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2001 EDITION

Research and development: annual statistics

Data 1990–2000

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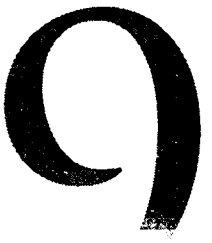

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Yves Franchet
Director-General

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- **Greece** General Secretariat for Research and Technology,
- **Spain** Instituto Nacional de Estadistica – INE,
- **France** Ministère de l'éducation nationale, de la recherche et de la technologie – MENRT,
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- **Italy** Istituto Nazionale di Statistica – ISTAT,
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- **Austria** Austrian Central Statistical Office – ÖSTAT,
- **Portugal** Observatório das Ciências e das Tecnologia – OCT,
- **Finland** Statistics Finland,
- **Sweden** Statistics Sweden,
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As well as the following institutions:

- **DG Research – European Commission**
- **European Patent Office** – EPO
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Foreword

The first edition of Research and Development: Annual Statistics was published in 1993. This ninth edition, prepared by the 'Research and development, methods and data analysis' unit of Eurostat, presents the latest developments in the field of research and development and patent statistics.

Responding to developments in the policy and scientific communities, Research and Development: Annual Statistics 2001 provides further information on relevant indicators. Data and trends are provided not only for patent applications overall, but also in high technology fields. Additional data on the number of researchers amongst total R&D personnel are analysed for the European Union and beyond.

Furthermore, in an effort to provide users of Eurostat data with more detailed information, certain indicators at the regional level are, for the first time, presented at the NUTS 2 level as opposed to NUTS 1 in the previous publication. Although limitations of space have prevented the inclusion of complete time series in all cases, these data can be found in the CD-ROM version of this publication and are, of course, available in Eurostat's reference database, NewCronos.

Comprehensive methodological notes are provided in their own section for clearer data utilisation, providing such information as the source, reference unit and coverage of the data, the time series available or any country specific methodological changes in the collection procedures.

All the information in this publication is based on data supplied to Eurostat by the Member States, by the Research DG of the European Commission, by the European Patent Office – EPO – and by the OECD. We express our thanks to our colleagues in the Member States – and in Iceland and Norway, the Commission Services, the EPO and the OECD for their excellent cooperation and their willingness to help in meeting the ever-growing demand for information on R&D.

Yves Franchet
Director-General – Eurostat

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Introduction

The indicators presented in Research and Development: Annual Statistics 2001, by the Statistical Office of the European Communities (Eurostat), allow the continuous reporting and analysis for a close monitoring of recent performances and the identification of current and potential areas of concern.

The data, which cover R&D expenditure, R&D personnel, Government budget appropriations or outlays for R&D and patent applications, are as comprehensive, comparable and as up to date as possible.

Their focus is on the 15 European Union Member States and, to a lesser extent, the European Economic Area. To provide high level international comparison, the United States and Japan are also considered, where possible. At the other end of the scale, a regional analysis across the EU countries is provided.

This publication, intended for both generalists and specialists, is organised as follows. The first Part presents an analysis of the recent trends in R&D and patenting. In Part 2, the accompanying methodological information is provided in some detail for more specialist users. Part 3 presents tables containing both original data and derived indicators, providing users with the opportunity to conduct their own analyses on the Research and Development situation in Europe and beyond.

Given the numerous sources of data involved, the time series differ according to indicator. For example, the first considered year for indicators concerning GBAORD is 1985, whereas for R&D expenditure, R&D personnel and Patents the starting points in this publication are 1990. Nevertheless, the goal of this publication remains the same throughout: to provide the most detailed and coherent time series analysis possible.

Consistency with the analyses conducted in previous publications is also maintained, whilst seeking to complement these aspects with further research. A number of important innovations have been introduced into this publication.

The first is an extended reporting of the data, with data on patents now also presented according to their perceived technological impact. The level of detail has been extended in the area of R&D personnel too. Readers will note the inclusion of R&D personnel by occupation, providing focus on the number of actual researchers among total R&D personnel, which also includes, amongst others, secretarial and clerical occupations.

A second innovation is the presentation of regional data in Part 3. Here, data are presented at the NUTS 2 level ([1]), as opposed to the NUTS 1 level in the previous edition of *Research and Development: Annual Statistics 1999* – but for a reduced time series. Within R&D expenditure and personnel or patents, data are organised according to geographical detail, with national data being presented before NUTS 2 level regional data.

In an effort to provide users with a set of rigorous and comprehensive methodological notes, Part 2 of this publication presents in some detail the information behind the data. For each variable – GBAORD, R&D expenditure and personnel or patents – Part 2 specifies the appropriate definitions, sources, reference units, time series, geographical coverage, method of calculation, etc. Also documented in this section are the country specific notes, such as breaks in series or methodological changes.

Due to constraints of space, the comprehensive statistical tables used for the analysis are not always available in the paper version of the present publication. Instead, they are provided in their entirety in the electronic version of Research and Development: Annual Statistics 2001. Electronic Versions of this publication can be obtained by visiting the Eurostat Web-site at:

http://www.europa.eu.int/comm/eurostat.

Government budget appropriations or outlays for R&D

In Part 1, Chapter 1 documents the main trends of GBAORD in the EU and EEA, first placing Europe in an international context and then concentrating on developments at the national level. In 2000, budget appropriations in the Member States of the European Union totalled more than EUR 61 800 million, a rise of close to EUR 2 700 million in nominal terms on 1999 (or 2 % in real terms, i.e. corrected for inflation). Despite this, GBAORD in the EU continued to deteriorate against GDP over the same period. Comparisons with the US and Japan reveal that Japan has caught up both the EU and the US to a significant degree since the end of the '80s, registering almost systematic higher year-on-year absolute growth. Nevertheless, the US still retains the highest values of government budgeting to R&D activities.

Within the EU, Finland and France show the highest proportions of government budgeting to R&D activities, both as a proportion of their GDPs and also of total general government expenditure. Spain and Portugal, on the other hand, have shown the highest growth rate over the last five years and are approaching the EU average.

([1]) The economic territory of each Member State of the EU has been divided according to a five-level hierarchical classification (three regional levels and two local levels) named Nomenclature of Territorial Units for Statistics — NUTS. NUTS serves as a reference for the collection, development and harmonisation of Community regional statistics, for the socio-economic analysis of the regions and for the drawing up of Community regional policies. In general, NUTS subdivides each Member State into a number of NUTS 1 regions, which are in turn subdivided into a number of NUTS 2 regions, and so on.

Introduction

Changing trends are also evident in the socio-economic objectives of these funds. The importance of budgeting towards 'Defence' has continued to decline throughout the '90s. So too have 'Agricultural production and technology' and 'Exploration and exploitation of the earth'. Meanwhile, 'Research financed from general university funds' has continued to see budgetary increases, as has 'Protection and improvement of human health'.

R&D expenditure and R&D personnel

Chapter 2, which looks at the recent trends in both R&D expenditure and R&D personnel, shows that in the EU, 161 billion ECU/EUR at current prices were spent on R&D in 2000. The increase compared to 1999 was about 5 %. However, as a proportion of GDP, R&D expenditure was down to 1.90 % in 2000 after a significant strong rise in 1999, which took it to 1.92 %. R&D expenditure per capita in the EU was about 400 current PPS, but the figures vary a lot amongst European countries. The highest performances were experienced in Finland and Sweden, which are at the same level as Japan and the US.

For its part, R&D personnel increased slightly: 1.7 million people in full time equivalent or 2.3 million in head count were engaged in R&D in the European Union in 2000. Amongst these personnel, the percentage of researchers was much more important in the higher education sector than in the government or business enterprise sectors. Moreover, women were unequally represented in R&D, in particular when they were researchers and employed in the business enterprise sector.

At the regional level, the latest data show that Germany continued to dominate the amount of expenditure in R&D as a proportion of regional GDP: 6 German regions are in the top ten. The other places are occupied by 2 Finnish regions and 2 French. In the top two regions, Braunschweig and Stuttgart, R&D as a proportion of GDP was 4.84 and 4.79 % respectively.

For R&D personnel, a greater degree of variation existed. Of the top ten regions, 3 were Swedish, 3 were German, 1 was Austrian, 1 was French 1 was Finnish and 1 was Icelandic. Stockholm was in first position with 3.7 % of the labour force being R&D personnel, followed by Oberbayern (3.3 %) and Braunschweig (3.2 %).

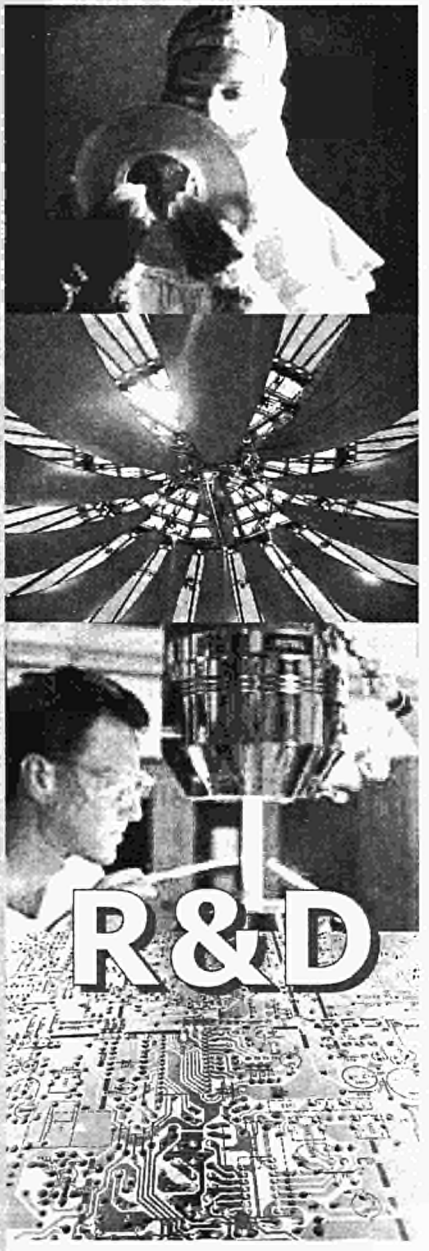
Patents

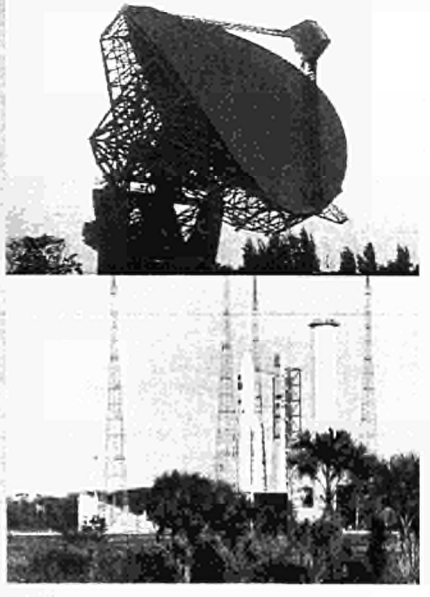
As documented in Chapter 3, patent applications to the European Patent Office have been increasing in the second part of the 90's. In 1999 there were 44 775 patent applications to the EPO from EU Member States, 31 157 from the US and 14 236 from Japan. Note that the EU Member States may have a home advantage.

Within Europe, Germany is leading, accounting for 43.6 % of total European patent applications in 1999, followed by France (14.9 %) and the UK (12.3 %). In relative terms, Germany also accounted for the largest ratio (238 patent applications per million population in 1999). However, in relative terms, countries like Sweden and Finland outperformed France and the UK in 1999, registering 237 and 233 patent applications per million population, respectively, compared to 113 in France and 99 in the UK.

At the regional level, in 1999 the highest number of patent applications came from Île de France (2 813). But as a proportion of the population, the two German regions of Oberbayern (635) and Stuttgart (495) and a Dutch one, Noord-Brabant (441), registered the highest patenting concentrations.

Among the patent applications to the EPO, an increasing proportion relates to high technology areas. For the period 1994 to 1998, patent applications from EU-15 in the high tech fields grew at an annual average growth rate of 22.8 % compared to 11.1 % for total patent applications. This increase for high tech patents was evident not just for the EU, but also for patent applications made to the EPO by Japan and the US.





PART 1

R&D IN EUROPE: ANALYSIS

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Chapter 1
Government budget appropriations or outlays on Research and Development — GBAORD

1.1. Introduction

Government budget appropriations or outlays on R&D – GBAORD – are a way of measuring government support to R&D activities. They include all appropriations allocated to R&D in central government or federal budgets. Provincial or state government should be included only where the contribution is significant. Unless otherwise stated, data include both current and capital expenditure, and cover not only government-financed R&D performed in government establishments, but also government-financed R&D in the business enterprise, private non-profit and higher education sectors, as well as abroad (i.e. international organisations). Data are collected according to the guidelines outlined in the OECD 'Proposed standard Practice for surveys of research and experimental development' – *Frascati Manual*, 1993.

GBAORD data do not consider the amount of money actually spent, but are based on budget provisions, and so should be seen as intentions of spending. This is why data on actual R&D expenditure, which are not available in their final form until some time after the end of the budget year concerned, may well differ from the original budget provisions. The process of political consensus about public expenditures creates gaps between budgets and final expenditures (gaps in terms of time and amount of resources). The reporting unit also differs between GBAORD and R&D expenditure: the reporting unit for GBAORD is the Government, whereas for R&D expenditure the reporting unit is the performer of the R&D activity. However, since there is a greater time lag for data on final R&D expenditure, data are usually collected from budget statistics in order to provide timely indicators.

Data are collected at the national level and the procedure can be articulated in a two step process:

- within the budget statistics, it is first necessary to identify the budget items that involve R&D;
- the R&D content of these budget items must then be measured or estimated.

Government R&D appropriations are broken down by socio-economic objectives on the basis of NABS (Nomenclature for the analysis and comparison of scientific programmes and budgets, Eurostat, 1994). These data reflect policies at a given moment in time and the concomitant priorities of the policy makers when allocating their budgets. These data are hard to collect because they are not obtained from *ad hoc* surveys, but from national budget statistics. More specifically, the difficulty is due to the fact that national budgets already have their own terminology and methodology and therefore do not accord entirely with the Eurostat guidelines and the methodology proposed by the Frascati Manual.

The 1983 version of NABS applies to all the figures up until the 1992 final budgets and the 1993 provisional budgets. The 1993 version applies from the 1993 final and the 1994 provisional budgets onwards. As a result of the revision of NABS, some caution should be employed when comparing the data for some NABS headings with those of earlier years. The greatest differences are to be found in chapters 1, 3, 5, 7, 10 and 11 of NABS ([1]). Furthermore, not all countries transpose their data directly to NABS: some follow other compatible classifications – OECD, Nordforsk, which are then converted to the NABS classification – see paragraph 455 of the *Frascati Manual*.

The analysis in this chapter covers the period 1985 to 2000 and is divided into three main sections. The next section takes an international perspective and compares the respective evolutions in the EU ([2]), Japan and the US. The following section analyses the evolution of GBAORD for the EU, whilst the final section presents some specific developments in the Member States, with individual country reports.

1.2. GBAORD — an international perspective

This section considers government budgeting to R&D activities in the European Union compared to that of Japan and the United States. Overall levels of GBAORD are examined as well as breakdowns by socio-economic objectives.

1.2.1. Total GBAORD

Throughout the late '80s and the '90s, the largest amount of government funds allocated towards R&D activities was registered by the United States, when measured as a percentage of GDP. In nominal terms also (ECU/EUR), US GBAORD was for most years above that of the whole of the European Union, as well as three to four times higher than government budgeting to R&D activities in Japan – see Part 3, Table 2. Figure 1.1. shows that the efforts made by Governments in R&D activities are clearly converging.

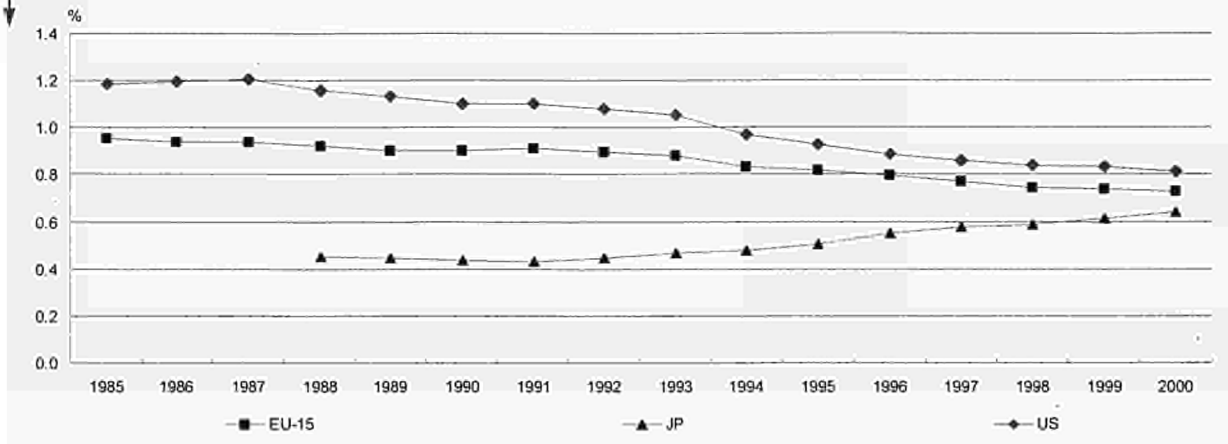
Of course, GDP levels (as well as government budgeting towards R&D activities) affect the relative effort made by countries to R&D. Therefore, the healthy economic growth experienced in the US and the EU towards the end of the '90s, and the stagnant or negative growth encountered in Japan around the same time, play their parts in determining the relative efforts made by the EU, the US and Japan during this period. Nominal GBAORD has increased by over 90 % in Japan between 1988 and 2000 compared with close to 70 % for the EU and 62 % for the US (between 1985 and 2000).

Indeed, as shown by Figure 1.2., year on year absolute growth (correcting for inflation) has been the highest in Japan for most of the time period analysed. As for Figure 1.1, GBAORD in the US and EU follow more similar paths. Both fluctuate between positive and negative growth between 1985 and 2000 – the latest data show that GBAORD increased in absolute terms by around 2 % between 1999 and 2000.

([1]) These NABS chapters cover the following fields:
Chapter 1 — Exploration and exploitation of the Earth;
Chapter 3 — Control and care of the environment;
Chapter 5 — Production, distribution and rational utilisation of energy;
Chapter 7 — Industrial production and technology;
Chapter 10 — Research financed from General University Funds (GUF);
Chapter 11 — Non-oriented research.

([2]) No data exist for Luxembourg and therefore EU-15 totals in this chapter exclude Luxembourg.

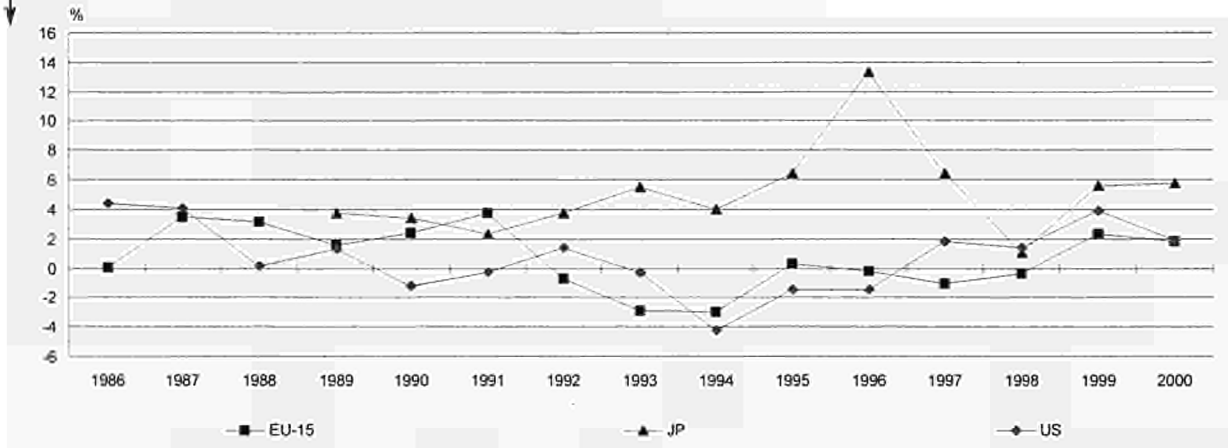
Figure 1.1. — GBAORD as a % of GDP — 1985-2000 (1)



(1) EU-15: Eurostat estimate for 2000; US: provisional data for 1999 and 2000.

Sources: Eurostat, OECD (JP, US).

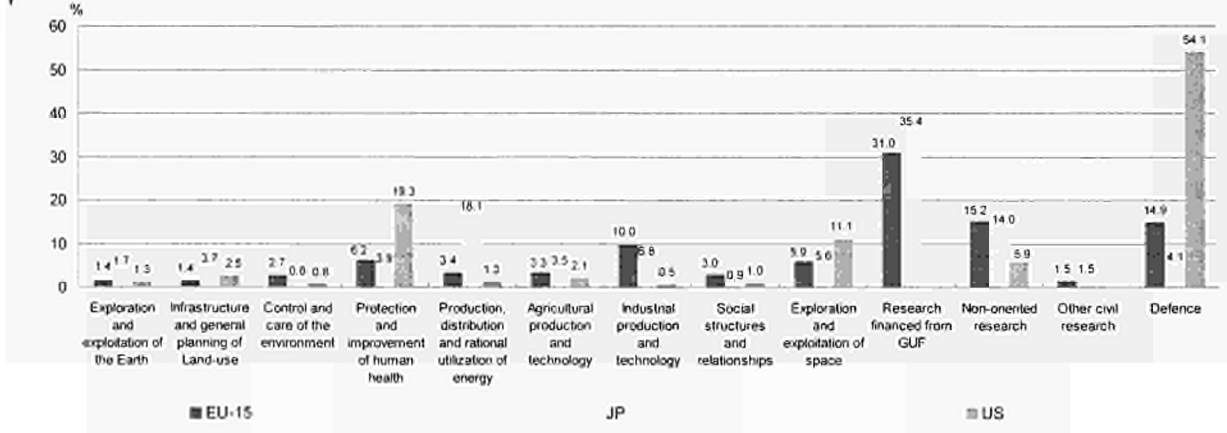
Figure 1.2. — Evolution of GBAORD in millions of constant 1995 ECU/EUR % change on previous year — 1985-2000 (1)



(1) EU-15: Eurostat estimate for 2000; US: provisional data for 1999 and 2000.

Sources: Eurostat, OECD (JP, US).

Figure 1.3. — Distribution of GBAORD by NABS socio-economic objective — 2000 (1)



(1) EU-15: Eurostat estimate; US: 1998.

Sources: Eurostat, OECD (JP, US).

1.2.2. GBAORD by socio-economic objective

Not only does the level of budgeting towards R&D activities differ across countries, but priorities are also distinct. GBAORD can be broken down into socio-economic objectives, providing information on changing trends and attitudes towards different types of R&D activities.

Figure 1.3. displays the various stances taken on government budgeting to R&D in 2000 (US = 1998). 'Research financed from General University Funds (GUF)' accounted for the lion's share of EU GBAORD in 2000 (31 %), with 'Non-oriented research' and 'Defence' each accounting for a further 15 % of planned R&D budgeting. 'Industrial production and technology', which includes such sub-chapters as 'Manufacturing and processing techniques' and 'Electronic and related industries' represented 10 % of total EU GBAORD in 2000. 'Exploration and exploitation of the earth' and 'Other civil research' were the socio-economic objectives with the lowest budgets (1.4 % each of total EU GBAORD), just below 'Infrastructure and general planning of land-use'.

'Research financed from GUF' was also the leading socio-economic objective in Japan in 2000 (35.4 % of total GBAORD). A further 18.1 % was allocated towards 'Production, distribution and rational utilisation of energy', which includes such research as 'Radioactive waste management' and 'Renewable energy sources'. The lowest proportion of budgeting in Japan was allocated towards 'Control and care of the environment' where it accounted for 0.8 % of total GBAORD in Japan in 2000 compared with 2.7 % in the EU and 0.8 % in the US.

In the United States, over half of all GBAORD in 1998 was allocated to 'Defence' (54 %). 'Protection and improvement of human health', which comprises such sub-chapters as 'Medical research' and 'Preventive medicine', took up a further fifth of government budgeting to R&D activities and 'Exploration and exploitation of space' just over a tenth. No data are available for 'Research financed from GUF' and 'Other civil research' for the US.

1.3. GBAORD — a European perspective

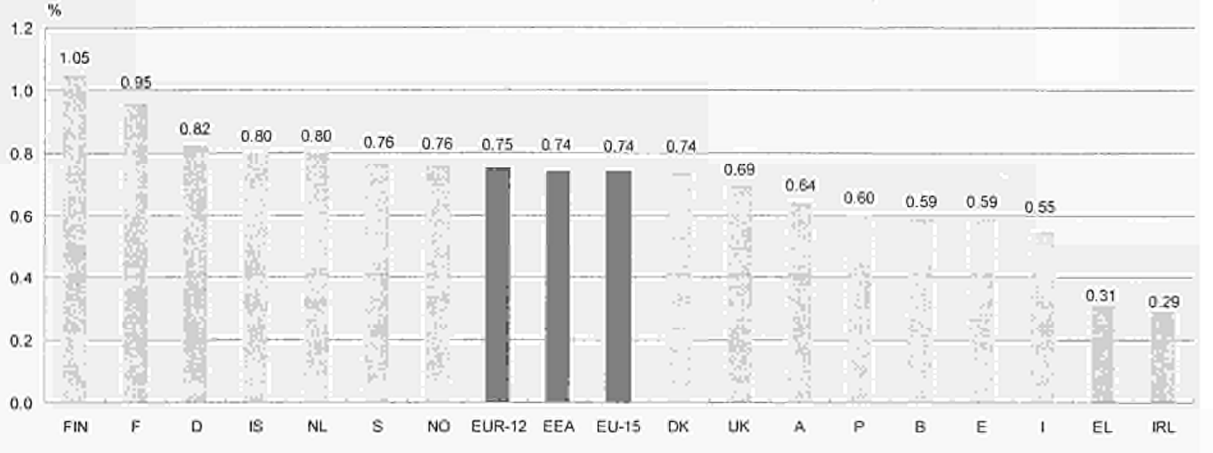
This section is split into two main parts. First, levels and trends of total GBAORD are examined and compared at the national level. Secondly, the changing socio-economic priorities of European governments are briefly evaluated.

1.3.1. Total GBAORD

Whilst, in the EU, GBAORD represented 0.74 % of GDP in 1999, this figure conceals differences between the Member States – Figure 1.4. The highest effort in 1999 was registered by Finland (1.05 %), ahead of France (0.95 %). Germany also placed more emphasis on government budgeting towards R&D activities than the EU average. In Belgium and Spain, budget efforts were around 80 % of the EU average in 1999, just under 0.6 % of GDP. Greek and Irish GBAORD were around 40 % of the EU average in the same year, when measured as a percentage of GDP.

Another indicator, GBAORD as a percentage of total general government expenditure, provides a proxy of the relative emphasis that governments place on publicly funding R&D – See Figure 1.5. Again Finland, followed by France, budgeted more to R&D activities than any other EU country – in Finland, government budgeting to R&D activities represented 2 % of total general government expenditure in 1999. The UK, which budgeted less than the EU average when measured against GDP, budgeted over 10 % more if taken as a proportion of total general government expenditure. Spain, which stood at 80 % of the EU average for GBAORD/GDP in 1999, was at 94 % as a percentage of total general government expenditure for the same year. This is following a period that has witnessed strong increases in GBAORD – Figure 1.6.: the annual average growth rate of GBAORD in real terms in Spain was 11.4 % during the 1995-2000 period, although this trails an absolute contraction in government budgeting to R&D activities between 1990-95 (- 0.5 %). Portugal, on the other hand,

Figure 1.4. — GBAORD as a % of GDP — 1999

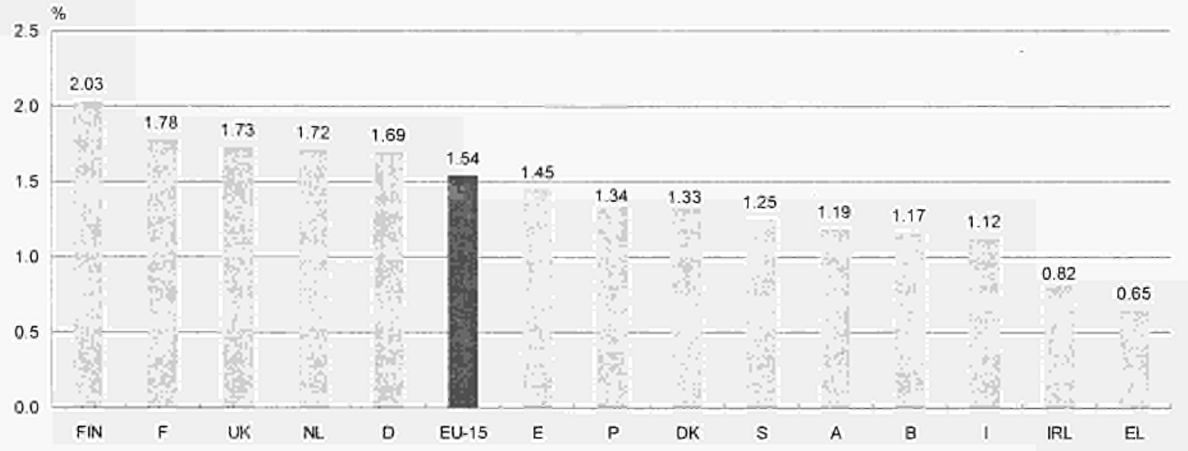


Source: Eurostat.

has increased its absolute budgeting to R&D activities over the whole of the decade, rising by an average of 6.3 % per year between 1990-95 and 10.6 % per year between 1995-2000. In both time periods, GBAORD has increased in absolute terms for a majority of EU countries. Exceptions are the larger EU economies of Germany, France and the UK, for which GBAORD contracted throughout the '90s. Budgeting in Italy and the Netherlands on average fell annually between 1990-95, but grew in the second half of the '90s. GBAORD grew in Austria in the first half of the decade, but then fell in the second.

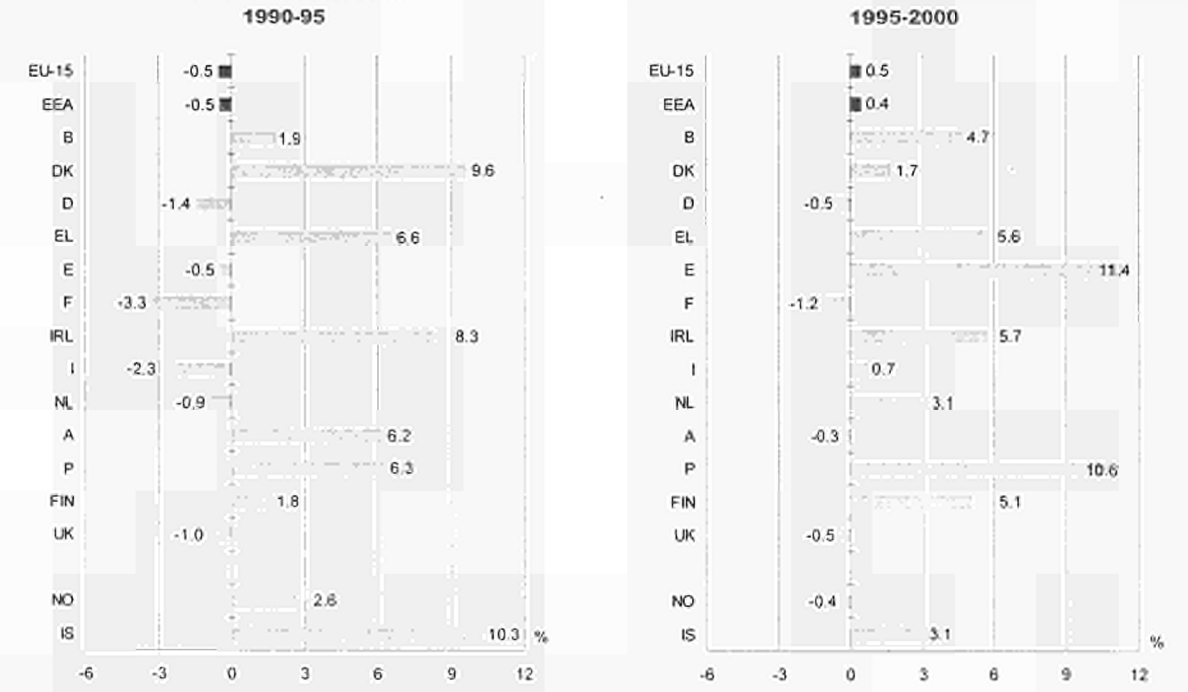
Overall, if GBAORD at the EU level has remained stable relative to the beginning of the '90s (measured in constant 1995 ECU/EUR, see Part 3, Table 3), this is as a result of the smaller EU countries increasing their government budgeting to R&D activities, offsetting the budget reductions of the larger economies of Germany, France, Italy and the UK.

Figure 1.5. — GBAORD as a % of total general government expenditure — 1999



Source: Eurostat.

Figure 1.6. — Annual average growth of GBAORD in millions of constant 1995 ECU/EUR 1990-95 and 1995-2000 (1)



(1) DK: 1993-95; D: 1991-95; F: 1992-95; IRL: 1995-99; FIN: 1991-94; IS: 1991-95 and 1995-99;
S not included due to numerous breaks in series;
data for latest available year are provisional except for FIN, NO and P.

Source: Eurostat.

1.3.2. GBAORD by socio-economic objective

Figure 1.3. showed the distribution of GBAORD by socio-economic objectives for the EU, Japan and the US. Figure 1.7., in turn, provides an indication of the evolution of these priorities at the EU level during the '90s.

Budgeting for 'Defence', 'Agricultural production and technology' and 'Exploration and exploitation of the earth' has fallen over the whole of the decade, with 'Defence' and 'Exploration and exploitation of the earth' contracting by an average 6 % per year between 1990-95. 'Agricultural production and technology', which represented 3.5 % of total EU GBAORD in 1990 (at constant 1995 ECU/EUR) declined by 0.4 % during 1990-95 and by 1.3 % between 1995-2000. In 2000, 'Agricultural production and technology' represented 3.3 % of EU GBAORD – recall Figure 1.3.

Of the two objectives that accounted for the most spending at the EU level in 2000, 'Research financed from GUF' grew strongly in the first half of the '90s and by 1.2 % in the latter, whereas 'Non-oriented research' grew by a more consistent 2.5 and 1.8 % in 1990-95 and 1995-2000, respectively.

The highest growth in the first half of the '90s was registered for 'Protection and improvement of human health' at just over 6 %, but this fell back to an annual average growth of around 1.6 % in the second half of the '90s. In 2000, 40 % of EU budgeting for this objective was accounted for by the UK.

The strongest growth in the second half of the '90s was for the socio-economic objective 'Social structures and relationships', which by 2000 represented 3 % of total EU GBAORD – recall Figure 1.3. – and includes research into such social aspects as education and training or 'Management of businesses and institutions'. The growth of this objective was followed by 'Production distribution and rational utilisation of energy' at 2.9 %, for which 1995 was the turning point following its annual average 6 % decline in the first half of the '90s.

Budgeting for research on 'Control and care of the environment' increased by an average of over 3 % between 1990-95, but only marginally thereafter. Germany represented around a third of total EU budgeting to this objective in 2000.

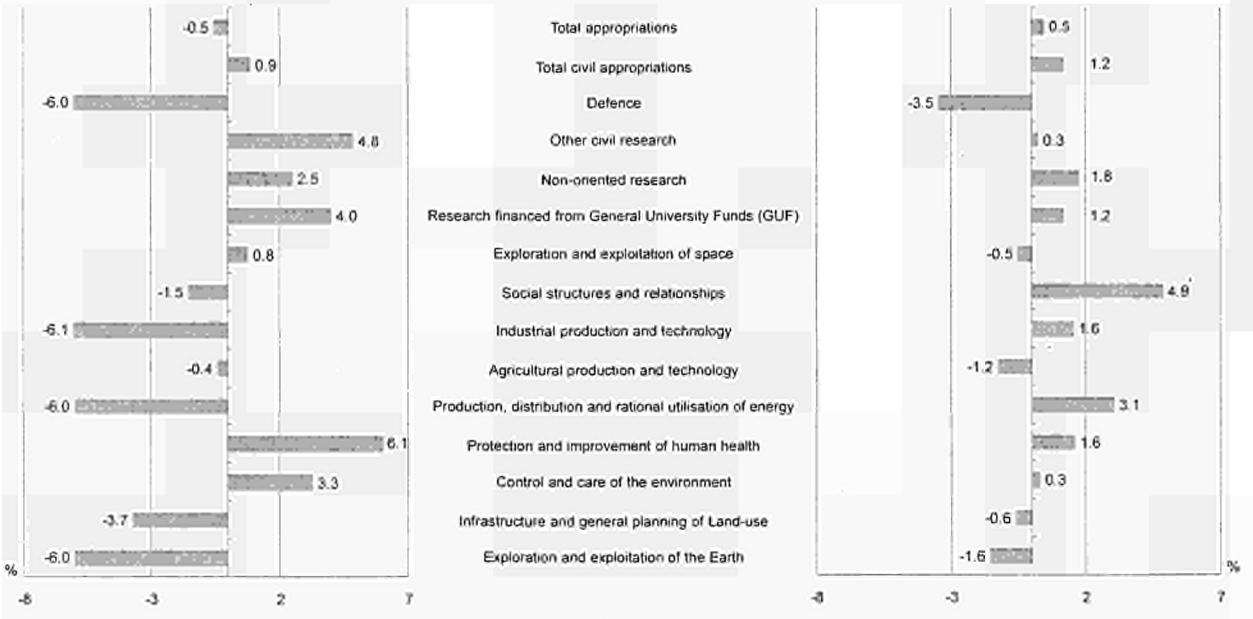
Looking more closely at the priorities of the individual countries, Table 1.1. shows that 'Research financed from GUF' was the highest priority in 8 of the EU Member States. This objective accounted for almost two thirds of total GBAORD in Austria in 2000, half of total GBAORD in Sweden and around 45 % in Greece, Italy and the Netherlands.

In 2000, 'Defence' budgeting represented less than 10 % of total GBAORD in each of the Member States (15 % at the EU level) except Spain, France and the UK, where its proportion of total GBAORD ranged from a little more than one-fifth for France to around one-third for Spain and the UK. One should note that, for Spain, a large proportion of the increase follows the incorporation of budgets for a new programme into the 'Defence' budget (see Part 2 – Definitions and methodological notes).

Denmark (12.4 %), Ireland (20.0 %) and Portugal (13.0 %) devoted a far higher proportion of their GBAORD to 'Agricultural production and technology' than was the EU average (3.3 %).

As far as European Commission contributions go, in 1999, over a third of its provisional Framework Programme budget for R&D activities was allocated to 'Industrial production and technology'. 'Production, distribution and rational utilisation of energy' represented another 15 % of this budget. The lowest socio-economic objectives were 'Exploration and exploitation of space' (0.7 %) and 'Exploration and exploitation of the earth' (1.9 %).

Figure 1.7. — Annual average growth of GBAORD in the EU by NABS socio-economic objective
In millions of constant 1995 ECU/EUR — 1990-95 and 1995-2000 (1)



(1) 2000: Eurostat estimate.

Source: Eurostat.

Table 1.1. — Distribution of GBAORD by NABS socio-economic objective in % — 2000 provisional (1)

	NABS	EU-15	B	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	CEC	IS	NO
1.	Exploration and exploitation of the Earth	1.4	1.0	1.3	1.8	3.8	2.0	0.6	0.4	1.6	0.8	2.5	1.6	1.5	1.7	1.4	1.9	0.0	2.3
2.	Infrastructure and general planning of Land-use	1.5	1.1	1.8	1.6	5.1	0.6	0.7	2.4	0.3	3.0	2.0	7.6	2.2	4.1	1.8	6.9	5.3	2.3
3.	Control and care of the environment	2.7	3.6	2.8	3.4	3.3	2.7	1.8	1.4	2.5	3.9	2.1	4.4	2.3	1.4	2.5	7.6	0.6	3.0
4.	Protection and improvement of human health	6.3	1.6	2.0	3.4	5.8	4.8	5.6	2.9	6.8	3.6	2.5	6.6	6.8	1.3	15.2	8.0	4.2	7.2
5.	Production, distribution and rational utilization of energy	3.4	2.7	2.0	3.5	1.5	3.6	5.1	0.0	4.5	3.0	0.5	0.9	5.3	5.8	0.5	15.2	2.5	2.1
6.	Agricultural production and technology	3.3	3.0	12.4	2.5	6.9	4.2	2.5	20.0	2.1	3.0	3.3	13.0	5.4	1.8	4.1	5.3	23.5	8.7
7.	Industrial production and technology	10.0	22.6	6.4	12.3	13.8	15.8	6.4	29.8	15.5	13.1	6.4	13.0	28.5	5.4	0.6	33.8	1.2	12.3
8.	Social structures and relationships	3.0	4.5	11.2	3.6	4.1	0.6	0.7	6.9	3.5	2.7	2.2	3.4	5.5	5.6	3.7	3.8	44.3	7.1
9.	Exploration and exploitation of space	5.9	11.9	2.8	4.5	0.9	5.5	11.0	0.0	8.7	3.1	0.1	0.5	2.1	3.4	2.5	0.7	0.0	2.5
10.	Research financed from General Universty Funds (GUF)	31.0	19.2	39.0	38.5	45.8	21.4	17.9	23.6	42.5	46.0	63.7	36.1	26.8	50.9	21.1	0.0	0.0	39.3
11.	Non-oriented research	15.2	23.9	17.8	16.6	8.0	7.3	22.5	12.6	11.2	10.7	14.8	8.2	12.3	0.0	13.4	6.5	18.3	8.1
12.	Other civil research	1.4	4.7	0.0	0.1	0.3	1.2	2.6	0.0	0.0	4.6	0.0	3.4	0.0	11.5	0.4	10.2	0.0	0.0
13.	Defence	14.9	0.4	0.6	6.0	0.8	30.2	22.6	0.0	0.9	2.6	0.0	1.2	1.3	7.1	32.8	0.0	0.0	5.3
	Total civil appropriations	**85.1**	**99.6**	**99.4**	**92.0**	**99.2**	**69.8**	**77.4**	**100**	**99.1**	**97.4**	**100**	**98.8**	**98.7**	**92.9**	**67.2**	**100**	**100**	**94.7**
	Total appropriations	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(1) EU-15: Eurostat estimate; CEC (European Commission), IRL and IS: 1999 provisional data; FIN and P: final data.
NB: Sum of constituent parts may not equal total due to rounding.

Source: Eurostat.

1.4. Specific developments in the Member States: country reports

This section provides information on specific developments in the Member States. Data for some socio-economic objectives in the subsequent tables are grouped according to the following classification plan:

- 'Human and social objectives' groups NABS:
  2. Infrastructure and general planning of land-use,
  3. Control and care of the environment,
  4. Protection and improvement of human health,
  8. Social structures and relationships.
- 'Technological objectives' groups NABS:
  1. Exploration and exploitation of the earth,
  5. Production, distribution and rational utilisation of energy
  7. Industrial production and technology
  9. Exploration and exploitation of space

Readers should refer to Table 32 in Part 3 of this publication to obtain the relevant exchange rates to convert the figures from national currency into ECU/EUR.

1.4.1. Belgium

Table 1.2., p. 19, shows for the 1998 and 1999 financial years (final budgets) and for 1999 and 2000 (provisional budgets) the breakdown (%) of budget appropriations or outlays for R&D by the various Belgian authorities:

The final budget for 1999 amounts to BEF 55.8 billion, i.e. an increase of BEF 3.5 billion compared with 1998.

The following comments refer to the data of the final budgets for 1998 and 1999.

It can be seen that more than a third of government R&D budgeting in Belgium (nearly 40 %) has technological objectives (NABS 1+5+7+9), with the regions responsible for just over half of these resources.

Nearly a quarter (23.9 %) of government R&D budgeting in 1999 was devoted to industrial production and technology (NABS 7), with the Flemish Community accounting for more than half.

Exploration and exploitation of space (NABS 9) accounted for 12.1 % of government R&D expenditure in 1999, with the total cost borne entirely by the Federal Government.

Nearly 23 % of government R&D budgeting went on 'Non-oriented research', with the bulk of the cost being borne by the Flemish Community, followed by the French-speaking Community and the Federal Government.

Just under a quarter of government R&D budgeting in Belgium comes from General University Funds, with the Communities being responsible for the majority of the expenditure.

It can be seen that between 1998 and 1999 (and even 2000) there were generally only slight variations for each NABS objective or group of objectives.

A look at the period 1989-2000 shows that in total GBAORD:

- The significance of 'technological objectives' (NABS 1+5+7+9) showed the biggest increase (from 35 % in 1989 to 39 % in 2000); this is the highest percentage in the EU;
- 'Research financed from GUF' (NABS 10) declined (from 24 % in 1989 to 19 % in 2000).

Institutional context

Belgium's federal structures (which arose from the reforms of 1980, 1988 and 1993) give primary responsibility for basic and university research to the Communities, while the Regions are primarily responsible for supporting industrial and technological research. The Federal Government has particular responsibility for the federal scientific and cultural establishments, for space research, thematic research programmes linked to areas of federal responsibility, nuclear research and Belgium involvement in the activities of international research bodies.

The Interministerial Conference for Science Policy (Conférence interministérielle de la politique scientifique – CIMPS) and its administrative bodies are the instruments for dialogue between the Government, the Regions and the Communities.

1.4.2. Germany

Overall trend in GBAORD

According to the final Federal and *Land* budgets, public R&D spending in 1999 amounted to DEM 31.9 billion, which was 1.9 % higher than in 1998.

The provisional Federal and Land budgets for 2000 post a similar amount of GBAORD, thus remaining at the level of the provisional budgets for 1999.

It is estimated that public R&D spending in 2001 will be a good 3 % up on the provisional budget for 2000 at around DEM 33 billion. The estimates are based on Federal budget plans for 2001, taking into account budgetary appropriations made by the *Länder* for establishments run jointly by the Federal and Land authorities. The remaining R&D spending by the Länder was estimated on the basis of the provisional budget for 2000.

Structure of and trends in GBAORD by group of objectives

According to the final budget estimates for 1999, 'Research financed from General University Funds' accounted for the largest share of public R&D expenditure, at 38.3 %. Second place went to 'Technological objectives' (22.8 %), followed by 'Non-oriented research' (16.0 %) and 'Human and social objectives' (11.9 %). 'Defence' absorbed 8.3 % of public R&D funding.

The data for GBAORD in 1999 compared with the final budget for 1998 show that the shares of 'Human and social objectives', 'Technological objectives' and 'Non-oriented research' rose, while the proportions going to all the other groups of objectives were in decline – Table 1.3., p. 19.

The increase in R&D budgeting on 'Human and social objectives' can be attributed mainly to the above-average increase in spending on 'Social structures and relationships' – more specifically on

training, further training and re-training, on culture – and on 'Protection and improvement of human health'.

Although there was only a slight increase in the share of spending on 'Technological objectives' in 1999 from the 1998 final budget, there were differing trends within this group of objectives: above-average or marginal increases for 'Industrial production and technology' (+ 4.5 %) and 'Production, distribution and rational utilisation of energy' (+ 0,9 %) on the one hand, as opposed to downward trends for 'Exploration and exploitation of space' (- 2 %) and 'Exploration and exploitation of the Earth' (- 0,2 %) on the other.

A comparison of the provisional budgets for 2000 and 1999 reveals a further increase in the share appropriated to 'Human and social objectives'. A substantial increase is also recorded for 'Non-oriented research', whilst the shares allocated to the other groups of objectives have fallen, particularly 'Technological objectives' and 'Defence'.

An analysis of the Federal Budget plan for 2001 reveals that around DEM 1 billion more than in the previous year is scheduled to be spent on research and development. This increase in budgeting is primarily due to the 3-year future investment programmme which focuses on the following objectives: 'Innovative regional growth centres in the new *Länder*' (NABS Chapter 7), 'Future initiative for universities' (NABS Chapter 8), 'National genome research network; combating disease through genome research' (NABS Chapter 4) and 'Research and development of less-polluting forms of energy in the field of non-nuclear energy research' (NABS Chapter 5). A total of DEM 525 million is available for these R&D activities in 2001 – see Table 1.3., p. 19.

1.4.3. Italy

In 1999, the final GBAORD budget amounted to 11 771 405 Million Italian lire. Final data for 1999 registered a negative difference (- 4.2 %) on 1999 provisional data. This is due to smaller allocations for 'Protection and improvement of human health' (- 27.5 %), 'Social structures and relationships' (- 20.7 %) and 'Defence' (- 52.4 %), that are not balanced by an increase for other objectives such as 'Agricultural production and technology' (+ 19.1 %) and 'Exploration and exploitation of space' (+ 3.7 %).

The final 1999 budget presents a slight decrease on the 1998 budget (- 1.0 % in nominal terms, but - 2.6 % in real terms, at 1995 prices). First of all, this is due to the allocations to 'Defence' (- 53.2 %), which are less than half the value of the previous year. Also CNR, which is the biggest research agency of the country (about 11 % of GBAORD in 1999), registered a decrease of funds in nominal terms. Moreover, the current restructuring of the agency involves a different distribution of resources within its objectives.

'Infrastructure and general planning of land-use' (- 43.5 %) and 'Control and care of the environment' (- 20.8 %) decreased dramatically in 1999 compared to 1998. Also 'Production, distribution and rational utilisation of energy' (- 9 %) and 'Industrial production and technology' (- 8.2 %) received fewer funds.

