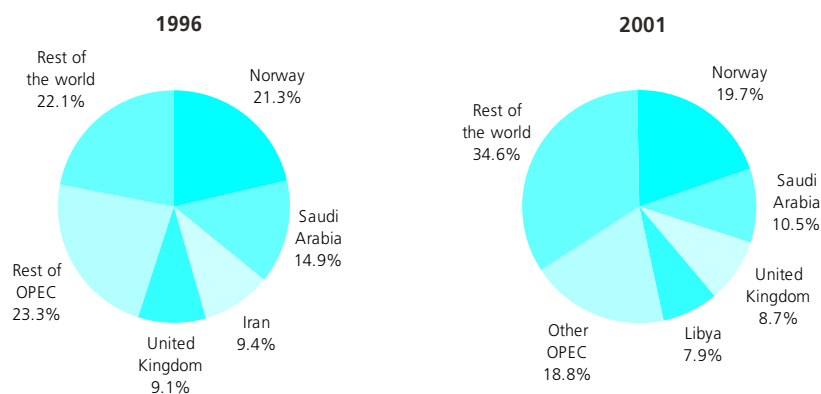
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_124a and es_134a).

EXTERNAL TRADE

The importance of crude oil imports for the EU has already been noted with respect to production and consumption. Table 1.4 shows that the EU-25's exports of crude oil and feedstocks were relatively small compared with imports, and that the negative trade balance (net imports) widened over the last few years for which data are available, with imports nearly six times higher than exports in 2001. Table 1.5 shows the situation for petroleum products, where the level of exports and imports was much closer, although the EU ran a deficit of between 12 and 34 million tonnes each year during the decade from 1991 to 2001. The trade situation for natural gas was similar to that for crude oil, with imports several times higher than exports, and a trade deficit generally widened over the 10-year period considered - see Table 1.6.

Considering both intra- and extra-external trade flows, Norway was the most important supplier of crude oil to the EU-15 in 2001, as it had been in 1996. The only Member State among the top suppliers was the United Kingdom, which occupied third place behind Saudi Arabia in 2001. Collectively OPEC provided 45.6 % of the EU-15's crude oil imports in 2001 - see Figure 1.11.

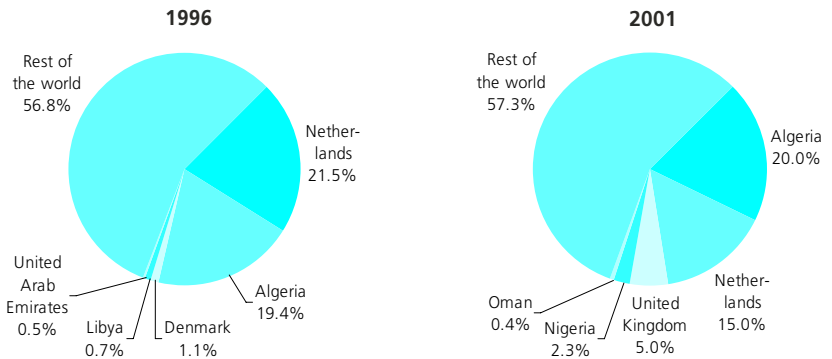
Figure 1.11

**Crude oil
Sum of EU-15 Member States: origin of imports**

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_123a).

Comparing Figures 1.11 and 1.12 it is clear that the origins of natural gas imports were much more diverse than those for crude oil. Furthermore, in 2001 two Member States, Denmark and the Netherlands, were among the top five countries satisfying the import requirements of the 15 EU Member States, and a third, the United Kingdom was the sixth most important source. It should, however, be noted that a full breakdown of the origins of EU-15 imports of natural gas is not available, and most importantly, information on imports from Norway and the countries of the former Soviet Union are not available.

Figure 1.12
Natural gas
Sum of EU-15 Member States: origin of imports (1)



(1) Data not available for all partner countries, notably Norway, Russia and other countries of the former Soviet Union.
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_124a).

1.2: ELECTRICITY GENERATION AND DISTRIBUTION

This subchapter covers the generation and consumption of electricity, whether generated from fossil, nuclear or renewable fuels.

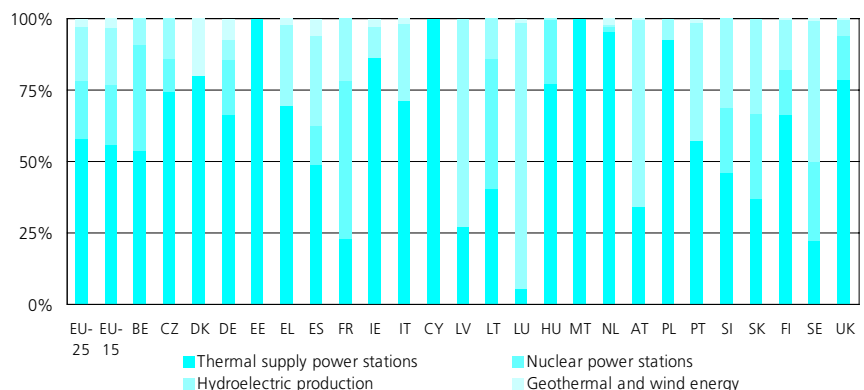
The development of an internal energy market has led to changes in the electricity sector, notably the unbundling of generation, transmission and distribution. The Electricity Directive ⁽⁶⁾ legislates for access to networks to be based on objective, transparent and non-discriminatory criteria. An amendment ⁽⁷⁾ to this directive was adopted in June 2003. Like the amendment to the Gas Directive (see previous subchapter) the aim is to have an electricity market open for all non-household customers by July 2004, and for all customers by July 2007. In addition a regulation ⁽⁸⁾ on cross-border exchanges in electricity provides guidelines on the compensation of transit flows, the harmonisation of national transmission tariffs and the allocation of cross-border interconnection capacity.

⁽⁶⁾ Directive 96/92/EC of the European Parliament and of the Council concerning common rules for the internal market in electricity.

⁽⁷⁾ Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC.

⁽⁸⁾ Regulation 1228/2003/EC of the European Parliament and of the Council on conditions for access to the network for cross-border exchanges in electricity.

Figure 1.13
Mix of net electricity capacity, 2001



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_11/es_113a).

CAPACITY

The EU-25's net installed capacity of electricity generation was 670.7 GW in 2001, compared with 590.7 GW for the EU-15. Thermal power stations provided 58.2 % of this capacity, nuclear power plants 19.9 %, hydroelectric plants 19.3 % and the remainder was split between wind energy (2.6 %) and geothermal energy (0.1 %). A comparison between the EU-25 and the EU-15 is provided in Figure 1.13. It shows that enlargement has led to a greater proportion of capacity being based on thermal power stations, and less on the other sources, notably concerning geothermal plants and wind turbines. In the majority of the Member States more than half of the generation capacity was based on thermal supply power

stations. In Latvia, Luxembourg, Austria and Sweden, hydroelectric production accounted for close to or more than half of generation capacity, while in France more than half of electricity generation capacity was in nuclear power stations and in Lithuania 46 % of capacity was in nuclear power stations. In both Slovenia and Slovakia there was a more diverse range of generating power stations, with thermal power stations, hydroelectric production and nuclear power stations all contributing at least one quarter of total capacity. In none of the Member States did geothermal and wind energy sources dominate generation capacity. However, in Denmark they accounted for 19 % of capacity (in a country which has no nuclear or hydroelectric capacity).

The use of nuclear fuels remains controversial, as they are seen as a lower emission alternative to fossil fuels, while they raise specific security and safety concerns, both in operation and at the end of life. With enlargement the number of countries without a nuclear capacity increased from 6 to 11, while some of the other Member States were in the process of running down their existing nuclear capacities.

GENERATION AND NET IMPORTS

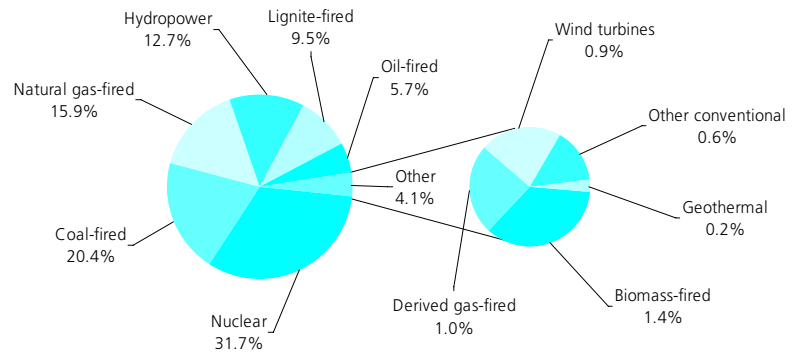
Gross electricity generation is the electricity measured at the outlet of the main transformers, in other words, including the consumption of electricity in plant auxiliaries and in transformers. Gross electricity generation in 2001 was 3 005 TWh. Just over half of this total was generated in conventional thermal power stations (54.5 %) and just under one third (31.7 %) in nuclear power stations. The remainder was generated in hydroelectric power plants (12.7 %), wind turbines (0.9 %) and geothermal power plants (0.2 %) - see Figure 1.14. Compared with the breakdown of capacity, the importance of nuclear power in terms of gross generation was relatively high as was the much smaller geothermal electricity production, while the other sources were relatively less important for generation, particularly wind turbines.

Enlargement has led to a greater share of electricity being generated from conventional thermal power stations. In fact, the contribution of coal and lignite power stations to gross electricity generation was 25.6 % in the EU-15 and 29.9 % in the EU-25 in 2001. However, natural gas fired power stations generated 15.9 % of electricity in the EU-25 compared with 17.1 % in the EU-15. Once more this reinforces the relatively high importance of solid fuels as an energy source in the new Member States, although the use of these fuels was diverse: the Czech Republic, Estonia and Poland were heavily dependent on coal and/or lignite for electricity generation, with 70 % or more of gross electricity generation from these fuels, while several other new Member States had a lower reliance, notably Cyprus, Latvia, Lithuania and Malta who generated very little or no electricity from these sources.

By 2010 renewable sources should generate enough electricity for one fifth of the EU's gross national electricity consumption (gross national electricity generation from all fuels plus net electricity imports). Figure 1.15 shows the current position of the EU and of each country. Renewable sources include wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

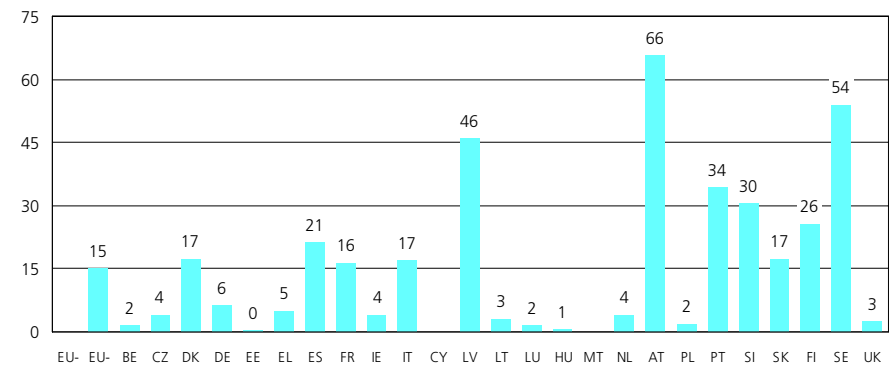
The analysis above focuses on electricity production. However, within Europe there are

Figure 1.14
Gross electricity generation by type of power plant, EU-25, 2001



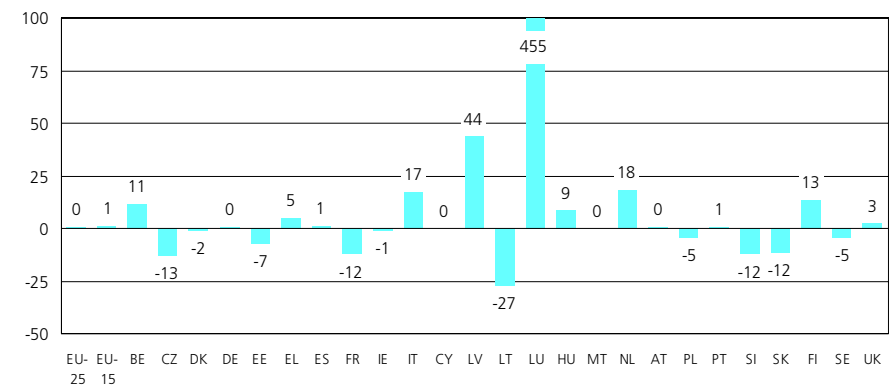
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_105a).

Figure 1.15
Contribution of electricity from renewables to total electricity consumption, 2001 (%) (1)



(1) EU-25, Cyprus and Malta, not available.
Source: Eurostat, Energy statistics (theme8/sirene/es_indic/es_33a/es_333a).

Figure 1.16
Net electricity imports relative to gross electricity generation, 2001 (%) (1)



(1) A negative sign indicates net exports.
Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_105a).

some major movements of electricity across borders. Some countries are particularly dependent on external sources for their electricity supply, for example, Luxembourg, where the level of net imports is four and a half times greater than gross electricity generation - see Figure 1.16. Among the larger Member States only France and Poland are net exporters of electricity.

CONSUMPTION

Electricity accounted for 19.7 % of the EU-25's final energy consumption in 2001, and 20.2 % of the EU-15 total. Industrial consumers (41.4 %) were the largest final electricity consumers in 2001 in the EU-25, followed by households (28.8 %) and services (22.3 %) with very little difference in the pattern of consumption recorded in the EU-15.

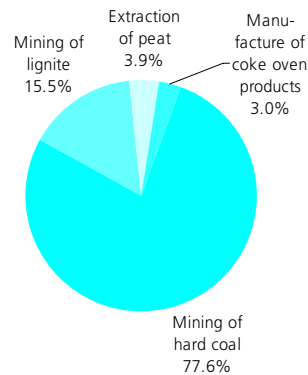
1.3: OTHER ENERGY ACTIVITIES

This subchapter covers the mining and extraction of hard coal, lignite and peat (NACE Division 10), and the manufacture of coke oven products (NACE Group 23.1). It also addresses nuclear fuels in the form of mining of uranium and thorium ores (NACE Division 12) and the processing of nuclear fuels (NACE Group 23.3), which includes the production of enriched uranium, fuel elements for nuclear reactors, radioactive elements for industrial or medical use and the treatment of nuclear waste. Finally, steam and hot water supply are covered by NACE Group 40.3.

MINING AND PROCESSING OF COAL AND LIGNITE SECTOR: STRUCTURAL PROFILE AND EMPLOYMENT

Mining and processing of coal and lignite (NACE Division 10 and NACE Group 23.1) generated EUR 10.6 billion of value added in the EU-25 in 2001. Figure 1.17 shows that the mining of hard coal dominated this activity. Employment in the EU-15 in 2001 was 107 200, of which 91 300 were occupied in the mining of hard coal (Group 10.1). Mining and processing of coal and lignite is an important sector in several of the new Member States. This was notably the case for the mining of hard coal and lignite (Groups 10.1 and 10.2) which employed 170 900 persons in Poland in 2001, which was more than in the EU-15. The mining of hard coal, lignite and peat (NACE Division 10) employed 45 000 persons in the Czech Republic and 7 700 persons in Slovakia.

Figure 1.17
Share of value added in solid fuels, EU-25, 2001

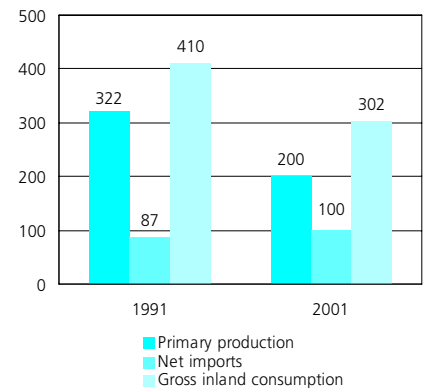


Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

HARD COAL AND LIGNITE PRODUCTS

Figure 1.18 shows the shift in supplying gross inland consumption of hard coal and lignite between 1991 and 2001, with primary production in the EU-25 falling by more than one third over the period studied. This was accompanied by a modest increase in net imports - see Table 1.7 for details on the trade deficit which widened from 1994 onwards. Overall gross inland consumption of hard coal and lignite fell by 26.3 % to reach 301.7 million toe in 2001.

Figure 1.18
Main indicators for hard coal and lignite, EU-25 (million toe)



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_101a).

Poland contributed 35.4 % of the EU-25's primary production, Germany 29.0 % and the Czech Republic 12.6 %, with no other country reporting a double-digit share. Germany's share of EU-25 primary production of lignite was 54.5 % and Poland's share of primary production of hard coal was 45.3 %.

Table 1.7

Hard coal and lignite Trade indicators, sum of EU-25 Member States

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Exports (million tonnes)	45	41	44	49	53	48	48	50	43	44	52
Imports (million tonnes)	181	174	154	156	163	166	171	175	170	188	210
Trade balance (million tonnes)	-135	-132	-110	-107	-111	-119	-123	-125	-127	-144	-158
Cover ratio (%)	25.1	23.8	28.6	31.5	32.2	28.6	28.0	28.3	25.4	23.5	24.7

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_122a and es_132a).

Figure 1.19 shows the shift in the origin of the EU-15's imports of hard coal in the five years between 1996 and 2001. Most notable was the considerable fall in the share of imports from the United States, which had been the largest single provider in 1996. In absolute terms the imports from the United States fell from 34.7 million tonnes to 19.7 million tonnes by 2001.

The vast majority of hard coal and lignite was consumed as a transformation input in 2001, 86.3 % of hard coal and 98.1 % of lignite. Most of this was used in conventional thermal power stations, although nearly one quarter (22.9 %) of the hard coal that was transformed was used as input in coke oven plants.

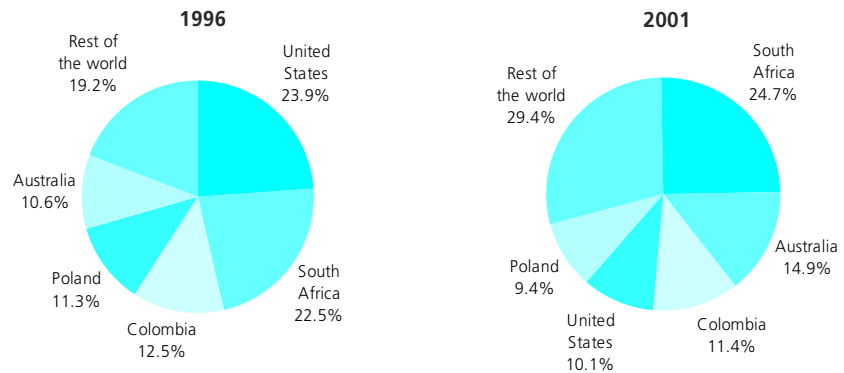
Energy available for final consumption in 2001 was just 13.3 % of gross inland consumption for hard coal and 1.6 % in the case of lignite. Around two thirds of this was consumed by industry and just over one quarter by households.

COAL AND LIGNITE DERIVATIVES

The part of hard coal and lignite consumption that is not used in conventional thermal power stations is mainly transformed into solid derivatives, namely coke, patent fuels and brown coal briquettes. The gross inland consumption (net imports and stock changes) of these products in the EU-25 in 2001 was just 4.0 million toe. By comparison, the transformation output of these products was 36.8 million toe, of which 90.7 % was coke. Furthermore, gases derived from coke ovens, blast-furnaces and gasworks generated 22.0 million toe, mainly blast furnace and coke oven gas. A large proportion of these derived products were further transformed, notably coke used in blast furnaces, and coke oven and gaswork gases, which are used as input for conventional thermal power stations.

The energy available for final consumption in the EU-25 was 27.3 million toe from solid derivatives and 9.3 million toe from derived gases. Four fifths of this energy from solid derivatives was consumed by industry, although almost all patent fuels were consumed by households. Of the energy available for final consumption from coke oven and blast furnace gases, some 98.5 % was consumed by industry, nearly all by the iron and steel sector. Final energy consumption of gasworks gas was mainly by households.

Figure 1.19
Hard coal
Sum of EU-15 Member States: origin of imports



Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_122a).

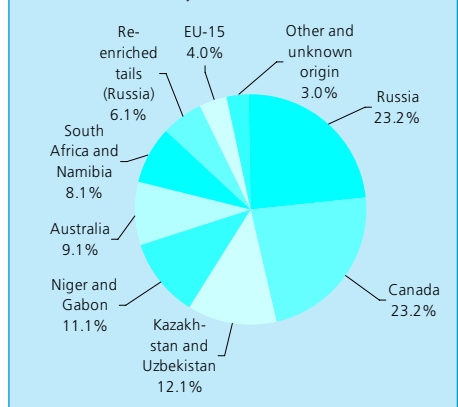
NUCLEAR FUELS: STRUCTURAL PROFILE AND EMPLOYMENT

According to the Euratom supply agency, preliminary figures indicate that worldwide natural uranium production in 2002 was 35 000 tU. The mining of uranium and thorium ores in the EU is a very small activity, with an estimated 3 500 employees in 2001, most of these in the new Member States, notably the Czech Republic.

According to the Euratom supply agency, EU-15 production supplies about 4 % of the utilities' requirements, mainly from stocks or clean-up operations at closed mines. Russia and Canada were the largest suppliers to EU-15 utilities in 2002 - see Figure 1.20.

The processing of nuclear fuel is a much larger activity, employing 32 200 persons in 2001 in the EU-15, of which half were employed in the United Kingdom. There was little or no activity in many Member States, including all of the new Member States. Value added by the nuclear fuels processing sector in the EU-15 was EUR 3.4 billion in 2001.

Figure 1.20
Origin of natural uranium deliveries to EU-15 utilities, 2002



Source: Euratom supply agency, annual report 2002.

STEAM AND HOT WATER SUPPLY: STRUCTURAL PROFILE AND EMPLOYMENT

The most recent data available for the EU report that 46 800 persons were employed in the supply of steam and hot water in the EU-15 in 1999, approximately 5.2 % of the supply of electricity, gas, steam and hot water sector (NACE Division 40). Although data availability for the new Member States is incomplete, it is clear that this activity was important in the Czech Republic and Lithuania where it contributed more than one third of employment in the supply of electricity, gas, steam and hot water sector. It was also relatively important, although to a lesser extent, in Hungary, whereas there was no steam and hot water supply in Cyprus and Malta.

In value added terms, steam and hot water supply generated EUR 4.8 billion in 1999 in the EU-15, 3.7 % of the supply of the electricity, gas, steam and hot water sector.

