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Facts and figures

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Data 1998-2002

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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_l 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 Prodcom, 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 is derived from structural 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 - 0)**
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+	1999 onwards: employment size classes are defined in terms of employees; size class 1-4 has been approximated with size class 0-4 employees; size class 1-9 has been approximated with size class 0-9 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 includes 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	Is in fact the number of employees
		Sections C to F: social security costs	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

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	Begian 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

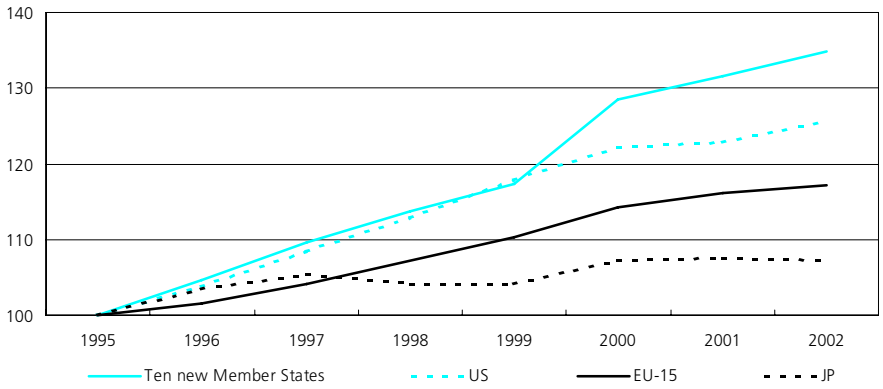
Rapid economic integration between the EU-15 and most of the 10 new Member States [3] started at the beginning of the 1990s, when market reforms were accompanied by the realignment of external trade relations. Up until this point the majority of the 10 new Member States (as well as Bulgaria and Romania) 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).

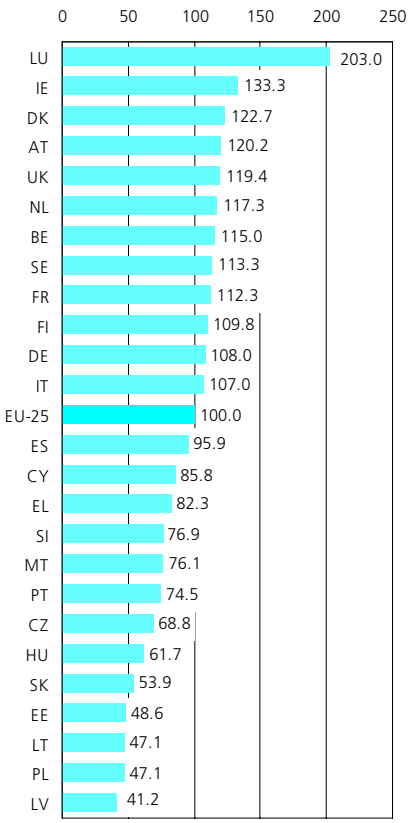
GDP AND POPULATION

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).

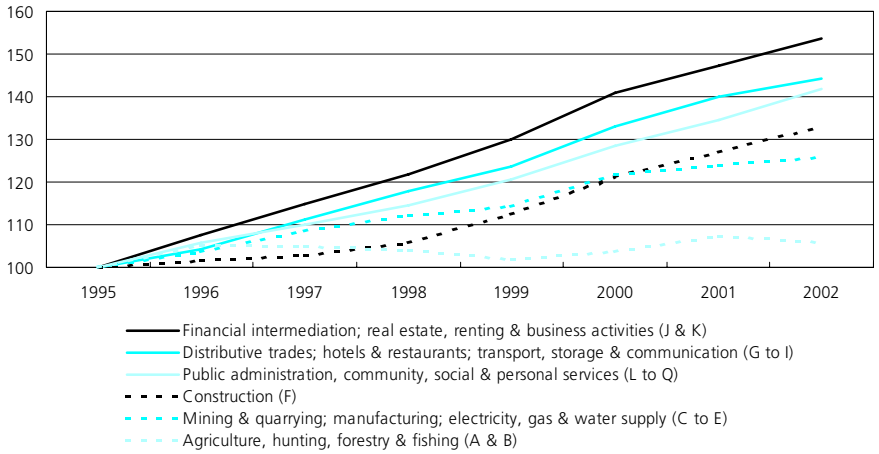
The level of GDP per inhabitant expressed in terms of purchasing power standards (PPS) is often used to compare the living standards of different countries. This indicator was forecast to be approximately twice as high in the EU-15 Member States (PPS 24 990) as in the 10 new Member States (PPS 12 330) 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

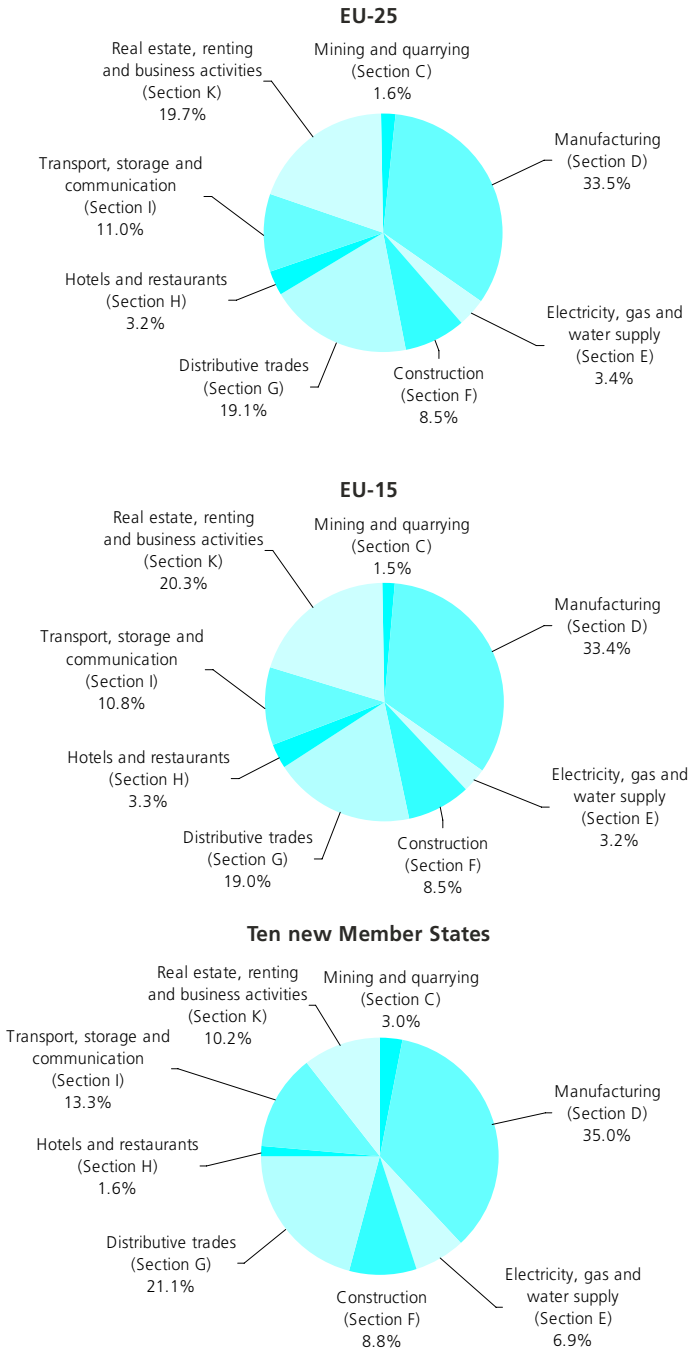
Value added in the EU-25's non-financial business economy (as defined by NACE Sections C to I and K) totalled EUR 4 585 billion in 2001. This figure could be broken down into EUR 4 341 billion among the EU-15 Member States (or 94.7 % of the EU-25 total) and EUR 244 billion among the 10 new Member States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

Figure 4

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



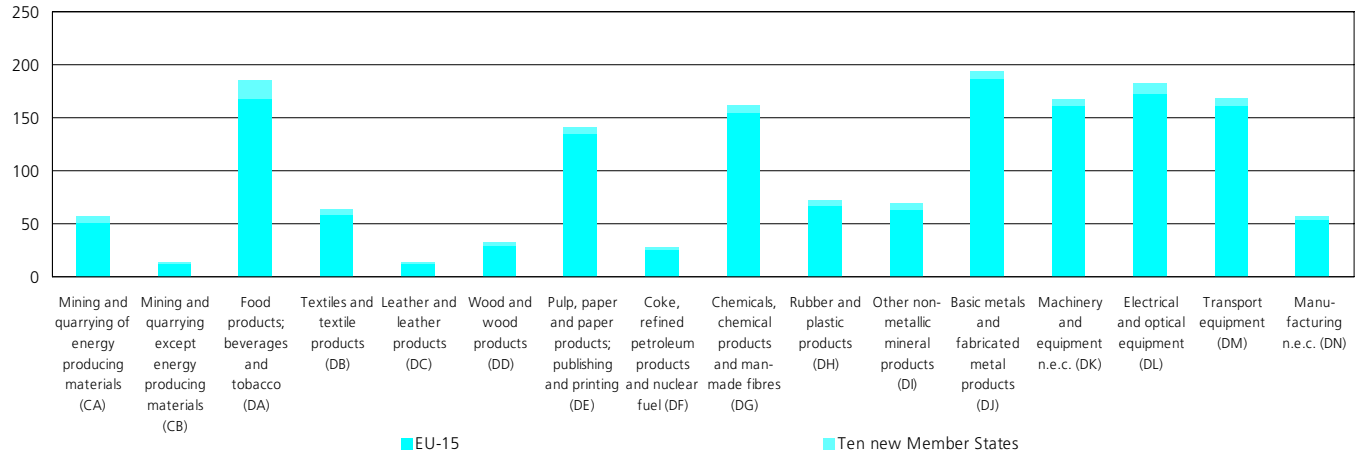
(1) Based on NACE Sections C to I and K; estimates.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr/enter_ms).

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 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

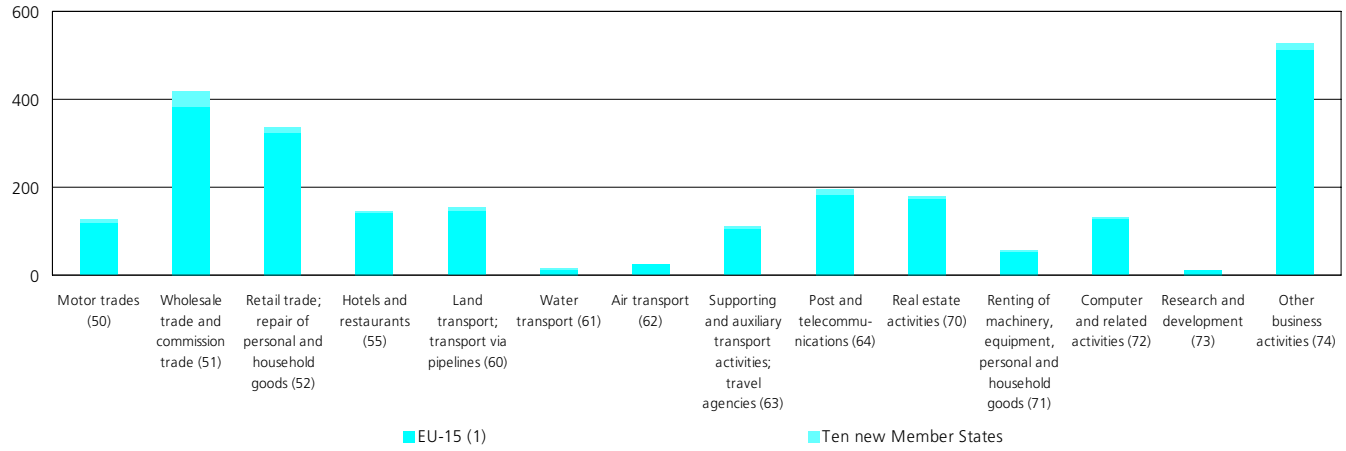
Relative specialisation ratios for value added in the manufacturing sector, 2001 (1)

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

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).

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

	Value added				Employment			
NACE label (NACE Section)	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.

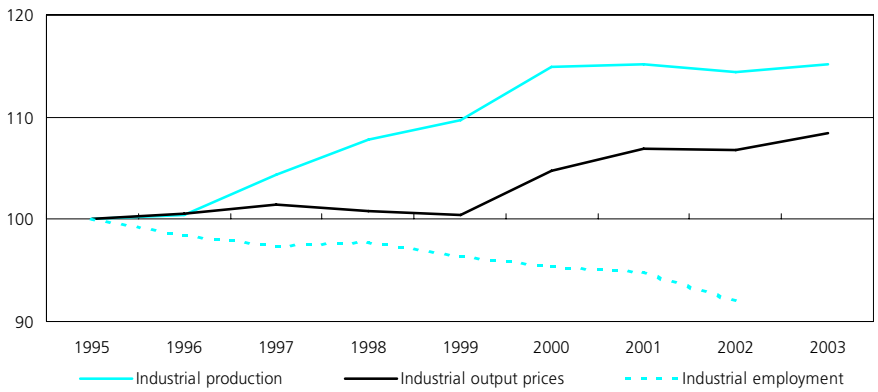
The evolution of EU-25 production across different manufacturing subsections showed wide variations (see Table 7). The fastest expanding sectors (with annual average growth of between 3.3 to 4.2 % during the period 1995 to 2003) included chemicals, chemical products and man-made fibres, electrical and 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

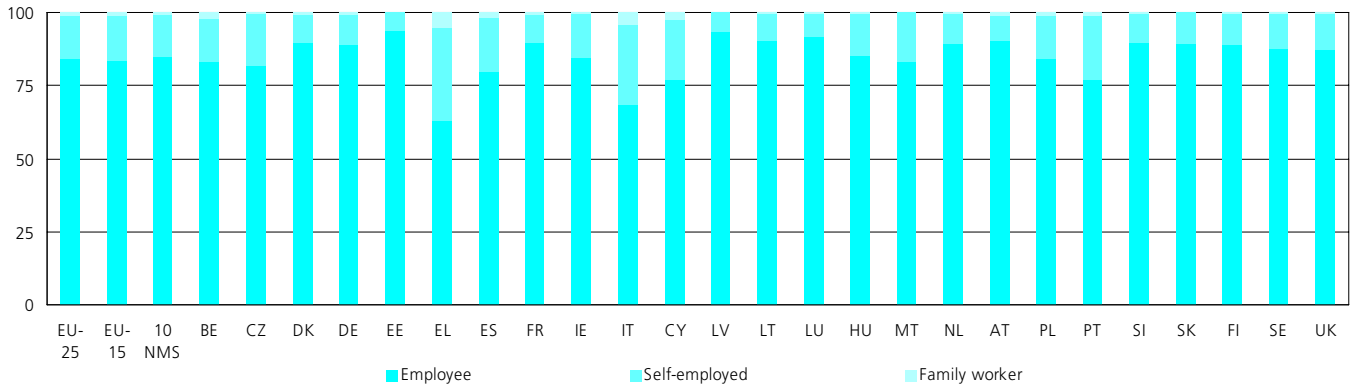
Source: Eurostat, European Business Trends.

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

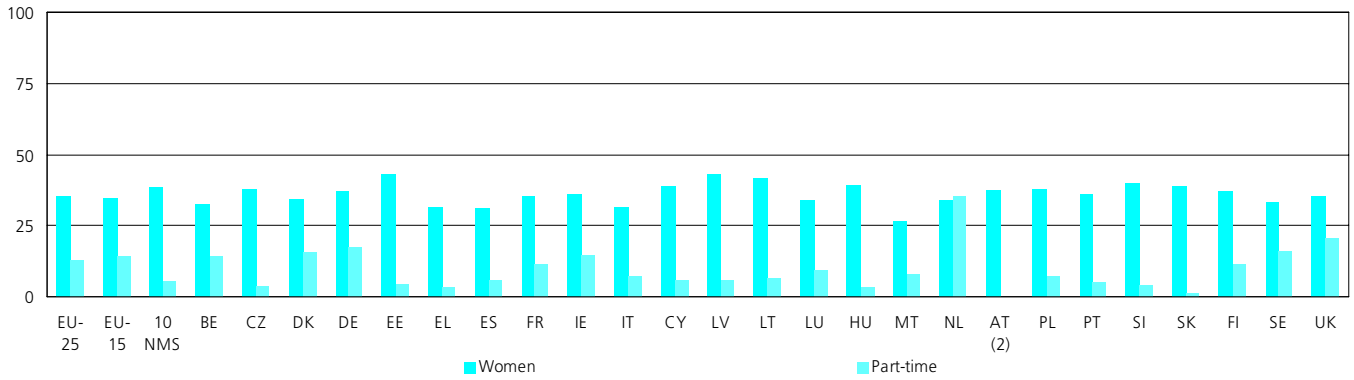
Labour force characteristics in the business economy (NACE Sections C to K) by employment status, 2002 (share of persons aged 15 or more) (%) (1)



(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, Italy 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 %).

[7] Slovenia, number of employees; Cyprus, excluding NACE Section K; Malta, excluding NACE Section E.

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.

Table 9

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

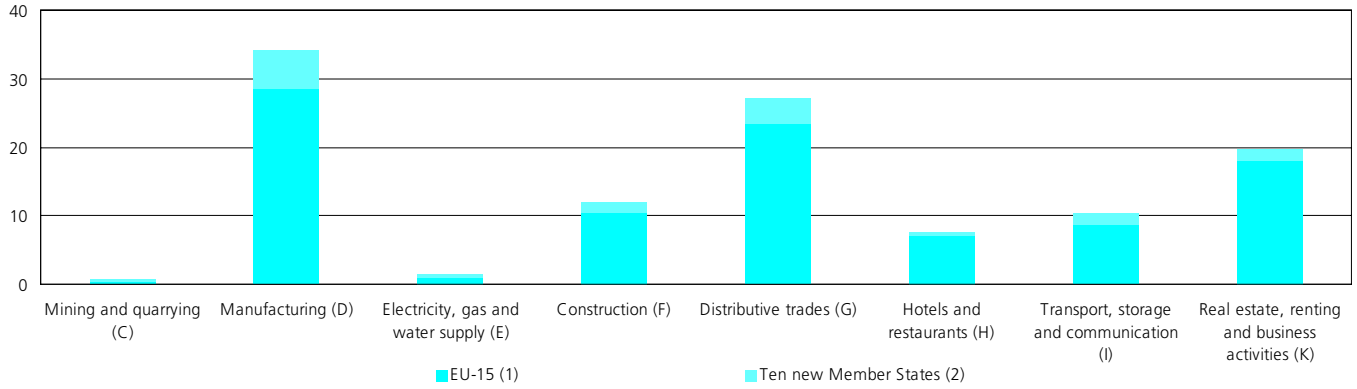
NACE label (NACE Section)	EU-25	EU-15	10 NMS	BE	CZ	DK	DE (2)	EE	EL (3)	ES	FR	IE (4)	IT	CY (5)
Non-financial business economy (C to I and K)														
Number of persons employed (thousands)	112 955	97 175	15 780	2 485	3 535	1 714	20 089	356	349	11 462	14 027	887	14 022	176
Share of EU-25 (%)	100.0	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).

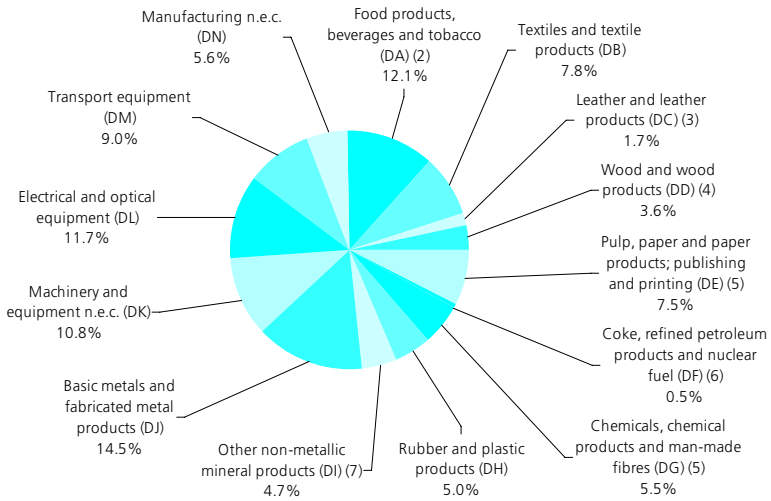
Figure 10 shows in more detail the breakdown of employment between the EU-15 and the 10 new Member States. The two NACE sections where the 10 new Member States had by far their highest share of total EU-25 employment were the activities of mining and quarrying (NACE Section C) and electricity, gas and 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 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.

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).

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

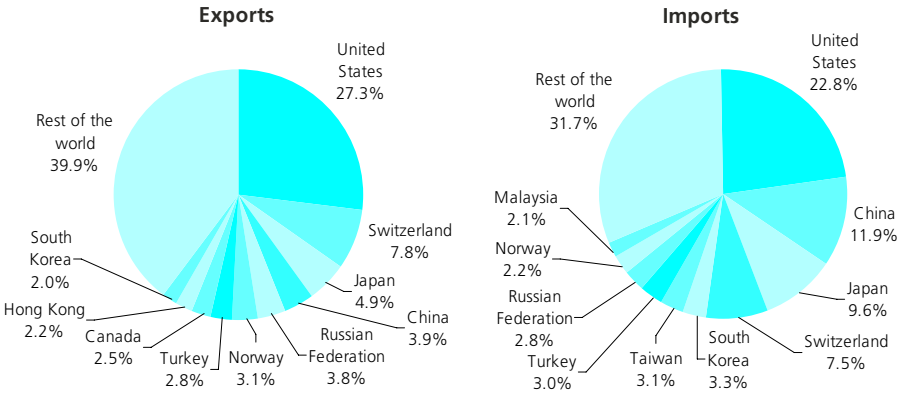
EU-25 external trade flows with non-Community countries (% share of all manufactured products)

	EU-25		Ten new Member States	
CPA label (CPA Subsection)	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.

[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).

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.

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 %).

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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].

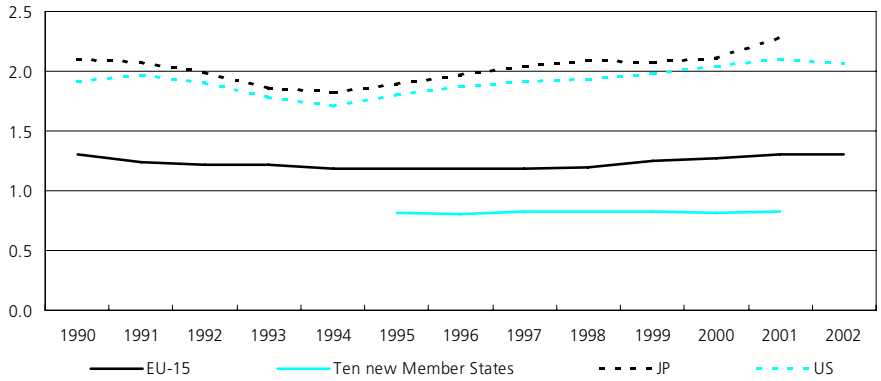
[14] Malta, not available.

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_cec/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_cec/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 under-performing 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).

Machinery and equipment

As a producer of capital goods the machinery and equipment manufacturing sector provides a basis for the performance of tasks in other sectors. The range of products offered has changed over time, away from single mechanical machines towards integrated systems using information technology. The increased complexity of products has led to the need for support by manufacturers in terms of training, maintenance and the provision of specialised software.

A proposal for a directive on the eco-design of energy-using products [1] was approved by the European Commission in August 2003. The aim of the directive is to facilitate the free movement of goods and to enhance product quality and environmental protection. Many pieces of machinery and equipment are covered by this draft directive, for example electrical domestic appliances.

STRUCTURAL PROFILE

In 2001 the machinery and equipment manufacturing sector generated EUR 167.6 billion of value added in the EU-25, equivalent to 10.9 % of total value added in manufacturing. As such it was the second largest manufacturing NACE division after the manufacture of food products and beverages. There were 3.6 million persons employed in the machinery and equipment manufacturing sector in the EU-25 in 2001 [2], of which 3.1 million were in the EU-15.

The contribution of the 10 new Member States to the EU-25's value added for the machinery and equipment manufacturing sector was 3.8 %, lower than the average for manufacturing as a whole (5.6 %). In fact, the machinery and equipment manufacturing sector recorded the lowest contribution of the 10 new Member States to the EU-25 total of any manufacturing NACE subsection, marginally below the share of the manufacture of basic metals and fabricated metal products (NACE Subsection DJ).

The manufacture of other general purpose machinery (NACE Group 29.2) and the manufacture of other special purpose machinery (NACE Group 29.5) accounted for 29.4 % and 26.6 % respectively of value added in the EU-25's machinery and equipment manufacturing sector in 2001. The manufacture of machinery for the production and use of mechanical power (NACE Group 29.1) was the third largest subsector with a 20.5 % contribution.

Germany dominated the EU-25's machinery and equipment manufacturing sector with 37.4 % of the EU-25's value added in 2001. This was the second highest proportion of EU-25 value added accounted for by Germany among the NACE manufacturing subsections, behind the manufacture of transport equipment. With the exception of the manufacture of weapons and ammunition, Germany was the dominant EU-25 manufacturer in each of the NACE groups making up the machinery and equipment manufacturing sector. For example, in the manufacture of machine-tools (NACE Group 29.4) Germany alone accounted for half (50.7 %) of the EU-25's value added. Germany was also the most specialised in machinery and equipment manufacturing relative to manufacturing as a whole, generating 15.2 % of its manufacturing value added in this sector; Denmark (14.4 %) and Italy (14.2 %) were also relatively highly specialised. For all three of these countries the machinery and equipment manufacturing sector was the second largest manufacturing NACE subsection, while it was the third largest manufacturing NACE subsection in Austria, Poland and Finland.

This chapter covers NACE Division 29, in other words all mechanical machinery and equipment, except for transport equipment. This sector provides equipment for use in many mining, manufacturing, energy and construction sectors, as well as producing domestic appliances. Furthermore, the machinery and equipment manufacturing sector covers weapons and ammunition, whether for military or sporting uses, including some military vehicles such as tanks, but not military aircraft or warships (which are classified under the manufacture of transport equipment). Data availability for the weapons and ammunitions subsector is generally weaker than the other subsectors and it is not treated in a separate subchapter.

NACE

29: manufacture of machinery and equipment n.e.c.;
29.1: manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines;
29.2: manufacture of other general purpose machinery;
29.3: manufacture of agricultural and forestry machinery;
29.4: manufacture of machine-tools;
29.5: manufacture of other special purpose machinery;
29.6: manufacture of weapons and ammunition;
29.7: manufacture of domestic appliances n.e.c.

[1] COM(2003) 453.
[2] Slovenia, number of employees.

Table 10.1

Manufacture of machinery and equipment n.e.c. (NACE Division 29)
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 (62.7)	Germany (139)	Germany (1 106.6)	United States (16.1)	United States (24.1)
2	Italy (28.8)	Denmark (132)	Italy (597.0)	Japan (7.9)	China (10.1)
3	United Kingdom (18.4)	Italy (130)	United Kingdom (355.0)	Switzerland (6.7)	Switzerland (6.2)
4	France (16.3)	Sweden (127)	France (334.4)	China (5.3)	Russian Federation (5.2)
5	Spain (7.6)	Austria (115)	Poland (197.3)	South Korea (1.8)	Turkey (3.9)

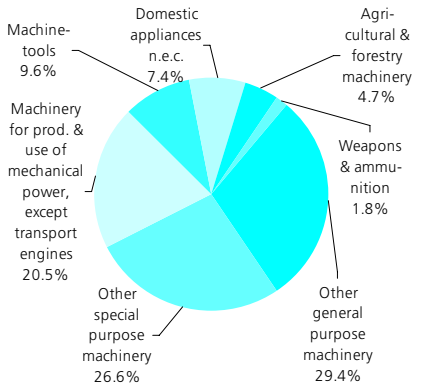
(1) Slovenia, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

The working day adjusted EU-25 production index for machinery and equipment manufacturing showed generally an upward trend between its low in 1993 and 2001, with one notable fall during this period of 2.4 % in 1999. In 2002 and 2003, however, the index fell by 1.3 % and 1.1 % respectively. In contrast the EU-25 employment index for machinery and equipment manufacturing showed a general decline from 1994 (the beginning of the series) until the most recent value for 2002. During this period the average rate of change was –1.0 % per annum, with modest growth recorded in just two years: 0.4 % in 1998 and 0.2 % in 2001. The domestic output price index for machinery and equipment manufacturing in the EU-25 increased without interruption throughout the 1990s and through to 2003. In the 10 years to 2003 the average increase was 1.5 % per annum (the same as the manufacturing average), with the highest growth rates recorded in 1995 and 1996 (2.7 % or more) and the lowest between 1998 and 2000 and again in 2003 (all around 1 %).

A breakdown by size-class reveals that approximately one half (49.3 %) of the value added in the EU-25's machinery and equipment manufacturing sector was generated by large enterprises (with 250 or more persons employed), a smaller proportion than the manufacturing average (54.9 %). The situation was reversed for medium-sized enterprises (with between 50 and 249 persons employed) which generated 27.4 % of value added in machinery and equipment manufacturing compared to 22.0 % in manufacturing as a whole. In employment terms, for the EU-15, a slightly different situation was observed, with both medium-sized and large enterprises accounting for a greater share of employment in the machinery and equipment manufacturing sector than was the case for manufacturing as a whole, with micro enterprises accounting for a notably lower share.

Figure 10.1

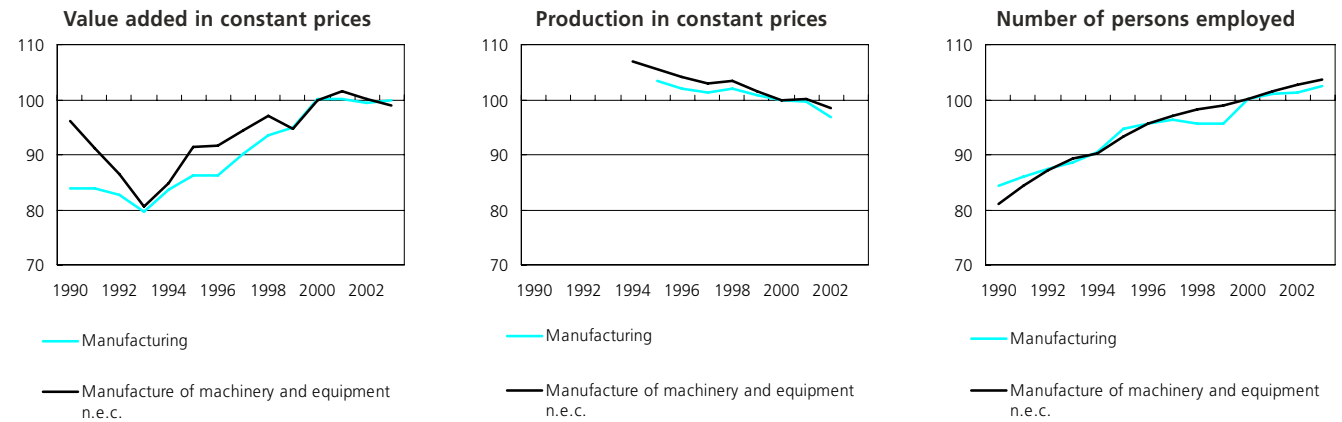
Manufacture of machinery and equipment n.e.c. (NACE Division 29)
Share of value added at factor cost, EU-25, 2001



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

Figure 10.2

Manufacture of machinery and equipment n.e.c. (NACE Division 29)
Main indicators, EU-25 (2000=100)



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

Table 10.2

Manufacture of machinery and equipment n.e.c. (NACE Division 29)
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	6.2	:	17.1	:	27.4	:	49.3	:
EU-15	6.3	8.7	17.2	20.5	27.2	27.6	49.3	43.2

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

LABOUR AND PRODUCTIVITY

According to the labour force survey, men made up 82.0 % of employment in the EU-15's machinery and equipment manufacturing sector in 2002, a higher share than the manufacturing average (71.7 %). This pattern was observed in all Member States [3], with Portugal recording the largest difference between male employment in this sector (81.5 %) and the manufacturing average (56.1 %). The proportion of full-time employment in the machinery and equipment sector of the EU-15 was slightly higher (at 95.1 %) than the corresponding figure for manufacturing as a whole (92.4 %). This was the case in almost all Member States [4], with Latvia and Malta the only exception.

SBS data show that in 2001 the apparent labour productivity of the EU-15's machinery and equipment manufacturing sector was EUR 51 800 per person employed and, as such, close to the manufacturing average. In the same period, average personnel costs in the EU-15 constituted EUR 39 500 per employee (manufacturing, EUR 35 700). These relatively high average personnel costs contributed to a wage adjusted labour productivity ratio of 131.1 % in the EU-15 in 2001, some 12.4 percentage points below the manufacturing average. In fact, in none of the NACE groups that make up the EU-15's machinery and equipment manufacturing sector was the wage adjusted labour productivity ratio above the manufacturing average in 2001.

[3] Estonia and Poland, not available.
[4] Estonia, Austria and Poland, not available.