Major increases were registered by 'Exploration and exploitation of the earth' (+ 13.3 %), 'Protection and improvement of human health' (+ 25 %), 'Agricultural production and technology' (+ 17.9 %) and 'Social structures and relationships' (+ 24.7 %). 'Exploration and exploitation of space' (+ 5.4 %) and 'Non-oriented research' (+ 3.9 %) registered a better performance too. Major investment in R&D to 'Non-oriented research' produced an increase in this objective (+ 3.9 %) and allowed it to cover 11.7 % of GBAORD.

The objective 'Research financed from GUF' is currently affected by certain methodological aspects, which have to be solved before changing the amount of funds. Nevertheless, it covered 47.3 % of total GBAORD.

In 2000, provisional data amounted to 13 081 108 Million Italian Lire, with an increase of 11.1 % on final 1999 data. The most important variation has occurred in the chapter 'Industrial production and technology' (+ 128.5 %), due to increased funding from the Ministry of University and Scientific and Technological Research – MURST – allocated through the Fund for Applied Research: the 'IMI Fund'. This brought about a diminution of the relative importance of the other objectives. On the other hand, there was a constant decrease in funds for 'Defence' (- 22 %) and 'Infrastructure and general planning of land-use' (- 16 %), whereas 'Research financed from GUF' remained steady – see Table 1.4., p. 19.

1.4.4. Austria

Public R&D funding totalled ATS 16.4 billion in 1998 and ATS 17.3 billion in 1999 (the final budget in each case). This means that public R&D expenditure rose nominally by 5.9 % in 1999 compared with the previous year. The provisional Federal budget earmarked State funds of ATS 16.5 billion for R&D for the year 2000, representing a nominal cut of 2.6 % compared with the reference value for the 1999 provisional budget (ATS 16.9 billion) and a nominal decline of 5.1 % compared with the final budget of 1999.

For 2001, the public R&D funding calculated on the basis of the provisional Federal budget amounts to ATS 24.0 billion, which represents a nominal increase of 46.0 % compared with the corresponding value of the provisional budget for 2000 (ATS 16.5 billion). This abnormally high increase in public R&D funding in 2001 is mainly due to the funds listed in the 2001 provisional budget for the 'Research and technology offensive' totalling ATS 7 billion. These funds, which can be placed in reserve, are entered in the 2001 provisional Federal budget in accordance with the 2001 Federal Finance Law, and according to current information it can be assumed that in 2001 only about ATS 2 billion of these ATS 7 billion will be used, the remaining ATS 5 billion being reserved for R&D expenditure in subsequent years.

Up to the year 2000, there was basically no change in the Austrian situation, in which some 64 % of the Federation's total R&D expenditure is allocated to NABS Chapter 10 'Research financed from GUF', owing to the dominant position of the universities in State sector research. In 2001, the share of the research objective group 'Technological objectives' will increase to 36.1 % because the above-mentioned funds for the 'Research and Technology Offensive' have been allocated to the NABS objective 'Industrial production and technology', so the share of 'Research financed from GUF' will fall to 46.4 % – see Table 1.5., p. 19.

1.4.5. United Kingdom

Data on government expenditure and employment on Research and Development are collected by means of an annual survey of central government departments. The results of the latest survey are published in the OST's Science, Engineering and Technology Statistics 2001 – Available on the Internet on the Office of Science and Technology website at http://www.dti.gov.uk/ost/.

The survey shows that total net Government expenditure on R&D in 1999-2000 was GBP 6174 million. This represents 2.43 % of total Central Government expenditure and 0.68 % of Gross Domestic Product. The expenditure on R&D in 1999-2000 increased in nominal terms by GBP 466.9 million (8.2 %) on 1998-99.

Table 1.5. shows UK Government expenditure on R&D in 'Defence' has increased. In 1999-2000 expenditure on defence was GBP 2347 million, which was GBP 247 million (12 %) up on the previous year.

After 'Defence' the biggest category of R&D expenditure in 1999-2000 was the group 'Human and social objectives', which continues to show an increase in expenditure from GBP 1254 million in 1998-99 to GBP 1401 million in 1999-2000. The increase in this area from 1995-96 onwards is due in part to the fact, that for 1995-96 UK National Health Service – NHS – figures have been obtained from the Department of Health and the Scottish Office on the basis of the Culyer directive, which for the first time confirmed the extent of R&D spending in the NHS.

Of the other categories showing a rise in expenditure between 1998-99 and 1999-2000, 'Non-oriented research' increased by 3.5 % from GBP 677 million to GBP 700 million, 'Research financed from GUF' rose by 6.6 % from GBP 1085 million to GBP 1157 million and 'Agricultural production and technology' increased by GBP 4.1 million (2 %).

'Technological objectives' showed a decrease of 7 % (GBP 22 million) between 1998-99 and 1999-2000 and 'Other civil research' also decreased by 19 % (GBP 25.8 million to GBP 21.0 million) in the same period.

1.4.6. Norway

Net Government Budget Appropriations or Outlays on R&D (GBAORD) in the provisional budget for 2000 amounted to NOK 9.7 billion . In current prices this is an increase of NOK 620 million from the final budget for 1999, or 6.8 %. In real terms this means a 3 % growth, which is an improved growth rate compared to development between the final budgets for 1998 and 1999 – only slightly above zero. In the summer of 1999, the Norwegian Government proposed a white paper on research, which aimed at lifting the level of the Norwegian R&D as a share of GDP to the OECD average over the next five years. This ambitious plan, inter alia, involves increase and reallocation of GBAORD, including the introduction of a new research foundation. So far, however, the annual budgets have hardly brought Norway any closer to achieving this goal.

In 1999, 39 % of net Norwegian GBAORD was allocated through 'Research financed from General University Funds'. Universities are thus by far the most prominent recipient of Government R&D funding, and the share still seems to be on the increase. Funds for 'Technological objectives' account for one fifth, of which 'Industrial production and technology' makes up almost two thirds. The overall technology share is almost equal to the share for 'Human and social objectives'. A slight decline in the 'Defence' share of total GBAORD and a slight increase in the share of 'Non-oriented research' apart, there are no stable or large changes in the pattern during the period 1998-2000 – See Table 1.6., p. 19.

Tables 1.2. to 1.6. — GBAORD in % by country and groups of objectives

1.2. — Belgium — 1998-2000

Groups of NABS objectives	Final Budgets 1998	1999	Provisional Budgets 1999	2000
2. 3. 4. 8. Human and social objectives	9	9.3	9.4	10.8
1. 5. 7. 9. Technological objectives	38.9	39.7	39.2	38.1
6. Agriculture	3.3	3.1	3.0	3.0
10. Research financed from GUF	19.9	19.4	19.3	19.2
11. Non-oriented research	23.4	22.8	23.2	23.9
12. Other civil research	5	5.3	5.3	4.7
13. Defence	0.5	0.4	0.6	0.4
Total	**100**	**100**	**100**	**100**

NB: Sum of constituent parts may not equal total due to rounding.

Source: **Federal Office for Scientific, Technical and Cultural Affairs, Belgium.**

1.3. — Germany — 1998-2001

Groups of NABS objectives	Final Budgets 1998	1999	Provisional Budgets 1999	2000	2001 (1)
2. 3. 4. 8. Human and social objectives	11	11.9	10.6	12.1	13.4
1. 5. 7. 9. Technological objectives	22.7	22.8	22.6	22.1	22.3
6. Agriculture	2.7	2.6	2.6	2.5	2.4
10. Research financed from GUF	38.8	38.3	38.6	38.5	37.5
11. Non-oriented research	15.8	16.0	16.1	16.6	16.9
12. Other civil research	0.3	0.2	0.2	0.1	0.1
13. Defence	8.8	8.3	8.4	8.0	7.4
Total	**100**	**100**	**100**	**100**	**100**

NB: Sum of constituent parts may not equal total due to rounding.

(1) Estimate.

Source: **BMBF.**

1.4. — Italy — 1997-2000

Groups of NABS objectives	Final Budgets 1997	1998	Provisional Budgets 1999	2000
2. 3. 4. 8. Human and social objectives	14	13.3	14.7	13.0
1. 5. 7. 9. Technological objectives	23.1	23.0	22.8	30.3
6. Agriculture	2.2	1.9	2.2	2.1
10. Research financed from GUF	45.4	48.0	47.3	42.5
11. Non-oriented research	10.9	11.1	11.7	11.2
12. Other civil research	-	-	-	-
13. Defence	4.4	2.7	1.3	0.9
Total	**100**	**100**	**100**	**100**

NB: Sum of constituent parts may not equal total due to rounding.

Source: **ISTAT.**

1.5. — United Kingdom — 1998-2000

Groups of NABS objectives	Final Budgets 1997	1998	Provisional Budgets 1999	2000
2. 3. 4. 8. Human and social objectives	20.2	22.0	22.6	22.8
1. 5. 7. 9. Technological objectives	6.8	5.4	5.0	6.1
6. Agriculture	4.6	4.5	4.2	4.1
10. Research financed from GUF	17.5	19.0	18.7	20.9
11. Non-oriented research	11.4	11.9	11.3	13.3
12. Other civil research	0.4	0.5	0.3	0.4
13. Defence	39.2	36.8	37.9	32.4
Total	**100**	**100**	**100**	**100**

NB: Sum of constituent parts may not equal total due to rounding.

Source: **ONS.**

1.6. — Norway — 1998-2000

Groups of NABS objectives	Final Budgets 1998	1999	Provisional Budgets 2000
2. 3. 4. 8. Human and social objectives	18.9	19.5	19.2
1. 5. 7. 9. Technological objectives	20.3	19.0	19.3
6. Agriculture	8.7	8.7	8.9
10. Research financed from GUF	38.9	39.3	39.3
11. Non-oriented research	7.7	8.1	8.3
12. Other civil research	-	-	-
13. Defence	5.5	5.3	5.0
Total	**100**	**100**	**100**

NB: Sum of constituent parts may not equal total due to rounding.

Source: **NIFU.**

Chapter 2
R&D expenditure and personnel

2.1. Introduction

R&D activities are often considered an engine of economic growth. They comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications ([1]). The basic statistical variables are R&D expenditure and R&D personnel. These two values are usually measured every two years or else annually, both at national and regional levels in the European Economic Area countries.

Two manuals are considered methodological reference works for R&D surveys: the *Frascati Manual* and the *Regional Manual* ([2]). They provide a model for obtaining an exact picture of the resources put into R&D activities as well as comparable statistics between countries.

The R&D variables referred to in this chapter are based on the following definitions: the basic measurement of R&D expenditure corresponds to 'intramural' expenditure, i.e. all expenditure on R&D within a statistical unit or sector of the economy, whatever the source of funds – *Frascati Manual*, paragraph 335. For statistical purposes, current expenditure and capital expenditure are included ([3]).

Data on R&D personnel measure the human resources directly devoted to R&D activities, i.e. all persons employed directly on R&D plus those who provide direct services such as R&D managers, administrators and clerical staff – *Frascati Manual*, paragraph 279. Data on R&D personnel are collected in terms of full-time equivalent (FTE) and head count (HC) ([4]).

Intramural R&D expenditure and R&D personnel are broken down by institutional sector, i.e. by sector engaged in R&D. In this publication, four sectors are used to calculate indicators of R&D activity: the business enterprise sector, the government sector, the higher education sector and the private non-profit sector ([5]). However, given the minor role played by the latter sector in all countries save Portugal, it has not been systematically included in all the analyses of this chapter.

([1]) Proposed standard practice for surveys of research and experimental development — *Frascati Manual*, OECD, 1993.

([2]) The regional dimension of R&D and innovation statistics — *Regional Manual*, Eurostat, 1996.

([3]) Data on R&D expenditure are based on expenditure actually committed, i.e. they refer to the R&D resources mobilised during a given year. In view of the time it takes to conduct such surveys and to process their results, data on R&D expenditure are not available until some time after the R&D has been carried out. Data on R&D expenditure are available at Eurostat for all the Member States of the European Union — except Luxembourg — Norway and Iceland from 1981 on.

([4]) Data on R&D personnel are also based on resources actually committed, i.e. they refer to the number of personnel employed on R&D during a given year. Data on R&D personnel, in terms of head count and FTE, are available at Eurostat for all the Member States of the European Union — except Luxembourg — Norway and Iceland from 1981 on.

([5]) In other publications (e.g. OECD) in which data are also classified by source of funds, the 'foreign' sector is also taken into account.

Some changes have been made in this year's publication. For one thing, new indicators have been included: the proportion of researchers and of women among R&D personnel. The publication of the latter indicator is part of the European Commission's commitment to promote female participation in science.

Certain methodological changes have also been implemented. This chapter takes into account the changes brought about by the adoption of the new European system of national accounts, with ESA '95 replacing ESA '79 – this process was started last year. In general terms, this methodological change allows more precise and extensive coverage of the whole range of economic activities. From a statistical point of view, the absence of complete series in ESA '95 means that there are breaks in the series for calculating research intensity and R&D personnel as a percentage of the labour force. These variables are based on ESA '95 series on GDP and the labour force, but they have had to be systematically completed with ESA '79 data, which has led to a certain number of breaks in series. However, the impact on the variables remains minimal.

Lastly, there has been a second important change in how research intensity is calculated. At the national level, GDP classified in Theme 2 'Economy and Finance' from the NewCronos database has been used, while at the regional level the GDP available in Theme 1 'General statistics' has been used.

This chapter is divided into three major parts. The first covers R&D at the level of the Triad: Europe, the United States and Japan. The second covers the R&D activities of the European Economic Area. Lastly, the chapter concludes by presenting the regional dynamics of R&D in Europe. The analysis pertains to the period 1990-2000.

2.2. Perspectives of R&D at the international level — Europe, United States and Japan

Despite an increase in resources allocated for R&D both from the point of view of expenditure and personnel, the European Union continues to lag behind Japan and the United States.

2.2.1. R&D expenditure

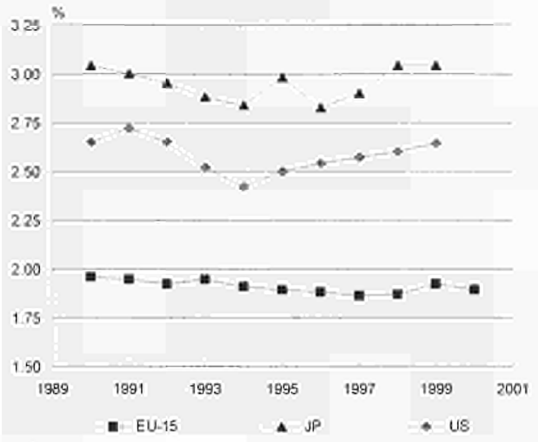
Global R&D expenditure

R&D expenditure accounted for 1.90 % of GDP in Europe in 2000, compared with 3.04 % in Japan and 2.64 % in the United States (1999 data). Although the gap between the European Union and the two other countries remains considerable and is even tending to widen, there has nevertheless been a slight increase in the intensity of research in Europe over the last two years. With 1.92 % in 1999, EU-15 has exceeded the level reached in 1994 (1.91 %), gaining 0.06 points in comparison with the lowest level recorded over the last decade: 1.86 % in 1997.

Japan and the United States for their part are continuing their upward trend, even if there has been a certain flagging in Japan's case. The gap between the two countries' intensity of research

Figure 2.1. — R&D expenditure as a % of GDP, 1990-2000

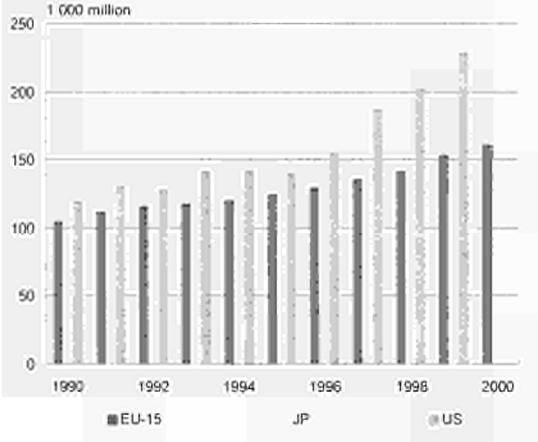
All sectors



Sources: Eurostat, OECD (JP, US).

Figure 2.2. — R&D expenditure in current ECU/EUR, 1990-2000

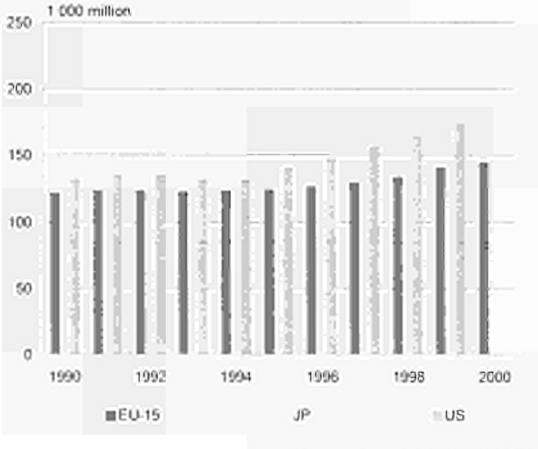
All sectors



Sources: Eurostat, OECD (JP, US).

Figure 2.3. — R&D expenditure in constant 1995 ECU/EUR at 1995 prices, 1990-2000

All sectors



Sources: Eurostat, OECD (JP, US).

activity has gone up slightly (in Japan's favour), rising from 0.3 points in 1997 to 0.4 in 1999 – Figure 2.1.

The United States still shows the highest amount of expenditure for R&D, with figures in current ECU/EUR of 229 billion and in constant ECU/EUR of 174 billion in 1999. In the same year, R&D expenditure in the European Union came to 67 % of the figure in the United States (in current ECU/EUR), while in Japan (54 %) it was only just over half of the US figure.

The global trend in R&D expenditure – in constant ECU/EUR – has been increasing since 1994, both for EU-15, Japan and the United States. The respective annual average growth rates – AAGR – for the period 1995 until the last year for which data are available are of the order of 3.0 % for EU-15, 4.1 % for Japan and 5.6 % for the United States. The pattern of R&D expenditure over the last year is not in line with these trends. Only the United States, with an annual growth rate of 5.8 %, recorded a higher level than the annual average growth rate. The rates have declined in Japan and in the European Union, where they stand at 2.5 and 2.3 % respectively.

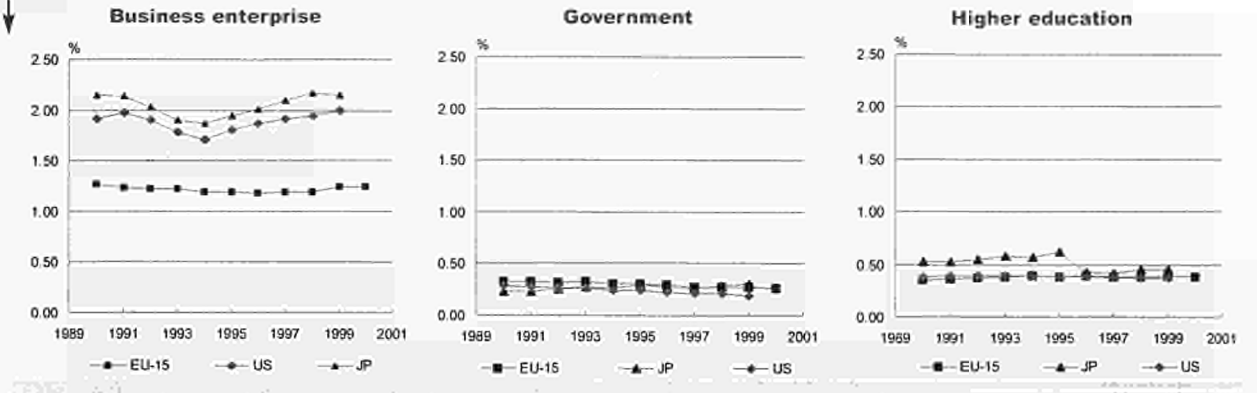
R&D expenditure by institutional sector

The gap between the levels of intensity in research for all sectors between Japan and the United States on the one hand and EU-15 on the other is principally attributable to the differences recorded in the business enterprise sector. In fact in 2000, despite an increase between 1998 and 1999 of 0.05 points, EU-15 spent only 1.24 % of its GDP on R&D expenditure in the business enterprise sector compared with 2.00 % for the United States and 2.15 % for Japan (1999 data). In the medium term, i.e. between 1995 and 2000, European R&D expenditure (constant ECU/EUR) progressed by 3.4 % in terms of volume in the private sector compared with the previous year and remained close to the 1995-2000 AAGR which was around 3.9 %.

In Japan, expenditure in volume terms declined slightly in the business enterprise sector compared with the previous year. However, the trend remained positive between 1995 and 2000, years for which the annual average growth rate stood at approximately 3.1 %. In the United States, the recent rise of 7.4 % in expenditure in volume in 1999 confirmed the medium-term trend – AAGR of 6.9 % for 1995-99.

In the government and higher education sectors, the European Union and the United States were in a similar position. In the first sector mentioned, the percentage of GDP spent on R&D tended to decline during the decade. In the second sector, the percentage of GDP spent on R&D has stabilised at about 0.4 %. Conversely, Japan has considerably increased the intensity of its research in the two sectors since 1997, a year which showed a significant change in the pattern. The strong decrease recorded in 1996 was due to a change in the survey methodology – for more information, see the methodological notes in Part 2.

Figure 2.4. — R&D expenditure as a % of GDP by institutional sector, EU-15, Japan, US — 1990-99



Sources: Eurostat, OECD (JP, US).

2.2.2. R&D personnel

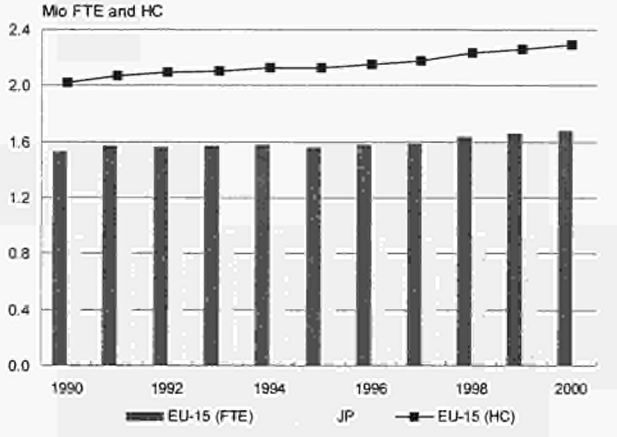
Almost 1.7 million people, expressed in full-time equivalent, were employed in R&D in the European Union in 2000. This represents an increase of 156 000 people, again expressed in full-time equivalent, over the last 10 years. In terms of head count, this represents 2.3 million individuals. In Japan, 919 000 people are employed in R&D activities — again expressed in full-time equivalent, Figure 2.5.

For all sectors, R&D personnel is on the increase in terms of volume for EU-15 (0.9 %) but decreased in comparison with the previous year in Japan (- 0.7 %).

In both cases, the majority of these R&D personnel work in the business enterprise sector: 66 % in Japan in 1999 and 55 % in Europe in 2000.

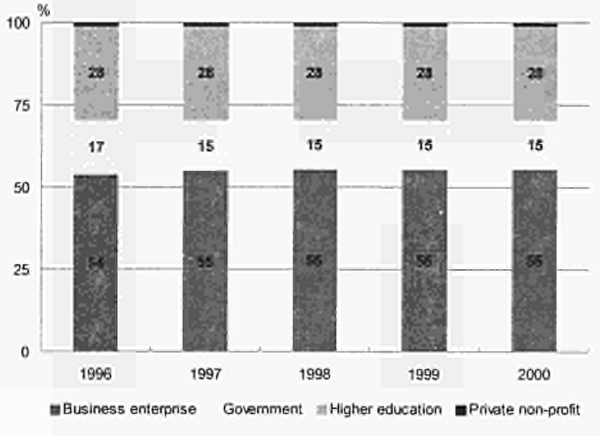
With regard to the public sector, the most noticeable feature of the situation in Europe is the larger proportion of R&D personnel in the government sector: almost 15 % compared with 6 % in Japan. In general terms, this breakdown of R&D personnel among the different sectors remained stable in the second half of the decade — Figures 2.6. and 2.7.

Figure 2.5. — R&D personnel expressed in FTE units and head count (HC) All sectors, EU-15, Japan — 1990-2000



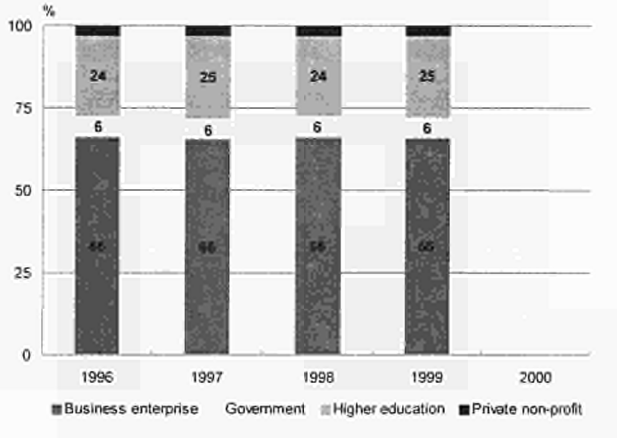
Sources: Eurostat, OECD.

Figure 2.6. — R&D personnel in FTE by institutional sector EU-15 — 1996-2000



Source: Eurostat.

Figure 2.7. — R&D personnel in FTE by institutional sector Japan — 1996-1999



Source: OECD.

2.3. R&D in Europe

With more than 3.1 % of GDP in 1999, Sweden and Finland confirmed their lead in terms of intensity of R&D in Europe. They by far exceeded the average levels achieved in the United States (2.62 %) and Japan (2.91 %).

Among the top four countries in terms of R&D activity measured in volume (Germany, France, the United Kingdom and Italy), only the first two, with respectively 2.46 and 2.15 % of intensity of R&D, outperformed the European average in 2000.

Four countries (Greece, Portugal, Spain and Italy) spend less than 1.1 % of their GDP on R&D, whilst for ten countries this figure exceeds 1.8 %.

In terms of R&D personnel, Sweden and Finland were accompanied at the top of the list by Iceland, Denmark and Norway, where over 1.9 % of the labour force in 1999 were employed in R&D activities, compared with an average figure of 1.34 % for Europe as a whole (in 2000).

There are generally fewer women among R&D personnel. The proportion decreases in the business enterprise sector and increases in the countries of southern Europe.

2.3.1. R&D expenditure

Finland and Sweden recorded the highest percentages of GDP spent on R&D in Europe with 3.80 and 3.19 % respectively – 1999 data. Together with Belgium, they also recorded the greatest advances compared with the previous year, with the intensity of research progressing from 2.89 % to 3.19 % in Finland, from 1.90 % to 1.98 % in Belgium and from 3.75 % to 3.80 % in Sweden.

Over the period 1995-2000, only eight EEA countries recorded an increase of more than 0.1 point in expenditure on R&D as a percentage of GDP. Among the four main countries, the only notable increase occurred in Germany – from 2.26 % to 2.46 % – whereas expenditure in France and the United Kingdom declined.

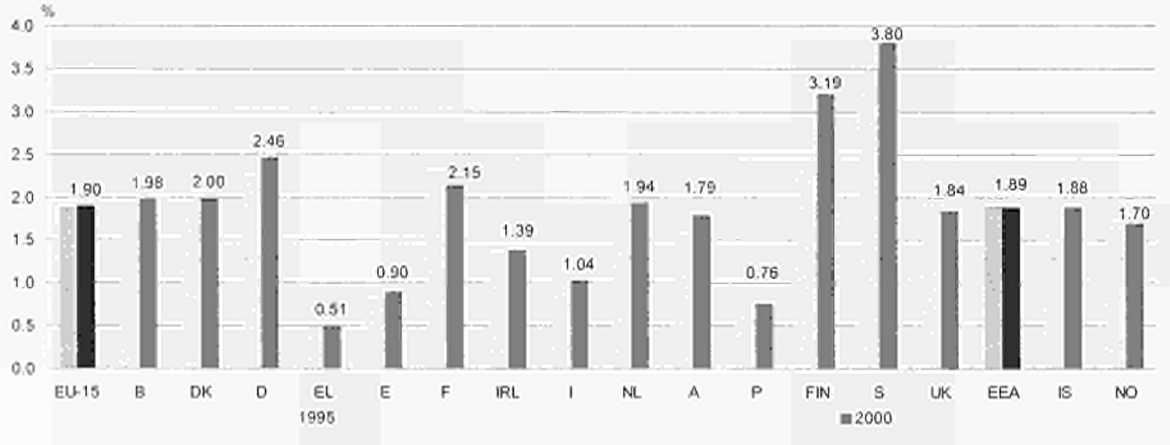
The gap between the two ends of the table continues to widen. In 1995 there was a difference of 3.0 points between the first and last countries, but this had risen to 3.3 points in 2000 – Figure 2.8.

The analysis in terms of volume in constant ECU/EUR places Germany in the lead in the European Economic Area, with expenditure of 50.5 billion on R&D. France – 28.8 billion – ranked second ahead of the United Kingdom – 18.2 billion – and Italy – 9.2 billion. Together, these four countries totalled almost 75 % of total R&D expenditure in EU-15 in 2000.

Sweden and Finland, with the highest intensity of research in Europe, counted for 8.1 % of European R&D expenditure in 1999, with ECU/EUR 7.8 and 3.8 billion respectively.

The vigorous R&D performance in Finland is also confirmed by the progression of R&D expenditure between 1998-99, which went up by 15 % in real terms. Ireland came second with an increase of 10 % and was followed by Belgium (7 %) and Italy (6.8 %).

Figure 2.8. — R&D expenditure as a % of GDP
All sectors — EEA countries — 1995 and 2000



Exceptions to the reference year 2000: B, DK, I, P, FIN, S, IS and NO: 1999; NL: 1998; EL and IRL: 1997.

Source: Eurostat.

These performances have been confirmed in the medium-term by the high annual average growth rates (AAGR) recorded by these countries in 1995-2000. Italy was the only exception: its AAGR of 2.5 % is below the higher level of 6 % reached by the three other countries. Iceland should be added to this trio, because despite a slight drop of its R&D expenditure in 1999, with an AAGR of 10.1 %, it recorded one of the biggest improvements in Europe over this same period.

The countries with low R&D expenditure — Iceland and Ireland as already mentioned, together with Greece and Portugal — all recorded an AAGR (1995-2000) above the European average of 3 % — Table 2.1.

R&D expenditure by institutional sector

In 2000, two thirds of R&D expenditure in the European Economic Area was made by the business enterprise sector. This sector increased slightly compared with 1995, when it represented 63 % of R&D expenditure. The government sector declined slightly, however, with 14 % of R&D expenditure in 2000, thus losing 2 points compared with the 1995 level. The share accounted for by the higher education sector remained unchanged over this period.

In the medium term, the sharpest increase in constant ECU/EUR was made by the business enterprise sector, both in terms of annual growth (3.4 % from 1999 to 2000) and in terms of AAGR (3.9 % between 1995 and 2000). The trend remained positive for the higher education sector, even if there it flagged somewhat over the last year, while the government sector is stagnating with an AAGR equivalent to - 0.1 %.

At the national level, the situation differs between institutional sectors. In the short term and in the business enterprise sector, the trends were generally increasing in 2000 compared with 1999, the exceptions being Denmark and the Netherlands (their AAGR 1995-2000 nevertheless remains positive). In 2000, Finland, Ireland and Greece recorded annual average growth rates that were higher than 10 %. In the medium term, i.e. over the last 5 years, Iceland had the highest AAGR in Europe — 17.2 %.

The situation is similar in the higher education sector where the countries mentioned above (Finland, Ireland and Sweden) recorded annual average growth rates above 7.9 %. In the medium term, Greece, Finland and Portugal recorded the strongest growth, with AAGRs higher than 12 %.

The government sector was an exception, with three countries showing a downward medium-term trend: the United Kingdom (AAGR of - 5 %), Ireland (- 2.5 %) and France (- 2.3 %) — Table 2.1.

Table 2.1. — R&D expenditure in millions of constant ECU/EUR at 1995 prices
By institutional sector — EEA countries — 1995-2000

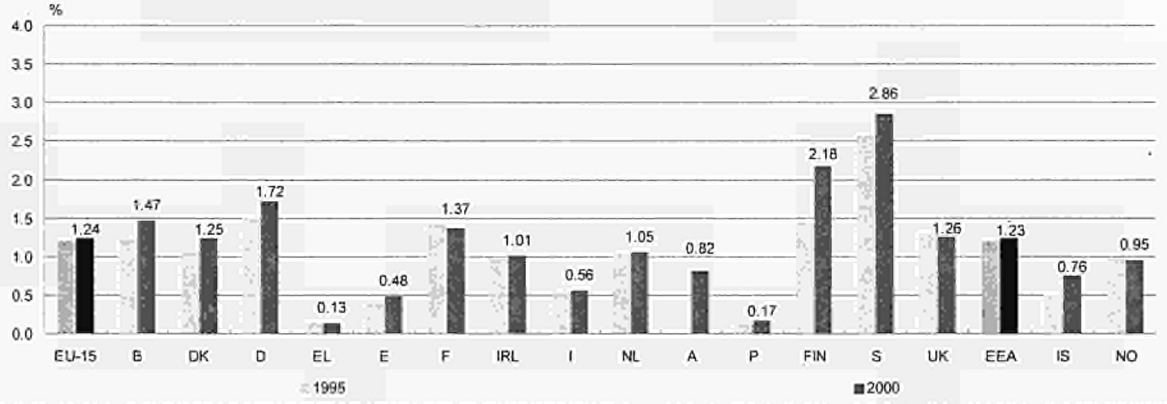
Sector	EU-15	B	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EEA	IS	NO
All sectors																		
2000	144 102 e	:	:	50 507 e	:	4 642 e	28 814 e	:	:	:	3 648 e	:	:	:	18 206	146 155 e	:	:
1999	140 882 e	4 593	3 051 e	48 510 e	:	4 581	28 488	:	9 265	:	3 606 e	728	3 833	7 767	17 954	143 140 e	121	2 157
1998	133 363 e	4 295	3 015 e	45 246 e	:	4 448 e	27 453	:	8 675	6 655	3 470 e	:	3 331	7 345 e	17 169	135 637 e	125	:
1997	129 078 e	4 141	2 822	43 902	483	3 897	27 142	840 e	8 527	6 925	3 139 e	552	2 972	6 960	16 775	131 208 e	108	2 042
1996	126 682 e	3 862	2 617 e	42 747 e	:	3 800 e	27 596	764 e	8 540	6 645	2 942 e	:	2 613	:	16 901	128 725 e	85 e	:
1995	124 475 e	3 629	2 531	42 438	437 e	3 624	27 447	683 e	8 386	6 313	2 797 e	470	2 263	6 361	17 097	126 464 e	82	1 920
Annual growth in % (1)	2.3	7.0	1.2	4.1	:	5.7	1.1	10.0	6.8	-1.0	1.2	:	15.1	5.7	1.4	2.1	-3.2	:
AAGR in % (2) 1995-2000	3.0	6.1	4.8	3.5	5.1	6.0	1.0	10.9	2.5	2.6	5.5	11.6	14.1	5.1	1.3	2.9	10.2	3.0
Business enterprise																		
2000	94 634 e	3 542	:	35 352 e	:	2 586 p	18 451 e	:	:	:	:	:	:	:	12 429	95 748 e	:	:
1999	91 668 e	3 289	1 901 e	33 650 e	:	2 382	17 998	:	4 982	:	:	165	2 613	5 835	12 177	92 814 e	49	1 207
1998	85 410 e	3 048	1 969	30 741 e	:	2 318	17 093	:	4 543	3 713	:	0	2 237	5 596 e	11 307	86 678 e	46	:
1997	82 288 e	2 965	1 734	29 613	123	1 902	16 973	614 e	4 534	3 779	:	124	1 961	5 207	10 987	83 486 e	44	1 162
1996	79 695 e	2 765	1 594 e	28 323 e	112	1 837 e	16 984	553 e	4 568	3 467	:	0	1 729	:	11 016	80 838 e	26 e	:
1995	78 101 e	2 586	1 452	28 196	129	1 748	16 737	487 e	4 479	3 294	1 415 (1)	98	1 430	4 718	11 168	79 212 e	26	1 089
Annual growth in %	3.4	7.7	-3.4	5.1	10.2	7.7	2.5	11.1	9.7	-1.7	:	:	16.8	4.3	2.1	3.2	6.5	:
AAGR in % 1995-2000	3.9	6.5	7.0	4.6	-2.2	8.0	2.0	12.3	2.7	4.1	:	13.8	16.3	5.5	2.2	3.9	17.2	2.6
Government																		
2000	20 013 e	:	:	6 941 e	:	800 e	5 119 e	53 e	:	:	:	:	:	:	1 907	20 352 e	:	:
1999	19 946 e	152	477	6 785 e	150	773	5 169	53 e	1 960	:	:	204	465	261	1 926	20 310 e	38	332
1998	19 852 e	148	436 e	0 e	:	724	5 117	60 e	1 902	1 281	:	:	419	254 e	2 290	20 237 e	47	:
1997	19 263 e	137	435	6 425	113	677	5 066	59 e	1 765	1 253	:	134	404	246	2 289	19 628 e	32	336
1996	19 913 e	127	426 e	6 515	:	695 e	5 593	61 e	1 706	1 231	:	:	412	:	2 418	20 273 e	35 e	:
1995	20 068 e	125	431	6 540	111	675	5 761	58 e	1 772	1 142	225 (1)	127	390	239	2 464	20 423 e	31	332
Annual growth in %	-0.3	2.1	9.3	2.3	:	3.5	-1.0	0.9	3.1	2.2	:	:	10.8	2.7	-1.0	0.2	-19.1	:
AAGR in % 1995-2000	-0.1	5.0	2.6	1.2	7.6	3.5	-2.3	-2.5	2.6	3.9	:	12.6	4.5	2.2	-5.0	-0.1	5.3	0.0
Higher education																		
2000	28 496 p	:	:	8 214 e	:	1 428 e	4 816 e	:	:	:	:	:	:	:	3 619	29 095 e	:	:
1999	28 410 e	1 097	637	8 075 e	341	1 380	4 889	:	2 322	:	:	281	756	1 662	3 600	29 054 e	31	618
1998	27 201 e	1 045	610 e	7 871 e	:	1 357	4 834	174 e	2 231	1 861	:	:	653	1 490 e	3 349	27 831 e	31	:
1997	26 670 e	986	626	7 864	244	1 275	4 727	161 e	2 228	1 892	:	221	593	1 501	3 283	27 239 e	31	544
1996	26 168 e	918	566 e	7 910	:	1 226	4 647	145 e	2 266	1 884	:	:	472	:	3 261	26 704 e	20 e	:
1995	25 428 e	887	620	7 702	194	1 161	4 585	132 e	2 135	1 817	885 (1)	174	442	1 393	3 252	25 946 e	23	500
Annual growth in %	0.3	5.0	4.4	1.7	:	3.5	-1.5	7.9	4.1	-1.7	:	:	15.7	11.5	0.5	0.1	3.2	:
AAGR in % 1995-2000	2.3	6.1	0.7	1.3	15.2	4.2	1.0	9.5	2.1	0.8	:	12.7	14.3	4.5	2.2	2.3	9.2	5.5

(1) Annual growth rate — reference years: 1999-2000 depending on availability of data.
(2) 1993 data.
(3) Annual average growth rate — reference years: 1995-2000 depending on availability of data.

Source: Eurostat.

In terms of research intensity, the situation differs among the institutional sectors. The business enterprise sector is the sector with the biggest range of R&D expenditure as a percentage of GDP, with figures going as high as 2.7 %, as distinct from the two other sectors, particularly that of higher education — Figures 2.9. to 2.11.

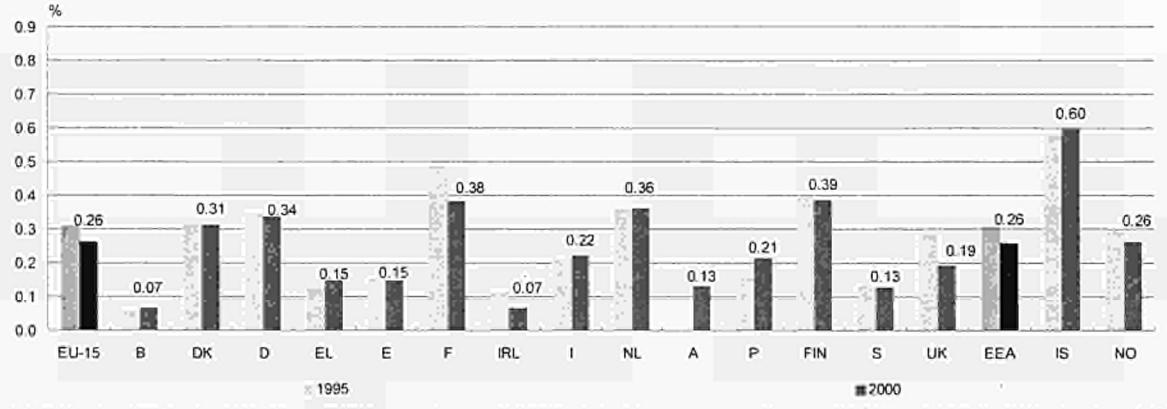
Figure 2.9. — R&D expenditure as a % of GDP
EEA countries — Business enterprise sector — 1995 and 2000



Exceptions to the reference year 2000: DK, FIN, I, IS, NO, P and S: 1999; NL: 1998; EL and IRL: 1997; A: 1993.

Source: Eurostat.

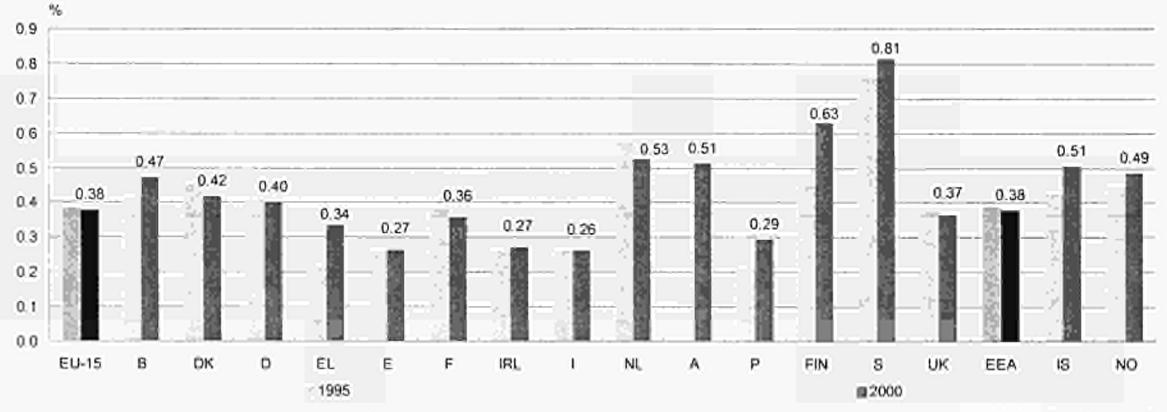
Figure 2.10. — R&D expenditure as a % of GDP
EEA countries — Government sector — 1995 and 2000



Exceptions to the reference year 2000: B, DK, EL, FIN, I, IS, NO, P and S: 1999; NL: 1998; A: 1993.

Source: Eurostat.

Figure 2.11. — R&D expenditure as a % of GDP
EEA countries — Higher education sector — 1995 and 2000



Exceptions to the reference year 2000: B, DK, EL, FIN, I, IS, NO, P and S: 1999; IRL and NL: 1998; A: 1993.

Source: Eurostat.

2.3.2. R&D personnel

In 1999, the countries of northern Europe employed the highest proportion of R&D personnel as a percentage of the total labour force in Europe, i.e. more than 1.8 %. This proportion has been rising overall in these countries, apart from Norway, since 1995.

For the countries with the lowest proportion, there has also been an overall increase in the ratio, which has progressed from 0.53 % in 1995 to 0.73 % in 1999 – Figure 2.12.

Conversely, the proportion of R&D personnel, (head count) in the labour force has remained stable since 1995 in France and Germany, with the latter employing the greatest number of R&D personnel in Europe.

Similarly to R&D expenditure, the breakdown of R&D personnel within Europe is unevenly distributed among the various countries.

Almost two-thirds of R&D personnel, expressed in full-time equivalent (FTE) units, are employed in only three countries: Germany (466 000), France (307 000 in 1998) and the United Kingdom (277 000 in 1993).

The increase (FTE) over the last year for these three countries has nevertheless remained moderate and far short of the advances made by countries at the head of the list: Ireland (11 %), Finland (9 %), Belgium (7 %) and Iceland (6 %). These four countries stand out with annual average growth rates above 5 % in 1999. Nevertheless, although the trend is generally upward, it remains moderate. For eight countries, the annual growth recorded in 1999 remained lower than the annual average progression recorded between 1995 and 1999 (AAGR). The countries in particular concerned by this trend are Spain, Sweden and Iceland.

Figure 2.12. — R&D personnel as a % of labour force in head count (HC)
All sectors — 1995 and 1999

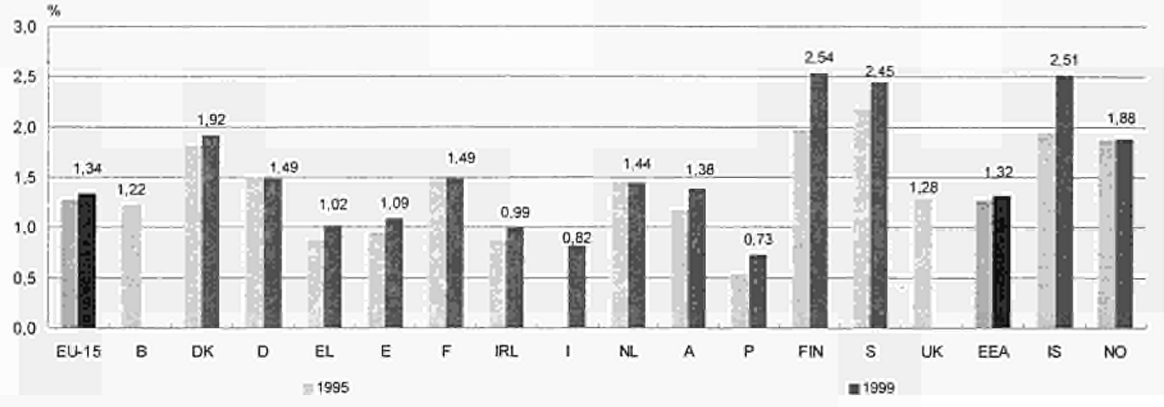
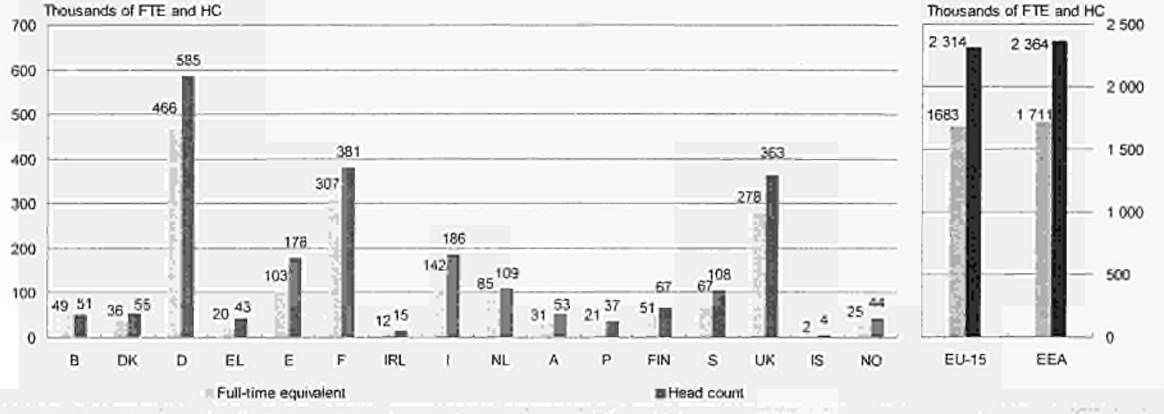


Figure 2.13. — R&D personnel in full-time equivalent (FTE) and in head count (HC)
All sectors — 1999



Figures 2.12. and 2.13.: exceptions to the reference periods

R&D personnel as a percentage of the labour force
Reference period 1999
EU-15: 2000; A, D, EEE, F and IS: 1998;
EL, IRL and NL: 1997;
I: 1996.
Reference period 1995
A and UK: 1993.

R&D personnel in FTE
Reference period 1999
EU-15, EEA, E: 2000;
A, F and NL: 1998;
EL, IRL and I: 1997;
UK: 1993.

R&D personnel expressed as head count
Reference period 1999
EU-15, EEA: 2000;
A, D and F: 1998;
EL, IRL and NL: 1997;
I: 1996; B: 1995.

Source: **Eurostat.**

R&D personnel by institutional sector

In 2000, the business enterprise sector employed on average a little over one of every two people in full-time equivalent (56 %) working in R&D in Europe, compared with 29 % in the higher education sector and 15 % in the government sector.

Four countries oppose the trend in the breakdown of R&D personnel: Greece and Portugal, where R&D personnel in the business enterprise sector was less than 20 %, and to a lesser degree Spain and Italy, which recorded levels of 38 and 43 % respectively – Figure 2.14.

R&D personnel has increased overall in the business enterprise and higher education sectors, with annual growth rates of 1.18 and 1.23 % respectively for the EEA countries in 2000. In the government sector, the overall trend was downward (- 0.67 %).