Table 1.8

Interior flows of solid fuels, 2001 (thousand toe)

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
Primary production	604 031	341 332	0	66 106	-	206 178	12 186	66 344	22 678	2 295	4 357	139	-	69	35
Net imports	163 865	187 814	11 836	-7 996	6 790	41 522	1 070	1 318	18 436	16 751	2 941	20 045	72	93	112
Gross inland consumption	774 349	532 198	11 114	58 574	7 028	249 442	13 636	68 487	41 201	19 298	7 161	19 871	66	262	169
Transformation input	727 857	511 083	8 946	52 523	6 601	243 272	11 757	67 007	40 398	17 607	6 128	18 944	-	136	35
-conventional thermal power stations	617 717	435 114	3 781	45 250	6 600	216 929	10 667	66 742	36 516	8 131	5 430	11 222	-	108	-
Transformation output	55 993	40 627	3 232	3 802	0	12 544	139	138	2 648	5 174	327	4 829	-	1	9
Consumption of the energy branch	2 898	1 138	11	11	-	674	94	-	35	288	-	74	-	5	4
Available for final consumption	99 587	60 604	5 389	9 842	427	18 040	1 924	1 618	3 416	6 577	1 360	5 682	66	122	139
Final non-energy consumption	1 841	1 599	0	-	-	272	139	0	0	0	-	0	-	3	-
Final energy consumption	95 525	58 651	5 200	9 023	412	17 056	390	1 596	2 778	7 871	1 306	5 615	65	118	136
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Primary production	-	13 914	:	-	1 207	162 832	0	4 133	3 424	5 711	910	31 513	26 611	33 289	65 831
Net imports	160	1 556	:	13 483	4 929	-25 060	4 807	506	5 698	6 587	3 445	34 764	4 048	3 641	8 303
Gross inland consumption	160	15 289	:	13 382	6 849	139 709	5 158	5 260	9 186	14 562	4 516	63 969	31 425	34 631	75 588
Transformation input	0	14 619	:	13 555	5 816	124 701	4 895	5 109	7 894	12 810	3 915	61 189	30 414	32 574	57 437
-conventional thermal power stations	0	13 169	:	9 156	3 172	103 369	4 788	5 109	4 931	10 663	1 056	50 928	27 787	30 148	54 999
Transformation output	-	772	:	2 214	1 394	8 946	67	-	1 697	909	1 148	6 003	1 842	1 413	2 589
Consumption of the energy branch	-	0	:	0	2	1 615	-	0	31	-	-	54	23	375	0
Available for final consumption	160	1 442	:	2 041	2 425	22 339	330	151	2 958	2 661	1 749	8 729	2 830	3 095	20 740
Final non-energy consumption	-	-	:	148	1 158	100	0	-	-	0	21	0	-	502	-
Final energy consumption	154	1 439	:	1 992	1 028	23 114	329	150	2 439	2 536	1 767	9 011	1 633	1 610	20 740

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_101a).

Table 1.9

Interior flows of crude oil and petroleum products, 2001 (thousand toe)

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
Primary production	149 854	146 531	-	183	16 887	3 278	263	191	338	1 786	-	4 097	-	-	515
Net imports	540 858	495 856	29 335	8 121	-6 433	129 315	729	19 699	72 804	94 957	8 260	84 825	2 498	1 423	2 039
Bunkers	46 419	45 037	5 429	-	1 122	2 280	102	3 584	6 884	2 767	161	2 900	193	197	102
Gross inland consumption	644 803	596 907	23 708	8 147	8 910	130 475	919	16 419	67 194	93 830	7 862	87 295	2 376	1 210	2 622
Transformation input	746 597	695 369	40 514	6 685	9 529	118 312	113	23 529	63 635	92 043	4 643	114 615	2 050	110	7 297
-conventional thermal power stations	37 079	33 710	260	223	1 336	1 163	12	1 934	5 266	1 000	1 247	17 230	894	52	189
-refineries	706 502	659 364	40 254	6 357	8 143	116 365	1	21 595	58 349	91 024	3 396	97 381	1 156	1	6 861
Transformation output	695 999	649 583	39 883	6 309	7 945	114 292	1	21 483	57 806	90 683	3 358	96 535	1 151	2	6 732
Consumption of the energy branch	37 141	34 154	1 509	350	197	6 542	16	1 068	3 859	5 355	221	5 103	19	11	481
Available for final consumption	555 773	515 617	21 568	7 416	7 129	119 913	791	13 305	57 506	85 770	6 359	64 112	1 458	1 091	1 576
Final non-energy consumption	90 068	83 163	5 442	2 369	264	22 319	44	685	9 372	12 707	0	9 605	89	60	167
Final energy consumption	471 828	438 291	16 072	5 246	6 747	98 561	819	12 824	47 182	75 431	6 846	56 559	1 344	1 111	1 374
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Primary production	-	1 540	-	2 263	1 012	767	-	1	54	0	0	116 679	34	6 238	2 520
Net imports	2 342	4 757	1 361	41 605	11 466	18 790	16 642	2 310	2 974	9 992	16 344	-35 297	4 065	5 124	26 476
Bunkers	-	-	521	15 140	-	267	483	-	-	584	1 429	2 274	96	-	237
Gross inland consumption	2 370	6 612	840	28 746	12 906	19 744	15 704	2 339	3 087	8 765	14 913	77 810	4 030	11 146	28 662
Transformation input	0	8 658	563	83 245	10 025	19 742	15 086	191	5 819	12 578	21 664	85 951	5 806	14 898	28 187
-conventional thermal power stations	0	1 084	563	647	412	230	2 007	32	90	138	419	651	203	2 498	2 627
-refineries	-	7 551	-	82 598	9 516	19 330	13 079	155	5 726	12 117	20 918	84 629	5 564	12 207	25 560
Transformation output	-	7 450	-	81 306	9 349	18 411	13 061	154	6 206	11 943	19 846	82 093	5 411	12 152	25 374
Consumption of the energy branch	0	373	-	3 158	734	1 318	911	0	419	499	267	4 731	160	846	1 648
Available for final consumption	2 370	5 031	277	23 649	11 488	17 095	12 768	2 302	3 119	7 631	12 828	69 221	3 475	7 554	24 201
Final non-energy consumption	12	1 004	0	7 590	1 427	2 090	1 940	205	877	1 038	1 915	8 847	663	895	3 458
Final energy consumption	2 356	4 035	277	15 893	10 077	14 974	10 712	2 250	2 107	7 557	10 933	60 541	3 059	6 070	20 611

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_102a).

Table 1.10

Interior flows of gas, 2001 (thousand toe)

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
Primary production	197 220	190 973	0	122	7 589	15 932	-	40	471	1 359	659	12 483	:	-	-
Net imports	182 014	148 881	13 134	7 736	-3 054	58 197	710	1 670	15 827	31 456	2 925	44 810	:	1 087	2 171
Gross inland consumption	383 972	343 727	13 180	8 032	4 631	75 591	710	1 683	16 400	33 793	3 584	58 099	:	1 270	2 171
Transformation input	105 353	95 300	3 450	1 766	2 266	16 231	463	1 265	3 177	3 330	1 851	19 046	:	837	1 119
-conventional thermal power stations	98 803	91 672	3 430	1 234	2 189	15 032	233	1 265	3 177	3 330	1 851	19 046	:	497	778
Transformation output	21 958	16 979	1 337	1 435	0	5 474	93	0	1 002	2 521	0	1 240	:	-	-
Exchanges, transfers, returns	0	0	-	-	0	0	0	-	0	0	-	-	:	-	-
Consumption of the energy branch	17 885	14 382	284	369	582	1 702	20	31	240	851	0	310	:	21	3
Distribution losses (1)	3 437	2 494	-	200	4	753	0	10	110	192	47	191	:	11	33
Available for final consumption (1)	278 579	248 530	10 782	7 132	1 779	62 379	321	377	13 875	31 942	1 686	39 792	:	400	1 016
Final non-energy consumption	13 070	10 121	741	-	-	2 150	153	59	505	1 900	451	993	:	-	626
Final energy consumption	262 328	234 997	10 070	7 088	1 771	56 697	167	317	13 370	30 084	1 234	38 798	:	387	390
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Primary production	-	2 477	:	55 713	1 471	3 492	-	5	151	-	-	95 257	16	10 974	257
Net imports	695	7 783	:	-20 172	5 008	7 178	2 252	800	5 666	3 707	767	-8 340	2 458	2 308	13 218
Gross inland consumption	695	10 711	:	35 547	6 930	10 377	2 255	806	6 168	3 707	767	86 866	2 465	13 282	13 372
Transformation input	57	2 931	:	11 839	1 972	1 201	1 215	124	1 611	2 549	517	26 533	962	4 210	9 261
-conventional thermal power stations	57	2 432	:	11 839	1 868	905	1 202	61	993	2 367	451	24 567	719	2 959	9 261
Transformation output	0	256	:	1 298	694	2 414	27	-	780	547	673	2 166	346	694	1 162
Exchanges, transfers, returns	-	-	:	-	-	-	0	-	-	-	0	0	-	-	-
Consumption of the energy branch	-	208	:	1 575	826	1 857	4	5	1 021	267	107	7 602	262	1 296	298
Distribution losses	0	338	:	0	256	318	2	-	42	0	75	856	81	392	17
Available for final consumption	637	7 490	:	23 431	4 569	9 414	1 061	-	4 276	1 438	742	54 041	1 506	8 079	4 958
Final non-energy consumption	-	331	:	2 211	235	1 710	-	108	22	33	-	843	541	877	99
Final energy consumption	637	7 099	:	21 546	4 334	7 520	1 049	569	4 111	1 379	724	52 985	933	7 085	4 858

(1) EU-15 and France, provisional.

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_103a).

Table 1.11

Interior flows of electricity, 2001 (thousand toe)

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
Net imports	1 037	2 871	783	-820	-49	234	-53	215	297	-5 880	-22	4 160	-	162	-341
Gross inland consumption	1 037	2 871	783	-820	-49	234	-53	215	297	-5 880	-22	4 160	-	162	-341
Transformation output	223 163	195 916	6 708	6 206	2 870	46 965	729	4 318	16 093	40 407	2 038	19 251	305	124	1 207
-conventional thermal power stations	141 155	119 290	2 723	4 938	2 870	32 236	729	4 318	10 616	4 202	2 038	19 251	305	124	230
-nuclear power stations	82 009	76 626	3 985	1 268	-	14 730	-	-	5 478	36 206	-	0	-	-	977
Exchanges, transfers, returns	32 724	31 308	41	177	372	2 661	1	245	4 126	6 459	80	4 126	-	244	28
Consumption of the energy branch (1)	23 096	18 940	490	768	184	4 889	118	524	1 500	4 400	133	2 028	18	56	222
Distribution losses (1)	17 465	14 899	323	422	171	2 822	117	426	1 738	2 580	164	1 663	20	85	122
Available for final consumption (1)	216 364	196 255	6 719	4 373	2 839	42 150	441	3 829	17 279	34 006	1 800	23 846	267	389	551
Final energy consumption (1)	216 363	196 255	6 719	4 373	2 839	42 150	441	3 829	17 279	34 006	1 800	23 846	267	389	551
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Net imports	485	273	-	1 486	18	-579	21	-152	-323	856	-627	894	-595	-113	356
Gross inland consumption	485	273	-	1 486	18	-579	21	-152	-323	856	-627	894	-595	-113	356
Transformation output	29	3 115	171	7 980	1 756	12 157	2 741	917	2 315	5 260	7 055	32 443	3 594	3 349	8 483
-conventional thermal power stations	29	1 901	171	7 638	1 756	12 157	2 741	465	845	3 302	855	24 715	1 913	2 880	8 483
-nuclear power stations	-	1 215	-	342	-	-	-	452	1 471	1 958	6 200	7 727	1 681	468	-
Exchanges, transfers, returns	4	16	-	81	3 470	201	1 229	326	424	1 141	6 839	432	149	1 283	2 070
Consumption of the energy branch	19	376	10	636	348	2 230	207	88	271	351	845	2 386	511	815	707
Distribution losses	15	402	0	361	263	1 221	349	63	114	260	1 015	2 750	527	586	2 006
Available for final consumption	484	2 626	161	8 549	4 634	8 328	3 434	941	2 031	6 646	11 408	28 633	2 110	3 118	8 196
Final energy consumption	484	2 626	161	8 549	4 634	8 328	3 434	941	2 031	6 646	11 408	28 632	2 109	3 118	8 196

(1) EU-25, EU-15 and Germany, provisional.

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10/es_105a).

Table 1.12

Interior flows of other energy sources, 2001 (thousand toe)

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
NUCLEAR ENERGY															
Primary production	:	229 878	11 956	3 805	:	44 189	:	:	16 434	108 617	:	0	:	:	2 931
DERIVED HEAT (1)															
Transformation output	:	26 707	420	3 494	2 959	9 950	687	26	74	:	:	:	:	864	1 212
-conventional thermal power stations	:	17 700	420	2 584	2 394	7 101	230	26	74	:	:	:	:	329	502
Consumption of the energy branch	:	289	-	367	57	232	10	-	-	:	:	:	:	33	41
Distribution losses	:	2 533	33	168	582	982	118	-	-	:	:	:	:	161	287
Available for final consumption	:	23 888	387	2 960	2 324	8 737	559	26	74	:	:	:	:	671	884
RENEWABLE ENERGIES															
Primary production (1)	:	91 374	681	689	2 156	9 859	551	1 318	8 262	18 046	261	13 480	44	1 701	658
Transformation input	:	18 878	353	286	1 198	2 235	104	31	714	1 823	24	3 629	-	222	57
-conventional thermal power stations	:	15 910	337	276	785	1 580	3	31	714	1 561	24	3 629	-	6	-
Exchanges, transfers, returns	:	-31 317	-41	-177	-372	-2 666	-1	-245	-4 127	-6 459	-80	-4 128	-	-244	-28
Available for final consumption (1)	:	41 265	389	226	627	4 957	434	1 042	3 418	9 763	157	5 723	44	1 031	596
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
NUCLEAR ENERGY															
Primary production	:	3 368	:	1 026	:	:	:	1 356	4 412	5 874	18 601	23 182	5 044	1 405	:
DERIVED HEAT															
Transformation output	24	1 726	:	2 518	1 167	8 873	86	212	743	3 002	3 982	2 498	1 310	5 157	:
-conventional thermal power stations	24	1 289	:	2 510	761	4 986	86	162	714	2 290	2 014	0	956	3 467	:
Consumption of the energy branch	-	208	:	-	0	1 256	-	18	135	-	0	0	178	515	:
Distribution losses	-	-	:	378	123	-	-	0	41	220	215	-	186	681	:
Available for final consumption	24	1 518	:	2 140	1 044	7 618	86	194	568	2 782	3 767	2 498	945	3 960	:
RENEWABLE ENERGIES															
Primary production	50	407	:	1 610	6 672	4 071	3 896	776	722	7 574	14 813	2 697	696	3 413	9 062
Transformation input	30	65	:	1 302	678	130	243	24	-	1 615	3 312	1 691	0	9	164
-conventional thermal power stations	30	63	:	1 302	378	114	243	16	-	1 486	2 190	1 621	-	0	164
Exchanges, transfers, returns	-4	-16	:	-82	-3 471	-201	-1 229	-326	-424	-1 141	-6 839	-432	-149	-1 283	-2 070
Available for final consumption	16	326	:	227	2 470	3 738	2 424	426	298	4 818	4 661	573	543	2 119	6 828

(1) EU-15 and Germany, provisional.

Source: Eurostat, Energy statistics (theme8/sirene/es_quant/es_10).

Table 1.13

Mining, quarrying and processing of energy materials, energy and water supply
Main indicators, 2001

	EU-25	EU-15	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
MINING AND QUARRYING OF ENERGY PRODUCING MATERIALS (NACE Subsection CA)															
Number of persons employed (thousands)	:	152.7	0.1	49.1	1.0	70.2	5.9	0.2	16.7	9.4	1.3	6.5	0.0	1.5	1.5
Value added (EUR million)	57 665	51 764	9	805	3 429	4 572	53	34	792	530	159	3 303	0	14	62
Gross investment in tangible goods (EUR million)	:	:	9	230	818	493	17	:	205	610	:	716	0	4	28
Simple wage adjusted labour productivity (%)	469	571	251	175	5 602	123	137	:	132	86	:	850	~	216	594
MANUFACTURE OF COKE, REFINED PETROLEUM PRODUCTS AND NUCLEAR FUEL (NACE Division 23) (1)															
Number of persons employed (thousands)	:	139.8	5.0	3.6	0.2	23.9	:	3.3	8.4	28.7	0.2	24.6	0.1	:	:
Value added (EUR million)	27 932	25 701	1 274	99	20	6 626	-9	1 060	1 819	3 287	11	3 675	14	:	:
Gross investment in tangible goods (EUR million)	:	:	144	78	2	667	1	:	396	802	:	890	1	:	:
Simple wage adjusted labour productivity (%)	291	286	285	270	185	345	-338	:	388	158	:	311	200	:	:
ELECTRICITY, GAS, STEAM AND HOT WATER SUPPLY (NACE Division 40) (2)															
Number of persons employed (thousands)	:	838.5	19.4	48.0	13.3	238.8	:	22.1	38.8	167.5	9.8	115.4	:	16.5	25.1
Value added (EUR million)	133 928	124 212	5 119	2 097	2 100	29 850	122	2 045	10 131	19 723	1 216	17 258	:	389	373
Gross investment in tangible goods (EUR million)	:	:	1 055	1 028	539	11 597	99	:	3 668	5 587	:	5 844	:	166	170
Simple wage adjusted labour productivity (%)	263	263	307	436	467	189	146	:	528	199	:	336	:	361	225
	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
MINING AND QUARRYING OF ENERGY PRODUCING MATERIALS (NACE Subsection CA) (3)															
Number of persons employed (thousands)	0	2	0	6	1	171	0	0	9	1	1	39	22	141	:
Value added (EUR million)	0	40	0	5 592	160	4 617	-1	110	125	107	35	32 918	127	108	:
Gross investment in tangible goods (EUR million)	:	9	0	779	30	443	0	25	59	27	8	6 986	23	1 279	:
Simple wage adjusted labour productivity (%)	~	124	~	1 495	372	183	-73	105	235	302	163	1 057	145	15	:
MANUFACTURE OF COKE, REFINED PETROLEUM PRODUCTS AND NUCLEAR FUEL (NACE Division 23) (4)															
Number of persons employed (thousands)	:	15	:	6	:	:	3	:	:	4	3	27	:	14	:
Value added (EUR million)	0	725	:	1 470	:	1 629	405	12	:	451	219	4 659	:	230	:
Gross investment in tangible goods (EUR million)	:	288	:	113	:	451	342	1	:	121	101	1 192	48	105	:
Simple wage adjusted labour productivity (%)	:	401	:	343	:	570	313	122	:	221	175	300	:	300	:
ELECTRICITY, GAS, STEAM AND HOT WATER SUPPLY (NACE Division 40) (5)															
Number of persons employed (thousands)	1	43	:	27	32	107	14	:	31	15	23	102	40	129	:
Value added (EUR million)	214	1 342	:	5 727	4 279	6 837	2 531	164	1 092	1 902	4 726	17 425	515	908	:
Gross investment in tangible goods (EUR million)	:	599	:	916	1 121	1 569	826	184	426	498	1 650	6 804	216	4 151	:
Simple wage adjusted labour productivity (%)	308	255	:	317	209	513	418	105	435	309	457	351	246	143	:

(1) Denmark and Estonia, 1999.

(2) EU-25 and EU-15, 2000 except the number of persons employed; Germany, 2000 except the number of persons employed and investment; Estonia, 1999.

(3) Poland, NACE Groups 10.1 and 10.2 only; Portugal and Slovenia, 1999.

(4) Hungary and Slovenia, 1999; Poland, 2000.

(5) Poland, NACE Group 40.1 only.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

Non-metallic mineral products



The manufacture of non-metallic mineral products involves the processing of materials that have been mined or quarried. Non-metallic mineral products are mostly intermediate goods used in downstream activities like construction, or as packaging in the case of glass. Some non-metallic mineral products, like glassware and ceramic tableware, are fabricated directly for use by the end-consumer.

STRUCTURAL PROFILE

Non-metallic mineral product manufacturers generated a value added of EUR 69.4 billion in the EU-25 in 2001, which was 4.5 % of the manufacturing total. In terms of employment the EU-25's ⁽¹⁾ non-metallic mineral products sector had 1.6 million persons employed in 2001, 4.6 % of the manufacturing total. The contribution of the ten new Member States to EU-25 value added in this sector (8.2 %) was well above the manufacturing average (5.6 %) in 2001.

The manufacture of articles of concrete, plaster and cement (NACE Group 26.6) accounted for 27.6 % of value added in the EU-25's non-metallic mineral products sector in 2001 and was the largest group. The second largest was the manufacture of glass and glass products (NACE Group 26.1) with 24.1 % of value added, which was nearly twice as large as the third largest group, the manufacture of cement, lime and plaster (12.7 %; NACE Group 26.5). The remaining five groups making up the non-metallic mineral products sector collectively generated 35.7 % of total value added in the EU-25 in 2001.

Germany and Italy were the largest producers of non-metallic mineral products in 2001, with EUR 14.5 billion and EUR 11.3 billion of value added respectively. Together they contributed 37.2 % of total value added in the EU-25 in this sector. In relation to their own manufacturing sectors, Cyprus, Luxembourg and Portugal were all relatively specialised in the manufacture of non-metallic mineral products, whereas Ireland and Sweden were relatively unspecialised. Non-metallic mineral products was the second largest NACE subsection within manufacturing in Cyprus (as measured by value added), and the third largest Subsection in both Luxembourg and Portugal.

An analysis by size-class shows that in the EU-25's non-metallic mineral products sector micro enterprises (with less than 10 persons employed) generated 7.1 % of the sector's value added. In contrast, 48.3 % of value added was accounted for by large enterprises (with 250 or more persons employed). As such, the main difference compared to a size-class breakdown for the whole of the manufacturing sector was the lower importance of large enterprises (as these generated 54.9 % of value added in the manufacturing sector). This was compensated by a higher share of value added being generated among small and medium-sized enterprises (44.5 % of value added in the non-metallic mineral products sector in 2001, compared with 37.8 % within manufacturing as a whole).

This chapter focuses on the manufacture of other non-metallic mineral products (NACE Division 26). The eight NACE groups that are included in Division 26 are split between the glass sector (NACE Group 26.1); the manufacture of ceramic goods and clay products (NACE Groups 26.2 to 26.4); and the manufacture and working of cement, concrete, stone and other non-metallic mineral products (NACE Groups 26.5 to 26.8). Note that the quarrying of non-metallic mineral products is covered in Chapter 2.