Table 10.3

Manufacture of machinery and equipment n.e.c. (NACE Division 29)
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	82.0	114.4	95.1	102.9	93.8	102.1
BE	81.3	109.3	94.5	103.7	96.6	101.9
CZ	78.1	126.8	98.8	101.3	96.2	103.9
DK	75.3	110.1	95.7	103.2	97.2	100.6
DE	82.8	115.4	94.1	104.9	96.4	101.1
EE	:	:	:	:	:	:
EL	86.3	121.7	99.3	101.3	79.8	108.9
ES	84.6	113.9	98.2	101.4	89.0	100.6
FR	80.8	114.2	95.7	101.3	96.0	101.2
IE	76.1	110.0	97.2	103.6	87.5	95.2
IT	81.2	116.7	97.0	102.5	88.3	106.7
CY	72.6	115.4	100.0	107.1	:	:
LV	83.1	134.7	87.9	92.8	91.7	95.9
LT	69.2	135.4	100.0	105.4	100.0	103.8
LU	82.0	101.1	100.0	104.7	100.0	101.7
HU	82.9	138.9	99.9	102.3	91.4	97.9
MT	82.6	118.0	82.6	85.5	100.0	107.4
NL	87.8	113.8	86.5	115.3	95.4	99.2
AT	85.6	115.1	:	:	96.1	100.9
PL	:	:	:	:	:	:
PT	81.5	145.3	98.7	101.7	84.7	97.2
SI	70.7	117.0	96.8	100.2	94.2	100.5
SK	80.6	136.0	99.6	100.9	96.0	99.9
FI	85.5	121.5	98.3	103.0	92.6	99.0
SE	83.7	113.2	95.8	104.5	95.8	101.9
UK	78.8	105.3	93.4	101.3	95.7	100.6

Source: Eurostat, Labour Force Survey.

Table 10.4

Manufacture of machinery and equipment n.e.c. (NACE Division 29)
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 machinery and equipment n.e.c.	51.8	131.1	39.5
Machinery for the prod. & use of mech. power, excl. transport engines	55.9	133.9	41.7
Manufacture of other general purpose machinery	50.8	131.8	38.5
Manufacture of agricultural and forestry machinery	45.4	136.4	33.3
Manufacture of machine-tools	53.7	130.6	41.1
Manufacture of other special purpose machinery	51.4	128.4	40.0
Manufacture of weapons and ammunition	53.8	108.6	49.5
Manufacture of domestic appliances n.e.c.	48.3	135.4	35.7

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

Table 10.5

Machinery and equipment n.e.c. (CPA Division 29)
External trade, EU-25, 2002 (EUR million)

	Exports	Imports	Trade balance	Cover ratio (%)
Machinery and equipment n.e.c.	124 747	57 360	67 386	217.5
Machinery for the prod. & use of mech. power, excl. transport engines	29 153	17 081	12 072	170.7
Other general purpose machinery	28 508	11 838	16 670	240.8
Agricultural and forestry machinery	4 547	1 627	2 920	279.5
Machine-tools	10 827	8 075	2 753	134.1
Other special purpose machinery	43 989	12 739	31 250	345.3
Weapons and ammunition	823	382	441	215.4
Domestic appliances n.e.c.	6 866	5 613	1 253	122.3

Source: Eurostat, Comext.

EXTERNAL TRADE

In 2002, the EU-25 exported EUR 124.7 billion of machinery and equipment (CPA Division 29) while imports were valued at EUR 57.4 billion. This led to an external trade surplus of EUR 67.4 billion, the largest of any CPA division for manufactured goods. All of the CPA groups within the division recorded trade surpluses, the largest being other special purpose machinery (CPA Group 29.5) with a surplus of EUR 31.3 billion. The EU-25 also recorded trade surpluses in excess of EUR 10 billion in both power machinery (CPA Group 29.1) and other general purpose machinery (CPA Group 29.2). These three CPA groups collectively accounted for 81.5 % of exports of all machinery and equipment and 72.6 % of imports.

Just over one fifth of the EU-25's exports of machinery and equipment in 2002 were destined for the United States (21.5 %), while China accounted for an 8.1 % share. The United States also dominated the EU-25's imports with a 30.9 % share of the total, followed at some distance by Japan and Switzerland with 16.6 % and 15.6 % respectively.

Unsurprisingly, given its dominance of the machinery and manufacturing sector in the EU, Germany was the largest exporter of machinery and equipment in 2002, accounting for 32.6 % of (intra- and extra-EU combined) exports by the EU-25's Member States. Italy (18.4 %), France (10.0 %) and the United Kingdom (8.7 %) followed in the ranking. Italy was, however, the most specialised in export terms, generating 20.4 % of all of its exports of manufactured goods within this area, a significantly higher share than the next most specialised countries, Germany (15.6 %) and Slovenia (14.9 %). This CPA division contributed the largest share of manufactured exports of any CPA division of manufactured goods in Italy, Sweden and Slovenia, and the second highest share in the Czech Republic, Germany and Austria.

When analysing the external trade balance, all 10 new Member States (except Slovenia) showed an external trade deficit (intra- and extra-EU combined) for machinery and equipment; the majority of the EU-15 Member States reported surpluses. Cyprus, the Czech Republic and Poland had particularly high imports of these products, relative to their imports of all manufactured goods, with Cyprus and the Czech Republic recording their highest levels of imports in this CPA division, as was also the case in Estonia.

10.1: POWER MACHINERY

The manufacture of power machinery (NACE Group 29.1) concerns the manufacture of machinery for the production and use of mechanical power. This includes internal combustion engines, as well as steam, gas, wind and hydraulic turbines, pumps, compressors, taps, valves, bearings and transmission equipment. This NACE group excludes the manufacture of propulsion engines for aircraft, vehicles or cycles. Power machines transform different forms of energy, for example, thermal or electrical energy into motion.

STRUCTURAL PROFILE

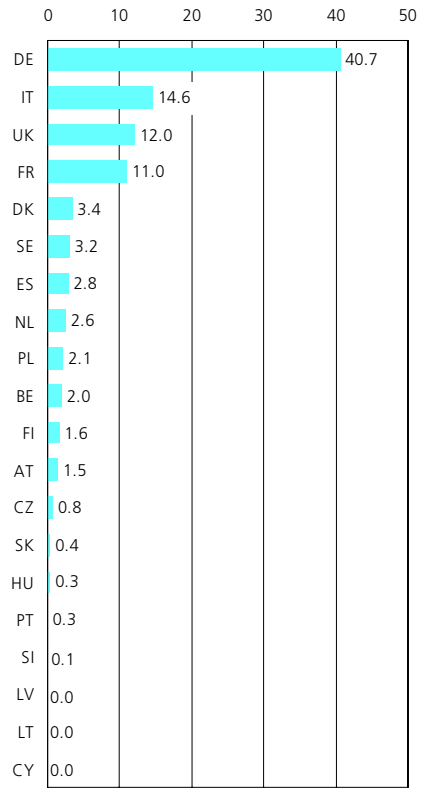
Value added of EUR 34.4 billion was generated in the EU-25's power machinery manufacturing sector in 2001, equivalent to 2.2 % of total manufacturing value added and to 20.5 % of machinery and equipment manufacturing. The sector employed 675 700 persons in the EU-25 [5], 591 900 of which were in the EU-15. For the EU-15 this was equivalent to 2.1 % of the total number of persons employed in manufacturing and 19.0 % of those employed in the manufacture of machinery and equipment.

Among the activities making up the EU-15's power machinery manufacturing sector the manufacture of pumps and compressors (NACE Class 29.12) contributed the highest proportion of value added in 2001, with a 31.1 % share. The manufacture of bearings, gears, gearing and driving elements (NACE Class 29.14) and the manufacture of taps and valves (NACE Class 29.13) accounted for 27.2 % and 25.4 % respectively. The manufacture of engines and turbines (NACE Class 29.11) was the smallest subsector, with a 16.3 % contribution.

[5] Estonia and Malta, 2000; Slovenia, number of employees.

Figure 10.3

Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (NACE Group 29.1)
Share of EU-25 value added, 2001 (%) (1)



(1) Estonia, Greece, Ireland, Luxembourg and Malta, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Germany had by far the largest power machinery manufacturing sector, accounting for 40.7 % of the EU-25's value added in 2001. Italy, the United Kingdom and France followed, but collectively they contributed less than Germany alone. Denmark and Germany [6] were the most specialised Member States in the manufacture of power machinery relative to manufacturing as a whole, as they generated respectively 4.5 % and 3.3 % of their manufacturing value added in this sector.

The working day adjusted production index for the manufacture of power machinery in the EU-25 showed a similar development to that for machinery and equipment manufacturing as a whole, albeit with more pronounced movements. There was strong growth from a low in 1993 through until 1995, but in 1996 output contracted by 1.1 % (in contrast to the slowdown experienced in machinery and equipment manufacturing). Growth was modest in 1997, and stronger in 1998, before another contraction in 1999 (–4.2 %), bringing the index below its 1995 level. Strong growth in 2000 (4.7 %) reversed the decline of 1999 but was followed by three years of more moderate rates of change.

Between 1991 and 2003 the development of domestic output prices for power machinery manufacturing was nearly identical to that observed for machinery and equipment manufacturing in general. In the 10 years to 2003 the average increase was 1.7 % per annum, just 0.2 percentage points above the machinery and equipment average.

[6] Estonia and Malta, 2000; Ireland, 1999; Greece and Luxembourg, not available.

Table 10.6

Selected power machinery products (CPA Group 29.1), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
Marine propulsion compression-ignition internal combustion piston engines (diesel or semi-diesel) (excluding power of > 200 kW but <= 1000 kW)	29.11.13.11, 29.11.13.13 and 29.11.13.19	2001 (1)	1 525.1
Industrial use compression-ignition internal combustion piston engines (diesel or semi-diesel) (excluding power of > 200 kW but <= 300 kW)	29.11.13.31 to 29.11.13.53, 29.11.13.57 to 29.11.13.75	2000	3 705.2
Hydraulic turbines and water wheels; Gas turbines (excluding turbojets and turboprops)	29.11.22.00 and 29.11.23.00	2000	2 295.0
Parts for steam turbines, other vapour turbines and hydraulic turbines and water wheels (including regulators)	29.11.31.00 and 29.11.32.00	2000 (2)	709.5
Ball bearings	29.14.10.30	2001	2 527.3
Iron or steel roller chain of a kind used for cycles and motor cycles; iron or steel articulated link chain	29.14.21.30 and 29.14.21.55	2000 (2)	373.5
Cranks and crankshafts; cardan shafts; other shafts	29.14.22.30 to 29.14.22.55	2000	868.8
Bearing housings, plain shaft bearings	29.14.23.30 and 29.14.23.50	2000	992.1
Gearboxes and other speed changers for machinery and land/sea vehicles excluding gears and gearing	29.14.24.50	2000	2 027.0
Flywheels and pulleys (including pulley blocks)	29.14.25.00	2001	385.8
Clutches and shaft couplings (including universal joints)	29.14.26.30	2001	851.3
Balls, needles and rollers for ball or roller bearings	29.14.31.30	2001	543.8
Parts of transmission, cam & crankshafts, cranks, plain shaft bearings, gears, ball/roller screws, gearboxes, torque converters, flywheels, pulleys, clutches, shaft couplings, universal joints	29.14.33.50	2001	1 870.7

(1) 2000 for one heading in the aggregate.
(2) 1999 for one heading in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

Table 10.7

Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (NACE Group 29.1) 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)
Machinery for the prod. & use of mech. power, excl. transport engines	55.9	133.9	41.7
Manufacture of engines and turbines, except transport engines	65.0	137.8	47.2
Manufacture of pumps and compressors	55.1	133.9	41.1
Manufacture of taps and valves	54.4	137.6	39.6
Manufacture of bearings, gears, gearing and driving elements	53.6	128.5	41.7

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

LABOUR AND PRODUCTIVITY

The apparent labour productivity of power machinery manufacturing in the EU-15 was EUR 55 900 per person employed in 2001 and average personnel costs per employee were EUR 41 700; in both cases these figures were above the machinery and equipment manufacturing averages. The resulting wage adjusted labour productivity ratio was 133.9 %, which was just above the average for machinery and equipment manufacturing. The manufacture of engines and turbines, and of taps and valves (NACE Classes 29.11 and 29.13), both recorded higher wage adjusted labour productivity ratios of 137.8 % and 137.6 % respectively. Lithuania was the only Member State [7] in which the wage adjusted labour productivity in the manufacture of power machinery was less than 100 %, mainly due to a very low value added in the pumps and compressors manufacturing subsector.

[7] Estonia, Ireland, Cyprus and Malta, 2000; Greece, Luxembourg and Slovenia, not available.

EXTERNAL TRADE

In 2002 the EU-25 exported EUR 29.2 billion worth of power machinery (CPA Group 29.1), while in the same year EUR 17.1 billion worth of these products were imported. Among the four CPA classes making up power machinery, a trade surplus was registered for all classes, the highest being for pumps and compressors (CPA Class 29.12). Around one quarter of the EU-25's exports of power machinery were destined for the United States in 2002. Switzerland and China were the next most important destinations, each with a 4.9 % share. In terms of imports of power machinery, 42.0 % of the EU-25's imports came from the United States in 2002 and a further 19.8 % from Japan.

As in the majority of machinery and equipment CPA groups, Germany had the highest intra- and extra-EU external trade surplus for power machinery, followed by Italy. The highest trade deficits were registered for Spain, Poland and Hungary, where deficits were between EUR 1.2 billion and EUR 0.9 billion in 2002.

Table 10.8

Machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (CPA Group 29.1)
External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Machinery for the prod. & use of mech. power, excl. transport engines	29 153	100.0	17 081	100.0	12 072
Engines and turbines except aircraft, vehicle and cycle engines	8 099	27.8	5 522	32.3	2 578
Pumps and compressors	10 147	34.8	5 205	30.5	4 942
Taps and valves	5 924	20.3	2 926	17.1	2 998
Bearings, gears, gearing and driving elements	4 982	17.1	3 429	20.1	1 554

Source: Eurostat, Comext.

10.2: INDUSTRIAL PROCESSING MACHINERY

The manufacture of industrial processing machinery is made up of the manufacture of general purpose machinery, machine-tools, and special purpose machinery, covering NACE Groups 29.2, 29.4 and 29.5.

General purpose machinery (for example, lifting, handling and cooling equipment) are used by a broad range of downstream sectors within mining and quarrying, manufacturing, energy, construction, distribution and transport sectors. Manufacturers of special purpose equipment are on the other hand focused on providing equipment for specific sectors of the economy, generally in mining, manufacturing or construction. A large part of the output of machine-tools manufacturing is used within the various engineering sectors covered in Chapters 10, 11 and 12 of this publication.

STRUCTURAL PROFILE

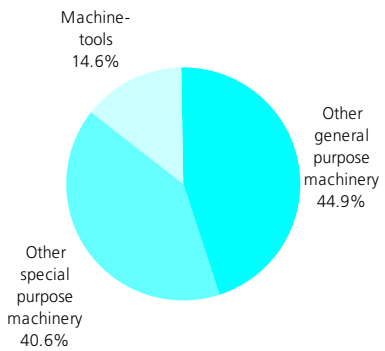
In 2001, the manufacture of industrial processing machinery generated EUR 109.9 million of value added, equivalent to 7.2 % of the manufacturing total and 65.6 % of the machinery and equipment manufacturing total. The contribution of the 10 new Member States to the EU-25 total was 3.4 %, lower than in manufacturing (5.6 %). In the EU-25's manufacture of industrial processing machinery there were 2.4 million persons employed in 2001 [8], of which 2.1 million were found in the EU-15. This sector contributed 7.3 % of EU-15 manufacturing employment and 66.3 % of EU-15 machinery and equipment manufacturing employment.

Among the three NACE groups making up the manufacture of industrial processing machinery, the highest contribution, in value added terms, was made by the other general purpose machinery subsector (NACE Group 29.2) with a 44.9 % share, followed closely by other special purpose machinery (NACE Group 29.5) with a 40.6 % share; the manufacture of machine-tools (NACE Group 29.4) was the smallest of the three subsectors with a 14.6 % share.

[8] Estonia, not available; Latvia and Lithuania, 2000; Slovenia, number of employees.

Figure 10.4

Industrial processing machinery (NACE Groups 29.2, 29.4 and 29.5)
Share of value added at factor cost, EU-25, 2001



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

Germany's share of EU-25 value added in the manufacture of industrial processing machinery was 38.1 % in 2001, more than double the share of Italy (17.5 %) which had the second largest contribution. Germany was the largest manufacturer in each of the three subsectors, most notably in the manufacture of machine-tools where its value added was greater than all of the other 24 Member States collectively.

The manufacture of general purpose machinery was the largest of all manufacturing NACE groups in value added terms in Italy, while it was the fourth largest manufacturing NACE group in Denmark and Sweden. Germany, Sweden and the Czech Republic were highly specialised in the manufacture of machine-tools, as machine-tools accounted for 2.0 % of all manufacturing value added in Germany and 1.6 % in both Sweden and the Czech Republic. Finland, Austria and Germany showed high specialisation in the manufacture of other special purpose machinery [9], which accounted for between 5.0 % and 4.0 % of national manufacturing value added. In Austria, the manufacture of other special purpose machinery was the largest manufacturing group in value added terms, while in Finland and Germany it was the third largest manufacturing group.

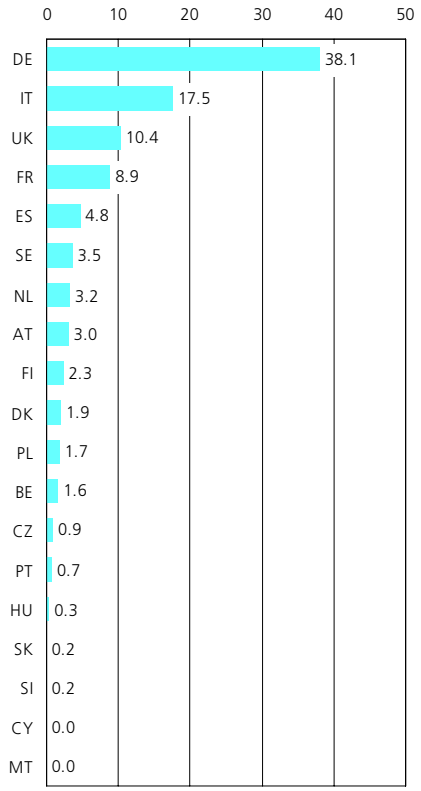
The EU-25 production indices for the three NACE groups that make up the manufacture of industrial processing machinery showed a generally similar progression in the period between 1993 and 2003. A period of growth started in 1994 and continued through until 2001 interrupted in two of the three groups by a contraction in output in 1999. Over this period average growth ranged from 4.6 % per annum for the manufacturing of machine-tools to just over 2.4 % per annum in the two other groups. In 2002 and 2003 the production indices for all three of the NACE groups fell, most strongly in machine-tool manufacturing.

The domestic output price index for each of these three groups followed a very similar course to that of machinery and equipment manufacturing as a whole: all three saw year on year price rises throughout the 1990s and through to 2003.

[9] Greece and Latvia, not available; Ireland, 2000.

Figure 10.5

Industrial processing machinery (NACE Groups 29.2, 29.4 and 29.5) Share of EU-25 value added, 2001 (%) (1)



(1) Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

LABOUR AND PRODUCTIVITY

In the manufacture of industrial processing machinery, apparent labour productivity in the EU-15 was EUR 51 400 per person employed in 2001, and as such it was just below the machinery and equipment manufacturing average (EUR 51 800). Apparent labour productivity was highest in the machine-tools manufacturing subsector (EUR 53 700), and lowest in the manufacture of other general purpose machinery (EUR 50 800). Average personnel costs amounted to 39 500 per employee in the EU-15, the same as the machinery and equipment manufacturing average. Again machine-tool manufacturing recorded the highest level among the three subsectors.

In the manufacture of industrial processing machinery the wage adjusted labour productivity ratio for the EU-15 was 130.2 % in 2001, less than one percentage point below the machinery and equipment manufacturing average, but 13.3 percentage points lower than the total manufacturing average. All three of the subsectors recorded values for this ratio within a close range, the highest being 131.8 % for the manufacture of other general purpose machinery and the lowest being 128.4 % for the manufacture of other special purpose machinery.

Table 10.9

Selected industrial processing machinery (CPA Groups 29.2 and 29.5), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
Self-propelled fork-lift trucks (and similar)	29.22.15.13 to 29.22.15.33	2001 (1)	4 430.0
Pneumatic elevators and conveyors; belt and bucket typed continuous-action elevators and conveyors for goods or materials; roller conveyors for goods or materials	29.22.17.10 to 29.22.17.95	2001 (2)	5 283.6
Lifting machinery (including feeding equipment for blast furnaces, forging manipulators)	29.22.18.70	2001	2 344.3
Refrigerating or freezing equipment (excluding absorption heat pumps)	29.23.13.35 to 29.23.13.73, 29.23.13.90	2001 (1)	5 477.9
Fans (excluding table, floor, wall, window, ceiling or roof fans with a self-contained electric motor of an output <= 125 W)	29.23.20.30 to 29.23.20.70	2001 (2)	2 099.2
Machinery and apparatus for filtering and purifying beverages or water; machinery and apparatus for solid-liquid separation/ purification excluding for water & beverages, centrifuges & centrifugal dryers, oil/petrol-filters for internal combustion engines	29.24.12.30 to 29.24.12.70	2001 (2)	3 420.6
Machinery for packing or wrapping (excluding for filling, closing, sealing, capsuling or labeling bottles, cans, boxes, bags or other containers)	29.24.21.70	1999	3 788.5
Spray guns and similar appliances; steam or sand blasting machines and similar jet-projecting machines (excluding fire extinguishers); other mechanical appliances for projecting, dispersing or spraying	29.24.24.30 to 29.24.24.70	2001	3 025.1
Wheeled loaders, crawler shovel loaders, front-end loaders	29.52.25.50	2001	1 763.1
Self-propelled bulldozers, excavators	29.52.26.00 and 29.52.27.30	2000	4 191.3
Industrial machinery for the preparation or manufacture of food or drink (excluding industrial bakery machinery; industrial machinery for the preparation of fruits, nuts or vegetable (excluding for use in milling or for working dried leguminous vegetables))	29.53.16.15, 29.53.16.50 to 29.53.16.70	2001 (1)	2 722.2
Machinery for making pulp of fibrous cellulosic material; machinery of making or finishing paper or paperboard	29.55.11.13 to 29.55.11.17	2001 (2)	2 557.0
Reel fed letterpress printing machinery; flexographic printing machinery; letterpress printing machinery & other printing machinery including ink-jet printing machines excluding offset printing machinery, reel fed letterpress, flexographic, gravure printing machinery	29.56.14.10, 29.56.14.30 and 29.56.14.90	2001 (3)	1 602.3
Industrial robots for multiple uses (excluding robots designed to perform a specific function (e.g. lifting, handling, loading or unloading))	29.56.25.75	2001	1 753.7

(1) 1999 or 2000 for two or more headings in the aggregate.
(2) 2000 for one or more headings in the aggregate.
(3) 1999 for one heading in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

Table 10.10

Industrial processing machinery (NACE Groups 29.2, 29.4 and 29.5)
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)
Industrial processing machinery	51.4	130.2	39.5
Manufacture of other general purpose machinery	50.8	131.8	38.5
Manufacture of machine-tools	53.7	130.6	41.1
Manufacture of other special purpose machinery	51.4	128.4	40.0

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

EXTERNAL TRADE

EU-25 exports of industrial processing machinery (CPA Groups 29.2, 29.4 and 29.5) were valued at EUR 83.3 billion in 2002, while imports amounted to EUR 32.7 billion. More than half of the EU-25's exports in 2002 were of other special purpose machinery (CPA Group 29.5), while other general purpose machinery (CPA Group 29.2) and machine-tools (CPA Group 29.4) accounted for 34.2 % and 13.0 % respectively. In terms of imports, other special purpose machinery was the largest category with 39.0 % of all imports of industrial processing machinery, only just ahead of other general purpose machinery (36.3 %). For all three product groups the EU-25 recorded a trade surplus in 2002.

The main destinations for the EU-25's exports of industrial processing machinery were the United States, China and Switzerland, receiving together 35.6 % of exports. For all three CPA groups the United States was the largest destination and China the second largest, while for other special purpose machinery Turkey and Russia pushed Switzerland into fifth place, whereas it was the third largest destination for the manufacture of other general purpose machinery and machine tools.

Germany and Italy recorded the highest trade surpluses in 2002 (intra- and extra-EU combined) for industrial processing equipment, while Spain and Poland recorded the highest trade deficits. All of the 10 new Member States recorded trade deficits for each of the three CPA groups within industrial processing equipment, except for the Czech Republic (which recorded a surplus for other general purpose machinery).

Italy, Germany and Sweden showed the highest export specialisation in industrial processing machinery (extra- and intra-EU combined) compared to all manufactured goods. The share of this machinery in exports of manufactured goods was 12.2 % in Italy, 10.0 % in Germany and 9.7 % in Austria, whereas the average for the 25 Member States was 7.0 %.

In 2002, other general purpose machinery was the second largest CPA group of manufactured goods in export terms for Italy. In a similar fashion, other special purpose machinery was the largest CPA group of manufactured goods in export terms for Italy, the second largest for Germany and Austria, and the third largest for Finland. In terms of imports the Czech Republic and Slovakia recorded the highest share of industrial processing machinery imports (extra- and intra-EU combined) in imports of manufactured goods, namely 7.7 % and 7.6 % in 2002. Estonia, Latvia, Poland and Finland also recorded shares higher than 7 %, compared to the average for the 25 Member States of 5.0 %.

Table 10.11

Other general purpose machinery; machine-tools; other special purpose machinery (CPA Groups 29.2, 29.4 and 29.5)
External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Other general and special purpose machinery; machine-tools	83 324	100.0	32 652	100.0	50 672
Other general purpose machinery	28 508	34.2	11 838	36.3	16 670
Machine-tools	10 827	13.0	8 075	24.7	2 753
Other special purpose machinery	43 989	52.8	12 739	39.0	31 250

Source: Eurostat, Comext.

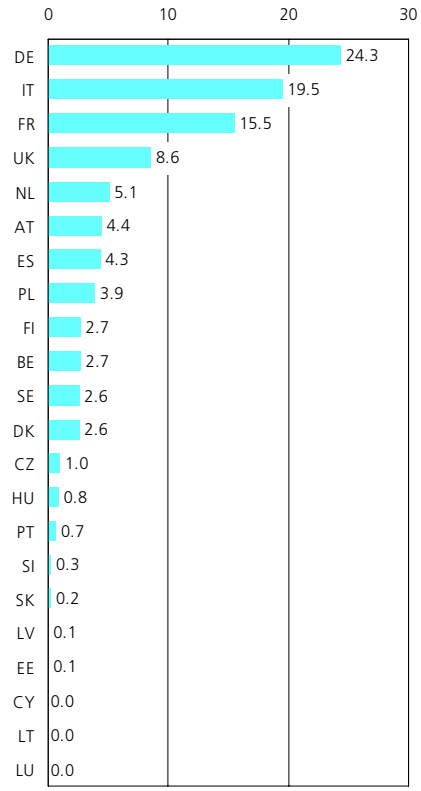
10.3: AGRICULTURAL MACHINES AND TRACTORS

NACE Group 29.3 covers the manufacture of agricultural tractors and other agricultural and forestry machinery. This NACE group does not cover the manufacture of agricultural hand tools.

Improvements in agricultural machinery and tractors have come through greater performance and higher quality, combined with attention for environmental impact. Demand is also influenced by the size of agricultural holdings and the incidence of sharing of equipment: Table 10.12 gives an overview of the number of combine harvesters and tractors used in agriculture in 2000.

Figure 10.6

Manufacture of agricultural and forestry machinery (NACE Group 29.3)
Share of EU-25 value added, 2001 (%) (1)



(1) Greece, Ireland and Malta, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

STRUCTURAL PROFILE

The EU-25 generated a value added of EUR 7.9 billion through the manufacture of agricultural machines and tractors in 2001, equivalent to 0.5 % of manufacturing value added and 4.7 % of machinery and equipment manufacturing value added. The contribution of the 10 new Member States to the EU-25 total in the manufacture of agricultural and forestry machinery was 6.3 %, and as such was a higher proportion than the manufacturing average (5.6 %) and the machinery and equipment manufacturing average (3.8 %).

In employment terms there were an estimated 209 100 persons employed in the EU-25 [10] and 163 400 in the EU-15, which was equivalent to a 0.6 % share of EU-15 manufacturing employment.

In 2001, one fifth (20.5 %) of the value added in the manufacture of agricultural and forestry machinery in the EU-15 was generated by the manufacture of agricultural tractors (NACE Class 29.31), with the manufacture of other agricultural and forestry machinery (NACE Class 29.32) responsible for the rest. The share of the manufacture of agricultural tractors in the sector's employment was even less, at 17.2 %.

[10] Malta, not available; Slovenia, number of employees.

Table 10.12

Main indicators for agricultural use, 2000

	Proportion of tractor using agricultural holdings that exclusively own tractors (%)	Number of combine harvesters belonging exclusively to a farm holding	Number of tractors belonging exclusively to a farm holding	Average size of farm holdings (hectares)
BE	95.3	4 190	92 410	22.6
CZ	:	:	:	:
DK	:	23 460	129 500	45.7
DE	:	:	:	36.3
EE	:	:	:	:
EL	33.8	2 790	218 990	4.4
ES	49.5	23 900	642 910	20.3
FR	71.5	85 300	1 249 600	42.0
IE	64.1	4 470	160 080	31.4
IT	52.6	25 070	1 264 060	6.1
CY	:	:	:	:
LV	:	:	:	:
LT	:	:	:	:
LU	97.7	720	7 260	45.4
HU	:	:	:	:
MT	:	:	:	:
NL	100.0	6 680	149 530	20.0
AT	91.4	13 790	326 580	17.0
PL	:	:	:	:
PT	37.6	4 200	168 500	9.3
SI	99.0	3 120	108 170	5.6
SK	:	:	:	:
FI	82.7	34 010	171 550	27.3
SE	:	35 820	172 130	37.7
UK (1)	:	41 450	486 230	67.7

(1) Number of combine harvesters and tractors belonging exclusively to a farm holding, 1995.
Source: Eurostat, Management and practices (theme5/eurofarm).

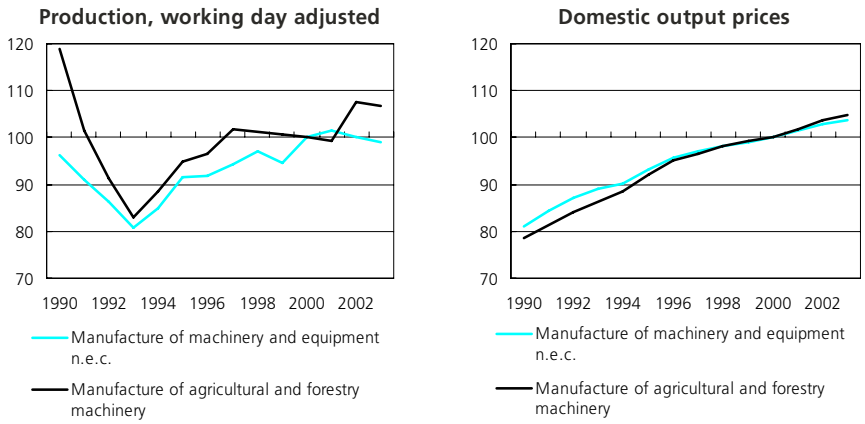
Almost one quarter of the value added in the EU-25's manufacture of agricultural and forestry machinery was generated by Germany (24.3 %) in 2001, and although this was Germany's second lowest share of EU-25 value added among the NACE groups of machinery and equipment manufacturing, it was still larger than that of any other Member State. Austria was highly specialised in the manufacture of agricultural and forestry machinery [11]: as this sector accounted for 1.0 % of manufacturing value added in Austria, double the EU-25 average, ahead of Denmark and Italy (both 0.8 %).

[11] Greece and Malta, not available; Ireland, 2000.

From a low point in 1993, the working day adjusted production index for the manufacture of agricultural and forestry machinery increased until 1997 at an average rate of 5.3 % per annum. Beginning in 1998 a steady but modest contraction in output was recorded for four consecutive years, all less than –1 % and averaging –0.6 % per annum. This period of modest contractions was followed by strong growth of 8.4 % in 2002, before a return to a modest, negative rate of change (–0.9 %) in 2003. The output price index increased steadily throughout the 1990s and through to 2003, in a similar manner to the index for machinery and equipment manufacturing as a whole. In the 10 years to 2003 it increased on average by 2.0 % per annum, half a percentage point above the average for machinery and equipment manufacturing.

Figure 10.7

Manufacture of agricultural and forestry machinery (NACE Group 29.3)
Main indicators, EU-25 (2000=100)



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

Table 10.13

Selected agricultural and forestry machines (CPA Group 29.3), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
New agricultural and forestry tractors, wheeled, of an engine power <= 18 kW (excluding pedestrian-controlled tractors)	29.31.21.30	2001	86.1
New agricultural and forestry tractors, wheeled, of an engine power > 18 kW but <= 37 kW (excluding pedestrian-controlled tractors)	29.31.21.50	2000	148.9
New agricultural and forestry tractors, wheeled, of an engine power > 37 kW but <= 59 kW (excluding pedestrian-controlled tractors)	29.31.22.00	1999	1 116.2
New agricultural and forestry tractors, wheeled, of an engine power > 75 kW but <= 90 kW (excluding pedestrian-controlled tractors)	29.31.23.50	2000	930.3
Distributors for mineral or chemical fertilizer for soil preparation; manure spreaders and fertilizer distributors	29.32.14.30 and 29.32.14.50	2001 (1)	215.0
Agricultural forestry machinery, n.e.c.; lawn or sports-ground rollers	29.32.15.00	2001	459.2
Electric mowers for lawns, parks, golf courses or sports grounds	29.32.20.10	1999	257.6
Mowers designed to be hauled or carried by a tractor, with cutting device rotating in a horizontal plane; Mowers designed to be carried or hauled by a tractor; (excluding those with motors, for lawns, parks, golf courses or sports grounds, those designed to be hauled or carried by a tractor)	29.32.31.53 to 29.32.31.70	2001 (1)	406.6
Turners, side delivery rakes, and tedders; haymaking machinery	29.32.32.30 and 29.32.32.50	2001 (1)	241.4
Pick-up balers	29.32.33.30	2000	292.3
Forage harvesters, self propelled	29.32.34.75	2001	220.6
Sprayers and powder distributors designed to be mounted on or drawn by agricultural tractors (excluding watering appliances)	29.32.40.50	2001	281.1
Machines for cleaning, sorting or grading eggs, fruit or other agricultural produce	29.32.61.00	2001	404.3
Milking machines	29.32.62.00	2001	218.9
Poultry incubators and brooders; poultry-keeping machinery	29.32.63.53 and 29.32.63.55	2000	232.2
Forestry machinery	29.32.65.30	2001	331.7

(1) 2000 for one heading in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

LABOUR AND PRODUCTIVITY

In the EU-15's agricultural and forestry machinery manufacturing sector apparent labour productivity was EUR 45 400 per person employed in 2001, although the small agricultural tractor manufacturing subsector recorded a figure of EUR 54 000 per person employed, which was above the manufacturing average. Only in Italy [12] did the apparent labour productivity for the whole agricultural and forestry machinery manufacturing sector exceed the national manufacturing average.