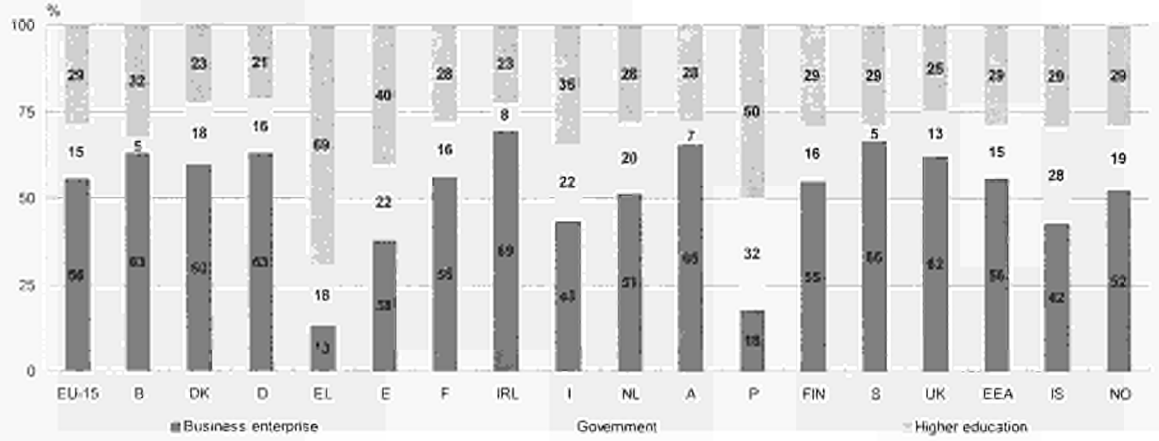
At the national level and in the business enterprise sector, although the 1995-2000 developments were positive for the EEA countries as a whole, in 2000 there was a decrease in comparison with 1999 of R&D personnel in Sweden (- 5.5 %), in the United Kingdom (- 1.6 %) and in Italy (- 0.5 %). At the European level overall, these drops were offset, at the opposite extreme, by sharp increases in Ireland (14.1 %), Spain (13.5 %), Finland (11.2 %), Iceland (9.9 %) and in Belgium (7.4 %).

In the higher education sector, the differences are not as marked: the highest increases in 2000 did not exceed 9 %. The biggest rises occurred in Finland (8.7 %), Belgium (8.7 %) and Ireland (7.1 %).

R&D personnel decreased overall in the Netherlands and in Germany, where the latest figure and the AAGR between 1995 and 2000 were both negative.

It was in the government sector where the downward trend was most common: eight countries saw their R&D personnel – in FTE – decrease in 1995-2000. The AAGR figures (1995-2000) were negative for France (- 8.7 %), Greece (- 2.5 %), Sweden (- 2.4 %) and Italy (- 1.8 %), to mention the countries most affected. Only Spain and Portugal stood out with an AAGR higher than 5 % – Table 2.2., next page.

Figure 2.14. — R&D personnel in FTE by institutional sector
EEA countries — 1999



Exceptions to the reference period
A, F and NL: 1998;
EL, IRL and I: 1997;
UK: 1993.

Source: Eurostat.

Table 2.2. — R&D personnel in FTE by institutional sector
Annual average growth rate 1995-2000 (AAGR) and annual growth rates

Sector	EU-15	B	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EEA	IS	NO
All sectors																		
Annual growth rate in % 1999-2000	**0.94**	6.57	1.78	0.87	:	1.00	1.29	11.00	-0.39	1.81	:	:	8.78	-2.53	:	**0.95**	5.81	:
AAGR in % 1995-2000	**1.45**	5.56	4.35	0.35	7.14	5.24	-0.88	11.58	-0.02	2.55	8.58	7.73	10.75	1.57	:	**1.46**	9.16	1.50
Business enterprise																		
Annual growth rate in % 1999-2000	**1.16**	7.39	-0.03	1.75	13.53	1.00	1.12	14.10	-0.48	3.45	:	:	11.22	-5.50	-1.65	**1.18**	9.95	:
AAGR in % 1995-2000	**1.93**	6.37	5.36	0.86	3.05	7.03	1.23	15.28	0.44	5.41	10.49	14.20	11.81	1.49	0.54	**1.95**	16.24	2.43
Government																		
Annual growth rate in % 1999-2000	**-0.67**	7.63	6.54	-0.91	:	1.00	0.05	-0.23	-0.03	1.76	:	:	5.95	-5.59	0.21	**-0.67**	3.09	:
AAGR in % 1995-2000	**-0.82**	2.50	3.48	-0.82	-2.52	5.58	-8.72	-1.66	-1.80	2.89	-0.05	5.89	4.39	-2.38	0.53	**-0.80**	4.33	-0.58
Higher education																		
Annual growth rate in % 1999-2000	**1.21**	8.71	4.24	-0.36	:	1.00	2.23	7.11	-0.24	-1.01	:	:	8.70	5.38	:	**1.23**	2.96	:
AAGR in % 1995-2000	**1.93**	5.02	2.68	-0.24	16.41	3.63	-0.16	7.50	0.62	-0.94	6.71	9.10	12.86	2.60	:	**1.93**	7.05	1.27

Exceptions to the reference period

Reference period 2000

All sectors:

B, DK, D, P, FIN,
S, IS and NO: 1999;
F, NL and A: 1998;
EL, IRL and I: 1997.

Business enterprise:

DK, D, P, FIN,
S, IS and NO: 1999;
F, I, NL and A: 1998;
EL and I: 1997.

Government:

B, DK, D, EL, P, FIN,
S, IS and NO: 1999;
F, I, NL and A: 1998.

Higher Education:

B, DK, D, P, FIN,
S, IS and NO: 1999;
F, IRL, NL and A: 1998.

Reference period 1995

All sectors together:
A: 1993.

Source: Eurostat.

Researchers in Europe

Researchers are one of the three categories of the classification of R&D personnel by occupation, the other being technicians and similar staff, and other support staff to R&D. They are defined as professionals engaged in the conception or creation of new knowledge, products, processes (...) and in managing the products concerned — see methodological notes in Part 2.

Regarded as an indicator of R&D activity, the number of researchers gives a snapshot of a country's scientific potential. It does however have to be made relative to the scientific disciplines or the sectors of activity in which these researchers and scientists are working. The support in terms of technicians, administrative staff and other 'optimum' supports needed to carry out the research can vary greatly from one discipline to another. It should be possible to present absolute statistics on researchers together with countries' scientific specialisations.

In relation to total R&D personnel, Portugal (76 %) and Norway (72 %) employed the greatest number of researchers within the EEA in 1999.

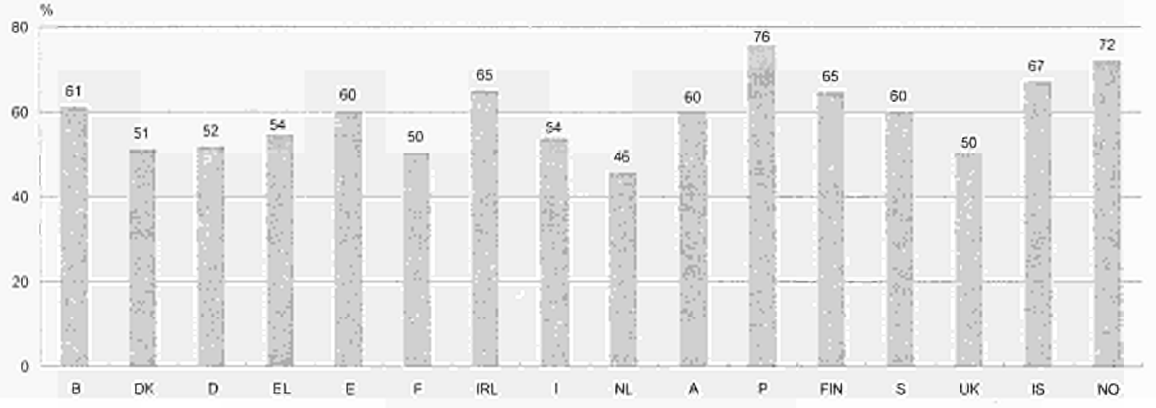
At the opposite extreme, only 46 % of total R&D personnel in the Netherlands are researchers. This figure is however not very far away from the average range in which the majority of the EEA countries are situated. Nine countries in fact have a proportion of researchers in the 50-60 % range — Figure 2.15.

In the business enterprise sector, it is once again Norway that in 1999 had proportionately the highest number of researchers, with almost three people in every four working in R&D activities.

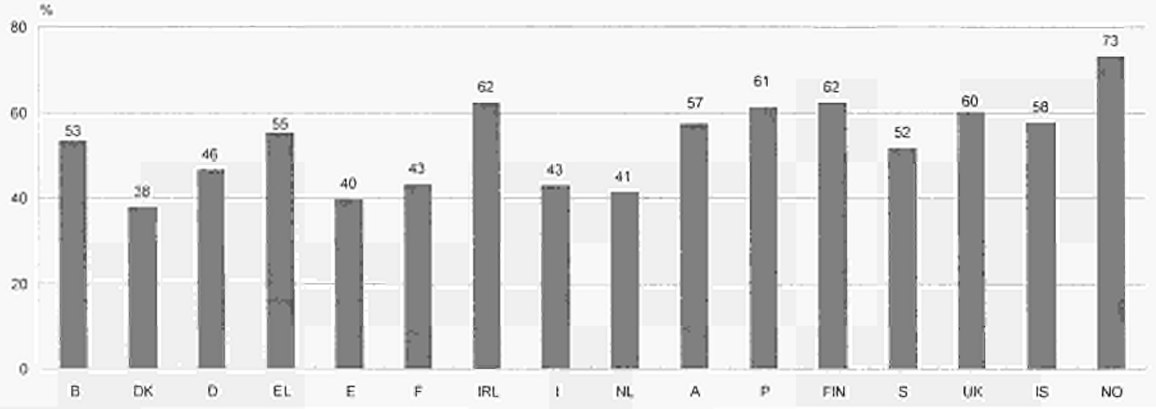
Overall, the countries can be divided into two groups. In the first one, the proportion of researchers lies between 40 and 55 %, with nine countries falling into this category: Belgium, Denmark, Germany, Greece, Spain, France, Italy, the Netherlands and Sweden. In the second group, which covers the remaining countries, the percentage of researchers is generally higher than 60 % of total R&D personnel.

Figures 2.15. and 2.16. — Proportion of researchers in FTE — 1999

2.15. — All sectors



2.16. — Business enterprise sector



Exceptions to the reference periods:

All sectors:
F, NL and A: 1998;
DK, EL, IRL, I: 1997; UK: 1993;
OECD data, MSTI 2001_1: DK, IRL, I, NL and S.

Business enterprise:
DK, F, I, NL and A: 1998;
IRL and EL: 1997;
OECD data, MSTI 2001_1: NL and S.

Sources: Eurostat, OECD.

Female R&D personnel

In spite of there being little available information – only seven countries have so far supplied data on the proportion of women among R&D personnel expressed in FTE – it can be seen that the proportion of women working in the R&D sector is generally lower than that of men. This proportion is lower in the business enterprise sector and increases when they are employed in one of the southern countries (in FTE).

The level of female representation is not in fact the same in all countries. Only one country, Portugal, has equal numbers of men and women, and that only for the government sector. Two countries and two sectors come close, where the percentage of women recorded (in FTE) is higher than or very close to 40 %. These countries are once again Portugal, together with Greece, in the higher education sector, and Greece in the government sector.

Women are unevenly employed in the institutional sectors. Although they are more numerous in the public sector in comparison with the business enterprise sector, overall the figure is close to or just under 30 % (in FTE).

They are less numerous across all sectors in Austria and in Germany, where less than one person in five employed in R&D is a woman. In the case of Germany, this proportion is not exceeded in any sector (in FTE).

In the business enterprise sector, the figure drops to below 20 % in all countries. The only exception is Denmark, where almost one person in three (in FTE) employed in R&D activities is a woman – Figure 2.17.

At a more detailed level of analysis, and breaking down the R&D personnel into categories, it is apparent that overall the number of female researchers (in FTE) is a few per cent lower than that of female technicians. Some exceptions exist, however, and two countries differ from the general trend: Austria in the government sector, Sweden and Austria in the higher education sector.

Lastly, Greece achieved parity in the higher education sector where there were equal numbers of male and female researchers – Table 2.3.

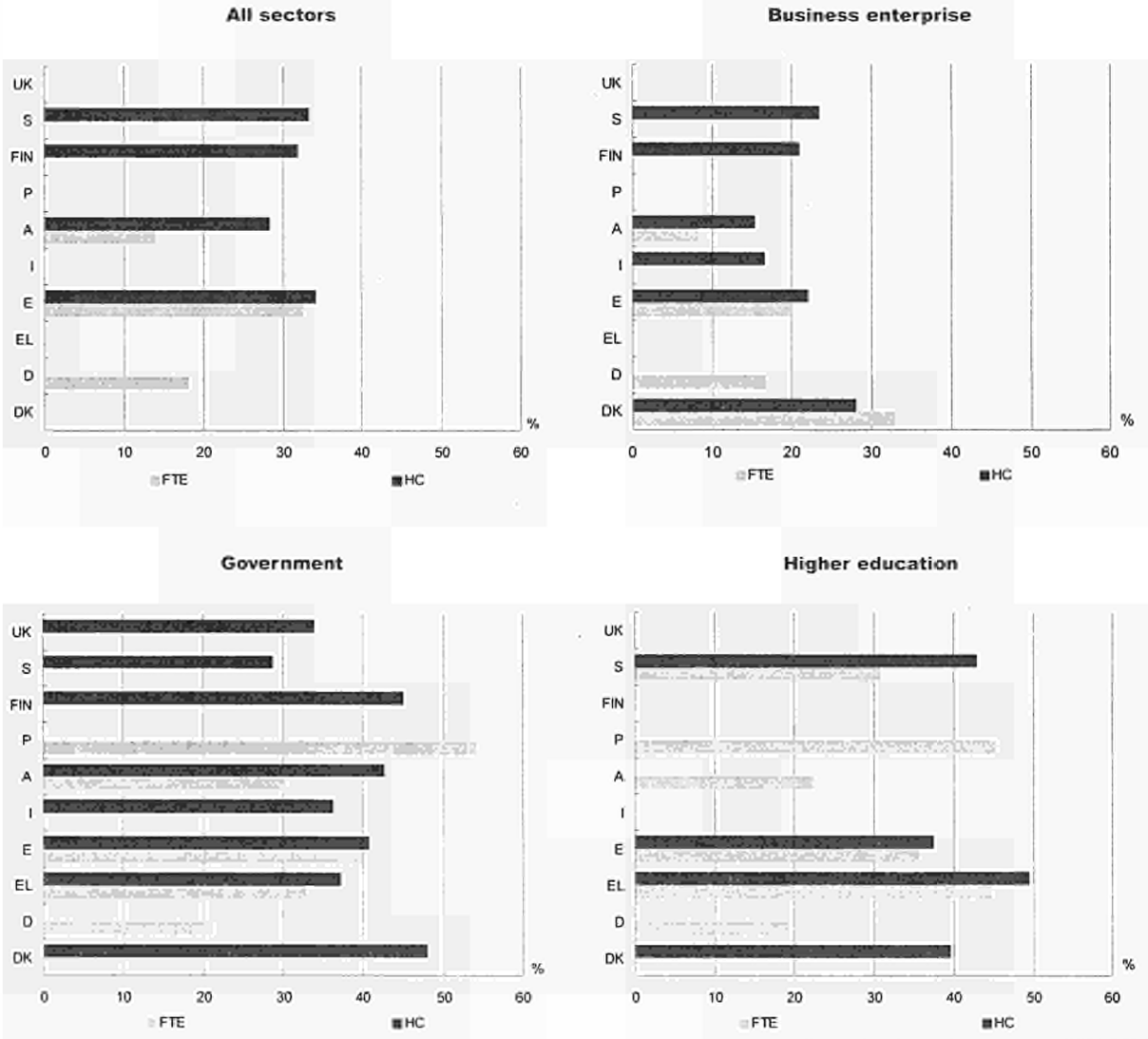
Table 2.3. — Ratio of women in FTE by institutional sector and by category of R&D personnel (in %) Researchers, technicians and similar personnel — 1999

Category by sector	DK	D	EL	E	A	P	S
Researchers							
All sectors	:	24	:	33	22	:	:
Business enterprise	25	17	:	22	14	:	:
Government	:	35	40	41	40	:	:
Higher education	:	35	50	38	36	:	37
Technicians							
All sectors	:	:	:	27	25	:	:
Business enterprise	27	:	:	20	16	:	:
Government	:	:	41	42	51	:	:
Higher education	:	:	55	41	64	:	48

Exceptions to the reference period:
For researchers — DK and A: 1998; D: 1997.
For technicians — DK and A: 1998.

Source: Eurostat.

Figure 2.17. — Female personnel in FTE and HC as a % of total R&D personnel by institutional sector — 1999



Exceptions to the 1999 reference period for female personnel:

In FTE (full-time equivalent):
A and DK: 1998;
D and P: 1997.

In HC (head count):
For all sectors — A, I, FIN and UK:1998;
For the government sector — DK: 1998.

Source: Eurostat.

2.4 R&D in the regions

The collection of R&D regional data allows a clear picture of research activities within a territorial and geographical area. The data presented in this chapter correspond to level 2 of the nomenclature of territorial units for statistics – NUTS. Aggregated data at a higher level – NUTS 1 – or lower – NUTS 3 – supplied by the Member States are available in the NewCronos database, Theme 9.

As part of the presentation of R&D activity at regional level, attention focuses primarily on the disparities in terms of R&D existing among regions on one hand and on those that are centres of research in Europe on the other. This type of analysis uses a classification by order of magnitude. However, it is important to remember that not all European regions are represented in all institutional sectors, nor for all the variables – more detailed information is provided in the methodological part of this publication. The collection of regional data is in fact a difficult exercise that can put Member States under constraints that involve technical and political considerations as well as confidentiality. The classifications presented below should be read bearing in mind these considerations.

Lastly, the reference indicator used to establish the ranking is the intensity of research (i.e. R&D expenditure as a % of GDP) which has the advantage of taking into account the economic weight of each of the regions.

2.4.1. R&D expenditure in the European regions

Research activities are unequally divided among the European regions, both within and also between countries. Only three countries – Germany, Finland and France – have regions in which the intensity of research exceeds 3 %. There are four countries in the band between the European average (1.87 % in 1998) and 3.0 %: Austria, Denmark, the Netherlands and Iceland.

The range covering the best region for each country is also considerable, with 4 points separating Braunschweig (D) from Lisbon and Vale do Tejo (P). There is also a considerable range in the figures for individual countries: over 4.5 points separate Braunschweig from Weser-Ems in Germany.

The situation is slightly different in Finland and in the Netherlands where, apart from Åland (FIN) and Zeeland (NL), the other regions all exceed 1.20 % in terms of research intensity – Table 2.4.

The diversity in the location of R&D activities in European regions appears when one analyses the concentration of regional R&D expenditure. The results presented in Table 2.5. suffer from the absence of regional data, which are not available for certain countries, but nevertheless do allow a general overview of R&D in the European regions.

In the business enterprise sector, as in the government sector, 25 % of R&D expenditure occurs in five regions in Europe.

Out of a total of 211 regions classified at NUTS 2 level, 21 regions in the business enterprise sector and 18 regions in the government sector account for half of R&D expenditure in Europe.

This concentration is scarcely less marked in the education sector where 11 regions account for 25 % of R&D expenditure and 40 regions for half of such expenditure.

The top ten regions in Europe

When all sectors are considered together, four German regions – with Braunschweig and Stuttgart in the lead – have the highest levels of R&D expenditure as a percentage of GDP in Europe, i.e. over 4 %. These regions represent the equivalent of 11 % of R&D expenditure (in constant ECU/EUR) in Europe – Table 2.6. In total, six German regions are among the top ten regions. The four other regions are Pohjois-Suomi and Uusimaa (Suuralue) in Finland and Île de France and Midi-Pyrénées in France. They account for 12 % of total R&D expenditure in Europe, of which more than 9 % is spent in Île de France (F).

At the regional level, the predominance and dynamism of the German regions confirm German figures at the national level in terms of research intensity, where it ranks third behind Sweden and Finland.

The top regions by institutional sector

The German regions remain omnipresent in all three institutional sectors. Depending on the sector, the other places are shared between Sweden, the Netherlands, France, Italy and Austria.

In the business enterprise sector the strongest research intensities were recorded in the regions of Stuttgart (D), Västsveridge (S) and Stockholm (S), Oberbayern (D) and Tübingen (D). Together these regions accounted for over 16 % of R&D expenditure (in constant ECU/EUR). The five other top regions belonged to these same two countries, with the exception of the Finnish regions Pohjois-Suomi and Uusimaa (Suuralue).

The gaps between these regions are relatively large, with 1.5 points separating the first region Stuttgart (D) from the tenth, Pohjois-Suomi (FIN).

In the public sector, the German regions seem to be lagging behind slightly in comparison with the private sector, but they nevertheless keep a very high profile with five regions among the top ten.

The Netherlands is in first place – Flevoland (2.08 %) in the government sector and Groningen (1.30 %) in the higher education sector. In both cases, the gaps in terms of intensity of research are very wide when it comes to the second-ranked region. Almost 0.6 points separate Flevoland (NL) from the Midi-Pyrénées (F) in the first case, while Groningen (NL) is ahead of Giessen (D) by more than 0.3 points in the second case.

In the government sector, the leading regions, as in the business enterprise sector, account for a large part of R&D expenditure in volume. Over 14 % of R&D expenditure in Europe occurs in these top five regions. The figure is only 5 % in the higher education sector.

Table 2.4. — Disparities between R&D intensity in % of GDP by region
All sectors — 1998

Country	Region	Regions with high R&D intensity: % of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%	Region	Regions with low R&D intensity: % of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%
EU-15 — 1998		**1.87**	**142 002**	**133 353**	**100.0**					
D	Braunschweig — 1997	4.84	1 675	1 723	1.3	Weser-Ems — 1997	0.39	199	205	0.2
	Stuttgart — 1997	4.79	5 045	5 191	3.9	Niederbayern — 1997	0.41	97	100	0.1
DK	Denmark	2.02	3 144	3 015	2.3					
E	Comunidad de Madrid	1.60	1 449	1 374	1.0	Baleares	0.29	34	33	0.0
	Pais Vasco	1.24	412	391	0.3	Extremadura	0.43	38	36	0.0
F	Midi-Pyrénées	3.70	1 803	1 759	1.3	Corse	0.25	11	11	0.0
	Île de France	3.43	12 416	12 113	9.1	Champagne-Ardenne	0.54	147	143	0.1
EL	Kriti — 1997	0.92	53	48	0.0	Notio Aigaio — 1997	0.06	2	2	0.0
	Ipeiros — 1997	0.69	17	15	0.0	Sterea Ellada — 1997	0.12	10	9	0.0
I	Lazio — 1996	1.88	1 869	1 632	1.2	Valle d'Aosta — 1996	0.17	5	4	0.0
	Piemonte — 1996	1.67	1 418	1 238	0.9	Calabria — 1996	0.26	53	46	0.0
NL	Groningen	2.64	382	385	0.3	Zeeland	0.69	51	51	0.0
	Flevoland	2.43	116	117	0.1	Overijssel	1.26	259	260	0.2
A	Wien — 1993	2.53	1 218	1 325	1.0	Burgenland — 1993	0.34	11	12	0.0
	Steiermark — 1993	1.78	331	360	0.3	Kärnten — 1993	0.40	36	39	0.0
P	Lisboa e Vale do Tejo — 1997	0.85	333	316	0.2	Algarve — 1997	0.28	9	9	0.0
	Centro — 1997	0.65	89	85	0.1	Alentejo — 1997	0.39	17	16	0.0
FIN	Pohjois-Suomi	3.82	410	410	0.3	Åaland	0.02	0	0	0.0
	Uusimaa (Suuralue)	3.73	1 571	1 569	1.2	Itä-Suomi	1.29	148	148	0.1
IS	Iceland	2.04	148	105	0.1					

The nomenclature of territorial units for statistics — NUTS — classifies Denmark and Iceland at NUTS level 2.

Source: **Eurostat.**

Table 2.5. — Concentration of R&D expenditure in the EEA regions in current ECU/EUR
By institutional sector — 1997

Sector	Number of regions per quartile of R&D expenditure: Q1	Q2	Q3	1	Total R&D expenditure for EEA — 1997	Number of regions at NUTS 2 level	% of R&D expenditure not broken down into regions
All sectors	7	28	:	:	137 714	211	**27%**
Business enterprise	5	21	79	:	87 519	211	20%
Government	5	18	82	:	20 582	211	**22%**
Higher education	11	40	:	:	28 686	211	**26%**

For example: for the business entreprise sector, 25% of R&D expenditure (Q1) are carried out in 5 regions, 50% of R&D expenditure (Q2) are carried out in 21 regions, and so on.

The exceptions to the reference year:

All sectors and Higher education — I:1996; A: 1993;
Business enterprise and Government — A: 1993.

Source: **Eurostat.**

The regions as intersectoral research centres

Taking research intensity as the criterion – Table 2.6. – only the region of Braunschweig (D) is present in all three institutional sectors, while Berlin (D) appears both in the government sector and in the higher education sector.

The same analysis carried out by volume of expenditure for 1998 (constant ECU/EUR) extends the list of regions classified among the top ten European regions in more than one sector. The classification of R&D expenditure by institutional sector places the regions Oberbayern (D), Köln (D), Île de France (F) and Denmark among the top ten regions in all three institutional sectors.

Four regions are present in two sectors. Rhône-Alpes (F) in the business enterprise and higher education sectors; Zuid-Holland (NL), Karlsruhe (D) and Berlin (D) once again in the Government and higher education sectors.

Table 2.6. — Regions with a high level of R&D expenditure measured in % of GDP
All sectors — 1998

All sectors

Region	Country	% of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%
EU-15 — 1998		**1.87**	**142 002**	**133 353**	**100.0**
Braunschweig — 1997	D	4.84	1 675	1 723	1.3
Stuttgart — 1997	D	4.79	5 045	5 191	3.9
Oberbayern — 1997	D	4.38	5 911	6 081	4.6
Tübingen — 1997	D	4.05	1 608	1 654	1.2
Pohjois-Suomi	FIN	3.82	410	410	0.3
Uusimaa (Suuralue)	FIN	3.73	1 571	1 569	1.2
Midi-Pyrénées	F	3.70	1 803	1 759	1.3
Rheinhessen-Pfalz — 1997	D	3.50	1 527	1 571	1.2
Île de France	F	3.43	12 416	12 113	9.1
Berlin — 1997	D	3.41	2 566	2 640	2.0

Business enterprise

Region	Country	% of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%
EU-15 — 1998		**1.19**	**90 817**	**85 410**	**100.0**
Stuttgart — 1997	D	4.27	4 499	4 628	5.4
Västsverige — 1997	S	4.27	1 585	1 423	1.7
Stockholm — 1997	S	3.88	2 119	1 904	2.2
Oberbayern — 1997	D	3.38	4 568	4 700	5.5
Tübingen — 1997	D	3.31	1 313	1 351	1.6
Braunschweig — 1997	D	2.94	1 017	1 047	1.2
Sydsverige — 1997	S	2.80	736	661	0.8
Rheinhessen-Pfalz — 1997	D	2.79	1 217	1 252	1.5
Pohjois-Suomi	FIN	2.79	299	299	0.4
Uusimaa (Suuralue)	FIN	2.39	1 006	1 569	1.8

Government

Region	Country	% of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%
EU-15 — 1998		**0.28**	**21 141**	**19 852**	**100.0**
Flevoland	NL	2.08	100	100	0.5
Midi-Pyrénées	F	1.51	736	718	3.6
Braunschweig	D	1.05	376	383	1.9
Lazio	I	1.02	1 109	914	4.6
Berlin	D	0.98	743	758	3.8
Karlsruhe	D	0.92	714	728	3.7
Languedoc-Roussillon	F	0.91	344	336	1.7
Dresden	D	0.85	238	243	1.2
Köln	D	0.77	834	851	4.3
Zuid-Holland	NL	0.71	554	557	2.8

Higher education

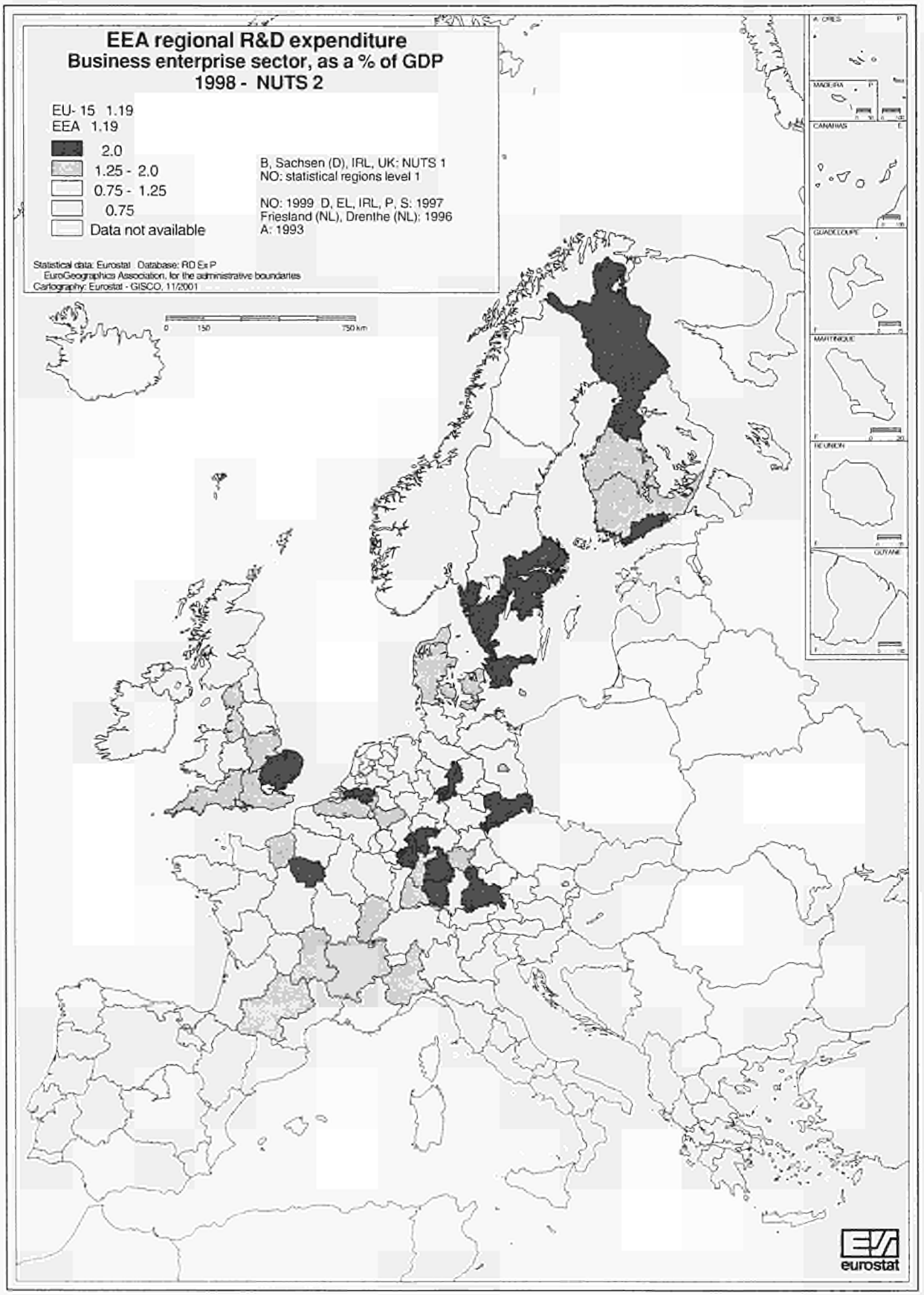
Region	Country	% of GDP	Current ECU/EUR Mio	Constant ECU/EUR at 1995 prices Mio	%
EU-15 — 1998		**0.38**	**29 059**	**27 201**	**100.0**
Groningen	NL	1.30	189	190	0.7
Giessen	D	0.97	202	206	0.8
Wien — 1993	A	0.92	442	481	1.8
Steiermark — 1993	A	0.82	152	165	0.6
Braunschweig	D	0.82	296	302	1.1
Utrecht	NL	0.82	252	253	0.9
Halle	D	0.77	111	113	0.4
Berlin	D	0.76	577	589	2.2
Leipzig	D	0.72	137	140	0.5
Gelderland	NL	0.72	266	268	1.0

The regional classifications have been carried out on the basis of the intensity of research calculated with the latest figures available for GDP at the regional level, which are in fact the 1998 figures. As a result, the data in ECU/EUR are not always the latest available for certain countries including Spain, France, Portugal and Finland. The complete series are presented in the tables found in Part 3.

The United Kingdom does not supply NUTS level 2 data: the region 'Northern Ireland' is classified at both NUTS 1 and 2.

Source: **Eurostat.**

Map 2.1.


EEA regional R&D expenditure
Business enterprise sector, as a % of GDP
1998 - NUTS 2
EU- 15 1.19
EEA 1.19
2.0
1.25 - 2.0
0.75 - 1.25
0.75
Data not available
B, Sachsen (D), IRL, UK: NUTS 1
NO: statistical regions level 1
NO: 1999 D, EL, IRL, P, S: 1997
Friesland (NL), Drenthe (NL): 1996
A: 1993
Statistical data: Eurostat Database: RD Es P
EuroGeographics Association, for the administrative boundaries
Cartography: Eurostat - GISCO, 11/2001
0 150 750 km
A. ORES
MADEIRA
CANARIAS
GUADELOUPE
MARTINIQUE
REUNION
GUYANE
eurostat

2.4.2. R&D personnel in the European regions

As for R&D expenditure, the German regions remain well represented in all three sectors – Table 2.7. The disparities between the regions and countries are also shown. The top five European regions alone employ almost 14 % of R&D personnel in Europe (head count).

At 3.7 %, it was Stockholm (S) which employed the greatest number of R&D personnel as a percentage of the labour force in 1998.

In the business enterprise sector, as well as in the government sector, the same regions already listed for R&D expenditure come up again. It is worth pointing out, in this last sector, the very high ratio of R&D personnel as a percentage of the labour force in Flevoland (NL), which is almost double that of Braunschweig (D), which ranks second.

The main changes come from the higher education sector, particularly remarkable for the presence of three Greek regions among the top ten.

Table 2.7. — Regions with a high level of R&D personnel By institutional sector — 1998

All sectors

Region	Country	As a % of the labour force	Head count Thousands	%
EU-15 (1998)		**1.31**	**2 238**	**100.00**
Stockholm	S	3.65	33	1.46
Oberbayern — 1997	D	3.33	68	3.06
Braunschweig — 1997	D	3.18	24	1.07
Wien	A	3.14	25	1.13
Île de France	F	2.89	155	6.91
Pohjois-Suomi	FIN	2.70	7	0.31
Östra Mellansverige — 1997	S	2.70	20	0.90
Stuttgart — 1997	D	2.67	51	2.29
Västsverige — 1997	S	2.57	22	0.99
Iceland	IS	2.51	4	0.17

Business enterprise

Region	Country	As a % of the labour force	Head count Thousands	%
EU-15 1 1998		**0.62**	**1 047**	**100.00**
Oberbayern 1 1997	D	2.32	48	4.56
Stuttgart — 1997	D	**2.23**	43	4.10
Stockholm — 1997	S	**1.92**	17	1.64
Tübingen — 1997	D	**1.64**	14	1.31
Braunschweig — 1997	D	**1.61**	12	1.16
Darmstadt — 1997	D	**1.58**	28	2.71
Île de France	F	**1.55**	83	7.93
Västsverige — 1997	S	**1.55**	13	1.28
Pohjois-Suomi	FIN	**1.52**	4	0.38
Rheinhessen-Pfalz — 1997	D	1.38	13	1.22

Government

Region	Country	As a % of the labour force	Head count Thousands	%
EU-15 — 1998		**0.19**	**323**	**100.00**
Flevoland — 1996	NL	1.22	2	0.50
Braunschweig — 1997	D	0.75	6	1.75
Lazio	I	0.73	15	4.77
Iceland	IS	0.72	1	0.34
Comunidad de Madrid	E	0.68	15	4.59
Karlsruhe — 1997	D	0.67	8	2.63
Berlin — 1997	D	0.61	11	3.37
Köln — 1997	D	0.59	11	3.48
Kriti — 1997	EL	0.58	1	0.41
Zuid-Holland — 1996	NL	0.58	9	2.83

Higher education

Region	Country	As a % of the labour force	Head count Thousands	%
EU-15 — 1998		**0.48**	**787**	**100.00**
Oevre Norrland — 1997	S	1.97	5	0.65
Voreio Aigaio — 1997	EL	**1.74**	1	0.13
Ipeiros — 1997	EL	**1.69**	2	0.23
Östra Mellansverige — 1997	S	**1.56**	12	1.48
Wien	A	1.46	12	1.50
Stockholm — 1997	S	1.41	13	1.61
Bruxelles-capitale — 1995	B	1.34	5	0.65
Dytiki Ellada — 1997	EL	1.20	3	0.38
Comunidad Foral de Navarra	E	1.17	3	0.33
Västsverige — 1997	S	1.01	9	1.11

Source: **Eurostat.**

2.5. Specific developments in the Member States — Country reports

2.5.1. Belgium

The results of the 1998 R&D survey covering 1996/97 show that gross domestic expenditure on R&D (GERD) in Belgium represented 1.85 % of gross domestic product (GDP) in 1997.

Most of this expenditure – 1.32 % of GDP – was by Belgian undertakings.

The rate of R&D activity in the business sector, expressed as a percentage of gross regional product, was highest in the Flemish Region (Vlaams Gewest), followed in turn by the Walloon Region and the Brussels-Capital Region.

The non-market sector in Belgium (i.e. the government sector, the private non-profit sector and the higher education sector) accounted for 0.53 % of GDP.

The rate of R&D activity per region in this sector, expressed as a percentage of gross regional product, was highest in the Brussels-Capital Region, followed in turn by the Walloon Region and the Flemish Region.

The data of the 2000 R&D survey covering 1998-99 are currently being processed and will be available shortly.

2.5.2. Finland

The number of research personnel increased throughout the 1990s. The most significant growth was in the corporate sector. In the public sector research personnel numbers increased in particular in project-based work.

In regional terms Finland's R&D activity is relatively concentrated. Southern Finland, and the Helsinki metropolitan area in particular, saw vigorous growth in their R&D investment. Other regional centres with universities, such as Oulu, Tampere, Jyväskylä and Turku, also increased their expenditure. It can be said, indeed, that Finnish R&D activity seems to reinforce the position in regional development of a number of relatively vigorous centres. In these regions there has been positive development in cooperation between universities and the corporate sector.

Efforts have also been made to promote regional development by means of a national centre-of-excellence programme. The programme has provided an opportunity for promoting skills-based cooperation in various regions and drawing economic benefit from the skills potential in the region.

2.5.3. United Kingdom — Government Office Regions

In 1999, GBP 11.3 billion was spent on R&D performed within UK businesses, a rise of 10 % at current prices compared with the revised 1998 total. In real terms (using the GDP deflator) expenditure increased by 7 % and in 1999 represented approximately 1.2 % of GDP.

The South East continued to be the area with the largest R&D expenditure, with 26 % of the UK total of GBP 11 302 million. The second largest region was Eastern with 23 % of the UK total. In comparison the area with the smallest R&D expenditure in England was the North East which had 1 % of the UK total.

The product group with the largest R&D expenditure was pharmaceuticals: expenditure in 1999 was GBP 2 535 million, 22 % of all spending. Other major product groups were aerospace, accounting for GBP 1 237 million (11 %), and motor vehicle and parts, GBP 1 060 million (9 %).

Funding of R&D in UK businesses by the EU Commission through its schemes to support R&D in the European Union amounted to GBP 137 million in 1999. Other funding from overseas (i.e. excluding funds from the EU Commission) was GBP 2 433 million. Funding from the UK Government was GBP 1 157 million. Funding of R&D from businesses own funds was GBP 6 824 million in 1999 (60 % of the total).

Detailed final results of the survey of expenditure and employment relating to Business Enterprise Research and Development (R&D) in 1999 were published in January 2001 by the Office for National Statistics in Business Monitor, MA14 Research & Development in UK Business.

During the financial year 2000-01 the UK government introduced tax credits for R&D performed by small and medium sized companies. As a consequence, the size of the sample for the BERD survey was increased from 2000 to 4000 forms in order to monitor the impact of these incentives. Also during this financial year a consultation document has been published on tax incentives for large firms.

Chapter 3
European patenting activities

3.1. Introduction

A patent is a legal title of industrial property allowing its owner the exclusive right to exploit an invention commercially for a limited area and time. The patent owner is allowed to stop others from, among other things, making, using or selling it without authorisation. In return for the exclusive right to exploit it, the technical details of the invention are published. Being a legal instrument to protect innovation, patents are used as a proxy to measure R&D outputs.

It is in this context, and more specifically as a measure of the countries' inventive potential, that this chapter analyses the structure and evolution of patenting activities of European countries, as well as Japan and the US, by looking at patent applications to the European Patent Office (EPO).

3.1.1. Patents as an indicator of innovative activities

The adequacy of using patent counts as an indicator of innovative activities has long been discussed. There are some good reasons that have made patents one of the most widely used source of data to construct indicators of inventive output. Patents have a close link to invention and cover a broad range of fields. Patent data are readily available from the various national and regional patent offices, containing very detailed information for a relatively long time series. Also, being relatively closer to the time of invention, patent statistics can be more accurate than production or trade statistics, which may comprise a greater time lag between actual innovation and commercialisation.

However, using patent indicators does also have several shortcomings. Not all inventions are patented and not all patents have the same value. Also, there are differences in the propensity to patent across firms, sectors and countries, influenced by different national patent systems, as well as the patterns of international trade and direct investment. In areas where technology changes rapidly, patent protection may be of little value because inventions quickly become obsolete and it takes a long time to grant a patent. Although patents cover a wide range of fields of technology, not all inventions can apply for patent protection. In the framework of the EPO, this is the case, for example, of computer software.

3.1.2. Some notes to the reader

All the data presented in this chapter have been extracted from the EPO's database. The criteria used for the data extraction refer especially to the regional potential for innovation. In this sense, patents are counted by year of filing and they are imputed to the country of the inventor (as opposed to the country of the applicant). Fractional counting is used when multiple inventors correspond to a same patent, or when the patent is applicable to more than one technological field, avoiding thus double counting. Finally, patent data are classified according to the International Patent Classification – IPC – which assigns an invention to an IPC-class according to its function or intrinsic nature or its field of application ([1]).

This chapter analyses data on patent applications only. Although not all applications are granted, each application still represents technical effort by the inventor and therefore patent applications can be considered as an appropriate indicator of inventive potential. On the other hand, it takes on average just over four years for a patent to be granted at the EPO. In an effort to provide timely data therefore, patent applications are chosen over patents granted.

It should be noticed that patent applications studied in this chapter refer only to applications submitted to the European Patent Office, and not to applications to other national offices such as the United States Patent and Trademark Office – USPTO – or the Japanese Patent Office – JPO. When interpreting the data at the international level, the reader should bear this in mind, since figures for European countries may enjoy a 'home' advantage.

Patent applications to the EPO include European patent applications as well as Euro-PCT applications. The former refer to patent applications made under the *Munich Convention* ([2]), whereas Euro-PCTs are patent applications to the World Intellectual Property Organisation – WIPO – made under the Patent Cooperation Treaty ([3]) which nominate the EPO for protection when entering the regional phase in the patenting process.

The analysis covers the period from 1990 to 1999. 1999 data are provisional, which explains the drop of patent applications to the EPO compared to the previous year. This is because for the PCT applications, the data on the country of residence of the applicant(s) and/or the inventor(s) are imputed into the EPO database only after their international publication. This means that these patent applications can only be attributed to a country or region at least 18 months after the priority date (date in which the patent was first applied for). So as to avoid obtaining an unreliable picture of the evolution of patenting activities at the EPO, annual average growth rates have been calculated using data up until 1998 rather than 1999.

This chapter is divided into two parts. The first one is devoted to the examination of patent applications to the EPO from the three main patenting 'blocks', i.e. the EU, Japan and the US. The analysis in the second part focuses on the EU and EEA countries and provides a perspective at both national and regional levels.

([1]) For further information on the methodology used, see Part 2.
([2]) European Patent Convention, signed in Munich in October 1973.
([3]) Patent Cooperation Treaty, signed at Washington on June 1970.

3.2. Patent applications to the EPO — An international perspective

This section studies the evolution of patent applications to the EPO from the three main patenting blocks in the world, i.e. the European Union, Japan and United States. The analysis covers the period 1990 to 1999, 1999 data being provisional.

During the last decade, patent applications to the EPO have been growing not only from countries signatory of the Munich convention, but also from other countries such as Japan or the US. The evolution of patent applications to the EPO from the three main patenting 'blocks' is shown in Figure 3.1. It can be seen that, in absolute terms, the EU is leading the US and Japan. However, it should be noticed that, as the host region, figures for the EU enjoy a 'home advantage'.

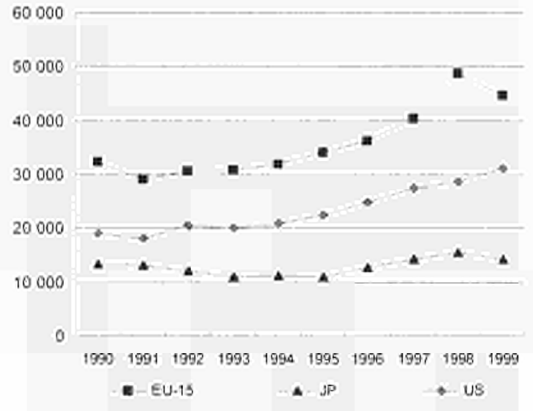
With regard to their evolution, two periods can be clearly distinguished. During the first part of the 90's, European patent applications from the three 'blocks' followed a fairly unstable trend. A general drop of patent applications to the EPO occurred in 1991. This was possibly due to the increase in EPO fees that came into force on 1st January 1991, which may have led to a rush of applications the previous year. However, from 1994 onwards, a clear increasing demand for patents can be seen from each of the three blocks. In fact, for the period 1994-98, an annual average growth rate of 11.1 % was registered by EU-15 – See Table 3.1. Those of Japan and the US were 8.4 and 8.2 % respectively, during the same period.

To account for the dimension of their respective economy, patent applications are computed as a proportion of both the population and the labour force of each 'block'. Although in absolute terms the EU appears clearly ahead of the US or Japan, the differences diminish when counting patent applications in relative terms. In this sense, in 1999 the EU applied for 119 European patents per million capita, whereas the US and Japan applied for 115 and 113 respectively.

Table 3.1. shows the distribution of patent applications to the EPO from EU-15, Japan and the US, broken down by IPC section. The table shows a fairly even distribution of patent applications across technological fields. Nevertheless, most patents in the EU were applied for in the 'Performing operations and transporting' section, those from Japan were most specialised in 'Electricity' and the largest section for the US was 'Physics'. Sections such as 'Textiles and paper' and 'Fixed constructions' seemed to be less important in all 'blocks'.

In terms of progress over time, the distribution of patent applications to the EPO across IPC sections has remained fairly stable for all three 'blocks'. All sectors in all countries showed an increasing trend for the 1994-98 period, but the fastest growing sectors were 'Electricity' for EU-15 (19.3 %) and the US (14.2 %) and 'Mechanical engineering' for Japan (18.4 %).

Figure 3.1. — Evolution of patent applications to the EPO from EU, Japan and the US — 1990-99 (1)



(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Table 3.1. — Patent applications to the EPO from EU, Japan and the US By IPC section — 1999 (1)

	IPC section	EU-15	Annual average growth rate 1994-98 (%)	JP	Annual average growth rate 1994-98 (%)	US	Annual average growth rate 1994-98 (%)
A	Human necessities	16.2	10.1	8.6	8.5	20.3	5.0
B	Performing operations, transporting	21.5	9.0	16.3	7.9	13.4	9.1
C	Chemistry; metallurgy	14.4	7.7	10.5	4.2	19.1	4.6
D	Textiles, paper	2.2	7.0	1.1	10.4	1.1	6.8
E	Fixed constructions	4.8	8.5	0.6	4.2	1.9	12.8
F	Mechanical engineering, lighting, heating; weapons, blasting	10.2	10.5	7.5	18.4	5.2	5.9
G	Physics	14.1	13.5	22.5	6.4	20.4	8.6
H	Electricity	17.7	19.3	27.0	11.4	18.7	14.2
	Total	**100.0**	**11.1**	**100.0**	**8.4**	**100.0**	**8.2**

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Among the patent applications to the EPO, an increasing proportion relates to high technology areas. The evolution of the percentage of high tech patent applications, with regard to the total patents applied for from EU-15, Japan and the US, is shown in Figure 3.2. The definition of high tech patents followed here is the one used in the Trilateral Statistical Report ([4]). As shown in Figure 3.2., the European Union is less specialised in high tech fields than Japan or the US. In 1999, 16.0 % of patent applications from the EU were in high tech fields, compared to 26.3 % from the US and 25.0 % from Japan. Nevertheless, the proportion of high tech patent applications to the EPO from the EU has been growing steadily during the last decade. During the period 1994-98, the percentage of high tech patent applications to the EPO from EU-15 grew at an annual average growth rate of 10.5 %, which was well above that of Japan (1.8 %) or the US (3.8 %).