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 stone;
- 26.8: manufacture of other non-metallic mineral products.

⁽¹⁾ Poland and Slovenia, number of employees.

Table 7.1
Manufacture of other non-metallic mineral products (NACE Division 26)
Structural profile, 2001

Rank	Largest value added (EUR billion)	Highest value added specialisation relative to manufacturing (EU-25=100)	Largest number of persons employed (thousands) (1)	Main EU-25 trading partners: origin of imports, 2002 (EUR billion)	Main EU-25 trading partners: destination of exports, 2002 (EUR billion)
1	Germany (14.5)	Cyprus (256)	Germany (281.5)	China (1.2)	United States (4.5)
2	Italy (11.3)	Luxembourg (231)	Italy (249.5)	United States (1.2)	Switzerland (1.2)
3	Spain (9.1)	Portugal (217)	Spain (195.5)	Turkey (0.9)	Russian Federation (0.7)
4	France (7.9)	Greece (201)	France (149.9)	Japan (0.6)	Japan (0.6)
5	United Kingdom (7.6)	Spain (193)	United Kingdom (134.2)	Switzerland (0.4)	United Arab Emirates (0.5)

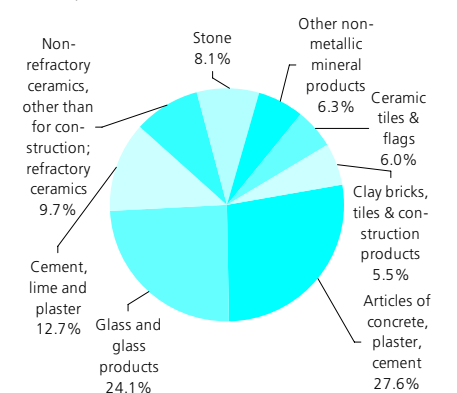
(1) Poland and Slovenia, not available.
 Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Analysing annual short-term statistics for the working day adjusted production index of non-metallic mineral products, there was a period of growth between 1993 and 2000, averaging 2.3 % per annum; during this period there was growth each year except in 1996 when output contracted by 2.7 %. After 2000 there was a reduction in output, as production fell by 1.0 % in 2001 and a further 2.1 % in 2002. There was a modest recovery in 2003, as EU-25 output rose by 1.2 %. When breaking down the data by Member State, a similar recent evolution was reported in most of the EU-15 Member States, as production declined between 2001 and 2003 in Germany and France, while negative rates were also registered for Italy in 2002 and 2003 and in the United Kingdom in 2002.

The output price index for non-metallic mineral products has recorded uninterrupted year on year growth throughout the 1990s and through to 2003. Price increases were relatively low from 1996 to 2000, averaging 1.1 % per annum, but increased to an average of 2.0 % per annum over the next three years. In 2003 a 0.7 % increase in prices was recorded, the lowest for more than 10 years.

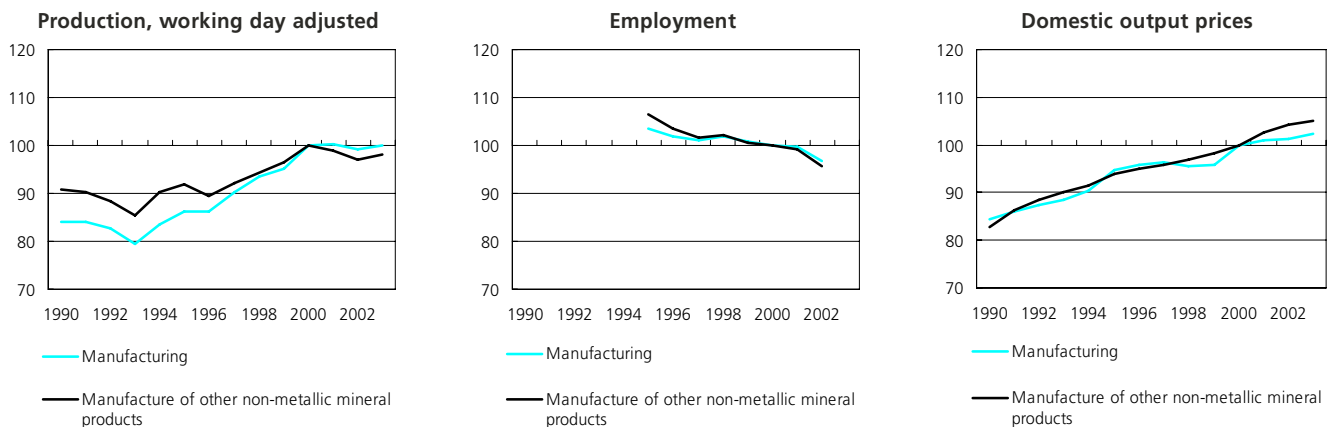
In terms of the employment index (gross data) there was a marked reduction in the level of employment between 1995 (beginning of the series) and 2002. Employment fell by 1.5 % per annum on average in the EU-25 and with the exception of 0.5 % growth in 1998, there was a fall in the employment index in each of the other years considered, the largest of which was recorded in 2002 (-3.6 %).

Figure 7.1
Manufacture of other non-metallic mineral products (NACE Division 26)
Share of value added at factor cost, EU-25, 2001



Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Figure 7.2
Manufacture of other non-metallic mineral products (NACE Division 26)
Main indicators, EU-25 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/eht).

Table 7.2

Manufacture of other non-metallic mineral products (NACE Division 26)

Value added at factor cost and persons employed, by enterprise size-class, 2001 (% of total)

	Micro enterprises		Small enterprises		Medium-sized enterprises		Large enterprises	
	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed
EU-25	7.1	:	18.1	:	26.4	:	48.3	:
EU-15	7.3	13.6	18.7	24.0	26.0	26.1	48.0	36.2

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass).

LABOUR AND PRODUCTIVITY

In 2002 the proportion of men in the non-metallic mineral products' workforce was 78.9 % in the EU-15, 7.3 percentage points higher than the manufacturing average, reflecting the physical nature of the work in this sector, in particular concerning the processing of construction materials. The non-metallic mineral products sector was characterised by a high proportion of full-time employment (94.9 %) in the EU-15 in 2002, slightly higher than the manufacturing average (92.4 %). The proportion of paid employees in total employment was 89.8 % in 2002, lower than the manufacturing average (91.9 %).

Apparent labour productivity in the EU-15's non-metallic mineral products sector was EUR 50 300 per person employed in 2001, close to the average recorded for the whole of manufacturing (EUR 51 200). In terms of wage adjusted labour productivity, the manufacture of non-metallic mineral products (153.0 %) registered a higher level of productivity than the manufacturing average (143.5 %).

Table 7.3

Manufacture of other non-metallic mineral products (NACE Division 26)

Labour force characteristics, 2002

	Share of men		Share of full-time		Share of employees	
	Value (%)	Index (manufacturing=100)	Value (%)	Index (manufacturing=100)	Value (%)	Index (manufacturing=100)
EU-25	:	:	:	:	:	:
EU-15	78.9	110.1	94.9	102.7	89.8	97.8
BE	84.4	113.5	94.4	103.7	97.4	102.8
CZ	67.4	109.4	97.4	99.8	94.3	101.9
DK	86.5	126.5	97.8	105.4	97.5	100.9
DE	76.8	107.0	91.5	102.0	93.6	98.1
EE	:	:	:	:	:	:
EL	86.1	121.4	100.0	102.0	77.9	106.2
ES	88.0	118.4	99.1	102.2	91.1	103.0
FR	79.6	112.6	95.0	100.6	93.2	98.2
IE	84.2	121.8	94.9	101.1	89.0	96.7
IT	72.8	104.6	95.0	100.4	80.0	96.7
CY	75.8	120.5	95.2	101.9	80.9	101.0
LV	85.3	138.3	100.0	105.6	94.4	98.8
LT	70.9	138.7	93.7	98.7	98.5	102.2
LU	80.3	99.0	100.0	104.7	96.0	97.7
HU	70.7	118.5	99.4	101.8	90.5	97.0
MT	79.7	113.9	93.9	97.2	69.3	74.4
NL	85.9	111.4	82.4	109.8	97.1	100.9
AT	75.5	101.5	:	:	97.7	102.7
PL	:	:	:	:	:	:
PT	70.4	125.6	98.8	101.9	90.7	104.1
SI	70.2	116.3	98.1	101.4	96.4	102.7
SK	64.2	108.4	97.0	98.3	98.9	103.0
FI	80.0	113.7	98.7	103.4	93.4	99.8
SE	79.3	107.3	89.9	98.0	93.5	99.4
UK	79.2	105.8	93.4	101.3	90.3	94.9

Source: Eurostat, Labour Force Survey.

Table 7.4
Manufacture of other non-metallic mineral products (NACE Division 26)
Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Manufacture of other non-metallic mineral products	50.3	153.0	32.9
Manufacture of glass and glass products	51.8	148.3	35.0
Manufacture of ceramic goods (excl. for construction)	35.4	123.0	28.8
Manufacture of ceramic tiles and flags	47.6	149.4	31.9
Manufacture of clay bricks, tiles and construction products	52.8	170.4	31.0
Manufacture of cement, lime and plaster	126.2	253.9	49.7
Manufacture of articles of concrete, plaster, cement	51.5	155.3	33.2
Cutting, shaping and finishing of stone	32.2	140.6	22.9
Manufacture of other non-metallic mineral products	51.8	129.2	40.1

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

EXTERNAL TRADE

The EU-25 exported EUR 15.7 billion of non-metallic mineral products (CPA Division 26) in 2002, while recording imports worth EUR 7.3 billion. By far the largest destination of non-metallic mineral products from the EU-25 was the United States, accounting for over one quarter (28.6 %) of the exports made in 2002. China, the United States and Turkey were the dominant suppliers of EU-25 imports, accounting for respectively 16.8 %, 16.3 % and 12.4 %.

Glass and glass products (CPA Group 26.1) made up the largest part of EU-25 exports of non-metallic mineral products in 2002 (33.2 % of the total), followed by ceramic goods other than for construction (20.1%; CPA Group 26.2) and ceramic tiles and flags (18.9 %; CPA Group 26.3). In terms of imports, glass and glass products were the most important (38.9 %) of all non-metallic mineral products, again followed by ceramic goods other than for construction (24.6 %).

When combining intra and extra-EU trade, Italy had the largest trade surplus (EUR 6.3 billion) in 2002, followed by Spain (EUR 2.4 billion) and Germany (2.2 EUR billion). In contrast, the highest deficit was registered by the United Kingdom (EUR 1.1 billion).

Table 7.5
Other non metallic mineral products (CPA Division 26)
External trade, EU-25, 2002 (EUR million)

	Exports	Imports	Trade balance	Cover ratio (%)
Other non metallic mineral products	15 696	7 295	8 400	215.1
Glass and glass products	5 218	2 837	2 382	183.9
Ceramic goods (excl. for construction)	3 149	1 797	1 352	175.2
Ceramic tiles and flags	2 964	245	2 719	1 208.9
Bricks, tiles and construction products, in baked clay	135	16	119	849.2
Cement, lime and plaster	436	639	-203	68.3
Articles of concrete, plaster and cement	542	128	414	423.7
Monumental or building stone and articles thereof	1 495	522	972	286.2
Other non-metallic mineral products	1 735	1 108	626	156.5

Source: Eurostat, Comext.

7.1: 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 can be classified by varied aspects, for example, its chemical composition, or its kind of use. By use, five broad classes can be distinguished: container glass (like jars and bottles); flat glass (for cars and buildings); continuous filament glass fibre (mainly used for composite materials); domestic glass (glassware and decorative items); and special glass (for example, lighting glass, optical glass, glass for television screens or monitors).

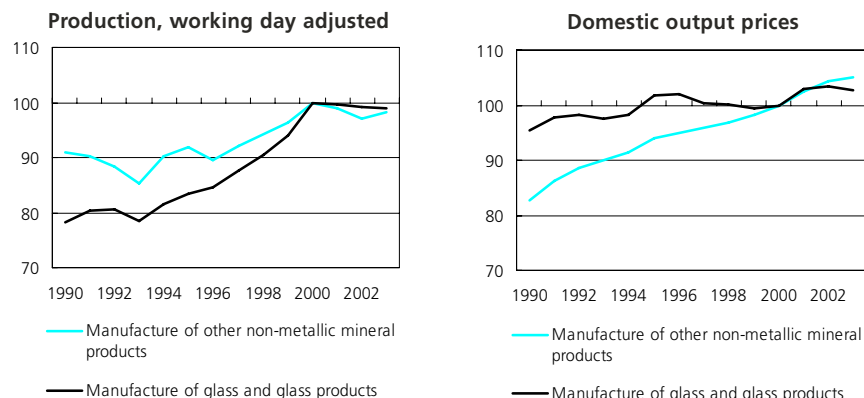
STRUCTURAL PROFILE

In 2001 the EU-25's manufacture of glass and glass products sector (hereafter referred to as glass manufacturing) generated EUR 16.7 billion of value added, a 24.1 % share of the non-metallic mineral products total.

Figure 7.3

Manufacture of glass and glass products (NACE Group 26.1)

Main indicators, EU-25 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/eht).

Table 7.6

Selected glass and glass products (CPA Group 26.1), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
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	2000	1 187.7
Non-wired sheets of float glass and surface ground/polished glass, coloured throughout the mass, opacified, flashed or merely surface ground excluding horticultural sheet glass; other sheets of float/ground/polished glass, n.e.c.	26.11.12.30 and 26.11.12.80	2000	1 074.4
Toughened safety glass (excluding for use in aircraft, spacecraft, ships or boats)	26.12.12.15 and 26.12.12.30	2001	2 665.7
Laminated safety glass for use in aircraft; spacecraft; ships or boats and n.e.c.	26.12.12.53 and 26.12.12.70	2001 (1)	1 239.5
Multiple-walled insulating units of glass	26.12.13.30	2001	3 195.2
Bottles of colourless glass of a nominal capacity of >= 0.15 litre for beverages and foodstuffs excluding bottles covered with leather or composition leather, infants' feeding bottles; glass containers for beverages and foodstuffs excluding bottles, flasks covered with leather or composition leather, domestic glassware - vacuum flasks and vessels	26.13.11.53, 26.13.11.55 and 26.13.11.59	2001	5 703.4
Glass containers used for the conveyance or packing of pharmaceutical products of a capacity <= 0.33 l	26.13.11.70	2000	437.4
Glass containers for the conveyance or packing of goods (excluding for beverages and foodstuffs, for pharmaceutical products, containers made from glass tubing)	26.13.11.90	2001	827.0
Drinking glasses (excluding cut or otherwise decorated drinking glasses of lead crystal gathered by hand, and drinking glasses of lead crystal gathered mechanically)	26.13.12.19, 26.13.12.35, 26.13.12.53 and 26.13.12.55	2001 (1)	1 006.7
Table or kitchen glassware (excluding glass-ceramics and drinking glasses)	26.13.13.10, 26.13.13.30, 26.13.13.50 and 26.13.13.20	2001 (1)	1 402.9
Glass fibre threads cut into lengths of at least 3 mm but <= 50 mm (chopped strands); glass fibre filaments (including rovings)	26.14.11.10 and 26.14.11.30	2001 (1)	606.1
Glass fibre mats and voiles (including of glass wool)	26.14.12.10 and 26.14.12.30	2001 (1)	730.9
Non-woven glass fibre webs; felts; mattresses and boards	26.14.12.50	2001	688.7
Unworked glass in balls, rods or tubes (excluding glass balls: as toys; which have been ground after shaping; used as stoppers for bottles; microspheres <= 1 mm in diameter), (excluding tubes coated inside with fluorescent material), including tubes which have had fluorescent material added to them in the mass	26.15.11.30 and 26.15.11.50	2000	571.5
Open glass envelopes for electric lamps, cathode-ray tubes or the like	26.15.21.00	2000	771.9
Other articles of glass n.e.s.	26.15.26.90	1999	752.4

(1) 2000 for one heading in the aggregate.

Source: Eurostat, European production and market statistics (Comext).

There were 391 800 persons employed ⁽²⁾ in the EU-25's glass manufacturing sector in 2001, 24.9 % of the total employed in the non-metallic mineral products sector. The average size of EU-15 glass manufacturing enterprise was 22 persons in 2001; six persons more than the corresponding figure for the whole of the non-metallic mineral products sector.

The two largest parts of glass manufacturing in the EU-15 were the manufacture of hollow glass (NACE Class 26.13) and the shaping and processing of flat glass (NACE Class 26.12), which in 2001 accounted for respectively 33.1 % and 27.6 % of value added in the glass manufacturing total.

⁽²⁾ Slovenia, number of employees.

Germany, France and Italy had the largest glass manufacturing sectors in the EU in 2001. However, in terms of its contribution to total manufacturing value added, glass manufacturing was most important in the Czech Republic, Slovakia, Austria and Belgium ⁽³⁾, and least important in Latvia.

Between 1993 and 2000 glass manufacturing in the EU-25 experienced uninterrupted growth, the working-day adjusted production index growing by an average of 3.5 % per annum, compared to an average of 2.3 % over the same period for non-metallic mineral products manufacturing. A moderate contraction in output was recorded in each of the three years after 2000, averaging -0.3 % per annum.

⁽³⁾ Greece, Ireland and Luxembourg, not available

LABOUR AND PRODUCTIVITY

The wage adjusted labour productivity ratio shows the relationship between value added and personnel costs. This ratio stood at 148.3 % in the EU-15's glass manufacturing sector in 2001, which was 4.7 percentage points below the non-metallic mineral products average.

EXTERNAL TRADE

Both in terms of exports and imports glass and glass products (CPA Group 26.1) was the largest product group among non-metallic mineral products in the EU-25 in 2002, accounting for 33.3 % of exports and 38.9 % of imports. The trade surplus of the EU-25 was EUR 2.4 billion in 2002. The main destination of EU-25 exports of glass and glass products was the United States, which was also the biggest origin of EU-25 imports. Other important origins of imports for the EU-25 included two Asian countries (China and Japan), as well as Turkey.

Germany, Belgium and the Czech Republic recorded the largest trade surpluses (intra and extra-EU trade), while the United Kingdom had the largest trade deficit.

Table 7.7

Manufacture of glass and glass products (NACE Group 26.1) Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Manufacture of glass and glass products	51.8	148.3	35.0
Manufacture of flat glass	77.6	198.0	39.2
Shaping and processing of flat glass	41.0	134.9	30.4
Manufacture of hollow glass	53.7	147.9	36.3
Manufacture of glass fibres	65.9	154.4	42.7
Manufacture and processing of other glass, including technical glassware	51.8	144.5	35.8

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 7.8

Glass and glass products (CPA Group 26.1) External trade, EU-25, 2002

	Exports		Imports		Trade balance (EUR million)
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	
Glass and glass products	5 218	100.0	2 837	100.0	2 382
Flat glass	410	7.8	263	9.3	146
Shaped and processed flat glass	654	12.5	719	25.3	-65
Hollow glass	2 232	42.8	746	26.3	1 486
Glass fibres	459	8.8	435	15.3	24
Other glass, processed, including technical glassware	1 435	27.5	672	23.7	762

Source: Eurostat, Comext.

7.2: CERAMIC GOODS AND CLAY PRODUCTS

This subchapter includes information on three NACE groups: the manufacture of ceramic goods other than tiles or flags (NACE Group 26.2); 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 these sectors are collectively referred to as ceramics manufacturing.

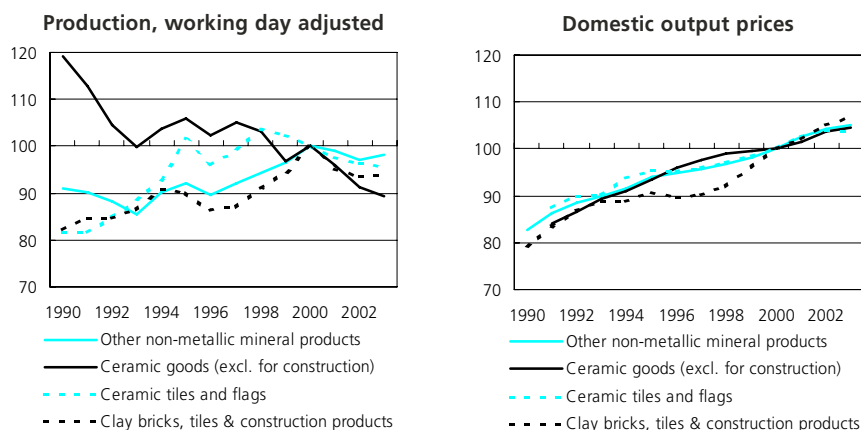
The largest share of output of this sector goes to the construction sector, for example, as bricks, tiles and sanitaryware. The demand for ceramic ornaments and tableware comes from private consumers as well as hotels, restaurants and institutional users, such as hospitals. Refractory products are supplied to other manufacturers that use high temperatures for their own production, for example, the steel, cement and glass manufacturing sectors.

STRUCTURAL PROFILE

In 2001 ceramics manufacturing in the EU-25 generated a value added of EUR 14.7 billion, equivalent to 21.2 % of the non-metallic mineral products total. Employment⁽⁴⁾ in the EU-25 in 2001 was 403 900 persons; in the EU-15 this sector accounted for one quarter (25.3 %) of employment in the non-metallic mineral products sector.

⁽⁴⁾ Estonia and Malta, not available; Latvia, 2002; Slovenia, number of employees, 2000.

Figure 7.4
Manufacture of ceramic goods and clay products (NACE Groups 26.2, 26.3 and 26.4)
Main indicators, EU-25 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/eht).

The largest part of ceramics manufacturing in the EU-25 was the manufacture of non-refractory ceramic goods other than for construction purposes/the manufacture of refractory ceramic products, which made up 45.7 % of ceramics manufacturing in 2001. This part of ceramics manufacturing was particularly dominant in Austria (72.2 % of the ceramics manufacturing total) and Slovakia (70.4 %).

The Italian ceramics manufacturing sector generated EUR 3.5 billion of value added, close to one quarter of the EU-25 total, followed by Spain (EUR 2.6 billion) and Germany (EUR 2.5 billion). In terms of manufacturing specialisation⁽⁵⁾, this sector was particularly important in Portugal and Spain, while Ireland (2000), Finland (1999) and Belgium were the least specialised.

⁽⁵⁾ Denmark, Estonia, Greece, Latvia, Malta and Sweden, not available.