Average personnel costs amounted to EUR 27 300 per employee in the EU-25's agricultural and forestry machinery manufacturing sector, and EUR 33 300 per employee in the EU-15. In 2001, Belgium, Cyprus (2000), Italy and Portugal were the only Member States [13] where average personnel costs were higher in this sector than their respective manufacturing averages.

The wage adjusted labour productivity ratio for the EU-15's agricultural and forestry machinery manufacturing sector was 136.4 %, and as such this sector had the highest level for this indicator among the seven NACE groups that make up machinery and equipment manufacturing. This ratio was lower in the agricultural tractors manufacturing subsector at 132.1 %, but this was still above the machinery and equipment manufacturing average.

[12] Greece, Malta and Slovenia, not available; Ireland, 2000.
[13] Greece, not available, Ireland, 2000.

EXTERNAL TRADE

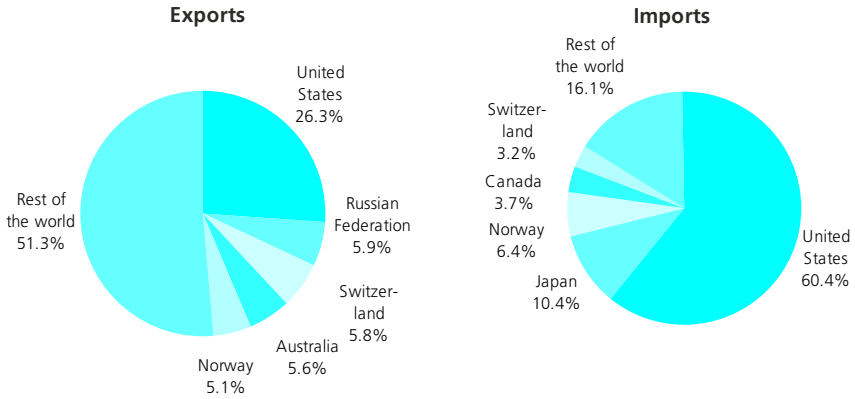
In 2002, the EU-25 exported EUR 4.5 billion of agricultural and forestry machinery (CPA Group 29.3), while it imported EUR 1.6 billion of this machinery. Other agricultural and forestry machinery (CPA Class 29.32) accounted for 58.2 % of these exports and 66.6 % of total imports.

More than one quarter (26.3 %) of the EU-25's exports of agricultural and forestry machinery were destined for the United States in 2002, while a group of six countries (Russia, Switzerland, Australia, Norway, Japan and Canada) each accounted for between 4.5 % and 6.0 % of the EU-25's exports. The United States was the origin of 60.4 % of the EU-25's imports of agricultural and forestry machinery, the fourth highest proportion for the United States among all of the CPA groups of manufactured goods.

Germany and Italy had the highest (intra- and extra- EU combined) external trade surplus among the Member States, valued in 2002 at EUR 2.3 billion and EUR 2.1 billion. In contrast, France reported the highest deficit, at EUR 882.7 million.

Italy and Finland both reported a 1.0 % share for agricultural and forestry machinery in exports of manufactured goods (intra- and extra- EU combined), the highest share among the Member States, compared with an average for the 25 Member States of 0.6 %. In Latvia, Denmark and Estonia agricultural and forestry machinery accounted for around 1 % of all imports of manufactured goods, approximately double the average for the 25 Member States.

Figure 10.8
Agricultural and forestry machinery (CPA Group 29.3)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

10.4: DOMESTIC APPLIANCES

The activities of NACE Group 29.7 cover the manufacture of domestic electrical appliances (such as white goods and vacuum cleaners), heating appliances, and non-electric domestic cooking equipment.

Among the activities covered by the machinery and equipment manufacturing sector, the manufacture of domestic appliances n.e.c. (NACE Group 29.7) is the only one for which households are the main customers.

STRUCTURAL PROFILE

Manufacturers of domestic appliances in the EU-25 generated EUR 12.4 billion value added in 2001, equivalent to 0.8 % of the manufacturing total and 7.4 % of the machinery and equipment manufacturing total. The contribution of the 10 new Member States to the EU-25's value added in this sector (5.4 %) was close to the manufacturing average (5.6 %). There were 293 000 persons employed in the EU-25's domestic appliances sector [14] and 242 200 in the EU-15, which was equivalent to 0.9 % of total EU-15 manufacturing employment.

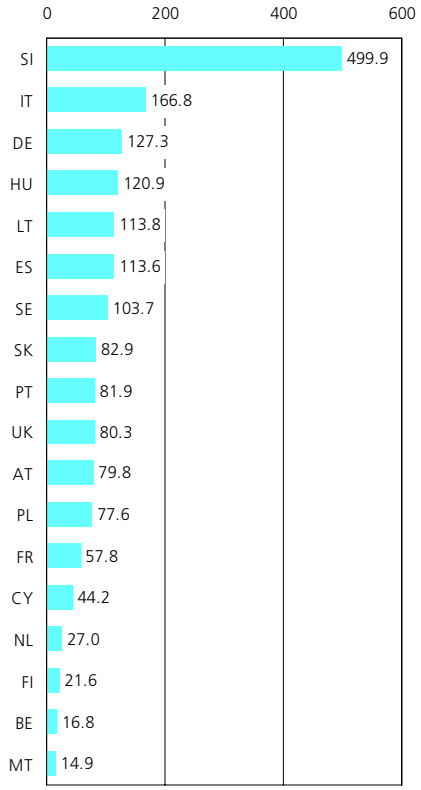
Electric domestic appliances manufacturing (NACE Class 29.71) dominated this sector with an 88.4 % share of value added and an 87.1 % share of persons employed in the EU-15, with non-electric domestic appliances manufacturing (NACE Class 29.72) the smaller of the two subsectors.

Germany accounted for 34.2 % of the EU-25's value added, followed by Italy and the United Kingdom with 22.0 % and 12.0 % respectively. Slovenia generated 4.0 % of its manufacturing value added in this sector in 2001, the highest share of any of the Member States [15], more than double the share of the next most specialised country (Italy, 1.3 %). This was the second most specialised manufacturing NACE group in Slovenia.

[14] Estonia, not available; Latvia, 2002; Slovenia, number of employees.
[15] The Czech Republic and Ireland, 2000; Latvia, 1999; Denmark, Estonia, Greece and Luxembourg, not available.

Figure 10.9

Manufacture of domestic appliances n.e.c. (NACE Group 29.7)
Value added specialisation ratio relative to total manufacturing, 2001 (EU-25=100) (1)



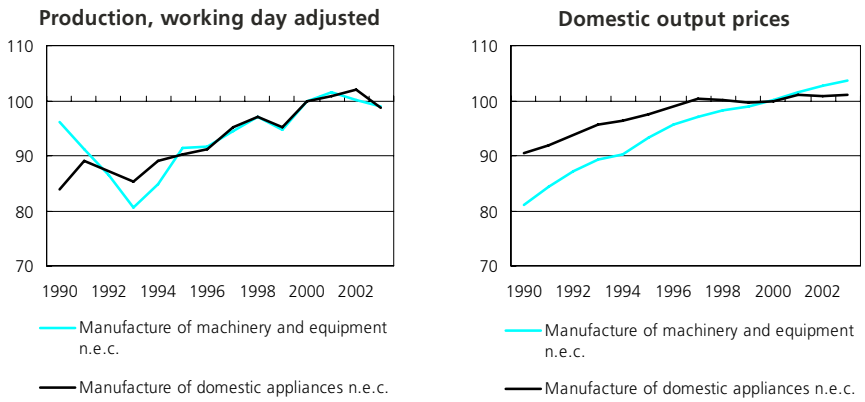
(1) The Czech Republic, Denmark, Estonia, Greece, Ireland, Latvia and Luxembourg, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

The development of the EU-25 working day adjusted production index for domestic appliances manufacturing differed from that for machinery and equipment manufacturing. The decline in output prior to 1993 was shorter and less severe, and the recovery in 1994 and 1995 was less strong. From the mid-1990s until 2001 the development of the production index for domestic appliances manufacturing followed fairly closely that of machinery and equipment manufacturing as a whole. However, while output for machinery and equipment manufacturing contracted (–1.3 %) in 2002, it continued to expand (1.1 %) for the manufacture of domestic appliances. In 2003 however, a stronger contraction (–3.0 %) was experienced in domestic appliance manufacturing.

Domestic output prices for domestic appliance manufacturing grew on average between 1993 and 2003 by 0.6 % per annum, considerably less strongly than the machinery and equipment manufacturing average of 1.5 %. Between 1997 and 2000 there was very little change in prices, and in two of these three years the output price index fell slightly. A fall in the index was also recorded in 2002.

Figure 10.10

Manufacture of domestic appliances n.e.c. (NACE Group 29.7)
Main indicators, EU-25 (2000=100)



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

Table 10.14

Selected domestic appliances (CPA Group 29.7), EU-15

	Prodcom code	Latest year for production	Production value (EUR million)
Combined refrigerators-freezers, with separate external doors	29.71.11.10	2000	1 114.4
Household-type refrigerators (including compression-type, electrical absorption-type) (excluding built-in)	29.71.11.33	2000	1 587.6
Household dishwashing machines	29.71.12.00	2000	2 122.4
Fully-automatic washing machines of a dry linen capacity <= 10 kg (including machines which both wash and dry)	29.71.13.30	2000	4 247.2
Domestic vacuum cleaners with a self-contained electric motor for a voltage >= 110 V	29.71.21.13	2000	1 426.4
Domestic microwave ovens	29.71.27.00	2000	848.8
Domestic electric cookers (including combines gas-electric appliances), hobs cooking-plates and ovens	29.71.28.10 to 29.71.28.35, 29.71.28.70 and 29.71.28.90	2000 (1)	3 731.1
Non-electric instantaneous or storage water heaters	29.72.14.00	2000	1 123.8

(1) 2000 for one heading in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

LABOUR AND PRODUCTIVITY

In domestic appliances manufacturing apparent labour productivity in 2001 was EUR 48 300 per person employed in the EU-15, and as such below the manufacturing average (EUR 51 200). This ratio was lower in the manufacture of non-electrical domestic appliances, where it was EUR 43 300. Average personnel costs in the domestic appliances manufacturing sector were identical with those in manufacturing, namely EUR 35 700 per employee, and hence below the average for machinery and equipment manufacturing. Again the non-electrical part of domestic appliance manufacturing recorded lower levels for this indicator. The low average personnel costs resulted in a wage adjusted labour productivity ratio (135.4 %) that was higher than the average for machinery and equipment manufacturing (131.1 %).

EXTERNAL TRADE

EU-25 exports of domestic appliances (CPA Group 29.7) were valued at EUR 6.9 billion in 2002, some EUR 1.3 billion more than imports. The vast majority (90.1 %) of the EU-25's exports were composed of electric domestic appliances (CPA Class 29.71), as was the case for imports (91.7 %).

As with most CPA groups of manufactured goods, the United States was the main destination for EU-25 exports of domestic appliances, with a 19.4 % share in 2002. This was however less than the United States average for manufactured goods (27.3 %). The destinations for the EU-25's exports of these goods were widespread, as no other country registered a share exceeding 10 %.

China was the main origin of EU-25 imports, supplying close to half (49.3 %) of the total in 2002. This was the fourth highest proportion of EU-25 imports supplied by China among the CPA groups of manufactured goods. Turkey (10.5 %), South Korea (9.7 %) and the United States (7.8 %) were the next most important sources of imports.

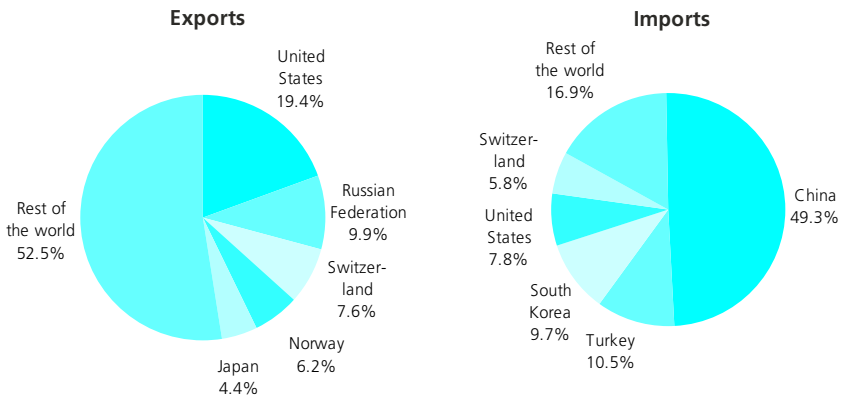
Italy registered by far the highest external trade surplus (intra- and extra-EU combined) in domestic appliances in 2002, valued at EUR 5.6 billion. Germany had the next highest surplus, with less than half of this value (EUR 2.4 billion). Only four other Member States reported a surplus in domestic appliances, with the largest deficits recorded by the United Kingdom (EUR –2.7 billion) and France (EUR –1.2 billion).

Unsurprisingly, Slovenia was the most specialised in the export of domestic appliances. As a proportion of its exports of all manufactured goods, domestic appliances accounted for 6.6 %, the third highest share of any CPA group of manufactured goods in this country in 2002. Italy registered the next highest share of domestic appliances in exports of manufactured goods (2.7 %).

In Cyprus, Finland, Greece and Latvia, domestic appliances represented between 1.6 % and 1.5 % of total imports of manufactured goods, the highest shares among the Member States.

Figure 10.11

Domestic appliances n.e.c. (CPA Group 29.7)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

Table 10.15

Manufacture of machinery for the production and use of mechanical power, except aircraft, vehicle and cycle engines (NACE Group 29.1)
Main indicators, 2001

	BE	CZ	DK	DE	EE (1)	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	2 075	814	2 635	32 848	3	:	2 832	11 275	391	17 030	14	31	23	:
Value added at factor cost (EUR million) (2)	703	260	1 153	13 984	2	:	971	3 792	157	5 036	4	11	7	:
Purchases of goods and services (EUR million)	1 535	725	0	22 412	2	:	2 135	8 724	239	12 752	11	22	15	:
Gross investment in tangible goods (EUR million)	65	76	136	1 472	0	:	117	484	26	783	1	2	2	:
Number of persons employed (thousands)	8	25	22	238	0	:	22	73	3	97	0	2	3	:
App. labour productivity (EUR thous./pers. emp.) (2)	92.4	10.6	52.5	58.8	5.6	:	44.5	52.2	56.9	52.1	24.2	7.0	2.3	:
Average personnel costs (EUR thous./employee) (3)	49.9	7.7	37.9	46.8	4.4	:	29.5	39.0	32.7	33.8	17.0	3.6	5.6	:
Wage adjusted labour productivity (%) (3)	185.2	137.7	138.5	125.5	126.4	:	150.8	133.9	173.9	154.4	144.8	195.0	41.5	:
Gross operating rate (%) (2)	14.7	7.8	11.9	8.0	9.5	:	11.1	7.7	19.1	11.2	10.4	18.5	-40.4	:

	HU	MT (1)	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	274	9	2 747	1 067	1 154	271	99	382	2 004	2 833	10 921	151	441	:
Value added at factor cost (EUR million)	94	4	886	513	736	90	31	135	539	1 085	4 132	49	188	:
Purchases of goods and services (EUR million)	226	4	2 087	676	614	196	69	268	1 587	2 265	7 481	112	330	:
Gross investment in tangible goods (EUR million)	22	0	57	65	61	20	14	57	52	97	440	12	38	:
Number of persons employed (thousands)	9	0	16	8	30	4	:	13	9	18	74	12	40	:
App. labour productivity (EUR thous./pers. emp.)	11.0	25.4	55.4	64.1	24.3	25.6	:	10.3	59.0	59.6	55.6	3.9	4.7	:
Average personnel costs (EUR thous./employee)	8.1	11.1	39.7	42.0	9.5	15.1	13.6	5.1	40.9	42.7	44.2	3.1	3.2	:
Wage adjusted labour productivity (%)	135.7	229.9	139.4	152.8	255.8	169.0	:	201.6	144.2	139.5	125.8	127.7	147.6	:
Gross operating rate (%)	7.9	32.7	9.4	15.2	34.4	13.5	5.0	17.4	8.2	9.7	7.8	9.1	15.1	:

(1) 2000.
(2) Ireland, 2000.
(3) Ireland and Cyprus, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 10.16

Manufacture of industrial processing machinery (NACE Groups 29.2, 29.4 and 29.5)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV (1)	LT	LU
Production (EUR million)	5 530	3 254	5 560	109 269	:	:	13 993	30 170	1 012	61 442	37	58	:	:
Value added at factor cost (EUR million) (2)	1 727	1 025	2 103	41 898	:	:	5 255	9 779	414	19 292	15	27	:	:
Purchases of goods and services (EUR million)	4 368	2 367	0	71 468	:	:	9 542	22 816	721	44 349	26	33	:	:
Gross investment in tangible goods (EUR million)	208	184	193	3 180	:	:	500	750	31	1 768	3	4	:	:
Number of persons employed (thousands)	31	102	41	750	:	:	133	199	8	404	1	4	:	:
App. labour productivity (EUR thous./pers. emp.) (2)	56.0	10.0	51.2	55.9	:	:	39.5	49.1	49.7	47.8	25.3	6.4	:	:
Average personnel costs (EUR thous./employee) (3)	43.6	7.5	40.8	45.9	:	:	28.8	39.6	28.4	32.4	14.8	3.5	:	:
Wage adjusted labour productivity (%) (3)	128.6	133.8	125.5	121.8	:	:	137.2	124.1	175.3	147.4	148.6	185.7	:	:
Gross operating rate (%) (2)	7.2	8.9	8.1	7.0	:	:	11.3	6.0	16.4	12.7	13.9	22.1	:	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	919	26	10 846	8 624	3 501	1 939	533	569	7 989	11 317	28 619	305	639	:
Value added at factor cost (EUR million)	351	11	3 551	3 340	1 900	757	166	183	2 550	3 893	11 394	84	270	:
Purchases of goods and services (EUR million)	794	14	8 402	5 803	1 783	1 251	387	414	5 634	8 503	18 908	252	479	:
Gross investment in tangible goods (EUR million) (4)	67	1	419	329	154	168	31	48	139	359	811	24	43	:
Number of persons employed (thousands)	32	0	68	57	124	33	:	29	45	69	220	34	70	:
App. labour productivity (EUR thous./pers. emp.)	10.9	33.7	52.4	58.8	15.3	22.6	:	6.4	56.5	56.3	51.7	2.4	3.9	:
Average personnel costs (EUR thous./employee)	7.6	13.5	40.2	42.4	8.2	16.1	13.8	5.2	40.6	41.8	37.0	2.2	2.7	:
Wage adjusted labour productivity (%)	142.8	248.7	130.3	138.8	186.6	141.0	:	122.0	139.2	134.7	139.8	111.9	140.8	:
Gross operating rate (%)	9.5	26.6	7.7	10.7	25.1	12.2	5.0	5.6	9.2	8.7	11.3	3.8	12.8	:

(1) 2000.
(2) Ireland, 2000.
(3) Ireland and Cyprus, 2000.
(4) The Netherlands, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 10.17

Manufacture of agricultural and forestry machinery (NACE Group 29.3)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million) (1)	710	190	587	6 991	21	:	1 005	3 751	92	6 238	7	13	8	1
Value added at factor cost (EUR million) (2)	216	75	206	1 927	7	:	344	1 225	29	1 546	3	8	3	0
Purchases of goods and services (EUR million)	664	169	0	5 516	24	:	926	4 300	67	5 237	4	7	5	0
Gross investment in tangible goods (EUR million)	21	17	29	149	1	:	39	115	3	199	0	2	0	:
Number of persons employed (thousands)	4	11	5	39	1	:	11	30	1	34	0	1	1	0
App. labour productivity (EUR thous./pers. emp.) (2)	57.3	6.8	41.1	48.9	7.3	:	31.0	40.3	36.9	46.0	22.5	7.0	2.8	18.0
Average personnel costs (EUR thous./employee) (3)	47.6	6.1	34.6	38.6	4.7	:	21.8	31.6	24.7	29.9	17.6	2.7	2.6	36.3
Wage adjusted labour productivity (%) (3)	120.5	111.3	118.7	126.6	156.8	:	142.6	127.4	149.5	153.9	108.8	259.0	109.5	49.5
Gross operating rate (%) (4)	6.6	4.7	7.1	6.9	8.9	:	10.0	6.2	10.3	11.2	17.2	38.9	3.6	3.4

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	252	:	1 358	1 055	651	127	65	47	792	646	2 760	19	123	:
Value added at factor cost (EUR million)	65	:	406	348	308	53	20	14	218	208	681	7	35	:
Purchases of goods and services (EUR million)	204	:	1 069	863	440	88	51	43	698	637	2 758	17	98	:
Gross investment in tangible goods (EUR million)	25	:	34	47	25	7	2	3	18	17	93	3	5	:
Number of persons employed (thousands)	7	:	8	7	19	3	:	3	4	4	12	3	14	:
App. labour productivity (EUR thous./pers. emp.)	8.8	:	50.2	50.6	16.0	17.7	:	4.1	51.2	49.9	54.8	1.9	2.5	:
Average personnel costs (EUR thous./employee)	6.8	:	34.7	35.3	6.8	13.2	11.3	5.0	35.2	39.0	36.8	1.8	2.3	:
Wage adjusted labour productivity (%)	129.6	:	144.6	143.1	235.3	133.8	:	82.0	145.5	127.8	148.7	105.7	107.1	:
Gross operating rate (%) (4)	5.6	:	9.2	9.7	27.9	11.4	3.0	-5.0	8.6	6.9	7.3	2.8	-0.1	:

(1) The Czech Republic, 2000.
(2) Ireland, 2000.
(3) Ireland and Cyprus, 2000.
(4) Ireland and Romania, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 10.18

Manufacture of domestic appliances n.e.c. (NACE Group 29.7)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV (1)	LT	LU
Production (EUR million)	159	266	:	11 058	:	:	3 323	3 609	304	10 934	8	0	60	:
Value added at factor cost (EUR million) (2)	60	70	:	4 225	:	:	952	963	101	2 723	3	0	13	:
Purchases of goods and services (EUR million)	149	215	:	9 476	:	:	2 818	3 920	171	8 580	5	0	48	:
Gross investment in tangible goods (EUR million)	4	15	:	408	:	:	168	140	20	422	0	0	4	:
Number of persons employed (thousands)	1	8	:	69	:	:	23	25	3	59	0	0	2	:
App. labour productivity (EUR thous./pers. emp.) (2)	43.6	8.1	:	61.3	:	:	40.7	39.1	39.8	46.1	20.1	1.1	5.4	:
Average personnel costs (EUR thous./employee) (3)	33.9	6.3	:	47.8	:	:	28.6	30.5	23.8	30.7	13.9	1.0	4.5	:
Wage adjusted labour productivity (%) (4)	128.7	144.9	:	128.3	:	:	142.7	128.3	167.4	150.2	127.0	107.0	120.4	:
Gross operating rate (%) (5)	7.8	8.0	:	6.9	:	:	7.8	4.4	16.5	8.5	13.3	24.7	3.7	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	485	4	348	560	699	443	799	196	159	1 145	4 116	36	167	:
Value added at factor cost (EUR million)	113	1	118	230	282	118	162	26	54	348	1 480	6	58	:
Purchases of goods and services (EUR million)	450	3	252	370	610	401	634	186	111	1 073	2 992	33	138	:
Gross investment in tangible goods (EUR million) (6)	22	0	7	28	51	22	80	7	2	28	178	4	28	:
Number of persons employed (thousands)	10	0	2	4	15	4	:	4	1	9	34	3	11	:
App. labour productivity (EUR thous./pers. emp.)	10.9	22.1	50.4	51.9	18.2	26.4	:	6.4	42.2	38.9	43.9	1.9	5.5	:
Average personnel costs (EUR thous./employee)	6.6	10.7	32.7	36.9	8.5	14.9	13.2	4.8	30.2	36.8	32.6	1.9	2.5	:
Wage adjusted labour productivity (%)	164.7	205.4	154.0	140.9	214.5	177.1	:	133.5	139.5	105.6	134.4	99.5	217.9	:
Gross operating rate (%) (5)	7.9	11.7	10.9	11.4	18.6	9.9	3.4	3.1	9.6	1.4	8.7	0.4	12.6	:

(1) 1999.
(2) The Czech Republic and Ireland, 2000.
(3) Ireland and Cyprus, 2000.
(4) The Czech Republic, Ireland and Cyprus, 2000.
(5) Ireland and Romania, 2000.
(6) The United Kingdom, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Electrical machinery and optical equipment

This chapter covers NACE Divisions 30 to 33, collectively referred to as the manufacture of electrical machinery and optical equipment. These activities include the manufacture of computers, office machinery, electrical machinery and equipment, electronic components, audiovisual and communication equipment, and medical, precision and optical equipment.

NACE

30: manufacture of office machinery and computers;
31: manufacture of electrical machinery and apparatus n.e.c.;
31.1: manufacture of electric motors, generators and transformers;
31.2: manufacture of electricity distribution and control apparatus;
31.3: manufacture of insulated wire and cable;
31.4: manufacture of accumulators, primary cells and primary batteries;
31.5: manufacture of lighting equipment and electric lamps;
31.6: manufacture of electrical equipment n.e.c.;
32: manufacture of radio, television and communication equipment and apparatus;
32.1: manufacture of electronic valves and tubes and other electronic components;
32.2: manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy;
32.3: manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods;
33: manufacture of medical, precision and optical instruments, watches and clocks;
33.1: manufacture of medical and surgical equipment and orthopaedic appliances;
33.2: manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment;
33.3: manufacture of industrial process control equipment;
33.4: manufacture of optical instruments, photographic equipment;
33.5: manufacture of watches and clocks.

This sector covers a large and diverse range of activities, from the manufacture of very specialised capital machinery and equipment (for example, precision instruments, computers, transmission equipment), through intermediate goods (for example, electronic components and batteries) to consumer goods (for instance, televisions, telephones, cameras and watches). Thus, several of the activities covered in this chapter are interconnected; for instance, the electronic components sector provides a vital input to other sectors. Competition in this sector comes mainly from South-East Asia. Furthermore, decreasing margins for goods with high equipment rates in households oblige enterprises to continuously launch new products, with new designs often based on new technology. Examples include the recent developments in markets for digital cameras and flat-panel TVs.

In August 2003, the European Commission approved a proposal for a directive on the eco-design of energy-using products [1], such as electrical and electronic devices or heating equipment. The aim of the directive is to facilitate the free movement of goods and to enhance product quality and environmental protection. Progress has also been made on a Commission proposal for a directive [2] to harmonise Member States rules on measuring instruments, such as water, gas, and electricity meters, petrol pumps, taxi meters, and exhaust gas meters.

[1] COM(2003) 453.
[2] COM(2000) 566.

STRUCTURAL PROFILE

In 2001, value added in the EU-25's electrical machinery and optical equipment sector (NACE Subsection DL) was EUR 182.4 billion, or 11.9 % of the manufacturing total, the third highest contribution of all NACE subsections to the manufacturing total. The number of persons employed [3] in the electrical machinery and optical equipment sector was 3.9 million in the EU-25 (again in 2001). In the EU-15, the electrical machinery and optical equipment sector contributed around 11.6 % of all manufacturing employment, slightly less than its share of value added.

[3] Slovenia, number of employees.

Table 11.1

Manufacture of electrical and optical equipment (NACE Subsection DL)
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 (55.4)	Malta (259)	Germany (1 052.2)	United States (50.1)	United States (38.9)
2	France (27.8)	Finland (230)	France (518.9)	China (33.9)	Switzerland (10.7)
3	United Kingdom (25.4)	Ireland (210)	United Kingdom (474.5)	Japan (28.4)	Japan (7.8)
4	Italy (19.2)	Hungary (132)	Italy (453.2)	Taiwan (15.6)	China (7.6)
5	Finland (8.5)	Germany (113)	Czech Republic (185.1)	Malaysia (10.8)	Russian Federation (6.0)

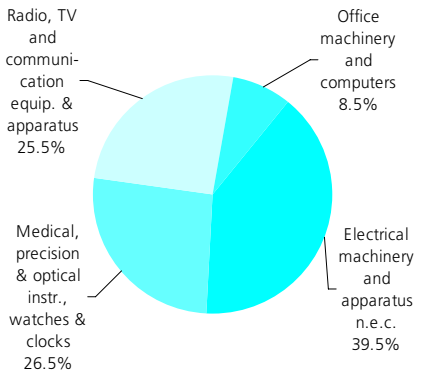
(1) Slovenia, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Among the four NACE divisions that compose this sector, the manufacture of electrical machinery and apparatus (NACE Division 31) was the largest, with 39.5 % of sectoral value added in the EU-25 and 42.2 % of employment in the EU-15. Optical and instrument engineering (NACE Division 33) generated 26.5 % of the sector's value added in the EU-25, just ahead of the manufacture of radio, television and communication equipment (NACE Division 32, 25.5 %). The smallest contribution came from the manufacture of office machinery and computers (NACE Division 30), which generated 8.5 % of the sector's value added.

In 2001, Germany generated EUR 55.4 billion of value added in the electrical machinery and optical equipment sector, the largest value among the Member States and roughly twice as much as in France (EUR 27.8 billion), where the second highest level of output was registered. Output in the electrical machinery and optical equipment sector was relatively high in Germany and France (compared with the EU-25 average), although Malta, Finland, Ireland, and to a lesser extent Hungary, were the most highly specialised countries in these activities; the least specialised Member States for the manufacture of electrical machinery and optical equipment were Cyprus, Latvia, Luxembourg and Greece. In Malta, Poland and Finland, the manufacture of electrical machinery and optical equipment was the largest of all manufacturing NACE subsections in value added terms.

Figure 11.1

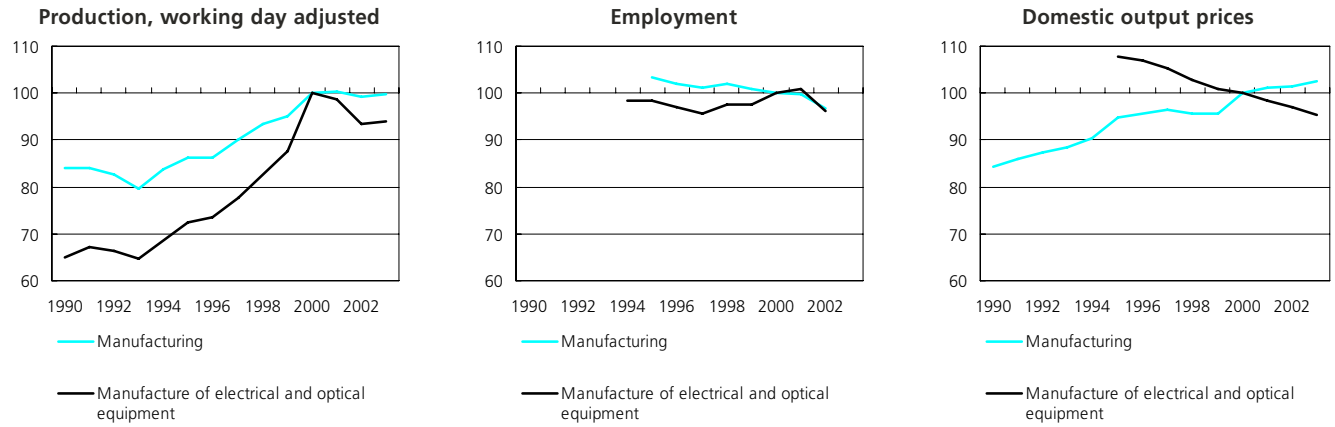
Manufacture of electrical and optical equipment (NACE Subsection DL)
Share of value added at factor cost, EU-25, 2001



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

Figure 11.2

Manufacture of electrical and optical equipment (NACE Subsection DL)
Main indicators, EU-25 (2000=100)



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

Table 11.2

Manufacture of electrical and optical equipment (NACE Subsection DL)
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	5.9	:	11.8	:	18.3	:	63.9	:
EU-15	6.0	9.0	11.9	15.4	18.2	19.9	63.9	55.7

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

The electrical machinery and optical equipment sector had a relatively high number of large enterprises (with 250 and more persons employed). Large enterprises generated close to two thirds (63.9 %) of the total value added in the EU-25's electrical machinery and optical equipment sector, which was 9.1 percentage points more than for the whole of manufacturing. Micro (less than 10 persons employed), small (10 to 49 persons employed) and medium-sized enterprises (from 50 to 249 persons employed) each generated lower shares of total value added in electrical machinery and optical equipment sector than they did for the whole of the manufacturing sector. This situation was repeated for three of the four NACE divisions that make up the electrical machinery and optical equipment sector, the exception being optical and instrument engineering (NACE Division 33), where SMEs had a higher than average share of total value added.