3.3. Patent applications to the EPO — An European perspective

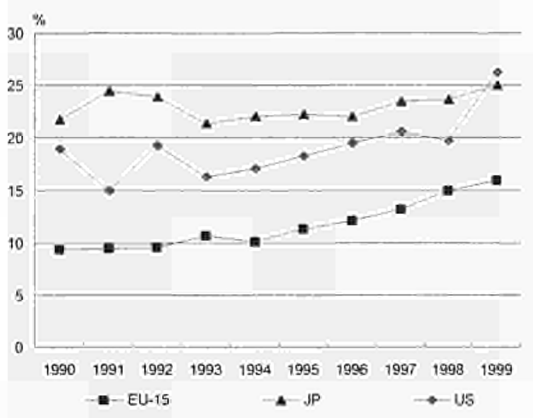
This section focuses on the patenting activities of the European countries and regions. The first part looks at data on patent applications to the EPO at the national level, whilst the second one takes a regional perspective of patenting activities.

3.3.1. Patent applications to the EPO at the national level

Traditionally, within the Member States of the European Union, Germany has been the most active country in terms of patenting. Figure 3.3. shows the percentage of patent applications to the EPO accounted for by each Member State in 1999. It can be seen that the distribution of patent applications to the EPO is largely skewed towards the large economies. In 1999 Germany accounted for 43.6 % of the patent applications to the EPO coming from the EU. In absolute terms, Germany is the leading European country in patenting and its share of the EU-15 total has slightly increased over the past years. In 1999 France and the UK accounted for 14.9 and 12.3 % of the European patent applications respectively. However, their share has slightly decreased since 1990, whereas other countries such as Finland and Sweden are increasing their proportion. The least numbers of patent applications to the EPO in 1999 came from Portugal (0.07 %), Greece (0.15 %), Luxembourg (0.15 %) and Ireland (0.47 %).

([1]) For further details see the methodological notes in Part 2.

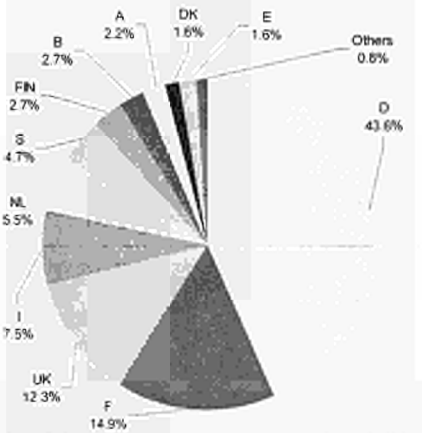
Figure 3.2. — Evolution of percentage of high tech patent applications to the EPO from EU, Japan and the US — 1990-99 ([1])



([1]) 1999 provisional data.

Sources: Eurostat, data — EPO.

Figure 3.3. — Distribution of patent applications to the EPO from the Member States 1999 ([1])



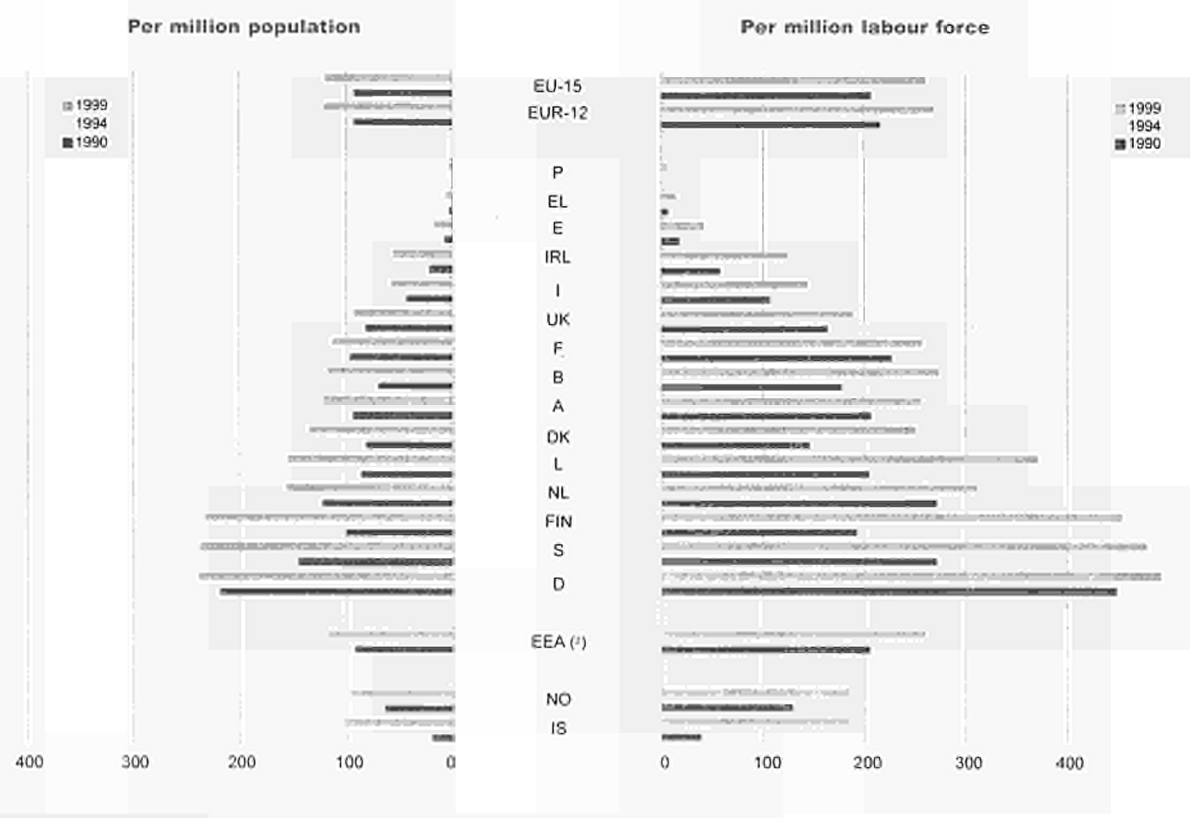
([1]) 1999 provisional data.

Sources: Eurostat, data — EPO.

Although in absolute terms smaller countries seem to be lagging with respect to the leading ones, differences are reduced when data are considered in relative terms. This is clearly shown in Figure 3.4., where countries like Finland, Sweden, the Netherlands, Luxembourg and Belgium outperform France and the UK. Sweden and Finland in particular were very close to Germany, the leading EU country also in relative terms. In 1999, 238 patent applications to the EPO per million people were recorded for Germany; Ratios for Sweden (237) and Finland (233) were very close to the German ones.

With regard to the evolution of patenting, following the general trend, most countries saw either a slight decrease or a very small increase during the first part of the 90's. However, patent applications to the EPO from all the European countries grew considerably during the second part of the decade. Within the European Union, the largest annual average growth rates of patent applications to the EPO for the 1994-98 period were retained by smaller countries in patenting terms, i.e. Ireland (21.9 %) and Greece (20.9 %), showing their high effort to improve innovation activities. Of special relevance is the case of Sweden that, while being the second European patenting country in relative terms, registered an annual average growth rate of 17.0 % for that period.

Figure 3.4. — Evolution of patent applications to the EPO from the EEA countries 1990, 1994 and 1999 (1)



(1) 1999 provisional data.
(2) Calculations of ratios for EEA as a proportion of the population have included Liechtenstein. However, this country is excluded from the ratio as a proportion of the labour force, as no reference data are available for this country.

Sources: Eurostat, data — EPO.

When looking at data on European patent applications by IPC section, it can be seen that, as for the international level, the distribution of patents across sections is quite similar for all countries. This is shown in Table 3.2. The 'Performing operations and transporting' section was the largest for 4 EU countries. The same is true for the 'Electricity' section. The 'Human necessities' section and the 'Chemistry and metallurgy' section were in turn the largest for three EU countries. 'Physics' was the largest section for one country. The 'Textiles and paper' section was the smallest for all the European countries except for Belgium, Luxembourg and Finland, where the least amount of patent applications corresponded to the 'Fixed constructions' field.

It was shown in the previous section how the share of high tech patent applications is increasing in the total patent applications to the EPO from the European Union. Looking at the national level, it is clear from Figure 3.5. that this increasing trend is common to all the European countries. In 1999, the country that applied for the largest proportion of European patents in the high tech fields was Finland (36.1 %), followed by Ireland (24.0 %) and the Netherlands (23.2 %). During the period 1994-98, high tech patent applications to the EPO from all European countries increased at annual average growth rates that were well above those corresponding to total patenting. This is clearly shown in Table 3.3. Growth rates for high tech patenting more than doubled those of total patenting for almost all countries of the European Union. In Sweden, for example, high tech patent applications to the EPO during the period 1994-98 grew at 47.5 % a year, whereas total patent applications grew at a rate of 17.0 %.

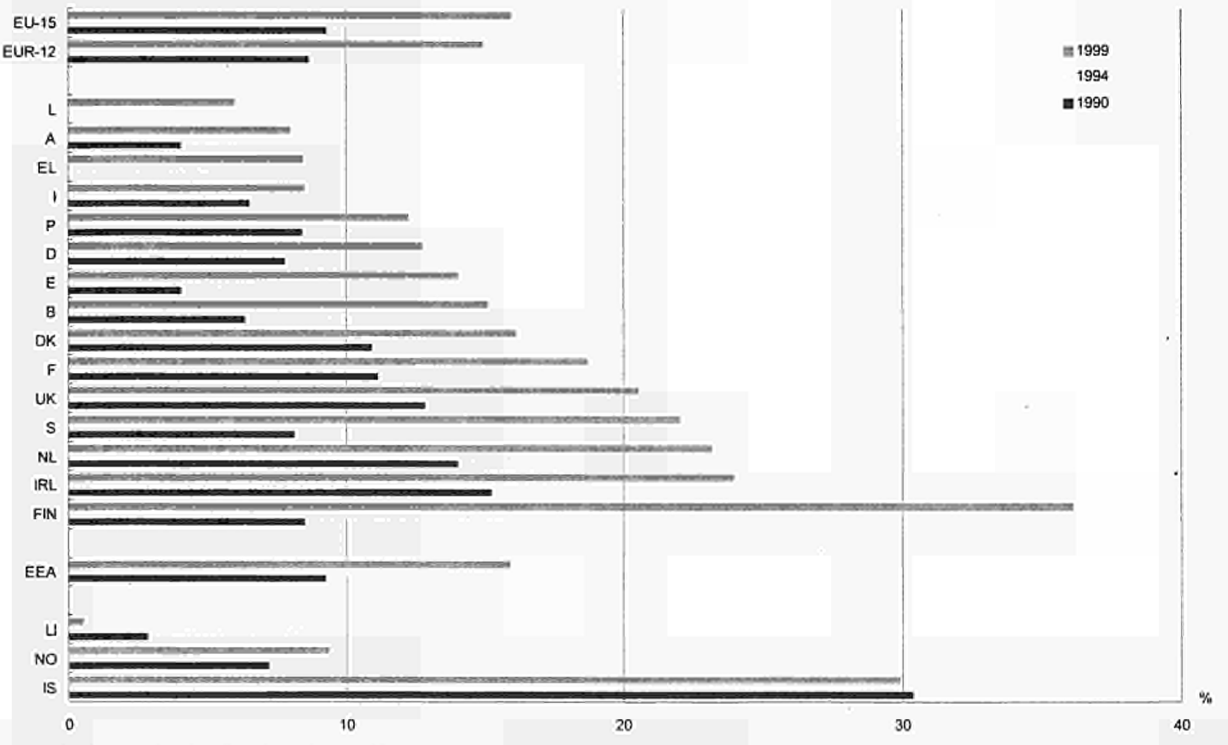
Table 3.2. — Patent applications to the EPO from the EEA countries By IPC section in % — 1999 (1)

	A	B	C	D	E	F	G	H	
	Human necessities	Performing operations; transporting	Chemistry; metallurgy	Textiles; paper	Fixed constructions	Mechanical engineering; lighting; heating; weapons; blasting	Physics	Electricity	Total
EU-15	**15.2**	**21.5**	**14.4**	**2.2**	**4.8**	**10.2**	**14.1**	**17.7**	**100**
EUR-12	**14.4**	**22.5**	**14.1**	**2.3**	**5.0**	**10.6**	**13.5**	**17.7**	**100**
B	13.9	17.8	31.9	4.5	2.6	3.6	12.8	12.9	100
DK	27.4	15.7	19.3	1.4	4.3	9.1	11.0	11.8	100
D	11.7	24.5	14.1	2.0	5.3	12.3	13.6	16.6	100
EL	40.7	7.8	15.2	0.0	3.0	13.1	11.3	8.8	100
E	23.3	23.6	13.6	3.1	4.4	8.1	10.1	13.8	100
F	18.9	18.5	13.0	1.3	4.4	9.9	14.6	19.4	100
IRL	28.6	11.7	17.6	1.1	5.6	6.8	13.5	15.2	100
I	20.1	27.0	10.9	3.4	5.2	10.1	9.7	13.6	100
L	5.4	28.1	35.4	1.4	0.0	11.8	10.9	7.1	100
NL	14.8	16.6	16.0	1.1	4.1	6.0	18.7	22.7	100
A	14.3	26.1	12.1	2.5	10.8	11.7	11.1	11.4	100
P	23.8	12.1	29.4	0.0	5.0	16.3	6.8	6.7	100
FIN	8.6	15.6	7.4	9.6	2.6	4.8	11.1	40.2	100
S	18.1	20.1	7.9	2.6	3.8	9.1	13.2	25.2	100
UK	17.7	15.9	17.9	1.3	4.3	8.1	18.9	16.1	100
EEA	**15.3**	**21.5**	**14.3**	**2.2**	**4.9**	**10.2**	**14.1**	**17.7**	**100**
IS	36.3	8.9	4.1	0.0	0.0	7.0	15.8	27.9	100
LI	25.9	23.3	6.8	1.4	6.4	23.7	7.4	5.0	100
NO	17.7	21.7	11.6	0.0	13.0	9.7	15.6	10.7	100

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Figure 3.5. — Evolution of percentage of high tech patent applications to the EPO from the EEA countries — 1990, 1994 and 1999 (1)



(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Table 3.3. — Annual average growth rates of high tech patent applications compared to patents overall

	Annual average growth rates of high tech patents		Annual average growth rates of total patents	
	1990-94	1994-98	1990-94	1994-98
EU-15	**1.6**	**22.8**	**-0.3**	**11.1**
EUR-12	**1.5**	**22.8**	**-0.5**	**11.5**
B	18.3	18.5	6.8	11.9
DK	6.1	22.2	8.7	5.8
D	-4.4	28.4	-1.8	12.4
EL	:	35.2	4.8	20.9
E	28.7	26.1	13.3	15.7
F	1.7	15.7	-1.1	8.6
IRL	-7.0	43.5	4.3	21.9
I	7.2	9.1	0.2	9.9
L	:	:	6.0	10.0
NL	2.7	20.2	-1.5	12.7
A	12.2	17.2	0.9	11.1
P	-28.1	88.0	42.8	2.1
FIN	36.5	36.2	11.9	14.1
S	7.9	47.5	4.1	17.0
UK	0.9	14.8	-1.3	7.4
EEA	**1.6**	**23.0**	**-0.3**	**11.2**
IS	-24.3	74.7	8.8	34.8
LI	23.5	-3.7	-5.4	9.9
NO	-11.3	57.1	-1.8	19.4

Sources: Eurostat, data — EPO.

3.3.2. Patent applications to the EPO from the European regions

This section analyses the patenting activities of the European regions and is carried out at the NUTS 2 level from 1990 to 1999, 1999 data being provisional.

All the rankings of regions presented in this section are based on the number of patent applications to the EPO, from each region, as a proportion of its population. In the case of high tech patents, the same ratios have been used to select the leading European regions, but based on the number of patent applications in the high technology fields.

In 1999, the European region with the highest number of patent applications to the EPO was Île de France (2 813), ahead of the German regions of Oberbayern (2 538) and Stuttgart (1 928). However, when taking the dimension of each region into account, the Île de France no longer appears as the leading one. Table 3.4. shows the number of patent applications to the EPO from the top 15 European regions relative to each region's population, as well as relative to its labour force. The table reveals the dominance of Germany, which accounts for 10 regions in the top 15. In 1999, the highest ratios of European patent applications per million population were recorded by two German regions, Oberbayern (635) and Stuttgart (495), followed by Noord-Brabant (441) in the Netherlands and Stockholm (417) in Sweden. These same regions also retained the highest ratios when compared to labour force, with 1 210 patent applications per million labour force registered from Oberbayern, 989 from Stuttgart, 865 from Noord-Brabant and 854 from Stockholm.

All these fifteen regions have recorded increasing growth rates over the last decade. The highest annual average growth rates for the 1994-98 period from the top regions were registered by Braunschweig (26.4 %), Oberpfalz (24.6 %) and Stockholm (22.4 %).

Map 3.1. provides a more complete view, as it shows the performance of all regions of the European Economic Area in terms of patent applications to the EPO per million people. Large disparities exist, not only across countries, but also across regions within the same country. For example, the number of patent applications per million people from the highest German region, i.e. Oberbayern, was some 29 times larger than that of the lowest region in the country, Magdeburg.

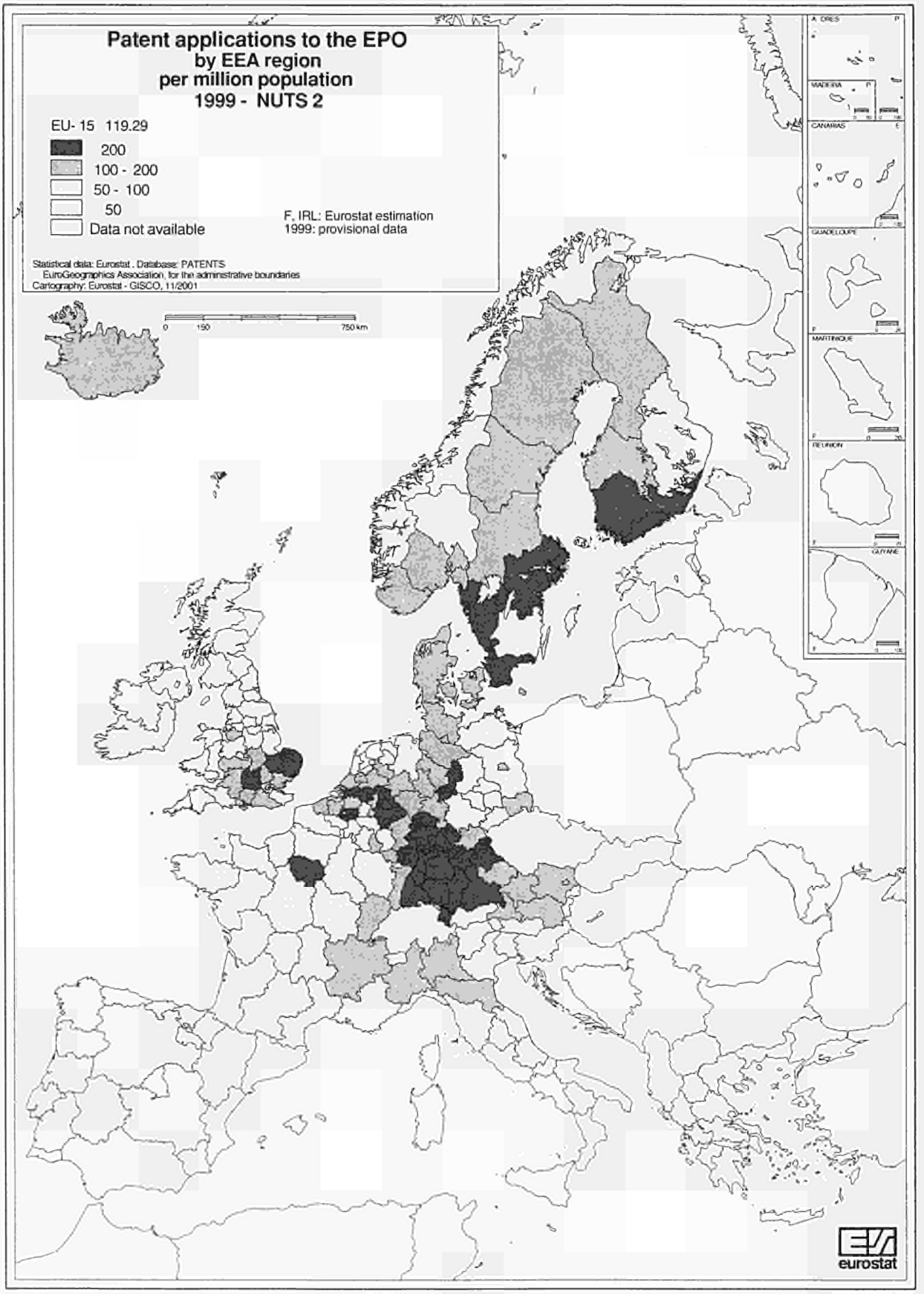
Table 3.4. — Top European patenting regions 1999 (1)

Ranking	Country	NUTS 2 region	Number of patent applications to the EPO	
			Per million population	Per million labour force
1	D	Oberbayern	635	1210
2	D	Stuttgart	495	989
3	NL	Noord-Brabant	441	865
4	S	Stockholm	417	854
5	D	Darmstadt	408	827
6	FIN	Uusimaa (Suuralue)	406	723
7	D	Freiburg	404	842
8	D	Mittelfranken	371	757
9	D	Karlsruhe	369	779
10	D	Tübingen	360	737
11	D	Rheinhessen-Pfalz	356	750
12	B	Brabant Wallon	331	768
13	A	Vorarlberg	322	672
14	D	Oberpfalz	305	618
15	D	Braunschweig	301	652
		EU-15	119	261

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Map 3.1.


Patent applications to the EPO
by EEA region
per million population
1999 - NUTS 2
EU- 15 119.29
200
100 - 200
50 - 100
50
Data not available
F, IRL: Eurostat estimation
1999: provisional data
Statistical data: Eurostat . Database: PATENTS
EuroGeographics Association, for the administrative boundaries
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GUADELOUPE
MARTINIQUE
REUNION
GUYANE
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Looking at the disparities across countries, Liechtenstein, Germany, the Netherlands, Sweden, Finland, Belgium, Austria, France and the UK are the countries that had at least one region applying for more than 200 patents per million inhabitants in 1999. At the other end of the scale, none of the Spanish, Greek or Portuguese regions applied for more than 50 patents per million population. However, both Spain and Greece have shown a high effort to improve innovation activities, as reflected in their annual average growth rates, which were above the EU average both for the periods 1990-94 and 1994-98.

With regard to the breakdown by IPC sections, overall most European regions follow a similar pattern to Europe as a whole. Table 3.5. shows the proportion of patent applications corresponding to each IPC section coming from the fifteen leading European regions. Although at the EU level, most patent applications corresponded to the 'Performing operations and transporting' section, this was the case for 6 of the 15 leading regions. Another 6 were most specialised in 'Electricity', whereas the other 3 concentrated their patents in 'Chemistry and metallurgy'. These results are in line with the positive annual average growth rates recorded for these sections during the past decade. The proportion of patent applications in the 'Electricity' field shows that this is the fastest growing section for all the analysed leading regions, except for Oberpfalz and Braunschweig, both in Germany.

The IPC section with the lowest proportion of patent applications, same as for the EU average, was 'Textiles and paper' for all the leading regions except for Finnish Uusimaa. In this region the lowest patent applications corresponded to 'Fixed constructions'.

With regard to high tech patenting, in 1999, the regions that applied for the highest number of patents in the high tech fields were Oberbayern (833), Île de France (646) and Noord-Brabant (382). However, when looking at the data in relative terms, the situation varies slightly – See Table 3.6. Oberbayern and Noord-Brabant retain the first and third positions respectively, but Finnish Uusimaa (Suuralue) takes second place. Île de France, in turn, goes to twelfth position. Table 3.6. presents data on high tech patent applications from the top fifteen European high tech patenting regions as a proportion of the population and as a proportion of the labour force. Although Oberbayern remains as the leading European patenting region, the dominance of Germany is certainly less striking than in patenting overall – recall Table 3.4. In fact, 4 German regions, 4 British, 3 Finnish, 2 Swedish, one Dutch and a French region are included in the 1999 high tech patenting top 15.

Table 3.5. — Top European patenting regions By IPC section in % — 1999 (1)

	Region	A Human necessities	B Performing operations; transporting	C Chemistry; metallurgy	D Textiles; paper	E Fixed constructions	F Mechanical engineering; lighting; heating; weapons; blasting	G Physics	H Electricity	Total
D	Oberbayern	7.5	16.7	7.6	0.6	2.5	11.0	22.3	31.6	100
D	Stuttgart	4.8	29.1	3.7	3.3	5.1	22.6	13.5	18.0	100
NL	Noord-Brabant	6.4	9.5	5.8	0.8	1.5	3.3	30.3	42.5	100
S	Stockholm	19.2	10.5	7.2	1.0	2.7	7.8	14.8	36.8	100
D	Darmstadt	17.8	23.9	25.4	1.4	3.4	7.1	10.9	10.1	100
FIN	Uusimaa (Suuralue)	8.5	13.7	10.2	4.1	2.1	2.5	9.8	49.0	100
D	Freiburg	16.8	18.6	15.9	1.0	4.3	11.6	17.0	14.7	100
D	Mittelfranken	12.3	19.8	4.6	1.1	2.4	13.1	15.8	30.9	100
D	Karlsruhe	11.0	25.3	17.6	0.9	3.9	13.5	15.0	12.7	100
D	Tübingen	13.7	27.6	7.7	5.8	6.2	18.5	10.4	10.2	100
D	Rheinhessen-Pfalz	14.8	15.9	45.8	1.8	1.9	6.2	6.7	6.9	100
B	Brabant Wallon	21.5	12.1	47.5	1.7	3.1	3.5	7.3	3.3	100
A	Vorarlberg	19.1	29.8	4.1	0.9	7.9	18.7	13.2	6.3	100
D	Oberpfalz	5.2	23.6	3.0	0.6	3.1	16.1	17.7	30.7	100
D	Braunschweig	5.5	46.4	9.1	0.2	3.3	15.5	9.8	10.1	100
	EU-15	**15.2**	**21.5**	**14.4**	**2.2**	**4.8**	**10.2**	**14.1**	**17.7**	**100**

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Table 3.6. — Top European high tech patenting regions 1999 (1)

Ranking	Country	NUTS 2 region	Number of high tech patent applications to the EPO: Per million population	Per million labour force
1	D	Oberbayern	209	397
2	FIN	Uusimaa (Suuralue)	188	335
3	NL	Noord-Brabant	164	321
4	S	Stockholm	150	308
5	FIN	Pohjois-Suomi	107	216
6	UK	East Anglia	84	167
7	UK	Hampshire & Isle of Wight	84	164
8	D	Mittelfranken	63	129
9	D	Stuttgart	63	126
10	UK	Gloucestershire, Wiltshire & North Somerset	62	120
11	FIN	Etelae-Suomi	59	116
12	F	Île de France	59	118
13	UK	Berkshire, Bucks & Oxfordshire	57	106
14	S	Sydsverige	48	99
15	D	Oberpfalz	47	95
EU-15			**19**	**42**

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

Relative to their respective labour forces, the same regions remain in the top 15. In 1999, 397 patent applications to the EPO per million labour force came from Oberbayern, 335 from Uusimaa and 321 from Noord-Brabant. All the leading regions show ratios far above the EU average.

As shown in Table 3.7., during the last years, high tech patenting has been growing in all the leading European regions. For the period 1994-98, all the annual average growth rates of high tech patent applications to the EPO from the leading European regions were also considerably higher than the growth rates of patenting in general. In some cases, the annual average growth rate corresponding to high tech patents more than doubled its equivalent for total patenting. For example, the growth rate for high tech patenting from Sydsverige was about 2.8 times its growth rate for patenting overall.

As a result of this, the proportion of high tech patents over total patent applications has also been increasing during the last decade. This can be seen in Table 3.7., where the percentages for all the top regions have considerably grown since 1990. Of special relevance is the case of the Finnish region Pohjois-Suomi, for which in 1990 only 7.0 % of its patent applications were in high tech fields, compared with 60.8 % in 1999.

Table 3.7. — Evolution of high tech patenting in the top European regions (1)

Ranking	Country	NUTS 2 region	Annual average growth rates of high tech patents: 1990-94	1994-98	Annual average growth rates of total patents: 1990-94	1994-98	% of high tech patents over total patents: 1990	1994	1999
1	D	Oberbayern	-15.7	37.2	-11.2	17.7	21.7	17.6	32.8
2	FIN	Uusimaa (Suuralue)	45.7	43.0	16.0	16.9	8.3	20.6	46.4
3	NL	Noord-Brabant	-1.9	24.5	-6.3	17.3	21.8	26.3	37.1
4	S	Stockholm	11.9	47.9	5.6	22.4	15.9	20.1	36.0
5	FIN	Pohjois-Suomi	107.1	31.2	30.5	20.5	7.0	44.4	60.8
6	UK	East Anglia	8.1	14.6	1.6	11.8	29.3	37.6	41.2
7	UK	Hampshire & Isle of Wight	-12.6	9.9	-5.1	6.0	33.0	23.8	47.0
8	D	Mittelfranken	102.7	16.0	85.7	11.9	9.6	13.7	17.0
9	D	Stuttgart	8.7	16.3	1.5	14.7	7.4	9.7	12.7
10	UK	Gloucestershire, Wiltshire & North Somerset	-3.0	23.9	-4.4	11.2	17.6	18.6	36.4
11	FIN	Etelae-Suomi	16.9	29.2	6.1	11.7	9.5	14.0	27.5
12	F	Île de France	-0.5	14.4	-1.6	7.8	16.1	16.7	22.9
13	UK	Berkshire, Bucks & Oxfordshire	0.7	13.2	-1.5	9.1	12.7	13.9	26.0
14	S	Sydsverige	10.4	44.2	6.0	15.6	6.8	8.0	19.3
15	D	Oberpfalz	7.0	51.6	22.0	24.6	8.7	5.1	15.4
EU-15			**1.6**	**22.8**	**-0.3**	**11.1**	**9.3**	**10.0**	**16.0**

(1) 1999 provisional data.

Sources: Eurostat, data — EPO.

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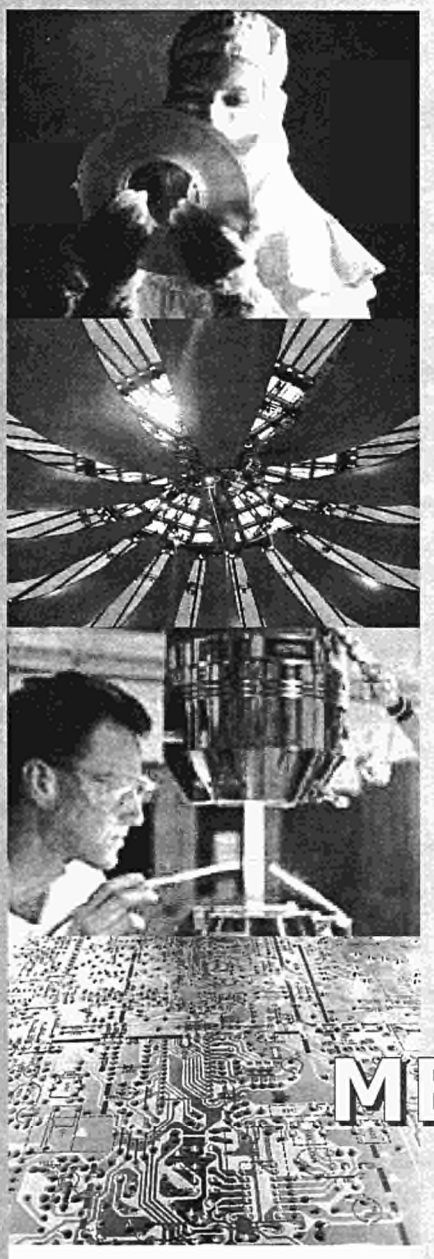
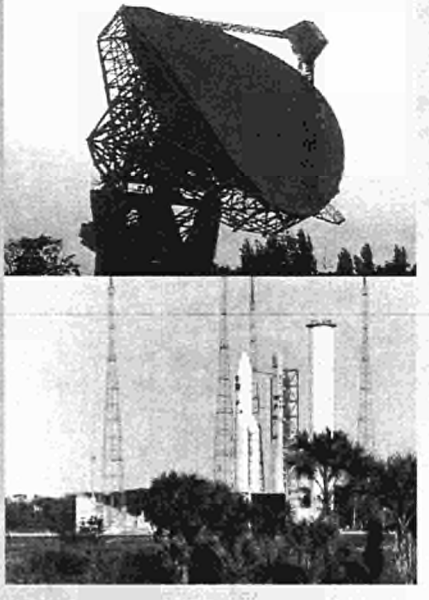


PART 2

DEFINITIONS AND METHODOLOGICAL NOTES



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Chapter 1
Government budget appropriations or outlays on Research and Development — GBAORD

1. GBAORD as a S&T indicator — General information

Government budget appropriations or outlays on R&D are all appropriations allocated to R&D in central government or federal budgets and therefore refer to budget provisions, not to actual expenditure. Provincial or state government should be included where the contribution is significant. Unless otherwise stated, data include both current and capital expenditure and cover not only government-financed R&D performed in government establishments, but also government-financed R&D in the business enterprise, private non-profit and higher education sectors, as well as abroad (i.e. international organisations). Data on actual R&D expenditure, which are not available in their final form until some time after the end of the budget year concerned, may well differ from the original budget provisions. This and further methodological information can be found in the *Frascati Manual*, OECD, 1994.

2. Eurostat's GBAORD database — Sources and methods

2.1. Sources

GBAORD data are provided to Eurostat directly by the Member States of the European Union and the European Economic Area countries. Data for Japan and the United States are provided to Eurostat by the OECD.

The **exchange rates** applied to translate national currencies into current ECU/EUR are obtained from Eurostat's reference database NewCronos:

- Theme — 2_Economy and Finance,
- Domain — Monetary and other financial statistics,
- Collection — Exchange rates,
- Group — ECU/EUR exchange rates,
- Table — ECU/EUR exchange rates – Annual data,
- Observation type — Average type.

GDP data are obtained from the following NewCronos sources:

- Theme — 2_Economy and Finance,
- Domain — National accounts – Aggregates – Annual data,
- Collection — GDP and main aggregates,
- Table — GDP and main components – Current prices.

Where **lacking**, data were **completed** using NewCronos:

- Theme — 2_Economy and Finance,
- Domain — National accounts historical data – ESA '79,
- Collection — National accounts – Aggregates Annual data – ESA '79,
- Group — Economic and social indicators,
- Table — ESA aggregates at current prices in ECU,
- Indicator — Gross domestic product at market prices (GDPmp) (N1).

Data for the **GDP deflator** are taken from NewCronos:

- Theme — 2_Economy and Finance,
- Domain — National accounts – Aggregates – Annual data,
- Collection — GDP and main aggregates,
- Table — GDP and main components Price indices,
- Indicator — Gross domestic product at market prices,
- Unit — Price index, 1995 = 100, based on national currency...

Where **lacking** data were **completed** using NewCronos:

- Theme — 2_Economy and Finance,
- Domain — National accounts historical data – ESA '79,
- Collection — National accounts – Aggregates – Annual data ESA '79,
- Group — Price indices,
- Table — ESA aggregates – price indices,
- Unit — Index, 1990 = 100,
- Aggregat — a18 – Gross domestic product at market prices, (GDPmp)(N1).

Data on **total general government expenditure** are obtained from:

- Theme — 2_Economy and Finance,
- Domain — Government sector,
- Collection — Main aggregates of general government, including total revenue and expenditure,
- Table — Full table (t+8).

2.2 Reference Unit

The reference unit for the GBAORD database is national currencies.

2.3. Indicators

Measurements in current ECU/EUR are obtained by applying the average exchange rate for the year in question.

Data measured in constant 1995 ECU/EUR are first corrected for inflation using the GDP deflator – a Paasche index with 1995 = 100 as a base – of the country in question before applying the 1995 ECU/EUR exchange rate. The GDP deflator in general conforms to the 1995 European System of Accounts – ESA '95, available on NewCronos, Theme 2. Where the series was incomplete, the adjusted GDP deflator from ESA '79 was used. Appropriate caution should be employed interpreting the results in such cases.

As with the GDP deflator, time series on GDP are built up using the two systems of European accounts. Where GDP data using ESA '95 were missing, the year on year growth rates of GDP in the ESA '79 system were applied retrospectively to the years for which data were missing in the ESA '95 national accounts database.

Data on total general government expenditure include all the aggregations listed:

Code in NewCronos	Section
p2	Intermediate consumption,
d1pay	Compensation of employees, payable,
d29pay	Other taxes on production, payable,
d3pay	Subsidies, payable,
d4pay	Property income, payable,
d5pay	Current taxes on income, wealth, etc., payable,
d62pay	Social benefits other than social transfers in kind, payable,
d6311_ d63121_ d63131pay	Social transfers in kind = expenditure on products supplied to households via market producers,
d7pay	Other current transfers, payable
d8	Adjustment for the change in net equity of households in pension funds reserves
d9pay	Capital transfers, payable,
p5	Gross capital formation,
k2	Acquisitions less disposals of non-financial non-produced assets.

2.4. Classifications

GBAORD data are built up using the guidelines laid out in the *Proposed standard practice for surveys of research and experimental development – Frascati Manual*, OECD, 1993.

The main classification used in the GBAORD database is the NABS – *Nomenclature for the analysis and comparison of scientific programmes and budgets*, Eurostat, 1994.

The 1983 version of NABS applies to all the figures up until the 1992 final budgets and the 1993 provisional budgets. The 1993 version applies from the 1993 final and the 1994 provisional budgets onwards.

As a result of the revision of NABS, exact comparability between certain 1- and 2-digit NABS headings cannot be achieved. The greatest differences are to be found in chapters 1, 3, 5, 7, 10 and 11 of NABS.

These NABS chapters cover the following fields:

- Chapter 1: Exploration and exploitation of the Earth,
- Chapter 3: Control and care of the environment,
- Chapter 5: Production, distribution and rational utilisation of energy,
- Chapter 7: Industrial production and technology,
- Chapter 10: Research financed from General Universty Funds (GUF),
- Chapter 11: Non-oriented research.

Not all countries collect the data directly by NABS: some follow other compatible classifications (OECD, Nordforsk), which are then converted to the NABS classification (see paragraph 455 of the *Frascati Manual*).

2.5. Time series

Eurostat's GBAORD database contains data from 1980 onwards, though availability differs according to country.

For the following countries, data for 2000 are provisional: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Spain, Sweden, the UK and the US.

2.6. Geographical coverage

Data on GBAORD are available for Austria, Belgium, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, the UK and the US. Data are also available for European Commission budgets (Commission of the European Communities).

No GBAORD data exist for Luxembourg and therefore EU-15 totals exclude Luxembourg.

No GBAORD data exist for Liechtenstein and therefore EEA totals exclude Liechtenstein and Luxembourg.

2.7. Reliability of the data

Because of national revisions, some of the data shown for government R&D appropriations deviate from the figures in previous issues of this publication. Even in the case of derived indicators there are differences compared with previous issues, since the values of the reference parameters, such as the GDP deflator, have been revised.

2.8. Comparability of the data

Despite all efforts, the concepts and methods used by the individual Member States of the EU, the United States and Japan for collecting data on government R&D appropriations are not completely harmonised.

In interpreting the tables, some (national) peculiarities still have to be borne in mind, and the most important of these are indicated in the section 'Country specific notes'.

2.9. Country specific notes

Belgium

Belgium's federal structures – which arose from the reforms of 1980, 1988, and 1993 – give primary responsibility for basic and university research to the Communities, while the Regions are primarily responsible for supporting industrial and technological research. The Federal Government has particular responsibility for the federal scientific and cultural establishments, for space research, nuclear research, a broad area of agricultural research and Belgian participation in the activities of the international research bodies.

The share of Research in the Universities' total operating budgets was set at 43 % of total GBAORD between 1989 and 1992. This percentage had been applied to the Belgium system using the results of a Dutch study dating from the beginning of the '80s. However, this approach did not take into account the peculiarities of both financing and the organisation of research in Belgium. Research has since been undertaken in order to determine a proportion which is closer to the reality of the Belgian system. The conclusion was that a rate of 25 % should be applied instead of 43 %. As a result, all the GBAORD data from 1989 onwards have been revised.

There were only minor variations by NABS objective or group between 1996 and 2000.

No data are available for sub-chapters of NABS.

No data are available for the breakdowns biotechnology, information technology and developing countries.

Denmark

Up until 1992, GBAORD data contained some non-government resources, but not thereafter. The effects of this methodological change are not known, but comparison of the data for the period before 1992 with the data from 1993 should be made with caution.

The way of funding PhDs was changed from 1993 to 1994, which makes it more difficult to compare chapter 10 (Research financed from GUF) for 1993 and 1994.

The Ministery of Education has changed the way it estimates capital investment related to R&D for 1994 and the following years.

Some differences arise in the calculation of GBAORD by groups of objectives in both 1995 and 1996 compared to previous years.

In calculating the total for GBAORD, all external funds (non-general funds) at the level of institutions have been excluded. This is done to avoid double counting of funds originating from other sources within central government. As it is not possible in all cases to distinguish between external funds from private and public sources, the exclusion of external funds also means that all funds from private sources are in effect excluded.

GBAORD on 'Biotechnology', 'Information Technology', and on 'Developing Countries' are underestimated as it is not always possible to separate all funds (often part of larger programmes) devoted to these objectives.

Data are collected according to the Nordforsk chapters – Nordic Industrial Fund – and converted to NABS chapters. Therefore, the data cannot be classified according to the NABS sub-chapters.

Germany

As a result of unification and the restructuring of the research landscape thereafter, there are breaks in the time series between 1990 and 1991 (final budgets) as well as between 1991 and 1992 (provisional budgets).

Another break in series occurs between 1995 and 1996 (final budgets) and 1996 and 1997 (provisional budgets). This refers mainly to methodological improvements of the allocation of funds to and within NABS chapters 7, 10, and 12.

The negative value in NABS chapter 12 – 'Other civil research' – in 1997 is explained by a technical budgetary adjustment.

Spain

Up until 1993, 'Research financed from general university funds' was estimated by applying a figure of 16 % of total university budgets. This factor has been adapted in several steps to bring it closer to reality – 20 % in 1994, 25 % in 1995.

For 1997, 'Production, distribution and rational utilisation of energy' includes the Spanish contributions to CERN.

The declines in 'Non-oriented research' and 'Other civil research' between 1996 and 1997 are partly a result of improvements in the way the allocation of resources are recorded, with these two objectives previously tending to be a catch-all for R&D funding.

The 'Defence' figures for 1997 and 1998 are marked by the incorporation into the 'Defence' budget of large sums from the Ministry of Industry and Energy with a substantial industrial R&D content corresponding to the 'Promotion and Industrial Strategies for Defence' programmes, which accounts for the increase of almost 300 % in 'Defence' over the three-year period.

France

There is a break in series between 1991 and 1992. The figures for the period up until 1991 are not fully comparable with those of the following years for two reasons: an improved methodology for compiling GBAORD data has been introduced and the legal status of the *France Télécom* and the *GIAT industries* has been changed.

Ireland

A new methodology was introduced in 1992, which results in government funds only being included in the analysis. Note that in Ireland the definition of government funds includes money received from the EU (Community Support Framework) in support of R&D activities. It is estimated that in 1997 one third of government funds for R&D came from the CSF, with Chapter 7 of the NABS – 'Industrial production and technology' – significantly affected by the allocation of these funds.

Italy

The amount of 'Defence' is estimated for 1998 final and for 1999 provisional data.

In 2000, the figure for 'Research financed from general university funds' is the same as for 1999, due to an ongoing methodological review.

Netherlands

An effort has been made to harmonise the funding (GBAORD) and performance (Statistical Office) figures on university research. This results in higher figures for general university funds as part of GBAORD from 1996 (final budget) and 1997 (provisional budget) onwards.

Austria

Data on R&D appropriations are collected according to the OECD classification and translated to NABS; therefore, the data cannot be divided into NABS sub-chapters.

Finland

As a result of changes in methodology, there are breaks in the time series for Finland between 1990 and 1991 (due to the inclusion of pension fees in the labour costs), and between 1994 and 1995 (since 1995, universities and research organisations have to pay a rent for government buildings which was not the case before).

Data on R&D appropriations are collected according to the OECD classification and translated to NABS, therefore the data cannot be divided into NABS sub-chapters.

Sweden

The methodology for measuring government R&D appropriations in Sweden has been subject to numerous changes in the '90s – in 1991, 1992, 1993 and 1995.

Up until 1994, the Swedish budgetary year referred to the period July – June. In 1995/96, the budgetary year has been changed to the calendar year (January-December). Due to this change, the budgets for 1995 and 1996 are estimations based on the budget for the period July 1995 until December 1996.

No data exist for 1997.

Data on R&D appropriations are collected according to the Nordforsk – Nordic Industrial Fund – classification and translated to NABS and therefore the data cannot be divided into NABS sub-chapters.

United Kingdom

In 1995/96, a new methodology was used to calculate GUF figures, in respect of the Higher Education Funding Councils. Values have been revised back for one year only to 1993-94.

From 1995-96, the increase in 'Human and social objectives' is due in part to the fact that UK National Health Service figures have been obtained from the Department of Health and the Scottish Office on the basis of the Culyer directive, which for the first time confirmed the extent of R&D spending in the NHS.

The budgetary year for central government differs from the calendar year.

Iceland

No data are available for sub-chapters of NABS.

Norway

Data on R&D appropriations are collected according to the Nordforsk – Nordic Industrial Fund – classification and translated to NABS. The GBAORD analysis is not performed at a sufficient level of detail to allow information on the NABS sub-chapters.

United States

US data exclude the socio-economic objectives 'Research financed from general university funds' and 'Other civil research' and are therefore systematically underestimated. Comparisons with other countries should be made with caution.

US data concern federal or central government budgets only and exclude most or all capital expenditure.

Only data for total GBAORD exist for US in 1999 and 2000. These data are provisional.

Japan

The figures for Japan are estimates made by the OECD Secretariat and recognised as official data by the Japanese Government. They exclude R&D in the social sciences and humanities and are thus only to some extent comparable with the data for other countries.

The R&D portion of military contracts is excluded.

Commission of the European Communities

The European Commission's budgets for R&D do not include the European Development Fund's resources for technological research. These funds are shown in the national budgets of the Member States of the EU.

There is a break between 1989 and 1990 in the time series for the final budgets of the European Commission, since from 1990 onwards the pro rata administrative costs are no longer included in the data.

An improved methodology has been adopted for the Fourth Framework Programme (1994-98) data which allows for the distribution by NABS sub-chapter of data previously included in Chapter 12 – 'Other civil research' – and the sub-chapters for 'General Research'.

Chapter 2
R&D expenditure and personnel

1. R&D expenditure and personnel as a S&T indicator — General information

The basic methodological recommendations for R&D statistics are given in the *Proposed Standard Practice for Surveys of Research and Experimental Development – Frascati Manual*, OECD, 1994.

The regional aspects of R&D and innovation statistics are covered by *The Regional Dimension af R&D and Innovation Statistics – Regional Manual*, Eurostat, 1996.

The following definitions are mainly derived from these manuals. In principle, the R&D data in this publication are collected in line with these recommendations.

1.1. Research and experimental development — R&D

Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications – *Frascati Manual*, § 57.

This term covers three activities: basic research, applied research, and experimental development.

1.2. Research and development input indicators

At the national level

Intramural expenditures

Intramural expenditures are all expenditures for R&D performed within a statistical unit or sector of the economy, whatever the source of funds. Expenditures made outside the statistical unit or sector but in support of intramural R&D (e.g. purchase of supplies for R&D) are included. Both current and capital expenditures are included.

R&D personnel

All persons employed directly on R&D should be counted, as well as those providing direct services such as R&D managers, administrators, and clerical staff.

For the purposes of regional statistics, these R&D definitions have been adapted to the region – see *The Regional Dimension of R&D and Innovation Statistics – Regional Manual*, Eurostat, 1996, Part C: First-Priority Indicators.

In accordance with international recommendations, figures for R&D personnel are indicated not only in full-time equivalent but also in head count.

R&D personnel by occupation

The standard international classification in this field is the International Standard Classification of Occupation – ISCO, 110, 1968, ILO, 1990.

- Researchers – RSE
  Researchers are professionals engaged in the conception or creation of new knowledge, product processes, methods, and systems, and in the management of the projects concerned.
- Technicians and equivalent staff
  Technicians and equivalent staff are persons whose main tasks require technical knowledge and experience in one or more fields of engineering, physical and life sciences, or social sciences and humanities. They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, normally under the supervision of researchers. Equivalent staff performs the corresponding R&D tasks under the supervision of researchers in the social sciences and humanities.
- Other supporting staff
  Other supporting staff include skilled and unskilled craftsmen, secretarial and clerical staff participating in R&D projects or directly associated with such projects.

At the regional level

Intramural expenditure
on R&D at the regional level — Regional Manual, § 134

Regional intramural expenditures are all expenditures for R&D performed within a statistical unit or a sector in a region, whatever the source of funds.

R&D personnel
at the regional level — Regional Manual, § 151

All persons employed directly on R&D in a region should be counted, as well as those providing direct services such as R&D managers, administrators and clerical staff. Those providing an indirect service, such as canteen and security staff, should be excluded, even though their wages and salaries are included as an overhead cost in the measurement of R&D expenditure.

1.3. Regional classification

The economic territory of each Member State of the EU has been divided according to a five-level hierarchical classification (three regional levels and two local levels) named *Nomenclature of Territorial Units for Statistics – NUTS*. NUTS serves as a reference for the collection, development and harmonisation of Community regional statistics, for the socio-economic analysis of the regions and for the drawing up of Community regional policies. The NUTS should be the territorial classification for R&D and innovation statistics at the regional level.

In general, NUTS subdivides each Member State into a number of NUTS 1 regions, which are in turn subdivided into a number of NUTS 2 regions, and so on.

- NUTS 1 is the first level of deseggregation and is of major importance in Germany, where it equates to the Länder, and to a lesser extent in the UK, where it is equivalent to standard English regions or the countries of Scotland, Wales and Northern Ireland.