Table 7.9
Selected ceramic goods and clay products (CPA Groups 26.2 to 26.4), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
Porcelain or china tableware and kitchenware (excluding electro-thermic apparatus, coffee or spice mills with metal working parts)	26.21.11.30	2001	1 352.4
Ceramic sinks etc. and other sanitary fixtures, of porcelain of china	26.22.10.30	2000	1 507.5
Refractory bricks, blocks etc., weight > 50% Al ₂ O ₃ and/or SiO ₂ ; 7% < Al ₂ O ₃ <= 45% and others; and n.e.c.	26.26.12.35 to 26.26.12.90	2001 (1)	808.5
Refractory cement; mortar; concrete and similar compositions (including refractory plastics, ramming mixes, gunning mixes) (excluding carbonaceous pastes)	26.26.13.00	2001	830.9
Refractory ceramic goods n.e.s., alumina or silica or mixture > 50%: alumina >= 45%	26.26.14.59	2000	255.5
Unglazed stoneware flags and paving; hearth or wall tiles (excluding double tiles of the Spaltplatten type)	26.30.10.53	1999	1 065.0
Unglazed ceramic flags and paving; hearth or wall tiles (excluding stoneware, earthenware or fine pottery, double tiles of the Spaltplatten type)	26.30.10.59	1999	528.8
Non-refractory clay building bricks and flooring blocks; support or filler tiles and the like (excluding of siliceous fossil meals or earth)	26.40.11.10 and 26.40.11.30	2000	4 299.4
Non-refractory clay roofing tiles; non-refractory clay constructional prod. (including chimney pots, cowl, liners and flue-blocks, architectural ornaments, ventilator grills, clay-lath; excluding pipes, guttering and the like)	26.40.12.50 and 26.40.12.70	2000	2 164.0

(1) 2000 for one or more headings in the aggregate.

Source: Eurostat, European production and market statistics (Comext).

The three NACE groups making up this subchapter showed contrasting fortunes as regards the evolution of annual short-term statistics in the EU-25. The working day adjusted index of production for non-refractory goods other than for construction purposes/the manufacture of refractory ceramic products (NACE Group 26.2) fell by 2.1 % per annum on average between 1995 and 2003, despite growth of 2.5 % in 1997 and of 3.5 % in 2000. The manufacture of ceramic tiles and flags (NACE Group 26.3) reported a less significant decline in activity, as output fell on average by 0.7 % between 1995 and 2003; growth of 3.3 % and 4.5 % was recorded in 1997 and 1998 respectively, since when a negative rate of change was recorded each year. The production index for the manufacture of bricks, tiles and construction products (NACE Group 26.4) also recorded a decline to a low point in 1996, however it then recorded four years of uninterrupted growth averaging 3.8 % per annum. Like the other activities in this subchapter this was followed by a decline in production in the following three years, averaging -2.1 % per annum.

LABOUR AND PRODUCTIVITY

Apparent labour productivity in ceramics manufacturing was EUR 42 000 per person employed in the EU-15 in 2001, and average personnel costs were EUR 30 100 per employee, both below the respective averages for the non-metallic mineral products sector, particularly the figure for apparent labour productivity. Consequently, wage adjusted labour productivity was also relatively low, at 139.5 % in the EU-15, compared with the non-metallic mineral products average of 153.0 %.

EXTERNAL TRADE

The external trade of ceramic goods and clay products (CPA Groups 26.2 to 26.4) registered a trade surplus of EUR 4.2 billion in the EU-25 in 2002. These products made up 39.8 % of total exports and 28.2 % of total imports of non-metallic mineral products. The main destination of EU-25 exports of ceramic goods and clay products was the United States, accounting for 28.7 % of the total in 2002. In terms of imports, the main origin was China, with more than one quarter of the total.

Italy and Spain had by far the highest trade surpluses, EUR 3.8 billion and EUR 2.0 billion respectively in 2002. These Member States, together with Germany, Portugal, the Czech Republic and Slovakia, were the only ones to record a trade surplus in 2002, while the highest trade deficit was registered in France.

Table 7.10

Manufacture of ceramic goods and clay products (NACE Groups 26.2, 26.3 and 26.4) Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Ceramic goods and clay products	42.0	139.5	30.1
Ceramic goods (excl. for construction)	35.4	123.0	28.8
Ceramic tiles and flags	47.6	149.4	31.9
Clay bricks, tiles and construction products	52.8	170.4	31.0

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 7.11

Ceramic goods and clay products (CPA Groups 26.2, 26.3 and 26.4) External trade, EU-25, 2002

	Exports		Imports		Trade balance (EUR million)
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	
Ceramic goods and clay products	6 247	100.0	2 058	100.0	4 189
Ceramic goods (excl. for construction)	3 149	50.4	1 797	87.3	1 352
Ceramic tiles and flags	2 964	47.4	245	11.9	2 719
Bricks, tiles and construction products, in baked clay	135	2.2	16	0.8	119

Source: Eurostat, Comext.

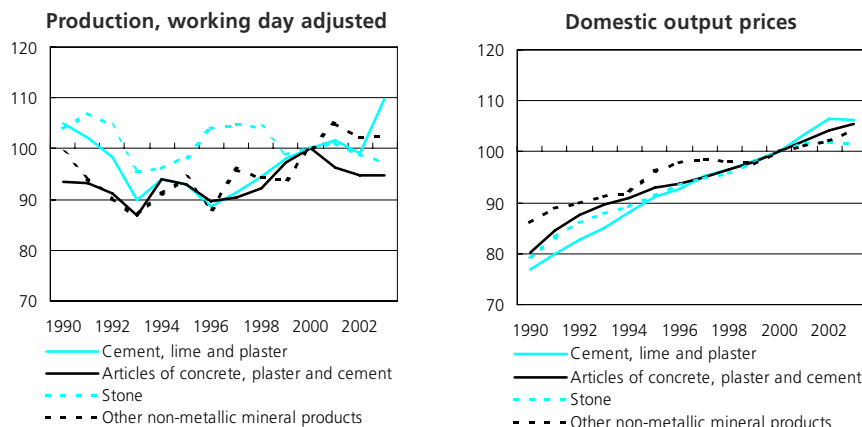
7.3: CEMENT, CONCRETE, STONE AND OTHER NON-METALLIC MINERAL PRODUCTS

This final subchapter groups together the four remaining activities that make up NACE Division 26. The manufacture of cement, lime and plaster (NACE Group 26.5) is treated together with the manufacture of articles made from concrete, plaster and cement (NACE Group 26.6). There are also separate sections covering the activities of cutting, shaping and finishing stone (NACE Group 26.7) and the manufacture of other non-metallic mineral products (NACE Group 26.8), a miscellaneous collection of activities that includes the production of abrasive products, non-metallic mineral yarns, and mineral insulating materials (be they for heat or sound insulation).

This subchapter analyses four NACE groups, treated in three separate sections. The manufacture of cement and concrete (NACE Groups 26.5 and 26.6) was by far the largest, with value added in the EU-25 of EUR 27.9 billion in 2001. The working of stone contributed EUR 5.6 billion of value added and the manufacture of other non-metallic mineral products contributed EUR 4.4 billion.

Figure 7.5

Cement, concrete, stone and other non-metallic mineral products (NACE Groups 26.5 to 26.8)
Main indicators, EU-25 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Table 7.12

Cement, concrete, stone and other non-metallic mineral products (NACE Groups 26.5 to 26.8)
Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Cement, concrete, stone and other non-metallic mineral products	53.6	160.6	33.4
Manufacture of cement, lime and plaster	126.2	253.9	49.7
Manufacture of articles of concrete, plaster, cement	51.5	155.3	33.2
Cutting, shaping and finishing of stone	32.2	140.6	22.9
Manufacture of other non-metallic mineral products	51.8	129.2	40.1

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 7.13

Cement, concrete, stone and other non-metallic mineral products (CPA Groups 26.5 to 26.8)
External trade, EU-25, 2002

	Exports		Imports		Trade balance (EUR million)
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	
Cement, lime and plaster	436	10.4	639	26.6	-203
Articles of concrete, plaster and cement	542	12.9	128	5.3	414
Monumental or building stone and articles thereof	1 495	35.5	522	21.8	972
Other non-metallic mineral products	1 735	41.2	1 108	46.2	626

Source: Eurostat, Comext.

Table 7.14
Selected cement and concrete products (CPA Groups 26.5 and 26.6), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
Cement clinker	26.51.11.00	2000	292.3
White Portland cement	26.51.12.10	2000	440.9
Grey Portland cement (including blended cement)	26.51.12.30	2001	11 102.2
Other hydraulic cements	26.51.12.90	2000	1 564.0
Plasters consisting of calcined gypsum or calcium sulphate (including for use in building, for use in dressing woven fabrics or surfacing paper, for use in dentistry)	26.53.10.00	2000	866.1
Building blocks and bricks of cement; concrete or artificial stone	26.61.11.30	2000	3 166.9
Tiles; flagstones and similar articles of cement; concrete or artificial stone (excluding building blocks and bricks)	26.61.11.50	2000	5 201.1
Plaster products for construction purposes	26.62.10.50 and 26.62.10.90	2000	2 117.4
Factory made mortars	26.64.10.00	2000	3 326.1
Sheets; panels; tiles and similar articles; of asbestos-cement; cellulose fibre-cement; vegetable fibres; synthetic polymer; glass or metallic fibres	26.65.12.30	2000	844.2

Source: Eurostat, European production and market statistics (Comext).

MANUFACTURE OF CEMENT AND CONCRETE

Cement and concrete manufacturing (NACE Groups 26.5 and 26.6) generated EUR 27.9 billion of value added in the EU-25 in 2001, making up 40.2 % of the non-metallic mineral products total. One fifth (20.0 %) of value added in the EU-25 was accounted for by Germany, followed by Italy (13.7 %) and Spain (12.9 %). Employment⁽⁶⁾ in the EU-25 was 502 800 persons in 2001. Average personnel costs were equal to EUR 35 800 per employee in the EU-15, while apparent labour productivity reached EUR 62 900 per person employed; both of these values were above the non-metallic mineral products average. Wage adjusted labour productivity was 175.8 %, which was also well above the average for non-metallic mineral products. This resulted from a particularly high ratio in cement, lime and plaster manufacturing (253.9 %), the highest wage adjusted labour productivity ratio among all of the NACE groups that form the non-metallic mineral products sector. The articles made from concrete, plaster and cement manufacturing (NACE Group 26.6) sector recorded the third highest wage adjusted labour productivity ratio (155.1 %).

⁽⁶⁾ Estonia, NACE Group 26.5 not available; Latvia and Slovenia, number of employees; Malta, 2000.

The working day adjusted index of production for the manufacture of cement, lime and plaster (NACE Group 26.5) did not follow the pattern of falling output that was witnessed in the majority of NACE groups that compose non-metallic mineral products manufacturing. Output increased overall on average by 2.0 % per annum between 1993 and 2003, with a particularly rapid expansion with respect to the latest year available, as production grew by 10.7 % in 2003.

In contrast, the evolution of output for the manufacture of articles of concrete, plaster and cement (NACE Group 26.6) resembled more closely that recorded for the whole of non-metallic mineral products. The index of production grew by 2.0 % per annum on average between 1993 and 2000, but then declined by 1.8 % per annum between 2000 and 2003.

External trade flows for cement, lime, plaster and concrete products (CPA Groups 26.5 and 26.6) were relatively small, with exports in 2002 valued at close to EUR 1.0 billion (6.2 % of total exports of non-metallic mineral products) and imports valued at EUR 766.5 million (10.5 % of the non-metallic mineral products' total). This led to a trade surplus of EUR 211.9 million for the EU-25. The main destinations for EU-25 exports were China, the United States and Norway, accounting respectively for 19.4 %, 14.9 % and 7.2 % of EU-25 exports in 2002. The main origin of imports of these products was Turkey, accounting for 37.5 % of the total. The Netherlands showed by far the highest trade deficit among the Member States (EUR 298.8 million), while in contrast, Belgium and Denmark registered the highest trade surpluses in 2002, with respectively EUR 454.3 million and EUR 402.2 million.

WORKING OF STONE

Enterprises active in the cutting, shaping and finishing of stone (NACE Group 26.7) generated EUR 5.6 billion of value added in 2001 in the EU-25, equivalent to 8.1 % of the non-metallic mineral products total. Italy, as the largest Member State in this sector accounted for 27.6 % of the EU-25 total, followed by Spain (20.4 %) and Germany (18.2 %). In relation to the whole non-metallic mineral products sector, several southern Member States showed the highest specialisation rates⁽⁷⁾. This was notably the case in Portugal, Spain, Cyprus, Italy and Malta. Employment⁽⁸⁾ in this sector in the EU-25 in 2001 was 183 700 persons employed, with Italy and Spain together employing 88 600 persons.

The development of the EU-25's working day adjusted index of production for the cutting, shaping and finishing of stone sector increased on average by 2.3 % between 1993 and 1997. In 1998 (-0.4 %) and 1999 (-5.2 %) output contracted, after which there was a more modest expansion in output of 1.2 % in both 2000 and 2001. This was followed by a further period of contraction, -2.2 % in 2002 and -1.6 % in 2003.

⁽⁷⁾ Greece and Ireland, not available.

⁽⁸⁾ Poland and Slovenia, number of employees.

EU-25 exports of monumental and building stone products (CPA Group 26.7) were EUR 1.5 billion in 2002, compared with imports of EUR 522.3 million, resulting in a trade surplus of EUR 972.2 million. Almost half of all EU-25 exports of monumental and building stone (47.5 %) were destined for the United States in 2002. There was no other country accounting for more than 10 % of EU-25 exports. Imports came mainly from China (39.2 %) and India (25.7 %) in 2002, with Turkey the third largest source (9.0 %).

The majority of Member States recorded trade deficits in monumental and building stone. In particular, all of the new Member States reported a trade deficit with the exception of the Czech Republic and Malta. Italy registered the highest trade surplus (EUR 1.6 billion), far ahead of Spain (EUR 592.2 million). Germany registered the highest trade deficit, some EUR 395.2 million in 2002.

MANUFACTURE OF OTHER NON-METALLIC MINERAL PRODUCTS

This activity (NACE Group 26.8) is composed of a diverse range of products, often destined for specialist markets, covering, for example, peat flower pots for gardening and automotive brake linings. In 2001 this sector generated EUR 4.4 billion of value added in the EU-25, which was equivalent to 6.3 % of the non-metallic mineral products total. Germany had the largest other non-metallic mineral products sector and contributed EUR 1.5 billion of value added to the EU-25 total, almost three times higher than the second largest contribution that was made by the United Kingdom (EUR 556.0 million). Slovenia, and to a lesser extent, Luxembourg, Austria and Cyprus were all relatively specialised in this sector, whereas France and Ireland (2000) were relatively unspecialised ⁽⁹⁾. There were 93 600 persons employed ⁽¹⁰⁾ in this sector in the EU-25 in 2001, around 6 % of the total for the non-metallic mineral products sector. Average personnel costs were EUR 40 100 per employee in the EU-15, EUR 7 200 above the non-metallic mineral products average, while apparent labour productivity reached EUR 51 800 per person employed, just EUR 1 500 above the non-metallic mineral products average. Consequently, wage adjusted labour productivity was relatively low at 129.2 %.

⁽⁹⁾ Greece and Latvia, not available.

⁽¹⁰⁾ Latvia, 2002; Slovenia, number of employees.

Annual short-term statistics for the other non-metallic mineral products sector show that the EU-25's working day adjusted index of production rose by 6.2 % overall between 1995 and 2000, with a rapid jump in production between 1999 and 2000 (6.3 %). This was followed by a further increase of 5.0 % between 2000 and 2001, since when a reduction of 2.7 % was registered in 2002, followed by a modest change in 2003 (+ 0.3 %).

Some EUR 1.7 billion of other non-metallic mineral products (CPA Group 26.8) were exported from the EU-25 in 2002, while imports of these products were valued at EUR 1.1 billion. The resulting trade surplus was EUR 626.3 million. The main destination of EU-25 exports in 2002 was the United States (21.6 %), which was also the main origin of EU-25 imports (31.4 %), although Switzerland (15.8 %) and Japan (14.1 %) also provided significant shares.

The 10 new Member States were generally net importers of other non-metallic mineral products, with Poland recording the highest trade deficit among the 10 new Member States, some EUR 103.0 million in 2002 and indeed among all 25 of the Member States. Slovenia was the only new Member State that registered a trade surplus (EUR 70.0 million). Germany recorded by far the highest surplus among the complete set of 25 Member States, valued at EUR 564.9 million.

Table 7.15

Manufacture of other non-metallic mineral products (NACE Division 26)

Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	7 180	3 524	2 286	36 731	182	1 858	25 317	23 259	1 624	35 670	286	116	198	586
Value added at factor cost (EUR million)	2 338	1 278	935	14 466	63	808	9 087	7 891	766	11 341	107	66	66	238
Purchases of goods and services (EUR million)	5 259	2 440	0	25 409	130	:	17 934	16 948	1 104	25 724	199	84	138	356
Gross investment in tangible goods (EUR million)	666	335	194	2 178	18	:	1 917	1 267	174	2 471	24	22	17	:
Number of persons employed (thousands)	37	87	18	281	5	16	196	150	11	249	3	4	11	3
App. labour productivity (EUR thous./pers. emp.)	63.5	14.7	53.3	51.4	13.8	52.0	46.5	52.7	69.3	45.5	38.2	16.7	6.0	81.1
Average personnel costs (EUR thous./employee) (1)	43.0	7.3	38.7	38.8	6.8	:	25.4	36.6	31.9	29.1	19.3	4.1	4.2	40.9
Wage adjusted labour productivity (%) (1)	147.4	200.7	137.7	132.5	203.9	:	183.0	143.9	216.8	156.0	193.4	410.6	142.6	198.1
Gross operating rate (%) (2)	11.1	18.8	12.1	9.8	16.6	:	16.3	10.0	24.1	14.5	18.2	43.5	10.5	19.9
	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	1 340	64	6 107	4 786	6 059	4 494	592	798	2 469	2 678	17 596	394	1 101	:
Value added at factor cost (EUR million)	494	23	2 316	2 130	3 134	1 754	172	276	995	994	7 606	108	388	:
Purchases of goods and services (EUR million)	982	41	4 248	3 155	3 291	3 168	400	561	1 616	1 932	10 730	317	851	:
Gross investment in tangible goods (EUR million)	126	2	406	385	611	552	44	115	142	128	956	61	241	:
Number of persons employed (thousands)	29	1	35	35	:	66	:	24	16	19	134	23	86	:
App. labour productivity (EUR thous./pers. emp.)	17.0	17.1	66.5	61.2	:	26.6	:	11.5	60.9	51.6	56.7	4.6	4.5	:
Average personnel costs (EUR thous./employee)	7.7	10.8	40.0	43.7	7.9	13.6	13.4	5.5	35.3	37.1	34.9	2.4	2.5	:
Wage adjusted labour productivity (%)	221.4	158.4	166.4	139.9	:	195.0	:	207.0	172.5	139.0	162.3	189.6	180.6	:
Gross operating rate (%)	18.8	19.1	15.3	12.4	33.1	18.5	5.7	17.4	16.6	10.9	16.4	13.2	16.2	:

(1) Ireland and Cyprus, 2000.

(2) Ireland, 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Water supply and sewerage



The organisation of water supply and wastewater treatment within the EU varies between countries, with State-owned, private and mutual enterprises, as well as municipalities involved in terms of the ownership or operation of infrastructure. Among the key issues that affect this sector are pricing and the metering of water use. The EU water framework directive ⁽¹⁾ was adopted in October 2003, and one of its goals was the introduction of pricing regimes to reflect the costs of water supply and to provide an incentive for efficient water use. Costs concern not only the financial costs related to investment in infrastructure and the operation of services, but also the environmental costs related to the impact of abstraction and wastewater collection, treatment and disposal. Pricing issues need to consider these costs balanced against the vital nature of water, and hence the need to supply consumers, regardless of location, season and resources.

STRUCTURAL PROFILE

In 2001 the EU-25's water supply sector generated an estimated EUR 17.9 billion of value added. In the EU-15 value added was estimated at EUR 16.0 billion in 2001, around 0.4 % of value added in the non-financial business economy (NACE Sections C to I and K). As such, the 10 new Member States accounted for an estimated 10.6 % of the EU-25's total value added in the water supply sector, close to double their contribution to the manufacturing sector (5.6 %) and slightly more than their contribution to the mining and quarrying sector (10.3 %).

⁽¹⁾ Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy.

EU-25 employment data are only available on the basis of the number of employees: it should be noted that this is a fairly good approximation for the number of persons employed in this sector, as 2000 data for the EU-15 show that employees made up over 99 % of the number of persons employed. In 2000 there were 310 600 employees in the EU-25's water supply sector, of which nearly two fifths (39.0 %) were working in one of the 10 new Member States. In value added terms, the water supply sector was dominated by Germany and the United Kingdom, with 27.2 % and 23.2 % shares of the EU-25's value added in 2000. Several of the ten new Member States reported relatively large water supply sectors in 2001, relative to the size of their non-financial business economies. In Estonia (1999), Lithuania and Slovakia, the water supply sector contributed 1.2 % of the non-financial business economy's value added, while in Hungary (1.0 %), the Czech Republic (0.8 %) and Slovenia (0.7 %), the contribution of the water supply sector was also equal to, or above, the level indicated in Portugal (0.7 %), which had the highest share among the EU-15 Member States ⁽²⁾.

⁽²⁾ Greece, Cyprus, Malta and Poland, not available.

This chapter describes the activities involved in water supply and sewerage. The former provides for the collection, purification, desalination and distribution of water (NACE Division 41) and is treated in NACE separately from sewerage treatment (which is classified as part of liquid waste treatment, found within NACE Division 90).

NACE

- 41: collection, purification and distribution of water;
90: sewage and refuse disposal, sanitation and similar activities.

Table 14.1

Collection, purification and distribution of water (NACE Division 41) Structural profile, 2001

Rank	Largest value added (EUR billion) (1)	Largest number of persons employed (thousands) (2)
1	United Kingdom (4.1)	Germany (35.3)
2	France (2.0)	France (34.3)
3	Spain (1.5)	United Kingdom (31.2)
4	Italy (1.1)	Spain (24.9)
5	Netherlands (0.9)	Hungary (23.0)

(1) Germany, Estonia, Malta and Poland, not available.