Annual short-term statistics show that the evolution of output within the electrical machinery and optical equipment sector grew at a faster pace than the manufacturing average between 1993 and 2000, only to contract at a quicker pace thereafter. The level of production grew at an average rate of 6.4 % per annum in EU-25 electrical machinery and optical equipment manufacturing between 1993 and 2000, compared with a 3.3 % average for manufacturing as a whole. In 2001 however, while the production index for manufacturing was relatively unchanged (0.2 % growth) compared with the year before, electrical machinery and optical equipment manufacturing output contracted by 1.4 %. This was followed in 2002 by a fall of 5.3 %, compared with a reduction of 0.9 % for the whole of the manufacturing sector. There were modest signs of a recovery in 2003, as the production index rose by 0.7 % within electrical machinery and optical equipment manufacturing, compared with growth of 0.6 % for manufacturing as a whole.

The output price index for electrical machinery and optical equipment manufacturing fell every year between 1996 (the beginning of the series) and 2003 in the EU-25, by 1.5 % per annum on average. Over the same period, no other NACE subsection recorded a negative price evolution. Among the activities that compose electrical machinery and optical equipment manufacturing, two different pictures emerge in terms of price developments. The computer and office machinery (NACE Division 30) and the radio, television and communication manufacturing sector (NACE Division 32) both reported uninterrupted falling prices over the period considered, averaging 9.0 % and 3.5 % per annum respectively. The two other NACE divisions, electrical machinery and apparatus (NACE Division 31) and optical and instrument engineering (NACE Division 33) recorded modest price increases for most years, averaging 0.4 % and 1.0 % per annum respectively.

Unlike the production index, where growth was experienced from 1994 onwards, the employment index did not show any signs of expansion in this activity until 1998, when it grew by 2.0 % in the EU-25. There was no significant change in 1999 (-0.1 %), while 2000 (2.5 %) and 2001 (1.0 %) continued the general upward trend. However, a 4.7 % reduction in the number of persons employed in 2002 brought employment levels back down to only just above their 1997 level. Employment growth in electrical machinery and optical equipment manufacturing between 1997 and 2001, which averaged 1.3 % per annum, was in contrast to the overall picture for manufacturing in the EU-25, where there was only one year of employment growth during the period considered, while the number of persons employed fell, on average, by 0.4 % per annum.

LABOUR AND PRODUCTIVITY

Employment characteristics for electrical machinery and optical equipment manufacturing tended to be rather similar to those observed for manufacturing as a whole. Indeed, according to LFS data, in 2002, men represented 68.8 % of the persons employed in the EU-15 in this sector, just 2.9 percentage points less than the proportion observed in manufacturing (71.7 %). Among the Member States [4], the proportion of men employed in this sector in Greece was more than 10 percentage points above the national average for manufacturing, while the opposite situation was observed in the Czech Republic, Ireland, Malta, Portugal, Slovenia and Slovakia. Among the four NACE divisions that compose electrical machinery and optical equipment manufacturing, male employment rates were rather similar.

In the EU-15, 92.9 % of the persons employed in the electrical machinery and optical equipment sector worked full-time in 2002, a rate that was close to the manufacturing average (92.4 %). Again there was little difference between full-time employment rates recorded in the four NACE divisions that make up this sector.

A somewhat higher proportion of employees made up the electrical machinery and optical equipment workforce in 2002 (94.5 %) than the EU-15 manufacturing average (91.9 %). This pattern was repeated in every Member State [5], except for Italy. Optical and instrument engineering had a notably lower proportion of paid employees (90.8 %), while the three other NACE divisions within this sector recorded paid employee rates of between 95 and 97 %.

[4] Estonia, Cyprus, Latvia, Luxembourg and Poland, not available.
[5] Cyprus, Latvia and Poland, not available.

Table 11.3

Manufacture of electrical and optical equipment (NACE Subsection DL)
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	68.8	95.9	92.9	100.6	94.5	102.9
BE	69.4	93.3	87.6	96.2	97.8	103.2
CZ	50.2	81.5	98.3	100.8	95.3	102.9
DK	62.2	90.9	96.8	104.4	96.9	100.4
DE	68.6	95.6	90.2	100.5	96.0	100.7
EE	:	:	96.1	99.4	100.0	103.5
EL	81.2	114.5	97.8	99.8	74.9	102.2
ES	70.9	95.4	97.5	100.6	92.0	104.1
FR	66.0	93.3	94.4	100.0	97.7	103.0
IE	58.4	84.4	95.6	101.9	96.8	105.3
IT	69.3	99.6	95.2	100.5	81.0	97.9
CY	:	:	100.0	107.1	:	:
LV	:	:	:	:	:	:
LT	51.3	100.5	96.9	102.1	100.0	103.8
LU	:	:	97.6	102.1	100.0	101.7
HU	51.6	86.5	99.0	101.4	96.7	103.6
MT	53.8	76.9	99.1	102.6	99.1	106.4
NL	77.1	100.0	79.9	106.5	96.6	100.5
AT	69.0	92.8	:	:	97.1	102.0
PL	:	:	:	:	:	:
PT	45.2	80.6	99.5	102.5	98.1	112.5
SI	50.2	83.1	96.3	99.6	97.6	104.0
SK	42.6	71.9	99.5	100.8	98.5	102.5
FI	64.5	91.8	96.2	100.8	99.0	105.9
SE	64.4	87.1	94.8	103.4	98.0	104.2
UK	73.4	98.1	95.0	103.0	97.3	102.3

Source: Eurostat, Labour Force Survey.

Apparent labour productivity was EUR 52 900 per person employed in the EU-15's electrical machinery and optical equipment sector in 2001 (EUR 1 700 above the manufacturing average), which was the fifth highest of the 14 manufacturing subsections. Among the four NACE divisions that compose the electrical machinery and optical equipment sector, the manufacture of office machinery and computers (NACE Division 30) had clearly the highest level of apparent labour productivity (EUR 76 100 per person employed), while the other three divisions recorded levels that were closer to EUR 50 000 per person employed.

Average personnel costs in the electrical machinery and optical equipment sector were EUR 36 300 per employee in the EU-25 in 2001 (EUR 41 500 in the EU-15), which was EUR 5 400 above the EU-25 manufacturing average, and as such the fourth highest average personnel costs across all manufacturing subsections.

The wage adjusted labour productivity ratio shows that value added was equivalent to 127.5 % of personnel costs in EU-15's electrical machinery and optical equipment manufacturing sector in 2001. This was the lowest value recorded for all manufacturing subsections, while the overall manufacturing average was 143.5 %. However, office machinery and computer manufacturing, as well as optical and instrument engineering, had wage adjusted labour productivity ratios that were close to the manufacturing average.

Among the Member States [6], the wage adjusted labour productivity ratio was high in the electrical machinery and optical equipment sector in Finland and Malta, considerably above national manufacturing averages. Poland and Latvia also recorded high wage adjusted labour productivity in this sector, although the ratios for both of these countries were more in line with the manufacturing averages of both countries.

[6] Greece, Ireland and Slovenia, not available.

Table 11.4

Manufacture of electrical and optical equipment (NACE Subsection DL)
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 electrical and optical equipment	52.9	127.5	41.5
Office machinery and computers	76.1	148.3	51.3
Electrical machinery and apparatus n.e.c.	48.8	124.1	39.3
Radio, television and communication equipment and apparatus	54.6	118.4	46.1
Medical, precision and optical instruments, watches and clocks	52.4	137.4	38.2

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

EXTERNAL TRADE

The EU-25 recorded a trade deficit for electrical and optical equipment (CPA Subsection DL) equal to EUR 52.2 billion in 2002. Exports were valued at EUR 155.6 billion (18.6 % of all manufactured exports) and imports at EUR 207.8 billion (28.4 % of manufactured imports). Radio, television and communication equipment and apparatus (CPA Division 32) represented the largest export and import market with around one third of electrical and optical equipment exports and imports.

Among the Member States, Germany was the largest trader of electrical and optical equipment in 2002 (EUR 109.6 billion of exports and EUR 102.5 billion of imports, intra- and extra-EU combined). Malta's exports were very specialised in these products, as electrical machinery and optical equipment accounted for 60.5 % of its total manufactured exports, by far the largest share among the Member States. Latvia registered the lowest export specialisation in these goods, as electrical and optical equipment accounted for 4.5 % of manufactured exports. The most specialised importers were Ireland, Hungary, Malta and Ireland, where these goods accounted for more than one third of all the manufactured imports. The largest EU-25 trading partners were the United States (25.0 % of exports and 24.1 % of imports in 2002), China (4.9 % and 16.3 %), Switzerland (6.9 % and 5.0 %) and Japan (5.0 % and 13.7 %).

Table 11.5

Electrical and optical equipment (CPA Subsection DL)
External trade, EU-25, 2002 (EUR million)

	Exports	Imports	Trade balance	Cover ratio (%)
Electrical and optical equipment	155 581	207 825	-52 244	74.9
Office machinery and computers	25 890	63 618	-37 728	40.7
Electrical machinery and apparatus n.e.c.	37 050	31 950	5 100	116.0
Radio, television and communication equipment and apparatus	50 755	73 635	-22 880	68.9
Medical, precision and optical instruments; watches and clocks	41 886	38 623	3 264	108.4

Source: Eurostat, Comext.

11.1: INSTRUMENT ENGINEERING

The manufacture of medical, precision and optical instruments (NACE Division 33) includes activities related to the manufacture of instruments, as well as the manufacture of industrial process control equipment, watches and clocks. Photographic equipment is covered, but not photochemical products, flashbulbs or television cameras. Together these activities are referred to as instrument engineering in this subchapter.

According to the European Commission [7], the importance of medical devices within national health budgets has generally increased and in some countries it exceeds that of pharmaceutical products. The legislative framework influencing these products is the medical devices directive [8] that has recently been the subject of an assessment by the European Commission in order to set up an action programme, aiming to improve the implementation of the directive.

Growth in the digital camera market has had an impact on the optical instruments and photographic equipment sector (NACE Group 33.4), with technology improvements and competition resulting in better quality images and lower prices.

[7] European Commission press release, DN: IP/03/934, 2 July 2003.
[8] Council Directive (93/42/EEC) of 14 June 1993 concerning medical devices.

STRUCTURAL PROFILE

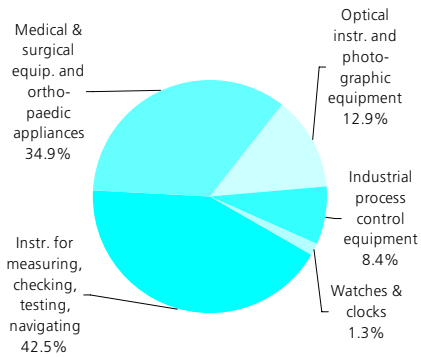
Value added for instrument engineering was EUR 48.4 billion in the EU-25 in 2001, more than one quarter of the electrical machinery and optical equipment total. In the EU-15 added value was EUR 46.7 billion, which made this sector the second largest of the four NACE divisions that are covered within this chapter. The number of persons employed in the EU-25 [9] was 995 700 and in the EU-15 it was 892 300, and as such this sector's share of electrical machinery and optical equipment employment was higher than its value added share.

In 2001, among the five NACE groups that compose NACE Division 33, the largest activity was the manufacture of instruments (NACE Group 33.2) which generated 42.5 % of the sector's value added in the EU-25 and employed 36.8 % of the sector's workforce in the EU-15. The smallest group was the watches and clocks subsector, which accounted for 1.3 % of sectoral value added.

[9] Poland, number of employees, 2000; Slovenia, number of employees.

Figure 11.3

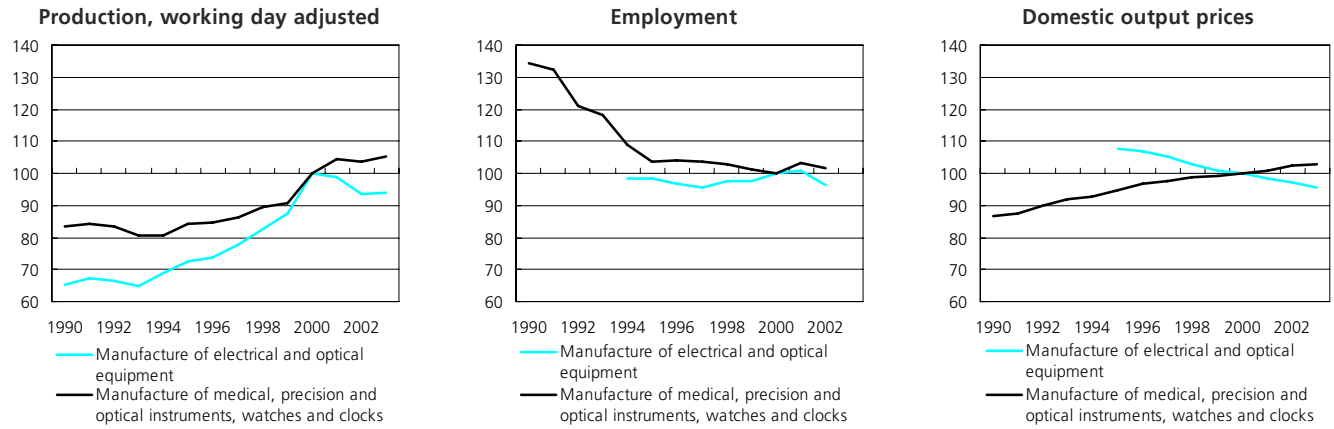
Manufacture of medical, precision and optical instruments, watches and clocks (NACE Division 33)
Share of value added at factor cost, EU-25, 2001



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

Figure 11.4

Manufacture of medical, precision and optical instruments, watches and clocks (NACE Division 33)
Main indicators, EU-25 (2000=100)



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

Among the Member States [10], Germany registered the highest value added (EUR 15.9 billion) in 2001 and accounted for almost one third of the EU-25's value added in the instrument engineering sector. The United Kingdom (17.8 %) and France (16.1 %) accounted respectively for the second and the third largest shares of value added, followed by Italy (10.2 %). However, in terms of value added specialisation relative to manufacturing, Ireland, Denmark and Malta were the most specialised Member States, all generating 4 % or more of their manufacturing value added in the instrument engineering sector.

Annual short-term statistics show that the production index for instrument engineering has followed a fairly typical evolution for a manufacturing activity over the last 10 years. Its average growth (3.2 % per annum) between 1993 and 2000 was slower than electrical machinery and optical equipment manufacturing (6.4 % per annum) as a whole, but almost identical to the manufacturing average. However, instrument engineering maintained a positive evolution for output through to 2003, at an average rate of 1.7 % per annum, despite a slight fall in production in 2002 (-0.7 %). This was in contrast to a stable situation for the whole of manufacturing, and a contraction in output in the other parts of electrical machinery and optical equipment manufacturing.

[10] The Netherlands and Poland, not available.

Unlike for some of the other activities in electrical machinery and optical equipment manufacturing, the output price index of instrument engineering followed an upward progression, with a 1.1 % annual average increase during the 10 years to 2003. This basic pattern was observed in each of the groups [11] that make up instrument engineering.

The EU-25's employment index for instrument engineering declined strongly in the first half of the 1990s, by 5.0 % per annum on average between 1990 and 1995. Two years of little change (+/– 0.3 %) were followed by three consecutive years of further reductions for employment, around -1 % per year, such that by 2000 the index was around 25 % lower than it had been 10 years earlier. In 2001 the employment index increased by 3.4 %, by far its highest growth rate in more than 10 years, although this expansion was short lived, as the index fell again by 1.6 % in 2002.

[11] NACE Group 33.3, not available.

Table 11.6

Selected products of medical, precision and optical instruments, watches and clocks (CPA Division 33), EU-15

	PRODCOM code	Latest year for production	Production value (EUR million)
Apparatus based on the use of X-rays (including radiography and radiotherapy apparatus)	33.10.11.15 and 33.10.11.19	2001	3 103.8
Electro-diagnostic, apparatus (excluding electro-cardiographs) n.e.c.	33.10.12.30	2001	1 891.2
Ultraviolet or infrared apparatus used in medical, surgical, dental or veterinary sciences	33.10.12.50	1999	117.2
Dental drill engines, whether or not combined on a single base with other dental equipment; instruments and appliances used in dental sciences	33.10.13.30 and 33.10.13.50	2001	848.6
Syringes, with or without needles, tubular metal needles, needles for sutures, used in medical, surgical, dental or veterinary sciences	33.10.15.11 to 33.10.15.15	2001 (1)	837.9
Renal dialysis equipment; diathermic apparatus (including ultrasonic); transfusion apparatus (excluding special blood storage glass bottles)	33.10.15.53 to 33.10.15.63	2000 (2)	1 367.2
Orthopaedic appliances, splints and other fracture appliances	33.10.17.39	1999	944.9
Individual artificial teeth (including metal posts for fixing) and dental fittings	33.10.17.53 to 33.10.17.59	2000	1 990.8
Appliances for overcoming deafness and pacemakers for stimulating heart muscles (excluding parts and accessories)	33.10.18.33 and 33.10.18.50	2001 (1)	1 461.9
Medical, surgical or veterinary furniture, and parts thereof (excluding tables and seats specialised for X-ray purposes)	33.10.20.50	2001	1 105.0
Instruments and appliances for aeronautical or space navigation and for navigation (including for marine or river navigation) (excluding compasses)	33.20.11.55 and 33.20.11.59	2001 (1)	1 816.9
Radar apparatus; radio remote control apparatus (including for ships, pilotless aircraft, rockets, missiles, toys, and model ships or aircraft, for machines, for the detonation of mines)	33.20.20.30 and 33.20.20.70	2001	2 886.6
Electronic and non-electronic instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device (including multimeters, voltmeters)	33.20.43.10 to 33.20.43.59	2001 (1)	575.0
Instruments and apparatus, for telecommunications	33.20.44.00	2001	1 555.2
Instruments and apparatus, for measuring or checking electric gains (excluding multimeters, voltmeters)	33.20.45.30 to 33.20.45.59	2001 (2)	682.6
Flow meters (excluding supply meters, hydrometric paddle-wheels)	33.20.52.35 and 33.20.52.55	2001	617.3
Electronic pressure gauges, sensors, indicators and transmitters	33.20.52.71	2000	363.1
Instruments and apparatus for measuring variables of liquids/gases (including heat meters; excluding for measuring pressure/flow/level of liquids)	33.20.52.83 and 33.20.52.89	2001	908.9
Electronic gas or smoke analysers	33.20.53.13	2001	440.0
Spectrometers, spectrophotometers etc., using optical radiations; exposure meters; instruments and apparatus using optical radiations, n.e.c.	33.20.53.30 to 33.20.53.50	2001	1 688.7
Gas, liquid (excluding pumps) and electricity (excluding voltmeters, ammeters, wattmeters and the like) supply or production meters (including calibrated)	33.20.63.30 to 33.20.63.70	2001	1 241.7
Test benches	33.20.65.20	2000	658.1
Optical instruments and appliances for measuring or checking n.e.c.	33.20.65.40	2000	379.8
Electronic instruments, appliances and machines for measuring or checking geometrical quantities (including comparators, coordinate measuring machines (CMMs)) and other electronic instruments, appliances etc., for measuring or checking	33.20.65.50 and 33.20.65.70	2001	2 590.2
Thermostats; manostats; hydraulic or pneumatic automatic regulating or controlling instruments and apparatus; instruments and apparatus, regulating or controlling n.e.c.	33.20.70.15 to 33.20.70.90	2001	4 305.6
Contact lenses	33.40.11.30	2001	807.1
Unmounted spectacle lenses for the correction of vision	33.40.11.55 to 33.40.11.70	2001 (2)	1 795.2
Sunglasses; spectacles, goggles and the like, corrective, protective or other	33.40.12.50 and 33.40.12.90	2000	1 304.6
Image conductor cables; optical fibres, optical fibre bundles and cables (excluding image conductor cables, optical fibre cables made up of individually sheathed fibres)	33.40.21.15 and 33.40.21.19	2001 (1)	834.0
Prisms, mirrors and other optical elements n.e.c.; mounted lenses, prisms, mirrors etc. n.e.c.; mounted objective lenses (excluding for cameras, projectors or photographic enlargers or reducers); mounted filters	33.40.21.53 to 33.40.21.90	2001 (1)	786.8
Telescopic sights for fitting to arms; periscopes; telescopes etc.; lasers (excluding laser diodes, machines and appliances incorporating lasers)	33.40.23.10 and 33.40.23.30	2000 (2)	466.8
Mechanical display battery/accumulator powered wrist-watches, incorporating or not stop-watch facility excluding with case of precious metal/metal clad with precious metal	33.50.12.13	2001	185.5
Clock or watch springs (including hair-springs); clock or watch dials; other watch or clock parts	33.50.28.10, 33.50.28.50 and 33.50.28.70	2000 (2)	177.2

(1) 2000 for one or more headings in the aggregate.
(2) 1999 for one or more headings in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

Table 11.7

Manufacture of medical, precision and optical instruments, watches and clocks (NACE Division 33)
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 medical, precision and optical instruments, watches and clocks	52.4	137.4	38.2
Manufacture of medical and surgical equipment and orthopaedic appliances	45.3	143.7	31.5
Instr. & appl. for measuring, checking, testing, navigating and other purposes	60.1	135.3	44.5
Manufacture of industrial process control equipment	51.7	118.5	43.6
Manufacture of optical instruments and photographic equipment	54.8	151.9	36.1
Manufacture of watches and clocks	40.8	127.8	31.9

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

Table 11.8

Medical, precision and optical instruments; watches and clocks (CPA Division 33)
External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Medical, precision and optical instruments; watches and clocks	41 886	100.0	38 623	100.0	3 264
Medical and surgical equipment and orthopaedic appliances	15 946	38.1	13 711	35.5	2 235
Instr. & appl. for measuring, checking, testing, navigating & other purposes	17 405	41.6	14 684	38.0	2 721
Optical instruments and photographic equipment	6 870	16.4	5 904	15.3	966
Watches and clocks	1 639	3.9	4 313	11.2	-2 674

Source: Eurostat, Comext.

LABOUR AND PRODUCTIVITY

Apparent labour productivity was EUR 52 400 per person employed in the EU-15 within the instrument engineering sector and average personnel costs were EUR 35 000 per employee in the EU-25 and EUR 38 200 in the EU-15. Both of these ratios were below the averages recorded for the whole of the electrical machinery and optical equipment sector, particularly average personnel costs. The resulting wage adjusted labour productivity of 137.4 % in the EU-15 was the second highest of the four NACE divisions within the electrical machinery and optical equipment sector. Optical instruments and photographic equipment manufacturing (NACE Group 33.4) recorded the highest wage adjusted labour productivity within the instrument engineering sector, while industrial process control equipment (NACE Group 33.3) recorded the lowest ratio. Latvia had the highest wage adjusted labour productivity of the Member States [12] in the instrument engineering sector in 2001, as value added covered personnel costs three times over, while in Lithuania value added did not even cover personnel costs.

[12] Greece, Ireland, the Netherlands and Poland, not available.

EXTERNAL TRADE

EU-25 exports to non-Community countries of instruments, watches and clocks (CPA Division 33) were worth EUR 41.9 billion in 2002, while imports of the same goods were valued at EUR 38.6 billion; these figures represented approximately 5 % of manufactured imports and exports. The EU-25 ran a trade surplus of EUR 3.3 billion for instruments, watches and clocks, in contrast to a trade deficit for all electrical machinery and optical equipment goods. All of the CPA groups that compose Division 33 also registered a trade surplus, except for watches and clocks (CPA Group 33.5). The largest group in terms of total exports and imports was measuring instruments (CPA Group 33.2) which accounted for 41.6 % of exports and 38.0 % of imports of instruments, watches and clocks.

Germany recorded the highest value of exports and imports (intra- and extra-EU) of instruments, watches and clocks in 2002, valued at EUR 26.8 billion and EUR 16.0 billion respectively. Nonetheless, relatively to the EU-25, the Netherlands was the most specialised exporter and importer of instruments, watches and clocks, while Ireland, Denmark, Germany and the United Kingdom were also relatively specialised in exports of these goods. In terms of imports, Sweden was the second most specialised Member State. The main EU-25 trading partners were the United States, Switzerland and Japan. Instruments, watches and clocks were the products where the United States accounted for its highest share of EU-25 trade among the four CPA divisions within electrical and optical equipment. The EU's imports of these goods were extremely concentrated, as 81.8 % of imports came from the four largest sources, compared with 51.8 % for all manufactured goods.

11.2: COMPUTER AND OFFICE EQUIPMENT

This subchapter covers the manufacture of office machinery, computers and peripherals, such as printers and terminals (NACE Division 30). The manufacture of electronic games is classified under toys and is covered within Subchapter 13.2.

One of the most notable developments in this sector has been manufacturers' use of the Internet to sell their products directly, avoiding the costs of sales networks. The computer and office equipment sector is characterised by a highly competitive environment, mainly coming from South-East Asia. Among the new products launched by manufacturers in the last few years, flat computer screens have started to replace more traditional computer screens.

STRUCTURAL PROFILE

In 2001, the EU-25's computer and office equipment sector generated EUR 15.4 billion of value added, the smallest share (8.5 %) of value added among the four NACE divisions that make up the electrical machinery and optical equipment sector. Enlargement added EUR 485.3 million to sectoral value added, as the EU-15 level was EUR 14.9 billion. The number of persons employed in the EU-25's [13] computer and office equipment sector was 225 000 in 2001, which was also the lowest value among the four NACE divisions. In the EU-15, employment levels were 196 300 persons, or 6.0 % of the electrical machinery and optical equipment total.

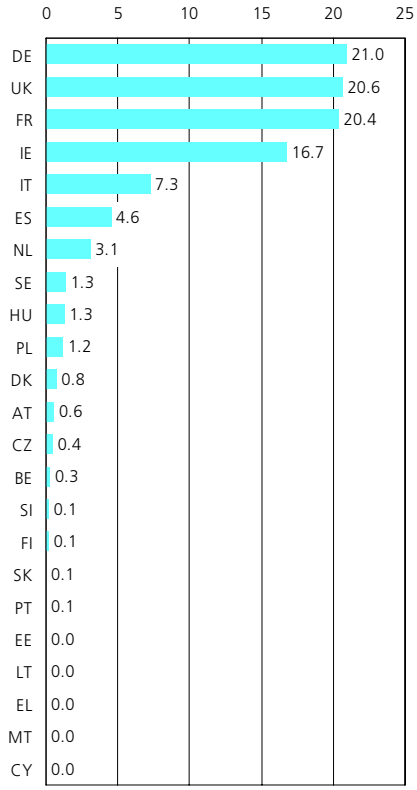
[13] Latvia, 2002; Slovenia, number of employees.

No single Member State dominated computer and office equipment manufacturing, as the three largest Member States [14], Germany, the United Kingdom and France, each generated just over one fifth of EU-25 value added in 2001. Ireland was clearly the most specialised in this sector, accounting for almost 16.7 % of the EU-25's value added. This may, in part, be due to Ireland being an entrance point into the EU for many enterprises from the United States, as Irish affiliates import and then re-export made up American products. The EUR 2.6 billion of value added in Ireland represented 7.6 % of Irish manufacturing value added. Hungary, France and the United Kingdom were the only other Member States [15] to generate a higher proportion of their manufacturing value added in the computer and office equipment sector than the EU-25 average.

An analysis of short-term indices shows that the EU-25's working day adjusted index of production grew rapidly from its low in 1993 up until 2000, averaging 11.7 % per annum. This was far ahead of the electrical machinery and optical equipment manufacturing average of 6.4 % during the same period, and was the strongest growth rate of any manufacturing division over the period considered. After 2000, the production index for the computer and office equipment sector decreased through until 2003, with an average decline of 7.5 % per annum, heavily influenced by a sharp contraction of 18.1 % in 2002.

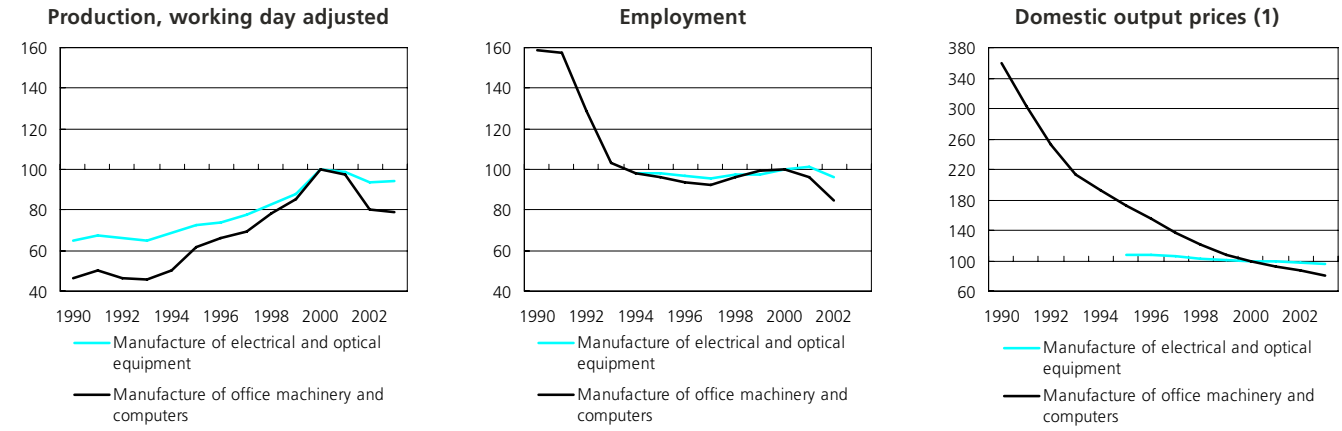
[14] Cyprus, Latvia and Luxembourg, not available.
[15] Cyprus, Latvia, Malta and Luxembourg, not available.

Figure 11.5
Manufacture of office machinery and computers (NACE Division 30)
Share of EU-25 value added, 2001 (%) (1)



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

Figure 11.6
Manufacture of office machinery and computers (NACE Division 30)
Main indicators, EU-25 (2000=100)



(1) Note that the scale for this graph is different.
Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Four periods can be observed concerning the development of the EU-25's employment index since 1991: a rapid reduction in the number of persons employed in 1992 and 1993 of close to 20 % per annum; a more moderate fall from 1994 to 1997, averaging -2.6 % per annum; a similar increase of 2.6 % per annum until 2000; followed by further contractions in employment (3.7 % in 2001 and 12.3 % in 2002).

As already noted earlier in this chapter, the output price index for computer and office equipment manufacturing is atypical in that its basic trend is downwards, in contrast to an upward trend observed in nearly all other manufacturing divisions. In the 10 years to 2003, the EU-25's output price index for computer and office equipment fell, on average, by 9.2 % per annum, compared with growth of 1.5 % per annum for the whole of manufacturing.

Table 11.9 shows the market size for a range of IT products, according to EITO. All of these products have seen a contraction in their markets (in value terms) between 2000 and 2002, ranging from 3 % for copiers to 29 % for workstations. In volume terms, among the selected items shown in Table 11.10, the number of servers and LAN cards that were sold increased by more than 8 % between 2000 and 2002, whereas the volume of PCs, PC printers, and particularly workstations that were sold fell during the same period.

LABOUR AND PRODUCTIVITY

Apparent labour productivity in EU-15's computer and office equipment sector was EUR 76 100 per person employed, which was higher than in the other divisions of electrical machinery and optical equipment manufacturing. Equally, the computer and office equipment sector reported higher than average personnel costs per employee, at EUR 45 900 in the EU-25 and EUR 51 300 in the EU-15, which was the third highest across manufacturing NACE divisions. In the EU-15, wage adjusted labour productivity was 148.3 %, some 4.8 percentage points higher than the manufacturing average. Ireland (2000), Latvia (1999), Poland, Austria, and Lithuania all reported high wage adjusted labour productivity ratios [16].

[16] Greece, Cyprus, Luxembourg and Slovenia, not available.

Table 11.9

Value of the IT hardware market for selected items, ranked by 2002/2000 rate of change, EU-25 (EUR million) (1)

	2000	2001	2002
Copiers	5 678	5 628	5 493
LAN hardware	10 485	9 844	9 994
Server systems	23 684	22 791	21 223
PCs	49 928	45 580	43 057
Workstations	1 216	1 086	868

(1) Excluding Cyprus and Malta.
Source: EITO, 2003.

Table 11.10

Unit shipments of IT hardware, ranked by 2002/2000 rate of change, EU-25 (thousands) (1)

	2000	2001	2002
Servers	1 331	1 414	1 445
LAN cards	17 732	18 196	19 154
Copiers	1 513	1 532	1 523
PCs	29 918	28 273	28 762
PC printers	23 076	22 642	22 162
Workstations	113	106	86

(1) Excluding Cyprus and Malta.
Source: EITO, 2003.

Table 11.11

Selected products of office machinery and computers (CPA Division 30), EU-15

	PRODCOM code	Latest year for production	Production value (EUR million)
Calculating machines; postage-franking machines, ticket-issuing machines and similar machines incorporating a calculating device	30.01.13.20 and 30.01.13.70	2000	368.8
Electrostatic photocopiers	30.01.21.70	2001	1 192.5
Addressing machines and address plate embossing machines, mailing machines	30.01.23.50	2000	375.6
Other office machines n.e.c.	30.01.23.90	1999	858.1
Analogue or hybrid automatic data processing machines	30.02.11.00	2000	126.0
Desk top PCs	30.02.13.00	2001	4 044.3
Digital data processing machines: presented in the form of systems	30.02.14.00	2001	11 334.7
Printers	30.02.16.30	2001	1 775.9
Storage units (excluding central storage units, disk storage units and magnetic tape storage units)	30.02.17.90	2001	387.9

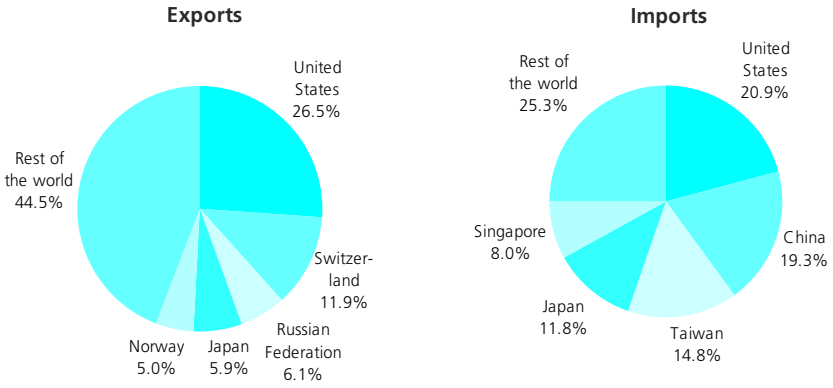
Source: Eurostat, European production and market statistics (Comext).