- NUTS 2 is the secondary level, with 206 regions within Europe. Denmark, Ireland and Luxembourg are level 1 and level 2 regions at the same time. For some countries, this tier corresponds to a significant form of regional government.
- NUTS 3 is the smallest regional level for which R&D or patent data are available. There are over 1 000, usually conforming to a genuine administrative area.

It is important to notice that several regions can be classified at different NUTS levels at the same time: 8 regions are classified at the NUTS levels 1, 2 and 3; 17 regions at both NUTS 1 and 2 levels and 22 regions at NUTS levels 2 and 3.

2. Eurostat's R&D expenditure and personnel database — Sources and methods

2.1. Sources

R&D basic data are provided to Eurostat directly by the Member States of the European Union and the European Economic Area countries – National Statistical Offices, Research Councils, and Ministries responsible for R&D. The OECD provides data for Japan and the United States and with labour force data in some cases. The data are then checked, transformed, and the derived indicators are calculated.

OECD data: Main Science and Technology Indicators – MSTI 2001.1.

The **exchange rates** applied to translate national currencies into current ECU/EUR are obtained from Eurostat's reference database NewCronos:

- Theme: 2_Economy and Finance,
- Domain: Monetary and other financial statistics,
- Collection: Exchange rates,
- Group: ECU/EUR exchange rates,
- Table: ECU/EUR exchange rates – Annual data
- Observation type: Average type.

PPS data are taken from NewCronos:

- Theme: 2_Economy and Finance,
- Domain: Auxiliary indicators (Population, employment and exchange rates),
- Table: Auxiliary indicators (Euro exchange rate, PPP),
- Indicator: 1 PPS = ...national currency units.

Where **lacking**, data were **completed** using NewCronos:

- Theme: 2_Economy and Finance,
- Domain: National accounts historical data – ESA '79,
- Collection: National accounts – Aggregates – Annual data – ESA '79,
- Group: Economic and social indicators,
- Table: Economic and social indicators associated to ESA aggregates,
- Indicator: 1 PPS = ...national currencies.

GDP data are obtained from the following NewCronos sources:

For **GDP at the national level** the source is:

- Theme: 2_Economy and Finance,
- Domain: National accounts – Aggregates – Annual data,
- Collection: GDP and main aggregates,
- Table: GDP and main components – Current prices.

Where **lacking**, data were **completed** using NewCronos:

- Theme: 2_Economy and Finance,
- Domain: National accounts historical data – ESA '79,
- Collection: National accounts – Aggregates – Annual data – ESA '79,
- Group: Economic and social indicators,
- Table: ESA aggregates at current prices – in ECU,
- Indicator: Gross domestic product at market prices (GDPmp) (N1).

For **GDP at the regional level** the source is:

- Theme: 1_General statistics,
- Domain: Regional statistics,
- Collection: Economic accounts,
- Group: Economic accounts – ESA '95,
- Subject: Gross domestic product indicators – ESA '95,
- Table: Gross domestic product (GDP) at NUTS level 2 ESA '95,
- Currency: millions of EUR (from 1.1.1999)/ millions of ECU (up to 31.12.1998).

Where **lacking**, data were **completed** using NewCronos:

- Theme: 1_General statistics,
- Domain: Regional statistics,
- Collection: Economic accounts,
- Group: Economic accounts – ESA '79,
- Subject: Gross domestic product indicators – ESA '79,
- Table: Gross domestic product (GDP) at NUTS level 2 ESA '79,
- Currency: millions of EUR (from 1.1.1999)/ millions of ECU (up to 31.12.1998).

Data for the **GDP deflator** are taken from NewCronos:

- Theme: 2_Economy and Finance,
- Domain: National accounts – Aggregates – Annual data,
- Collection: GDP and main aggregates,
- Table: GDP and main components Price indices,
- Indicator: Gross domestic product at market prices,
- Unit: Price index, 1995 = 100, based on national currency...

Where **lacking** data were **completed** using NewCronos:

- Theme 2_Economy and Finance,
- Domain National accounts historical data – ESA '79,
- Collection National accounts – Aggregates – Annual data ESA '79,
- Group Price indices,
- Table ESA aggregates – price indices,
- Unit Index, 1990 = 100,
- Aggregat a18 – Gross domestic product at market prices, (GDPmp)(N1).

Labour force data have been taken from NewCronos:

- Theme 1_General Statistics,
- Domain Regional statistics,
- Collection Community labour force survey,
- Table Active population by age and sex.

2.2. Reference Unit

The reference unit for the R&D expenditure database is national currencies.

The reference units for the R&D personnel database are full-time equivalent and head count.

- **Full-time equivalent — FTE**
  Full-time equivalent corresponds to one year's work by one person. Thus, someone who normally devotes 40 % of his/her time to R&D and the rest to other activities (e.g. teaching, university administration or counselling) should be counted as only 0.4 FTE.
- **Personnel in head count — HC**
  The number of individuals who are employed mainly or partly on R&D. For purposes of comparison between different regions and periods, this indicator is often used in conjunction with employment or population variables.

In this publication, HC data are used to calculate the derived indicator 'R&D personnel as a percentage of the labour force'.

Regional data: the analytical part of the publication – Part 1 – uses data at the NUTS 2 level. Exceptions to that general rule are indicated.

2.3. Indicators

- **Current ECU/EUR**
  Measurements in current ECU/EUR are obtained by applying the average exchange rate for the year in question.
- **Constant 1995 ECU/EUR**
  Data measured in constant 1995 ECU/EUR are first corrected for inflation using the GDP deflator – a Paasche index with 1995 = 100 as a base – of the country in question before applying the 1995 ECU/EUR exchange rate. The GDP deflator in general conforms to the 1995 European System of Accounts – ESA '95, available on NewCronos – Theme 2. Where the series was incomplete, the adjusted GDP deflator from ESA '79 was used. Appropriate caution should be employed interpreting the results in such cases.
- **Purchasing power parities — PPS**
  Purchasing power parities are based on comparisons of the prices of representative and comparable goods or services in different countries in different currencies on a specific date. As a result, financial aggregates are expressed in purchasing power standards – PPS – rather than ECU/EUR based on exchange rates. The calculations are based on current purchasing power standards.
- **European totals for R&D expenditure in ECU/EUR and in PPS**
  By definition, the exchange between ECU/EUR and PPS for the EU-15 total is: 1 ECU/EUR = 1 PPS. In consequence, the EU-15 totals in PPS and in ECU/EUR for R&D expenditure should be equal. Nevertheless, this is not the case in the frame of this publication where the totals in both units differ. The reason is that the PPS unit was built up in order to correct the purchase power within European countries on the basis of the gross domestic product – GDP. The computation corresponds to a goods and services, basket which do not specifically include goods and services used for R&D purposes. A purchase measurement unit for R&D specific goods and services is not yet available.
- **GDP**
  GDP is an aggregate that represents the result of the production activity of the country's resident producer units. It corresponds to the economy's output of goods and services, minus intermediate consumption, plus taxes linked to imports. As with the GDP deflator, time series on GDP are built up using the two systems of European accounts. Where GDP data using ESA '95 were missing, the year on year growth rates of GDP in the ESA '79 system were applied retrospectively to the years for which data were missing in the ESA '95 national accounts database.
- **R&D personnel as a percentage of the labour force**
  As recommended in Eurostat's Regional Manual, R&D personnel as a percentage of the labour force is calculated in head count. The labour force comprises all people aged 15 and over who are employed or unemployed but not inactive – inactive people are for example pupils, students, people in compulsory military service and retired people.
- **R&D intensity**
  R&D intensity corresponds to R&D expenditure as a percentage of GDP. The unit used is current ECU/EUR. Concerning the calculation of R&D intensity, some methodological changes have taken place this year. Previously the GDP from Theme 1, which included both regional and national level data, was used as a priority. Now, the GDP from Theme 2 serves for the computation of the R&D intensity at the national level and the GDP from Theme 1 is used at the regional level. As for the GDP deflator, GDP ESA '1995 data from Theme 1 (regional) or 2 (national), were completed with ESA '79 data where necessary – see 2.1. Sources.
- **EU totals**
  EU totals are calculated as the sum of the country data by sector. If data are missing, estimations are first made for each country, institutional sector or relevant R&D variable.

2.4. Classifications

R&D data are built up using the guidelines laid out in the *Proposed standard practice for surveys of research and experimental development – Frascati Manual*, OECD, 1993.

Institutional classifications

Internal expenditure and R&D personnel are broken down by institutional sector, i.e. the sector in which the R&D is performed. There are four main sectors: business enterprise, government, higher education and private non-profit institutions.

The business enterprise sector — BES

With regard to R&D, the business enterprise sector includes – *Frascati Manual*, § 145:

- 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;
- The private non-profit institutes mainly serving them.

The government sector — GOV

In the field of R&D, the government sector includes – *Frascati Manual*, § 168:

- All departments, offices and other bodies which furnish but normally do not sell to the community those common services, other than higher education, which cannot otherwise be conveniently and economically provided and administer the state and the economic and social policy of the community. (Public enterprises are included in the business enterprise sector);
- Non-profit institutes (NPIs) controlled and mainly financed by government.

The higher education sector — HES

This sector is composed of – *Frascati Manual*, § 190:

- All universities, colleges of technology and other institutes of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education establishments.

The private non-profit sector — PNP

The fields covered by this sector include – *Frascati Manual*, § 178:

- Non-market, private non-profit institutions serving households (i.e. the general public);
- Private individuals or households.
- The PNP sector accounts generally for less than 3% of total R&D expenditure or personnel. Portugal is an exception, as R&D expenditure for all sectors in that country was equal to 11 % in 1999. For that reason, there are no tables compiled for the PNP. For some countries, the PNP is included in the GOV. This information can be found in the section 'Country specific notes'.

2.5. Time series

Eurostat's R&D database contains data from 1981 onwards, though availability differs according to country.

2.6. Geographical coverage

Data on R&D expenditure are available for Austria, Belgium, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, the UK and the US.

Data on R&D personnel in FTE are available for Austria, Belgium, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden and the UK. R&D personnel data on FTE are not available for the US except for researchers (RSE).

No R&D data exist for Luxembourg and therefore EU-15 totals exclude Luxembourg.

No R&D data exist for Liechtenstein and therefore EEA totals exclude Liechtenstein and Luxembourg.

2.7. Reliability of the data

Because of national revisions, some of the data shown for intramural R&D expenditure or R&D personnel deviate from the figures in previous issues of this publication. For R&D personnel, for instance, some figures which previously had to be estimated are now available from surveys, while for others it was possible to improve the estimation procedure (by using national conversion factors for the country in question). Even in the case of derived indicators, there are differences compared with previous issues where the values of reference parameters, such as the GDP deflator, have been revised.

2.8. Comparability of the data

Although the R&D expenditures and R&D personnel data are collected by surveys, which follow the guidelines and definitions outlined in the *Frascati manual* and the Regional Manual, the data are not completely comparable. Differences include interpretation of the definitions, different survey methodologies and peculiarities of national R&D systems.

The collection of regional data is faced with one major difficulty that could affect the comparability between regions and also give a distorted picture of regional R&D. This difficulty is the measuring of R&D activity in the territorial unit where it is actually performed. It is particularly the case for the business enterprise sector where, generally, the reporting unit is the legal entity. In the case where R&D is not performed at the territorial location of the reporting unit, the reporting unit might have problems to break down R&D expenditure and personnel at the regional level. According to the survey methods applied, the comparability of the data might be affected.

R&D personnel problems occur mainly with calculations of full-time equivalent (FTE). In order to collect the FTE for certain employee groups such as R&D managers or graduate staff, the proportion of work undertaken on R&D has to be estimated for each individual, and the methods of estimation may differ from one country to another.

In interpreting the tables, some peculiarities still have to be borne in mind, and the most important of these are indicated in the section 'Country specific notes'.

2.9. Country specific notes

For R&D expenditure

Belgium

The R&D expenditure of the 'Centres Sectoriels de Recherche Collective', a subsector of the business enterprise sector, could not be disaggregated at the regional level before 1994. It should also be noted that up until 1993, no figures were available for public undertakings in Belgium. However, from 1994 onwards, public enterprises are included in the BES.

Denmark

The delimitation of the government sector in Denmark does not agree entirely with the international methodological recommendations. Not all GOV data can be disaggregated to regions. Moreover, it should be noted that, in the BES, the figures for some regions of Denmark are combined with those of neighbouring regions for data protection reasons.

Germany

Because of German unification, there is a break in the time series between 1990 and 1991. In general, R&D expenditure is broken down in accordance with the location of employment of the R&D personnel. As an exception, the GOV data up until 1991 are broken down by the main location of the research institution. In 1992, a new survey framework, including additional survey units, has been introduced in the GOV; therefore, there is another break in series between 1991 and 1992. The total of GOV expenditure includes R&D expenditure of German research institutions located abroad. From 1992 onwards, data for the PNP are included in the GOV. Not all data can be allocated to regions. Due to modifications of the survey method, there is a break in the HES series between 1994 and 1995.

Spain

The survey unit in the business enterprise sector is the enterprise. If an enterprise has several establishments in at least two different regions, the intramural R&D expenditure of the enterprise is allocated to the regions concerned in accordance with the regional breakdown of the personnel. Only in 1986 was the R&D expenditure of enterprises allocated exclusively to the region in which the head office was situated. Part of the R&D expenditure in Spain cannot be disaggregated to the regional level. For the HES, from 1992 onwards the personnel costs of technicians and other staff are included, and the estimation procedure for other current and capital expenditure has been improved. Both these changes result in a break in the time series.

France

Due to the change of the legal status of France Télécom and the GIAT industries, there is a break in the time series between 1991 and 1992, so that comparisons of the figures for the period before and after 1992 should be treated with caution. Not all of the intramural R&D expenditure (defence sector, some expenditure of the HES) can be disaggregated to the regional level.

Italy

There is a break in the time series for Italy between 1990 and 1991. Until 1990 the figures for BES and GOV represent the sum of intramural and extramural R&D expenditure, but from 1991 onwards only the intramural R&D expenditure. The pre-1991 data for Italy are thus only partly comparable with those of other countries. No data exist for the PNP sector in Italy.

Austria

Not all data can be disaggregated down to the regional level.

Portugal

1995 data have been revised. The revision of the data for 1995 is due to the fact that all the private non-profit institutes (PNP) which serve the BES have been reallocated to the BES. Data have thus been revised for the PNP and BES in what concerns R&D expenditure and R&D personnel.

Finland

Between 1990 and 1991, there is a break in the GOV and in the HES due to the inclusion of pension fees attached to salaries. PNP data are included in the GOV.

Sweden

The data of GOV and HES before 1997 refer to the fiscal year (July-June).

United Kingdom

Sufficiently reliable regional data can only be produced at the NUTS 1 level. The regional figures for the government sector are estimated on the basis of the data on R&D personnel in the individual regions. R&D of the National Health Service is included in GOV expenditure since 1995/96. In 1994, a new methodology has been introduced in the BES to improve the collection of regional data; therefore, no direct comparisons can be made between data up to and including 1993 and from 1994 onwards. The new methods use grant income as a proxy for expenditure. The grants have been classified into three groups: 'research-oriented grants', 'teaching-oriented grants' and 'other grants'.

Norway

The regional breakdown is based on a national classification. No regional GDP data are currently available. PNP data are included in the GOV.

United States

The intramural R&D expenditure of the United States is slightly underestimated in comparison to the corresponding figures for other countries as the US methodology is slightly different from the international recommendations. In the business enterprise sector, for instance, depreciation is shown instead of the gross capital expenditure.

Japan

See comments for R&D personnel.

For R&D personnel

Belgium

See comments for R&D expenditure.

Denmark

The delimitation of the government sector in Denmark does not agree entirely with the international methodological recommendations. Some of the R&D personnel in the GOV cannot be allocated to the individual regions.

Germany

See comments for R&D expenditure.

Greece

Though there are no duplications in full-time equivalent, a small number exist in head count data since some non-permanent personnel may be occupied in more than one research institute.

Spain

Not all data can be allocated to the individual regions.

France

The national and the regional data on R&D personnel refer to the personnel 'remunerated by' the institutional sector. The total for all regions for the GOV and the HES (and hence the total of all sectors) thus differs from the values normally indicated for France as a whole (e.g. in OECD publications where the national totals are indicated as 'working in'). Not all personnel data can be broken down by region (defence sector, some personnel in the HES). Due to the change of the legal status of France Télécom and the GIAT industries, there is a methodological break in the time series between 1991 and 1992, so that comparisons of the figures for the period before and after 1992 should be made with caution.

Ireland

Regional data in the HES refer to NUTS 92.

Italy

No data exist for the PNP sector in Italy.

Austria

Before 1995, no regional labour force data are available. This means that no proportions of R&D personnel in the total labour force can be calculated.

Finland

There is a break in the series of the HES between 1990 and 1991 due to revised time budget coefficients. PNP data are included in the GOV.

Sweden

Before 1995, no regional labour force data are available. This means that no indicator of R&D personnel in the total labour force can be calculated. Before 1997, the data of the GOV refer to the fiscal year (July to June). Before 1999, the data of the HES refer to the academic year (July to June). Not all data can be broken down by region.

United Kingdom

See comments for R&D expenditure.

Norway

The regional breakdown is based on a national classification as there are no official NUTS categories for Norway. No regional labour force data are currently available. This means that no indicator of R&D personnel in the total labour force can be calculated. PNP data are included in the GOV.

Japan

After 1995, the data provided for R&D personnel are expressed in full-time equivalent and consequently the personnel costs are not overestimated as previously.

Up to and including 1995, data provided for R&D personnel and consequently labour cost data are overestimated by international standards. Data for researchers are expressed in number of persons regularly employed in R&D rather than in full-time equivalent. Studies by some Japanese authorities suggest that in order to reach FTE, the number of researchers might be reduced by perhaps 40 % in the higher education sector and by about 30 % for the national total. That would reduce HERD by about 25 % and GERD by about 15 %. The OECD calculated, until 1998, the adjusted series for both expenditure and researchers for the higher education sector and the national total, and these data appear in the OECD publications Main Science and Technology Indicators and Basic Science and Technology Statistics, as well as various studies and analytical reports ([1]).

([1]) OECD, R&D Sources and Methods Database.

Chapter 3
European patenting activities

These methodological notes are divided into two sections. The first one describes the general conceptual framework surrounding patent statistics. The second section focuses on Eurostat's patent database and provides information on the sources, methods, variables, classifications, time series, geographical coverage, reliability and comparability of the data contained in the database.

1. Patent applications as a S&T indicator — General information

Patents, as a legal instrument to protect invention, are strongly influenced by the legal system that surrounds them. The European patent framework, in particular, is rather complex, since national systems co-exist with a European patent, and a third system, the Community patent, is currently under regulation. As a result, the process of patenting is not straightforward. This section aims to clarify the conceptual and legal frameworks in the field of patents, so as to facilitate understanding the data contained in Eurostat's database and to provide some basic guidelines for the interpretation of patent data as an indicator of regional potential for innovation.

1.1. What is a patent and what do indicators based on patents help to illustrate?

A patent is a legal title of industrial property granting its owner the exclusive right to exploit an invention commercially for a limited area and time. The patent confers its owner the right to stop others from, among other things, making, using or selling such invention without authorisation. In return for the exclusive right to exploit it, the technical details of the invention are published. Patentability requires novelty, inventiveness and industrial applicability of the invention.

Technological change and innovation have become two main areas of economic analysis in the industrialised countries, as they are determining factors for the productivity and competitiveness of a nation. S&T activities are crucial for fostering technical innovation, and therefore there is an increasing interest for describing the countries' S&T activities in both quantitative and qualitative terms. In this context, S&T activities are mainly measured by using indirect input, output and impact indicators. It is in the framework of output indicators that patent data are used. In particular, indicators based on patents can be very interesting for assessing the performance of application-oriented types of R&D. Although patents do not cover all kinds of innovation activities, they do cover a considerable part of it. However, patent indicators should be complemented with other S&T indicators, so as to obtain a complete view of the innovation activities of the countries and regions.

There are some good reasons that have made patents one of the most widely used source of data to construct indicators of inventive output. Patents have a close link to invention and cover a broad range of fields. Patent data are readily available from the various patent offices, containing very detailed information for a relatively long time series. Also, being closer to the time of invention, patent statistics can be more accurate than production or trade statistics, which may comprise a greater time lag between actual innovation and commercialisation.

However, using patent indicators does also have several shortcomings. Not all inventions are patented and not all patents have the same value. Also, there are differences in the propensity to patent across firms, sectors and countries, influenced by different national patent systems as well as the patterns of international trade and direct investment. In areas where technology changes rapidly, patent protection may be of little value because inventions quickly become obsolete and it takes a long time to grant a patent. Although patents cover a wide range of fields of technology, patent protection can not be applied for to cover all inventions; this is the case, for example, of computer software at the European Patent Office (EPO).

1.2. Patent systems in Europe

In the European Union, patent protection is currently provided by two systems: the European patent system and the national patent systems. The former is regulated by the *Munich convention* adopted in 1973, whereas national patent systems are defined by national laws. However, as all the Member States of the European Union have ratified the *Munich convention*, the patent law across Europe is largely harmonised, at least de facto. Patent protection in Europe can also be obtained via the *Patent Cooperation Treaty* – PCT, by filing the application at the World Intellectual Property Organisation – WIPO – and designating a European country or the EPO for protection.

In addition to the existing systems, the European Union is now willing to implement the *1975 Luxembourg Agreement* on the Community patent. After various attempts of implementation using international tools, the European Commission proposed a council regulation on the Community patent in 2000. If this regulation is approved, a third system will enter into force: the Community patent system, which aims to establish a unitary and autonomous patent system for the entire European Union, coexisting with the actual patent systems.

European Patent Convention Munich Convention

The *European Patent Convention* was signed in Munich in October 1973 and entered into force on 1 June 1978. The *Munich Convention* establishes a uniform patenting system for all countries signatory to the Convention, providing applicants with protection in as many of the signatory states as they wish. Once granted, the European patent is protected under the national law in each of the countries designated in the application. The *Munich Convention* created the European Patent Organisation (the legislative body) and the European Patent Office (the executive body) ([1]), establishing a centralised procedure for granting European patents.

([1]) See the European Patent Office's — EPO — web site at http://www.european-patent-office.org/.

At present, 19 countries have ratified the Convention: Austria, Belgium, Cyprus, Denmark, Germany, Finland, France, Greece, Italy, Ireland, Liechtenstein, Luxembourg, Monaco, the Netherlands, Portugal, Spain, Sweden, Switzerland and the UK. The EPO provides patent protection in all 19 countries on the basis of a single patent application and a single grant procedure ([2]). European patent applications and patents can also be extended to countries signing agreements to that effect with the European Patent Organisation. The extension states at present are Albania, Latvia, Lithuania, Romania, Slovenia and the former Yugoslav Rep. of Macedonia.

Although applying for a European patent is cheaper than applying for the patent in each of the National offices where protection is desired, the cost of a European Patent is still considerably higher than in Japan or the US. Recent figures published on the proposal for a regulation on the Community patent reveal that the cost of a European patent is three to five times higher than that of the American or Japanese patent.

National Patent systems

Each European country has its own national patent office, which grants patents that protect their owner within the national territory. These patents are awarded by the corresponding national authority and are ruled by national law. However, the national patent law of all the Member States of the European Union has been de facto harmonised. This is because all the Member States are parties of both the *Paris Convention* for the Protection of Industrial Property of 20 March 1883, the European Patent Convention and the Agreement of Trade related aspects of Intellectual property Rights – TRIPS Agreement – reached at the *Uruguay Round* concluded in 1994.

Patent Cooperation Treaty — PCT

The *Patent Cooperation Treaty* was signed in Washington on 19 June 1970 and came into force on 1 June 1978. The PCT allows for a filing of an international application to have the same effect as a national application in each of the contracting countries designated in the application. All the PCT applications are centralised through the World Intellectual Property Organisation – WIPO. As of 1 September 2000, one hundred and seventy-five States were members of the WIPO ([3]), and therefore any applicant can designate for protection in all these states or a in a regional office such as the EPO. In the cases were the EPO is designated, the patent is known as a Euro-PCT patent ([4]).

The Community patent

The Community Patent has its origins in the Luxembourg convention signed on 15 December 1975. Although the Convention was amended by an agreement in 1989 ([5]), the Luxembourg Convention has not yet entered into force, since only France, Germany, Greece, Denmark, Luxembourg, the United Kingdom and the Netherlands have ratified the Convention. In view of the lack of effectiveness of the international convention and the discussions of the European Council in Lisbon in March 2000, where the importance of introducing a Community patent without delay was underlined, the European Commission proposed a Council regulation on the Community patent in August 2000 ([6]).

The difference between the council regulation and the Convention is that once approved, the regulation will be directly applicable to all the Member States, and therefore the Community patent system will enter into force. Also, the regulation tries to overcome the problems arisen in the context of the Convention (especially costs and jurisdiction). In this framework, the regulation proposes a Community patent characterised by unity and autonomy that arises from a body of Community patent law, affordable, with appropriate language arrangements and information requirements and that guarantees legal certainty. The Community patent system shall co-exist with the national patent systems and the European patent system.

The complex framework described above shows that invention owners are provided with multiple possibilities to protect themselves in Europe. Usually, a patent application is initially filed with the national patent office of the country in which the inventor's laboratory or company is located. The patent application is then provisionally protected until examination of the application is complete and the patent is either granted, rejected or withdrawn.

For various reasons, it could also be worthwhile to apply for patent protection in other countries. Within one year, the same invention can also be filed in other countries. This can either be done by filing a patent application in each desired country, by filing a regional application, e.g. with the EPO, for a number of European countries (based on the European Patent Convention), or by filing an international application under the Patent Cooperation Treaty. Besides the possibilities outlined above, direct filing for several countries either under the PCT-route or with the EPO (Euro-direct application) is also possible. In all cases, the protection starts from the date of first filing (priority date). In addition, inventors that are seeking protection outside Europe, can also apply for patents in other offices, such as the United States Patent and Trademark Office – USPTO – and the Japanese Patent Office – JPO.

2. Eurostat's patent database — Sources and methods

2.1. Sources

The data contained in Eurostat's patent database are extracted from the database of the European Patent Office – EPO. Therefore, this database excludes patent applications directly made to the National Patent Offices of the European Member States as well as to the USPTO or the JPO.

Although EPO data alone do not give a complete view of the patenting activities in Europe, using data from the EPO guarantees the comparability of the data, as all applications filed with the European Patent Office follow the harmonised procedure of the European Patent Convention. This makes these data particularly interesting for international comparisons. However,

([2]) It takes on average just over four years for a patent to be granted. For further information on the European patent granting procedure see methodological notes in Eurostat's reference database NewCronos, Theme 9, Domain Patents.

([3]) See the list of members at http://www.wipo.org/members/members/index.html.

([4]) For further information on the WIPO's patent granting procedure see methodological notes in Eurostat's reference database NewCronos — Theme 9, Domain Patents.

([5]) Agreement relating to Community Patents, done at Luxembourg on 15 December 1989 — Official Journal L 401, 30.12.1989, p. 1.

([6]) Commission of the European Communities, Proposal for a Council Regulation on the Community patent, Brussels 1.8.2000, COM(2000)412 final.

when undertaking international assessments, one has to take into account that the results may show higher values for the European countries compared to the US or Japan, as they may enjoy 'home advantage'. Nevertheless, this effect is not as strong for the European countries at the EPO as it is for the US or Japan at their respective offices. This is because Europeans face more complicated and expensive options when applying for a patent in Europe (i.e. they may apply first at the national patent office and after at the European Patent Office) compared to the Americans or the Japanese, who only need to apply for one patent to obtain protection in their entire territory.

Labour force data to construct the derived indicator 'patents per million labour force' have been taken from the following sources:

For **labour force data** at the **national level** the source is:

- Theme 3_Population and social conditions,
- Domain LFS,
- Collection Working population,
- Table Active population by age group and marital status.

For **labour force data** at the **regional level** the source is:

- Theme 1_General Statistics,
- Domain Regional statistics,
- Collection Community labour force survey,
- Table Active population by age and sex.

Population data to construct the derived indicator 'patents per million population' have been extracted from the following sources:

For **population data** at the **national level** the source is:

- Theme 3_Population and social conditions,
- Domain Demography,
- Collection Population
- Table Population by sex and age on 1st January of each year.

For **population data** at the **regional level** the source is:

- Theme 1_General Statistics,
- Domain Regional statistics,
- Collection Demographic statistics,
- Group Population and area,
- Table Population at 1st January by sex and age group, from 1980.

When not available in NewCronos, reference data have been obtained from the Main Science and Technology Indicators – MSTI, except for Norway, for which regional population data have been obtained from the Statistics Norway database: http://www.sbs.no.

2.2. Reference Unit

The reference unit for the patent database is the patent application.

Although not all applications are granted, each application still represents technical effort by the inventor and therefore patent applications are considered to be an appropriate indicator of inventive potential. On the other hand, it takes on average just over four years for a patent to be granted at the EPO. In an effort to provide timely data, therefore, patent applications are chosen over patents granted.

2.3. Patent counts as an indicator of regional potential for innovation

Different criteria can be chosen to count patents. Depending on the options made, the obtained indicators will have different value and different meaning. The criteria used for the data extraction from the EPO refer especially to the regional potential for innovation, which are not necessarily the same as the criteria used by the EPO for their own extractions. Therefore, the national totals of European patent applications presented in this source may be somewhat different from those presented in the EPO's annual report. Eurostat counts patents according to the following criteria:

Type of patents covered

Eurostat's patent statistics refer to applications filed directly under the European Patent Convention or to applications filed under the Patent Cooperation Treaty and designating the EPO – Euro-PCT.

Reference year

Patent applications are counted according to the year in which they were filed at the EPO, since this is closer to the date of invention than the year in which they were published. Although the closest date to invention is the priority year, i.e. the year in which the patent was first applied for at any patent office, no complete data are available for the most recent years. In an effort to provide timely and comprehensive data, therefore, the year of filing has been chosen over year of priority.

Geographical assignment of the patent

To get an indication of the regional potential for innovation within the EU, the regional distribution of the patent applications is assigned according to the address of the inventor, i.e. the inventor's place of residence. This approach follows the methodological recommendations as given in *The Regional Dimension of R&D and Innovation Statistics – Regional Manual*. The assignment by the inventor's place of residence has been chosen in order to measure the inventive capacity of a region in contrast to the regional R&D performance. The regional R&D performance could be indicated by allocating the patents to the region of the institution in which R&D is performed and where inventions are developed. However, for institutions with several branches located in different regions, patent applications are generally filed through the headquarters and, therefore, an overestimation in favour of the region of the headquarters could be expected. The approach used here avoids this. However, some underestimation of the regional potential of innovation is still possible as not every inventor will register under the address where he/she is resident but rather the address of his/her enterprise or institution.

If one application has more than one inventor, the application is divided equally among all of them and subsequently among their regions, avoiding thus double counting. This might lead to some over- or underestimation of some regions as the different contributions of several inventors may not have the same weight.

Assignment to the IPC codes

If a patent is assigned to more than one IPC code, the application is equally divided among all the IPC sub-classes (fractional counting). This approach avoids double counting.

2.4. Indicators

Patent data are only collected for one statistical unit, i.e. number of patent applications to the EPO. Then, on the basis of the number of patent applications, Eurostat calculates patent applications per million labour force and patent applications per million population.

Based on the data on patent applications, Eurostat also calculates data on patent applications in high technology fields. High tech patents are counted following the criteria established by the Trilateral Statistical Report, where the subsequent technical fields are defined as high technology: Computer and automated business equipment; micro-organism and genetic engineering; aviation; communications technology; semiconductors; lasers. The IPC sub-classes corresponding to the above high tech fields are listed in the following table.

IPC subclasses considered as high technology

IPC sub-class	Definition
B41J	Typewriters; selective printing mechanisms, i.e. Mechanisms printing otherwise than from a forme; correction of typographical errors
G06C	Digital computers in which all the computation is effected mechanically
G06D	Digital fluid-pressure computing devices
G06E	Optical computing devices
G06F	Electric digital data processing
G06G	Analogue computers
G06J	Hybrid computing arrangements
G06K	Recognition of data; presentation of data; record carriers; handling record carriers
G06M	Counting mechanisms; counting of objects not otherwise provided for
G06N	Computer systems based on specific computational models
G06T	Image data processing or generation, in general
G11C	Static stores
B64B	Lighter-than-air aircraft
B64C	Aeroplanes; helicopters
B64D	Equipment for fitting in or to aircraft; flying suits; parachutes; arrangements or mounting of power plants or propulsion transmissions
B64F	Ground or aircraft-carrier-deck installations
B64G	Cosmonautics; vehicles or equipment therefor
C12M	Apparatus for enzymology or microbiology
C12N	Micro-organisms or enzymes; compositions thereof; propagating, preserving, or maintaining micro-organisms; mutation or genetic engineering; culture media
C12P	Fermentation or enzyme-using processes to synthesise a desired chemical compound or composition or to separate optical isomers from a racemic mixture
C12Q	Measuring or testing processes involving enzymes or micro-organisms ; compositions or test papers therefor; processes of preparing such compositions; condition-responsive control in microbiological or enzymological processes
H01S	Devices using stimulated emission
H01L	Semiconductor devices; electric solid state devices not otherwise provided for
H04B	Transmission
H04H	Broadcast communication
H04J	Multiplex communication
H04K	Secret communication; jamming of communication
H04L	Transmission of digital information, e.g. Telegraphic communication
H04M	Telephonic communication
H04N	Pictorial communication, e.g. Television
H04Q	Selecting
H04R	Loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers; deaf-aid sets; public address systems
H04S	Stereophonic systems.

2.5. Classifications

The main classifications used in the patent database are the International Patent Classification (IPC) and the Nomenclature of Territorial Units for Statistics (NUTS).

International Patent Classification — IPC

The International Patent Classification (IPC) is based on an international multilateral treaty ([7]) administered by the World Intellectual Property Organisation (WIPO). The IPC is used by the industrial property offices of more than 90 States, four regional offices and the International Bureau of WIPO.

According to the IPC classification, an invention is assigned to an IPC-class by its function or intrinsic nature, or by its field of application. IPC is therefore a combined function-application classification system in which the function takes precedence. A patent may contain several technical objects and therefore be designated to several IPC-classes. The IPC is structured into sections, classes, sub-classes, groups and sub-groups. In its seventh edition, the IPC divides technology into eight sections with approximately 69 000 sub-divisions ([8]). Data are given by IPC section and class in the national patent database and by section in the regional database. However, data are treated at the sub-class level.

([7]) The Strasbourg Agreement Concerning the International Patent Classification, which was concluded in 1971 and entered into force in 1975.

([8]) For further detail on the IPC classification visit the WIPO web site http://www.wipo.int.

Nomenclature of Territorial Units for Statistics — NUTS

Originally assigned by postal code at the EPO, patent data are regionalised by Eurostat according to the *Nomenclature of Territorial Units for Statistics* – NUTS. This nomenclature was established by Eurostat to provide a single uniform breakdown of territorial units for the production of regional statistics for the EU. The most detailed regional level data available is at NUTS level 3 ([9]).

2.6. Time series

Eurostat's patent database contains data from 1989 to 2000, with 1999 and 2000 data being provisional. The provisional character explains the drop of patent applications to the EPO reflected in 1999 and specially in 2000 compared to the previous years. This is because for the PCT applications, the data on the country of residence of the applicant(s) and/or the inventor(s) is imputed into the EPO database only after their international publication. This means that these patent applications can only be ascribed to a country or region at least 18 months after the priority date – year in which the patent was first applied for at any patent office. Therefore 1999 final data will only be available in the second half of 2001, and 2000 final data will be ready in the second half of 2002.

2.7. Geographical coverage

Data on patent applications to the EPO in the national database are available for Austria, Belgium, Canada, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, UK and US. Data at the regional level are available for all the Member States of the European Union plus Iceland, Liechtenstein and Norway.

([9]) For further details refer to *Regions, Nomenclature Territorial Units for Statistics NUTS*, Eurostat, 1998.

([10]) Paul Schwander, Lies, *damned lies, and statistics – Is European innovation really lagging its competitors?*, 2001. http://www.ipmatters.net/statistics/001113_lies.html.

Patent data for candidate countries and the Russian Federation are available under NewCronos Theme 9 – Research & Development in the Candidate Countries & Russian Federation.

2.8. Reliability of the data

The data contained in this database are reliable in terms of patenting activities in the framework of the EPO. However, as an indicator of innovative potential of the countries and regions, one has to bear in mind that these data refer only to patent applications to the European Patent Office and that therefore patent applications to the National Patent Offices in Europe are excluded. In this context, some authors ([10]) sustain that looking only at data on patent applications to the EPO may provide an underestimation of the real scope of innovative activities in the European Union.

In the original data received by Eurostat, some patents do not have a postcode assigned, therefore during the regionalisation process these patents are included in a 'not known' NUTS category. The country total is therefore the sum of all the regions at the NUTS 3 level and the 'not known' NUTS group. In any case, the percentage of non-regionalised patents is rather small, for example in 2000 the highest percentage of non-regionalised patents in the EU was 1.92 % for the UK.

2.9. Comparability of the data

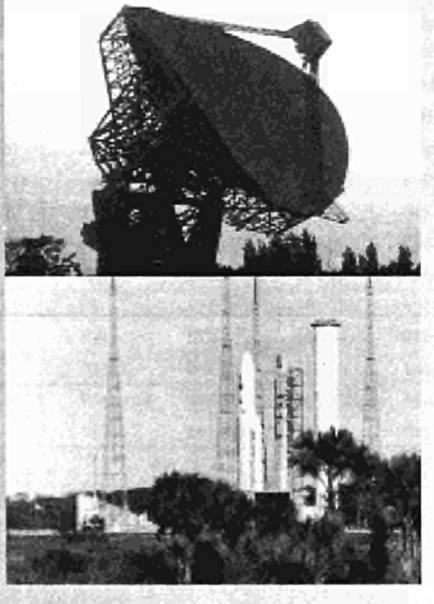
Comparability between years and countries

The European Patent Office follows the harmonised procedure established by the European Patent Convention. As all the data contained in this database originate from the EPO database, comparability of the data is guaranteed both for a cross-country as well as a time series analysis.

Comparability with other sources

The patent applications in this database are counted according to specific criteria designed to measure innovative potential and therefore are not comparable with other sources that use different methods to build up the indicators. This is the case, for example, of the EPO's annual report.

PART 3
R&D DATA



eurostat

Table 1
Government R&D appropriations

In millions of national currencies or ECU/EUR
At current prices

Table 1A — Total Government budget appropriations or outlays on R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**48 511**	**52 610**	**53 926**	**52 989**	**52 555**	**53 753** s	**55 126** s	**55 880** s	**56 451**	**59 102** s	**61 809** ps
EUR-12	38 646	42 238	43 872	43 268	42 999	43 952 s	44 723	44 266	45 150	46 787 s	48 554 ps
CEC	1 314	1 646	1 762	2 047	2 026	2 298	2 591	2 664	2 552	2 441 p	:
B	34 127	36 168	36 695	40 083	40 972	42 891	46 047	49 239	52 269	55 753	57 411 p
DK	6 058	6 253	5 969	5 751	6 308	7 156	:	8 066	8 560	9 045	8 861 p
D	25 119	29 450	31 103	31 382	30 932	31 639	32 194	31 312	31 327	31 924	31 896 p
EL	29 712	34 241	35 068	42 994	51 200	78 333	89 507	100 149	103 223	119 067	131 647 p
E	277 732	297 119	307 574	305 933	316 670	353 505	365 332	406 249	490 642	553 756	696 660 p
F	90 088	93 132	90 381	89 434	89 472	86 537	85 963	82 369	83 328	84 565	85 878 p
IRL	80	89	99	111	106	138	152	155	168	201 p	:
I	9 680 944	10 775 671	12 069 023	10 762 846	10 303 769	10 975 663 p	11 056 438	12 047 336	11 882 967	11 771 405	13 081 108 p
NL	4 721	4 659	4 785	4 800	4 853	5 041	5 343	5 802	6 203	6 572	6 504 p
A	10 064	12 121	13 062	14 291	15 851	15 830	15 462	15 589	16 386	17 349	16 468 p
P	36 381	44 823	62 552	66 925	68 022	72 963	87 360	95 562	108 543	129 061	143 020
FIN	4 239	4 755	4 993	5 240	5 275	5 532	5 582	7 039	7 430	7 582	7 673
S (1)	16 414	18 374	18 465	18 769	18 493	19 578 e	19 578 e	:	15 357	15 191	15 814 p
UK	4 934	4 995	5 044	5 387	5 200	5 575	5 759	5 892	5 707	6 175	6 213 p
EEA	**49 290** a	**53 473**	**54 879**	**53 936**	**53 500**	**54 709** s	**56 139** s	**56 958** s	**57 538**	**60 259** s	**63 004** aps
IS	:	2 270	1 853	3 046	3 387	3 727	3 814	3 695	5 072	4 995 p	:
NO	6 188	6 668	7 462	7 548	7 573	7 555	7 939	8 276	8 658	9 078	9 678
JP	1 920 870	2 022 632	2 134 677	2 266 266	2 358 474	2 499 550	2 810 453	3 002 612	3 032 180	3 156 726	3 284 320
US	63 781	65 897	68 398	69 885	68 331	68 791	69 049	71 652	73 567	77 637 p	80 733 p

Table 1B — Government budget appropriations or outlays on civil R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**37 412**	**41 352**	**43 306**	**42 836**	**42 896**	**44 579** s	**45 859** s	**46 574** s	**47 730**	**50 074** s	**52 625** ps
EUR-12	31 084	34 806	36 659	36 538	36 331	37 648 s	38 575	38 728	39 665	41 455 s	42 850 ps
CEC	1 314	1 646	1 762	2 047	2 026	2 298	2 591	2 664	2 552	2 441 p	:
B	33 966	36 083	36 611	39 999	40 886	42 726	45 808	48 968	52 016	55 530	57 203 p
DK	6 033	6 217	5 933	5 716	6 273	7 120	:	8 030	8 512	8 993	8 810 p
D	21 734	26 215	27 982	28 708	28 283	28 773	28 991	28 314	28 583	29 265	29 337 p
EL	29 044	33 745	34 556	42 145	50 290	77 351	88 398	98 942	101 926	118 009	130 639 p
E	223 955	246 886	262 289	267 257	282 932	316 484	325 702	326 710	348 605	411 385	486 377 p
F	55 388	59 532	58 225	59 644	59 888	60 594	60 399	61 623	63 846	65 336	66 462 p
IRL	80	89	99	111	106	138	152	155	168	201 p	:
I	9 086 944	9 923 493	11 216 845	9 844 846	9 388 769	9 990 148 p	10 717 916	11 515 923	11 567 378	11 623 941	12 966 551 p
NL	4 564	4 497	4 610	4 631	4 683	4 879	5 173	5 616	5 993	6 412	6 336 p
A	10 061	12 119	13 060	14 291	15 849	15 829	15 461	15 589	16 385	17 349	16 465 p
P	36 381	44 507	62 108	66 724	67 001	72 040	86 248	94 231	107 090	126 999	141 330
FIN	4 177	4 687	4 917	5 129	5 164	5 417	5 468	6 931	7 328	7 478	7 573
S (1)	12 538	13 354	13 973	14 360	15 001	15 489 e	15 489 e	:	14 235	14 074	14 688 p
UK	2 779	2 786	2 974	3 097	3 179	3 564	3 616	3 580	3 608	3 828	4 177 p
EEA	**38 140** a	**42 132**	**44 206**	**43 733**	**43 791**	**45 483** s	**46 816** s	**47 595** s	**48 760**	**51 173** s	**53 761** aps
IS	:	:	1 853	3 046	3 387	3 727	3 814	3 695	5 072	4 995 p	:
NO	5 782	6 257	7 043	7 129	7 149	7 125	7 482	7 820	8 185	8 593	9 215 p
JP	1 816 602	1 907 587	2 007 688	2 129 091	2 217 686	2 345 051	2 645 174	2 827 272	2 888 004	3 010 197	3 148 239
US	23 856	26 569	28 315	28 636	30 567	31 587	31 248	32 061	33 744	:	:

Methodological notes

(1) Data are provided as provisional series by Sweden. No data are provided as final. As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 2
Government R&D appropriations

In millions of ECU/EUR
At current prices and current exchange rates

Table 2A — Total Government budget appropriations or outlays on R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**48 511**	**52 610**	**53 926**	**52 989**	**52 555**	**53 753** s	**55 126** s	**55 880** s	**56 451**	**59 102** s	**61 809** ps
EUR-12	38 646	42 238	43 872	43 268	42 999	43 952 s	44 723	44 266	45 150	46 787 s	48 554 ps
CEC	1 314	1 646	1 762	2 047	2 026	2 298	2 591	2 664	2 552	2 441 p	:
B	804	857	882	990	1 033	1 113	1 172	1 215	1 287	1 382	1 423 p
DK	771	791	764	757	836	976	:	1 078	1 141	1 216	1 189 p
D	12 240	14 360	15 395	16 206	16 072	16 885	16 860	15 940	15 909	16 322	16 308 p
EL	148	152	142	160	178	259	293	324	312	366	391 p
E	2 146	2 313	2 321	2 052	1 993	2 169	2 273	2 449	2 935	3 328	4 187 p
F	13 030	13 356	13 197	13 482	13 592	13 262	13 239	12 456	12 623	12 892	13 092 p
IRL	104	116	130	139	134	169	191	208	214	256 p	:
I	6 361	7 028	7 564	5 845	5 380	5 153 p	5 644	6 244	6 114	6 079	6 756 p
NL	2 042	2 016	2 103	2 207	2 248	2 402	2 497	2 624	2 795	2 982	2 951 p
A	697	840	919	1 049	1 171	1 201	1 151	1 128	1 183	1 261	1 197 p
P	201	251	358	355	345	372	446	481	538	644	713
FIN	873	951	860	782	852	969	958	1 197	1 242	1 275	1 291
S (1)	2 183	2 457	2 451	2 058	2 018	2 098 e	2 299 e	:	1 722	1 725	1 873 p
UK	6 911	7 125	6 838	6 906	6 702	6 726	7 077	8 511	8 437	9 374	10 194 p
EEA	**49 290** a	**53 473**	**54 879**	**53 936**	**53 500**	**54 709** s	**56 139** s	**56 958** s	**57 538**	**60 259** s	**63 004** aps
IS	:	31	25	38	41	44	45	46	64	65 p	:
NO	779	832	928	908	904	912	969	1 032	1 023	1 092	1 193
JP	10 459	12 148	12 999	17 413	19 440	20 320	20 353	21 905	20 709	26 020	33 017
US	50 086	53 179	52 691	59 680	57 444	52 592	54 380	63 183	65 621	72 845 p	87 569 p

Table 2B — Government budget appropriations or outlays on civil R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**37 412**	**41 352**	**43 306**	**42 836**	**42 896**	**44 579** s	**45 859** s	**46 574** s	**47 730**	**50 074** s	**52 625** ps
EUR-12	31 084	34 806	36 659	36 538	36 331	37 648 s	38 575	38 728	39 665	41 455 s	42 850 ps
CEC	1 314	1 646	1 762	2 047	2 026	2 298	2 591	2 664	2 552	2 441 p	:
B	801	855	880	988	1 031	1 108	1 166	1 208	1 281	1 377	1 418 p
DK	768	786	760	753	832	972	:	1 073	1 135	1 210	1 182 p
D	10 591	12 783	13 851	14 826	14 696	15 356	15 182	14 414	14 516	14 963	15 000 p
EL	144	150	140	157	175	255	289	320	308	362	388 p
E	1 731	1 922	1 979	1 792	1 780	1 942	2 026	1 969	2 085	2 472	2 923 p
F	8 011	8 537	8 502	8 991	9 098	9 286	9 302	9 319	9 672	9 960	10 132 p
IRL	104	116	130	139	134	169	191	208	214	256 p	:
I	5 970	6 472	7 030	5 347	4 903	4 690 p	5 471	5 969	5 951	6 003	6 697 p
NL	1 974	1 946	2 027	2 129	2 170	2 324	2 417	2 540	2 700	2 910	2 875 p
A	697	840	919	1 049	1 171	1 201	1 151	1 128	1 183	1 261	1 197 p
P	201	249	355	354	340	367	441	475	531	633	705
FIN	860	937	847	766	834	949	938	1 179	1 225	1 258	1 274
S (1)	1 667	1 785	1 855	1 574	1 637	1 660 e	1 819 e	:	1 597	1 598	1 739 p
UK	3 893	3 974	4 031	3 971	4 097	4 300	4 443	5 172	5 334	5 811	6 854 p
EEA	**38 140** a	**42 132**	**44 206**	**43 733**	**43 791**	**45 483** s	**46 816** s	**47 595** s	**48 760**	**51 173** s	**53 761** aps
IS	:	:	25	38	41	44	45	46	64	65 p	:
NO	727	780	876	858	854	860	913	975	967	1 034	1 136 p
JP	9 891	11 457	12 225	16 359	18 279	19 064	19 156	20 625	19 725	24 813	31 649
US	18 734	21 441	21 813	24 454	25 697	24 149	24 610	28 271	30 099	:	:

Methodological note

(1) Data are provided as provisional series by Sweden. No data are provided as final. As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 3
Government R&D appropriations