(2) Estonia, Malta, Poland and Slovenia, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 14.2

Collection, purification and distribution of water (NACE Division 41)

Value added at factor cost and persons employed, by enterprise size-class, 2001 (% of total)

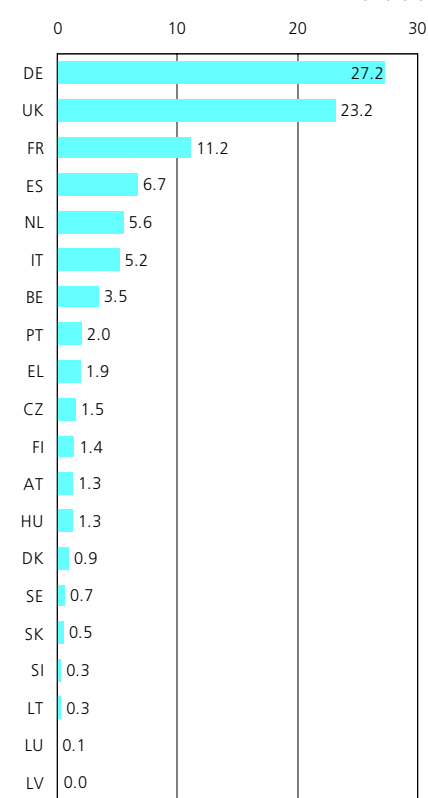
	Micro enterprises		Small enterprises		Medium-sized enterprises		Large enterprises	
	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed
EU-25	6.4	:	9.4	:	18.6	:	65.5	:
EU-15	7.0	6.8	9.8	10.4	17.9	19.2	65.3	63.6

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass).

Close to two thirds (65.5 %) of value added in the EU-25 was generated by large enterprises (with 250 or more persons employed) in 2001, a larger share than the equivalent figure in manufacturing (54.9 %). An analysis of the size-class breakdown shows a fairly common pattern among Member States, with large enterprises accounting for half or more of the water supply sector's value added in every country with data available, except for Denmark and Slovenia - see Table 14.3. In eight of the Member States with recent data available, micro enterprises (with less than 10 persons employed) had only a negligible role in the water supply sector, as they generated less than 1 % of total value added.

The working day adjusted production index for water supply in the EU-25 indicates a period of falling output between the beginning of the series in 1996 and 1998, followed by four years of alternating moderate growth and stability. The employment index starts in 1995 and shows that employment fell through to 1999, averaging -1.2 % per annum over the four years. Since then, the employment index registered two years of 1.6 % growth, followed by a fall of 0.3 % in 2002. The larger Member States experienced very different employment trends in recent years, as can be seen from the average rates of change in the five years until 2002. Germany (-2.6 % per annum) and the United Kingdom (-0.9 %) both recorded contractions in employment over this period, although the United Kingdom did register employment growth in 2000 and 2001. France averaged 1.7 % employment growth per annum over the same period, while Spain averaged 5.7 % growth per annum, despite a fall in employment in 2001. Output price increases for the supply of water in the EU-25 increased every year throughout the 1990s and through to 2003, averaging 4.0 % per annum during the 10-year period 1993 to 2003. These rates were notably higher than the manufacturing average of 1.5 % per annum over the same period.

Figure 14.1

Collection, purification and distribution of water (NACE Division 41)
Share of EU-25 value added, 2000 (%) (1)

(1) Estonia, Ireland, Cyprus, Malta and Poland, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 14.3

Collection, purification and distribution of water (NACE Division 41)
Share of size class in value added, 2001 (%)

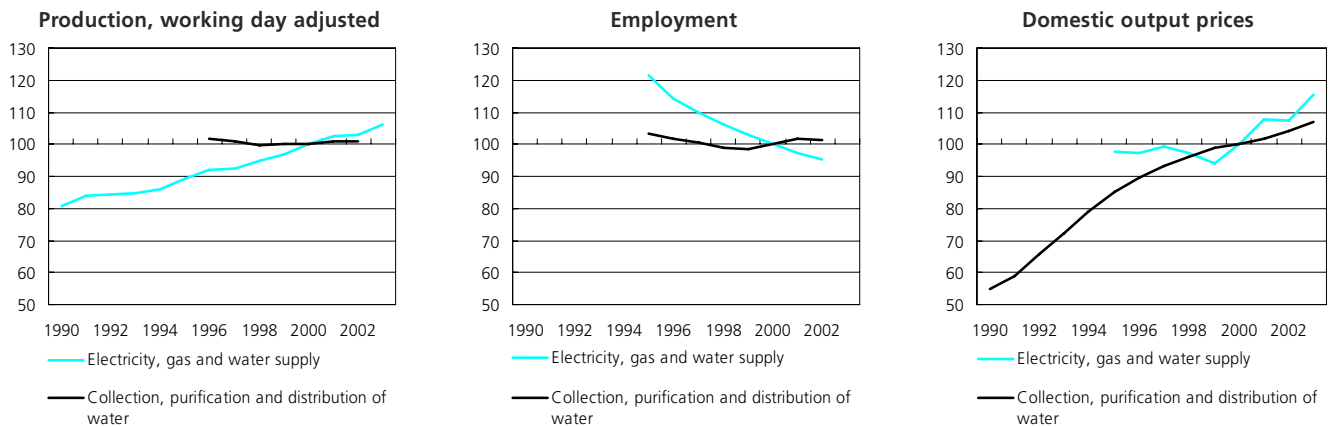
	Medium-sized				Total
	Micro	Small	Large		
EU-25	6.4	9.4	18.6	65.5	100
EU-15	7.0	9.8	17.9	65.3	100
BE (1)	2.6	3.2	8.2	86.1	100
CZ	0.2	2.4	17.5	79.8	100
DK (2)	95.0	5.0	0.0	0.0	100
DE (2)	16.1	23.1	:	:	100
EE (1)	1.1	13.5	:	:	100
EL	:	:	:	:	:
ES (2)	4.5	8.6	25.5	61.4	100
FR	0.9	4.6	12.5	82.0	100
IE	:	:	:	:	:
IT	3.0	10.2	31.6	55.2	100
CY	:	:	:	:	:
LV	:	:	:	:	:
LT (2)	0.6	5.9	25.9	67.7	100
LU	:	:	:	:	:
HU	0.3	2.7	14.8	82.2	100
MT	:	:	:	:	:
NL	0.2	:	:	90.5	100
AT	14.2	19.8	:	:	100
PL	:	:	:	:	:
PT	0.4	3.8	32.5	63.3	100
SI (1)	0.3	15.5	65.8	18.4	100
SK (1)	0.0	0.0	:	:	100
FI	10.4	19.9	:	:	100
SE	3.6	:	:	:	100
UK	:	:	10.5	:	100

(1) 1999.

(2) 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass/indus_ms).

Figure 14.2

Collection, purification and distribution of water (NACE Division 41)
Main indicators, EU-25 (2000=100)


Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Table 14.4 shows the annual volume of fresh water abstraction in each of the Member States, and the amount used for selected purposes, notably for the public water supply (PWS) concerned by this sector. In most Member States, the PWS accounted for between 10 and 40 % of total fresh water abstraction, with a few notable exceptions. The share was higher in Luxembourg, where there is practically no water used for cooling in electricity generation (Luxembourg's main electricity generation is hydro-electric - see Chapter 1), in Slovenia, and in Malta, where practically all fresh water abstraction is destined for the PWS. The share of PWS in total water abstraction was lower in the Baltic States, where, at least in Estonia and Lithuania, water for cooling in electricity generation was responsible for a very large share of fresh water abstraction. Table 14.5 shows the volume of PWS, with information on main users and also the proportion of households connected to the PWS network.

Table 14.4

Fresh water abstraction (million m³ per year)

	Latest year	Total surface and ground water	Of which, for:		
			public water supply	manu- facturing	electricity (cooling)
BE	1998	7 442	730	1 404	4 244
CZ	2002	1 908	764	339	577
DK	2002	669	:	:	:
DE	2001	38 006	5 409	5 374	24 837
EE	2001	1 471	67	33	1 103
EL	1997	8 695	861	110	124
ES	2001	38 544	5 616	1 089	5 836
FR	2000	30 932	5 872	3 633	18 339
IE		:	:	:	:
IT	1998	41 982	:	:	:
CY	2000	175	39	4	:
LV	2001	258	17	43	:
LT	2002	3 126	79	38	2 863
LU	1999	61	38	14	0
HU (1)	2001	4 552	687	204	4 028
MT (2)	2000	17	20	:	:
NL	2001	8 813	1 257	1 352	6 204
AT	1997	3 561	604	1 286	1 571
PL	2002	11 728	2 171	633	6 737
PT	1998	11 190	872	385	1 237
SI	2001	293	210	83	:
SK	2002	1 094	385	623	:
FI	1999	2 328	404	1 569	274
SE	2002	2 689	923	1 406	97
UK (3)	2000	15 895	5 988	1 621	2 626

(1) Electricity cooling, 2000.

(2) Public water supply, 1997.

(3) England and Wales only.

Source: Eurostat, Environment statistics (theme8/milieu/water).

Table 14.5

Public water supply (million m³ per year)

	Latest year	Proportion of households connected to PWS (1) (%)	Total supply	Of which, to:			
				agriculture, forestry and fishing	manu- facturing	electricity generation	house- holds
BE	1998	:	559	18	94	3	381
CZ	2002	90	545	6	:	:	343
DK	2001	95	411	:	:	:	251
DE	2001	99	4 474	:	360	39	3 779
EE	2001	71	66	:	:	:	:
EL	1997	:	:	:	:	:	670
ES	2001	:	4 402	387	379	48	2 460
FR (2)	1998	99	4 000	:	:	:	3 491
IE		:	:	:	:	:	:
IT	1999	100	5 692	84	:	:	4 258
CY	1998	:	68	24	:	:	:
LV (2)	2001	:	302	9	79	119	78
LT (2)	2002	76	45	:	:	0	43
LU	1999	:	37	0	:	:	24
HU	2002	93	546	5	20	:	381
MT		:	:	:	:	:	:
NL	2001	100	1 269	:	215	2	714
AT	1997	:	604	:	:	:	456
PL	2002	81	1 627	:	20	10	1 284
PT	1998	:	:	:	:	:	680
SI	2001	:	107	:	18	1	88
SK	2002	:	388	:	:	:	:
FI	1999	:	404	:	:	:	404
SE	2002	86	720	:	102	:	526
UK	1998	:	6 597	:	:	:	:

(1) Poland, 1999; Sweden, 1997.

(2) Households includes also activities other than industry and agriculture.

Source: Eurostat, Environment statistics (theme8/milieu/water).

Table 14.6

Urban waste water treatment (all treatment methods)

	Latest year	Number of plants	Thousand kg O ₂ /day (1)	
			Design capacity	Actual occupation
BE		:	:	:
CZ	1999	959	749	445
DK	1998	1 475	724	526
DE	1998	10 312	9 367	7 343
EE	2000	447	:	:
EL	1997	140	452	357
ES		:	:	:
FR	2000	4 119	4 291	:
IE		:	:	:
IT		:	:	:
CY	2000	30	:	:
LV	2001	1 421	:	:
LT	2001	791	:	:
LU	1998	301	:	:
HU	2000	520	:	:
MT		:	:	:
NL	2000	399	1 363	969
AT	2001	1 487	:	808
PL	2001	2 558	2 608	:
PT		:	:	:
SI	2000	110	60	43
SK	1998	199	:	237
FI	2001	:	415	624
SE	2000	1 260	:	:
UK (2)	2000	6 432	:	4 008

(1) Quantity of oxygen-demanding material.

(2) England and Wales only.

Source: Eurostat, Environment statistics (theme8/milieu/water).

Tables 14.6 and 14.7 provide information on wastewater treatment concerning the infrastructure for treating this waste and access to various collection and treatment systems. Most wastewater is treated after collection, but as can be seen in Table 14.7 a large proportion of the population in Malta (87 %), Belgium (44 %) and Portugal (36 %) only had access to collection systems without treatment.

Table 14.7

Proportion of the population connected to waste water systems (%)

	Latest year	Urban waste water treatment			Total	Urban waste water collecting system without treatment	Independent waste water collecting system of which: with independent treatment	
		Primary treatment	Secondary treatment	Tertiary treatment			Total	
BE	1998	0	22	16	38	44	17	:
CZ	2001	:	:	:	65	7	25	:
DK	1998	2	3	84	89	0	11	11
DE	1998	1	6	83	91	2	7	5
EE	2000	1	28	40	69	1	30	:
EL	1997	32	14	10	56	11	32	:
ES		:	:	:	:	:	:	:
FR	1998	:	:	:	77	2	18	:
IE		:	:	:	:	:	:	:
IT		:	:	:	:	:	:	:
CY	2000	0	0	35	35	0	66	66
LV		:	:	:	:	:	:	:
LT		:	:	:	:	:	:	:
LU	1999	:	:	:	93	0	7	7
HU	2000	2	24	6	32	19	49	17
MT	2001	:	:	:	13	87	:	:
NL	2000	0	18	80	98	0	2	:
AT	2001	:	:	:	86	0	14	14
PL	2001	3	29	23	55	:	:	:
PT	1998	18	26	2	46	36	18	5
SI	1999	15	15	0	30	23	47	45
SK	1998	:	:	:	49	5	46	:
FI	2001	0	0	81	81	0	19	:
SE	2000	0	5	81	86	:	14	13
UK (1)	2000	4	64	27	95	2	3	:

(1) England and Wales only.

Source: Eurostat, Environment statistics (theme8/milieu/water).

LABOUR AND PRODUCTIVITY

The water supply sector's labour force is characterised by a higher proportion of men and of full-time employment than the manufacturing average, although not as high as in construction, mining and quarrying, or electricity, gas, steam and hot water supply. Full-time employment was 93.6 % in the EU-15 in 2002, 1.2 percentage points above the manufacturing average, while men made up 79.7 % of the workforce, 8.0 percentage points above the manufacturing average.

The EU-15 water supply sector recorded apparent labour productivity of EUR 83 700 per person employed in 2001, well above the manufacturing average of EUR 51 200 for comparison. Average personnel costs were EUR 38 100 per employee, again above the manufacturing average of EUR 35 700 per employee. The resulting wage adjusted labour productivity ratio was 219.7 %, indicating that value added was more than double the level of personnel costs. This was much higher than the manufacturing average (143.5 %), and was higher than the level recorded for the majority of the divisions within the non-financial business economy. Particularly high wage adjusted labour productivity ratios⁽³⁾ were recorded in Latvia, the Netherlands, Finland and Sweden, where this indicator was at least twice as high in the water supply sector as the non-financial business economy average.

⁽³⁾ Germany, Estonia, Greece, Ireland, Cyprus, Malta, Poland and Slovenia, not available.

Table 14.8

Collection, purification and distribution of water (NACE Division 41)
Labour force characteristics, 2002

	Share of men (%)	Share of full-time (%)	Share of employees (%)
EU-25	:	:	:
EU-15	79.7	93.6	97.7
BE	88.1	90.8	100.0
CZ	74.3	96.9	95.1
DK	:	:	:
DE	71.7	89.6	98.5
EE	:	:	:
EL	86.4	98.4	100.0
ES	87.5	97.5	98.3
FR	75.9	92.5	100.0
IE	:	:	:
IT	92.3	97.8	89.8
CY	:	100.0	100.0
LV	:	:	:
LT	:	:	:
LU	:	:	:
HU	79.9	98.4	99.3
MT	95.3	100.0	100.0
NL	81.2	87.7	100.0
AT	93.5	:	100.0
PL	:	:	:
PT	83.8	100.0	100.0
SI	87.0	100.0	100.0
SK	81.9	98.6	100.0
FI	:	92.5	100.0
SE	:	:	:
UK	75.6	93.5	97.1

Source: Eurostat, Labour Force Survey.

Table 14.9

Collection, purification and distribution of water (NACE Division 41)

Main indicators, 2001

	BE	CZ	DK	DE	EE (1)	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	1 230	659	424	8 264	51	295	3 008	10 394	0	2 921	75	10	93	44
Value added at factor cost (EUR million) (2)	599	292	168	4 638	28	323	1 457	2 032	0	1 092	37	29	53	34
Purchases of goods and services (EUR million) (3)	610	371	257	3 742	19	:	1 642	8 124	0	1 773	39	4	31	35
Gross investment in tangible goods (EUR million) (3)	221	201	49	3 119	23	:	406	576	0	551	1	23	44	:
Number of persons employed (thousands)	8	22	3	35	:	7	25	34	0	18	0	1	7	0
App. labour productivity (EUR thous./pers. emp.) (2)	78.8	13.4	49.2	103.7	:	45.4	58.6	59.3	:	60.8	109.7	37.3	7.9	84.2
Average personnel costs (EUR thous./employee) (2)	49.3	7.5	29.2	37.3	5.3	:	32.1	47.9	:	39.9	:	4.3	4.7	53.0
Wage adjusted labour productivity (%) (2)	159.6	178.2	168.8	278.2	:	:	182.3	123.8	:	152.4	:	867.8	168.8	158.8
Gross operating rate (%) (2)	19.1	19.6	18.0	36.9	32.1	:	23.5	4.0	:	15.4	41.0	299.8	25.1	18.8
	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	498	:	1 624	326	:	634	192	207	356	184	6 805	179	394	:
Value added at factor cost (EUR million)	234	:	935	218	:	372	63	111	247	104	4 131	89	196	:
Purchases of goods and services (EUR million)	358	:	547	110	:	307	91	92	110	80	2 222	96	231	:
Gross investment in tangible goods (EUR million)	76	:	353	69	:	616	81	78	10	67	2 748	39	200	:
Number of persons employed (thousands)	23	:	7	2	:	13	:	15	2	1	31	19	54	:
App. labour productivity (EUR thous./pers. emp.)	10.2	:	134.5	117.7	:	29.4	:	7.6	130.3	118.7	132.5	4.6	3.6	:
Average personnel costs (EUR thous./employee)	7.5	:	44.6	44.2	:	16.4	15.7	5.0	35.8	45.2	40.0	3.0	2.7	:
Wage adjusted labour productivity (%)	136.4	:	301.8	266.6	:	179.2	:	152.4	364.1	262.6	331.4	154.4	133.5	:
Gross operating rate (%)	10.9	:	39.9	42.1	:	25.8	1.2	19.8	53.1	38.3	43.6	18.2	13.4	:

(1) 1999.

(2) Germany, 2000.

(3) Ireland, 1999.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Construction and real estate



Building and civil engineering changes the environment in which people live and work; it involves the construction of normally unique projects, with the time scale for many projects from conception to completion typically longer than in many other sectors (often years). The construction of many projects, whether building or civil engineering, often involves a large number of sub-contracting enterprises with various specialisations, organised by a project coordinating enterprise or lead developer.

The household sector consumed 17 % of the EU-25's gross inland consumption of energy in 2001 and about half of household energy consumption expenditure was on space heating. As part of efforts to use energy more efficiently, and so improve the EU's position with respect to the security of energy supply, a directive on the energy performance of buildings ⁽¹⁾ was adopted on 25 November 2002. This involves establishing a common methodology for energy performance standards for new buildings and major extensions to large buildings, certification schemes, and inspection and assessment for boilers, heating and cooling systems. It is hoped that actions in these areas will reduce energy consumption in buildings and consequently reduce the production of greenhouse gases.

The construction products directive (CPD) was passed in 1989 and modified in 1993 and forms the central part of the EU legislation for the single market for the construction sector; it is still in an implementation stage. One of the underlying principles of the CPD is that only construction products which are fit for their intended use may be commercialised within the single market. Products must satisfy six

essential requirements where the works are subject to regulations containing such requirements: (i) mechanical resistance and stability; (ii) safety in case of fire; (iii) hygiene, health and the environment; (iv) safety in use; (v) protection against noise; and (vi) energy economy and heat retention. For the current round of enlargement the implementation of this directive is one of the main issues for the sector, not just in terms of transposing the directive, but also implementing the decisions on the conformity of products, developing testing and certification facilities, and participation in international standard setting bodies. Furthermore, in December 2003 a Commission recommendation on 'Eurocodes' was adopted, to promote the use of these harmonised methods for calculating the strength of structural construction products: the first Eurocodes were published in 2000 and it is planned that 57 of them will have been established by the end of 2006.

Public procurement is relevant to many sectors, but is especially important for construction as the public sector is a major purchaser of building and particularly civil engineering work. The Commission proposed an amendment to the regulations governing public procurement in May 2000, and a final version of the new legislation was adopted by the European Parliament at the end of 2003 and by the Council at the beginning of 2004. After publication this directive on the coordination of procedures for the award of public supply contracts, public service contracts and public works contracts will need to be transposed into national law within 21 months. The main principles of this modern legislation are non-discrimination, transparency, free establishment of services and a respect of the rules of competition.

The statistical classification of economic activities covers construction activities and real estate services within NACE Section F and Division 70 respectively. Other activities related to the construction sector, although not formally part of it, such as architectural services or landscaping, are covered within Chapter 22.

Within NACE, construction is defined according to chronological stages of the construction process, starting with demolition and site preparation (NACE Group 45.1), passing through general construction activities (NACE Group 45.2), and ending with installation (NACE Group 45.3) and completion work (NACE Group 45.4). One additional activity in Division 45 covers the renting with an operator of construction equipment (NACE Group 45.5).

NACE

- 45: construction;
- 45.1: site preparation;
- 45.2: building of complete constructions or parts thereof; civil engineering;
- 45.3: building installation;
- 45.4: building completion;
- 45.5: renting of construction or demolition equipment with operator;
- 70: real estate activities;
- 70.1: real estate activities with own property;
- 70.2: letting of own property;
- 70.3: real estate activities on a fee or contract basis.

⁽¹⁾ Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.

STRUCTURAL PROFILE

The construction and real estate sectors had a combined value added of EUR 571.2 billion in the EU-25 in 2001, of which the construction sector accounted for just over two thirds. The construction sector ⁽²⁾ employed 11.9 million persons, and the real estate sector ⁽³⁾ 2.0 million. As such, these two sectors together generated an estimated 12.5 % of value added and 12.2 % of employment in the EU-25's non-financial business economy (NACE Sections C to I and K).

In terms of value added, the United Kingdom had the largest construction sector in the EU-25 with a 19.5 % share in 2001, followed by Germany (17.3 %). The Spanish construction sector in 2001 generated 13.0 % of the EU-25's total, nearly as much as in France (13.3 %). Relative to its non-financial business economy, Spain had the most important construction sector ⁽⁴⁾ in value added terms some 14.1 % of Spanish value added in the non-financial business economy in 2001. Luxembourg, Portugal and the Netherlands all reported that the construction sector accounted for 10 % or more of value added in the non-financial business economy, as did Cyprus among the new Member States. Hungary and Slovakia reported the lowest relative shares, as the construction sector accounted for approximately 5 % of the value added generated in their respective non-financial business economies. The situation with respect to employment was, however, quite different within the EU-15; the United Kingdom had only the fifth largest construction workforce (13.2 % of the EU-15 total), behind Germany (19.1 %), Spain (18.8 %), Italy (14.7 %) and France (14.0 %). This very high share in Spain was confirmed, as a 17.0 % share of the Spanish non-financial business economy workforce was engaged in the construction sector.