EXTERNAL TRADE

The EU-25's external trade balance for office machinery and computers (CPA Division 30) was in deficit by EUR 37.7 billion in 2002, resulting from EUR 63.6 billion of imports and EUR 25.9 billion of exports with non-Community countries. The Netherlands was the largest exporter (EUR 28.3 billion, intra- and extra-EU exports combined) and Germany the largest importer (EUR 29.4 billion). The Netherlands, Ireland, Hungary, the Czech Republic and Luxembourg were the only countries to register a trade surplus for computer and office equipment, while Germany and France registered the largest trade deficits. The main EU-25 export partners were the United States, Switzerland, Russia and Japan. The main import partners were the United States, followed by nine Asian countries that collectively supplied nearly three quarters of the EU's imports, headed by China, Taiwan and Japan.

Figure 11.7

Office machinery and computers (CPA Division 30)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

11.3: MANUFACTURE OF ELECTRICAL MACHINERY AND EQUIPMENT

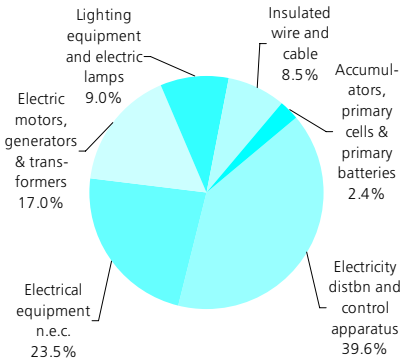
This subchapter covers NACE Division 31 which includes the manufacture of electric motors, generators, transformers, electricity distribution equipment, insulated wires and cables, optical fibres for coded data transmission, batteries, lighting equipment and other electrical equipment. The manufacture of metal cables, not being used as a conductor of electricity, is not included in this division.

This sector gathers products that are generally classified as intermediate products or, in the case of motors, generators and transformers, as capital goods. A small share of production is, however, also destined for the household market, for example the after-sales market for car batteries or lighting equipment.

With respect to the legislative framework impacting on this sector, in December 2002 the European Commission proposed [17] a simplification of the electromagnetic compatibility directive (EMC) [18]. This directive aims to ensure that the simultaneous use of different electrical and electronic devices does not cause interference, and the proposal aims to simplify the regulatory procedures for manufacturers, while increasing information and documentation on products in order to provide additional means of control for inspection authorities. See also the proposal for a directive concerning end-of-life batteries briefly presented in Chapter 13.

Figure 11.8

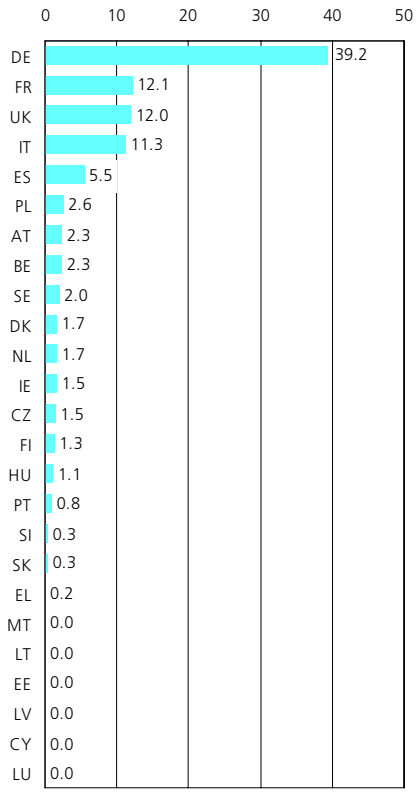
Manufacture of electrical machinery and apparatus n.e.c. (NACE Division 31)
Share of value added at factor cost, EU-25, 2001



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

Figure 11.9

Manufacture of electrical machinery and apparatus n.e.c. (NACE Division 31)
Share of EU-25 value added, 2001 (%)

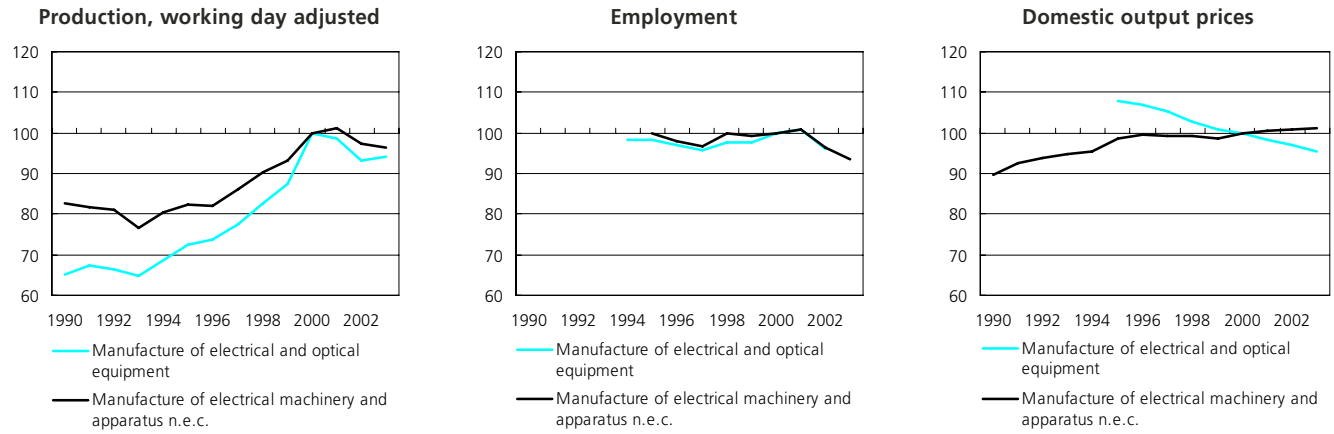


Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

[17] COM(2002) 759.
[18] Council Directive (89/336/EEC) of 3 May 1989 concerning the approximation of the laws of the Member States relating to electromagnetic compatibility.

Figure 11.10

Manufacture of electrical machinery and apparatus n.e.c. (NACE Division 31)
Main indicators, EU-25 (2000=100)



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

STRUCTURAL PROFILE

Electrical machinery and equipment manufacturing (NACE Division 31) contributed 39.5 % of the value added generated in the EU-25's electrical machinery and optical equipment sector (NACE Subsection DL). The level of value added reached EUR 72.0 billion in the EU-25 in 2001, and EUR 67.7 billion in the EU-15. As such, this was the largest NACE division covered by this chapter. The contribution of the 10 new Member States to EU-25 value added was also larger in this division (6.0 %) than in any of the others covered in this chapter, mainly due to a very high contribution from the 10 new Member States (over 10 %) within the manufacture of wire, cable, accumulators, batteries, lamps and lighting equipment (NACE Groups 31.3 to 31.5). In employment terms, the electrical machinery and equipment sector contributed a higher share (EU-15, 42.2 %) of the electrical machinery and optical equipment workforce than its corresponding share of value added, with a total of 1.7 million persons employed [(19)] in the EU-25.

Among the six NACE groups that make up the electrical machinery and equipment sector, the manufacture of electricity distribution and control apparatus (NACE Group 31.2) was the largest subsector with 39.6 % of the EU-25's value added in 2001. The second largest activity, with a 23.5 % share, was the manufacture of other electrical equipment (NACE Group 31.6), followed by the manufacture of electric motors, generators and transformers (NACE Group 31.1, 17.0 %).

[(19)] Slovenia, number of employees.

Germany accounted for 39.2 % of the EU-25's value added in the electrical machinery and equipment sector, its highest national contribution across the four divisions covered by this chapter; this could be attributed, in part, to the relatively large size of the electricity distribution and control apparatus subsector (NACE Group 31.2), which was Germany's most specialised manufacturing NACE group in 2001. France, the United Kingdom and Italy each accounted for between 11 and 12 % of the EU-25's value added and were all relatively unspecialised in the manufacture of electrical machinery and equipment, relative to manufacturing as a whole. The Czech Republic was the only Member State more specialised in this sector than Germany, while Hungary, Slovakia and Slovenia were also relatively specialised, all generating more than 5 % of their manufacturing value added in this sector. The manufacture of lighting equipment and electric lamps (NACE Group 31.5) was the manufacturing NACE group in which Hungary was most specialised in 2001.

Annual short-term statistics show that the EU-25's working day adjusted index of production for electrical machinery and equipment had a similar evolution to manufacturing as a whole over the period 1993–2000. Annual average growth for electrical machinery and equipment in the EU-25 over this period was 3.9 %, which was 0.6 percentage points higher than the manufacturing average. Electrical machinery and equipment manufacturing continued to grow (by 1.3 %) in 2001, whereas there was little growth in manufacturing as a whole (0.2 %) and the production index for electrical machinery and optical equipment manufacturing fell by 0.9 %. In 2002, output within electrical machinery and equipment manufacturing also contracted (-4.0 %), but not as strongly as the average for electrical machinery and optical equipment manufacturing (-5.3 %). However, in 2003, while output in electrical machinery and optical equipment increased by 0.7 %, production of electrical machinery and equipment continued to contract (-0.9 %).

The EU-25's output price index for electrical machinery and equipment grew on average by 1.7 % per annum between 1990 and 1996, which was followed by a period of falling prices, averaging -0.3 % from 1997 to 1999. Since then prices rose again for four consecutive years at an annual average rate of 0.7 %. In many ways this pattern is similar to that displayed for the whole of manufacturing, except that the period of falling prices started earlier and lasted longer in the second half of the 1990s within the electrical machinery and equipment sector, while recent price increases have been less pronounced.

The employment index for EU-25 electrical machinery and equipment followed a similar evolution to that for electrical machinery and optical equipment from the mid-1990s onwards (the start of the time-series). Having grown by 0.7 % and 0.8 % in 2000 and 2001, the number of persons employed in EU-25 electrical machinery and equipment manufacturing was reduced by 4.3 % in 2002 and by a further 3.2 % in 2003.

Table 11.12

Selected products of electrical machinery and apparatus (CPA Division 31), EU-15

	PRODCOM code	Latest year for production	Production value (EUR million)
DC motors and generators of an output > 37.5 W but <= 750 W (excl. starter motors for internal combustion engines)	31.10.10.30	2000	1 546.2
Single-phase AC motors	31.10.22.30 and 31.10.22.50	2001	1 484.0
Multi-phase AC motors of an output > 0.75 kW	31.10.24.03 to 31.10.25.90	2001 (1)	2 648.2
Alternators of an output > 75 kVA	31.10.26.30 to 31.10.26.70	2000	1 169.6
Generating sets with compression-ignition internal combustion piston engines, of an output > 7.5 kVA but <= 750 kVA	31.10.31.15 to 31.10.31.50	2001 (2)	1 216.4
Generating sets including turbo-generators, generating sets for welding equipment without heads/appliances excluding with compression	31.10.32.33 to 31.10.32.50	2001 (2)	3 868.7
Liquid dielectric transformers	31.10.41.30 to 31.10.41.70	2001 (2)	1 506.4
Measuring transformers having a power handling capacity <= 16 kVA (including for voltage measurement)	31.10.42.33 and 31.10.42.53	2001 (2)	425.0
Inverters	31.10.50.53 and 31.10.50.55	2001	2 427.5
Inductors (excluding induction coils, deflection coils for cathode-ray tubes, for discharge lamps and tubes)	31.10.50.80	2001	1 075.5
Automatic circuit breakers for a voltage <= 1 kV	31.20.22.30 and 31.20.22.50	2001	2 746.2
Relays and contactors for a voltage > 60 V but <= 1 kV	31.20.24.50	2001	1 668.6
Plugs and sockets for coaxial cables and printed circuits for a voltage <= 1 kV	31.20.27.10 and 31.20.27.30	2000	1 405.4
Connections and contact elements for wires and cables for a voltage <= 1 kV	31.20.27.70	2001	2 287.8
Numerical control panels with built-in automatic data-processing machine for a voltage <= 1 kV and other bases for electric control, distribution of electricity, voltage <= 1 kV (excluding programmable memory controllers for a voltage <= 1 kV)	31.20.31.30 and 31.20.31.70	2001	6 507.4
Numerical control panels, voltage > 1 kV	31.20.32.03 and 31.20.32.05	2001 (2)	1 580.0
Insulated winding wire lacquered or enamelled (including anodised)	31.30.11.30 and 31.30.11.50	2000	1 466.6
Insulated coaxial cables and other coaxial electric conductors for data and control purposes whether or not fitted with connectors	31.30.12.00	2001	1 154.7
Insulated electric conductors whether or not fitted with connectors, for a voltage > 80 V but <= 1 kV	31.30.13.70	1999	4 357.7
Insulated electric conductors for voltage > 1 kV excluding winding wire, coaxial cable and other coaxial electric conductors, ignition and other wiring sets used in vehicles, aircraft, ships	31.30.14.00	2001	2 322.6
Optical fibre cables made up of individually sheathed fibres whether or not assembled with electric conductors or fitted with connectors	31.30.15.00	2001	3 707.9
Lead-acid accumulators for starting piston engines, of a weight > 5 kg, working with liquid electrolyte	31.40.21.50	2000	1 415.2
Illuminated signs, illuminated name-plates and the like (including road signs)	31.50.24.00	2001	1 304.4
Electrical lighting or visual signalling equipment for motor vehicles (excluding electric filament or discharge lamps, sealed beam lamp units, ultraviolet, infrared and arc lamps)	31.61.23.30	2001	2 708.7

(1) 1999 or 2000 for one or more headings in the aggregate.
(2) 2000 for one or more headings in the aggregate.
Source: Eurostat, European production and market statistics (Comext).

Table 11.13

Manufacture of electrical machinery and apparatus n.e.c. (NACE Division 31)
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 electrical machinery and apparatus n.e.c.	48.8	124.1	39.3
Manufacture of electric motors, generators and transformers	49.8	130.6	38.1
Manufacture of electricity distribution and control apparatus	52.9	115.2	45.9
Manufacture of insulated wire and cable	48.8	135.2	36.1
Manufacture of accumulators, primary cells and primary batteries	44.1	119.5	36.9
Manufacture of lighting equipment and electric lamps	44.3	136.5	32.5
Manufacture of electrical equipment n.e.c.	44.2	130.8	33.8

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

Table 11.14

Electrical machinery and apparatus n.e.c. (CPA Division 31)
External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Electrical machinery and apparatus n.e.c.	37 050	100.0	31 950	100.0	5 100
Electric motors, generators and transformers	10 675	28.8	7 264	22.7	3 410
Electricity distribution and control apparatus	11 806	31.9	6 666	20.9	5 140
Insulated wire and cable	2 956	8.0	2 679	8.4	277
Accumulators, primary cells and primary batteries	1 209	3.3	2 174	6.8	-965
Lighting equipment and electric lamps	2 926	7.9	2 979	9.3	-53
Electrical equipment n.e.c.	7 479	20.2	10 188	31.9	-2 709

Source: Eurostat, Comext.

LABOUR AND PRODUCTIVITY

Apparent labour productivity per person employed and average personnel costs per employee in the manufacture of electrical machinery and equipment were the lowest of all the four NACE divisions covered by this chapter in 2001. EU-15 apparent labour productivity was EUR 48 800 per person employed and average personnel costs were EUR 39 300 per employee (EUR 33 400 per employee in the EU-25). A majority of the Member States reported their lowest apparent labour productivity ratios within the electrical machinery and equipment sector, when compared with the three other divisions covered by the chapter, while this was not the case for average personnel costs.

Wage adjusted labour productivity provides an indication of the ratio of value added to personnel costs, after adjusting the latter for the ratio of persons employed to paid employees. Electrical machinery and equipment had a ratio of 124.1 % in the EU-15, nearly 20 percentage points below the manufacturing average. The relatively low level of wage adjusted labour productivity was present in all of the six groups that make up this sector, but was particularly low in the manufacture of electricity distribution and control apparatus subsector (NACE Group 31.2) and the manufacture of accumulators and batteries (Group 31.4). Among Member States, wage adjusted labour productivity was particularly low in Luxembourg and Sweden (where it was below 100 % in both countries), indicating that value added did not cover adjusted personnel costs.

EXTERNAL TRADE

The EU-25's exports to non-Community countries of electrical machinery and apparatus (CPA Division 31) was valued at EUR 37.1 billion, which was EUR 5.1 billion above the value of imports. Exports of these goods accounted for 23.8 % of the EU-25's exports of electrical and optical equipment (CPA Subsection DL) and 15.4 % of imports. Among the CPA groups within electrical machinery and apparatus, electricity distribution and control apparatus (CPA Group 31.2) contributed the highest share of exports (31.9 %) and electrical equipment n.e.c. (CPA Group 31.6) the highest share of imports (31.9 %).

Germany was the largest trader (intra- and extra-EU trade combined) of electrical machinery and apparatus among the Member States, with EUR 31.9 billion of exports and EUR 23.5 billion of imports. However, Hungary and the Czech Republic were the most highly specialised exporters of these goods, relative to all manufactured goods, with specialisation ratios relative to the EU-25 above 200 %. The most highly specialised Member States for imports of these goods was Estonia, also with a specialisation ratio above 200 %.

The main destinations for the EU-25's exports of electrical machinery and equipment were the United States, China and Switzerland; 2002 marked the first time that exports to China from the EU-25 exceeded those to Switzerland. In terms of imports, China also moved up the ranking, taking the top spot from the United States (second) as the most important supplier to the EU-25, with Japan and Switzerland following in the ranking.

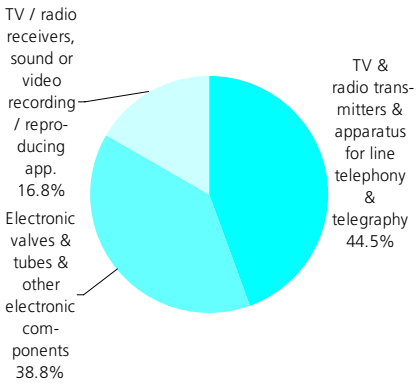
11.4: MANUFACTURE OF RADIO, TELEVISION AND COMMUNICATION EQUIPMENT

This subchapter covers the manufacture of electronic components (active, passive and printed circuit boards (PCBs)) (NACE Group 32.1). The activities that are classified under NACE Group 32.2 include the manufacture of television cameras, transmission apparatus for radio and TV, telephonic switching apparatus (including LANs and modems), telephones, fax machines and teleprinters. Note that Chapters 23 and 24 provide information on information, communication and media services that make use of this equipment. NACE Group 32.3 covers the manufacture of audio-visual equipment and related appliances such as loudspeakers, headphones and aerials, as well as other electronic consumer appliances, such as telephone answering machines. The manufacture of pre-recorded and unrecorded media is not included.

Electronic components manufacturing (NACE Group 32.1) produces intermediate products and is therefore highly dependent on the demand of other downstream sectors. For instance, the demand of chips closely depends on the demand for PCs, mobile phones, consumer and automotive electronics. In the manufacture of telecommunication equipment (NACE Group 32.2), a recent innovation has seen the development of mobile phones with multimedia messaging services (MMS) that permit digital pictures to be transmitted and displayed on the handset's screen; the infrastructure to support these services is, however, not yet completely available within the EU. For consumer electronics (NACE Group 32.3), some of the more notable recent innovations include flat-panel TVs, as well as DVD players and DVD recorders. DVD players have been one of the major success stories of this activity in recent years, and are the object of a battle to define DVD formats, reminiscent of the video cassette standards battle, won by VHS in the 1980s.

Figure 11.11

Manufacture of radio, television and communication equipment and apparatus (NACE Division 32)
Share of value added at factor cost, EU-25, 2001



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

STRUCTURAL PROFILE

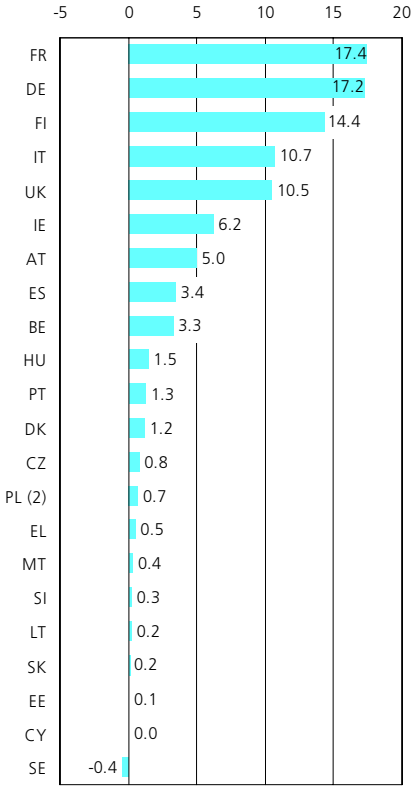
Value added in the manufacture of radio, television and communication equipment sector (NACE Division 32) was EUR 46.6 billion in the EU-25 in 2001 (EUR 43.9 billion in the EU-15). This sector represented slightly more than one quarter of value added generated in the whole of the electrical machinery and optical equipment sector (NACE Subsection DL). Employment in the EU-25's radio, television and communication equipment manufacturing sector was equal to 950 700 persons [20] in 2001, and 809 800 persons in the EU-15.

The manufacture of telecommunications equipment (NACE Group 32.2) was the largest subsector (at the group level) covered by this subchapter, with 44.5 % of the EU-25's radio, television and communication equipment sector's value added. The manufacture of electronic components (NACE Group 32.1) was slightly smaller, with a 38.8 % share, while the manufacture of television and radio equipment (NACE Group 32.3) was the smallest group, with a 16.8 % share.

[20] Latvia, 2002; Poland, number of employees, 2000; Slovenia, number of employees.

Figure 11.12

Manufacture of radio, television and communication equipment and apparatus (NACE Division 32)
Share of EU-25 value added, 2001 (%) (1)



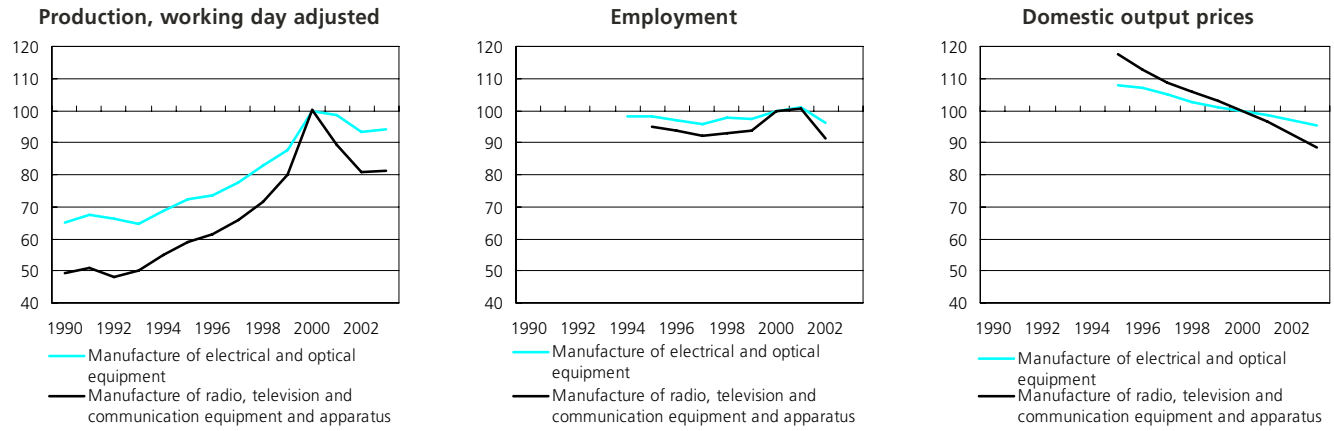
(1) Latvia, Luxembourg and the Netherlands, not available.
(2) 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

No Member State [21] dominated the EU-25's value added in the radio, television and communication equipment sector: Germany and France each accounted for just over 17 % of added value in 2001, Finland for 14.4 %, and Italy and the United Kingdom for 10.7 % and 10.5 %. Malta and Finland showed high value added specialisation [22] relative to manufacturing, as did Ireland to a lesser extent. Electronic components manufacturing (NACE Group 32.1) was the second most specialised manufacturing NACE group in Malta.

[21] Latvia, Luxembourg, the Netherlands and Poland, not available.
[22] Cyprus, Latvia, Luxembourg, the Netherlands and Poland, not available.

Figure 11.13

Manufacture of radio, television and communication equipment and apparatus (NACE Division 32)
Main indicators, EU-25 (2000=100)



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

Spain and Sweden were the least specialised Member States in this sector in terms of value added. The Swedish position, however, is unusual in that there was negative value added in this activity in 2001, and an analysis of employment shows that this activity provided employment for 6.6 % of the Swedish manufacturing workforce, compared with an EU-15 average of 2.9 %. Swedish value added data for the year before (2000) support the view that this country was, in fact, one of the EU's most specialised countries in this activity.

According to annual short-term statistics, the EU-25's production index for the manufacture of radio, television and communication equipment grew, on average, by 10.4 % per annum between 1993 (a low point in production) and 2000, when output peaked. This was the second highest level of growth over this period among all of the manufacturing divisions, behind office equipment and computer manufacturing (NACE Division 30, 11.7 %). The highest year-on-year growth rate during this period was 25.2 % in 2000, which was immediately followed by two year-on-year contractions of around 10 %. In 2003, the EU-25's output of radio, television and communication equipment stabilised, with growth of 0.9 %. An analysis of the three NACE groups that make up radio, television and communication equipment manufacturing shows that both the manufacture of electronic components and the manufacture of telecommunications equipment contributed to the high growth rates that were witnessed between 1993 and 2000, recording average growth of 15.8 % and 10.0 % per annum respectively. Both of these activities then recorded a fall in production in 2001 and 2002, with per annum reductions averaging 5.8 % for the manufacture of electronic components and 13.5 % for the manufacture of telecommunications equipment. In 2003 the evolution of output in these two activities parted, as electronic components manufacturing recovered strongly, growing by 11.3 %, while the manufacture of telecommunications equipment managed to stabilise output, as the production index fell by 0.6 %. The remaining part of the activity, namely the manufacture of television and radio equipment, recorded average growth of 3.2 % per annum between 1995 (first available year) and 2000. However, unlike the two other groups, output in television and radio equipment manufacturing continued to grow until 2001, before falling by 8.5 % in 2002 and a further 5.7 % in 2003.

A number of Member States were particularly hard hit by the decline in activity in the manufacture of radio, television and communication equipment in 2001 and 2002, notably Ireland and the United Kingdom, who both reported a contraction in output of more than 20 % in both of these years. Despite this overall negative picture in the EU, several countries continued to report an expansion in output during these two years, notably Slovakia, where the production index increased by 53.0 % in 2001 and by 26.3 % in 2002. Annual indices for the production index for 2003 are available for 15 of the 25 Member States (at the time of writing). These show an improvement in all countries (either a diminished reduction or stronger growth) than in 2003 in each country, with the exception of Poland and Estonia.

The EU-25's employment index for the manufacture of radio, television and communication equipment is available from 1995, after which it followed a downward path for two years. Between 1997 and 2001 employment grew by 2.2 % per annum on average, but in 2002 it fell by 9.2 %, the second largest contraction in employment among manufacturing NACE divisions that year.

Along with the manufacture of office machinery and computers (NACE Division 30), radio, television and communication equipment was the only EU-25 manufacturing division to record a general decline in output prices. Since the series began in 1995, eight consecutive years of falling prices were recorded, ranging from -2.7 % to -4.3 %, the largest reductions having been recorded in 2002 and 2003. All three groups within radio, television and communication equipment manufacturing have recorded a general fall in their respective output price indices between 1995 and 2003, with the weakest price reductions in television and radio equipment manufacturing.

Table 11.15 provides information for selected items on the market value for telecommunications hardware. The only market that experienced a rise in value between 2000 and 2002 was that of packet switching and routing equipment, where turnover increased by 5 % overall during these two years. In contrast, the market for cellular/mobile radio infrastructure products decreased by nearly one third (-31 %) in terms of sales.

Table 11.15

Value of the communications hardware market for selected items, ranked by 2002/2000 rate of change, EU-25 (EUR million) (1)

	2000	2001	2002
Packet switching and routing equipment	3 665	3 744	3 836
PBX & key systems, circuit switching equipment	10 137	9 277	8 469
Mobile telephone sets	19 951	18 184	16 491
Cellular mobile radio infrastructure	14 279	12 332	9 855

(1) EU-25, excluding Cyprus and Malta.
Source: EITO, 2003.

Table 11.16

Selected products of electronic values, tubes and other electronic components (CPA Division 32), EU-15

	PRODCOM code	Latest year for production	Production value (EUR million)
Fixed aluminium capacitors; fixed multilayer ceramic capacitors; fixed metallised paper or plastic capacitors	32.10.12.50, 32.10.12.75 and 32.10.12.77	2001 (1)	1 152.5
Variable resistors (including rheostats, potentiometers and trimmers)	32.10.20.55 to 32.10.20.70	2001 (2)	420.8
Bare multilayer printed circuit boards	32.10.30.50	2001	3 211.8
Passive networks (including networks of resistors and/or capacitors) (excluding resistor chip arrays, capacitor chip arrays, boards containing active components, hybrids)	32.10.30.90	2001	1 266.1
Colour TV tubes; television camera tubes, image converters and intensifiers and other photo-cathode tubes	32.10.41.35 and 32.10.41.50	2000	2 721.7
Magnetrons, klystrons, microwave tubes, valves and tubes	32.10.42.00	2000	291.3
Semiconductor	32.10.51.55 and 32.10.51.57	2000	725.6
Semiconductor devices	32.10.52.37 and 32.10.52.50	2001 (1)	535.7
Digital MOS integrated circuits (ICs): wafers and chips	32.10.60.15 and 32.10.60.17	2000	5 980.4
Digital MOS integrated circuits (ICs), DRAM (including modules)	32.10.60.25 and 32.10.60.27	2000	1 655.3
Digital MOS integrated circuits (ICs), EEPROMS and flash EEPROMS (CPUs and MPUs)	32.10.60.65 and 32.10.60.70	2000	906.1
Other digital MOS integrated circuits (ICs) (including MPR, MCU, ASIC, standard logic, PLD and other logic)	32.10.60.93	2001	4 473.8
Linear (analogue) integrated circuits (ICs)	32.10.60.95	2001	2 215.3
Hybrid integrated circuits (excluding circuits consisting solely of passive elements)	32.10.60.97	2001	651.7
Electronic microassemblies (excluding circuits consisting solely of passive elements, assemblies formed by mounting one or more discrete components on a support)	32.10.60.99	2000	2 223.7
Radio/TV transmission apparatus	32.20.11.50 and 32.20.11.70	2001	36 359.7
Telephonic or telegraphic switching apparatus (excluding relays and switching equipment such as selectors for automatic telephone exchangers); telephonic/telegraphic apparatus for carrier-current line systems n.e.c.; electrical telephonic and telegraphic apparatus n.e.c.; facsimile machines	32.20.20.40 to 32.20.20.75	2001 (3)	20 355.3
Colour television projection equipment and videoprojectors	32.30.20.20	2000	461.3
Colour televisions with a video recorder or player	32.30.20.30	2000	321.2
Colour television receivers with integral tube (excluding television projection equipment, apparatus with a video recorder or player, video monitors)	32.30.20.50	2001	4 995.4
Tuner blocks for CTV/VCR and cable TV receiver units (colour video tuners) (excluding those which isolate high-frequency television signals)	32.30.20.75	2000	1 024.2
Video cassette recorders for magnetic tape of width <=1.3cm and with a tape speed <=50mm per second excluding those combined with television, or a built-in television camera	32.30.33.39	1999	643.7
Loudspeakers (including speaker drive units, frames or cabinets mainly designed for mounting loudspeakers)	32.30.42.37 and 32.30.42.39	2001	1 211.8

(1) 2000 for one or more headings in the aggregate.
(2) 1999 for one or more headings in the aggregate.
(3) 1999 or 2000 for one or more headings in the aggregate.
Source: Eurostat, Eurostat, European production and market statistics (Comext).

Table 11.17

Manufacture of radio, television and communication equipment and apparatus (NACE Division 32)
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 radio, television and communication equipment and apparatus	54.6	118.4	46.1
Manufacture of electronic valves and tubes and other electronic components	58.3	145.5	40.0
TV & radio transmitters & apparatus for line telephony & line telegraphy	55.0	102.0	54.0
TV & radio receivers, sound or video recording or reproducing app.	46.5	117.7	39.5

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

LABOUR AND PRODUCTIVITY

Apparent labour productivity in the radio, television and communication equipment sector was EUR 54 600 per person employed in the EU-15 and personnel costs per employee were EUR 46 100 (EUR 40 700 in the EU-25). Both of these values were above the manufacturing average, particularly the figure for average personnel costs. As a result, the wage adjusted labour productivity ratio for the radio, television and communication equipment sector was the lowest of the four NACE divisions covered within electrical machinery and optical equipment manufacturing. Indeed, this ratio was 118.4 % in the EU-15, compared with an average of 127.5 % for the whole of electrical machinery and optical equipment and 143.5 % for the manufacturing sector in general. The manufacture of telecommunications equipment had the lowest wage adjusted labour productivity ratio (102.0 %), and the manufacture of television and radio equipment the next lowest (117.7 %). The manufacture of electronic components recorded a ratio of 145.5 %, and was therefore the only group to report a higher wage adjusted labour productivity ratio than the manufacturing average.