In millions of constant 1995 ECU/EUR
At 1995 prices

Table 3A — Total Government budget appropriations or outlays on R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**55 215**	**57 280**	**56 877**	**55 216**	**53 575**	**53 753** s	**53 623** s	**53 050** s	**52 851**	**54 058** s	**55 024** ps
EUR-12	45 152	47 494	47 357	45 510	44 212	43 952 s	43 821	43 492	43 886	44 726 s	45 782 ps
B	1 014	1 046	1 023	1 077	1 081	1 113	1 180	1 246	1 301	1 375	1 398 p
DK	918	921	855	812	876	976	:	1 051	1 095	1 123	1 061 p
D	15 997 i	17 901	18 004	17 519	16 845	16 885	17 012	16 399	16 232	16 398	16 447 p
EL	188	181	162	173	185	259	275	288	282	317	340 p
E (1)	2 221 i	2 215 i	2 147 i	2 049 i	2 036 i	2 169	2 166	2 356	2 782	3 052	3 713 p
F	15 341	15 397	14 658	14 174	13 935	13 262	12 992	12 280	12 315	12 438	12 511 p
IRL	113	123	134	143	134	169	182	178	182	211 p	:
I	5 775	5 972	6 402	5 492	5 081	5 153 p	4 929	5 246	5 039	4 912	5 340 p
NL (1)	2 510	2 413	2 423	2 385	2 354	2 402	2 515	2 679	2 809	2 926	2 804 p
A (1)	890	1 032	1 073	1 141	1 232	1 201	1 158	1 153	1 203	1 263	1 184 p
P	274 i	301 i	382 i	383 i	366 i	372	433	456	499	575	617
FIN	829	913	951	974	962	969	980	1 211	1 241	1 260	1 240
S (2)	2 084 i	2 168 i	2 155	2 131	2 051 i	2 098 e	2 069 e	:	1 581	1 556	1 606 p
UK	7 062	6 696	6 509	6 763	6 436	6 726	6 727	6 688	6 289	6 652	6 576 p
EEA	**56 016** a	**58 152**	**57 847**	**56 191**	**54 558**	**54 709** s	**54 585** s	**54 021** s	**53 885**	**55 072** s	**55 921** aps
IS	:	30	23	38	41	44	44	41	54	51 p	:
NO (1)	800	843	947	937	942	912	919	929	980	964	895
JP	16 403	16 778	17 406	18 368	19 096	20 320	23 031	24 507	24 773	26 159	27 668
US	55 286	55 120	55 867	55 713	53 361	52 592	51 805	52 723	53 463	55 576 p	56 626 p

Table 3B — Government budget appropriations or outlays on civil R&D

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**42 682**	**45 249**	**45 776**	**44 784**	**43 848**	**44 579** s	**44 625** s	**44 564** s	**45 047**	**46 263** s	**47 328** ps
EUR-12	36 199	39 022	39 457	38 458	37 380	37 648 s	37 764	38 015	38 518	39 580 s	40 360 ps
B	1 009	1 043	1 021	1 075	1 079	1 108	1 174	1 239	1 295	1 369	1 393 p
DK	914	916	850	807	871	972	:	1 047	1 089	1 117	1 055 p
D	13 842 i	15 935	16 197	16 027	15 402	15 356	15 319	14 829	14 810	15 032	15 128 p
EL	184	178	159	170	182	255	272	285	279	314	337 p
E (1)	1 791 i	1 840 i	1 831 i	1 790 i	1 819 i	1 942	1 931	1 894	1 977	2 268	2 592 p
F	9 432	9 842	9 443	9 453	9 327	9 286	9 129	9 187	9 436	9 609	9 682 p
IRL	113	123	134	143	134	169	182	178	182	211 p	:
I	5 420	5 500	5 950	5 024	4 630	4 690 p	4 778	5 015	4 905	4 851	5 293 p
NL (1)	2 427	2 329	2 334	2 301	2 272	2 324	2 435	2 593	2 714	2 855	2 732 p
A (1)	890	1 032	1 073	1 141	1 232	1 201	1 158	1 153	1 203	1 263	1 184 p
P	274 i	299 i	379 i	381 i	360 i	367	427	450	492	566	610
FIN	817	900	936	954	942	949	960	1 193	1 224	1 243	1 224
S (2)	1 592 i	1 576 i	1 631 i	1 630	1 664	1 660 e	1 637 e	:	1 465	1 442	1 492 p
UK	3 977	3 735	3 838	3 889	3 933	4 300	4 223	4 064	3 976	4 124	4 421 p
EEA	**43 430** a	**46 040**	**46 693**	**45 707**	**44 779**	**45 483** s	**45 535** s	**45 484** s	**46 028**	**47 226** s	**48 180** aps
IS	:	:	23	38	41	44	44	41	54	51 p	:
NO (1)	748	791	894	885	890	860	866	878	927	912	852 p
JP	15 512	15 824	16 370	17 256	17 956	19 064	21 677	23 076	23 595	24 945	26 521
US	20 678	22 224	23 128	22 829	23 870	24 149	23 444	23 591	24 523	:	:

Methodological notes

i: GDP deflator estimated using ESA79 data. ESA '79 uses base 1990 = 100 rather than 1995 = 100 for ESA '95.
(1) Forecasted GDP deflator for 2000.
(2) Data are provided as provisional series by Sweden. No data are provided as final.
As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Tables 4 and 5
Government R&D appropriations

Table 4 — Total GBAORD as a % of GDP

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.90**	**0.91**	**0.90**	**0.88**	**0.83**	**0.82** s	**0.80** s	**0.77** s	**0.74**	**0.74** s	**0.73** ps
EUR-12	0.90	0.91	0.90	0.88	0.84	0.82 s	0.80	0.77	0.76	0.75 s	0.74 ps
B	0.52	0.52	0.50	0.54	0.53	0.53	0.55	0.56	0.58	0.59	0.58 p
DK	0.73	0.73	0.67	0.64	0.65	0.71	:	0.72	0.73	0.74	0.68 p
D	0.94 i	1.00	0.99	0.97	0.91	0.90	0.90	0.85	0.83	0.82	0.80 p
EL	0.22	0.21	0.18	0.20	0.21	0.29	0.30	0.30	0.29	0.31	0.32 p
E	0.53	0.52	0.50	0.48	0.47	0.49	0.47	0.50	0.56	0.59	0.69 p
F	1.36	1.35	1.27	1.24	1.19	1.12	1.08	1.00	0.97	0.96	0.93 p
IRL	0.28	0.30	0.31	0.33	0.29	0.33	0.33	0.29	0.28	0.29 p	:
I	0.73	0.75	0.80	0.69	0.62	0.61 p	0.58	0.61	0.57	0.55	0.58 p
NL	0.88	0.83	0.81	0.79	0.76	0.76	0.77	0.79	0.80	0.80	0.74 p
A	0.55	0.62	0.63	0.66	0.70	0.67	0.63	0.62	0.63	0.64	0.58 p
P	0.36 i	0.39 i	0.48 i	0.49 i	0.45 i	0.45	0.50	0.51	0.54	0.60	0.63
FIN	0.81	0.95	1.03	1.06	1.01	0.98	0.95	1.11	1.08	1.05	0.98
S (1)	1.17 i	1.23 i	1.24 i	1.25	1.16	1.14 e	1.12 e	:	0.81	0.76	0.76 p
UK	0.89	0.85	0.83	0.84	0.77	0.78	0.76	0.73	0.67	0.69	0.67 p
EEA	**0.90** a	**0.91**	**0.90**	**0.88**	**0.83**	**0.82** s	**0.80** s	**0.77** s	**0.74**	**0.74** s	**0.73** aps
IS	:	0.57 i	0.46	0.74	0.77	0.83	0.79	0.70	0.88	0.80 p	:
NO	0.86	0.87	0.95	0.92	0.87	0.81	0.78	0.76	0.78	0.76	0.68
JP	0.44	0.43	0.44	0.47	0.48	0.50	0.55	0.58	0.59	0.62	0.64
US	1.10	1.10	1.08	1.05	0.97	0.93	0.88	0.86	0.84	0.84 p	0.81 p

Table 5 — Total GBAORD as a % of total government expenditure

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	:	:	:	:	:	:	**1.58** s	**1.55** s	**1.53**	**1.54** s	:
EUR-12	:	:	:	:	:	:	1.57	1.53	1.52	1.53 s	:
B	:	:	:	:	:	:	1.07	1.09	1.12	1.17	:
DK	:	:	:	:	:	:	:	1.25	1.29	1.33	:
D	:	:	:	:	:	:	1.83	1.73	1.69	1.69	:
EL	:	:	:	:	:	:	0.61	0.64	0.61	0.65	:
E	:	:	:	:	:	:	1.12	1.18	1.34	1.45	:
F	:	:	:	:	:	:	1.97	1.81	1.80	1.78	:
IRL	:	:	:	:	:	:	0.83	0.82	0.78	:	:
I	:	:	:	:	:	:	1.08	1.19	1.15	1.12	:
NL	:	:	:	:	:	:	1.60	1.63	1.68	1.72	:
A	:	:	:	:	:	:	1.14	1.15	1.15	1.19	:
P	:	:	:	:	:	:	1.13	1.17	1.22	1.34	:
FIN	:	:	:	:	:	:	1.62	1.97	2.01	2.03	:
S (1)	:	:	:	:	:	:	1.70 e	:	1.32 s	1.25 s	:
UK	:	:	:	:	:	:	1.72	1.74	1.65	1.73	:
EEA	:	:	:	:	:	:	:	:	:	:	:
IS	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:
JP	:	:	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:	:	:

Methodological notes

I: GDP estimated using the year on year growth rates of GDP with ESA '79 data and applying these growth rates retrospectively to the missing ESA '95 series.

(1) Data are provided as provisional series by Sweden. No data are provided as final. As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 6
Government R&D appropriations
By chapter of NABS

In millions of national currencies or ECU/EUR
At current prices

Table 6A — Government budget appropriations or outlays on R&D — 1999

	EU-15	EUR-12	CEC	B	DK	D	EL	E	F	IRL	I
1. Exploration and exploitation of the earth	**850** s	680 s	- p	549	116	573	5 625	10 654	612	1 p	214 820
2. Infrastructure and general planning of land-use	**933** s	649 s	168 p	522	172	548	4 374	5 535	544	5 p	42 479
3. Control and care of the environment	**1 564** s	1 272 s	187 p	1 466	310	1 101	3 836	14 986	1 330	3 p	322 920
4. Protection and improvement of human health	**3 640** s	2 169 s	195 p	766	162	1 063	6 468	27 859	4 641	6 p	832 449
5. Production, distribution and rational utilization of energy	**2 021** s	1 851 s	371 p	1 454	187	1 161	1 884	21 780	4 132	- p	538 369
6. Agricultural production and technology	**2 000** s	1 464 s	130 p	1 722	810	815	8 467	20 652	2 514	40 p	264 092
7. Industrial production and technology	**5 567** s	5 324 s	826 p	13 338	867	4 091	13 541	101 955	5 179	60 p	885 276
8. Social structures and relationships	**1 822** s	1 272 s	93 p	2 430	842	1 075	5 203	4 856	815	14 p	539 310
9. Exploration and exploitation of space	**3 459** s	3 154 s	17 p	6 769	236	1 440	756	26 750	9 296	- p	1 043 253
10. Research financed from general university funds (GUF)	**18 628** s	15 534 s	- p	10 815	3 426	12 229	58 212	138 550	15 390	48 p	5 566 000
11. Non-oriented research	**8 726** s	7 412 s	158 p	12 723	1 865	5 096	9 282	32 429	18 421	25 p	1 374 973
12. Other civil research	**865** s	676 s	249 p	2 976	-	73	360	5 380	2 460	- p	-
13. Defence	**9 028** s	5 332 s	- p	223	51	2 659	1 058	142 371	19 229	- p	147 464
Total appropriations	**59 102** s	**46 787** s	**2 441** p	**55 753**	**9 045**	**31 924**	**119 067**	**553 756**	**84 565**	**201** p	**11 771 405**

Table 6B — Government budget appropriations or outlays on R&D — 2000 (provisional)

	EU-15	EUR-12	CEC	B	DK	D	EL	E	F	IRL	I
1. Exploration and exploitation of the earth	**881** s	689 s	:	557	114	581	5 066	13 806	496	:	213 143
2. Infrastructure and general planning of land-use	**895** s	610 s	:	630	163	525	6 663	4 505	632	:	35 618
3. Control and care of the environment	**1 665** s	1 347 s	:	2 074	248	1 096	4 401	18 601	1 567	:	325 823
4. Protection and improvement of human health	**3 862** s	2 269 s	:	912	176	1 092	7 636	33 570	4 819	:	884 720
5. Production, distribution and rational utilization of energy	**2 105** s	1 922 s	:	1 568	176	1 114	1 944	25 359	4 355	:	585 550
6. Agricultural production and technology	**2 070** s	1 468 s	:	1 704	1 101	802	9 144	29 355	2 106	:	274 399
7. Industrial production and technology	**6 163** s	5 923 s	:	12 954	566	3 911	18 137	110 155	5 495	:	2 023 264
8. Social structures and relationships	**1 866** s	1 256 s	:	2 555	988	1 158	5 339	4 069	644	:	460 171
9. Exploration and exploitation of space	**3 639** s	3 288 s	:	6 814	247	1 450	1 181	38 438	9 423	:	1 135 627
10. Research financed from general university funds (GUF)	**19 173** s	15 609 s	:	11 033	3 452	12 271	60 265	148 935	15 379	:	5 566 000 e
11. Non-oriented research	**9 405** s	7 823 s	:	13 722	1 580	5 305	10 474	51 009	19 296	:	1 462 236
12. Other civil research	**901** s	646 s	:	2 679	-	33	390	8 574	2 249	:	-
13. Defence	**9 183** s	5 704 s	:	207	50	2 558	1 008	210 284	19 416	:	114 557
Total appropriations	**61 809** s	**48 554** s	:	**57 411**	**8 861**	**31 896**	**131 647**	**696 660**	**85 878**	:	**13 081 108**

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 6
Government R&D appropriations
By chapter of NABS

In millions of national currencies or ECU/EUR
At current prices

Table 6A — Government budget appropriations or outlays on R&D — 1999

NL	A	P	FIN	S (1)	UK	EEA	IS	NO	JP	US		
53	425	2 034	128	297	79	**875** s	- p	206	46 750	:	Exploration and exploitation of the earth	1.
219	285	9 529	182	907	104	**961** s	265 p	209	111 996	:	Infrastructure and general planning of land-use	2.
263	308	5 551	166	243	147	**1 597** s	29 p	273	22 429	:	Control and care of the environment	3.
244	456	8 370	530	267	934	**3 721** s	210 p	650	117 102	:	Protection and improvement of human health	4.
181	123	1 100	471	898	29	**2 045** s	127 p	186	608 322	:	Production, distribution and rational utilization of energy	5.
197	594	15 610	433	291	260	**2 110** s	1 176 p	786	109 176	:	Agricultural production and technology	6.
840	1 200	19 982	2 121	612	37	**5 702** s	62 p	1 113	205 485	:	Industrial production and technology	7.
183	372	4 331	389	958	216	**1 928** s	2 212 p	643	27 146	:	Social structures and relationships	8.
207	6	689	194	500	143	**3 486** s	- p	223	198 419	:	Exploration and exploitation of space	9.
3 011	11 083	45 200	1 922	7 724	1 157	**19 058** s	- p	3 570	1 156 116	:	Research financed from general university funds (GUF)	10.
716	2 493	10 320	944	-	700	**8 826** s	914 p	735	405 774	:	Non-oriented research	11.
298	5	4 284	-	1 377	21	**865** s	- p	-	1 482	:	Other civil research	12.
160	-	2 062	104	1 117	2 347	**9 086** s	- p	485	146 529	:	Defence	13.
6 572	**17 349**	**129 061**	**7 582**	**15 191**	**6 175**	**60 259** s	**4 995** p	**9 078**	**3 156 726**	**77 637** p	**Total appropriations**	

Table 6B — Government budget appropriations or outlays on R&D — 2000 (provisional)

NL	A	P	FIN	S	UK	EEA	IS	NO	JP	US		
52	405	2 307	118	264	88	**907** as	:	218	55 289	:	Exploration and exploitation of the earth	1.
193	323	10 805	167	644	114	**922** as	:	223	123 035	:	Infrastructure and general planning of land-use	2.
252	342	6 295	175	216	158	**1 700** as	:	279	26 247	:	Control and care of the environment	3.
237	413	9 491	525	211	942	**3 946** as	:	679	127 527	:	Protection and improvement of human health	4.
197	76	1 247	405	912	31	**2 135** as	:	243	593 330	:	Production, distribution and rational utilization of energy	5.
198	549	18 582	415	292	256	**2 177** as	:	867	113 754	:	Agricultural production and technology	6.
851	1 049	18 651	2 185	861	38	**6 308** as	:	1 181	221 917	:	Industrial production and technology	7.
175	363	4 911	418	891	227	**1 951** as	:	682	29 933	:	Social structures and relationships	8.
199	12	781	160	532	156	**3 668** as	:	230	182 650	:	Exploration and exploitation of space	9.
2 993	10 498	51 700	2 060	8 050	1 309	**19 643** as	:	3 811	1 164 087	:	Research financed from general university funds (GUF)	10.
693	2 431	11 702	946	-	835	**9 504** as	:	802	459 690	:	Non-oriented research	11.
299	4	4 858	-	1 815	24	**901** as	:	-	50 780	:	Other civil research	12.
168	4	1 690	100	1 126	2 035	**9 243** as	:	484	136 081	:	Defence	13.
6 504	**16 468**	**143 020**	**7 673**	**15 814**	**6 213**	**63 004** as	:	**9 699**	**3 284 320**	**80 733**	**Total appropriations**	

Methodological notes

(1) Data are provided as provisional series by Sweden. No data are provided as final. As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 7
Government R&D appropriations
By chapter of NABS

In millions of ECU/EUR
At current prices and current exchange rates

Table 7A — Government budget appropriations or outlays on R&D — 1999

	EU-15	EUR-12	CEC	B	DK	D	EL	E	F	IRL	I
1. Exploration and exploitation of the earth	**850** s	680 s	47 p	14	16	293	17	64	93	1 p	111
2. Infrastructure and general planning of land-use	**933** s	649 s	168 p	13	23	280	13	33	83	6 p	22
3. Control and care of the environment	**1 564** s	1 272 s	187 p	36	42	563	12	90	203	4 p	167
4. Protection and improvement of human health	**3 640** s	2 169 s	195 p	19	22	543	20	167	708	7 p	430
5. Production, distribution and rational utilization of energy	**2 021** s	1 851 s	371 p	36	25	594	6	131	630	- p	278
6. Agricultural production and technology	**2 000** s	1 464 s	130 p	43	109	417	26	124	383	51 p	136
7. Industrial production and technology	**5 567** s	5 324 s	826 p	331	117	2 092	42	613	789	76 p	457
8. Social structures and relationships	**1 822** s	1 272 s	93 p	60	113	549	16	29	124	18 p	279
9. Exploration and exploitation of space	**3 459** s	3 154 s	17 p	168	32	736	2	161	1 417	- p	539
10. Research financed from general university funds (GUF)	**18 628** s	15 534 s	- p	268	461	6 253	179	833	2 346	60 p	2 875
11. Non-oriented research	**8 726** s	7 412 s	158 p	315	251	2 606	28	195	2 808	32 p	710
12. Other civil research	**865** s	676 s	249 p	74	-	37	1	32	375	- p	-
13. Defence	**9 028** s	5 332 s	- p	6	7	1 359	3	856	2 931	- p	76
Total appropriations	**59 102** s	**46 787** s	**2 441** p	**1 382**	**1 216**	**16 322**	**366**	**3 328**	**12 892**	**256** p	**6 079**

Table 7B — Government budget appropriations or outlays on R&D — 2000 (provisional)

	EU-15	EUR-12	CEC	B	DK	D	EL	E	F	IRL	I
1. Exploration and exploitation of the earth	**881** s	689 s	:	14	15	297	15	83	76	:	110
2. Infrastructure and general planning of land-use	**895** s	610 s	:	16	22	269	20	27	96	:	18
3. Control and care of the environment	**1 665** s	1 347 s	:	51	33	560	13	112	239	:	168
4. Protection and improvement of human health	**3 862** s	2 269 s	:	23	24	558	23	202	735	:	457
5. Production, distribution and rational utilization of energy	**2 105** s	1 922 s	:	39	24	570	6	152	664	:	302
6. Agricultural production and technology	**2 070** s	1 468 s	:	42	148	410	27	176	321	:	142
7. Industrial production and technology	**6 163** s	5 923 s	:	321	76	1 999	54	662	838	:	1 045
8. Social structures and relationships	**1 866** s	1 256 s	:	63	133	592	16	24	98	:	238
9. Exploration and exploitation of space	**3 639** s	3 288 s	:	169	33	741	4	231	1 437	:	587
10. Research financed from general university funds (GUF)	**19 173** s	15 609 s	:	273	463	6 274	179	895	2 345	:	2 875 c
11. Non-oriented research	**9 405** s	7 823 s	:	340	212	2 712	31	307	2 942	:	755
12. Other civil research	**901** s	646 s	:	66	-	17	1	52	343	:	-
13. Defence	**9 183** s	5 704 s	:	5	7	1 308	3	1 264	2 960	:	59
Total appropriations	**61 809** s	**48 554** s	:	**1 423**	**1 189**	**16 308**	**391**	**4 187**	**13 092**	:	**6 756**

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 7
Government R&D appropriations
By chapter of NABS

In millions of ECU/EUR
At current prices and current exchange rates

Table 7A — Government budget appropriations or outlays on R&D — 1999

NL	A	P	FIN	S (1)	UK	EEA	IS	NO	JP	US		
24	31	10	21	34	121	**875**	-	25	385	:	Exploration and exploitation of the earth	1.
99	21	48	31	103	158	**961**	3	25	923	:	Infrastructure and general planning of land-use	2.
119	22	28	28	28	223	**1 597**	-	33	185	:	Control and care of the environment	3.
111	33	42	89	30	1 418	**3 721**	3	78	965	:	Protection and improvement of human health	4.
82	9	5	79	102	44	**2 045**	2	22	5 014	:	Production, distribution and rational utilization of energy	5.
89	43	78	73	33	394	**2 110**	15	95	900	:	Agricultural production and technology	6.
381	87	100	357	69	57	**5 702**	1	134	1 694	:	Industrial production and technology	7.
83	27	22	65	109	328	**1 928**	29	77	224	:	Social structures and relationships	8.
94	-	3	33	57	217	**3 486**	-	27	1 636	:	Exploration and exploitation of space	9.
1 366	805	225	323	877	1 757	**19 058**	-	430	9 530	:	Research financed from general university funds (GUF)	10.
325	181	51	159	-	1 063	**8 826**	12	88	3 345	:	Non-oriented research	11.
135	-	21	-	156	32	**865**	-	-	12	:	Other civil research	12.
72	-	10	18	127	3 563	**9 086**	-	58	1 208	:	Defence	13.
2 982	**1 261**	**644**	**1 275**	**1 725**	**9 374**	**60 259**	**65**	**1 092**	**26 020**	**72 845** p	**Total appropriations**	

Table 7B — Government budget appropriations or outlays on R&D — 2000 (provisional)

NL	A	P	FIN	S	UK	EEA	IS	NO	JP	US		
24	29	12	20	31	145	**907** as	:	27	556	:	Exploration and exploitation of the earth	1.
87	24	54	28	76	187	**922** as	:	27	1 237	:	Infrastructure and general planning of land-use	2.
114	25	31	29	26	260	**1 700** as	:	34	264	:	Control and care of the environment	3.
108	30	47	88	25	1 545	**3 946** as	:	84	1 282	:	Protection and improvement of human health	4.
89	5	6	68	108	51	**2 135** as	:	30	5 965	:	Production, distribution and rational utilization of energy	5.
90	40	93	70	35	420	**2 177** as	:	107	1 144	:	Agricultural production and technology	6.
386	76	93	367	102	62	**6 308** as	:	146	2 231	:	Industrial production and technology	7.
79	26	24	70	106	373	**1 951** as	:	84	301	:	Social structures and relationships	8.
90	1	4	27	63	255	**3 668** as	:	28	1 836	:	Exploration and exploitation of space	9.
1 358	763	258	346	953	2 148	**19 643** as	:	470	11 702	:	Research financed from general university funds (GUF)	10.
315	177	58	159	0	1 370	**9 504** as	:	99	4 621	:	Non-oriented research	11.
135	0	24	0	215	40	**901** as	:	0	510	:	Other civil research	12.
76	0	8	17	133	3 340	**9 243** as	:	60	1 368	:	Defence	13.
2 951	**1 197**	**713**	**1 291**	**1 873**	**10 194**	**63 004** as	**:**	**1 196**	**33 017**	**87 569**	**Total appropriations**	

Methodological notes

(1) Data are provided as provisional series by Sweden. No data are provided as final. As a result, after two years, provisional data are considered as final.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

In millions of constant 1995 ECU/EUR
At 1995 prices

Table 8
Government R&D appropriations

Table 8A — GBAORD by NABS socio-economic objective — EU-15

		1995	1996	1997	1998	1999	2000
1.	Exploration and exploitation of the earth	846 253 s	795 732 s	744 533 s	764 278	777 434 s	782 379 s
2.	Infrastructure and general planning of land-use	818 521 s	789 256 s	829 296 s	851 138	856 187 s	793 625 s
3.	Control and care of the environment	1 474 853 s	1 517 853 s	1 431 869 s	1 507 062	1 441 378 s	1 497 405 s
4.	Protection and improvement of human health	2 902 418 s	2 925 322 s	2 962 568 s	2 891 301	3 092 978 s	3 142 040 s
5.	Production, distribution and rational utilization of energy	1 678 857 s	1 732 038 s	1 810 396 s	1 905 152	1 909 098 s	1 952 800 s
6.	Agricultural production and technology	1 918 718 s	1 887 271 s	1 951 118 s	1 889 234	1 802 195 s	1 802 975 s
7.	Industrial production and technology	5 300 027 s	5 200 195 s	4 998 086 s	5 043 518	5 335 389 s	5 725 944 s
8.	Social structures and relationships	1 287 217 s	1 378 634 s	1 309 364 s	1 400 117	1 639 861 s	1 634 681 s
9.	Exploration and exploitation of space	3 410 162 s	3 463 109 s	3 365 596 s	3 208 512	3 221 112 s	3 320 295 s
10.	Research financed from general university funds (GUF)	16 297 555 s	16 162 311 s	16 702 918 s	17 221 138	17 234 022 s	17 305 976 s
11.	Non-oriented research	7 831 687 s	8 145 271 s	7 924 725 s	7 759 552	8 133 903 s	8 547 131 s
12.	Other civil research	812 436 s	627 930 s	533 979 s	606 127	818 955 s	822 886 s
13.	Defence	9 174 271 s	8 997 623 s	8 485 848 s	7 803 461	7 795 027 s	7 696 216 s
	Total appropriations	**53 752 973 s**	**53 622 544 s**	**53 050 296 s**	**52 850 592**	**54 057 536 s**	**55 024 355 s**

Table 8B — GBAORD by NABS socio-economic objective — Japan

		1995	1996	1997	1998	1999	2000
1.	Exploration and exploitation of the earth	257 259	310 380	330 444	333 562	387 405	465 762
2.	Infrastructure and general planning of land-use	386 353	542 999	658 905	689 086	928 081	1 036 463
3.	Control and care of the environment	113 582	132 724	139 390	151 360	185 863	221 108
4.	Protection and improvement of human health	575 659	814 297	985 603	902 563	970 393	1 074 304
5.	Production, distribution and rational utilization of energy	4 146 563	5 356 431	4 940 657	4 930 466	5 041 004	4 998 291
6.	Agricultural production and technology	694 388	778 052	823 490	853 788	904 713	958 279
7.	Industrial production and technology	762 690	776 224	1 611 387	1 699 577	1 702 800	1 869 458
8.	Social structures and relationships	237 050	236 602	229 856	236 043	224 952	252 160
9.	Exploration and exploitation of space	1 498 927	1 527 249	1 543 634	1 560 300	1 644 246	1 538 668
10.	Research financed from general university funds (GUF)	8 427 332	8 980 266	9 164 058	9 273 230	9 580 428	9 806 424
11.	Non-oriented research	1 963 792	2 219 582	2 646 614	2 964 592	3 362 542	3 872 490
12.	Other civil research	-	1 991	1 975	825	12 281	427 777
13.	Defence	1 255 967	1 354 436	1 431 114	1 177 938	1 214 247	1 146 364
	Total appropriations	**20 319 562**	**23 031 232**	**24 507 127**	**24 773 332**	**26 158 956**	**27 667 548**

Table 8C — GBAORD by NABS socio-economic objective — USA

		1995	1996	1997	1998	1999	2000
1.	Exploration and exploitation of the earth	689 597	610 716	598 224	716 556	:	:
2.	Infrastructure and general planning of land-use	1 454 882	1 384 239	1 348 764	1 362 619	:	:
3.	Control and care of the environment	419 722	361 628	419 419	414 963	:	:
4.	Protection and improvement of human health	8 917 363	9 097 715	9 519 343	10 292 680	:	:
5.	Production, distribution and rational utilization of energy	2 174 295	1 891 418	1 745 372	688 940	:	:
6.	Agricultural production and technology	1 323 384	1 261 196	1 255 314	1 123 525	:	:
7.	Industrial production and technology	401 373	324 115	300 952	289 239	:	:
8.	Social structures and relationships	580 271	492 924	465 776	507 984	:	:
9.	Exploration and exploitation of space	6 051 941	5 885 080	5 771 796	5 957 734	:	:
10.	Research financed from general university funds (GUF)	-	-	-	-	:	:
11.	Non-oriented research	2 136 069	2 135 255	2 166 263	3 168 544	:	:
12.	Other civil research	-	-	-	-	:	:
13.	Defence	28 443 208	28 360 771	29 131 970	28 940 576	:	:
	Total appropriations	**52 592 106**	**51 805 056**	**52 723 193**	**53 463 359**	**55 575 890**	**56 625 693**

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 9
Government R&D appropriations

In millions of national currencies or ECU/EUR
At current prices

Table 9A — Government budget appropriations or outlays on R&D — On biotechnology

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CEC	27	61	67	93	112	104	163	168	186	:
B	:	:	:	:	:	:	:	:	:	:
DK	20	16	:	:	:	:	9	:	:	:
D	154	166	246	348	431	461	460	444	476	493
EL	8	6	6	15	15	17	22	20	22	31
E	:	:	:	53	80	92	93	150	139	167
F	:	:	:	:	:	:	:	:	:	:
IRL	8	9	9	13	11	13	16	:	:	:
I	:	21	20	13	12	:	28	28	23	51
NL	:	:	:	:	:	:	:	:	:	:
A	:	:	:	:	:	:	:	:	:	:
P	:	:	:	:	:	:	:	:	:	:
FIN	:	:	:	:	:	:	:	:	:	:
S	:	:	:	:	:	:	:	:	:	:
UK	:	49	138	129	166	149	182	211	250	272

Table 9B — Government budget appropriations or outlays on R&D — On information technology

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CEC	466	593	601	699	637	810	697	734	704	:
B	:	:	:	:	:	:	:	:	:	:
DK	9	8	:	:	:	:	0	:	:	:
D	518	591	723	692	609	617	675	613	631	668
EL	14	10	9	6	12	23	28	36	34	44
E	82	56	63	53	47	48	59	34	50	60
F	:	:	:	:	:	:	:	:	:	:
IRL	11	14	9	16	14	25	18	:	:	:
I	:	71	70	79	14	:	10	12	16	8
NL	:	:	:	:	:	:	:	:	:	:
A	:	:	:	:	:	:	:	:	:	:
P	:	:	:	:	:	:	:	:	:	:
FIN	:	:	:	:	:	:	:	:	:	:
S	:	:	:	:	:	:	:	:	:	:
UK	:	109	120	115	134	107	154	207	148	153

Table 9C — Government budget appropriations or outlays on R&D — On developing countries

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CEC	31	39	60	64	57	63	80	78	78	:
B	:	:	:	:	:	:	:	:	:	:
DK	16	13	:	:	:	:	7	:	:	:
D	91	89	90	96	89	99	141	131	:	118
EL	:	:	:	:	:	:	:	:	:	:
E	4	2	11	6	3	4	2	2	3	5
F	:	:	:	:	:	:	:	:	:	:
IRL	:	:	:	:	:	:	:	:	:	:
I	:	0	0	:	:	:	6	0	0	1
NL	:	:	:	:	:	:	:	:	:	:
A	:	:	:	:	:	:	:	:	:	:
P	:	:	:	:	:	:	:	:	:	:
FIN	:	:	:	:	:	:	:	:	:	:
S	:	:	:	:	:	:	:	:	:	:
UK	:	75	118	149	14	142	130	162	154	354

Source: Eurostat.

Table 10
R&D expenditure
At the national level

In millions of national currencies or ECU/EUR
At current prices

Table 10A — R&D expenditure — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**115 765** s	**117 366** s	**120 623** s	**124 475** s	**129 846** s	**135 326** s	**142 002** s	**153 336** s	**160 926** s
EUR-12	90 817 s	92 871 s	94 490 s	98 487 s	101 972 s	103 337 s	107 821 s	116 123 s	120 510 s
B	:	127 271	133 345	139 895	150 691	163 625	172 524	186 293	:
DK	14 897 e	15 695	:	18 544	19 657 e	21 652	23 577 s	24 575 e	:
D	76 355	76 721	77 326	79 518	80 899 e	83 825	87 324 e	94 440 e	97 950 e
EL	:	100 458	:	132 401 e	:	167 728	:	:	:
E	539 918	557 403	548 154	590 686	641 020 e	672 013	784 513 e	831 158	908 439 e
F	169 379	173 717	175 562	179 091	182 588	182 065	185 760	193 694	197 789 e
IRL	327 e	399 e	478 e	557 e	637 e	732 e	:	:	:
I	17 957 958	17 613 239	17 388 858	17 863 901	19 155 413	19 580 020 e	20 457 315 s	22 201 758 e	:
NL	11 186	11 647	12 486	13 251	14 114	14 999	15 136	:	:
A	30 321 e	31 694	34 944 e	36 877 e	39 291 e	42 450 e	47 258 e	49 534 e	50 741 e
P	80 396	:	:	92 229	:	115 655	:	163 538	:
FIN	10 388	10 748	11 941	12 917	14 886	17 270	19 946	23 062	:
S	:	46 221	:	59 357	:	67 026	71 358 e	75 814	:
UK	12 688	13 541	14 046	14 170	14 470	14 779	15 581	16 666	17 201
EEA	**117 506** s	**119 152** s	**122 497** s	**126 477** s	**132 012** s	**137 714** s	**144 424** s	**155 933** s	**163 701** s
IS	5 309 e	5 497	6 047 e	6 958	7 317 e	9 650	11 773	11 763	:
NO	:	14 263	:	15 908	:	18 187	:	20 319	:
JP	13 909 493 ei	13 709 139 ei	13 596 030 ei	14 408 236 ei	14 155 058 ei	14 794 030	15 169 205	15 032 659	:
US	165 735 i	165 868 i	169 270 i	183 694 i	196 995 i	212 246 i	226 653 ip	243 548 ip	:

Table 10B — R&D expenditure — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**73 522** s	**73 698** s	**75 578** s	**78 101** s	**81 623** s	**86 179** s	**90 817** s	**99 542** s	**105 567** s
EUR-12	56 781 s	57 198 s	58 175 s	60 763 s	62 877 s	64 622 s	67 498 s	73 858 s	77 628 s
B	84 219 e	91 173	95 119	99 695	107 857	117 173	122 436	133 409	145 426
DK	8 703 e	9 151	:	10 641	11 973 e	13 302	15 394	15 310 e	:
D	52 285	51 236	51 190	52 832	53 600 s	56 543	59 329 e	65 510 e	68 560 e
EL	:	26 924	:	39 037	36 411	42 860	:	:	:
E	272 708	266 176	256 317	284 891	309 911 e	327 922	408 842	432 120	481 469 e
F	105 835	107 179	108 568	109 213	112 373	113 854	115 656	122 369	126 652 e
IRL	213 e	271 e	334 e	397 e	461 e	535 e	:	:	:
I	10 021 744	9 450 383	9 206 050	9 540 714	10 246 771	10 410 784	10 712 929	11 938 458 e	:
NL	5 458	5 749	6 428	6 913	7 364	8 185	8 199	:	:
A	:	17 715	:	:	:	:	:	:	:
P	17 452	:	:	19 292	:	25 976	:	37 048	:
FIN	5 896	6 234	7 431	8 166	9 850	11 396	13 396	15 720	:
S	:	33 457	:	44 029	:	50 151	54 361 e	56 953	:
UK	8 489	9 069	9 204	9 256	9 431	9 680	10 261	11 303	11 743
EEA	**74 440** s	**74 638** s	**76 595** s	**79 216** s	**82 832** s	**87 519** s	**92 154** s	**100 972** s	**107 067** s
IS	1 167 e	1 710	1 882 e	2 216	2 277 e	3 918	4 310	4 741	:
NO	:	7 632	:	9 021	:	10 352	:	11 369	:
JP	9 560 685 i	9 053 608 i	8 980 253 i	9 395 896 i	10 058 409 i	10 658 357	10 800 063	10 630 161	:
US	119 110 i	117 400 i	119 595 i	132 103 i	144 667 i	157 539 i	169 180 i	184 379 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 10
R&D expenditure
At the national level

In millions of national currencies or ECU/EUR
At current prices

Table 10C — R&D expenditure — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**18 797** s	**19 311** s	**19 504** s	**20 066** s	**20 398** s	**20 174** s	**21 141** s	**21 584** s	**22 115** s
EUR-12	15 710 s	16 251 s	16 236 s	16 932 s	17 150 s	16 540 s	17 337 s	18 064 s	18 325 s
B	:	4 738	4 693	4 826	4 943	5 394	5 933	6 175	:
DK	2 646 e	2 795	:	3 156	3 199 e	3 341	3 410 e	3 840	:
D	10 906	11 648	11 606	12 255	12 330	12 268	12 804 e	13 210 e	13 460 e
EL	:	32 122	:	33 749	:	39 287	:	56 236	:
E	108 033	111 495	113 441	110 000	117 290 e	116 726	127 668	140 307	150 128 e
F	35 420	36 695	36 219	37 591	37 008	33 982	34 627	35 141	35 140 e
IRL	37 e	41 e	46 e	47 e	51 e	51 e	55 e	50 e	54 e
I	3 946 012	3 765 240	3 696 280	3 774 394	3 827 012	4 053 735	4 484 116	4 696 883 e	:
NL	2 057	2 108	2 327	2 396	2 614	2 715	2 828	:	:
A	:	2 815	:	:	:	:	:	:	:
P	17 788	:	:	24 923	:	28 008	:	45 864	:
FIN	2 138	2 258	2 259	2 227	2 346	2 349	2 511	2 795	:
S	:	2 002	:	2 231	:	2 372	2 469 e	2 548	:
UK	1 846	1 928	2 050	2 042	2 070	2 017	2 078	1 788	1 802
EEA	**19 145** s	**19 669** s	**19 861** s	**20 428** s	**20 783** s	**20 582** s	**21 557** s	**22 008** s	**22 579** s
IS	2 302 e	2 247	2 472 e	2 606	2 991 e	2 875	4 391	3 720	:
NO	:	2 737	:	2 747	:	2 990	:	3 130	:
JP	1 160 101	1 278 640	1 226 427	1 390 132	1 328 535	1 306 976	1 402 914	1 481 731	:
US	16 359 i	16 957 i	16 847 i	17 596 i	17 083 i	17 475 i	17 949 i	17 589 ip	:

Table 10D — R&D expenditure — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**22 476** s	**23 349** s	**24 670** s	**25 428** s	**26 908** s	**28 048** s	**29 059** s	**31 111** s	**32 100** s
EUR-12	17 705 s	18 768 s	19 472 s	20 162 s	21 287 s	21 558 s	22 306 s	23 505 s	23 850 s
B	:	29 584	31 559	33 423	35 834	38 953	41 996	44 510	:
DK	3 384 e	3 587	:	**4 547**	4 253 e	4 803	4 773 e	5 133	:
D	13 164	13 837	14 530	14 431	14 969	15 014	15 191 e	15 720 e	15 930 e
EL	:	40 841	:	58 665	:	84 862	:	128 235	:
E	156 098	174 341	173 092	189 166	206 768	219 950	239 373	250 345	267 869 e
F	25 876	27 497	28 406	29 917	30 747	31 706	32 708	33 243	33 062 e
IRL	73 e	84 e	95 e	108 e	121 e	140 e	160 e	:	:
I	3 990 202	4 397 616	4 486 528	4 548 793	5 081 630	5 115 501 e	5 260 270 e	5 566 417 e	:
NL	3 381	3 499	3 602	3 813	4 002	4 099	4 109	:	:
A	:	11 082	:	:	:	:	:	:	:
P	34 587	:	:	34 168	:	46 309	:	63 024	:
FIN	2 283	2 185	2 251	2 524	2 690	3 444	3 911	4 547	:
S	:	10 431	:	13 004	:	14 452	14 478 e	16 226	:
UK	2 129	2 313	2 623	2 695	2 792	2 892	3 039	3 342	3 419
EEA	**22 948** s	**23 834** s	**25 168** s	**25 950** s	**27 477** s	**28 686** s	**29 725** s	**31 852** s	**32 909** s
IS	1 623 e	1 320	1 452 e	1 915	1 757 e	2 731	2 936	3 156	:
NO	:	3 894	:	4 139	:	4 846	:	5 819	:
JP	2 576 281 e i	2 758 712 e i	2 752 551 e i	2 982 186 e i	2 088 861 e i	2 111 730	2 252 160	2 231 158	:
US	24 654 i	25 784 i	26 943 i	28 019 i	29 131 i	30 747 i	32 597 ip	34 424 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 11
R&D expenditure
At the national level

In millions of ECU/EUR
At current prices and current exchange rates

Table 11A — R&D expenditure — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**115 765** s	**117 366** s	**120 623** s	**124 475** s	**129 846** s	**135 326** s	**142 002** s	**153 336** s	**160 926** s
EUR-12	90 817 s	92 871 s	94 490 s	98 487 s	101 972 s	103 337 s	107 821 s	116 123 s	120 510 s
B	:	3 145	3 363	3 629	3 835	4 037	4 247	4 618	:
DK	1 908 e	2 067	:	2 531	2 671 e	2 893	3 144 s	3 305 e	:
D	37 794	39 621	40 179	42 438	42 366 e	42 672	44 346 e	48 286 e	50 081 e
EL	:	374	:	437 e	:	542	:	:	:
E	4 074	3 738	3 449	3 624	3 988 e	4 051	4 693 e	4 995	5 460 e
F	24 733	26 187	26 671	27 447	28 121	27 533	28 140	29 529	30 153 e
IRL	429 e	499 e	603 e	683 e	803 e	979 e	:	:	:
I	11 255	9 566	9 080	8 386	9 778	10 149 e	10 525 s	11 466 e	:
NL	4 917	5 354	5 785	6 313	6 596	6 784	6 819	:	:
A	2 133 e	2 326	2 581 e	2 797 e	2 925 e	3 071 e	3 411 e	3 600 e	3 687 e
P	460	:	:	470	:	582	:	816	:
FIN	1 789	1 605	1 929	2 263	2 554	2 937	3 334	3 879	:
S	:	5 067	:	6 361	:	7 748	8 003 e	8 608	:
UK	17 201	17 361	18 103	17 097	17 781	21 348	23 034	25 300	28 223
EEA	**117 506** s	**119 152** s	**122 497** s	**126 477** s	**132 012** s	**137 714** s	**144 424** s	**155 933** s	**163 701** s
IS	**71** e	69	**73** e	82	86 e	120	148	152	:
NO	:	1 716	:	1 920	:	2 268	:	2 445	:
JP	84 699 ei	105 335 ei	112 066 ei	117 129 ei	102 510 ei	107 925	103 604	123 912	:
US	127 675 i	141 646 i	142 301 i	140 438 i	155 145 i	187 159 i	202 172 ip	228 516 ip	:

Table 11B — R&D expenditure — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**73 522** s	**73 698** s	**75 578** s	**78 101** s	**81 623** s	**86 179** s	**90 817** s	**99 542** s	**105 567** s
EUR-12	56 781 s	57 198 s	58 175 s	60 763 s	62 877 s	64 622 s	67 498 s	73 858 s	77 628 s
B	2 025 e	2 253	2 399	2 586	2 745	2 891	3 014	3 307	3 605
DK	1 114 e	1 205	:	1 452	1 627 e	1 777	2 053	2 059 e	:
D	25 880	26 460	26 599	28 196	28 070 s	28 784	30 130 e	33 495 e	35 054 e
EL	:	100	:	129	119	139	:	:	:
E	2 058	1 785	1 613	1 748	1 928 e	1 977	2 445	2 597	2 894 e
F	15 454	16 157	16 493	16 737	17 307	17 218	17 520	18 655	19 308 e
IRL	280 e	339 e	421 e	487 e	581 e	715 e	:	:	:
I	6 281	5 133	4 807	4 479	5 231	5 396	5 512	6 166 e	:
NL	2 399	2 643	2 978	3 294	3 442	3 702	3 694	:	:
A	:	1 300	:	:	:	:	:	:	:
P	100	:	:	98	:	131	:	185	:
FIN	1 015	931	1 200	1 430	1 690	1 938	2 239	2 644	:
S	:	3 668	:	4 718	:	5 797	6 097 e	6 466	:
UK	11 508	11 627	11 862	11 168	11 589	13 982	15 169	17 159	19 267
EEA	**74 440** s	**74 638** s	**76 595** s	**79 216** s	**82 832** s	**87 519** s	**92 154** s	**100 972** s	**107 067** s
IS	16 e	22	23 e	26	27 e	49	54	61	:
NO	:	918	:	1 089	:	1 291	:	1 368	:
JP	58 218 i	69 564 i	74 020 i	76 382 i	72 843 i	77 755	73 763	87 623	:
US	91 757 i	100 256 i	100 541 i	100 995 i	113 933 i	138 918 i	150 907 i	172 999 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 11
R&D expenditure
At the national level

In millions of ECU/EUR
At current prices and current exchange rates

Table 11C — R&D expenditure — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**18 797** s	**19 311** s	**19 504** s	**20 066** s	**20 398** s	**20 174** s	**21 141** s	**21 584** s	**22 115** s
EUR-12	15 710 s	16 251 s	16 236 s	16 932 s	17 150 s	16 540 s	17 337 s	18 064 s	18 325 s
B	:	117	118	125	126	133	146	153	:
DK	339 e	368	:	**431**	435 e	446	455 e	516	:
D	5 398	6 015	6 031	6 540	6 457	6 245	6 502 e	6 754 e	6 882 e
EL	:	120	:	111	:	127	:	173	:
E	815	748	714	675	730 e	704	764	843	902 e
F	5 172	5 532	5 502	5 761	5 700	5 139	5 245	5 357	5 357 e
IRL	49 e	51 e	58 e	58 e	64 e	69 e	70 e	64 e	68 e
I	2 473	2 045	1 930	1 772	1 954	2 101	2 307	2 426 e	:
NL	904	969	1 078	1 142	1 222	1 228	1 274	:	:
A	:	207	:	:	:	:	:	:	:
P	102	:	:	127	:	141	:	229	:
FIN	368	337	365	390	403	399	420	470	:
S	:	219	:	239	:	274	277 e	289	:
UK	2 503	2 472	2 642	2 464	2 544	2 913	3 072	2 714	2 957
EEA	**19 145** s	**19 669** s	**19 861** s	**20 428** s	**20 783** s	**20 582** s	**21 557** s	**22 008** s	**22 579** s
IS	31 e	28	30 e	31	35 e	36	55	48	:
NO	:	329	:	332	:	373	:	377	:
JP	7 064	9 825	10 109	11 301	9 621	9 535	9 582	12 214	:
US	12 602 i	14 481 i	14 163 i	13 453 i	13 454 i	15 410 i	16 010 i	16 503 ip	:

Table 11D — R&D expenditure — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**22 476** s	**23 349** s	**24 670** s	**25 428** s	**26 908** s	**28 048** s	**29 059** s	**31 111** s	**32 100** s
EUR-12	17 705 s	18 768 s	19 472 s	20 162 s	21 287 s	21 558 s	22 306 s	23 505 s	23 850 s
B	:	731	796	867	912	961	1 034	1 103	:
DK	433 e	472	:	620	578 e	642	636 e	690	:
D	6 516	7 146	7 550	7 702	7 839	7 643	7 715 e	8 038 e	8 145 e
EL	:	152	:	194	:	274	:	394	:
E	1 178	1 169	1 089	1 161	1 286	1 326	1 432	1 505	1 610 e
F	3 778	4 145	4 315	4 585	4 735	4 795	4 955	5 068	5 040 e
IRL	96 e	105 e	120 e	132 e	152 e	188 e	204 e	:	:
I	2 501	2 388	2 343	2 135	2 594	2 651 e	2 706 e	2 875 e	:
NL	1 486	1 609	1 669	1 817	1 870	1 854	1 851	:	:
A	:	813	:	:	:	:	:	:	:
P	198	:	:	174	:	233	:	314	:
FIN	393	326	364	442	462	586	654	765	:
S	:	1 144	:	1 394	:	1 671	1 624 e	1 842	:
UK	2 886	2 965	3 381	3 252	3 431	4 177	4 493	5 073	5 610
EEA	**22 948** s	**23 834** s	**25 168** s	**25 950** s	**27 477** s	**28 686** s	**29 725** s	**31 852** s	**32 909** s
IS	22 e	17	17 e	23	21 e	34	37	41	:
NO	:	469	:	500	:	604	:	700	:
JP	15 688 e i	21 197 e i	22 688 e i	24 243 e i	15 127 e i	15 405	15 382	18 391	:
US	18 992 i	22 019 i	22 650 i	21 421 i	22 942 i	27 113 i	29 076 ip	32 299 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 12
R&D expenditure
At the national level