⁽²⁾ Slovenia, number of employees.

⁽³⁾ Cyprus, not available; Poland and Slovenia, number of employees.

⁽⁴⁾ Greece and Ireland, not available.

Table 15.1
Construction (NACE Division 45)
Structural profile, 2001

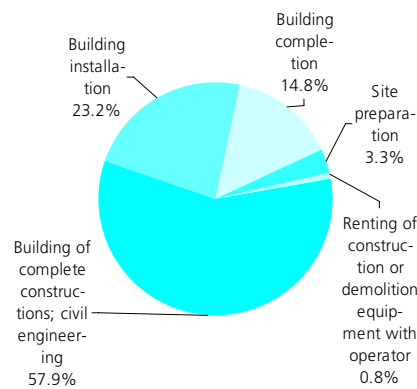
Rank	Largest value added (EUR billion) (1)	Largest number of persons employed (thousands) (2)
1	United Kingdom (76.4)	Germany (1 987)
2	Germany (67.6)	Spain (1 952)
3	France (52.1)	Italy (1 529)
4	Spain (50.7)	France (1 458)
5	Italy (43.3)	United Kingdom (1 366)

(1) Greece and Ireland, not available.

(2) Greece, Ireland and Slovenia, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

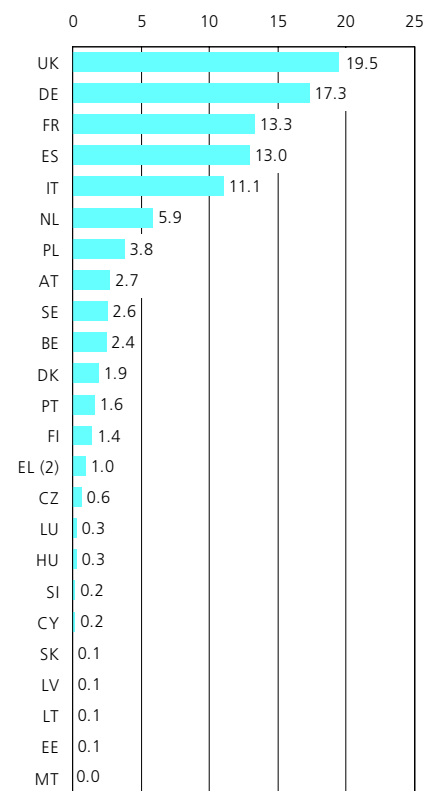
Figure 15.1
Construction (NACE Division 45)
Share of value added at factor cost, EU-25, 2001



Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Various classifications can be used to describe the construction sector. The NACE classification identifies five groups, the largest of which, according to SBS data, was the building of complete constructions or parts thereof and civil engineering (Group 45.2, hereafter referred to as general construction). This alone accounted for more than half of the value added (57.9 %) in the EU-25's construction sector, as well as that of the EU-15 (56.7 %). In employment terms, the general construction subsector accounted for 52.4 % of those employed in the EU-15's construction sector in 2001. This activity covers all civil engineering and the main structural works of building. Building installation work (Group 45.3) and building completion work (Group 45.4) were the next largest subsectors, with 23.2 % and 14.8 % respectively of the EU-25's value added in construction. In most of the Member

Figure 15.2
Construction (NACE Division 45)
Share of EU-25 value added, 2001 (%) (1)



(1) Ireland, not available.

(2) 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

States ⁽⁵⁾ the general construction subsector generated approximately half or more of the construction sector's value added, with Denmark (44.6 %) and France (43.0 %) a few percentage points below this level. Malta reported a completely different structure with general construction generating just 17.8 % of construction value added, and building installation and completion work together accounting for 73.7 %. For comparison, Cyprus reported the highest concentration of activity in the general construction subsector in 2001, with 83.2 % of construction value added generated in this subsector, and just 15.0 % in the building installation and completion subsectors.

⁽⁵⁾ Greece and Finland, 2000; Slovakia, 1999; Ireland, not available.

Table 15.2

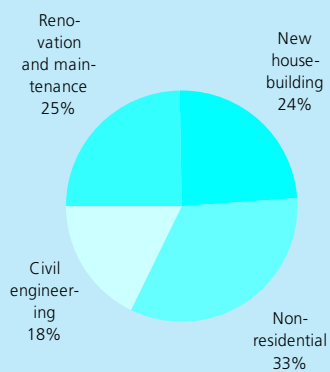
Construction (NACE Division 45)

Value added at factor cost and persons employed, by enterprise size-class, 2001 (% of total)

	Micro enterprises		Small enterprises		Medium-sized enterprises		Large enterprises	
	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed	Share of value added	Share of persons employed
EU-25	31.5	:	32.2	:	17.8	:	18.5	:
EU-15	32.3	40.7	32.8	32.6	16.9	14.1	18.0	12.6

Source: Eurostat, Structural Business Statistics (theme4/sbs/sizclass).

Figure 15.3

Breakdown of construction output, Europe, 2002 (1)

(1) Estimates; EU-15 plus the Czech Republic, Hungary, Poland, Slovakia, Turkey, Switzerland and Norway.

Source: FIEC.

Table 15.3

Top 10 international construction contractors, EU-15, 2002 (1)

		Total international revenue (EUR million)	Share of international revenue in total revenue (%)
Skanska AB	SE	11 520	82.6
Hochtief AG	DE	10 010	83.7
VINCI	FR	6 841	41.2
Bouygues	FR	6 449	42.5
TECHNIP-COFLEXIP	FR	4 619	99.2
Bovis Lend Lease	UK	3 625	77.8
Bau Holding Strabag AG	AT	3 544	70.4
AMEC plc	UK	3 017	58.2
Bilfinger Berger AG	DE	2 991	69.7
Balfour Beatty plc	UK	1 610	29.1

(1) Ranked according to the construction revenue generated outside of each company's home country.

Source: Engineering News-Record, McGraw-Hill, 25 August, 2003, available at http://enr.construction.com/people/topLists/topIntlCont/topIntlCont_1-50.asp.

The European Construction Industry Federation (FIEC) provides a project-based breakdown of construction output - see Figure 15.3. According to these estimates, approximately 18% of construction work in Europe ⁽⁶⁾ was accounted for by civil engineering, and the largest building segment was non-residential (33%). Renovation and maintenance, and new residential building each accounted for about one quarter of total construction output in 2002.

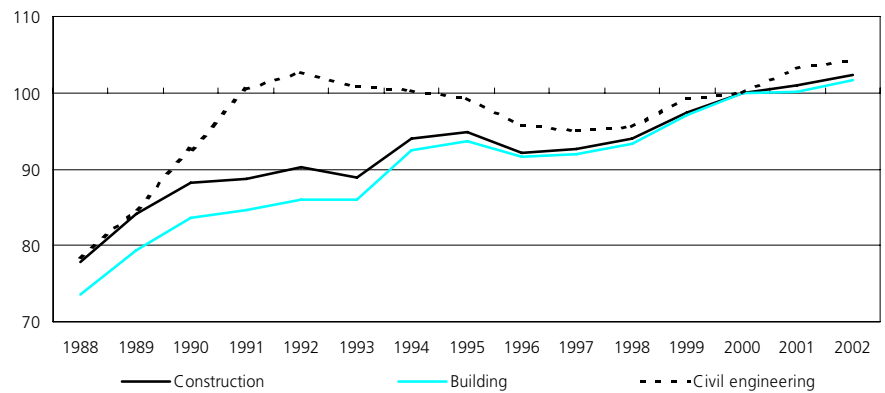
⁽⁶⁾ EU-15, plus the Czech Republic, Hungary, Poland, Slovakia, Switzerland, Norway and Turkey.

Micro and small enterprises together generated close to two thirds of the EU-25's value added in construction, far more than in the non-financial business economy as a whole (39%). Large enterprises generated less than one fifth of value added, less than half their share in the non-financial business economy as a whole. Most Member States displayed a similar pattern, the notable exceptions being the relatively low share of micro and small enterprises in the construction sectors of the Baltic States and Poland. Despite this dominance by micro and small enterprises, the EU's construction sector had a number of major multinational contractors - see Table 15.3.

Figures 15.4 and 15.5 show the development of construction output in the EU-15, and in some of the larger Member States. The references to building and civil engineering are based on the 'Classification of constructions', rather than NACE. It can be seen that since 1993 building work has gone through more than one complete economic cycle, with activity increasing in 1994 and 1995, contracting in 1996, recovering slowly in 1997, with stronger growth in the last five years (through to 2002) averaging 2.0 % per annum. The development for civil engineering has been somewhat different. The decline in activity started in 1993, however, instead of picking up again in 1994, this part of the construction sector continued to contract for five consecutive years, with no year-on-year growth recorded until 1998. By 1997 the production index for civil engineering in the EU-15 was 7.4 % lower than it had been in 1992. From 1998 until 2002 civil engineering output in the EU-15 grew each year, averaging 1.8 % per annum. As such the economic downturn in 2001 and 2002 reflected in the production indices of many manufacturing activities does not appear to have affected construction activity in the EU-15 as strongly, perhaps in part supported by demand stimulated by interest rate cuts by central banks. As Figure 15.5 shows, the situation within the five largest Member States was not uniform. Spain, the United Kingdom and France all recorded sustained periods of growth as regards construction activity since around 1993, continuing through to 2002, with only occasional year-on-year contractions in output. However, since a peak of activity in 1994, construction in Germany has only expanded in one year, the production index falling by an average of 3.8 % per annum over the nine years to 2003. The shorter time-series for Poland shows very rapid growth between the beginning of the series (1995) and 1999, averaging 10.5 % per annum, followed by a period of contraction, averaging 7.1 % per annum over the four years to 2003.

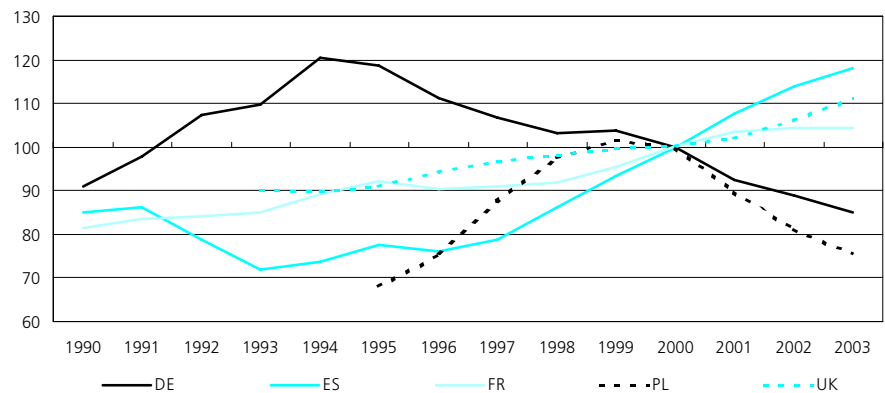
Throughout most of the 1990's the construction sector failed to regain the employment losses experienced at the beginning of the decade, and employment only picked up in 1999. Since 2000 the index of employment for the EU-15 has remained relatively stable - see Figure 15.6.

Figure 15.4 Production indices: construction, building and civil engineering, EU-15 (2000=100) (1)



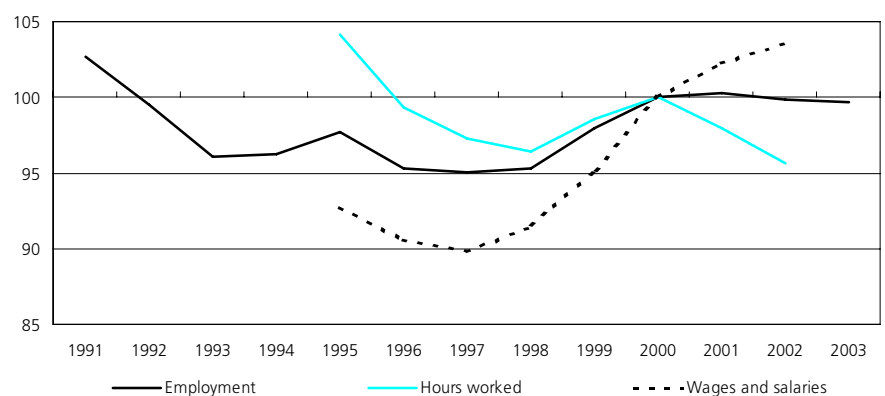
(1) Working-day adjusted data. Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Figure 15.5 Production indices for construction (2000=100) (1)



(1) Working-day adjusted data. Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

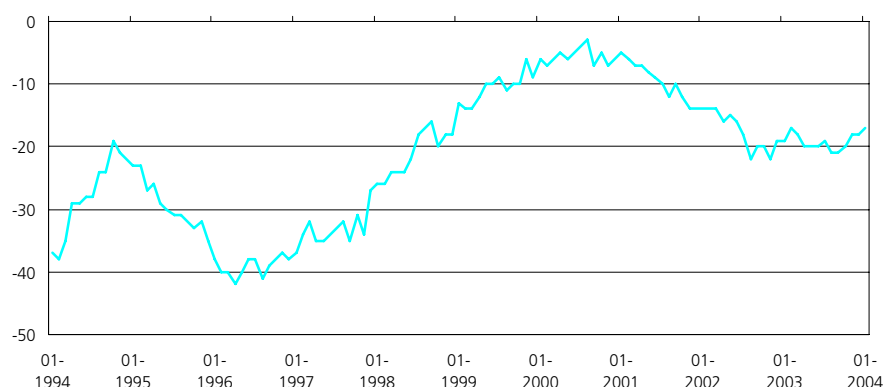
Figure 15.6 Labour input indices for construction, EU-15 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Figure 15.7 shows the development of the index of construction confidence for the EU-15 over a 10-year period, during which the index remained negative, although it rose from its low in April 1996 to close to zero in the middle of 2000. Since then the confidence index fell more gently, bottoming out in August 2002 and stabilising in the range of -17 to -22 percentage points through to January 2004. Table 15.4 provides a snapshot of the latest position in all of the Member States, as well as at the key dates mentioned above. As can be seen there was a large negative balance for the construction confidence indicator at the beginning of 2004 in several countries, notably Sweden, Germany and Poland.

Figure 15.7

Construction confidence indicator, EU-15 (balance %) (1)

(1) Percentage of positive responses minus the percentage of negative responses; seasonally adjusted data.
Source: Eurostat, European and national short term indicators - Business and consumer surveys (theme1/euroind/bs).

Table 15.4

Construction confidence indicator (balance, %) (1)

	04-1996	08-2000	08-2002	01-2004
EU-25	:	:	:	:
EU-15	-42	-3	-22	-17
BE	-27	6	-24	-12
CZ	-7	-31	-9	-4
DK	-2	-1	-18	-16
DE	-58	-41	-53	-50
EE	-1	-5	29	1
EL	-44	21	9	6
ES	-33	39	-19	2
FR	-53	32	-4	4
IE	37	33	-52	22
IT	-24	-2	3	-7
CY	:	:	17	4
LV	-58	-32	-19	-17
LT	-57	-76	-26	-25
LU	-55	-2	-34	-31
HU	-8	-5	-3	-22
MT	:	:	:	:
NL	2	22	-11	-19
AT	-60	-20	-37	-24
PL	:	-44	-61	-48
PT	-23	-8	-44	-40
SI	:	:	-19	-6
SK	5	-48	-18	-30
FI	-22	15	2	-3
SE	-52	9	-40	-56
UK	-36	-8	-7	1

(1) Percentage of positive responses minus the percentage of negative responses; seasonally adjusted data.

Source: Eurostat, European and national short term indicators - Business and consumer surveys (theme1/euroind/bs).

Table 15.5

Construction (NACE Division 45) Labour force characteristics, 2002

	Share of men (%)	Share of full-time (%)	Share of employees (%)
EU-25	:	:	:
EU-15	91.4	94.5	76.1
BE	92.3	94.7	78.4
CZ	91.3	98.6	64.2
DK	91.6	92.6	83.1
DE	86.9	92.2	85.2
EE	95.3	96.1	92.4
EL	98.2	97.9	66.8
ES	94.8	98.5	79.8
FR	90.4	94.7	81.0
IE	95.1	95.8	72.8
IT	93.6	95.7	61.0
CY	93.3	98.4	77.0
LV	89.3	95.8	91.7
LT	92.2	95.9	95.6
LU	93.4	95.9	92.2
HU	92.9	97.7	77.5
MT	97.3	99.5	62.7
NL	91.5	86.9	82.2
AT	91.5	:	92.9
PL	:	:	:
PT	95.6	96.6	74.2
SI	90.6	97.1	81.1
SK	92.9	99.2	76.4
FI	91.7	95.4	81.4
SE	92.3	92.5	79.5
UK	90.6	93.3	65.4

Source: Eurostat, Labour Force Survey.

LABOUR AND PRODUCTIVITY

The high importance of micro and small enterprises in the construction sector reflects the importance of self-employment. The proportion of paid employees was 76.2 % in the EU-25 in 2002, 7.8 percentage points lower than the business economy (NACE Sections C to K) average. The self-employed made up 22.6 % of the EU-25's construction labour force, compared to 14.7 % in the business economy as a whole. At the NACE division level, this was the second highest rate of self-employment within the EU-15's business economy, behind other business activities (Division 74). The above average share of self-employed was repeated in every Member State with data available ⁽⁷⁾ except for Greece, Luxembourg and Austria.

Like other activities involving physical labour (such as mining), the male proportion of the labour force in the construction sector was very high, 91.4 % in the EU-15 in 2002. This was 26 percentage points higher than the business economy average, and the third highest of all of the business economy NACE divisions (for the EU-15), lower only than two of the mining activities. In all Member States with data available, the proportion of men in the construction labour force was between 24 and 38 percentage points higher than national business economy averages.

⁽⁷⁾ Estonia and Lithuania, not available.

Full-time employment was also atypically high in the construction sector, as 94.8 % of persons were employed on this basis in the EU-25 in 2002, compared to 87.0 % in the business economy as a whole.

Apparent labour productivity in the EU-15's construction sector in 2001 was EUR 35 600 per person employed, one of the lower rates at the NACE division level within the business economy (higher than clothing and footwear manufacturing, retail trade, and hotels and restaurants, and at a similar level to the manufacture of wood products or textiles). Only in the United Kingdom, Poland and the Netherlands was apparent labour productivity in this sector higher than the national non-financial business economy average ⁽⁸⁾. The United Kingdom recorded the highest apparent labour productivity in the construction sector at EUR 55 900 per person employed. In the EU-25, average personnel costs were EUR 26 000 per employee, and in the EU-15 they were EUR 28 700. Again these were some of the lowest levels recorded in the business economy. The relatively low levels of apparent labour productivity and average personnel costs were particularly important given the small proportion of part-time employment within this sector: as most of the other activities that recorded low values for these two indicators were characterised by considerably higher levels of part-time employment, driving these ratios down.

⁽⁸⁾ Germany, 2000; Greece, Ireland, Cyprus, Malta and Slovenia, not available.

The wage adjusted labour productivity ratio provides a measure of the extent to which value added covers personnel costs (adjusted by the ratio of persons employed to employees), and as such is unaffected by issues of part-time employment or hours worked. In the construction sector in 2001 this ratio was 124.0 % for the EU-15, indicating that value added was 24.0 % higher than adjusted personnel costs, again one of the lowest levels among the non-financial business economy NACE divisions. This was reflected in the data for the Member States, as the wage adjusted labour productivity ratio was below 100 % in the Czech Republic and Malta ⁽⁹⁾, while only in Poland, Latvia and the United Kingdom did this ratio for the construction sector rise above the non-financial business economy average.

⁽⁹⁾ Greece, 2000, Ireland, Cyprus, and Slovenia, not available.

Figure 15.6

Construction (NACE Division 45)**Labour productivity and personnel costs, EU-15, 2001**

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Construction	35.6	124.0	28.7
Site preparation	40.6	133.4	30.4
Building of complete constructions or parts thereof; civil engineering	38.6	130.5	29.6
Building installation	33.7	118.7	28.4
Building completion	28.7	110.5	26.0
Renting of construction or demolition equipment with operator	55.7	162.8	34.2

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

15.1: SITE PREPARATION AND GENERAL CONSTRUCTION

Site preparation (NACE Group 45.1) includes relatively diverse activities, ranging from test drilling and boring to determine ground conditions, through demolition of existing buildings and structures, site clearance, ground stabilisation, excavation, to earth moving and trench digging. The building of complete constructions (or parts thereof) and civil engineering (NACE Group 45.2), hereafter referred to as general construction, constitute the core activities of the construction sector. These two activities are the first stages of most construction activities, following on from the activities of architects, structural engineers and landscape designers.

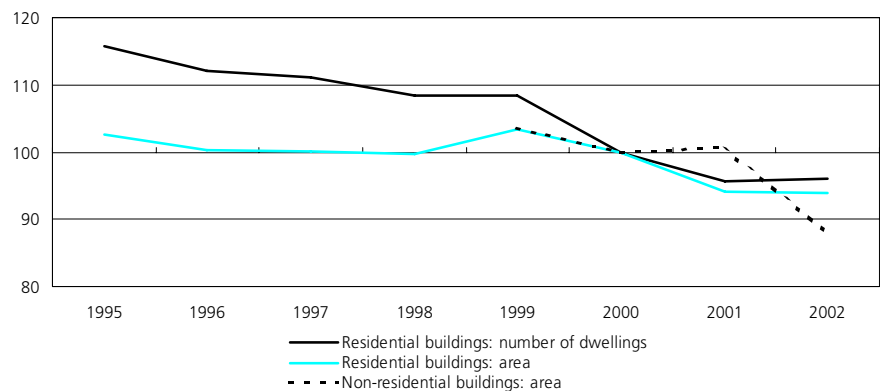
As already noted in the overview, interest rate cuts over recent years are believed to have stimulated the real estate market. Table 15.8 shows the number of dwellings completed and Figure 15.8 shows various indices of building permits. The table shows that the number of completions was generally lower around 2000 and 2001 than 20 years earlier, with only a few countries showing an increase, notably on the Iberian peninsula and in Ireland and Austria. Over a shorter period, the building permits' indices for the EU-15 for residential buildings support this view of a declining trend. In terms of the area for which permits have been issued for residential buildings, the index generally fell less strongly than for the number of dwellings, suggesting, that fewer, but larger dwellings were being constructed. Since 2001 this has changed and in the last two years for which data are available the index in terms of the area declined at a faster pace. The building permits indices also cover non-residential buildings and the index of the area for which permits have been issued in this case also suggested a decline in this market segment, with a particularly large fall in the area for which permits were issued in 2002.