Wage adjusted labour productivity in the radio, television and communication equipment sector was very high in Finland and Malta [(23)], where value added was around three and a half to four times higher than personnel costs. However, in the United Kingdom and to a lesser extent in Germany, the radio, television and communication equipment sector generated less value added than was spent on personnel (adjusted for the ratio of persons employed to employees). Low ratios recorded by these two large Member States, as well as France, explain the low EU-15 ratios. It should be noted that this situation appears to be related to the particular stage of the economic cycle (see the analysis of the production index above), as EU-15 wage adjusted labour productivity ratio was 167.1 % in 2000, more than 40 % higher than it was in 2001, and above the manufacturing average.

[(23)] Greece, Ireland, Cyprus, Latvia, Luxembourg and Poland, not available; Sweden, negative due to negative value added.

Table 11.18

Radio, television and communication equipment and apparatus (CPA Division 32)
External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Radio, television and communication equipment and apparatus	50 755	100.0	73 635	100.0	-22 880
Electronic valves and tubes and other electronic components	20 297	40.0	33 901	46.0	-13 604
TV & radio transmitters; apparatus for line telephony & telegraphy	21 584	42.5	16 294	22.1	5 290
TV & radio receivers; sound or video recording or reproducing app.	8 874	17.5	23 440	31.8	-14 566

Source: Eurostat, Comext.

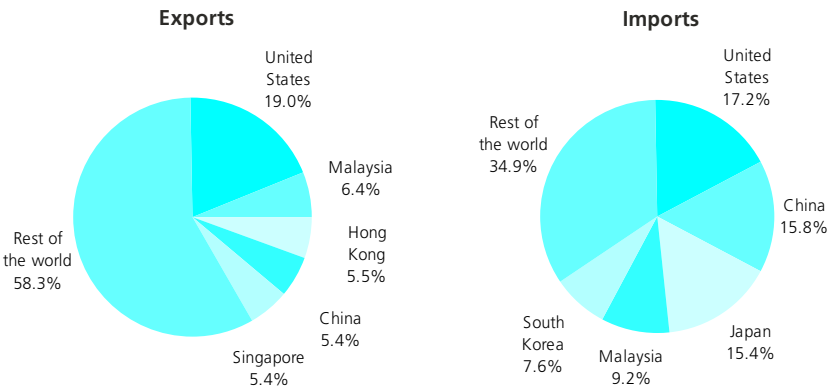
EXTERNAL TRADE

In 2002, the EU-25's exports of radio, television and communication equipment (CPA Division 32) to non-Community countries were EUR 50.8 billion, lower than the value of imports (EUR 73.6 billion). These products accounted for 32.6 % of the EU-25's exports of electrical and optical equipment (CPA Subsection DL) and for 35.4 % of its imports. The resulting trade deficit of EUR 22.9 billion was the third largest among the CPA divisions that make up total manufactured goods, behind office machinery and computers (CPA Division 30, EUR 37.7 billion) and wearing apparel and furs (CPA Division 18, EUR 27.1 billion).

Among the 3 CPA groups covered, television and radio transmitters and apparatus for line telephony and line telegraphy (CPA Group 32.2) accounted for the highest share (42.5 %) of exports, while communication equipment and electronic valves and tubes and other electronic components (CPA Group 32.1) accounted for 46.0 % of imports. Television and radio transmitters and apparatus for line telephony and line telegraphy (CPA Group 32.2) was the only one of the three CPA groups for which the EU-25 recorded a trade surplus in 2002, valued at EUR 5.3 billion; the trade deficits of the other two CPA groups were around EUR 14 billion each.

Figure 11.14

Radio, television and communication equipment and apparatus (CPA Division 32)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

Despite the relatively large trade deficit for the EU-25, eight Member States recorded a trade surplus (intra- and extra-EU trade combined) for radio, television and communication equipment, notably the United Kingdom and Finland, where surpluses were in excess of EUR 5 billion. The largest trade deficits were recorded by Italy, Spain and the Netherlands, all in excess of EUR 3.5 billion. Germany was the largest exporter (EUR 33.4 billion) and importer (EUR 33.5 billion) of radio, television and communication equipment, followed by the United Kingdom. However, relative to exports of all manufactured goods, Malta was by far the most specialised country, as exports of these goods accounted for 49.7 % of manufactured exports, compared with 19.9 % in Finland and 18.7 % in Hungary, the next most specialised countries. In terms of import specialisation, these goods represented 31.4 % of Malta's manufactured imports, 20.9 % of the total in Ireland, 17.7 % in Hungary and 13.1 % in Finland. The very high specialisation in Malta was due almost entirely to trade in communication equipment and electronic valves and tubes and other electronic components (CPA Group 32.1).

The EU-25 exported radio, television and communication equipment mainly to the United States (19.0 % of exports to non-Community countries), some South-East Asian countries (Malaysia, Hong Kong and Singapore, together 17.4 %), and China (5.4 %). The picture was slightly different for EU-25 imports of radio, television and communication equipment, as Japan (15.4 %) provided almost the same proportion of imports as China (15.8 %), although the United States remained the main trading partner (17.2 %). These top three origins of imports were followed by a quintet of South-East Asian countries (Malaysia, South Korea, Taiwan, Singapore and Philippines) who collectively provided one third of the EU-25's imports.

Table 11.19

Manufacture of office machinery and computers (NACE Division 30)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV (1)	LT	LU
Production (EUR million)	185	774	303	14 907	20	2	3 197	13 805	19 443	4 228	0	7	8	:
Value added at factor cost (EUR million)	47	65	119	3 235	3	0	703	3 149	2 582	1 122	0	2	3	:
Purchases of goods and services (EUR million)	149	724	0	13 410	30	:	3 494	13 837	16 015	3 465	0	13	8	:
Gross investment in tangible goods (EUR million)	8	76	4	268	0	:	267	285	151	347	0	0	0	:
Number of persons employed (thousands)	1	6	2	46	0	0	9	38	20	17	0	0	0	:
App. labour productivity (EUR thous./pers. emp.)	53.8	10.1	72.2	69.8	14.1	2.9	75.1	82.6	126.0	67.3	:	9.5	7.5	:
Average personnel costs (EUR thous./employee) (2)	44.2	6.4	44.5	54.3	8.8	:	48.0	68.5	30.6	33.3	:	2.8	3.2	:
Wage adjusted labour productivity (%) (2)	121.7	157.3	162.2	128.6	160.7	:	156.4	120.7	412.5	202.4	:	334.3	235.7	:
Gross operating rate (%) (2)	6.6	3.5	15.5	4.4	3.3	:	7.0	3.2	9.7	15.9	:	63.4	15.2	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	2 316	3	2 044	611	521	51	84	48	94	760	21 134	34	58	:
Value added at factor cost (EUR million)	198	0	479	86	182	11	22	12	21	207	3 181	8	12	:
Purchases of goods and services (EUR million)	2 170	3	1 741	605	512	40	122	44	97	597	19 829	34	123	:
Gross investment in tangible goods (EUR million) (3)	57	0	42	5	61	2	14	2	2	19	428	2	3	:
Number of persons employed (thousands)	13	0	9	1	6	0	:	2	0	4	48	3	2	:
App. labour productivity (EUR thous./pers. emp.)	15.0	21.5	55.2	85.6	32.1	32.4	:	6.7	43.2	47.4	66.5	2.7	5.5	:
Average personnel costs (EUR thous./employee)	7.0	17.3	41.9	33.6	11.5	19.4	16.5	5.4	34.9	43.9	53.2	2.3	2.1	:
Wage adjusted labour productivity (%)	215.3	124.3	131.5	254.3	278.0	166.8	:	123.6	123.9	107.8	124.9	118.0	259.3	:
Gross operating rate (%)	4.3	5.6	5.6	7.7	17.9	9.7	4.4	4.1	3.6	3.0	2.9	3.5	5.8	:

(1) 1999.
(2) Ireland, 2000.
(3) The Netherlands, 1999.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 11.20

Manufacture of electrical machinery and apparatus n.e.c. (NACE Division 31)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	4 428	3 623	4 404	84 255	90	617	13 342	27 989	2 434	29 045	38	69	109	45
Value added at factor cost (EUR million)	1 633	1 095	1 234	28 260	29	174	3 938	8 697	1 113	8 123	15	25	30	14
Purchases of goods and services (EUR million)	3 147	2 756	0	65 590	80	:	10 514	20 479	1 321	21 841	28	58	79	30
Gross investment in tangible goods (EUR million)	186	331	181	3 413	5	:	541	1 221	236	1 156	2	4	10	:
Number of persons employed (thousands)	26	112	24	530	3	5	95	171	15	210	1	3	4	0
App. labour productivity (EUR thous./pers. emp.)	62.2	9.8	51.8	53.3	11.0	36.7	41.4	50.8	72.9	38.7	25.8	8.8	7.1	32.4
Average personnel costs (EUR thous./employee) (1)	45.9	6.7	35.4	47.4	7.4	:	28.9	39.0	26.8	29.4	14.3	4.3	4.0	41.5
Wage adjusted labour productivity (%) (1)	135.4	146.8	146.1	112.5	149.6	:	143.5	130.3	271.8	131.6	166.6	204.0	179.2	78.2
Gross operating rate (%) (2)	9.7	12.1	9.3	3.5	8.8	:	9.0	7.1	27.8	9.4	14.8	17.0	12.5	-8.5

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	4 874	92	3 891	4 365	4 050	2 174	786	847	3 142	5 454	22 297	224	801	:
Value added at factor cost (EUR million)	774	33	1 197	1 634	1 871	605	224	223	972	1 475	8 637	54	279	:
Purchases of goods and services (EUR million)	4 387	60	3 213	3 213	2 606	1 657	555	671	2 328	4 279	15 644	209	592	:
Gross investment in tangible goods (EUR million) (3)	382	6	114	198	277	187	57	51	97	150	1 035	19	184	:
Number of persons employed (thousands)	72	1	23	29	90	34	:	32	17	43	165	18	58	:
App. labour productivity (EUR thous./pers. emp.)	10.7	24.4	52.4	56.8	20.8	17.7	:	6.9	56.7	33.9	52.3	3.0	4.8	:
Average personnel costs (EUR thous./employee)	7.6	15.8	37.2	40.8	8.4	14.7	14.0	4.5	37.6	35.3	38.4	2.2	2.6	:
Wage adjusted labour productivity (%)	140.5	154.4	141.0	139.1	248.3	120.6	:	151.3	150.8	96.2	136.0	136.7	184.1	:
Gross operating rate (%)	4.4	13.0	8.7	9.8	27.3	4.8	4.7	8.6	10.1	-0.7	9.8	6.8	16.4	:

(1) Ireland and Cyprus, 2000.
(2) Ireland, 2000.
(3) The Netherlands, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 11.21

Manufacture of electronic valves and tubes and other electronic components (NACE Group 32.1)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU (1)
Production (EUR million) (2)	954	407	313	14 160	41	:	1 452	16 229	3 406	5 369	0	5	135	0
Value added at factor cost (EUR million) (3)	368	207	121	3 746	11	:	569	4 117	2 284	1 929	0	3	59	0
Purchases of goods and services (EUR million) (2)	614	263	0	14 426	34	:	943	14 659	1 317	3 461	0	2	77	0
Gross investment in tangible goods (EUR million)	76	75	37	3 434	3	:	198	1 473	1 063	1 970	0	0	41	:
Number of persons employed (thousands)	5	19	2	72	2	:	13	81	8	35	0	0	4	0
App. labour productivity (EUR thous./pers. emp.) (3)	71.8	10.8	48.9	51.7	6.2	:	42.6	51.0	242.8	55.2	:	8.3	14.4	:
Average personnel costs (EUR thous./employee) (3)	47.9	5.8	34.8	46.3	5.2	:	28.5	41.4	34.0	31.8	:	2.8	7.0	:
Wage adjusted labour productivity (%) (3)	149.7	185.5	140.7	111.6	119.5	:	149.5	123.3	713.3	173.6	:	295.7	205.5	:
Gross operating rate (%) (4)	13.5	17.1	11.7	2.3	4.5	:	13.4	4.1	47.8	16.2	:	42.4	22.7	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE (1)	UK	BG	RO	TR
Production (EUR million)	727	1 131	617	2 183	147	994	166	205	554	1 064	6 445	36	59	:
Value added at factor cost (EUR million)	237	158	228	739	86	188	60	38	200	354	2 411	10	36	:
Purchases of goods and services (EUR million)	548	921	426	1 496	73	934	105	198	368	885	5 701	29	21	:
Gross investment in tangible goods (EUR million)	127	47	41	567	10	63	15	12	74	192	453	10	22	:
Number of persons employed (thousands)	21	3	6	11	6	7	:	5	5	6	38	3	6	:
App. labour productivity (EUR thous./pers. emp.)	11.3	54.3	38.6	69.3	14.6	28.6	:	7.0	41.3	58.3	62.8	3.6	5.7	:
Average personnel costs (EUR thous./employee)	7.6	15.7	27.5	45.0	6.8	18.0	12.0	4.8	31.1	43.2	45.0	2.5	3.0	:
Wage adjusted labour productivity (%)	148.9	345.3	140.3	154.1	215.1	158.8	:	144.6	132.7	134.8	139.6	141.5	192.5	:
Gross operating rate (%)	10.4	9.7	10.1	11.6	30.9	6.3	5.6	5.1	9.2	8.4	8.7	8.1	33.0	:

(1) 2000.
(2) The Czech Republic, 2000.
(3) Ireland, 2000.
(4) The Czech Republic and Ireland, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 11.22

Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy (NACE Group 32.2)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU (1)
Production (EUR million)	2 512	555	704	11 278	:	:	2 426	19 148	2 676	9 470	0	9	25	0
Value added at factor cost (EUR million) (3)	643	116	153	2 712	:	:	717	3 636	536	2 790	0	3	9	0
Purchases of goods and services (EUR million)	1 914	548	0	14 685	:	:	1 827	15 859	2 725	6 827	0	8	29	0
Gross investment in tangible goods (EUR million)	47	24	29	497	:	:	67	585	94	737	0	1	1	:
Number of persons employed (thousands)	8	9	3	55	:	:	12	77	4	60	0	1	1	0
App. labour productivity (EUR thous./pers. emp.) (3)	82.3	13.3	52.9	49.2	:	:	59.1	47.0	116.0	46.4	22.1	5.8	17.2	:
Average personnel costs (EUR thous./employee) (4)	67.0	8.9	40.5	58.7	:	:	54.9	56.3	35.5	38.6	11.2	3.1	9.8	:
Wage adjusted labour productivity (%) (4)	123.0	150.2	130.7	83.8	:	:	107.7	83.5	327.2	120.3	145.1	186.5	175.9	:
Gross operating rate (%) (3)	5.1	7.4	5.1	-2.8	:	:	2.3	-3.6	22.1	9.4	28.9	14.9	10.7	:

	HU	MT	NL	AT	PL (2)	PT	SI	SK	FI	SE (2)	UK	BG	RO	TR
Production (EUR million)	432	9	174	3 670	980	970	191	111	16 924	19 061	13 372	104	219	:
Value added at factor cost (EUR million)	151	3	59	1 413	230	247	56	29	6 453	2 379	797	20	78	:
Purchases of goods and services (EUR million) (5)	367	7	121	2 943	861	837	190	82	19 096	17 027	19 009	100	165	:
Gross investment in tangible goods (EUR million)	26	0	4	147	29	21	8	5	1 388	510	767	3	13	:
Number of persons employed (thousands)	5	0	2	16	:	5	:	4	32	35	47	3	5	:
App. labour productivity (EUR thous./pers. emp.)	28.4	51.0	34.1	88.8	:	51.7	:	7.7	198.9	67.8	16.8	6.1	15.0	:
Average personnel costs (EUR thous./employee)	12.9	10.2	38.4	67.0	10.8	36.0	31.2	5.8	44.5	58.5	70.1	3.2	5.5	:
Wage adjusted labour productivity (%)	219.2	499.8	88.8	132.6	:	143.7	:	133.9	446.9	116.0	23.9	191.2	274.0	:
Gross operating rate (%)	16.2	22.9	8.7	7.9	11.5	7.2	1.2	6.1	20.7	1.7	-14.1	11.6	24.1	:

(1) 1999.
(2) 2000.
(3) Ireland, 2000.
(4) Ireland and Cyprus, 2000.
(5) The United Kingdom, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 11.23

Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods (NACE Group 32.3)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV (1)	LT	LU
Production (EUR million)	2 033	:	936	6 020	:	:	2 131	1 822	229	1 149	:	3	70	:
Value added at factor cost (EUR million) (3)	512	69	291	1 555	:	:	309	360	60	269	:	0	21	:
Purchases of goods and services (EUR million)	1 546	:	0	7 305	:	:	2 620	1 593	153	1 048	:	3	52	:
Gross investment in tangible goods (EUR million)	79	20	60	361	:	:	44	47	4	31	:	0	5	:
Number of persons employed (thousands)	7	7	6	32	:	:	8	9	1	8	:	0	3	:
App. labour productivity (EUR thous./pers. emp.) (3)	77.4	9.5	48.6	48.6	:	:	38.7	40.1	61.2	34.6	:	0.5	6.6	:
Average personnel costs (EUR thous./employee) (3)	49.4	5.9	39.0	47.9	:	:	29.0	32.9	22.5	27.1	:	2.0	4.2	:
Wage adjusted labour productivity (%) (3)	156.8	160.5	124.7	101.3	:	:	133.6	122.1	272.0	127.6	:	26.4	158.3	:
Gross operating rate (%) (4)	9.3	3.7	6.4	0.5	:	:	2.8	3.4	17.8	5.7	:	-24.1	11.3	:

	HU	MT	NL	AT	PL (2)	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	3 236	16	:	737	1 269	1 055	75	30	190	754	6 354	4	16	:
Value added at factor cost (EUR million)	287	4	:	178	123	167	10	6	56	174	1 699	2	4	:
Purchases of goods and services (EUR million) (5)	3 206	12	:	590	1 355	865	66	23	140	587	6 173	3	18	:
Gross investment in tangible goods (EUR million)	101	0	:	24	52	41	1	1	6	22	171	1	0	:
Number of persons employed (thousands)	14	0	35	3	:	5	:	1	1	5	31	1	1	:
App. labour productivity (EUR thous./pers. emp.)	19.9	37.7	:	59.9	:	31.2	:	6.6	46.4	34.0	55.0	2.6	4.9	:
Average personnel costs (EUR thous./employee)	7.5	16.5	:	44.4	9.0	18.4	9.6	4.6	33.9	33.9	35.0	2.4	3.1	:
Wage adjusted labour productivity (%)	266.4	229.0	:	135.1	:	169.9	:	144.0	136.8	100.3	157.2	108.6	157.6	:
Gross operating rate (%)	5.1	14.4	:	6.3	0.2	6.6	2.6	5.9	7.8	0.4	8.3	6.1	8.9	:

(1) 1999.
(2) 2000.
(3) Ireland, 2000.
(4) Ireland, 2000; the Czech Republic, 1999.
(5) The United Kingdom, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 11.24

Manufacture of medical, precision and optical instruments, watches and clocks (NACE Division 33)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	1 148	1 003	2 583	34 943	57	57	3 196	20 742	3 526	13 863	9	20	79	164
Value added at factor cost (EUR million)	405	319	1 242	15 924	17	21	1 377	7 797	1 837	4 927	5	14	8	71
Purchases of goods and services (EUR million)	814	720	0	21 642	39	:	2 104	14 567	2 777	9 456	6	11	75	93
Gross investment in tangible goods (EUR million)	44	50	145	1 442	2	:	112	657	252	730	1	3	5	:
Number of persons employed (thousands)	9	32	16	316	2	1	34	143	18	124	0	1	4	2
App. labour productivity (EUR thous./pers. emp.)	47.2	10.0	76.7	50.3	7.0	26.8	40.7	54.7	100.5	39.8	19.7	11.0	2.1	42.7
Average personnel costs (EUR thous./employee) (2)	38.9	6.6	42.4	38.6	5.7	:	26.4	43.7	29.1	30.4	15.5	3.6	4.8	30.6
Wage adjusted labour productivity (%) (2)	121.4	150.1	181.1	130.5	123.3	:	154.5	125.1	344.9	131.0	118.8	303.7	43.3	139.8
Gross operating rate (%) (3)	10.7	12.6	21.6	11.1	5.9	:	18.1	8.0	36.1	14.9	15.2	49.0	-11.6	12.7

	HU	MT	NL	AT	PL (1)	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	395	68	:	1 402	1 200	372	343	183	1 978	3 896	20 356	45	146	:
Value added at factor cost (EUR million)	164	33	:	728	634	134	126	60	769	1 269	8 632	15	61	:
Purchases of goods and services (EUR million)	315	33	:	799	747	264	219	146	1 242	2 968	12 766	35	114	:
Gross investment in tangible goods (EUR million)	54	9	97	64	58	28	27	11	54	209	892	3	15	:
Number of persons employed (thousands)	14	1	26	16	:	7	:	6	12	24	145	7	12	:
App. labour productivity (EUR thous./pers. emp.)	11.3	26.1	:	45.2	:	20.2	:	9.7	63.1	52.4	59.7	2.3	5.0	:
Average personnel costs (EUR thous./employee)	7.5	14.3	:	33.7	8.2	14.9	14.1	6.0	39.2	47.2	40.3	1.9	2.7	:
Wage adjusted labour productivity (%)	151.6	182.7	:	134.0	:	136.2	:	161.8	161.1	111.1	148.0	122.2	187.4	:
Gross operating rate (%)	12.2	21.2	:	14.1	26.4	11.4	6.5	11.1	15.4	4.1	14.3	8.8	19.6	:

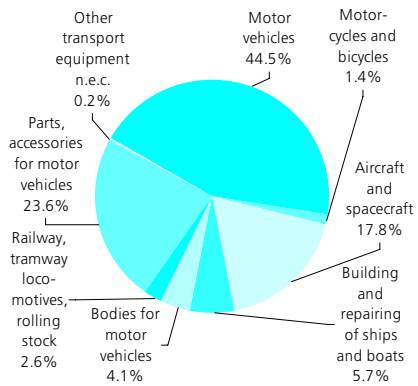
(1) 2000.
(2) Ireland and Cyprus, 2000.
(3) Ireland, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Transport equipment

Transport equipment plays an important role in the European economy, as it provides the means for transporting individuals and goods over both short and long distances. Globalisation and international free trade have stimulated the demand for transporting goods, while improved living standards, increased personal mobility, and longer and more frequent holidays have fuelled the demand for passenger transport. The result has been an increase in the modal share of motor vehicles, as passenger cars are increasingly used for personal trips, while there has been an equally rapid expansion in the number of light and heavy goods vehicles used to transport goods.

Figure 12.1

Manufacture of transport equipment (NACE Subsection DM)
Share of value added at factor cost, EU-25, 2001



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

STRUCTURAL PROFILE

Enterprises operating in the EU-25's transport equipment sector (NACE Subsection DM) generated EUR 168.6 billion of added value in 2001. As such, they accounted for 11.0 % of the EU-25's manufacturing value added total, while their equivalent share of EU-25 employment [(1)] was 8.8 %.

The motor vehicles, trailers and semi-trailers subsector (NACE Division 34) accounted for almost three quarters (72.2 %) of value added in the EU-25's transport equipment sector in 2001. The manufacture of aircraft and spacecraft (NACE Group 35.3) was the largest of the other transport equipment subsectors, with a 17.8 % share, which was just over three times the contribution made by the building and repairing of ships and boats (NACE Group 35.1, 5.7 %). The manufacture of railway, tramway locomotives and rolling stock (NACE Group 35.2, 2.6 %) and the manufacture of motorcycles and bicycles (NACE Group 35.4, 1.4 %) accounted for relatively small shares.

[(1)] Slovenia, number of employees.

The manufacture of transport equipment is covered by two NACE divisions, the manufacture of motor vehicles (NACE Division 34), and the manufacture of all other types of transport equipment, namely, shipbuilding, railway rolling stock, aerospace, motorcycles and bicycles, and a residual category of other transport equipment - all classified within NACE Division 35. This chapter deals exclusively with the manufacture of equipment that is used for transporting either passengers or freight; for more details in relation to transport services, please refer to Chapter 20.

NACE

34: manufacture of motor vehicles, trailers and semi-trailers;
34.1: manufacture of motor vehicles;
34.2: manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers;
34.3: manufacture of parts and accessories for motor vehicles and their engines;
35: manufacture of other transport equipment;
35.1: building and repairing of ships and boats;
35.2: manufacture of railway and tramway locomotives and rolling stock;
35.3: manufacture of aircraft and spacecraft;
35.4: manufacture of motorcycles and bicycles;
35.5: manufacture of other transport equipment n.e.c.

Table 12.1

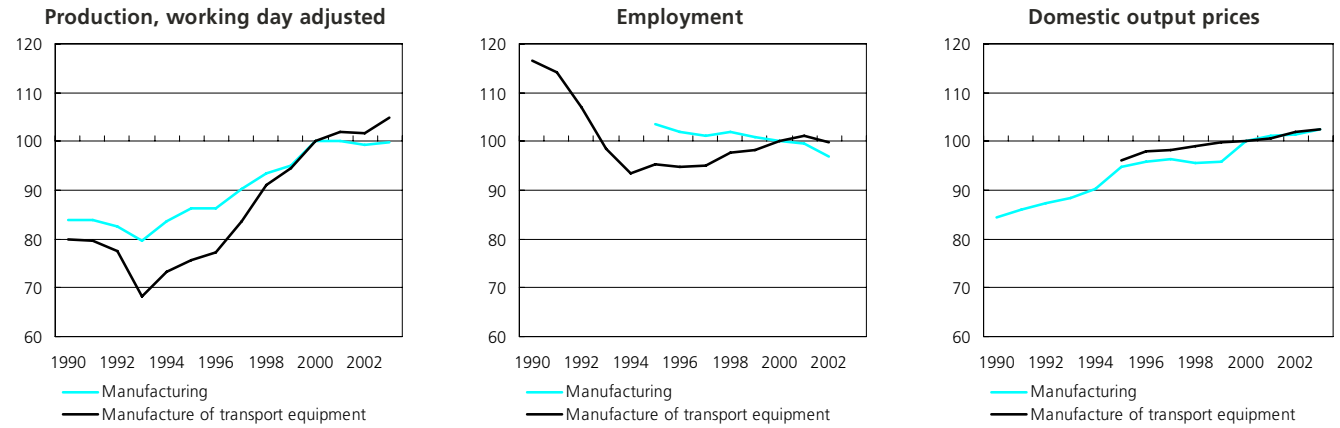
Manufacture of transport equipment (NACE Subsection DM)
Structural profile, 2001

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 (67.0)	Germany (148)	Germany (999.3)	United States (43.2)	United States (61.5)
2	United Kingdom (27.6)	Sweden (132)	France (414.2)	Japan (19.2)	Switzerland (8.4)
3	France (26.2)	Czech Republic (118)	United Kingdom (389.6)	South Korea (6.1)	Japan (7.2)
4	Italy (11.6)	France (115)	Italy (269.7)	Canada (4.0)	Canada (5.1)
5	Spain (9.5)	United Kingdom (110)	Spain (216.6)	Turkey (3.3)	China (5.0)

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

Figure 12.2

Manufacture of transport equipment (NACE Subsection DM)
Main indicators, EU-25 (2000=100)



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

Table 12.2

Manufacture of transport equipment (NACE Subsection DM)
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	1.4	:	3.7	:	8.8	:	86.2	:
EU-15	1.4	2.4	3.7	5.7	8.5	11.2	86.5	80.8

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

The 10 new Member States generated 4.4 % of the EU-25's value added in the transport equipment sector in 2001, compared with a 5.6 % share of all manufacturing value added. A closer analysis reveals that they were particularly specialised in the manufacture of railway, tramway locomotives and rolling stock (where their share of EU-25 value added rose to 12.4 %), as well as the building and repairing of ships and boats (10.6 %). In contrast, they were least specialised in the manufacture of aircraft and spacecraft (1.2 %).

The EU's transport equipment sector is dominated by enterprises from Germany. Indeed, transport equipment was the largest manufacturing NACE subsection in Germany (in terms of value added), with EUR 67.0 billion in 2001, 85.6 % of which came from the manufacture of motor vehicles (Division 34).

The manufacture of transport equipment was highly concentrated within the largest manufacturing economies, as Germany (39.7 % of EU-25 value added in 2001), the United Kingdom (16.4 %) and France (15.5 %) were the only countries to account for more than 10 % of total value added in this sector. As such, the three largest producers of transport equipment contributed a 71.7 % share of transport equipment value added compared with 55.2 % for manufacturing.

The transport equipment sector was also relatively important in the Czech Republic, Poland, Slovakia and Sweden, where it was the second largest manufacturing subsection (as measured by value added), while in France, Hungary and the United Kingdom, it was the third largest subsection. The high level of output in Germany distorts value added specialisation ratios, resulting in Germany (148.1 %), Sweden (132.0 %), the Czech Republic (118.0 %), France (115.3 %) and the United Kingdom (110.0 %) being the only Member States to report a specialisation in the manufacture of transport equipment in 2001. Some of the lowest specialisation ratios were reported in Denmark, Ireland, Cyprus, Latvia, Lithuania and Finland. In each of these countries, the contribution of the transport equipment sector to manufacturing value added was less than 40 % of the EU-25 average.

Large enterprises predominate in almost all transport equipment sectors. Indeed, the 88.0 % contribution of large enterprises to the EU-25's value added in the motor vehicles sector (NACE Division 34) was the second highest recorded across all manufacturing NACE divisions (the highest proportion being recorded for the manufacture of coke, refined petroleum products and nuclear fuel (NACE Division 23)), while the 81.4 % share in the other transport equipment sector (NACE Division 35) was the fourth highest proportion.

Having registered three successive negative rates from 1991 to 1993, there was annual growth of the index of production for motor vehicles (NACE Division 34) throughout the period 1994 to 2003 in the EU-25. In contrast, other transport equipment (NACE Division 35) saw output decline from 1991 through until 1995, after which there were six consecutive years of growth. In 2002 the production index for other transport equipment fell by 4.8 % (when manufacturing output fell by 0.9 %), rebounding in 2003 with growth of 4.5 % (compared with a manufacturing average of 0.6 %).

Table 12.3

Manufacture of transport equipment (NACE Subsection DM)
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	82.8	115.6	96.5	104.4	98.1	106.9
BE	90.9	122.3	97.1	106.6	99.7	105.2
CZ	68.8	111.6	98.4	100.9	98.1	106.0
DK	80.9	118.3	95.0	102.4	100.0	103.6
DE	81.1	113.1	95.9	106.9	98.9	103.7
EE	:	:	:	:	100.0	103.5
EL	92.4	130.3	99.6	101.6	91.4	124.6
ES	82.4	110.9	98.6	101.8	97.5	110.3
FR	81.1	114.7	96.7	102.4	98.9	104.2
IE	73.1	105.7	96.8	103.2	91.9	99.9
IT	83.3	119.8	96.3	101.7	96.0	116.1
CY	:	:	:	:	:	:
LV	78.2	126.7	100.0	105.6	100.0	104.6
LT	:	:	100.0	105.4	100.0	103.8
LU	:	:	:	:	:	:
HU	78.6	133.4	99.8	102.2	99.6	104.4
MT	96.7	138.1	100.0	103.5	95.2	102.2
NL	90.6	117.5	91.9	122.4	97.9	101.8
AT	:	:	:	:	:	:
PL	:	:	:	:	:	:
PT	68.8	122.7	98.9	102.0	95.5	109.5
SI	79.3	131.3	97.7	101.1	99.4	106.0
SK	72.8	122.9	99.6	100.9	98.9	103.0
FI	90.3	128.4	98.3	103.0	94.7	101.3
SE	80.5	107.8	95.8	104.5	97.8	104.0
UK	86.9	116.1	96.4	104.5	97.5	102.5

Source: Eurostat, Labour Force Survey.

LABOUR AND PRODUCTIVITY

In keeping with most manufacturing sectors, the transport equipment sector is characterised by a high proportion of paid employees, some 98.1 % of the EU-15 workforce in 2002. There was also a relatively high propensity to employ on a full-time basis, as full-time employment rates averaged 96.5 % in the EU-15 in 2002, compared with a manufacturing average of 92.4 %. The full-time employment rate exceeded the manufacturing average in every Member State [2], with the largest difference reported in the Netherlands where 91.9 % of the transport equipment workforce worked full-time, compared with an average of 75.1 % for the whole of Dutch manufacturing. The proportion of men in the total number of persons employed was 82.8 % in the EU-15's transport equipment sector in 2002, compared with a manufacturing average of 71.7 %. The proportion of men in the workforce was consistently above the manufacturing average in every country [3], often by 10 to 20 percentage points, with the difference rising to more than 20 points in Malta, Greece and Finland.

Apparent labour productivity in the EU-15's transport equipment sector was EUR 61 000 per person employed in 2001, which was EUR 9 800 above the manufacturing average. Motor vehicles (NACE Group 34.1, EUR 68 500) and aircraft and spacecraft (NACE Group 35.3, EUR 85 000) clearly stood out as the two subsectors with the highest apparent labour productivity in 2001. Productivity in these two subsectors influenced the transport equipment average, as a majority of the eight NACE groups that make up the transport equipment sector reported labour productivity ratios that were inferior to the manufacturing sector average.

Relatively high levels of apparent labour productivity were matched by equally high average personnel costs in 2001, which reached EUR 50 100 per employee in the EU-15 for the motor vehicles subsector (NACE Group 34.1) and EUR 53 300 per employee for aircraft and spacecraft. As a result, wage adjusted labour productivity was often relatively low, as the EU-15 manufacturing average of 143.5 % was surpassed only by the aircraft and spacecraft sector (159.5 %). The lowest EU-15 wage adjusted labour productivity ratio in the transport equipment sector was recorded for the manufacture of railway, tramway locomotives and rolling stock (NACE Group 35.2, 106.9 %).