In millions of constant 1995 ECU/EUR
At 1995 prices

Table 12A — R&D expenditure — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**123 411** s	**122 693** s	**123 138** s	**124 475** s	**126 668** s	**129 076** s	**133 353** s	**140 882** s	**144 102** s
EUR-12	99 769 s	98 228 s	97 523 s	98 487 s	100 471 s	102 519 s	105 823 s	112 109 s	115 323 s
B	:	3 421	3 519	3 629	3 862	4 141	4 295	4 593	:
DK	2 133 e	2 217	:	2 531	2 617 e	2 822	3 015 s	3 051 e	:
D	44 197	42 830	42 110	42 438	42 747 e	43 902	45 246 e	48 510 e	50 507 e
EL	:	405	:	**437** e	:	**483**	:	:	:
E	3 768 s	3 733 s	3 525 s	3 624	3 800 e	3 897	4 448 e	4 581	4 842 ef
F	27 469	27 532	27 343	27 447	27 596	27 142	27 453	28 488	28 814 e
IRL	442 e	513 e	604 e	683 e	764 e	840 e	:	:	:
I	9 526	8 988	8 575	8 386	8 540	8 527 e	8 675 s	9 265 e	:
NL	5 664	5 786	6 058	6 313	6 645	6 925	6 855	:	:
A	2 492 e	2 531	2 716 e	2 797 e	2 942 e	3 139 e	3 470 e	3 606 e	3 648 ef
P	490 s	:	:	470	:	552	:	728	:
FIN	1 978	1 999	2 179	2 263	2 613	2 972	3 331	3 833	:
S	:	5 247	:	6 361	:	6 960	7 345 e	7 767	:
UK	16 373	17 001	17 382	17 097	16 901	16 775	17 169	17 954	18 206
EEA	**125 172** s	**124 521** s	**125 076** s	**126 464** s	**128 711** s	**131 208** s	**135 637** s	**143 140** s	**146 155** s
IS	67 e	68	73 e	82	85 e	108	125	121	:
NO	:	1 771	:	1 920	:	2 042	:	2 157	:
JP	113 415 ei	111 112 ei	110 086 ei	117 129 ei	115 999 ei	120 748	123 935	124 572	:
US	135 372 i	132 231 i	132 186 i	140 438 i	147 798 i	156 175 i	164 716 ip	174 342 ip	:

Table 12B — R&D expenditure — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**78 603** s	**77 114** s	**77 195** s	**78 101** s	**79 695** s	**82 288** s	**85 410** s	**91 566** s	**94 634** s
EUR-12	62 780 s	60 637 s	60 133 s	60 763 s	62 108 s	64 359 s	66 539 s	71 654 s	74 697 s
B	2 349 e	2 451	2 510	2 586	2 765	2 965	3 048	3 289	3 542
DK	1 246 e	1 293	:	1 452	1 594 e	1 734	1 969	1 901 e	:
D	30 265	28 603	27 877	28 196	28 323 s	29 613	30 741 e	33 650 e	35 352 e
EL	:	109	:	129	112	123	:	:	:
E	1 903 s	1 783 s	1 648 s	1 748	1 837 e	1 902	2 318	2 382	2 566 ef
F	17 164	16 986	16 909	16 737	16 984	16 973	17 093	17 998	18 451 e
IRL	287 e	349 e	422 e	487 e	553 e	614 e	:	:	:
I	5 316	4 822	4 540	4 479	4 568	4 534	4 543	4 982 e	:
NL	2 763	2 856	3 119	3 294	3 467	3 779	3 713	:	:
A	:	1 415	:	:	:	:	:	:	:
P	106 s	:	:	98	:	124	:	165	:
FIN	1 123	1 159	1 356	1 430	1 729	1 961	2 237	2 613	:
S	:	3 798	:	4 718	:	5 207	5 596 e	5 835	:
UK	10 955	11 387	11 390	11 168	11 016	10 987	11 307	12 177	12 429
EEA	**79 536** s	**78 079** s	**78 250** s	**79 212** s	**80 838** s	**83 486** s	**86 678** s	**92 814** s	**95 748** s
IS	15 e	21	23 e	26	26 e	44	46	49	:
NO	:	948	:	1 089	:	1 162	:	1 207	:
JP	77 955 i	73 379 i	72 712 i	76 382 i	82 427 i	86 993	88 238	88 089	:
US	97 288 i	93 592 i	93 394 i	100 995 i	108 539 i	115 921 i	122 948 i	131 986 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 12
R&D expenditure
At the national level

In millions of constant 1995 ECU/EUR
At 1995 prices

Table 12C — R&D expenditure — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**19 985** s	**20 150** s	**19 884** s	**20 066** s	**19 913** s	**19 263** s	**19 852** s	**19 945** s	**20 013** s
EUR-12	17 008 s	17 107 s	16 700 s	16 932 s	16 826 s	16 292 s	16 872 s	17 281 s	17 373 s
B	:	127	124	125	127	137	148	152	:
DK	379 e	395	:	431	426 e	435	436 e	477	:
D	6 313	6 502	6 320	6 540	6 515	6 425	6 634 e	6 785 e	6 941 e
EL	:	129	:	111	:	113	:	150	:
E	754 s	747 s	730 s	675	695 e	677	724	773	800 ef
F	5 744	5 816	5 641	5 761	5 593	5 066	5 117	5 169	5 119 e
IRL	50 e	52 e	58 e	58 e	61 e	59 e	60 e	53 e	53 ef
I	2 093	1 921	1 823	1 772	1 706	1 765	1 902	1 960 e	:
NL	1 041	1 047	1 129	1 142	1 231	1 253	1 281	:	:
A	:	225	:	:	:	:	:	:	:
P	109 s	:	:	127	:	134	:	204	:
FIN	407	420	412	390	412	404	419	465	:
S	:	227	:	239	:	246	254 e	261	:
UK	2 382	2 421	2 537	2 464	2 418	2 289	2 290	1 926	1 907
EEA	**20 333** s	**20 513** s	**20 251** s	**20 423** s	**20 273** s	**19 626** s	**20 237** s	**20 310** s	**20 352** s
IS	29 e	28	30 e	31	35 e	32	47	38	:
NO	:	340	:	332	:	336	:	332	:
JP	9 459	10 363	9 930	11 301	10 887	10 667	11 462	12 279	:
US	13 362 i	13 518 i	13 156 i	13 452 i	12 817 i	12 859 i	13 044 i	12 591 ip	:

Table 12D — R&D expenditure — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**23 798** s	**24 383** s	**25 174** s	**25 428** s	**26 168** s	**26 670** s	**27 201** s	**28 410** s	**28 496** s
EUR-12	19 290 s	19 788 s	20 064 s	20 162 s	20 889 s	21 260 s	21 752 s	22 509 s	22 588 s
B	:	795	833	867	918	986	1 045	1 097	:
DK	485 e	507	:	620	566 e	626	610 e	637	:
D	7 620	7 725	7 913	7 702	7 910	7 864	7 871 e	8 075 e	8 214 e
EL	:	165	:	194	:	244	:	341	:
E	1 089 s	1 168 s	1 113 s	1 161	1 226	1 275	1 357	1 380	1 428 ef
F	4 196	4 358	4 424	4 585	4 647	4 727	4 834	4 889	4 816 e
IRL	99 e	108 e	120 e	132 e	145 e	161 e	174 e	:	:
I	2 117	2 244	2 212	2 135	2 266	2 228 e	2 231 e	2 323 e	:
NL	1 712	1 738	1 748	1 817	1 884	1 892	1 861	:	:
A	:	885	:	:	:	:	:	:	:
P	211 s	:	:	**174**	:	221	:	281	:
FIN	435	406	411	**442**	472	593	653	756	:
S	:	1 184	:	1 393	:	1 501	1 490 e	1 662	:
UK	2 747	2 904	3 246	3 252	3 261	3 283	3 349	3 600	3 619
EEA	**24 276** s	**24 880** s	**25 689** s	**25 946** s	**26 704** s	**27 239** s	**27 831** s	**29 054** s	**29 095** s
IS	21 e	16	18 e	23	20 e	31	31	32	:
NO	:	483	:	500	:	544	:	618	:
JP	21 006 ei	22 359 ei	22 287 ei	24 243 ei	17 118 ei	17 236	18 400	18 489	:
US	20 137 i	20 555 i	21 040 i	21 421 i	21 856 i	22 624 i	23 689 ip	24 642 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 13
R&D expenditure
At the national level

In millions
Current PPS

Table 13A — R&D expenditure — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**111 881** s	**112 782** s	**116 037** s	**118 902** s	**124 852** s	**130 541** s	**137 083** s	**148 179** s	**155 917** s
EUR-12	87 175 s	87 082 s	89 019 s	91 705 s	96 284 s	100 315 s	105 149 s	113 938 s	120 230 s
B	:	3 162	3 325	3 455	3 761	4 112	4 348	4 720	:
DK	1 506 e	1 655	:	1 999	2 147 e	2 386	2 590 s	2 687 e	:
D	34 174	33 806	34 748	35 795	37 457 e	39 319	40 856 e	44 937 e	47 821 ef
EL	:	505	:	592 e	:	680	:	:	:
E	4 349	4 417	4 202	4 390	4 782 e	4 989	5 662 e	5 971	6 486 ef
F	24 401	24 493	24 651	25 154	25 765	25 506	26 110	27 720	28 862 ef
IRL	473 e	565 e	697 e	796 e	879 e	1 021 e	:	:	:
I	11 382	10 642	10 545	10 455	11 036	11 219 e	11 899 s	13 006 e	:
NL	4 843	5 057	5 466	5 930	6 235	6 946	7 121	:	:
A	2 004 e	2 119	2 334 e	2 436 e	2 666 e	2 940 e	3 245 e	3 447 e	3 588 ef
P	643	:	:	703	:	891	:	1 195	:
FIN	1 510	1 636	1 807	1 999	2 296	2 692	3 060	3 535	:
S	:	4 356	:	5 536	:	6 449	6 824 e	7 290	:
UK	19 050	19 688	20 233	19 662	20 456	21 391	22 520	24 264	25 633 f
EEA	**113 400** s	**114 356** s	**117 643** s	**120 564** s	**126 610** s	**132 492** s	**139 112** s	**150 311** s	**158 130** s
IS	62 e	62	67 e	83	87 e	113	133	132	:
NO	:	1 512	:	1 578	:	1 838	:	1 999	:
JP	69 897 ei	69 339 ei	69 797 ei	76 133 ei	77 835 ei	83 011	86 572	88 891	:
US	157 843 i	153 656 i	156 877 i	170 832 i	185 233 i	201 688 i	216 462 ip	234 348 ip	:

Table 13B — R&D expenditure — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**70 723** s	**70 371** s	**72 165** s	**74 003** s	**77 906** s	**82 464** s	**86 899** s	**95 359** s	**101 416** s
EUR-12	54 171 s	53 066 s	54 212 s	55 906 s	58 821 s	62 162 s	65 178 s	71 752 s	76 764 s
B	2 061 e	2 265	2 372	2 462	2 692	2 945	3 086	3 380	3 741 f
DK	880 e	965	:	1 147	1 308 e	1 466	1 691	1 674 e	:
D	23 401	22 576	23 004	23 782	24 817 s	26 522	27 758 e	31 171 e	33 472 ef
EL	:	135	:	174	157	174	:	:	:
E	2 197	2 109	1 965	2 117	2 312 e	2 434	2 950	3 105	3 437 ef
F	15 247	15 112	15 244	15 339	15 857	15 950	16 257	17 512	18 482 ef
IRL	308 e	384 e	487 e	568 e	636 e	746 e	:	:	:
I	6 352	5 710	5 583	5 584	5 904	5 965	6 231	6 994 e	:
NL	2 363	2 496	2 814	3 094	3 253	3 791	3 857	:	:
A	:	1 184	:	:	:	:	:	:	:
P	140	:	:	147	:	200	:	271	:
FIN	857	949	1 124	1 264	1 519	1 776	2 055	2 410	:
S	:	3 153	:	4 107	:	4 825	5 199 e	5 476	:
UK	12 745	13 186	13 259	12 843	13 333	14 011	14 831	16 456	17 499 f
EEA	**71 524** s	**71 199** s	**73 035** s	**74 925** s	**78 883** s	**83 556** s	**88 017** s	**96 531** s	**102 612** s
IS	14 e	19	21 e	27	27 e	46	49	53	:
NO	:	809	:	895	:	1 046	:	1 119	:
JP	48 044 i	45 792 i	46 101 i	49 648 i	55 309 i	59 805	61 637	62 858	:
US	113 438 i	108 757 i	110 839 i	122 853 i	136 029 i	149 702 i	161 573 i	177 414 ip	:

Methodological notes

PPS exchange based on ESA '79 data:
EEA countries, reference period 1992-94, BES, GOV, HES, PNP and all sectors.
See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 13
R&D expenditure
At the national level

In millions
Current PPS

Table 13C — R&D expenditure — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**18 425** s	**18 702** s	**18 950** s	**19 350** s	**19 789** s	**19 668** s	**20 666** s	**21 179** s	**21 833** s
EUR-12	15 212 s	15 415 s	15 480 s	15 968 s	16 296 s	16 153 s	17 052 s	17 911 s	18 462 s
B	:	118	117	119	123	136	150	156	:
DK	267 e	295	:	340	349 e	368	375 e	420	:
D	4 881	5 132	5 215	5 517	5 709	5 754	5 991 e	6 286 e	6 571 ef
EL	:	161	:	151	:	159	:	222	:
E	870	884	870	818	875 e	867	921	1 008	1 072 ef
F	5 103	5 174	5 085	5 280	5 222	4 761	4 867	5 029	5 128 ef
IRL	54 e	57 e	67 e	68 e	70 e	72 e	72 e	64 e	67 e
I	2 501	2 275	2 242	2 209	2 205	2 323	2 608	2 751 e	:
NL	891	915	1 019	1 072	1 155	1 257	1 330	:	:
A	:	188	:	:	:	:	:	:	:
P	142	:	:	190	:	216	:	335	:
FIN	311	**344**	**342**	345	362	366	385	428	:
S	:	189	:	208	:	228	236 e	245	:
UK	2 772	2 803	2 953	2 833	2 926	2 919	3 003	2 603	2 685 f
EEA	**18 729** s	**19 017** s	**19 257** s	**19 654** s	**20 106** s	**20 004** s	**21 017** s	**21 529** s	**22 203** s
IS	27 e	25	27 e	31	36 e	34	50	42	:
NO	:	290	:	273	:	302	:	308	:
JP	5 830	6 467	6 296	7 345	7 305	7 334	8 007	8 762	:
US	15 580 i	15 709 i	15 614 i	16 364 i	16 063 i	16 606 i	17 142 i	16 925 ip	:

Table 13D — R&D expenditure — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**21 724** s	**22 661** s	**24 023** s	**24 638** s	**26 210** s	**27 467** s	**28 523** s	**30 543** s	**31 533** s
EUR-12	17 154 s	17 937 s	18 710 s	19 196 s	20 503 s	21 361 s	22 221 s	23 556 s	24 261 s
B	:	735	787	825	894	979	1 058	1 128	:
DK	342 e	378	:	490	465 e	529	524 e	561	:
D	5 892	6 097	6 529	6 496	6 931	7 043	7 107 e	7 480 e	7 777 ef
EL	:	205	:	262	:	344	:	506	:
E	1 257	1 382	1 327	1 406	1 542	1 633	1 727	1 799	1 912 ef
F	3 728	3 877	3 988	4 202	4 339	4 442	4 597	4 757	4 825 ef
IRL	106 e	119 e	139 e	154 e	166 e	196 e	210 e	:	:
I	2 529	2 657	2 721	2 662	2 928	2 931 e	3 060 e	3 261 e	:
NL	1 464	1 519	1 577	1 706	1 768	1 898	1 933	:	:
A	:	741	:	:	:	:	:	:	:
P	277	:	:	**260**	:	357	:	460	:
FIN	332	333	341	391	415	537	600	697	:
S	:	983	:	1 213	:	1 390	1 385 e	1 560	:
UK	3 196	3 363	3 778	3 739	3 947	4 186	4 392	4 866	5 095 f
EEA	**22 136** s	**23 089** s	**24 449** s	**25 072** s	**26 671** s	**27 989** s	**29 081** s	**31 151** s	**32 178** s
IS	19 e	15	16 e	23	21 e	32	33	35	:
NO	:	413	:	411	:	490	:	573	:
JP	12 946 ei	13 953 ei	14 131 ei	15 758 ei	11 486 ei	11 849	12 853	13 193	:
US	23 480 i	23 886 i	24 970 i	26 057 i	27 392 i	29 217 i	31 131 ip	33 124 ip	:

Methodological notes

PPS exchange based on ESA '79 data:
EEA countries, reference period 1992-94, BES, GOV, HES, PNP and all sectors.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 14
R&D expenditure
At the national level

As a % of GDP

Table 14A — R&D expenditure — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**1.93** s	**1.95** s	**1.91** s	**1.90** s	**1.88** s	**1.86** s	**1.87** s	**1.92** s	**1.90** s
EUR-12	1.86 s	1.89 s	1.84 s	1.83 s	1.82 s	1.80 s	1.80 s	1.86 s	1.85 s
B	:	1.71	1.71	1.72	1.81	1.88	1.90	1.98	:
DK	1.68 e	1.74	:	1.84	1.85 e	1.94	2.02 s	2.00 e	:
D	2.42	2.37	2.28	2.26	2.26 e	2.29	2.31 e	2.44 e	2.46 e
EL	:	0.47	:	0.49 e	:	0.51	:	:	:
E	0.88	0.88	0.81	0.81	0.83 e	0.82	0.90 e	0.89	0.90 e
F	2.38	2.40	2.34	2.31	2.30	2.22	2.17	2.19	2.15 e
IRL	1.04 e	1.17 e	1.31 e	1.35 e	1.40 e	1.39 e	:	:	:
I	1.18	1.13	1.05	1.00	1.01	0.99 e	0.99 s	1.04 e	:
NL	1.90	1.92	1.95	1.99	2.03	2.04	1.94	:	:
A	1.45 e	1.47	1.54 e	1.56 e	1.60 e	1.69 e	1.81 e	1.83 e	1.79 e
P	0.62 s	:	:	0.57	:	0.62	:	0.76	:
FIN	2.13	2.18	2.29	2.29	2.54	2.72	2.89	3.19	:
S	:	3.09	:	**3.46**	:	3.68	3.75 e	3.80	:
UK	2.09	2.12	2.07	1.99	1.91	1.84	1.83	1.87	1.84
EEA	**1.92** s	**1.94** s	**1.91** s	**1.89** s	**1.88** s	**1.86** s	**1.87** s	**1.92** s	**1.89** s
IS	1.33 e	1.33	1.38 e	1.54	1.51 e	**1.84**	**2.04**	1.88	:
NO	:	1.73	:	1.71	:	1.66	:	1.70	:
JP	2.95 ei	2.88 ei	2.84 ei	2.98 ei	2.83 ei	2.90	3.04	3.04	:
US	2.65 i	2.52 i	2.42 i	2.50 i	2.54 i	2.57 i	2.60 ip	2.64 ip	:

Table 14B — R&D expenditure — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**1.22** s	**1.22** s	**1.20** s	**1.19** s	**1.18** s	**1.19** s	**1.19** s	**1.25** s	**1.24** s
EUR-12	1.17 s	1.16 s	1.13 s	1.13 s	1.12 s	1.13 s	1.13 s	1.18 s	1.19 s
B	1.16 e	1.23	1.22	1.23	1.30	1.34	1.35	1.42	1.47
DK	0.98 e	1.02	:	1.05	1.13 e	1.19	1.32	1.25 e	:
D	1.66	1.58	1.51	1.50	1.49 s	1.54	1.57 e	1.69 e	1.72 e
EL	:	0.13	:	0.14	0.12	0.13	:	:	:
E	0.44	0.42	0.38	0.39	0.40 e	0.40	0.47	0.46	0.48 e
F	1.49	1.48	1.45	1.41	1.41	1.39	1.35	1.38	1.37 e
IRL	0.67 e	0.80 e	0.91 e	0.96 e	1.01 e	1.01 e	:	:	:
I	0.66	0.61	0.56	0.53	0.54	0.52	0.52	0.56 e	:
NL	0.93	0.95	1.01	1.04	1.06	1.11	1.05	:	:
A	:	0.82	:	:	:	:	:	:	:
P	0.13 s	:	:	0.12	:	0.14	:	0.17	:
FIN	1.21	1.27	1.42	1.45	1.68	1.79	1.94	2.18	:
S	:	2.23	:	2.57	:	2.75	2.85 e	2.86	:
UK	1.40	1.42	1.36	1.30	1.25	1.20	1.21	1.27	1.26
EEA	**1.22** s	**1.22** s	**1.19** s	**1.19** s	**1.18** s	**1.18** s	**1.19** s	**1.24** s	**1.23** s
IS	0.29 e	0.42	0.43 e	0.49	0.47 e	0.75	0.75	0.76	:
NO	:	0.93	:	0.97	:	0.94	:	0.95	:
JP	2.03 i	1.90 i	1.87 i	1.94 i	2.01 i	2.09	2.17	2.15	:
US	1.90 i	1.78 i	1.71 i	1.80 i	1.87 i	1.91 i	1.94 i	2.00 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 14
R&D expenditure
At the national level

As a % of GDP

Table 14C — R&D expenditure — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.31** s	**0.32** s	**0.31** s	**0.31** s	**0.30** s	**0.28** s	**0.28** s	**0.27** s	**0.26** s
EUR-12	0.32 s	0.33 s	0.32 s	0.31 s	0.31 s	0.29 s	0.29 s	0.29 s	0.28 s
B	:	0.06	0.06	0.06	0.06	0.06	0.07	0.07	:
DK	0.30 e	0.31	:	0.31	0.30 e	0.30	0.29 e	0.31	:
D	0.35	0.36	0.34	0.35	0.34	0.34	0.34 e	0.34 e	0.34 e
EL	:	0.15	:	0.12	:	0.12	:	0.15	:
E	0.18	0.18	0.17	0.15	0.15 e	0.14	0.15	0.15	0.15 e
F	0.50	0.51	0.48	0.49	0.47	0.41	0.40	0.40	0.38 e
IRL	0.12 e	0.12 e	0.13 e	0.11 e	0.11 e	0.10 e	0.09 e	0.07 e	0.07 e
I	0.26	0.24	0.22	0.21	0.20	0.20	0.22	0.22 e	:
NL	0.35	0.35	0.36	0.36	0.38	0.37	0.36	:	:
A	:	0.13	:	:	:	:	:	:	:
P	0.14 s	:	:	0.15	:	0.15	:	0.21	:
FIN	0.44	0.46	0.43	0.39	0.40	0.37	0.36	0.39	:
S	:	0.13	:	0.13	:	0.13	0.13 e	0.13	:
UK	0.30	0.30	0.30	0.29	0.27	0.25	0.24	0.20	0.19
EEA	**0.31** s	**0.32** s	**0.31** s	**0.31** s	**0.30** s	**0.28** s	**0.28** s	**0.27** s	**0.26** s
IS	0.58 e	0.55	0.56 e	0.58	0.62 e	0.55	0.76	0.60	:
NO	:	0.33	:	0.30	:	0.27	:	0.26	:
JP	0.25	0.27	0.26	0.29	0.27	0.26	0.28	0.30	:
US	0.26 i	0.26 i	0.24 i	0.24 i	0.22 i	0.21 i	0.21 i	0.19 ip	:

Table 14D — R&D expenditure — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.37** s	**0.39** s	**0.39** s	**0.39** s	**0.39** s	**0.39** s	**0.38** s	**0.39** s	**0.38** s
EUR-12	0.36 s	0.38 s	0.38 s	0.37 s	0.38 s	0.38 s	0.37 s	0.38 s	0.37 s
B	:	0.40	0.41	0.41	0.43	0.45	0.46	0.47	:
DK	0.38 e	0.40	:	0.45	0.40 e	0.43	0.41 e	0.42	:
D	0.42	0.43	0.43	0.41	0.42	0.41	0.40 e	0.41 e	0.40 e
EL	:	0.19	:	0.22	:	0.26	:	0.34	:
E	0.25	0.27	0.26	0.26	0.27	0.27	0.27	0.27	0.27 e
F	0.36	0.38	0.38	0.39	0.39	0.39	0.38	0.38	0.36 e
IRL	0.23 e	0.25 e	0.26 e	0.26 e	0.26 e	0.27 e	0.27 e	:	:
I	0.26	0.28	0.27	0.26	0.27	0.26 e	0.25 e	0.26 e	:
NL	0.57	0.58	0.56	0.57	0.58	0.56	0.53	:	:
A	:	0.51	:	:	:	:	:	:	:
P	0.27 s	:	:	0.21	:	0.25	:	0.29	:
FIN	0.47	0.44	0.43	0.45	0.46	0.54	0.57	0.63	:
S	:	0.70	:	0.76	:	0.79	0.76 e	0.81	:
UK	0.35	0.36	0.39	0.38	0.37	0.36	0.36	0.38	0.37
EEA	**0.38** s	**0.39** s	**0.39** s	**0.39** s	**0.39** s	**0.39** s	**0.38** s	**0.39** s	**0.38** s
IS	0.41 e	0.32	0.33 e	0.42	0.36 e	0.52	0.51	0.51	:
NO	:	0.47	:	0.45	:	0.44	:	0.49	:
JP	0.55 e i	0.58 e i	0.57 e i	0.62 e i	0.42 e i	0.41	0.45	0.45	:
US	0.39 i	0.39 i	0.39 i	0.38 i	0.38 i	0.37 i	0.37 ip	0.37 ip	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15A-1 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**124 475** s	**129 846** s	**135 326** s	**142 002** s	**153 336** s	**78 101** s	**81 623** s	**86 179** s	**90 817** s	**99 542** s
EUR-12	98 487 s	101 972 s	103 337 s	107 821 s	116 123 s	60 763 s	62 877 s	64 622 s	67 498 s	73 858 s
Belgique-België	139 895	150 691	163 625	172 524	186 293	99 695	107 857	117 173	122 436	133 409
Région Bruxelles-capitale	:	:	:	:	:	15 570	16 828	17 108	17 269	17 843
Vlaams Gewest	:	:	:	:	:	58 880	64 707	72 544	78 289	86 230
Région Wallonne	:	:	:	:	:	25 245	26 322	27 521	26 878	29 336
Danmark	18 544	19 657 e	21 652	23 577 s	24 575 e	10 641	11 973 e	13 302	15 394	15 310 e
Deutschland	79 518	80 899 e	83 825	87 324 e	94 440 e	52 832	53 600 e	56 543	59 329 e	65 510 e
Baden-Württemberg	18 159	:	19 612	:	:	13 755	:	15 126	:	:
Stuttgart	9 084	:	9 911	:	:	8 049	:	8 837	:	:
Karlsruhe	4 314	:	4 760	:	:	2 088	:	2 561	:	:
Freiburg	1 696	:	1 783	:	:	1 110	:	1 147	:	:
Tübingen	3 067	:	3 158	:	:	2 508	:	2 580	:	:
Bayern	16 093	:	16 653	:	:	12 440	:	12 747	:	:
Oberbayern	11 446	:	11 611	:	:	8 956	:	8 973	:	:
Niederbayern	182	:	191	:	:	148	:	157	:	:
Oberpfalz	510	:	525	:	:	337	:	332	:	:
Oberfranken	441	:	514	:	:	297	:	349	:	:
Mittelfranken	1 828	:	2 064	:	:	1 387	:	1 596	:	:
Unterfranken	865	:	928	:	:	570	:	603	:	:
Schwaben	820	:	820	:	:	745	:	736	:	:
Berlin	4 705	:	5 040	:	:	1 932	:	2 334	:	:
Brandenburg	987	:	1 140	:	:	355	:	459	:	:
Bremen	1 136	:	831	:	:	740	:	410	:	:
Hamburg	2 403	:	2 553	:	:	1 420	:	1 549	:	:
Hessen	7 087	:	7 330	:	:	5 531	:	5 814	:	:
Darmstadt	5 923	:	6 145	:	:	4 940	:	5 177	:	:
Gießen	808	:	789	:	:	364	:	370	:	:
Kassel	357	:	396	:	:	228	:	266	:	:
Mecklenburg-Vorpommern	485	:	522	:	:	104	:	79	:	:
Niedersachsen	5 406	:	5 574	:	:	3 235	:	3 405	:	:
Braunschweig	3 193	:	3 290	:	:	1 880	:	1 998	:	:
Hannover	1 538	:	1 622	:	:	883	:	1 039	:	:
Lüneburg	284	:	272	:	:	247	:	164	:	:
Weser-Ems	391	:	391	:	:	225	:	204	:	:
Nordrhein-Westfalen	13 132	:	13 857	:	:	8 103	:	8 754	:	:
Düsseldorf	2 951	:	3 945	:	:	2 130	:	3 038	:	:
Köln	6 783	:	6 273	:	:	3 986	:	3 538	:	:
Münster	857	:	913	:	:	438	:	504	:	:
Detmold	907	:	876	:	:	659	:	634	:	:
Arnsberg	1 632	:	1 851	:	:	889	:	1 040	:	:
Rheinland-Pfalz	2 841	:	3 447	:	:	2 188	:	2 711	:	:
Koblenz	298	:	298	:	:	268	:	261	:	:
Trier	125	:	148	:	:	46	:	59	:	:
Rheinhessen-Pfalz	2 417	:	3 000	:	:	1 874	:	2 391	:	:
Saarland	397	:	425	:	:	130	:	147	:	:
Sachsen	2 557	:	2 986	:	:	1 134	:	1 456	:	:
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	978	:	996	:	:	366	:	398	:	:
Dessau	101	:	110	:	:	82	:	101	:	:
Halle	507	:	454	:	:	143	:	158	:	:
Magdeburg	371	:	432	:	:	141	:	138	:	:
Schleswig-Holstein	1 244	:	1 262	:	:	512	:	512	:	:
Thüringen	1 056	:	1 226	:	:	501	:	643	:	:
Not registered by region	852	:	370	:	:	386	:	-	:	:
Ellada	132 401	:	167 728	:	:	39 037	36 411	42 860	:	:
Voreia Ellada	32 497	:	42 415	:	:	7 994	6 763	7 947	:	:
Anatoliki Makedonia, Thraki	4 591	:	6 056	:	:	1 096	620	942	:	:
Kentriki Makedonia	23 374	:	29 774	:	:	4 517	4 499	5 415	:	:
Dytiki Makedonia	1 484	:	3 673	:	:	1 151	504	568	:	:
Thessalia	3 048	:	2 913	:	:	1 230	1 139	1 022	:	:
Kentriki Ellada	17 783	:	23 492	:	:	5 710	5 683	5 998	:	:
Ipeiros	3 070	:	5 105	:	:	246	613	490	:	:
Ionia Nisia	431	:	1 094	:	:	32	118	105	:	:
Dytiki Ellada	7 684	:	10 987	:	:	967	1 235	1 271	:	:
Sterea Ellada	5 020	:	3 188	:	:	3 143	2 792	2 606	:	:
Peloponnisos	1 577	:	3 118	:	:	1 322	925	1 525	:	:
Attiki	69 334	:	82 642	:	:	24 541	23 210	27 775	:	:
Nisia Aigaiou, Kriti	12 788	:	19 178	:	:	792	755	1 140	:	:
Voreio Aigaio	1 152	:	2 025	:	:	318	151	93	:	:
Notio Aigaio	821	:	623	:	:	174	109	117	:	:
Kriti	10 814	:	16 529	:	:	300	495	931	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15B-1 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
20 066 s	**20 398** s	**20 174** s	**21 141** s	**21 584** s	**25 428** s	**26 908** s	**28 048** s	**29 059** s	**31 111** s	**EU-15**
16 932 s	17 150 s	16 540 s	17 337 s	18 064 s	20 162 s	21 287 s	21 558 s	22 306 s	23 505 s	EUR-12
4 826	4 943	5 394	5 933	6 175	33 423	35 834	38 953	41 996	44 510	Belgique-België
1 730	1 662	1 781	1 940	1 898	:	:	:	:	:	Région Bruxelles-capitale
2 481	2 525	2 858	3 250	3 485	:	:	:	:	:	Vlaams Gewest
615	756	755	743	792	:	:	:	:	:	Région Wallonne
3 156	3 199 e	3 341	3 410 e	3 840	4 547	4 253 e	4 803	4 773	5 133	Danmark
12 255	12 330	12 268	12 804 e	13 210 e	14 431	14 969	15 014	15 191 e	15 720 e	Deutschland
2 301	2 278	2 312	2 342 e	:	2 103	2 176	2 174	2 206 e	:	Baden-Württemberg
514	530	551	578 e	:	521	538	523	530 e	:	Stuttgart
1 464	1 437	1 421	1 405 e	:	762	751	777	745 e	:	Karlsruhe
221	205	218	244 e	:	365	400	418	419 e	:	Freiburg
103	106	121	115 e	:	456	487	457	512 e	:	Tübingen
1 484	1 515	1 526	1 598 e	:	2 169	2 347	2 381	2 423 e	:	Bayern
1 299	1 316	1 323	1 396 e	:	1 191	1 311	1 315	1 313 e	:	Oberbayern
-	-	-	- e	:	34	36	33	35 e	:	Niederbayern
8	11	20	17 e	:	165	173	173	190 e	:	Oberpfalz
20	22	25	29 e	:	124	124	140	146 e	:	Oberfranken
94	93	95	96 e	:	347	369	373	375 e	:	Mittelfranken
46	57	54	54 e	:	249	271	272	283 e	:	Unterfranken
16	17	9	6 e	:	59	63	75	81 e	:	Schwaben
1 595	1 564	1 539	1 463 e	:	1 178	1 141	1 167	1 136 e	:	Berlin
458	481	461	525 e	:	174	200	220	225 e	:	Brandenburg
213	211	219	245 e	:	183	190	201	195 e	:	Bremen
476	480	471	460 e	:	507	526	533	541 e	:	Hamburg
506	502	505	496 e	:	1 050	1 038	1 011	994 e	:	Hessen
445	457	468	459 e	:	538	528	500	488 e	:	Darmstadt
39	26	19	18 e	:	405	399	399	398 e	:	Gießen
22	19	18	19 e	:	107	112	111	108 e	:	Kassel
148	162	172	236 e	:	233	262	271	258 e	:	Mecklenburg-Vorpommern
1 027	1 094	999	1 030 e	:	1 144	1 203	1 169	1 199 e	:	Niedersachsen
749	764	713	740 e	:	564	574	578	583 e	:	Braunschweig
240	206	189	187 e	:	415	432	394	422 e	:	Hannover
11	81	74	80 e	:	26	33	33	23 e	:	Lüneburg
27	41	22	22 e	:	139	165	164	171 e	:	Weser-Ems
2 277	2 145	2 112	2 297 e	:	2 752	2 919	2 992	3 018 e	:	Nordrhein-Westfalen
230	275	255	309 e	:	591	619	652	654 e	:	Düsseldorf
1 735	1 596	1 545	1 643 e	:	1 062	1 148	1 191	1 192 e	:	Köln
122	73	89	99 e	:	297	335	320	327 e	:	Münster
21	20	20	20 e	:	227	231	222	230 e	:	Detmold
169	181	203	227 e	:	574	586	608	615 e	:	Arnsberg
194	206	226	238 e	:	459	475	510	546 e	:	Rheinland-Pfalz
11	10	10	10 e	:	19	23	28	31 e	:	Koblenz
20	22	20	24 e	:	59	64	70	67 e	:	Trier
163	173	197	204 e	:	380	388	413	448 e	:	Rheinhessen-Pfalz
79	83	92	85 e	:	188	182	186	187 e	:	Saarland
635	684	692	769 e	:	788	834	838	844 e	:	Sachsen
:	:	:	112 e	:	:	:	:	204 e	:	Chemnitz
:	:	:	469 e	:	:	:	:	370 e	:	Dresden
:	:	:	188 e	:	:	:	:	270 e	:	Leipzig
250	261	260	288 e	:	362	367	338	374 e	:	Sachsen-Anhalt
13	-	1	4 e	:	6	7	8	7 e	:	Dessau
154	127	108	133 e	:	210	209	188	218 e	:	Halle
83	134	151	151 e	:	147	152	142	149 e	:	Magdeburg
330	359	345	355 e	:	402	419	405	351 e	:	Schleswig-Holstein
217	235	248	291 e	:	338	366	335	347 e	:	Thüringen
65	70	88	86 e	:	401	321	282	347 e	:	Not registered by region
33 749	:	39 287	:	56 236	58 665	:	84 862	:	128 235	Ellada
5 567	:	6 902	:	7 706	18 482	:	27 262	:	40 470	Voreia Ellada
1 200	:	1 430	:	1 646	2 290	:	3 684	:	5 895	Anatoliki Makedonia, Thraki
3 566	:	3 790	:	5 012	14 841	:	20 264	:	29 143	Kentriki Makedonia
183	:	1 023	:	289	150	:	2 082	:	429	Dytiki Makedonia
617	:	659	:	760	1 201	:	1 232	:	5 004	Thessalia
3 196	:	1 818	:	2 713	8 841	:	15 622	:	23 379	Kentriki Ellada
269	:	266	:	361	2 555	:	4 349	:	7 763	Ipeiros
46	:	54	:	75	353	:	935	:	730	Ionia Nisia
1 185	:	308	:	1 425	5 532	:	9 408	:	14 850	Dytiki Ellada
1 508	:	294	:	334	369	:	288	:	34	Sterea Ellada
188	:	897	:	518	32	:	641	:	2	Peloponnisos
17 982	:	21 572	:	35 349	26 354	:	32 936	:	53 266	Attiki
7 004	:	8 994	:	10 469	4 989	:	9 043	:	11 121	Nisia Aigaiou, Kriti
102	:	145	:	173	732	:	1 787	:	1 257	Voreio Aigaio
169	:	161	:	205	478	:	325	:	315	Notio Aigaio
6 733	:	8 668	:	10 091	3 778	:	6 930	:	9 550	Kriti

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15A-2 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	590 686	641 020 e	672 013	784 513	831 158	284 891	309 911 e	327 922	408 842	432 120
Noroeste	34 283	36 178 e	39 643	45 936	46 855	7 067	7 688 e	10 804	17 933	16 186
Galicia	19 660	20 511 e	23 639	25 437	27 468	4 221	4 592 e	6 103	8 062	8 347
Principado de Asturias	9 600	10 598 e	10 173	11 384	12 386	2 109	2 294 e	3 259	4 906	5 202
Cantabria	5 023	5 069 e	5 831	9 114	7 001	737	802 e	1 442	4 964	2 637
Noreste	79 146	85 580 e	86 431	104 883	109 765	53 404	58 094 e	60 043	76 077	78 307
Pais Vasco	53 412	58 851 e	59 462	68 932	68 898	40 814	44 398 e	46 475	55 288	53 992
Comunidad Foral de Navarra	9 219	10 014 e	10 404	12 713	15 166	5 160	5 613 e	5 677	7 885	9 682
La Rioja	1 957	2 226 e	2 378	3 322	3 377	1 088	1 184 e	1 069	1 969	1 803
Aragón	14 558	14 489 e	14 187	19 917	22 324	6 342	6 899 e	6 822	10 935	12 830
Comunidad de Madrid	200 716	213 454 e	216 480	242 323	264 455	103 851	112 973 e	113 061	129 156	141 572
Centro (E)	36 972	39 749 e	45 527	47 765	50 877	14 807	16 106 e	18 306	17 968	19 596
Castilla y León	22 333	23 979 e	24 994	26 395	33 610	7 064	7 684 e	7 769	7 999	12 772
Castilla-la Mancha	11 081	11 113 e	15 019	14 959	10 832	7 255	7 892 e	10 279	8 971	5 591
Extremadura	3 558	4 657 e	5 514	6 412	6 435	488	530 e	258	999	1 233
Este	161 846	179 791 e	194 312	236 900	248 721	86 542	94 142 e	104 307	136 324	145 129
Cataluña	124 308	135 562 e	146 048	178 924	187 977	76 116	82 801 e	92 114	114 412	125 776
Comunidad Valenciana	34 757	40 673 e	43 972	52 227	55 272	10 234	11 132 e	12 051	20 612	18 485
Baleares	2 781	3 556 e	4 292	5 749	5 472	192	209 e	142	1 300	868
Sur	65 801	71 896 e	75 954	89 044	93 049	17 738	19 296 e	19 544	29 377	28 753
Andalucia	57 350	63 084 e	65 864	77 437	78 988	15 289	16 632 e	15 653	25 103	22 874
Murcia	8 451	8 812 e	10 090	11 606	14 061	2 449	2 664 e	3 891	4 274	5 879
Ceuta y Melilla	-	- e	-	-	-	-	- e	-	-	-
Canarias	11 922	14 372 e	13 666	17 662	17 436	1 482	1 612 e	1 857	2 007	2 577
France	179 091	182 588	182 065	185 760	193 694	109 213	112 373	113 854	115 656	122 369
Île de France	74 598	73 958	80 859	81 965	88 067	55 689	55 093	55 813	55 661	61 532
Bassin Parisien	11 826	11 954	14 350	15 452	16 058	10 545	10 610	11 325	12 342	12 855
Champagne-Ardenne	629	663	956	968	928	591	625	690	695	656
Picardie	1 886	2 008	2 124	2 436	2 447	1 806	1 919	1 815	2 108	2 100
Haute-Normandie	2 869	2 713	3 253	3 595	3 895	2 767	2 611	2 822	3 150	3 449
Centre	3 710	3 668	4 591	4 776	5 097	3 090	2 997	3 559	3 708	3 992
Basse-Normandie	1 060	1 052	1 270	1 507	1 599	839	833	788	1 038	1 103
Bourgogne	1 672	1 850	2 162	2 171	2 092	1 452	1 624	1 650	1 643	1 554
Nord - Pas-de-Calais	2 012	2 065	3 001	3 061	3 156	1 544	1 614	1 609	1 666	1 674
Est	7 151	7 129	8 911	9 189	9 395	5 594	5 546	5 718	5 932	6 125
Lorraine	2 151	2 064	2 858	2 870	2 860	1 518	1 426	1 540	1 499	1 487
Alsace	2 475	2 649	3 382	3 467	3 344	1 609	1 766	1 812	1 892	1 775
Franche-Comté	2 525	2 416	2 671	2 852	3 190	2 467	2 354	2 365	2 541	2 862
Ouest	8 162	8 521	11 179	10 749	11 329	6 261	6 563	7 448	6 877	7 432
Pays de la Loire	2 789	2 982	3 972	3 878	4 290	2 197	2 366	2 760	2 622	2 976
Bretagne	4 378	4 530	5 844	5 440	5 566	3 332	3 458	3 955	3 459	3 600
Poitou-Charentes	995	1 008	1 366	1 431	1 473	732	739	732	797	855
Sud-Ouest	13 425	13 937	16 104	17 712	18 384	8 933	9 127	8 970	9 433	9 972
Aquitaine	4 338	4 177	4 953	5 199	5 563	3 670	3 506	3 441	3 643	3 981
Midi-Pyrénées	8 668	9 328	10 554	11 902	12 238	4 866	5 213	5 104	5 356	5 601
Limousin	419	432	603	612	583	397	409	425	434	390
Centre-Est	17 307	18 532	21 578	22 110	22 860	12 624	13 817	14 563	15 187	15 877
Rhône-Alpes	15 414	16 024	18 498	18 800	19 458	11 102	11 698	12 199	12 595	13 211
Auvergne	1 893	2 508	3 101	3 310	3 402	1 522	2 119	2 364	2 591	2 666
Méditerranée	13 694	16 050	16 475	17 169	15 933	8 023	10 004	8 398	8 559	6 904
Languedoc-Roussillon	3 352	3 575	4 597	5 237	5 475	1 124	1 058	1 267	1 392	1 385
Provence-Alpes-Côte d'Azur	10 307	12 438	11 811	11 860	10 334	6 899	8 946	7 123	7 162	5 475
Corse	35	37	80	73	124	-	-	8	6	45
Départements d'Outre-Mer	1 071	1 030	1 160	1 343	1 341	-	-	10	-	-
Not registered by region	29 845	29 414	8 399	7 010	7 171	-	-	-	-	-
Ireland	557 e	637 e	732 e	-	-	397 e	461 e	535 e	-	-

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15B-2 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
110 000	117 290 e	116 726	127 668	140 307	189 166	206 768	219 950	239 373	250 345	España
7 548	8 049 e	8 143	7 854	8 887	19 248	19 994	20 240	19 618	21 533	Noroeste
4 715	5 028 e	5 048	4 858	5 189	10 711	10 877	12 475	12 502	13 932	Galicia
1 723	1 837 e	1 862	1 784	2 110	5 752	6 450	5 050	4 691	5 071	Principado de Asturias
1 110	1 184 e	1 233	1 212	1 588	2 785	2 667	2 715	2 425	2 530	Cantabria
4 934	5 261 e	4 742	5 964	6 381	18 608	19 885	21 521	22 695	24 583	Noreste
1 702	1 815 e	1 620	1 521	1 746	8 696	10 298	11 244	11 979	12 668	Pais Vasco
413	440 e	296	320	275	3 646	3 961	4 430	4 506	5 209	Comunidad Foral de Navarra
281	300 e	331	274	305	588	742	978	1 079	1 269	La Rioja
2 538	2 706 e	2 495	3 849	4 055	5 678	4 884	4 869	5 131	5 437	Aragón
56 697	60 454 e	59 353	67 533	73 774	38 437	38 186	41 943	43 164	46 276	Comunidad de Madrid
4 217	4 497 e	5 243	5 117	5 561	17 757	18 942	21 553	24 186	24 887	Centro (E)
2 099	2 238 e	2 540	2 616	3 171	12 979	13 853	14 287	15 317	16 914	Castilla y León
1 188	1 267 e	1 560	1 292	1 243	2 638	1 954	3 180	4 696	3 996	Castilla-la Mancha
930	992 e	1 143	1 209	1 147	2 140	3 135	4 086	4 173	3 977	Extremadura
19 023	20 284 e	21 681	19 806	22 208	54 383	63 347	64 236	76 014	77 744	Este
12 913	13 769 e	14 980	13 969	15 407	33 762	37 379	35 499	46 523	44 032	Cataluña
5 477	5 840 e	5 501	4 697	5 548	18 711	23 345	25 807	26 205	30 384	Comunidad Valenciana
633	675 e	1 200	1 140	1 253	1 910	2 623	2 930	3 286	3 328	Baleares
14 312	15 260 e	14 270	17 032	19 146	33 562	37 139	41 957	42 421	44 901	Sur
12 266	13 079 e	12 046	14 325	15 850	29 618	33 185	37 994	37 810	40 015	Andalucia
2 046	2 181 e	2 224	2 707	3 296	3 944	3 954	3 963	4 611	4 886	Murcia
-	- e	-	-	-	-	-	-	-	-	Ceuta y Melilla
3 269	3 485 e	3 294	4 362	4 350	7 171	9 275	8 500	11 275	10 421	Canarias
37 591	37 008	33 982	34 627	35 141	29 917	30 747	31 706	32 708	33 243	France
11 650	11 617	11 947	12 428	12 491	6 425	6 455	12 293	13 012	13 159	Île de France
790	**857**	**845**	**911**	980	491	487	2 180	2 200	2 223	Bassin Parisien
22	**23**	**30**	**19**	21	16	15	236	254	251	Champagne-Ardenne
65	**73**	**69**	**65**	73	15	16	240	263	274	Picardie
47	**49**	**43**	**58**	50	55	53	388	387	396	Haute-Normandie
453	**502**	**485**	**502**	518	167	169	**547**	566	587	Centre
47	**48**	**50**	**83**	135	174	171	431	387	361	Basse-Normandie
156	**163**	**174**	**184**	183	64	63	338	343	354	Bourgogne
224	**230**	**210**	**234**	220	244	221	1 182	1 161	1 262	Nord - Pas-de-Calais
402	**418**	**406**	**426**	443	1 155	1 164	2 787	2 831	2 827	Est
233	**237**	**228**	**242**	250	400	401	1 089	1 129	1 123	Lorraine
148	**158**	**156**	**164**	171	718	725	1 413	1 411	1 398	Alsace
21	24	21	20	21	37	38	285	290	306	Franche-Comté
1 408	1 449	1 496	1 584	1 577	493	509	2 235	2 288	2 321	Ouest
467	471	477	**486**	501	125	145	734	770	813	Pays de la Loire
792	**823**	**875**	**971**	947	254	249	1 014	1 010	1 019	Bretagne
149	**155**	**147**	**127**	129	114	115	487	507	489	Poitou-Charentes
3 534	3 827	4 152	5 234	5 280	958	983	2 982	3 045	3 132	Sud-Ouest
301	297	328	371	368	367	374	1 183	1 184	1 214	Aquitaine
3 225	3 521	3 824	4 857	4 907	577	594	1 626	1 688	1 730	Midi-Pyrénées
8	9	5	6	5	14	15	172	172	188	Limousin
2 755	2 768	2 774	2 695	2 703	1 928	1 947	4 241	4 228	4 280	Centre-Est
2 452	2 459	2 447	2 363	2 368	1 860	1 866	3 852	3 841	3 879	Rhône-Alpes
303	309	349	331	335	68	81	388	387	402	Auvergne
4 018	4 389	4 418	4 833	5 136	1 653	1 657	3 659	3 778	3 893	Méditerranée
1 488	1 776	1 856	2 271	2 496	740	741	1 473	1 574	1 595	Languedoc-Roussillon
2 497	2 578	2 544	2 531	2 611	911	914	2 144	2 167	2 248	Provence-Alpes-Côte d'Azur
33	34	30	30	29	2	2	42	37	50	Corse
1 064	1 023	1 005	1 178	1 195	7	7	145	165	145	Départements d'Outre-Mer
11 746	10 430	6 680	5 105	5 116	16 563	17 317	2	1	-	Not registered by region
47 e	51 e	51 e	55 e	50 e	108 e	121 e	140 e	160 e	:	Ireland