Table 15.7 Number of newly completed dwellings (thousands)

	1980	1985	1990 (1)	1995	2000 (2)	2001
BE (3)	48.6	30.3	44.5	38.7	38.9	41.0
DK	30.3	22.6	27.2	13.5	15.2	16.2
DE (4)	500.8	427.8	319.0	602.8	423.0	326.2
EL (4) (5)	136.0	88.5	120.2	70.9	89.4	:
ES	262.9	191.4	281.0	242.1	366.8	365.7
FR (3)	400.0	295.0	296.0	272.6	311.1	303.4
IE (6)	27.8	23.9	19.5	30.6	49.8	52.6
IT (7)	287.0	200.8	176.4	163.9	142.4	:
LU	2.0	1.3	2.5	2.8	1.7	:
NL	113.8	98.1	97.4	93.8	70.7	73.0
AT (4)	:	41.2	36.6	53.4	55.4	:
PT (4)	41.0	38.4	65.8	68.4	110.5	108.3
FI	49.6	50.3	65.4	25.0	32.7	30.6
SE	51.4	32.9	58.4	12.7	:	15.4
UK (8)	242.4	207.2	202.7	199.0	180.4	:

(1) Belgium, 1991
 (2) Austria, provisional.
 (3) Dwellings started.
 (4) Including extended, reconstructed and restored dwellings.
 (5) Private building activity, according to building permits issued.
 (6) Including an estimated 400 converted units per year.
 (7) Authorised dwellings only.
 (8) Dwellings are regarded as completed when they are ready for occupation, whether they are occupied or not.
 Source: National statistical institutes and Government departments, in 'Housing statistics in the European Union, 2002', Department of Housing of the Direction General of Planning, Housing and Heritage (Direction Générale de l'Aménagement du Territoire, du Logement et du Patrimoine) of the Walloon Region of Belgium.

Figure 15.8 Building permits indices, EU-15 (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/eht).

Table 15.8 shows the types of housing that exist within the EU-15 according to various household classifications; the data come from the European Community household panel. In 2001 just over 55 % of households lived in houses, a steadily increasing proportion.

STRUCTURAL PROFILE

Site preparation and general construction generated EUR 239.5 billion of value added in the EU-25 in 2001, 61.2 % of value added in the construction sector; in the EU-15, site preparation and general construction accounted for a lower proportion of construction value added, 60.1 %. In the majority of the Member States, site preparation and general construction accounted for at least 50 % of the value added generated in the construction sector, with France (49.5 %), Denmark (46.3 %) and most notably Malta (24.0 %) the exceptions ⁽¹⁰⁾.

⁽¹⁰⁾ Greece and Finland, 2000; Slovakia, 1999; Ireland, not available.

Table 15.9

Site preparation; building of complete constructions or parts thereof; civil engineering (NACE Groups 45.1 and 45.2)
Structural profile, 2001

Rank	Largest value added (EUR billion) (1)	Largest number of persons employed (thousands) (2)
1	United Kingdom (49.3)	Spain (1 276.5)
2	Spain (35.4)	Germany (929.6)
3	Germany (35.2)	Italy (820.7)
4	Italy (27.5)	United Kingdom (811.9)
5	France (25.8)	France (697.8)

(1) Greece, Ireland, Slovakia and Finland, not available.

(2) Greece, Ireland, Slovenia, Slovakia and Finland, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 15.8

Types of dwelling according to the occupier, EU-15, 2001 (% of households)

	House	Flat	Others (1)
Total	55.4	39.1	5.5
Socio-economic status			
Employed	57.5	37.9	4.6
Unemployed	42.2	50.2	7.7
Retired	54.9	38.1	7.0
Other	47.2	48.1	4.7
Type of household			
One adult younger than 30 years	26.4	67.9	5.7
One adult aged between 30 and 64 years	36.6	58.0	5.3
One adult older than 65 years	44.5	47.1	8.4
Single parent with dependent children	44.0	54.2	1.8
Two adults with one dependent child	59.1	37.2	3.7
Two adults with two dependent children	65.2	31.0	3.8
Two adults with three or more dependent children	68.1	28.5	3.4
Two adults, at least one aged 65 years and over	62.5	31.7	5.8
Income group (2)			
High	55.9	40.8	3.3
Mid-high	57.4	37.9	4.7
Mid-low	55.0	38.5	6.5
Low	51.8	39.9	8.4

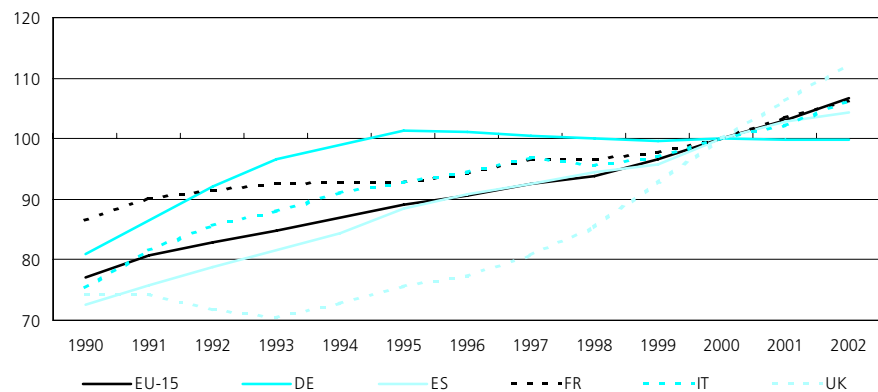
(1) For example hotel, institution or campsite.

(2) Income breakdown expressed in relation to median income: low income, less than 60 %; mid-low income, 60 % to 100 %; mid-high income, 100 % to 140 %; high income, more than 140 %.

Source: Eurostat, European Community Household Panel (theme3/housing/prholds/type).

Figure 15.9

Output price indices for residential buildings (2000=100)



Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Site preparation (NACE Group 45.1) accounted for just 5.3 % of the total value added in the EU-25's site preparation and general construction sector, and general construction (NACE Group 45.2) for the remainder. A more detailed analysis of the EU-25's ⁽¹¹⁾ general construction subsector is available for 2001. General construction of buildings and civil engineering work (NACE Class 45.21) was by far the largest part of Group 45.2, with 69.3 % of value added. Other construction work involving special trades (NACE Class 45.25) was the second largest class with 12.9 %. Construction of highways, roads, airfields, sports facilities and water projects (NACE Classes 45.23 and 45.24) generated 10.7 % of value added in the general construction subsector, while the erection of roof coverings and frames (NACE Class 45.22) accounted for the remaining 7.1 %. General construction of buildings and civil engineering work (NACE Class 45.21) accounted for at least half of the value added in the general construction subsector in all countries for which data are available, except France and Malta.

Employment in the EU-25's site preparation and general construction sector was 6.8 million persons employed ⁽¹²⁾ in 2001, and in the EU-15 it was 5.7 million, equivalent to 5.9 % of the EU-15's non-financial business economy (NACE Sections C to I and K) workforce or 57.0 % of employment in the EU-25's construction sector ⁽¹³⁾, and 55.3 % of employment in the EU-15's construction sector (a smaller share than in terms of value added). Spain had the largest workforce in the site preparation and general construction sector in 2001, recording 1.3 million persons employed, followed at some distance by Germany, Italy and the United Kingdom with between 800 000 and 1 million persons employed each.

⁽¹¹⁾ The Netherlands, 1999; the Czech Republic, Greece, Spain, Ireland and Luxembourg, not available.

⁽¹²⁾ Slovenia, number of employees; Slovakia, excluding NACE Group 45.1.

⁽¹³⁾ Slovenia, number of employees; Slovakia, not available.

The difficult period experienced by the construction sector in Germany (see the overview of this chapter) was reflected in output price indices for residential buildings shown in Figure 15.9, as the German index has hardly moved since 1994. Of the five Member States shown in the figure, the United Kingdom recorded the fastest increase in construction output prices over the last 10 years, with price increases rising on average by 4.6 % per annum. Spain recorded average output price increases over the same period of 2.8 %, just above the EU-15 average of 2.5 %, while the average in France was 1.5 % per annum.

A size-class analysis is available for general construction ⁽¹⁴⁾ (NACE Group 45.2) for 2001, although this excludes one of the largest Member States in this sector, namely Spain. Micro enterprises (with less than 10 persons employed) generated 25.0 % of value added in this subsector, and small enterprises (10 to 49 persons employed) some 28.3 %. In both cases, this was less than the 31 to 32 % of value added that these size-classes generated in the construction sector as a whole. As such, medium-sized and large enterprises together generated 46.6 % of value added in the general construction subsector, approximately 10 percentage points higher than the equivalent share of medium-sized and large enterprises in the value added of the whole of the construction sector.

⁽¹⁴⁾ Greece, Spain, Ireland, Luxembourg and Malta, not available.

LABOUR AND PRODUCTIVITY

The EU-15's site preparation and general construction sector reported apparent labour productivity of EUR 38 700 per person employed in 2001, EUR 3 100 higher than the construction average. In the general construction subsector this ratio stood at EUR 38 600, while for site preparation it was EUR 40 600, as such the second highest apparent labour productivity among the NACE groups that make up the construction sector, behind the renting of construction or demolition equipment. A similar situation can be observed for average personnel costs, which were EUR 29 600 per employee in the site preparation and general construction sector in the EU-15, EUR 900 higher than the construction average; again the site preparation subsector reported the second highest value (EUR 30 400) among NACE groups within the construction sector.

The combination of higher apparent labour productivity and average personnel costs resulted in a wage adjusted labour productivity ratio of 130.6 %: this shows the ratio of value added to personnel costs, after adjusting the latter for the ratio of the number of persons employed relative to the number of employees to take account of self-employment. This ratio of wage adjusted labour productivity was higher for site preparation and general construction than it was for the whole of the construction sector (124.0 %), a situation repeated in both subsectors that make up the site preparation and general construction sector.

Table 15.10

Site preparation; building of complete constructions or parts thereof; civil engineering (NACE Groups 45.1 and 45.2) Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Site preparation; building of complete constructions or parts thereof; civil eng.	38.7	130.6	29.6
Site preparation	40.6	133.4	30.4
Building of complete constructions or parts thereof; civil engineering	38.6	130.5	29.6

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

15.2: INSTALLATION AND COMPLETION

Installation and completion work is divided into nine classes at the NACE four-digit level: installation of electrical wiring and fittings (Class 45.31); insulation (Class 45.32); plumbing (Class 45.33); plastering (Class 45.41); joinery installation (Class 45.42); floor and wall covering (Class 45.43); painting and glazing (Class 45.44); and other building installation and completion activities (Classes 45.34 and 45.45). This subchapter also covers the activities of renting construction or demolition equipment with an operator (Group 45.5). Collectively all of these activities are referred to as the installation and completion sector within this subchapter.

Installation and completion enterprises are generally the last stages of the construction process. As well as work on new structures, the renovation, repair and maintenance markets are also particularly important for enterprises in these sectors.

STRUCTURAL PROFILE

The installation and completion sector employed 5.1 million persons in the EU-25 ⁽¹⁵⁾, of which 4.6 million were working in the EU-15, a figure that equated to 4.8 % of the EU-15's non-financial business economy (NACE Sections C to I and K) workforce. The value added generated by this workforce was EUR 151.9 billion in the EU-25 and EUR 147.5 billion in the EU-15.

Building installation (NACE Group 45.3) was the largest part of the installation and completion sector with a 59.7 % share of the EU-25's value added in 2001. Building completion (NACE Group 45.4) was the second largest part with a 38.3 % share and the renting of construction or demolition equipment with an operator (NACE Group 45.5) was by far the smallest (2.0 %).

A more detailed analysis of this sector can be made for a selection of Member States ⁽¹⁶⁾, although it should be noted in particular that this excludes one of the larger Member States, namely Spain. This shows that at the class level of NACE the largest activity in this sector in value added terms was the installation of electrical wiring and fittings (Class 45.31), with over one quarter (28.4 %) of total value added, followed closely by plumbing (Class 45.33) with

⁽¹⁵⁾ Estonia, 2002; Slovenia, number of employees; Slovakia, NACE Group 45.5, not available.

⁽¹⁶⁾ The Netherlands, 1999; Slovakia and Finland, NACE Group 45.5, 1999; the Czech Republic, Estonia, Greece, Spain, Ireland and Latvia, not available

Table 15.11
Building installation; building completion; renting of construction or demolition equipment with operator (NACE Groups 45.3 to 45.5)
Structural profile, 2001

Rank	Largest value added (EUR billion) (1)	Largest number of persons employed (thousands) (2)
1	Germany (32.4)	Germany (1 058.1)
2	United Kingdom (27.0)	France (760.6)
3	France (26.3)	Italy (708.3)
4	Italy (15.9)	Spain (676.2)
5	Spain (15.4)	United Kingdom (554.7)

(1) Estonia, Greece, Ireland, Slovakia and Finland, not available.

(2) Estonia, Greece, Ireland, Slovenia, Slovakia and Finland, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

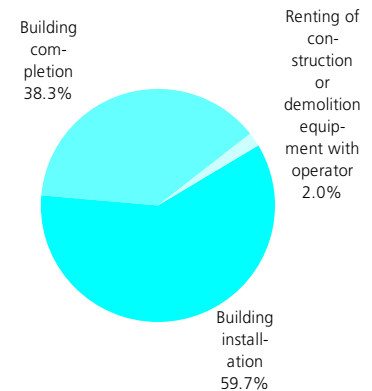
just under one quarter (24.4 %). The largest parts of building completion were painting and glazing (Class 45.44), with 13.0 % of the sector's total, and joinery installation (Class 45.42) with 10.9 %. Floor and wall covering, and other building completion (Classes 45.43 and 45.45) were the only other activities with a share above 5 %, contributing 6.1 % and 5.1 % to installation and completion value added respectively.

Germany (EUR 32.4 billion) had the largest share of EU-25 value added in the building installation and completion sector in 2001, equivalent to 21.3 %. The United Kingdom and France with between 17 and 18 % each followed, while Italy and Spain accounted for just over 10 % each of the EU-25's value added. Germany and France were clearly much more specialised in the building installation and completion sector as their respective shares of EU-25 value added were more than 6 percentage points higher than they were for site preparation and general construction, while Spain, and to a lesser extent Italy and the United Kingdom, were less specialised in the building installation and completion sector. Among the smaller EU-15 ⁽¹⁷⁾ Member States, Denmark also recorded a higher share of EU-25 value added in the installation and completion sector than in site preparation and general construction, while the reverse was true in Portugal.

One of the consequences of the relatively high shares of Germany and France in the value added of the EU-25's building installation and completion sector was that the 10 new Member States contributed 2.9 % of EU-25 value added,

⁽¹⁷⁾ Greece, Ireland and Finland, not available.

Figure 15.10
Building installation; building completion; renting of construction or demolition equipment with operator (NACE Groups 45.3 to 45.5)
Share of value added at factor cost, EU-25, 2001



Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

considerably less than their 7.2 % contribution to EU-25 value added in the site preparation and general construction sector. A more detailed breakdown shows that for the renting of construction or demolition equipment with an operator the 10 new Member States contributed 4.7 % to EU-25 value added, while for building installation it was 3.8 % and for building completion it was 1.5 %. Poland had the largest installation and completion sector among the 10 new Member States (EUR 2.7 billion of value added), which was equivalent to 1.8 % of the EU-25 total, compared to a 5.1 % share that Poland had of the EU-25's site preparation and general construction sector.

Again a size-class analysis can be made for a selection of Member States ⁽¹⁸⁾, notably excluding Spain, for the two largest parts of this sector, namely building installation and building completion (NACE Groups 45.3 and 45.4). Some 41.4 % of value added in these two activities was generated by micro enterprises (with less than 10 persons employed) in 2001, a much greater share than in general construction (NACE Group 45.2), where the share of micro enterprises was nearer 25 %. Although the data set is incomplete, small enterprises (10 to 49 persons employed) generated at least 30 % of value added in the two groups of building installation and building completion, indicating that the relatively high proportion of value added that was accounted for by micro enterprises was mainly compensated for by a lower share for medium-sized and large enterprises (with 50 or more persons employed).

⁽¹⁸⁾ Estonia, Greece, Spain, Ireland, Luxembourg, Malta and Slovakia, not available.

Table 15.12

Building installation; building completion; renting of construction or demolition equipment with operator (NACE Groups 45.3 to 45.5) Labour productivity and personnel costs, EU-15, 2001

	Apparent labour productivity (EUR thousand per person employed)	Wage adjusted labour productivity (%)	Average personnel costs (EUR thousand per employee)
Building installation; completion; renting of equipment with operator	31.8	115.6	27.5
Building installation	33.7	118.7	28.4
Building completion	28.7	110.5	26.0
Renting of construction or demolition equipment with operator	55.7	162.8	34.2

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

LABOUR AND PRODUCTIVITY

The building installation and completion sector recorded apparent labour productivity of EUR 31 800 per person employed in the EU-15 in 2001. Within this overall figure, building completion recorded the lowest value (EUR 28 700) with building installation higher (EUR 33 700), and the small activity of renting of construction or demolition equipment with an operator far above (EUR 55 700). Average personnel costs showed a similar, but less extreme situation, as these were lowest (again for the EU-15) in building completion (EUR 26 000 per employee), higher in building installation (EUR 28 400) and highest in the

renting of construction or demolition equipment with an operator (EUR 34 200). For both of these indicators, apparent labour productivity and average personnel costs, the renting of construction or demolition equipment with an operator was the only one of the three groups in this sector that recorded values that were above the construction sector averages.

Despite low average personnel costs, the wage adjusted labour productivity ratios of the building installation (118.7 %) and building completion (110.5 %) activities were below the construction average (124.0 %), while the ratio

for the renting of construction or demolition equipment with an operator was far above (162.8 %). In several Member States the building installation and building completion sectors recorded ratios for the wage adjusted labour productivity ratio that were below the threshold of 100 %, indicating that added value was lower than personnel costs (after adjusting for the ratio of persons employed to employees). This was most notably the case in the Czech Republic's building completion sector, where this ratio was just 52.6 % in 2001.

15.3: REAL ESTATE SERVICES

Within NACE, real estate services are covered by Division 70. Real estate activities are a service activity, classified in NACE alongside other business services within NACE Section K. They are nevertheless included in this chapter because of their close relationship with the construction sector.

Real estate services are very diverse: real estate agents sell on a commission basis; traders buy and sell property (perhaps altering or refurbishing the property between transactions); surveyors, valuers and estate managers provide professional services; and finally owners let property. These activities have very different cost structures and revenue streams and care has to be taken comparing them, particularly when trying to measure the size of each subsector. In particular, when enterprises are the owner of a good that they rent or lease, their financial and depreciation charges may constitute the main element of their total costs, but these are not considered when calculating gross value added.

Table 15.13

Types of dwelling, 2001 (% of households)

	House	Flat	Other (1)
EU-15	55.4	39.1	5.5
BE	79.7	17.9	2.4
DK	65.5	29.6	4.9
DE	40.5	44.4	15.1
EL	50.4	48.5	1.1
ES	40.2	59.8	0.0
FR	64.0	34.8	1.2
IE	95.4	2.8	1.8
IT	35.9	58.4	5.7
LU	66.1	33.8	0.1
NL	68.2	27.4	4.4
AT	49.1	45.2	5.8
PT	64.5	34.0	1.5
FI	56.0	42.8	1.2
SE	67.2	32.6	0.2
UK	81.6	16.7	1.7

(1) For example hotel, institution or camp.

Source: Eurostat, European Community Household Panel (theme3/housing/prholds/type).

Table 15.14

Proportion of households owning their own dwelling, by housing type, 2001 (%)

	Total	House	Flat
EU-15	64.2	79.6	39.5
BE	73.9	83.8	33.2
DK	66.6	85.9	28.0
DE	43.8	71.9	14.6
EL	84.6	92.9	76.3
ES	84.8	89.9	81.5
FR	63.4	81.3	31.1
IE	81.9	84.3	25.5
IT	76.2	85.4	70.3
LU	69.5	85.9	38.4
NL	55.3	70.0	22.3
AT	55.3	84.5	22.3
PT	66.7	73.0	56.5
FI	68.1	85.9	46.0
SE	59.8	67.0	44.8
UK	71.8	79.7	36.4

Source: Eurostat, European Community Household Panel (theme3/housing/prholds/tenure).

The importance of different real estate sectors, for example agents selling property, or estate management services and renting agencies, is to some extent determined by the incidence of owner occupation. Owner occupation among households in the EU-15 was 64.2 % in 2001, rising to 79.6 % for houses and falling as low as 39.5 % for flats. Among the EU-15 Member States, overall owner occupation was above 80 % in Spain, Greece and Ireland and below 60 % in Germany, the Netherlands, Austria and Sweden - see Table 15.14. In Germany, the Netherlands and Austria it was the particularly low rate of owner occupancy in flats that lowered the overall owner-occupancy rate. As Figure 15.11 shows, the situation is evolving, and owner occupancy is generally increasing, although several countries recorded slight year-on-year reductions in owner occupancy during the second half of the 1990s, it was particularly widespread in 1997, leading to a fall in the overall EU-15 figure in that year.

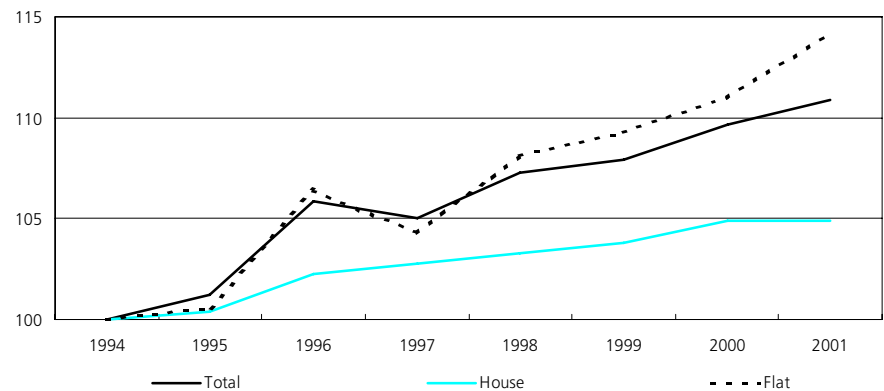
One indicator of the level of activity in the residential property market is the index for lending for house purchases compiled by the ECB. Figure 15.12 shows how the borrowing for house purchases, although increasing, was doing so at a progressively weaker rate until it reached a growth rate of 6.6 % in the last quarter of 2001, at which point the rate of increase stabilised and in fact picked up to a range of 7.3 to 7.7 % growth for most quarters of 2002 and 2003. As such, the stabilisation of this rate of increase and subsequent acceleration came a few months after the Governing Council of the ECB started to cut interest rates in May 2001. See Table 15.15 from the European mortgage federation on the number of housing transactions; note that some figures have been revised since the 2003 edition.