[2] Estonia, Cyprus, Luxembourg, Austria and Poland, not available.

[3] Estonia, Cyprus, Lithuania, Luxembourg and Poland, not available.

Table 12.4

Manufacture of transport equipment (NACE Subsection DM)
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 transport equipment	61.0	136.7	44.7
Motor vehicles	68.5	136.7	50.1
Bodies for motor vehicles; trailers	40.2	124.8	32.2
Parts, accessories for motor vehicles	52.3	131.4	39.8
Building and repairing of ships and boats	42.7	126.7	33.7
Railway, tramway locomotives, rolling stock	44.2	106.9	41.3
Aircraft and spacecraft	85.0	159.5	53.3
Motorcycles and bicycles	41.0	133.5	30.7
Other transport equipment n.e.c.	41.7	133.3	31.3

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

EXTERNAL TRADE

EU-25 exports of transport equipment (CPA Subsection DM) were valued at EUR 156.9 billion in 2002, while imports were EUR 99.4 billion. As such, transport equipment accounted for 18.8 % of the EU-25's manufactured exports and 13.6 % of manufactured imports in 2001. This resulted in a trade surplus of EUR 57.5 billion, which was the second highest across all CPA subsections (behind machinery and equipment, NACE Subsection DK).

The largest trade surpluses were registered for motor vehicles (CPA Group 34.1, EUR 45.7 billion) and for motor vehicle parts and accessories (CPA Group 34.3, EUR 9.1 billion). There was a relatively small deficit of EUR 913.1 million for aircraft and spacecraft (CPA Group 35.3), while the largest deficit was recorded for motorcycles and bicycles (CPA Group 35.4), at EUR 3.1 billion.

Germany ran a trade surplus of EUR 79.7 billion for transport equipment products in 2002 (in terms of intra- and extra-EU trade). This figure was four times the size of the next largest trade surplus that was recorded in France (EUR 20.0 billion). The largest deficit was recorded in the United Kingdom (EUR -20.2 billion), followed by Italy (EUR -8.6 billion).

Table 12.5

Transport equipment (CPA Subsection DM)
External trade, EU-25, 2002 (EUR million)

	Exports	Imports	Trade balance	Cover ratio (%)
Transport equipment	156 932	99 401	57 531	157.9
Motor vehicles	71 650	25 910	45 740	276.5
Bodies (coachwork) for motor vehicles; trailers and semi-trailers	1 413	330	1 084	428.7
Parts and accessories for motor vehicles and their engines	20 928	11 827	9 101	177.0
Ships and boats	12 706	8 309	4 397	152.9
Railway and tramway locomotives and rolling-stock	1 949	706	1 243	276.2
Aircraft and spacecraft	46 692	47 605	-913	98.1
Motorcycles and bicycles	1 500	4 622	-3 121	32.5
Other transport equipment n.e.c.	95	94	1	100.7

Source: Eurostat, Comext.

12.1: MOTOR VEHICLES

Division 34 of the NACE classification covers the manufacture of motor vehicles, trailers and semi-trailers. It contains three NACE groups, the first two of which are included in this subchapter, namely, the manufacture of motor vehicles (NACE Group 34.1) and the manufacture of bodies for motor vehicles, trailers and semi-trailers (NACE Group 34.2). The data for these two NACE groups are presented (where possible) in the form of an aggregate covering both activities, referred to as the motor vehicles sector.

The motor vehicles sector is one of the most often cited examples of a truly globalised industrial sector that applies modern management principles and just-in-time production techniques. Many vehicle producers have started to shift their production facilities to emerging markets and this explains some of the changes seen in the structure of manufacturing in central and eastern Europe. Buy-outs and green field developments by European manufacturers have led to Volkswagen producing under the Skoda badge in the Czech Republic and under the Audi badge in Hungary, while Fiat produces in Poland, Renault in Romania and PSA Peugeot Citroen plans plants in the Czech Republic and Slovakia. Manufacturers from non-Community countries have also invested in the region, for example Daewoo in Poland, and the recent announcement by Hyundai to build Kia cars in Slovakia. The main driving force behind the relocation of production is the cost of labour.

The European Commission is active in promoting the technical harmonisation of vehicles. The Commission has proposed to revamp the directive on the type-approval of vehicles, laying down new technical provisions for road safety in relation to vans, lorries, trailers, buses and coaches. The Commission has also adopted a draft directive [4] on the compulsory fitting of seat belts, extending this requirement to all vehicle categories. These proposed changes would affect nearly two million commercial vehicles every year.

[4] COM (2003) 361.

Table 12.6

New passenger car registrations, by main manufacturers, Europe, 2003 (units) (1)

Group	Brand	Total volume	Market share (%)
BMW	BMW	511 063	3.6
	MINI	116 095	0.8
DAIMLER-CHRYSLER	CHRYSLER	56 673	0.4
	JEEP	35 750	0.3
	MERCEDES	717 031	5.0
	SMART	111 681	0.8
FIAT	ALFA ROMEO	159 583	1.1
	FIAT	794 498	5.6
	LANCIA	100 477	0.7
FORD	FORD	1 227 318	8.6
	JAGUAR	48 807	0.3
	LAND ROVER	71 122	0.5
	VOLVO	216 079	1.5
GENERAL MOTORS	OPEL	1 310 728	9.2
	SAAB	73 265	0.5
JAPANESE MANUFACTURERS	HONDA	192 122	1.4
	MAZDA	207 157	1.5
	MITSUBISHI	116 560	0.8
	NISSAN	398 855	2.8
	SUZUKI	147 035	1.0
	TOYOTA	678 091	4.8
KOREAN MANUFACTURERS	DAEWOO	115 795	0.8
	HYUNDAI	246 015	1.7
	KIA	107 057	0.8
MG ROVER	MG ROVER	135 784	1.0
PSA	CITROEN	909 160	6.4
	PEUGEOT	1 196 651	8.4
RENAULT	RENAULT	1 505 756	10.6
VOLKSWAGEN	AUDI	544 021	3.8
	SEAT	381 367	2.7
	SKODA	240 913	1.7
	VOLKSWAGEN	1 418 386	10.0

(1) EU-15, excluding Luxembourg, plus the Czech Republic, Hungary and Slovakia.
Source: ACEA.

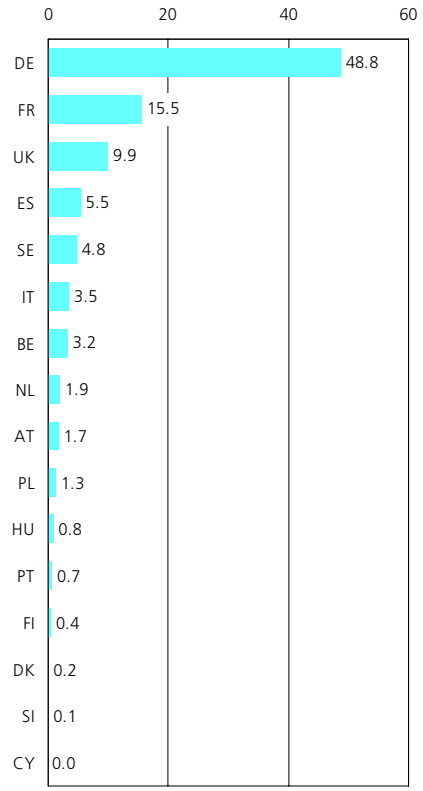
STRUCTURAL PROFILE

According to the European Automobile Manufacturers Association (ACEA), the number of new passenger car registrations in the EU-15 reached 15.9 million in 2003, compared with 14 million the year before. There were 961 300 new passenger car registrations in the new Member States [5]. Table 12.6 shows a breakdown of vehicle registrations according to the vehicle manufacturer in 2003.

[5] Cyprus and Malta, not available

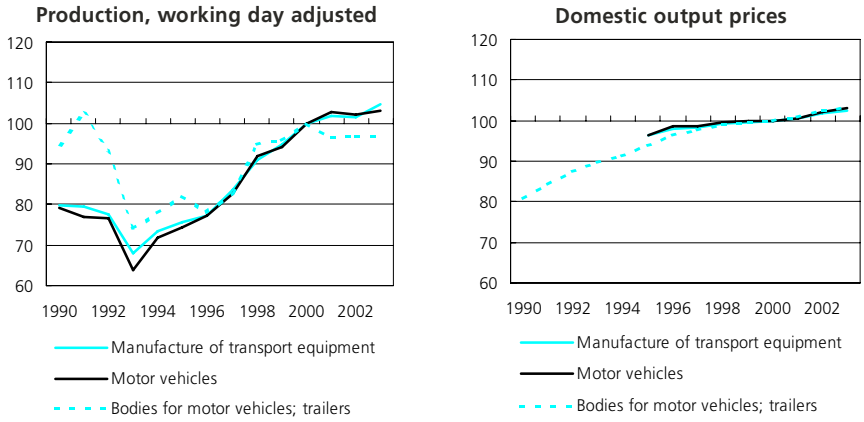
Besides the rapid growth of the monospace market in recent years, another emerging trend is the switch in demand towards diesel engines (likely to have resulted from the significant price differentials that are observed in a number of Member States between the price of diesel and petrol). Diesel engines accounted for 23.1 % of new car registrations in the EU-15 in 1994, a share that had risen to 40.9 % by 2002. Diesel engines accounted for a majority of new car registrations in Austria, Belgium, France, Luxembourg and Spain in 2002.

Figure 12.3
Motor vehicles (NACE Groups 34.1 and 34.2) Share of EU-25 value added, 2001 (%) (1)



(1) The Czech Republic, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovakia, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Figure 12.4
Motor vehicles (NACE Groups 34.1 and 34.2) Main indicators, EU-25 (2000=100)



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

The motor vehicles sector (NACE Groups 34.1 and 34.2) generated EUR 82.0 billion of value added in 2001 within the EU-25, which was equivalent to 5.3 % of manufacturing value added or 48.6 % of transport equipment value added. The 10 new Member States contributed 3.6 % to the EU-25 total.

Almost half of the added value in the motor vehicles industry in 2001 was generated in Germany (48.8 %). The addition of France (15.5 %) and the United Kingdom (9.9 %) took the share of the three largest motor vehicle producers to 74.3 % of the EU-25's value added in 2001 (while their share of the number of employees was 66.7 %). In relative terms, Germany was also the most specialised manufacturer within the EU-25, with a value added specialisation ratio of 182.0 %. The only other countries [6] to be relatively specialised in the manufacture of motor vehicles were Sweden (177.8 %), France, Belgium and Hungary (all between 112 and 115 %).

[6] The Czech Republic, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta and Slovakia, not available.

Motor vehicle manufacture is dominated by large enterprises, as these accounted for 93.1 % of the value added generated in this sector in 2001 in the EU-25, compared with a manufacturing average of 54.9 %.

From its low of 1993, the output of motor vehicles (NACE Group 34.1) in the EU-25 grew at an average rate of 4.9 % per annum through to 2003. The significant reduction in production in 1993 (-16.3 %) was followed by increasing output for every year through until 2002 (-0.6 %), after which a resumption of growth was registered (0.8 %). For the manufacture of bodies for motor vehicles, trailers and semi-trailers (NACE Group 34.2) the picture was somewhat different, as output fell by 20.6 % in 1993. A pattern of more modest growth was interrupted in 1996 (-4.6 %), as well as in 2001 (-3.6 %) and 2003 (-0.2 %).

Output prices for the EU-25 rose in each year from 1996 to 2003, with an annual average increase of 0.8 % for the manufacture of motor vehicles (NACE Group 34.1) and 1.2 % for the manufacture of bodies (coachwork) for motor vehicles / the manufacture of trailers and semi-trailers between 1995 and 2003. These price increases were higher than those recorded for the manufacture of parts and accessories for motor vehicles (NACE Group 34.3) where there was no change in output prices.

LABOUR AND PRODUCTIVITY

Apparent labour productivity in the EU-15's motor vehicles sector (NACE Groups 34.1 and 34.2) was EUR 64 700 per person employed in 2001. Differences between apparent labour productivity in this sector and national manufacturing averages were in excess of EUR 20 000 per person employed in Portugal and Sweden, rising to above EUR 40 000 in Hungary [7].

The wage adjusted labour productivity ratio for the motor vehicles sector in the EU-15 was modest at 135.5 %, compared with a manufacturing average of 143.5 %. This could be attributed to a relatively low ratio in Germany (124.4 %), where average personnel costs were particularly high (EUR 56 500 per employee). There were high ratios in Hungary (where value added covered personnel costs by 4.6 times), Poland (3.9 times) and Portugal (2.4 times) [8].

[7] The Czech Republic, Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovenia and Slovakia, not available.
[8] The Czech Republic, Estonia, Greece, Ireland, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Slovenia and Slovakia, not available.

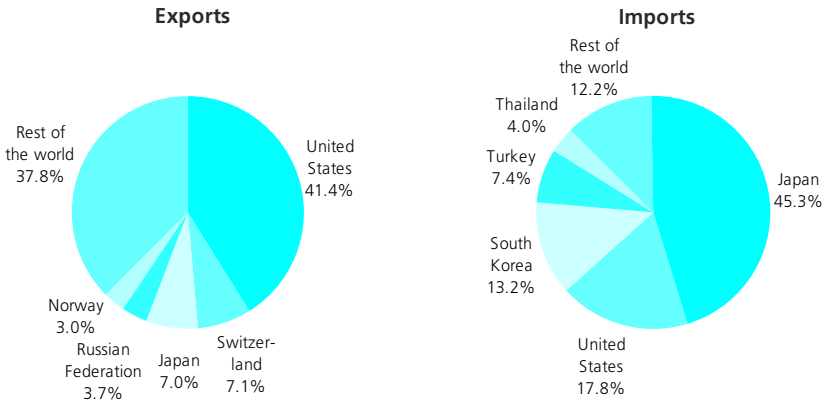
EXTERNAL TRADE

The EU-25 exported EUR 73.1 billion of motor vehicles and bodies (coachwork) for motor vehicles; trailers and semi-trailers (CPA Groups 34.1 and 34.2) to non-Community countries in 2002, while imports were valued at EUR 26.2 billion. Note that these figures include motor vehicles that have been produced in factories operating under American or Asian ownership.

The main export market for the EU-25 was the United States (41.4 %), followed by Japan and Switzerland, where just over 7 % of the EU-25's exports were destined. Japan was the main origin of EU-25 imports, accounting for 45.3 % of the total, ahead of the United States (17.8 %), South Korea (13.2 %) and Turkey (7.4 %), the latter hosting European, Asian and American manufacturers.

Figure 12.5

Motor vehicles; bodies (coachwork) for motor vehicles; trailers and semi-trailers (CPA Groups 34.1 and 34.2)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

12.2: MOTOR VEHICLE PARTS AND ACCESSORIES

This subchapter covers the one remaining NACE group of Division 34, namely the manufacture of parts and accessories for motor vehicles and their engines (NACE Group 34.3). The data presented in this subchapter do not cover the manufacture of tyres (Chapter 6), batteries or electrical equipment that are used in motor vehicles (Chapter 11).

Demand for vehicle parts and accessories is divided between original equipment (OE) that is supplied directly to motor vehicle manufacturers and demand from the after-market (AM) for spare parts and accessories for repairs and modifications to used vehicles. Despite the fact that there are an increasing number of vehicles on the road, AM demand for many products has declined as a result of quality improvements that have increased the average life of many products.

Recent changes in the structure of the parts and accessories sector have been driven by the emergence of Delphi Automotive Systems and Visteon (spin-offs from General Motors and Ford), which seemingly stimulated merger activity among first- and second-tier suppliers. There has been a general reduction in the number of suppliers being used by vehicle manufacturers and this has resulted in parts and accessories manufacturers being increasingly contracted to produce complete units for a vehicle, and as a result taking over part of the R & D burden.

The parts and accessories sector has one of the main examples of a thriving e-commerce B2B marketplace, through online trading systems such as Covisint, that have increased the potential client and geographic base of many suppliers, while leading to efficiency gains through just-in-time delivery and manufacture.

STRUCTURAL PROFILE

The EU-25's parts and accessories sector generated EUR 39.9 billion of value added in 2001 (94.1 % of which was derived in the EU-15), which was almost one third (32.7 %) of the total added value within the motor vehicles sector (Division 34).

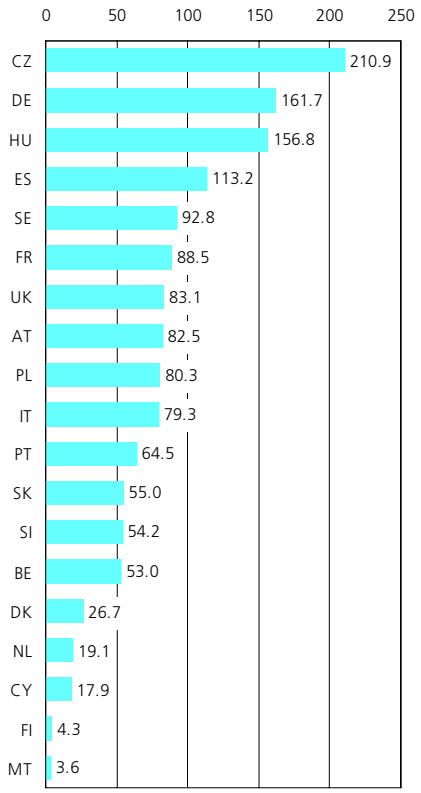
Germany was the most important manufacturer of parts and accessories in 2001, with EUR 17.3 billion of value added, or 43.4 % of the EU-25 total. The United Kingdom (12.4 %), France (11.9 %) and Italy (10.5 %) followed, while Spain (7.7 %) was the only other Member State [9] to account for more than 5 % of the EU-25's value added.

In relative terms, the most specialised producer of parts and accessories was the Czech Republic (specialisation ratio relative to EU-25 manufacturing of 210.9 %). There were only three other countries [10] that were relatively specialised in the manufacture of vehicle parts and accessories: Germany (161.7 %), Hungary (156.8 %) and Spain (113.2 %).

[9] Estonia, Greece, Ireland, Latvia, Lithuania and Luxembourg, not available.
[10] Estonia, Greece, Ireland, Latvia, Lithuania and Luxembourg, not available.

Figure 12.6

Manufacture of parts, accessories for motor vehicles (NACE Group 34.3)
Value added specialisation ratio relative to total manufacturing, 2001 (EU-25=100) (1)



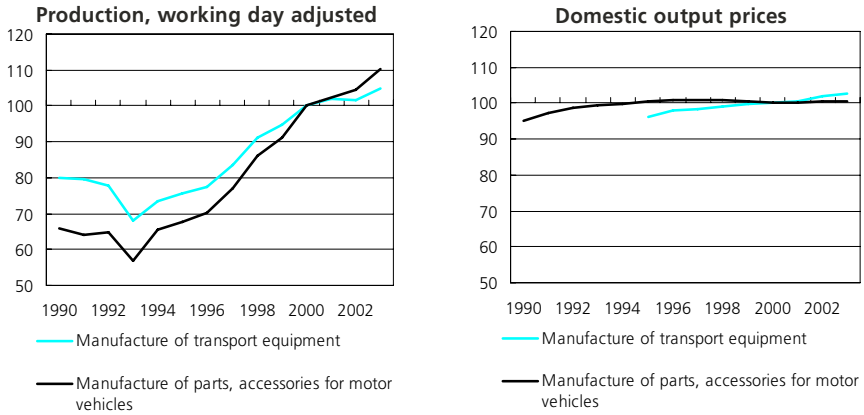
(1) Estonia, Greece, Ireland, Latvia, Lithuania and Luxembourg, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

The parts and accessories sector is dominated by large enterprises (with 250 or more persons employed). They contributed 77.5 % of the EU-25's value added in 2001 compared with a manufacturing average of 54.9 %.

Production of motor vehicle parts and accessories consistently out-performed manufacturing between 1994 and 2003, with higher growth registered for the production index. Positive growth rates were registered every year, with particularly large expansions in 1994, 1997, 1998 and 2000 (9 % or more). Parts and accessories suppliers are increasingly under pressure from vehicle manufacturers demanding cost-cutting measures. This is evident in the data for output prices for the EU-25, as there was no change in prices between 1995 and 2003 (-0.1 % overall).

Figure 12.7

Manufacture of parts, accessories for motor vehicles (NACE Group 34.3)
Main indicators, EU-25 (2000=100)



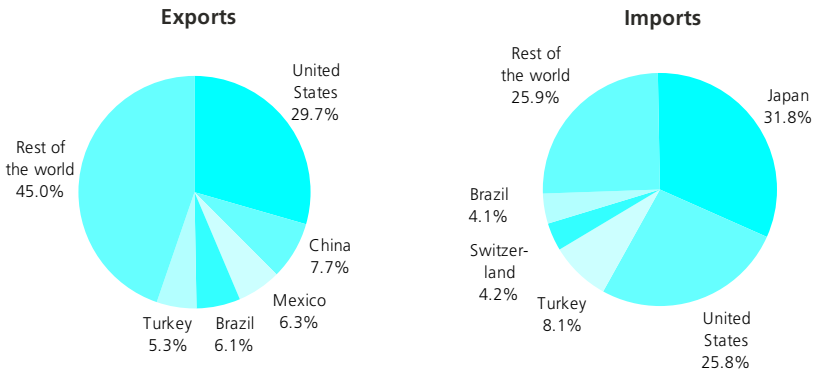
Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

LABOUR AND PRODUCTIVITY

The apparent labour productivity of the EU-15's parts and accessories sector was equivalent to EUR 52 300 per person employed in 2001. The largest differences in productivity between national manufacturing averages and the figures registered for the parts and accessories sector were recorded in the Czech Republic (51.4 % higher than the manufacturing average), Portugal (37.6 %) and Hungary (27.5 %) [11]. Average personnel costs in the EU-25's parts and accessories sector were EUR 34 800 per employee in 2001 and were at least 10 % above the manufacturing average in the parts and accessories sector in the Czech Republic, Germany, Spain, Hungary and Portugal [12]. Combining these two ratios, the wage adjusted labour productivity ratio shows that for each euro spent on personnel costs in the EU-15, EUR 1.31 of value added was derived in 2001. Wage adjusted productivity ratios were above national manufacturing averages in the Czech Republic (30.5 % higher), Austria (17.3 %), Hungary (10.1 %), Portugal (8.8 %), Italy (4.6 %) and Spain (0.1 %) [13].

Figure 12.8

Parts and accessories for motor vehicles and their engines (CPA Group 34.3)
Share in extra-EU trade, 2002



Source: Eurostat, Comext

EXTERNAL TRADE

EU-25 exports of parts and accessories for motor vehicles and their engines (CPA Group 34.3) were valued at EUR 20.9 billion in 2002, while imports totalled EUR 11.8 billion. Considering intra- and extra-EU trade, by far the largest trade surplus among the Member States was registered in Germany (EUR 11.3 billion), followed by Italy and France (both just over EUR 3.5 billion).

The largest export market for the EU-25 for parts and accessories in 2002 was the United States (29.7 % of total exports), followed by China (7.7 %), Mexico (6.3 %), Brazil (6.1 %) and Turkey (5.3 %). Almost one third of the EU-25's imports originated in Japan (31.8 %), while a further quarter came from the United States (25.8 %), with Turkey's 8.1 % a distant third place.

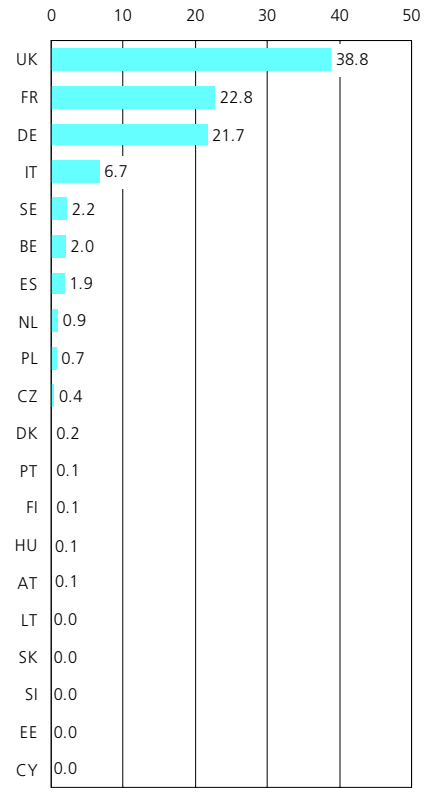
[11] Estonia, Greece, Ireland, Latvia, Lithuania, Luxembourg and Slovenia, not available.
[12] Estonia, Greece, Ireland, Cyprus, Latvia, Lithuania and Luxembourg, not available.
[13] Estonia, Greece, Ireland, Cyprus, Latvia, Lithuania, Luxembourg and Slovenia, not available.

12.3: AEROSPACE EQUIPMENT

This subchapter includes information on the production of aircraft that are used for the transport of passengers or freight, as well as military applications. These activities are classified together within NACE Group 35.3. The data presented also cover other means of air transport, for example gliders, balloons and spacecraft, as well as parts and accessories that are used in the construction of aircraft and spacecraft.

Figure 12.9

Manufacture of aircraft and spacecraft (NACE Group 35.3)
Share of EU-25 value added, 2001 (%) (1)



(1) Greece, Ireland, Latvia, Luxembourg and Malta, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

The aerospace industry is one of the EU's cutting-edge, high-technology sectors. There is a high emphasis on R & D and enterprises are often faced with the need for considerable investment, with a long and uncertain period before costs are recouped. The use of alliances and consortia is often used as a means of spreading this investment risk. Europe's most successful example of an alliance is Airbus, which, for the first time, delivered more jets than Boeing in 2003.

The structure of the European aerospace industry has undergone profound changes in the last decade. A process of mergers and rationalisation took place, leading to the creation of global players such as EADS (second highest global turnover in this sector) and BAE Systems (fourth), alongside the US based Boeing (first) and Lockheed Martin (third).

The STAR 21 initiative [14] provides a framework for the development aerospace in the EU, underlining steps to improve competitiveness, for example by improving support for civil and defence research, establishing an EU-wide defence equipment market, as well as undertaking to produce a White Paper on space policy.

STRUCTURAL PROFILE

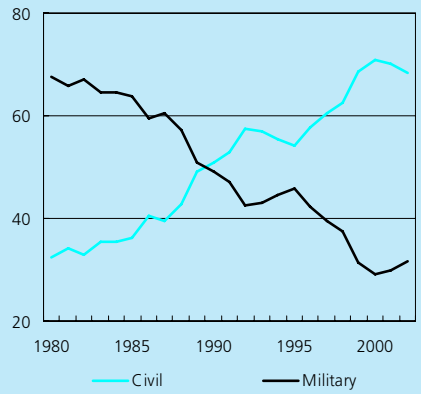
The EU-25's aerospace equipment sector generated EUR 30.0 billion of added value in 2001, which equated to 17.8 % of total value added in the transport equipment sector, a proportion that rose as high as 42.1 % in the United Kingdom and 26.1 % in France [15]. The United Kingdom accounted for 38.8 % of the EU-25's value added, ahead of France (22.8 %) and Germany (21.7 %). As such, the three largest producers together generated 83.2 % of value added compared with a manufacturing average of 55.2 %. This high concentration led to only the United Kingdom (260.1 %) and France (168.8 %) being relatively specialised in the aerospace equipment sector in 2001 [16]. Among the 10 new Member States, the Czech Republic and Poland had the largest aerospace sectors.

The simplest division that can be made for aerospace equipment is between civilian and military markets. Figure 12.10 shows the breakdown of consolidated turnover in the EU-15 between these two markets. After five annual reductions in the proportion of sales generated from military applications, 2001 and 2002 were marked by an increase in the share of the military sector, as civilian markets were hit by concerns over an economic slowdown and the after-effects of the terrorist attacks in the United States of 11 September 2001. Indeed, the production index for aerospace equipment fell by 9.0 % in 2002 for the EU-25, although it rebounded by 8.7 % in 2003. The longer-term evolution showed declining output during five successive years from 1991 to 1995, after which six consecutive positive annual rates were registered through to 2001.

[14] Communication from the European Commission, COM(2003) 600 final of 13 October 2003.
[15] Greece, Ireland, Latvia, Luxembourg and Malta, not available.
[16] Greece, Ireland, Latvia, Luxembourg and Malta, not available.

Figure 12.10

Breakdown of consolidated turnover in aerospace, EU-15 (%) (1)



(1) Based on consolidated turnover in 2002 constant prices.
Source: AECMA, available at http://www.aecma.org.

Table 12.7

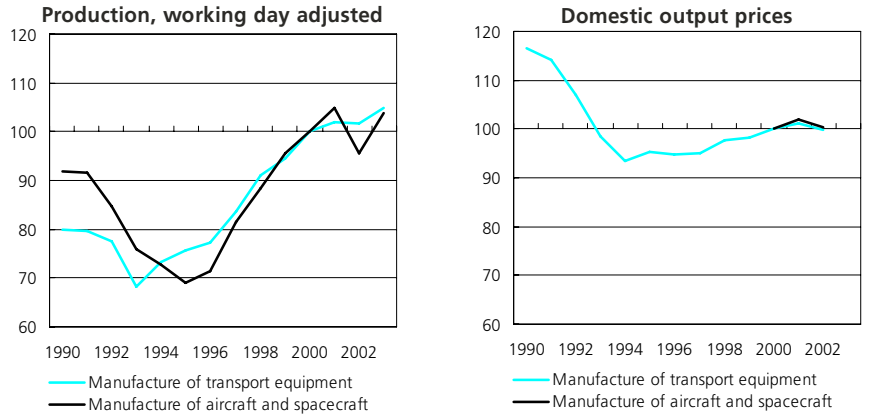
Breakdown of consolidated turnover in aerospace, EU-15, 2002

	(billion EUR)	(% of total)
Total	74.6	100.0
Aircraft	68.6	91.9
Aircraft final products (1)	34.3	46.0
Large civil aircraft	18.7	25.0
Regional aircraft	1.2	1.6
Business jets	1.1	1.4
Helicopters	4.9	6.6
Military aircraft	8.5	11.3
Aerostructures	3.2	4.3
Aircraft engines	9.4	12.6
Aircraft equipment	5.5	7.4
Aircraft maintenance	16.1	21.7
Missiles (1)	2.4	3.2
Space (1)	3.7	4.9

(1) Based on consolidated turnover in 2002 constant prices.
Source: AECMA, available at http://www.aecma.org.

Figure 12.11

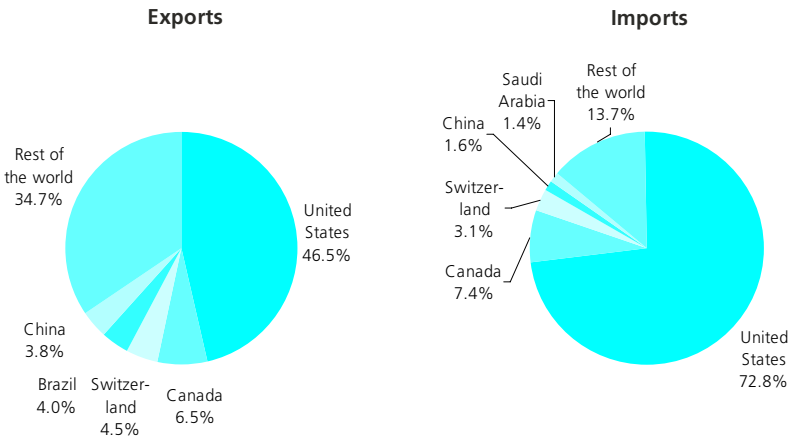
Manufacture of aircraft and spacecraft (NACE Group 35.3)
Main indicators, EU-25 (2000=100)



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

Figure 12.12

Aircraft and spacecraft (CPA Group 35.3)
Share in extra-EU trade, 2002



Source: Eurostat, Comext.

LABOUR AND PRODUCTIVITY

Apparent labour productivity in the EU-15's aerospace sector was EUR 85 000 per person employed in 2001, well above the transport equipment average of EUR 61 000. Average personnel costs for the EU-25 were EUR 50 300 per employee, also above the transport equipment average of EUR 40 300. When combining these two ratios, the resultant wage adjusted labour productivity ratio showed that added value exceeded personnel costs by 59.5 % in the EU-15's aerospace sector, compared with a transport equipment average of 36.7 %. The highest wage adjusted productivity ratios were registered in the Czech Republic (208.4 %), Lithuania (195.3 %) and the United Kingdom (190.1 %) *(17)*.

EXTERNAL TRADE

The EU-25 had an almost balanced trade situation for aircraft and spacecraft (CPA Group 35.3) in 2002, as exports of EUR 46.7 billion were cancelled out by imports valued at EUR 47.6 billion. The largest surpluses among the Member States (intra- and extra-EU trade) were registered in France (EUR 7.7 billion) and Germany (EUR 4.9 billion), while the United Kingdom recorded a deficit of EUR 595 million in 2002, which was only exceeded in Denmark (EUR 1.1 billion) and Ireland (EUR 1.6 billion).

Given that the other main global players in the aerospace equipment industry are American, it is no surprise that the highest shares of the EU-25's imports and exports were with the United States. Just under half (46.5 %) of the EU's exports in 2002 were destined for the United States, with Canada, Switzerland, Brazil and China all accounting for between 6.5 and 3.8 %. The origin of the EU's imports was even more concentrated, as the United States accounted for almost three quarters (72.8 %) of the total, followed by Canada (7.4 %) and Switzerland (3.1 %).

(17) Estonia, Greece, Ireland, Cyprus, Latvia, Luxembourg, Malta and Slovenia, not available.

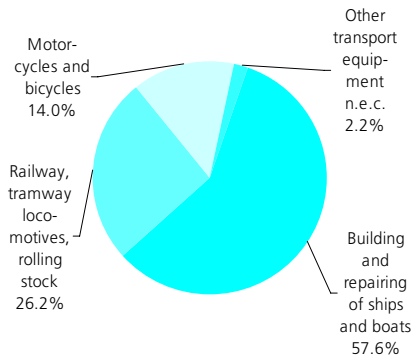
12.4: MISCELLANEOUS TRANSPORT EQUIPMENT

This miscellaneous grouping brings together the remaining activities within the transport equipment sector. It includes information on the building of ships and boats (NACE Group 35.1), the manufacture of railway and tramway locomotives and rolling stock (NACE Group 35.2), the manufacture of motorcycles and bicycles (NACE Group 35.4) and the manufacture of other transport equipment (NACE Group 35.5).

The miscellaneous transport equipment sector generated EUR 16.8 billion of value added in 2001 in the EU-25 and employed 354 100 persons in the EU-15. As such, the combined weight of these activities in the whole of the EU-25's transport equipment sector was 10.0 % in terms of value added and 13.4 % of EU-15 employment.

Figure 12.13

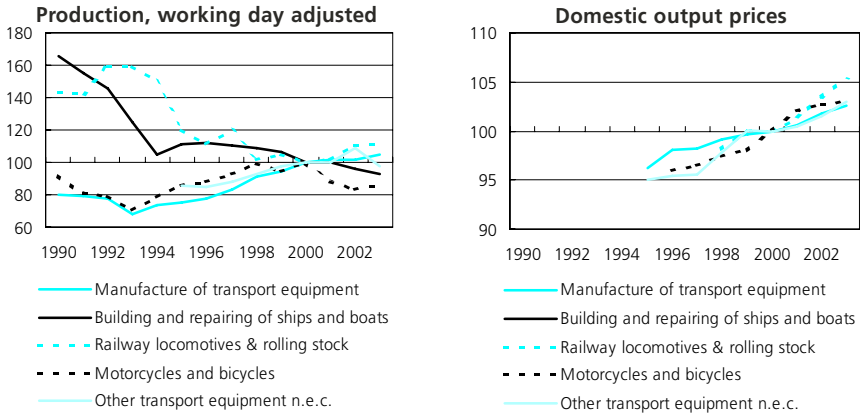
Manufacture of miscellaneous transport equipment (NACE Groups 35.1, 35.2, 35.4 and 35.5) Share of value added at factor cost, EU-25, 2001



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

Figure 12.14

Manufacture of miscellaneous transport equipment (NACE Groups 35.1, 35.2, 35.4 and 35.5) Main indicators, EU-25 (2000=100) (1)



(1) Note: different scales for figures.
Source: Eurostat, European Business Trends - Monthly and Quarterly Short Term Statistics (theme4/ebt).

Table 12.8

Manufacture of miscellaneous transport equipment (NACE Groups 35.1, 35.2, 35.4 and 35.5) 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)
Manufacture of miscellaneous transport equipment	42.7	121.6	35.1
Building and repairing of ships and boats	42.7	126.7	33.7
Manufacture of railway, tramway locomotives, rolling stock	44.2	106.9	41.3
Manufacture of motorcycles and bicycles	41.0	133.5	30.7
Manufacture of other transport equipment n.e.c.	41.7	133.3	31.3

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

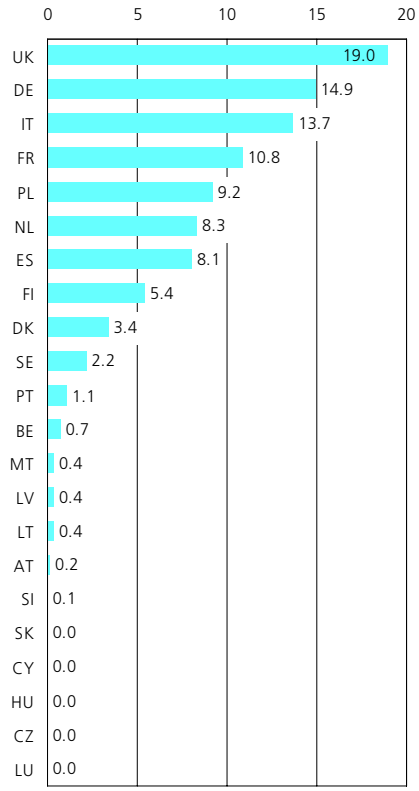
Table 12.9

Miscellaneous transport equipment (CPA Groups 35.1, 35.2, 35.4 and 35.5) External trade, EU-25, 2002

	Exports		Imports		
	Value (EUR million)	Share of total (%)	Value (EUR million)	Share of total (%)	Trade balance (EUR million)
Miscellaneous transport equipment	16 250	100.0	13 730	100.0	2 520
Ships and boats	12 706	78.2	8 309	60.5	4 397
Railway and tramway locomotives and rolling-stock	1 949	12.0	706	5.1	1 243
Motorcycles and bicycles	1 500	9.2	4 622	33.7	-3 121
Other transport equipment n.e.c.	95	0.6	94	0.7	1

Source: Eurostat, Comext.

Figure 12.15
Building and repairing of ships and boats (NACE Group 35.1)
Share of EU-25 value added, 2001 (%) (1)



(1) Estonia, Greece and Ireland, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.10
Breakdown of the world shipbuilding market (%) (1)

	1997	1998	1999	2000	2001	2002
Completions						
Europe (2)	23.7	24.8	23.4	24.4	23.6	22.9
South Korea	23.5	20.3	29.4	32.4	30.2	31.1
Japan	37.2	38.0	34.6	30.9	32.1	30.7
Rest of the world	15.6	16.9	12.6	12.3	14.1	15.3
New orders						
Europe (2)	17.1	28.5	21.1	24.8	17.1	10.9
South Korea	27.5	24.4	32.5	35.8	29.9	28.3
Japan	39.1	31.3	26.2	25.5	33.3	37.1
Rest of the world	16.3	15.8	20.2	13.9	19.7	23.7

(1) All data are based on compensated gross tonnage.
(2) EU-15, Norway, Poland and Romania; data for Romania are included from 2000, data for Croatia are included from 2002.
Source: Lloyd's Register of Shipping in AWES Annual Report 2002-2003.

BUILDING AND REPAIRING OF SHIPS AND BOATS (NACE GROUP 35.1)

European shipbuilding has undergone widespread changes since the early 1970's, as two out of every three shipyards have disappeared. Short-term statistics show that output fell overall by 44.0 % between 1990 and 2003 in the EU-25, equivalent to an average decline of 5.6 % per annum.

Table 12.10 provides information on the breakdown of the world shipbuilding market by geographical region in terms of completions and new orders. One of the most striking features is the rapid decline in the proportion of the total order book that was accounted for by European [18] shipbuilders in 2001 and 2002. This may in part be explained by a lack of orders in the high-end, cruise-liner market following the terrorist attacks in the United States on 11 September 2001.

[18] EU-15, Norway, Poland and Romania; data for Romania are included from 2000 onwards, data for Croatia are included from 2002 onwards.

Environmental accidents, such as those involving the Erika and Prestige oil tankers in the winters of 1999 and 2002, have focused concerns on safety at sea and the resulting environmental impact of oil spills, resulting in stricter EU regulations to strengthen certain parts of the steel structure of ships. This has had the effect of bringing forward the replacement of some oil tankers, a market segment dominated by South-East Asian shipyards. Capacity continues to expand, with new shipyard investment being undertaken in China, South Korea and Vietnam. The European Commission believes that certain business practices in Korean shipyards could be unlawful and, in the absence of a negotiated solution, the Commission has started to pursue actions at a WTO and OECD level.

The sector of the building and repairing of ships and boats (NACE Group 35.1), hereafter referred to as shipbuilding, generated EUR 9.7 billion of added value in 2001 in the EU-25. There were 202 600 persons employed in the EU-15 in 2001. As such, the shipbuilding sector accounted for 5.7 % of value added in the EU-25's transport equipment sector and for 7.7 % of EU-15 employment. The 10 new Member States were collectively relatively specialised in the shipbuilding sector, as they contributed 10.6 % of the EU-25's value added in 2001, compared with a 5.6 % share of manufacturing value added. By far the largest contribution came from Poland, which accounted for 9.2 % of the EU-25's value added. This was the fifth highest share behind the United Kingdom (19.0 %), Germany (14.9 %), Italy (13.7 %) and France (10.8 %) [19].

[19] Estonia, Greece and Ireland, not available.

Apparent labour productivity in the EU-15's shipbuilding sector was, at EUR 42 700 per person employed in 2001, well below the transport equipment average of EUR 61 000. Average personnel costs (EUR 28 500 per employee) in the EU-25 were also below the transport equipment average (EUR 40 300). Wage adjusted productivity for the shipbuilding sector was, as a result, 126.7 % in the EU-15, again below the ratio for the whole of transport equipment (136.7 %). Value added did not cover adjusted personnel costs in 2001 in a number of countries including Sweden (98.3 %), Spain (85.2 %), Malta (54.4 %) and the Czech Republic (48.8 %) [20].

The EU-25 had a trade surplus of EUR 4.4 billion for ships and boats (CPA Group 35.1), with EUR 12.7 billion of exports. There were only four Member States that reported a trade surplus/deficit in excess of +/- EUR 1 billion in 2002. Three of them reported surpluses (Germany, Italy and Finland), while Greece had the largest deficit of EUR -2.5 billion. External trade statistics for ships and boats is complicated by the existence of flags of convenience that result in the Cayman Islands, Bermuda and the Bahamas appearing as the second, third and fourth most important export destinations for EU-25 exports. South Korea was by far the most important origin of EU-25 imports, accounting for a 27.8 % share in 2002, while no other country accounted for a double-digit share.

[20] Estonia, Greece, Ireland, Cyprus, Luxembourg and Slovenia, not available.

MANUFACTURE OF RAILWAY AND TRAMWAY LOCOMOTIVES AND ROLLING STOCK (NACE GROUP 35.2)

The EU-25 generated EUR 4.4 billion of value added in 2001 in the manufacture of railway and tramway locomotives and rolling stock (NACE Group 35.2), hereafter referred to as railway equipment. The 10 new Member States together contributed 12.4 % of this total, which was more than double their average contribution to manufacturing value added (5.6 %).

Germany (28.6 %) made the largest contribution to the EU-25's value added, while the United Kingdom (17.7 %) and France (12.7 %) followed [21].

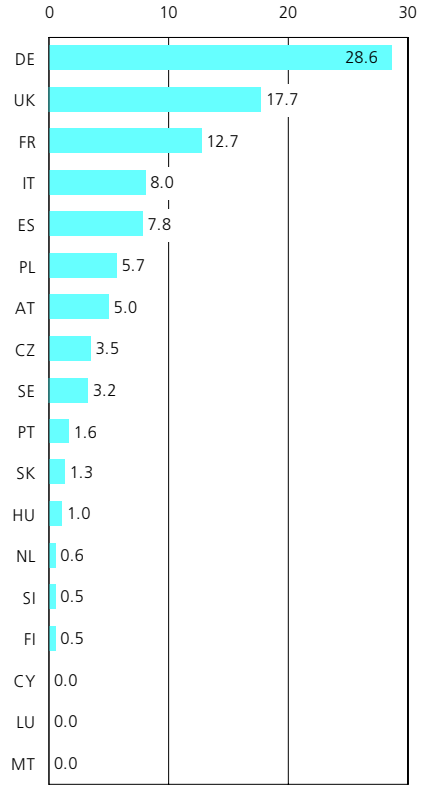
However, relative to manufacturing as a whole, the highest value added specialisation ratio (EU-25 = 100) was recorded in Slovakia (510.4 %), which was the third highest of any manufacturing group in that country. The next highest ratio was recorded in the Czech Republic (359.3 %), which was the highest value added specialisation ratio of any manufacturing NACE group in that country, while Poland and Slovenia also reported specialisation ratios above 190 %. Austria (214.9 %) was the only EU-15 Member State to report a specialisation ratio in excess of 150 % [22].

From a high in 1992, the production index for railway equipment fell for four consecutive years to 1996 when a pattern of alternating positive and negative rates began, which lasted until 2001. During the period 2001 to 2003 there was a gradual recovery in output with three consecutive positive rates, as the EU-25's output of railway equipment stood in 2003 some 11.3 % above its level of 2000, although still 30.0 % below its level of 1992.

[21] Belgium, Denmark, Estonia, Greece, Ireland, Latvia and Lithuania, not available.
[22] Belgium, Denmark, Estonia, Greece, Ireland, Latvia and Lithuania, not available.

Figure 12.16

Manufacture of railway, tramway locomotives, rolling stock (NACE Group 35.2)
Share of EU-25 value added, 2001 (%) (1)



(1) Belgium, Denmark, Estonia, Greece, Ireland, Latvia and Lithuania, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Apparent labour productivity in the railway equipment sector was EUR 44 200 per person employed in 2001 in the EU-15. In every country for which data are available [23], labour productivity in the railway equipment sector was below the national transport equipment average. Average personnel costs in 2001 were EUR 29 300 per employee in the EU-25 and EUR 41 300 in the EU-15. With relatively high average personnel costs and relatively low labour productivity, the railway equipment sector recorded a wage adjusted labour productivity ratio of 106.9 % in the EU-15, compared with a transport equipment average of 136.7 %. France (87.1 %) and Sweden (65.9 %) reported that value added did not cover adjusted personnel costs in 2001. The highest wage adjusted labour productivity ratios were registered in the Czech Republic (166.2 %) and Poland (164.2 %), the only countries [24] to report ratios over 135 %.

The EU-25 reported a trade surplus of EUR 1.2 billion in 2002 for railway and tramway locomotives and rolling stock (CPA Group 35.2), with exports valued at EUR 1.9 billion. Germany (EUR 818 million) and France (EUR 507 million) were the only countries that reported a trade surplus (intra- and extra-EU trade) in excess of EUR 500 million.

[23] Belgium, Denmark, Estonia, Greece, Ireland, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovenia, not available.
[24] Belgium, Denmark, Estonia, Greece, Ireland, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovenia, not available.

MANUFACTURE OF MOTORCYCLES AND BICYCLES (NACE GROUP 35.4)

ACEM estimates that the total number of moped deliveries in the EU [25] reached over 1.25 million units in 2001, while there were 1.51 million motorcycle registrations. Italy was the largest single producer of motorcycles and mopeds in the EU, with 754 600 units in 2002, well ahead of Spain (223 700), while France and Germany were the only other countries where more than 100 000 units were made.

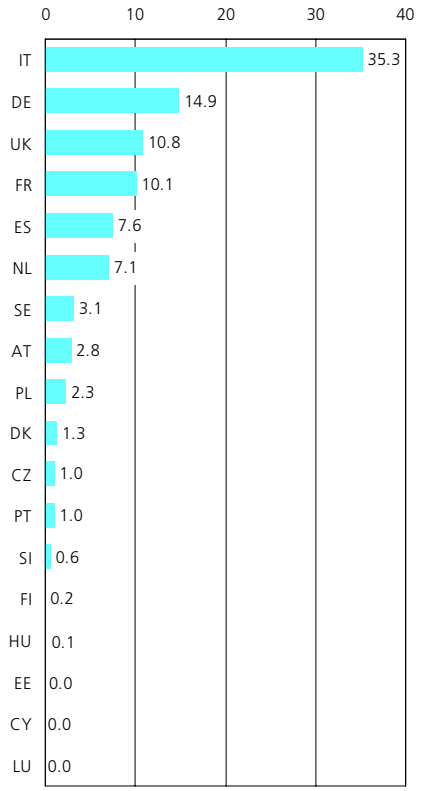
The motorcycles and bicycles sector (NACE Group 35.4) generated EUR 2.4 billion of added value in the EU-25 in 2001, 4.3 % of which came from the 10 new Member States. This sector therefore contributed 1.4 % of the EU-25's value added in the transport equipment sector, a share that rose to 7.3 % in Slovenia and 7.2 % in Italy [26]. Italy produced more than one third (35.3 %) of the EU's output in value added terms in 2001.

A breakdown of activity for the EU-15 shows that the manufacture of motorcycles (NACE Class 35.41) accounted for almost half (49.7 %) of the value added in 2001 in the motorcycles and bicycles sector. Some 34.0 % of value added in the EU-15 was created in the bicycle sector (NACE Class 35.42) and the remaining 16.3 % by the manufacture of invalid carriages (NACE Class 35.43).

[25] Belgium, the Czech Republic, Denmark, Germany, Greece, Spain, France, Ireland, Italy, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom; excluding Greece for moped deliveries.
[26] Belgium, Greece, Ireland, Latvia, Lithuania, Malta and Slovakia, not available.

Figure 12.17

Manufacture of motorcycles and bicycles (NACE Group 35.4)
Share of EU-25 value added, 2001 (%) (1)



(1) Belgium, Greece, Ireland, Latvia, Lithuania, Malta, Slovakia, not available.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

The evolution of the production index of motorcycles and bicycles followed closely that of transport equipment during the 1990s. There was a low point in output registered in 1993, following which there was fairly rapid growth though to 2000, which averaged 5.1 % per annum for motorcycles and bicycles, compared with 5.5 % for the whole of transport equipment. This similar development ended after 2000, as the output of transport equipment continued to grow at a modest rate of 1.4 % per annum through to 2003, while the production of motorcycles and bicycles fell (-5.3 % per annum).

In employment terms, the motorcycles and bicycles sector contributed 2.1 % of the EU-15's employment in the transport equipment sector, with 55 300 persons employed in 2001. Their apparent labour productivity was EUR 41 000 per person employed. Average personnel costs in the EU-25 were EUR 27 200 per employee, which was the lowest figure recorded among the NACE groups that make up the transport equipment sector.

The EU-25 had a relatively large trade deficit in motorcycles and bicycles (CPA Group 35.4) in 2002 that was equal to EUR 3.1 billion, with imports valued at EUR 4.6 billion. Some 61.4 % of the EU-25's imports were composed of motorcycles (CPA Class 35.41), while just over one third of the total was accounted for by bicycles (CPA Class 35.42). Japan was by far the most important origin of motorcycle imports, with a 76.8 % share of the EU-25 total in 2002, which was more than eight times higher than the next highest share recorded by the United States (8.9 %). The main origin of EU-25 bicycle imports (CPA Class 35.42) in 2002 was Taiwan (34.4 %), followed by China (24.4 %), with Japan (12.2 %) the only other country with a double-digit share.

Table 12.11

Manufacture of motor vehicles; bodies (coachwork) for motor vehicles; trailers and semi-trailers (NACE Groups 34.1 and 34.2)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	15 920	:	673	176 079	:	:	32 252	101 567	118	27 715	8	:	:	:
Value added at factor cost (EUR million)	2 663	:	173	40 029	:	:	4 520	12 709	:	2 884	3	:	:	:
Purchases of goods and services (EUR million)	14 228	:	0	166 731	:	:	33 829	92 510	90	30 779	5	:	:	:
Gross investment in tangible goods (EUR million)	408	:	28	8 870	:	:	2 135	4 092	4	1 126	0	:	:	:
Number of persons employed (thousands)	43	:	3	569	:	:	94	186	1	87	0	:	:	:
App. labour productivity (EUR thous./pers. emp.)	61.3	:	50.2	70.3	:	:	47.9	68.3	:	33.3	23.0	:	:	:
Average personnel costs (EUR thous./employee) (1)	46.4	:	37.8	56.5	:	:	33.7	42.2	:	33.6	13.8	:	:	:
Wage adjusted labour productivity (%) (1)	131.9	:	132.9	124.4	:	:	142.0	161.8	:	99.1	135.2	:	:	:
Gross operating rate (%)	3.8	:	6.5	3.9	:	:	3.6	4.6	:	0.0	14.5	:	:	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	4 358	:	6 373	5 891	5 027	3 313	1 142	:	856	17 086	38 362	10	:	:
Value added at factor cost (EUR million)	696	:	1 527	1 356	1 102	587	77	:	316	3 955	8 151	3	:	:
Purchases of goods and services (EUR million)	4 123	:	5 398	4 682	4 742	3 250	1 038	:	622	14 703	39 578	7	:	:
Gross investment in tangible goods (EUR million)	343	:	129	271	331	161	38	:	30	1 010	2 931	1	:	:
Number of persons employed (thousands)	12	:	22	19	29	12	:	:	7	54	122	2	:	:
App. labour productivity (EUR thous./pers. emp.)	57.7	:	71.0	70.9	38.2	47.8	:	:	46.9	73.3	66.8	1.9	:	:
Average personnel costs (EUR thous./employee)	12.4	:	37.9	44.3	9.9	19.8	14.6	:	34.4	43.3	44.8	1.8	:	:
Wage adjusted labour productivity (%)	463.9	:	187.1	159.9	386.4	241.7	:	:	136.5	169.5	149.1	105.3	:	:
Gross operating rate (%)	11.4	:	10.3	8.6	13.3	9.0	1.6	:	9.5	9.4	5.6	2.0	:	:

(1) Cyprus, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.12

Manufacture of parts, accessories for motor vehicles (NACE Group 34.3)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	2 242	3 582	463	50 734	:	:	10 560	21 028	350	14 559	9	:	:	:
Value added at factor cost (EUR million) (1)	609	815	178	17 300	:	:	3 058	4 757	114	4 174	4	:	:	:
Purchases of goods and services (EUR million)	1 689	2 915	0	42 506	:	:	7 796	17 152	236	10 877	6	:	:	:
Gross investment in tangible goods (EUR million)	180	420	34	2 748	:	:	739	1 021	27	746	1	:	:	:
Number of persons employed (thousands)	11	50	4	294	:	:	68	100	3	88	0	:	:	:
App. labour productivity (EUR thous./pers. emp.) (1)	57.7	16.2	50.5	58.8	:	:	45.3	47.6	47.1	47.5	20.0	:	:	:
Average personnel costs (EUR thous./employee) (2)	40.1	7.8	39.0	48.2	:	:	29.8	37.3	26.1	31.3	13.1	:	:	:
Wage adjusted labour productivity (%) (2)	143.7	208.1	129.5	122.1	:	:	152.0	127.7	180.1	151.7	143.7	:	:	:
Gross operating rate (%) (1)	8.3	11.6	8.7	5.3	:	:	9.9	4.7	14.7	10.1	12.1	:	:	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	1 555	2	963	2 754	2 508	1 130	236	198	92	3 529	14 197	17	417	:
Value added at factor cost (EUR million)	471	1	268	766	942	299	57	56	35	1 004	4 936	7	158	:
Purchases of goods and services (EUR million)	1 137	2	767	2 029	1 657	872	206	147	62	2 552	9 684	14	317	:
Gross investment in tangible goods (EUR million)	130	0	36	129	213	119	13	25	5	153	914	1	44	:
Number of persons employed (thousands)	24	0	6	11	49	11	:	6	1	24	98	2	41	:
App. labour productivity (EUR thous./pers. emp.)	19.5	14.4	46.1	68.2	19.3	27.1	:	9.8	45.9	42.5	50.4	3.4	3.8	:
Average personnel costs (EUR thous./employee)	8.4	9.4	37.5	40.0	7.9	16.0	14.0	5.5	34.2	35.0	36.2	2.0	2.6	:
Wage adjusted labour productivity (%)	231.6	152.4	123.2	170.7	245.3	169.9	:	178.7	134.4	121.3	139.2	173.1	147.8	:
Gross operating rate (%)	16.8	11.4	5.5	11.2	22.8	10.8	5.3	12.2	10.1	5.2	9.7	15.2	12.3	:

(1) Ireland, 2000.
(2) Ireland and Cyprus, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.13

Building and repairing of ships and boats (NACE Group 35.1)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	155	12	1 094	5 683	:	:	2 898	4 383	35	4 549	7	73	81	0
Value added at factor cost (EUR million) (1)	68	2	329	1 442	:	:	782	1 049	11	1 323	4	36	35	0
Purchases of goods and services (EUR million) (2)	100	6	0	4 450	:	:	2 282	3 617	20	3 335	6	45	47	0
Gross investment in tangible goods (EUR million)	5	1	44	111	:	:	116	171	2	189	1	5	6	:
Number of persons employed (thousands)	2	0	7	27	:	:	31	21	0	30	0	3	5	0
App. labour productivity (EUR thous./pers. emp.) (1)	41.5	3.2	46.0	52.5	:	:	25.1	48.9	32.3	43.4	27.8	12.9	7.2	:
Average personnel costs (EUR thous./employee) (3)	35.8	6.5	38.0	43.3	:	:	29.5	32.9	25.2	30.0	16.5	4.9	5.7	:
Wage adjusted labour productivity (%) (4)	115.8	48.8	120.9	121.4	:	:	85.2	148.4	127.7	144.8	138.7	264.8	125.8	:
Gross operating rate (%) (1)	8.7	:	6.1	5.2	:	:	-3.5	7.9	9.6	13.0	18.6	34.4	9.2	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	8	58	3 271	33	1 762	289	35	13	2 178	691	4 500	93	386	:
Value added at factor cost (EUR million) (1)	3	38	808	16	891	103	7	5	525	209	1 836	23	161	:
Purchases of goods and services (EUR million)	7	26	2 600	21	1 199	195	29	10	1 687	543	2 659	102	300	:
Gross investment in tangible goods (EUR million)	1	1	61	3	63	21	3	2	35	29	141	5	27	:
Number of persons employed (thousands)	0	4	17	0	40	5	:	1	11	6	37	6	27	:
App. labour productivity (EUR thous./pers. emp.) (1)	7.4	10.3	46.9	38.7	22.0	20.2	:	5.5	46.6	35.6	49.7	4.4	6.0	:
Average personnel costs (EUR thous./employee)	4.9	18.8	39.5	32.3	11.2	18.2	11.5	5.1	36.0	36.2	32.8	2.6	3.7	:
Wage adjusted labour productivity (%) (4)	149.9	54.5	118.9	119.6	196.5	110.9	:	108.0	129.3	98.3	151.6	149.9	161.0	:
Gross operating rate (%) (1)	10.8	-48.7	6.0	12.5	25.4	4.4	6.5	5.0	5.6	3.2	15.7	10.0	19.4	:

(1) Ireland and Bulgaria, 2000.
(2) The Czech Republic, 1999.
(3) Ireland and Cyprus, 2000.
(4) Ireland, Cyprus and Bulgaria, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.14

Manufacture of railway, tramway locomotives, rolling stock (NACE Group 35.2)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE (1)	IT	CY	LV (1)	LT	LU
Production (EUR million)	:	435	:	4 591	:	:	1 088	2 291	0	1 436	0	21	:	0
Value added at factor cost (EUR million)	:	154	:	1 258	:	:	344	559	0	354	0	8	:	0
Purchases of goods and services (EUR million)	:	287	:	3 463	:	:	770	1 703	0	1 049	0	10	:	0
Gross investment in tangible goods (EUR million)	:	17	:	132	:	:	51	47	0	31	0	0	:	:
Number of persons employed (thousands)	:	12	:	23	:	:	8	14	0	10	0	2	:	0
App. labour productivity (EUR thous./pers. emp.)	:	12.4	:	54.8	:	:	42.1	38.9	:	36.5	:	3.3	:	:
Average personnel costs (EUR thous./employee)	:	7.5	:	49.3	:	:	36.6	44.7	:	34.8	:	3.1	:	:
Wage adjusted labour productivity (%)	:	166.2	:	111.2	:	:	115.1	87.1	:	104.9	:	106.1	:	:
Gross operating rate (%)	:	15.1	:	2.7	:	:	4.3	-3.9	:	1.4	:	2.8	:	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million)	146	0	76	851	615	199	42	254	68	1 000	2 080	27	279	:
Value added at factor cost (EUR million)	46	0	26	221	251	70	23	58	22	143	782	11	103	:
Purchases of goods and services (EUR million)	112	0	51	671	564	136	18	198	47	860	1 562	20	215	:
Gross investment in tangible goods (EUR million)	5	0	2	25	19	3	2	7	3	22	104	3	18	:
Number of persons employed (thousands)	5	0	4	4	19	3	:	8	1	5	14	4	29	:
App. labour productivity (EUR thous./pers. emp.)	9.6	:	6.3	55.5	13.5	25.3	:	7.4	31.5	29.1	55.4	3.0	3.6	:
Average personnel costs (EUR thous./employee)	8.8	:	5.3	53.5	8.2	24.4	14.8	5.5	29.6	44.1	40.9	2.3	2.7	:
Wage adjusted labour productivity (%)	109.2	:	119.3	103.9	164.2	103.9	:	135.4	106.6	65.9	135.5	129.7	135.5	:
Gross operating rate (%)	2.5	:	5.2	1.0	13.4	1.2	0.4	5.9	2.1	-7.3	9.3	9.6	11.3	:

(1) 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.15

Manufacture of aircraft and spacecraft (NACE Group 35.3)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV (1)	LT	LU
Production (EUR million)	1 411	268	106	18 077	0	:	1 833	42 174	:	5 855	0	0	6	:
Value added at factor cost (EUR million)	603	125	49	6 500	0	:	567	6 827	:	2 005	0	0	3	:
Purchases of goods and services (EUR million)	841	:	0	11 657	0	:	1 390	36 304	:	3 598	0	0	10	:
Gross investment in tangible goods (EUR million)	98	21	9	951	0	:	166	846	:	219	0	0	0	:
Number of persons employed (thousands)	8	8	1	75	0	:	11	84	:	32	0	0	0	:
App. labour productivity (EUR thous./pers. emp.)	79.1	15.5	79.5	87.1	:	:	53.5	81.6	:	62.4	:	3.1	9.2	:
Average personnel costs (EUR thous./employee)	49.1	7.4	48.7	60.4	:	:	39.7	55.5	:	42.9	:	0.2	4.7	:
Wage adjusted labour productivity (%)	161.1	208.4	163.2	144.1	:	:	134.8	147.1	:	145.5	:	1 274.1	195.3	:
Gross operating rate (%) (2)	16.9	6.7	18.8	11.7	:	:	8.1	5.2	:	10.7	:	64.4	11.5	:

	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO	TR
Production (EUR million) (3)	37	:	691	35	276	88	3	8	57	1 547	27 269	1	96	:
Value added at factor cost (EUR million)	19	:	275	17	205	40	1	3	39	648	11 627	0	56	:
Purchases of goods and services (EUR million) (3)	33	:	474	24	144	52	2	4	18	903	16 881	0	51	:
Gross investment in tangible goods (EUR million) (4)	2	:	15	1	41	9	0	1	1	46	738	0	4	:
Number of persons employed (thousands) (3)	1	:	5	0	15	2	:	1	1	10	113	0	9	:
App. labour productivity (EUR thous./pers. emp.) (3)	14.8	:	57.1	45.6	13.8	18.2	:	5.3	50.6	66.4	103.0	1.4	6.1	:
Average personnel costs (EUR thous./employee) (3)	13.4	:	44.9	41.2	8.6	22.0	11.4	5.3	40.2	47.2	54.2	1.5	3.6	:
Wage adjusted labour productivity (%) (3)	110.3	:	127.2	110.6	161.4	82.6	:	99.8	125.9	140.8	190.1	96.4	168.8	:
Gross operating rate (%) (4)	3.8	:	9.8	8.4	24.5	-9.6	3.6	0.1	14.6	12.6	19.7	16.7	26.7	:

(1) 1999.
(2) Bulgaria, 2000; the Czech Republic, 1999.
(3) Bulgaria, 2000.
(4) The United Kingdom, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).

Table 12.16

Manufacture of motorcycles and bicycles (NACE Group 35.4)
Main indicators, 2001

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT	LU
Production (EUR million)	:	84	78	1 180	0	:	825	994	:	3 894	0	:	:	0
Value added at factor cost (EUR million)	:	24	30	351	0	:	179	238	:	833	0	:	:	0
Purchases of goods and services (EUR million)	:	68	0	900	0	:	924	854	:	3 334	0	:	:	0
Gross investment in tangible goods (EUR million)	:	5	5	35	0	:	70	31	:	153	0	:	:	:
Number of persons employed (thousands)	:	3	1	8	0	:	4	7	:	23	0	:	:	0
App. labour productivity (EUR thous./pers. emp.)	:	7.7	45.5	42.4	:	:	43.3	33.2	:	36.8	:	:	:	:
Average personnel costs (EUR thous./employee)	:	5.7	33.8	34.8	:	:	27.7	32.4	:	29.6	:	:	:	:
Wage adjusted labour productivity (%)	:	134.7	134.5	121.9	:	:	156.1	102.5	:	124.5	:	:	:	:
Gross operating rate (%)	:	8.0	10.0	5.2	:	:	6.1	0.7	:	5.2	:	:	:	:

	HU	MT	NL	AT	PL	PT	SI	SK (1)	FI	SE	UK	BG (2)	RO	TR
Production (EUR million)	13	:	613	247	120	69	48	3	16	276	688	2	:	:
Value added at factor cost (EUR million)	2	:	169	67	53	24	13	0	5	74	254	0	:	:
Purchases of goods and services (EUR million)	15	:	457	184	84	48	36	3	11	214	488	2	:	:
Gross investment in tangible goods (EUR million) (3)	4	:	11	8	2	5	1	0	0	7	36	0	:	:
Number of persons employed (thousands)	1	:	3	1	3	2	:	:	0	1	4	0	:	:
App. labour productivity (EUR thous./pers. emp.)	2.3	:	55.9	65.2	18.8	15.8	:	:	35.9	50.3	61.4	1.5	:	:
Average personnel costs (EUR thous./employee)	4.5	:	28.8	28.8	5.4	10.8	12.5	3.6	28.5	36.2	35.9	1.0	:	:
Wage adjusted labour productivity (%)	50.9	:	194.3	226.0	349.0	146.2	:	:	125.8	139.2	170.8	148.5	:	:
Gross operating rate (%)	-8.7	:	13.0	15.1	28.5	11.2	3.9	-19.4	7.2	8.0	14.8	5.6	:	:

(1) 1999.
(2) 2000.
(3) The United Kingdom, 2000.
Source: Eurostat, Structural Business Statistics (theme4/sbs/enterpr).