STRUCTURAL PROFILE

The EU-25's real estate services sector generated EUR 179.8 billion in 2001, of which the EU-15 contributed EUR 174.2 billion. As such, the 10 new Member States collectively contributed 3.1 % of the EU-25's value added in this sector, compared to 5.5 % in construction and 4.6 % in non-financial services (Sections G to I and K). The largest real estate services' sector in the EU-25 was in Germany (EUR 51.3 billion, 2000), far ahead of the United Kingdom (EUR 31.9 billion) and France (EUR 25.1 billion), and nearly three times higher than in Spain and four and a half times higher than in Italy. As a proportion of value added in non-financial services, the real estate services sector was largest ⁽¹⁹⁾ in Sweden

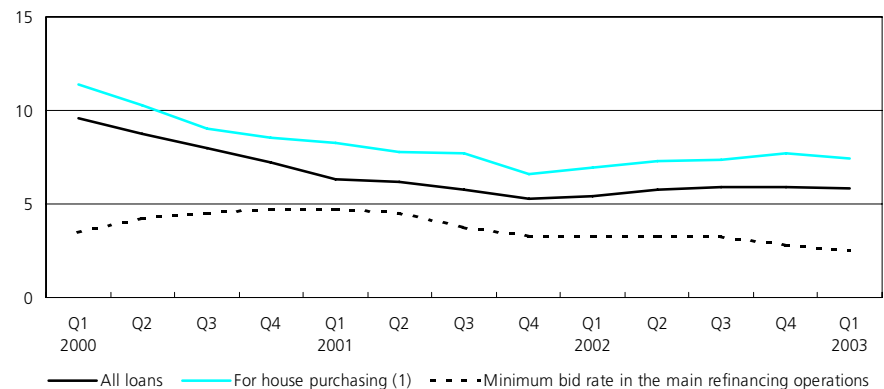
⁽¹⁹⁾ Greece and Cyprus, not available.

Figure 15.11 Index of the proportion of households owning their own dwelling, by housing type, EU-15 (1994=100)



Source: Eurostat, European Community Household Panel (theme3/housing/prhlds/tenure).

Figure 15.12 Annual growth rate for national stocks of loans by other MFIs (credit institutions, money market funds and other institutions) to households and individual enterprises, euro-zone (%)



(1) The definitions of lending for house purchase are not fully consistent across the euro-zone.

Source: ECB.

(14.3 %), Denmark (11.5 %), Germany (11.2 %, 2000), the Netherlands (9.8 %, 2000) and Spain (9.4 %) in 2001. Its lowest share was recorded in Slovenia (1.5 %), while the other Member States recorded shares of 2.5 % or more. In employment terms, real estate services employed 2.0 million persons in the EU-25 ⁽²⁰⁾ in 2001, of which 1.7 million were working in the EU-15.

⁽²⁰⁾ Cyprus, not available; Poland and Slovenia, number of employees.

An analysis of size-class data shows that large enterprises had a relatively small impact on the real estate services sector, while micro enterprises dominated. Micro enterprises (with less than 10 persons employed) alone generated 53.3 % of the EU-25's value added in this sector, the highest proportion recorded by micro enterprises among all of the non-financial business economy NACE divisions, far ahead of the next highest share (38.4 %) recorded in the hotels and restaurants sector. Despite this dominance by micro enterprises, small enterprises (with 10 to 49 persons employed) generated 18.1 % of value added and medium-sized enterprises (with 50 to 249 persons employed) generated a further 16.9 % of value added, both quite close to the non-financial services' averages of 20.2 % and 16.4 % respectively. Consequently, it was large enterprises in real estate services whose contribution to value added was particularly low, as their added value accounted for 11.6 % of the whole sector, compared to an average for the non-financial services sector that was three times higher (36.9 %). Micro enterprises accounted for at least 40 % of value added in the real estate services sector in all Member States⁽²¹⁾, except for Austria (25.9 %), the Netherlands (26.6 %, 1999), Lithuania (27.4 %), Poland (31.8 %, 1999) and Latvia (34.7 %).

⁽²¹⁾ Greece, Cyprus, Luxembourg, Hungary and Malta, not available.

Table 15.15
Number of housing transactions (thousands)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BE (1)	104	104	96	102	109	108	115	108	111	116
DK (2)	63	71	74	77	78	76	71	71	68	68
DE (3)	680	615	587	633	569	623	567	483	498	499
EL	:	:	:	:	:	:	:	:	:	:
ES	:	:	:	:	:	:	:	:	:	:
FR	624	684	618	734	701	780	863	:	:	:
IE (4)	45	50	49	61	65	69	79	81	69	93
IT	502	495	502	484	524	576	640	688	661	754
LU	3	4	4	4	4	4	4	:	:	:
NL (5)	198	215	224	259	281	280	292	269	265	269
AT	:	:	:	:	:	:	:	:	:	:
PT (6)	178	187	186	:	:	:	:	:	:	:
FI	75	71	68	83	81	90	94	85	93	:
SE (7)	36	43	42	47	55	52	61	55	54	55
UK (8)	1 195	1 275	1 134	1 241	1 441	1 348	1 469	1 431	1 457	1 587

(1) Excluding transactions on new dwellings and own constructions; 2002, estimated.

(2) Excluding own constructions.

(3) Residential property sales, therefore excluding gifts and inheritance.

(4) Estimate based on number of mortgage loan approvals.

(5) Includes commercial transactions.

(6) Includes commercial and residential property transactions; urban areas only.

(7) One- and two-dwelling buildings.

(8) England and Wales; freehold and leasehold transactions.

Source: European Mortgage Federation and national associations.

Table 15.16
Real estate activities (NACE Division 70)
Structural profile, 2001

Rank	Largest value added (EUR billion) (1)	Highest value added specialisation relative to non-financial services (EU-25=100) (2)	Largest number of persons employed (thousands) (3)
1	United Kingdom (31.9)	Sweden (193)	United Kingdom (382.7)
2	France (25.1)	Denmark (156)	France (315.2)
3	Spain (17.9)	Spain (127)	Germany (304.0)
4	Netherlands (11.9)	Latvia (116)	Italy (220.3)
5	Italy (11.2)	Estonia (111)	Spain (211.3)

(1) Germany, Greece and Cyprus, not available.

(2) Germany, Greece, Cyprus and the Netherlands, not available.

(3) Greece, Cyprus, Poland and Slovenia, not available.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

LABOUR AND PRODUCTIVITY

Real estate services in the EU-15 had a more balanced workforce in gender terms than services as a whole, with male employment equivalent to 51.4 % of the total in 2002, compared to a services' average of 56.3 %. This was notably not the case in Austria, where male employment in this sector accounted for just 29.8 % of the total workforce, compared to a services average of 49.5 %. The highest proportion of men in the real estate services workforce was recorded in Malta (73.9 %), while in all other Member States ⁽²²⁾ male employment ranged between 40 and 70 %.

The proportion of the EU-15 real estate services' workforce that was self-employed was 19.8 %, just above the services' average of 17.3 %. Paid employees made up 79.3 % of the EU-15 workforce, a share that exceeded 90 % in Denmark, the Baltic States and Slovakia, and only dipped below 60 % in Italy (48.8 %) ⁽²³⁾.

Part-time employment was quite common in real estate services, more so than in all of the business economy NACE divisions except for retail trade, hotels and restaurants, and other business activities (NACE Divisions 52, 55 and 74). In the EU-15, part-time employment averaged 21.1 % of the real estate services' workforce in 2002, compared to a services' average of 19.9 %.

Average personnel costs in real estate services were EUR 28 000 per employee in the EU-25 in 2001, and EUR 32 200 per employee in the EU-15, the latter being EUR 4 700 higher than the non-financial services' average. In the majority of the Member States ⁽²⁴⁾, average personnel costs were close to the non-financial services' average, with only the Netherlands, Slovenia and Denmark recording a large difference.

⁽²²⁾ Greece, Lithuania, Poland and Slovenia, not available.

⁽²³⁾ Greece and Poland, not available.

⁽²⁴⁾ Germany, 2000; Greece and Cyprus, not available.

Table 15.17
Real estate activities (NACE Division 70)
Labour force characteristics, 2002

	Share of men		Share of full-time		Share of employees	
	Value (%)	Index (services=100)	Value (%)	Index (services=100)	Value (%)	Index (services=100)
EU-25	:	:	:	:	:	:
EU-15	51.4	91.3	78.9	98.5	79.3	98.1
BE	59.6	100.7	79.7	97.5	61.1	78.8
CZ	47.7	89.8	88.8	94.3	69.3	92.0
DK	61.7	103.5	79.7	100.6	92.2	105.2
DE	55.1	107.6	73.0	97.3	73.0	86.1
EE	65.4	126.0	85.8	90.7	94.9	103.7
EL	:	:	97.6	101.3	:	:
ES	42.6	73.9	87.8	96.5	69.1	92.9
FR	45.6	80.3	83.5	98.4	88.4	99.5
IE	53.5	101.0	86.6	109.2	71.1	84.3
IT	55.5	89.7	89.2	98.8	48.8	81.1
CY	56.9	107.6	58.7	63.1	65.8	87.1
LV	42.7	91.9	92.9	99.9	90.5	98.8
LT	:	:	88.4	96.7	92.2	109.8
LU	46.0	81.9	82.0	92.8	69.2	76.9
HU	48.3	89.8	89.9	93.7	80.3	99.5
MT	73.9	106.3	73.9	83.7	75.5	93.4
NL	59.8	102.1	64.2	110.7	86.8	98.9
AT	29.8	60.2	:	:	88.3	101.8
PL	:	:	:	:	:	:
PT	44.1	79.0	87.5	94.4	68.1	96.4
SI	:	:	100.0	105.7	81.5	93.9
SK	48.0	92.5	96.9	99.0	96.7	112.5
FI	60.5	113.9	82.7	99.3	88.1	101.0
SE	68.4	115.5	76.1	96.1	82.4	96.4
UK	51.7	92.1	76.6	106.8	81.9	93.4

Source: Eurostat, Labour Force Survey.

Table 15.18

Construction (NACE Division 45)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL (1)	ES	FR	IE	IT	CY	LV	LT	LU
Turnover (EUR million)	30 499	13 766	20 318	168 903	1 265	8 766	142 584	144 809	:	143 771	1 334	1 280	1 124	2 768
Value added at factor cost (EUR million)	9 507	2 475	7 421	67 564	232	3 433	50 731	52 070	:	43 314	722	428	338	1 172
Purchases of goods and services (EUR million)	21 102	10 904	12 228	101 198	1 020	6 017	95 154	92 230	:	103 038	612	887	797	1 652
Gross investment in tangible goods (EUR million)	1 717	513	782	4 264	36	:	:	3 976	:	6 992	44	65	68	:
Number of persons employed (thousands)	278	376	184	1 988	31	92	1 953	1 458	:	1 529	27	43	69	27
App. labour productivity (EUR thous./pers. emp.)	34.2	6.6	40.3	34.0	7.5	37.2	26.0	35.7	:	28.3	27.1	10.0	4.9	43.9
Average personnel costs (EUR thous./employee)	30.0	6.8	34.7	31.1	5.0	16.1	22.1	32.0	:	23.1	:	3.1	3.4	30.8
Wage adjusted labour productivity (%)	114.3	96.3	116.1	109.3	149.8	230.8	117.6	111.5	:	122.5	:	326.4	143.5	142.5
Gross operating rate (%)	9.9	5.2	8.5	7.1	6.3	23.6	10.8	7.6	:	16.4	17.0	22.7	9.6	13.6
	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Turnover (EUR million)	6 286	276	70 376	23 981	25 792	25 607	3 013	2 309	16 636	27 789	210 865	1 792	4 715	:
Value added at factor cost (EUR million)	1 154	58	23 000	10 645	14 862	6 409	793	459	5 605	10 045	76 354	408	1 276	:
Purchases of goods and services (EUR million)	5 216	174	48 466	13 520	9 634	20 349	2 133	1 762	11 344	18 723	136 321	1 480	4 034	:
Gross investment in tangible goods (EUR million)	534	7	1 842	822	992	1 543	37	77	537	1 072	5 439	150	681	:
Number of persons employed (thousands)	117	8	496	235	709	382	:	74	126	237	1 367	124	373	:
App. labour productivity (EUR thous./pers. emp.)	9.8	7.2	46.3	45.4	21.0	16.8	:	6.2	44.4	42.3	55.9	3.3	3.4	:
Average personnel costs (EUR thous./employee)	5.9	10.6	39.9	34.9	7.0	12.3	10.8	4.7	33.6	36.2	31.7	3.0	2.2	:
Wage adjusted labour productivity (%)	167.4	67.5	116.2	130.1	298.8	136.1	:	129.8	132.2	117.0	176.4	110.2	152.1	:
Gross operating rate (%)	7.5	6.5	8.9	12.3	43.5	9.6	4.2	4.7	0.0	9.3	18.1	6.5	10.1	:

(1) 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 15.19

Site preparation; building of complete constructions or parts thereof; civil engineering (NACE Groups 45.1 and 45.2)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL (1)	ES	FR	IE	IT	CY	LV	LT	LU
Turnover (EUR million)	18 967	10 638	11 114	94 324	1 004	8 062	104 631	80 922	:	97 974	1 108	876	822	1 667
Value added at factor cost (EUR million)	5 546	1 857	3 437	35 166	167	3 158	35 360	25 798	:	27 456	614	300	244	686
Purchases of goods and services (EUR million)	13 468	8 442	7 030	58 795	831	5 570	72 153	54 874	:	72 038	494	595	588	1 022
Gross investment in tangible goods (EUR million)	916	375	490	2 659	27	:	:	2 386	:	5 120	38	46	48	:
Number of persons employed (thousands)	135	261	79	930	22	80	1 277	698	:	821	22	26	48	15
App. labour productivity (EUR thous./pers. emp.)	41.2	7.1	43.7	37.8	7.5	39.5	27.7	37.0	:	33.5	27.8	11.4	5.1	46.2
Average personnel costs (EUR thous./employee)	35.1	6.8	37.1	34.7	4.9	16.6	22.5	32.6	:	24.4	:	3.7	3.7	31.2
Wage adjusted labour productivity (%)	117.4	105.2	117.7	109.1	152.9	237.8	123.3	113.4	:	137.1	:	308.6	137.5	148.0
Gross operating rate (%)	8.6	4.8	6.8	5.1	5.9	23.8	10.4	6.0	:	15.0	17.6	23.2	8.4	14.0
	HU	MT	NL	AT	PL	PT	SI	SK (2)	FI (1)	SE	UK	BG	RO	TR
Turnover (EUR million)	5 063	176	46 510	14 532	19 438	21 169	2 094	1 175	11 139	17 324	149 020	1 455	3 562	:
Value added at factor cost (EUR million)	853	14	13 609	6 209	12 148	5 083	536	252	3 357	5 757	49 309	356	940	:
Purchases of goods and services (EUR million)	4 282	118	33 775	8 472	6 835	17 211	1 506	858	8 109	12 387	101 610	1 184	3 152	:
Gross investment in tangible goods (EUR million) (3)	489	6	1 211	549	877	1 304	27	44	414	803	3 560	99	610	:
Number of persons employed (thousands)	85	4	265	120	482	284	:	:	77	128	812	103	275	:
App. labour productivity (EUR thous./pers. emp.)	10.1	3.4	51.3	51.7	25.2	17.9	:	:	43.6	45.1	60.7	3.5	3.4	:
Average personnel costs (EUR thous./employee)	6.0	10.1	42.8	39.9	7.1	12.5	11.3	4.1	31.4	36.4	33.3	3.3	2.3	:
Wage adjusted labour productivity (%)	167.4	33.6	119.9	129.4	354.9	143.0	:	:	138.7	123.7	182.6	105.2	149.0	:
Gross operating rate (%)	6.9	-3.8	8.0	10.8	48.0	9.5	3.2	0.8	0.0	9.4	16.9	6.3	9.5	:

(1) 2000.

(2) 1999.

(3) Bulgaria, 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 15.20

**Building installation; building completion; renting of construction or demolition equipment with operator
(NACE Groups 45.3, 45.4 and 45.5)
Main indicators, 2001**

	BE	CZ	DK	DE	EE	EL (1)	ES	FR	IE	IT	CY	LV	LT	LU
Turnover (EUR million)	11 532	3 128	9 204	74 579	:	704	37 953	63 887	:	45 797	226	404	302	1 101
Value added at factor cost (EUR million)	3 961	619	3 984	32 398	:	275	15 371	26 272	:	15 858	108	128	94	486
Purchases of goods and services (EUR million)	7 634	2 462	5 198	42 403	:	447	23 002	37 356	:	31 000	117	293	209	630
Gross investment in tangible goods (EUR million)	801	138	293	1 605	:	:	1 590	:	:	1 872	6	18	20	:
Number of persons employed (thousands)	143	115	106	1 058	:	12	676	761	:	708	4	17	21	12
App. labour productivity (EUR thous./pers. emp.)	27.7	5.4	37.7	30.6	:	22.4	22.7	34.5	:	22.4	24.1	7.8	4.5	41.0
Average personnel costs (EUR thous./employee)	24.4	7.1	32.7	27.6	:	12.5	21.3	31.5	:	21.2	:	2.1	2.8	30.2
Wage adjusted labour productivity (%)	113.2	76.0	115.1	110.8	:	179.0	106.7	109.8	:	105.9	:	378.9	162.6	135.5
Gross operating rate (%)	12.2	6.6	10.5	9.7	:	21.5	11.8	9.6	:	19.2	14.3	21.5	12.7	13.0
	HU	MT	NL	AT	PL	PT	SI	SK (2)	FI (1)	SE	UK	BG	RO	TR
Turnover (EUR million)	1 223	99	23 866	9 449	6 354	4 438	919	196	4 046	10 464	61 845	337	1 153	:
Value added at factor cost (EUR million)	301	44	9 391	4 437	2 714	1 326	258	42	1 681	4 289	27 046	52	336	:
Purchases of goods and services (EUR million)	933	56	14 691	5 047	2 799	3 139	627	147	2 438	6 336	34 711	296	882	:
Gross investment in tangible goods (EUR million) (3)	45	1	631	273	115	239	10	11	132	269	1 879	11	71	:
Number of persons employed (thousands)	33	4	231	114	226	98	:	:	43	110	555	21	98	:
App. labour productivity (EUR thous./pers. emp.)	9.2	11.0	40.7	38.8	12.0	13.6	:	:	39.2	39.1	48.8	2.4	3.4	:
Average personnel costs (EUR thous./employee)	5.5	11.7	36.4	29.3	6.8	11.8	9.8	4.3	31.3	35.9	29.3	1.6	2.1	:
Wage adjusted labour productivity (%)	167.7	94.6	111.9	132.5	177.3	115.4	:	:	125.2	109.1	166.5	153.3	161.6	:
Gross operating rate (%)	10.1	24.9	10.7	14.7	29.8	9.9	6.6	1.7	0.0	9.3	21.2	7.0	12.1	:

(1) 2000.

(2) 1999.

(3) Bulgaria, 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 15.21

**Real estate activities (NACE Division 70)
Main indicators, 2001**

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Turnover (EUR million)	5 203	1 856	8 253	76 447	439	:	54 532	68 527	1 681	25 303	:	364	292	551
Value added at factor cost (EUR million) (1)	1 984	528	5 567	51 304	157	:	17 871	25 100	947	11 238	:	263	131	161
Purchases of goods and services (EUR million) (1)	3 379	1 326	1 982	33 460	285	:	47 424	40 999	663	14 283	:	151	166	389
Gross investment in tangible goods (EUR million) (1)	1 298	997	2 843	21 515	162	:	9 264	22 008	669	4 267	:	192	182	:
Number of persons employed (thousands)	30	44	41	304	12	:	211	315	11	220	:	21	16	2
App. labour productivity (EUR thous./pers. emp.) (1)	65.2	12.1	134.6	168.5	13.1	:	84.6	79.6	85.4	51.0	:	12.4	7.9	106.1
Average personnel costs (EUR thous./employee) (1)	32.9	7.3	24.5	38.2	4.4	:	21.1	34.8	30.4	27.0	:	3.5	3.2	33.6
Wage adjusted labour productivity (%) (1)	198.2	166.3	548.3	441.2	297.1	:	401.2	228.9	281.3	189.3	:	349.1	246.3	315.5
Gross operating rate (%) (1)	26.7	15.5	57.3	58.7	24.9	:	27.1	24.4	46.1	40.7	:	51.6	28.4	22.3
	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Turnover (EUR million)	1 202	89	24 329	6 529	8 041	4 528	190	500	4 424	18 760	52 322	94	284	:
Value added at factor cost (EUR million)	414	54	11 929	2 961	3 872	1 126	58	194	2 214	9 880	31 885	42	146	:
Purchases of goods and services (EUR million)	821	50	12 745	3 637	3 672	4 273	132	299	2 199	9 567	22 645	64	146	:
Gross investment in tangible goods (EUR million)	292	41	:	3 309	2 470	1 036	19	146	1 657	10 353	29 987	58	200	:
Number of persons employed (thousands)	23	2	71	29	:	34	:	16	20	75	383	10	19	:
App. labour productivity (EUR thous./pers. emp.)	17.8	22.6	167.2	101.5	:	33.1	:	11.8	108.5	131.8	83.3	4.3	7.5	:
Average personnel costs (EUR thous./employee)	7.4	6.8	45.1	32.4	9.1	15.5	14.1	5.2	30.3	36.1	31.4	2.3	2.6	:
Wage adjusted labour productivity (%)	239.5	334.9	370.3	313.4	:	213.2	:	227.4	358.1	365.4	265.2	188.6	285.4	:
Gross operating rate (%)	20.2	52.2	37.5	32.9	34.6	16.8	11.3	22.2	37.4	42.7	41.9	24.9	35.9	:

(1) Germany, 2000.

Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).