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15A-3 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	17 863 901	19 155 413	19 580 020 e	20 457 315 s	22 201 758 e	9 540 714	10 246 771	10 410 784	10 712 929	11 938 458 e
Nord Ovest	3 263 272	3 515 929	:	:	:	2 543 587	2 614 633	2 766 999	2 799 283	:
Piemonte	2 645 335	2 777 859	:	:	:	2 262 438	2 352 841	2 406 188	2 481 886	:
Valle d'Aosta	3 077	8 829	:	:	:	2 800	7 900	2 800	7 710	:
Liguria	614 860	729 241	:	:	:	278 349	253 892	358 011	309 687	:
Lombardia	4 347 167	4 646 952	:	:	:	3 320 413	3 491 008	3 510 061	3 639 868	:
Nord Est	1 496 493	1 508 096	:	:	:	742 263	780 066	745 653	813 279	:
Trentino-Alto Adige	149 933	164 101	:	:	:	63 230	75 550	78 698	79 769	:
Veneto	862 530	863 354	:	:	:	403 141	416 148	385 323	418 227	:
Friuli-Venezia Giulia	484 030	480 641	:	:	:	275 892	288 368	281 632	315 283	:
Emilia-Romagna	1 278 836	1 396 541	:	:	:	648 941	724 519	791 030	869 271	:
Centro (I)	1 464 359	1 579 888	:	:	:	461 773	485 327	403 763	415 264	:
Toscana	1 118 567	1 195 432	:	:	:	379 797	400 397	320 853	327 990	:
Umbria	151 234	180 818	:	:	:	26 962	28 347	30 717	30 743	:
Marche	194 558	203 638	:	:	:	55 014	56 583	52 193	56 531	:
Lazio	3 457 835	3 660 415	:	:	:	1 136 333	1 288 491	1 359 942	1 317 987	:
Abruzzo-Molise	305 743	476 371	:	:	:	155 513	303 437	188 548	137 387	:
Abruzzo	291 480	449 409	:	:	:	155 410	292 260	188 548	127 531	:
Molise	14 263	26 962	:	:	:	103	11 177	-	9 856	:
Campania	886 149	989 394	:	:	:	303 396	341 499	395 509	373 056	:
Sud	573 143	564 887	:	:	:	156 657	146 865	152 652	125 097	:
Puglia	397 023	398 406	:	:	:	138 977	134 706	142 922	109 048	:
Basilicata	68 983	62 584	:	:	:	12 093	10 755	7 967	12 572	:
Calabria	107 137	103 897	:	:	:	5 587	1 404	1 763	3 477	:
Sicilia	557 226	545 828	:	:	:	41 503	32 838	59 354	197 534	:
Sardegna	233 678	271 112	:	:	:	30 335	38 088	37 273	24 903	:
Nederland	13 251	14 114	14 999	15 136	:	6 913	7 364	8 185	8 199	:
Noord-Nederland	:	:	847	849	:	:	347	424	402	:
Groningen	:	:	847	849	:	:	163	424	402	:
Friesland	:	:	-	-	:	:	92	-	-	:
Drenthe	:	:	-	-	:	:	92	-	-	:
Oost-Nederland	:	:	2 708	2 759	:	:	1 172	1 290	1 317	:
Overijssel	:	:	620	574	:	:	374	404	358	:
Gelderland	:	:	1 829	1 927	:	:	768	844	922	:
Flevoland	:	:	259	258	:	:	30	42	37	:
West-Nederland	:	:	7 633	7 758	:	:	2 815	3 196	3 207	:
Utrecht	:	:	1 596	1 412	:	:	575	707	505	:
Noord-Holland	:	:	2 376	2 465	:	:	998	1 106	1 152	:
Zuid-Holland	:	:	3 609	3 768	:	:	1 213	1 346	1 451	:
Zeeland	:	:	52	113	:	:	29	37	99	:
Zuid-Nederland	:	:	3 811	3 770	:	:	3 030	3 275	3 273	:
Noord-Brabant	:	:	2 741	2 712	:	:	2 306	2 385	2 418	:
Limburg (NL)	:	:	1 070	1 058	:	:	724	890	855	:
Österreich	36 877 e	39 291 e	42 450 e	47 258 e	49 534 e	:	:	:	:	:
Ostösterreich	:	:	:	:	:	:	:	:	:	:
Burgenland	:	:	:	:	:	:	:	:	:	:
Niederösterreich	:	:	:	:	:	:	:	:	:	:
Wien	:	:	:	:	:	:	:	:	:	:
Südösterreich	:	:	:	:	:	:	:	:	:	:
Kärnten	:	:	:	:	:	:	:	:	:	:
Steiermark	:	:	:	:	:	:	:	:	:	:
Westösterreich	:	:	:	:	:	:	:	:	:	:
Oberösterreich	:	:	:	:	:	:	:	:	:	:
Salzburg	:	:	:	:	:	:	:	:	:	:
Tirol	:	:	:	:	:	:	:	:	:	:
Vorarlberg	:	:	:	:	:	:	:	:	:	:
Portugal	92 229	:	115 655	:	163 538	19 292	:	25 976	:	37 048
Continente	89 004	:	112 111	:	151 991	19 221	:	25 971	:	36 740
Norte	18 955	:	23 030	:	33 788	4 493	:	5 518	:	10 038
Centro (P)	13 799	:	17 765	:	22 482	4 180	:	3 720	:	5 391
Lisboa e Vale do Tejo	53 086	:	66 126	:	87 742	10 115	:	16 195	:	20 511
Alentejo	2 188	:	3 347	:	4 712	423	:	415	:	313
Algarve	977	:	1 844	:	3 267	10	:	123	:	487
Açores	1 277	:	1 710	:	9 608	15	:	5	:	12
Madeira	1 948	:	1 834	:	1 939	56	:	-	:	296

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15B-3 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
3 774 394	3 827 012	4 053 735	4 484 116	4 696 883 e	4 548 793	5 081 630	5 115 501 e	5 260 270 e	5 566 417 e	Italia
315 710	442 476	376 116	342 252	:	403 975	458 820	:	:	:	Nord Ovest
150 266	160 148	160 099	134 844	:	232 631	264 870	:	:	:	Piemonte
277	929	1 304	647	:	-	-	:	:	:	Valle d'Aosta
165 167	281 399	214 713	206 761	:	171 344	193 950	:	:	:	Liguria
478 912	549 001	535 892	495 245	:	547 842	606 943	:	:	:	Lombardia
276 825	246 365	256 953	291 916	:	477 405	481 665	:	:	:	Nord Est
43 186	43 662	46 752	61 241	:	43 517	44 889	:	:	:	Trentino-Alto Adige
150 263	145 346	140 613	138 328	:	309 126	301 860	:	:	:	Veneto
83 376	57 357	69 588	92 347	:	124 762	134 916	:	:	:	Friuli-Venezia Giulia
209 658	186 824	204 315	210 377	:	420 237	485 198	:	:	:	Emilia-Romagna
315 287	306 929	311 111	356 637	:	687 299	787 632	:	:	:	Centro (I)
272 198	264 964	252 910	305 324	:	466 572	530 071	:	:	:	Toscana
20 988	21 744	24 196	26 671	:	103 284	130 727	:	:	:	Umbria
22 101	20 221	34 005	24 642	:	117 443	126 834	:	:	:	Marche
1 672 722	1 630 900	1 856 432	2 154 846	:	648 780	741 024	:	:	:	Lazio
41 342	45 102	41 416	35 994	:	108 888	127 832	:	:	:	Abruzzo-Molise
39 409	42 958	35 288	34 626	:	96 661	114 191	:	:	:	Abruzzo
1 933	2 144	6 128	1 368	:	12 227	13 641	:	:	:	Molise
188 281	186 385	223 870	262 792	:	394 472	461 510	:	:	:	Campania
121 084	81 218	89 731	144 241	:	295 402	336 804	:	:	:	Sud
72 324	46 837	64 961	106 993	:	185 722	216 863	:	:	:	Puglia
29 336	19 628	5 922	10 581	:	27 554	32 201	:	:	:	Basilicata
19 424	14 753	18 848	26 667	:	82 126	87 740	:	:	:	Calabria
101 008	91 867	101 590	127 667	:	414 715	421 123	:	:	:	Sicilia
53 565	59 945	56 309	62 149	:	149 778	173 079	:	:	:	Sardegna
2 396	2 614	2 715	2 828	:	3 813	4 002	4 099	4 109	:	Nederland
:	65	25	28	:	:	:	398	419	:	Noord-Nederland
:	57	25	28	:	:	:	398	419	:	Groningen
:	7	-	-	:	:	:	-	-	:	Friesland
:	1	-	-	:	:	:	-	-	:	Drenthe
:	677	627	649	:	:	:	791	793	:	Oost-Nederland
:	36	15	14	:	:	:	201	202	:	Overijssel
:	428	395	414	:	:	:	590	591	:	Gelderland
:	213	217	221	:	:	:	-	-	:	Flevoland
:	1 835	2 045	2 131	:	:	:	2 392	2 420	:	West-Nederland
:	391	332	348	:	:	:	557	559	:	Utrecht
:	574	515	540	:	:	:	755	773	:	Noord-Holland
:	855	1 183	1 229	:	:	:	1 080	1 088	:	Zuid-Holland
:	15	15	14	:	:	:	-	-	:	Zeeland
:	37	18	20	:	:	:	518	477	:	Zuid-Nederland
:	24	6	6	:	:	:	350	288	:	Noord-Brabant
:	13	12	14	:	:	:	168	189	:	Limburg (NL)
:	:	:	:	:	:	:	:	:	:	Österreich
:	:	:	:	:	:	:	:	:	:	Ostösterreich
:	:	:	:	:	:	:	:	:	:	Burgenland
:	:	:	:	:	:	:	:	:	:	Niederösterreich
:	:	:	:	:	:	:	:	:	:	Wien
:	:	:	:	:	:	:	:	:	:	Südösterreich
:	:	:	:	:	:	:	:	:	:	Kärnten
:	:	:	:	:	:	:	:	:	:	Steiermark
:	:	:	:	:	:	:	:	:	:	Westösterreich
:	:	:	:	:	:	:	:	:	:	Oberösterreich
:	:	:	:	:	:	:	:	:	:	Salzburg
:	:	:	:	:	:	:	:	:	:	Tirol
:	:	:	:	:	:	:	:	:	:	Vorarlberg
24 923	:	28 008	:	45 864	34 168	:	46 309	:	63 024	Portugal
23 358	:	26 114	:	36 835	33 145	:	45 134	:	61 260	Continente
1 789	:	1 890	:	2 450	9 397	:	11 738	:	16 247	Norte
499	:	634	:	1 350	6 887	:	10 618	:	12 351	Centro (P)
20 549	:	22 599	:	31 811	14 843	:	19 626	:	27 692	Lisboa e Vale do Tejo
336	:	700	:	829	1 271	:	1 758	:	2 681	Alentejo
186	:	291	:	395	747	:	1 392	:	2 289	Algarve
341	:	654	:	7 825	764	:	825	:	1 463	Açores
1 224	:	1 240	:	1 204	258	:	350	:	301	Madeira

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15A-4 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Suomi-Finland	12 917	14 886	17 270	19 946	23 062	8 166	9 850	11 396	13 396	15 720
Manner-Suomi	12 913	:	17 268	19 945	23 059	8 165	:	11 395	13 395	15 717
Itä-Suomi	613	:	811	888	1 035	258	:	332	369	429
Väli-Suomi	879	:	1 211	1 344	1 622	584	:	895	981	1 168
Pohjois-Suomi	1 272	:	1 869	2 454	2 821	809	:	1 279	1 790	2 062
Uusimaa	6 552	:	8 346	9 397	10 729	4 055	:	5 335	6 016	6 988
Etelä-Suomi	3 597	:	5 031	5 862	6 852	2 459	:	3 554	4 239	5 070
Åland	4	:	2	1	3	1	:	1	1	3
Sverige	59 357	:	67 026	71 358 e	75 814	44 029	:	50 151	54 361	56 953
Stockholm	:	:	:	:	:	:	:	18 333	:	21 865
Östra Mellansverige	:	:	:	:	:	:	:	6 551	:	7 417
Sydsverige	:	:	:	:	:	:	:	6 370	:	7 783
Norra Mellansverige	:	:	:	:	:	:	:	1 574	:	1 446
Mellersta Norrland	:	:	:	:	:	:	:	578	:	508
Övre Norrland	:	:	:	:	:	:	:	931	:	1 001
Småland med Öarna	:	:	:	:	:	:	:	1 107	:	1 078
Västsverige	:	:	:	:	:	:	:	13 709	:	14 842
Not registered by region	:	:	:	:	:	:	:	998	:	1 013
United Kingdom	14 170	14 470	14 779	15 581	16 666	9 256	9 431	9 680	10 261	11 303
North East	329	:	266	286	279	230	189	162	178	164
North West	1 394	:	1 454	1 519	1 784	1 093	1 174	1 164	1 224	1 476
Yorkshire and The Humber	529	:	529	568	619	279	278	255	287	309
East Midlands	828	:	924	992	1 068	615	710	708	775	838
West Midlands	965	:	958	1 042	1 068	663	628	647	708	724
Eastern	2 586	:	2 899	2 854	3 027	2 024	2 128	2 381	2 367	2 559
London	1 806	:	1 593	1 630	1 770	881	730	667	643	735
South East	3 313	:	3 465	3 652	3 966	2 232	2 321	2 379	2 542	2 916
South West	1 106	:	1 133	1 354	1 294	754	724	767	907	887
Wales	227	:	249	284	379	96	108	113	125	203
Scotland	928	:	970	1 045	1 004	328	359	356	424	393
Northern Ireland	129	:	149	152	175	61	82	81	81	99
Not registered by region	-	:	190 s	203 s	233 s	-	-	-	-	-
EEA	**126 477**	**132 012**	**137 714**	**144 424**	**155 933**	**79 216**	**82 832**	**87 519**	**92 154**	**100 972**
Iceland	6 958	7 317	9 650	11 773	11 763	2 216	2 277 e	3 918	4 310	4 741
Norge	15 908	:	18 187	:	20 319	9 021	:	10 352	:	11 369
Oslo og Akershus	7 061	:	8 615	:	9 568	3 688	:	4 871	:	5 332
Hedmark og Oppland	1 638	:	1 730	:	1 806	1 404	:	1 451	:	1 494
Sør-Østlandet	434	:	484	:	347	343	:	384	:	225
Agder og Rogaland	1 246	:	1 466	:	1 662	1 109	:	1 301	:	1 458
Vestlandet	2 264	:	2 278	:	2 488	893	:	769	:	762
Trøndelag	2 525	:	2 776	:	3 492	1 484	:	1 495	:	1 970
Nord-Norge	739	:	839	:	954	101	:	81	:	129

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 15
R&D expenditure
At the regional level

In millions of national currencies or ECU/EUR
At current prices

Table 15B-4 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
2 227	2 346	2 349	2 511	2 795	2 524	2 690	3 444	3 911	4 547	Suomi-Finland
2 224	:	2 348	2 511	2 795	2 524	:	3 444	3 911	4 547	Manner-Suomi
101	:	114	130	149	254	:	359	383	457	Itä-Suomi
75	:	74	91	154	220	:	241	270	300	Väli-Suomi
178	:	179	198	218	285	:	411	465	541	Pohjois-Suomi
1 461	:	1 581	1 671	1 812	1 036	:	1 375	1 615	1 929	Uusimaa
409	:	400	421	462	729	:	1 058	1 178	1 320	Etelä-Suomi
3	:	1	-	-	-	:	-	-	-	Åland
2 231	:	2 372	2 469 e	2 548	13 004	:	14 452	14 478 e	16 226	Sverige
:	:	:	:	1 520	:	:	:	:	:	Stockholm
:	:	:	:	611	:	:	:	:	:	Östra Mellansverige
:	:	:	:	17	:	:	:	:	:	Sydsverige
:	:	:	:	137	:	:	:	:	:	Norra Mellansverige
:	:	:	:	33	:	:	:	:	:	Mellersta Norrland
:	:	:	:	185	:	:	:	:	:	Övre Norrland
:	:	:	:	2	:	:	:	:	:	Småland med Öarna
:	:	:	:	43	:	:	:	:	:	Västsverige
-	-	-	-	-	-	-	-	-	-	Not registered by region
2 042	2 070	2 017	2 078	1 788	2 695	2 792	2 892	3 039	3 342	United Kingdom
4	4	3	3	2	91	:	101	105	113	North East
62	55	62	57	48	223	:	228	238	260	North West
35	34	45	40	40	209	:	229	241	270	Yorkshire and The Humber
60	53	65	58	48	142	:	151	159	182	East Midlands
141	198	155	167	164	149	:	156	167	180	West Midlands
334	296	304	276	213	195	:	214	211	255	Eastern
244	210	196	212	198	670	:	730	775	837	London
645	750	652	650	557	404	:	434	460	493	South East
217	263	237	309	259	122	:	129	138	148	South West
27	20	25	46	47	102	:	111	113	129	Wales
258	175	257	246	200	336	:	357	375	411	Scotland
15	12	16	14	12	52	:	52	57	64	Northern Ireland
-	-	-	-	-	-	-	-	-	-	Not registered by region
20 428 s	**20 783** s	**20 582** s	**21 557** s	**22 008** s	**25 950** s	**27 477** s	**28 686** s	**29 725** s	**31 852** s	**EEA**
2 606	2 991 e	2 875	4 391	3 720	1 915	1 757	2 731	2 936	3 156	Iceland
2 747	:	2 990	:	3 130	4 139	:	4 846	:	5 819	Norge
1 625	:	1 706	:	1 789	1 748	:	2 038	:	2 447	Oslo og Akershus
194	:	206	:	217	40	:	74	:	96	Hedmark og Oppland
43	:	54	:	56	49	:	46	:	66	Sør-Østlandet
55	:	55	:	71	82	:	109	:	134	Agder og Rogaland
471	:	548	:	558	900	:	961	:	1 168	Vestlandet
184	:	198	:	204	857	:	1 083	:	1 318	Trøndelag
175	:	223	:	235	464	:	535	:	590	Nord-Norge

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16A-1 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**124 475 s**	**129 846 s**	**135 326 s**	**142 002 s**	**153 336 s**	**78 101 s**	**81 623 s**	**86 179 s**	**90 817 s**	**99 542 s**
EUR-12	98 487 s	101 972 s	103 337 s	107 821 s	116 123 s	60 763 s	62 877 s	64 622 s	67 498 s	73 858 s
Belgique-België	3 629	3 835	4 037	4 247	4 618	2 586	2 745	2 891	3 014	3 307
Région Bruxelles-capitale	:	:	:	:	:	404	428	422	425	442
Vlaams Gewest	:	:	:	:	:	1 527	1 647	1 790	1 927	2 138
Région Wallonne	:	:	:	:	:	655	670	679	662	727
Danmark	2 531	2 671 e	2 893	3 144 s	3 305 ei	1 452	1 627 e	1 777	2 053	2 059 ei
Deutschland	42 438	42 366 ei	42 672	44 346 e	48 286 e	28 196	28 070 s	28 784	30 130 e	33 495 e
Baden-Württemberg	9 691	:	9 984	:	:	7 341	:	7 700	:	:
Stuttgart	4 848	:	5 045	:	:	4 296	:	4 499	:	:
Karlsruhe	2 302	:	2 423	:	:	1 114	:	1 304	:	:
Freiburg	905	:	908	:	:	592	:	584	:	:
Tübingen	1 637	:	1 608	:	:	1 338	:	1 313	:	:
Bayern	8 589	:	8 477	:	:	6 639	:	6 489	:	:
Oberbayern	6 109	:	5 911	:	:	4 780	:	4 568	:	:
Niederbayern	97	:	97	:	:	79	:	80	:	:
Oberpfalz	272	:	267	:	:	180	:	169	:	:
Oberfranken	235	:	262	:	:	159	:	178	:	:
Mittelfranken	976	:	1 051	:	:	740	:	813	:	:
Unterfranken	462	:	473	:	:	304	:	307	:	:
Schwaben	438	:	417	:	:	398	:	375	:	:
Berlin	2 511	:	2 566	:	:	1 031	:	1 188	:	:
Brandenburg	527	:	581	:	:	189	:	234	:	:
Bremen	606	:	423	:	:	395	:	209	:	:
Hamburg	1 282	:	1 300	:	:	758	:	788	:	:
Hessen	3 782	:	3 731	:	:	2 952	:	2 960	:	:
Darmstadt	3 161	:	3 128	:	:	2 636	:	2 636	:	:
Gießen	431	:	401	:	:	194	:	188	:	:
Kassel	191	:	202	:	:	122	:	135	:	:
Mecklenburg-Vorpommern	259	:	265	:	:	56	:	40	:	:
Niedersachsen	2 885	:	2 838	:	:	1 726	:	1 733	:	:
Braunschweig	1 704	:	1 675	:	:	1 003	:	1 017	:	:
Hannover	821	:	826	:	:	471	:	529	:	:
Lüneburg	152	:	138	:	:	132	:	84	:	:
Weser-Ems	209	:	199	:	:	120	:	104	:	:
Nordrhein-Westfalen	7 008	:	7 054	:	:	4 324	:	4 456	:	:
Düsseldorf	1 575	:	2 008	:	:	1 137	:	1 547	:	:
Köln	3 620	:	3 193	:	:	2 127	:	1 801	:	:
Münster	457	:	465	:	:	234	:	256	:	:
Detmold	484	:	446	:	:	352	:	323	:	:
Arnsberg	871	:	942	:	:	474	:	530	:	:
Rheinland-Pfalz	1 516	:	1 755	:	:	1 168	:	1 380	:	:
Koblenz	159	:	152	:	:	143	:	133	:	:
Trier	67	:	75	:	:	25	:	30	:	:
Rheinhessen-Pfalz	1 290	:	1 527	:	:	1 000	:	1 217	:	:
Saarland	212	:	217	:	:	69	:	75	:	:
Sachsen	1 365	:	1 520	:	:	605	:	741	:	:
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	522	:	507	:	:	195	:	203	:	:
Dessau	54	:	56	:	:	44	:	52	:	:
Halle	271	:	231	:	:	76	:	81	:	:
Magdeburg	198	:	220	:	:	75	:	70	:	:
Schleswig-Holstein	664	:	642	:	:	273	:	261	:	:
Thüringen	564	:	624	:	:	267	:	327	:	:
Not registered by region	455	:	189	:	:	206	:	-	:	:
Ellada	437	:	542	:	:	129	119	139	:	:
Voreia Ellada	107	:	137	:	:	26	22	26	:	:
Anatoliki Makedonia, Thraki	15	:	20	:	:	4	2	3	:	:
Kentriki Makedonia	77	:	96	:	:	15	15	18	:	:
Dytiki Makedonia	5	:	12	:	:	4	2	2	:	:
Thessalia	10	:	9	:	:	4	4	3	:	:
Kentriki Ellada	59	:	76	:	:	19	19	19	:	:
Ipeiros	10	:	17	:	:	1	2	2	:	:
Ionia Nisia	1	:	4	:	:	-	-	-	:	:
Dytiki Ellada	25	:	36	:	:	3	4	4	:	:
Sterea Ellada	17	:	10	:	:	10	9	8	:	:
Peloponnisos	5	:	10	:	:	4	3	5	:	:
Attiki	229	:	267	:	:	81	76	90	:	:
Nisia Aigaiou, Kriti	42	:	62	:	:	3	2	4	:	:
Voreio Aigaio	4	:	7	:	:	1	-	-	:	:
Notio Aigaio	3	:	2	:	:	1	-	-	:	:
Kriti	36	:	53	:	:	1	2	3	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16B-1 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
20 066 s	**20 398** s	**20 174** s	**21 141** s	**21 584** s	**25 428** s	**26 908** s	**28 048** s	**29 059** s	**31 111** s	**EU-15**
16 932 s	17 150 s	16 540 s	17 337 s	18 064 s	20 162 s	21 287 s	21 558 s	22 306 s	23 505 s	EUR-12
125	126	133	146	153	867	912	961	1 034	1 103	Belgique-België
45	42	44	48	47	:	:	:	:	:	Région Bruxelles-capitale
64	64	71	80	86	:	:	:	:	:	Vlaams Gewest
16	19	19	18	20	:	:	:	:	:	Région Wallonne
431	435 e	446	455 ei	516	620	578 e	642	636 ei	690	Danmark
6 540	6 457	6 245	6 502 e	6 754 e	7 702	7 839	7 643	7 715 e	8 038 e	Deutschland
1 228	1 193	1 177	1 189 e	:	1 122	1 140	1 107	1 120 e	:	Baden-Württemberg
274	278	280	294 e	:	278	282	266	269 e	:	Stuttgart
781	753	724	714 e	:	407	393	396	378 e	:	Karlsruhe
118	107	111	124 e	:	195	209	213	213 e	:	Freiburg
55	56	62	58 e	:	243	255	233	260 e	:	Tübingen
792	793	777	812 e	:	1 158	1 229	1 212	1 230 e	:	Bayern
693	689	673	709 e	:	636	687	669	667 e	:	Oberbayern
-	-	-	- e	:	18	19	17	18 e	:	Niederbayern
4	6	10	9 e	:	88	91	88	96 e	:	Oberpfalz
11	12	13	15 e	:	66	65	71	74 e	:	Oberfranken
50	49	48	49 e	:	185	193	190	190 e	:	Mittelfranken
25	30	27	27 e	:	133	142	138	144 e	:	Unterfranken
9	9	4	3 e	:	31	33	38	41 e	:	Schwaben
851	819	783	743 e	:	629	598	594	577 e	:	Berlin
244	252	235	267 e	:	93	105	112	114 e	:	Brandenburg
114	111	111	124 e	:	98	100	103	99 e	:	Bremen
254	251	240	234 e	:	271	275	271	275 e	:	Hamburg
270	263	257	252 e	:	560	544	515	505 e	:	Hessen
237	239	238	233 e	:	287	277	255	248 e	:	Darmstadt
21	14	10	9 e	:	216	209	203	202 e	:	Gießen
12	10	9	10 e	:	57	59	57	55 e	:	Kassel
79	85	87	120 e	:	124	137	138	131 e	:	Mecklenburg-Vorpommern
548	573	509	523 e	:	611	630	595	609 e	:	Niedersachsen
400	400	363	376 e	:	301	301	294	296 e	:	Braunschweig
128	109	96	95 e	:	221	226	201	214 e	:	Hannover
6	42	38	41 e	:	14	17	17	12 e	:	Lüneburg
14	21	11	11 e	:	74	86	84	87 e	:	Weser-Ems
1 215	1 123	1 075	1 167 e	:	1 469	1 529	1 523	1 533 e	:	Nordrhein-Westfalen
123	144	130	157 e	:	315	324	332	332 e	:	Düsseldorf
926	836	786	834 e	:	567	601	606	605 e	:	Köln
65	38	46	50 e	:	159	175	163	166 e	:	Münster
11	10	10	10 e	:	121	121	113	117 e	:	Detmold
90	95	103	115 e	:	306	307	310	312 e	:	Arnsberg
104	108	115	121 e	:	245	249	260	277 e	:	Rheinland-Pfalz
6	5	5	5 e	:	10	12	14	16 e	:	Koblenz
11	12	10	12 e	:	31	34	35	34 e	:	Trier
87	91	100	104 e	:	203	203	210	228 e	:	Rheinhessen-Pfalz
42	43	47	43 e	:	100	95	95	95 e	:	Saarland
339	358	352	391 e	:	421	437	427	429 e	:	Sachsen
:	:	:	57 e	:	:	:	:	104 e	:	Chemnitz
:	:	:	238 e	:	:	:	:	188 e	:	Dresden
:	:	:	95 e	:	:	:	:	137 e	:	Leipzig
133	137	133	146 e	:	193	192	172	190 e	:	Sachsen-Anhalt
7	-	-	2 e	:	3	4	4	4 e	:	Dessau
82	67	55	68 e	:	112	109	96	111 e	:	Halle
44	70	77	77 e	:	78	80	72	76 e	:	Magdeburg
178	188	176	180 e	:	215	219	206	178 e	:	Schleswig-Holstein
116	123	126	148 e	:	180	192	171	176 e	:	Thüringen
35	37	45	44 e	:	214	168	144	176 e	:	Not registered by region
111	:	127	:	173	194	:	274	:	394	Ellada
18	:	22	:	24	61	:	88	:	124	Voreia Ellada
4	:	5	:	5	8	:	12	:	18	Anatoliki Makedonia, Thraki
12	:	12	:	15	49	:	66	:	89	Kentriki Makedonia
1	:	3	:	1	-	:	7	:	1	Dytiki Makedonia
2	:	2	:	2	4	:	4	:	15	Thessalia
11	:	6	:	8	29	:	51	:	72	Kentriki Ellada
1	:	1	:	1	8	:	14	:	24	Ipeiros
-	:	-	:	-	1	:	3	:	2	Ionia Nisia
4	:	1	:	4	18	:	30	:	46	Dytiki Ellada
5	:	1	:	1	1	:	1	:	-	Sterea Ellada
1	:	3	:	2	-	:	2	:	-	Peloponnisos
59	:	70	:	109	87	:	106	:	164	Attiki
23	:	29	:	32	16	:	29	:	34	Nisia Aigaiou, Kriti
-	:	-	:	1	2	:	6	:	4	Voreio Aigaio
1	:	1	:	1	2	:	1	:	1	Notio Aigaio
22	:	28	:	31	12	:	22	:	29	Kriti

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16A-2 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	3 624	3 988 e	4 051	4 693	4 995	1 748	1 928 e	1 977	2 445	2 597
Noroeste	210	225 e	239	275	282	43	48 e	65	107	97
Galicia	121	128 e	143	152	165	26	29 e	37	48	50
Principado de Asturias	59	66 e	61	68	74	13	14 e	20	29	31
Cantabria	31	32 e	35	55	42	5	5 e	9	30	16
Noreste	486	532 e	521	627	660	328	361 e	362	455	471
Pais Vasco	328	366 e	358	412	414	250	276 e	280	331	325
Comunidad Foral de Navarra	57	62 e	63	76	91	32	35 e	34	47	58
La Rioja	12	14 e	14	20	20	7	7 e	6	12	11
Aragón	89	90 e	86	119	134	39	43 e	41	65	77
Comunidad de Madrid	1 231	1 328 e	1 305	1 449	1 589	637	703 e	682	773	851
Centro (E)	227	247 e	274	286	306	91	100 e	110	107	118
Castilla y León	137	149 e	151	158	202	43	48 e	47	48	77
Castilla-la Mancha	68	69 e	91	89	65	45	49 e	62	54	34
Extremadura	22	29 e	33	38	39	3	3 e	2	6	7
Este	993	1 118 e	1 171	1 417	1 495	531	586 e	629	815	872
Cataluña	763	843 e	880	1 070	1 130	467	515 e	555	684	756
Comunidad Valenciana	213	253 e	265	312	332	63	69 e	73	123	111
Baleares	17	22 e	26	34	33	1	1 e	1	8	5
Sur	404	447 e	458	533	559	109	120 e	118	176	173
Andalucia	352	392 e	397	463	475	94	103 e	94	150	137
Murcia	52	55 e	61	69	85	15	17 e	23	26	35
Ceuta y Melilla	-	- e	-	-	-	-	- e	-	-	-
Canarias	73	89 e	82	106	105	9	10 e	11	12	15
France	27 447	28 121	27 533	28 140	29 529	16 737	17 307	17 218	17 520	18 655
Île de France	11 433	11 390	12 236	12 416	13 426	8 535	8 485	8 440	8 432	9 381
Bassin Parisien	1 812	1 841	2 170	2 341	2 448	1 616	1 634	1 713	1 870	1 960
Champagne-Ardenne	96	102	145	147	142	91	96	104	105	100
Picardie	289	309	321	369	373	277	296	274	319	320
Haute-Normandie	440	418	492	545	594	424	402	427	477	526
Centre	569	565	694	723	777	474	462	538	562	609
Basse-Normandie	162	162	192	228	244	129	128	119	157	168
Bourgogne	256	285	327	329	319	223	250	250	249	237
Nord - Pas-de-Calais	308	318	454	464	481	237	249	243	252	255
Est	1 096	1 098	1 348	1 392	1 432	857	854	865	899	934
Lorraine	330	318	432	435	436	233	220	233	227	227
Alsace	379	408	511	525	510	247	272	274	287	271
Franche-Comté	387	372	404	432	486	378	363	358	385	436
Ouest	1 251	1 312	1 691	1 628	1 727	960	1 011	1 126	1 042	1 133
Pays de la Loire	427	459	601	587	654	337	364	417	397	454
Bretagne	671	698	883	824	849	511	533	598	524	549
Poitou-Charentes	152	155	207	217	225	112	114	111	121	130
Sud-Ouest	2 057	2 147	2 435	2 683	2 803	1 369	1 406	1 356	1 429	1 520
Aquitaine	665	643	748	787	848	562	540	520	552	607
Midi-Pyrénées	1 328	1 437	1 596	1 803	1 866	746	803	772	811	854
Limousin	64	67	91	93	89	61	63	64	66	59
Centre-Est	2 652	2 854	3 263	3 349	3 485	1 935	2 128	2 202	2 301	2 420
Rhône-Alpes	2 362	2 468	2 795	2 848	2 966	1 701	1 802	1 845	1 908	2 014
Auvergne	290	386	468	501	519	233	326	357	393	406
Méditerranée	2 099	2 472	2 491	2 601	2 429	1 230	1 541	1 270	1 297	1 053
Languedoc-Roussillon	514	551	694	793	835	172	163	192	211	211
Provence-Alpes-Côte d'Azur	1 580	1 916	1 785	1 797	1 575	1 057	1 378	1 077	1 085	835
Corse	5	6	12	11	19	-	-	1	1	7
Départements d'Outre-Mer	164	159	175	203	204	-	-	2	-	-
Not registered by region	4 574	4 530	1 270	1 062	1 093	-	-	-	-	-
Ireland	683 e	803 e	979 e	:	:	487 e	581 e	715 e	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16B-2 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
675	730 e	704	764	843	1 161	1 286	1 326	1 432	1 505	España
46	50 e	49	47	53	118	124	122	117	129	Noroeste
29	31 e	30	29	31	66	68	75	75	84	Galicia
11	11 e	11	11	13	35	40	30	28	30	Principado de Asturias
7	7 e	7	7	10	17	17	16	15	15	Cantabria
30	33 e	29	36	38	114	124	130	136	148	Noreste
10	11 e	10	9	10	53	64	68	72	76	Pais Vasco
3	3 e	2	2	2	22	25	27	27	31	Comunidad Foral de Navarra
2	2 e	2	2	2	4	5	6	6	8	La Rioja
16	17 e	15	23	24	35	30	29	31	33	Aragón
348	376 e	358	404	443	236	238	253	258	278	Comunidad de Madrid
26	28 e	32	31	33	109	118	130	145	150	Centro (E)
13	14 e	15	16	19	80	86	86	92	102	Castilla y León
7	8 e	9	8	7	16	12	19	28	24	Castilla-la Mancha
6	6 e	7	7	7	13	20	25	25	24	Extremadura
117	126 e	131	118	133	334	394	387	455	467	Este
79	86 e	90	84	93	207	233	214	278	265	Cataluña
34	36 e	33	28	33	115	145	156	157	183	Comunidad Valenciana
4	4 e	7	7	8	12	16	18	20	20	Baleares
88	95 e	86	102	115	206	231	253	254	270	Sur
75	81 e	73	86	95	182	206	229	226	240	Andalucia
13	14 e	13	16	20	24	25	24	28	29	Murcia
-	- e	-	-	-	-	-	-	-	-	Ceuta y Melilla
20	22 e	20	26	26	44	58	51	67	63	Canarias
5 761	5 700	5 139	5 245	5 357	4 585	4 735	4 795	4 955	5 068	France
1 785	1 789	1 814	1 883	1 904	985	994	1 859	1 971	2 006	Île de France
121	132	128	138	149	75	75	330	333	339	Bassin Parisien
3	4	5	3	3	2	2	36	38	38	Champagne-Ardenne
10	11	10	10	11	2	2	36	40	42	Picardie
7	8	6	9	8	8	8	59	59	60	Haute-Normandie
69	77	73	76	79	26	26	83	86	89	Centre
7	7	8	13	21	27	26	65	59	55	Basse-Normandie
24	25	26	28	28	10	10	51	52	54	Bourgogne
34	35	32	35	34	37	34	179	176	192	Nord - Pas-de-Calais
62	64	61	65	68	177	179	422	429	431	Est
36	36	35	37	38	61	62	165	171	171	Lorraine
23	24	24	25	26	110	112	214	214	213	Alsace
3	4	3	3	3	6	6	43	44	47	Franche-Comté
216	223	226	240	240	76	78	338	347	354	Ouest
72	73	72	74	76	19	22	111	117	124	Pays de la Loire
121	127	132	147	144	39	38	153	153	155	Bretagne
23	24	22	19	20	17	18	74	77	75	Poitou-Charentes
542	589	628	793	805	147	151	451	461	477	Sud-Ouest
46	46	49	56	56	56	58	179	179	185	Aquitaine
494	542	578	736	748	88	92	246	256	264	Midi-Pyrénées
1	1	1	1	1	2	2	26	26	29	Limousin
422	426	419	408	412	295	300	641	641	653	Centre-Est
376	379	368	356	361	285	287	583	582	591	Rhône-Alpes
46	48	52	50	51	10	12	59	59	61	Auvergne
616	676	668	732	783	253	255	553	572	594	Méditerranée
228	274	280	344	380	113	114	223	238	243	Languedoc-Roussillon
383	397	384	383	398	140	141	324	328	343	Provence-Alpes-Côte d'Azur
5	5	5	5	4	-	-	6	6	8	Corse
163	158	152	178	182	1	1	22	25	22	Départements d'Outre-Mer
1 800	1 606	1 010	773	780	2 538	2 667	-	-	-	Not registered by region
58 e	64 e	69 e	70 e	64 e	132 e	152 e	188 e	204 e	:	Ireland

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16A-3 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	8 386	9 778	10 149 ei	10 525 s	11 466 ei	4 479	5 231	5 396	5 512	6 166 ei
Nord Ovest	1 532	1 795	:	:	:	1 194	1 335	1 434	1 440	:
Piemonte	1 242	1 418	:	:	:	1 062	1 201	1 247	1 277	:
Valle d'Aosta	1	5	:	:	:	1	4	1	4	:
Liguria	289	372	:	:	:	131	130	186	159	:
Lombardia	2 041	2 372	:	:	:	1 559	1 782	1 819	1 873	:
Nord Est	703	770	:	:	:	348	398	386	418	:
Trentino-Alto Adige	70	84	:	:	:	30	39	41	41	:
Veneto	405	441	:	:	:	189	212	200	215	:
Friuli-Venezia Giulia	227	245	:	:	:	130	147	146	162	:
Emilia-Romagna	600	713	:	:	:	305	370	410	447	:
Centro (I)	687	806	:	:	:	217	248	209	214	:
Toscana	525	610	:	:	:	178	204	166	169	:
Umbria	71	92	:	:	:	13	14	16	16	:
Marche	91	104	:	:	:	26	29	27	29	:
Lazio	1 623	1 869	:	:	:	533	658	705	678	:
Abruzzo-Molise	144	243	:	:	:	73	155	98	71	:
Abruzzo	137	229	:	:	:	73	149	98	66	:
Molise	7	14	:	:	:	-	6	-	5	:
Campania	416	505	:	:	:	142	174	205	192	:
Sud	269	288	:	:	:	74	75	79	64	:
Puglia	186	203	:	:	:	65	69	74	56	:
Basilicata	32	32	:	:	:	6	5	4	6	:
Calabria	50	53	:	:	:	3	1	1	2	:
Sicilia	262	279	:	:	:	19	17	31	102	:
Sardegna	110	138	:	:	:	14	19	19	13	:
Nederland	6 313	6 596	6 784	6 819	:	3 294	3 442	3 702	3 694	:
Noord-Nederland	:	:	383	382	:	:	162	192	181	:
Groningen	:	:	383	382	:	:	76	192	181	:
Friesland	:	:	-	-	:	:	43	-	-	:
Drenthe	:	:	-	-	:	:	43	-	-	:
Oost-Nederland	:	:	1 225	1 243	:	:	548	584	593	:
Overijssel	:	:	280	259	:	:	175	183	161	:
Gelderland	:	:	827	868	:	:	359	382	415	:
Flevoland	:	:	117	116	:	:	14	19	17	:
West-Nederland	:	:	3 453	3 495	:	:	1 316	1 446	1 445	:
Utrecht	:	:	722	636	:	:	269	320	228	:
Noord-Holland	:	:	1 075	1 111	:	:	466	500	519	:
Zuid-Holland	:	:	1 632	1 698	:	:	567	609	654	:
Zeeland	:	:	24	51	:	:	14	17	45	:
Zuid-Nederland	:	:	1 724	1 698	:	:	1 416	1 481	1 475	:
Noord-Brabant	:	:	1 240	1 222	:	:	1 078	1 079	1 089	:
Limburg (NL)	:	:	484	477	:	:	338	403	385	:
Österreich	2 797 e	2 925 e	3 071 e	3 411 e	3 600 e	:	:	:	:	:
Ostösterreich	:	:	:	:	:	:	:	:	:	:
Burgenland	:	:	:	:	:	:	:	:	:	:
Niederösterreich	:	:	:	:	:	:	:	:	:	:
Wien	:	:	:	:	:	:	:	:	:	:
Südösterreich	:	:	:	:	:	:	:	:	:	:
Kärnten	:	:	:	:	:	:	:	:	:	:
Steiermark	:	:	:	:	:	:	:	:	:	:
Westösterreich	:	:	:	:	:	:	:	:	:	:
Oberösterreich	:	:	:	:	:	:	:	:	:	:
Salzburg	:	:	:	:	:	:	:	:	:	:
Tirol	:	:	:	:	:	:	:	:	:	:
Vorarlberg	:	:	:	:	:	:	:	:	:	:
Portugal	470	:	582	:	816	98	:	131	:	185
Continente	454	:	565	:	758	98	:	131	:	183
Norte	97	:	116	:	169	23	:	28	:	50
Centro (P)	70	:	89	:	112	21	:	19	:	27
Lisboa e Vale do Tejo	271	:	333	:	438	52	:	82	:	102
Alentejo	11	:	17	:	24	2	:	2	:	2
Algarve	5	:	9	:	16	-	:	1	:	2
Açores	7	:	9	:	48	-	:	-	:	-
Madeira	10	:	9	:	10	-	:	-	:	1

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16B-3 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
1 772	1 954	2 101	2 307	2 426 ei	2 135	2 594	2 651	2 706	2 875 ei	Italia
148	226	195	176	:	190	234	:	:	:	Nord Ovest
71	82	83	69	:	109	135	:	:	:	Piemonte
-	-	1	-	:	-	-	:	:	:	Valle d'Aosta
78	144	111	106	:	80	99	:	:	:	Liguria
225	280	278	255	:	257	310	:	:	:	Lombardia
130	126	133	150	:	224	246	:	:	:	Nord Est
20	22	24	32	:	20	23	:	:	:	Trentino-Alto Adige
71	74	73	71	:	145	154	:	:	:	Veneto
39	29	36	48	:	59	69	:	:	:	Friuli-Venezia Giulia
98	95	106	108	:	197	248	:	:	:	Emilia-Romagna
148	157	161	183	:	323	402	:	:	:	Centro (I)
128	135	131	157	:	219	271	:	:	:	Toscana
10	11	13	14	:	48	67	:	:	:	Umbria
10	10	18	13	:	55	65	:	:	:	Marche
785	833	962	1 109	:	305	378	:	:	:	Lazio
19	23	21	19	:	51	65	:	:	:	Abruzzo-Molise
19	22	18	18	:	45	58	:	:	:	Abruzzo
1	1	3	1	:	6	7	:	:	:	Molise
88	95	116	135	:	185	236	:	:	:	Campania
57	41	47	74	:	139	172	:	:	:	Sud
34	24	34	55	:	87	111	:	:	:	Puglia
14	10	3	5	:	13	16	:	:	:	Basilicata
9	8	10	14	:	39	45	:	:	:	Calabria
47	47	53	66	:	195	215	:	:	:	Sicilia
25	31	29	32	:	70	88	:	:	:	Sardegna
1 142	1 222	1 228	1 274	:	1 817	1 870	1 854	1 851	:	Nederland
:	30	11	13	:	:	:	180	189	:	Noord-Nederland
:	27	11	13	:	:	:	180	189	:	Groningen
:	3	-	-	:	:	:	-	-	:	Friesland
:	-	-	-	:	:	:	-	-	:	Drenthe
:	318	284	292	:	:	:	358	357	:	Oost-Nederland
:	17	7	6	:	:	:	91	91	:	Overijssel
:	200	179	187	:	:	:	267	266	:	Gelderland
:	100	98	100	:	:	:	-	-	:	Flevoland
:	858	925	960	:	:	:	1 082	1 090	:	West-Nederland
:	183	150	157	:	:	:	252	252	:	Utrecht
:	268	233	243	:	:	:	342	348	:	Noord-Holland
:	400	535	554	:	:	:	489	490	:	Zuid-Holland
:	7	7	6	:	:	:	-	-	:	Zeeland
:	17	8	9	:	:	:	234	215	:	Zuid-Nederland
:	11	3	3	:	:	:	158	130	:	Noord-Brabant
:	6	5	6	:	:	:	76	85	:	Limburg (NL)
:	:	:	:	:	:	:	:	:	:	Österreich
:	:	:	:	:	:	:	:	:	:	Ostösterreich
:	:	:	:	:	:	:	:	:	:	Burgenland
:	:	:	:	:	:	:	:	:	:	Niederösterreich
:	:	:	:	:	:	:	:	:	:	Wien
:	:	:	:	:	:	:	:	:	:	Südösterreich
:	:	:	:	:	:	:	:	:	:	Kärnten
:	:	:	:	:	:	:	:	:	:	Steiermark
:	:	:	:	:	:	:	:	:	:	Westösterreich
:	:	:	:	:	:	:	:	:	:	Oberösterreich
:	:	:	:	:	:	:	:	:	:	Salzburg
:	:	:	:	:	:	:	:	:	:	Tirol
:	:	:	:	:	:	:	:	:	:	Vorarlberg
127	:	141	:	229	174	:	233	:	314	Portugal
119	:	132	:	184	169	:	227	:	306	Continente
9	:	10	:	12	48	:	59	:	81	Norte
3	:	3	:	7	35	:	53	:	62	Centro (P)
105	:	114	:	159	76	:	99	:	138	Lisboa e Vale do Tejo
2	:	4	:	4	6	:	9	:	13	Alentejo
1	:	1	:	2	4	:	7	:	11	Algarve
2	:	3	:	39	4	:	4	:	7	Açores
6	:	6	:	6	1	:	2	:	2	Madeira

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16A-4 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Suomi-Finland	2 263	2 554	2 937	3 334	3 879	1 430	1 690	1 938	2 239	2 644
Manner-Suomi	2 262	:	2 936	3 334	3 878	1 430	:	1 938	2 239	2 643
Itä-Suomi	107	:	138	148	174	45	:	56	62	72
Väli-Suomi	154	:	206	225	273	102	:	152	164	196
Pohjois-Suomi	223	:	318	410	474	142	:	217	299	347
Uusimaa	1 148	:	1 419	1 571	1 804	710	:	907	1 006	1 175
Etelä-Suomi	630	:	856	980	1 152	431	:	604	709	853
Åland	1	:	-	-	1	-	:	-	-	1
Sverige	6 361	:	7 748	8 003 e	8 608	4 718	:	5 797	6 097 e	6 466
Stockholm	:	:	:	:	:	:	:	2 119	:	2 483
Östra Mellansverige	:	:	:	:	:	:	:	757	:	842
Sydsverige	:	:	:	:	:	:	:	736	:	884
Norra Mellansverige	:	:	:	:	:	:	:	182	:	164
Mellersta Norrland	:	:	:	:	:	:	:	67	:	58
Övre Norrland	:	:	:	:	:	:	:	108	:	114
Småland med Öarna	:	:	:	:	:	:	:	128	:	122
Västsverige	:	:	:	:	:	:	:	1 585	:	1 685
Not registered by region	:	:	:	:	:	:	:	115	:	115
United Kingdom	17 097	17 781	21 348	23 034	25 300	11 168	11 589	13 982	15 169	17 159
North East	397	:	384	423	424	278	232	234	263	249
North West	1 682	:	2 100	2 246	2 708	1 319	1 443	1 681	1 809	2 241
Yorkshire and The Humber	638	:	764	840	940	337	342	368	424	469
East Midlands	999	:	1 335	1 467	1 621	742	872	1 023	1 146	1 272
West Midlands	1 164	:	1 384	1 540	1 621	800	772	935	1 047	1 099
Eastern	3 120	:	4 187	4 219	4 595	2 442	2 615	3 439	3 499	3 885
London	2 179	:	2 301	2 410	2 687	1 063	897	963	951	1 116
South East	3 997	:	5 005	5 399	6 021	2 693	2 852	3 436	3 758	4 427
South West	1 334	:	1 637	2 002	1 964	910	890	1 108	1 341	1 347
Wales	274	:	360	420	575	116	133	163	185	308
Scotland	1 120	:	1 401	1 545	1 524	396	441	514	627	597
Northern Ireland	156	:	215	225	266	74	101	117	120	150
Not registered by region	-	:	274	300	354	-	-	-	-	-
EEA	**126 477** s	**132 012** s	**137 714** s	**144 424** s	**155 933** s	**79 216** s	**82 832** s	**87 519** s	**92 154** s	**100 972** s
Iceland	82	86 ei	120	148	152	26	27 ei	49	54	61
Norge	1 920	:	2 268	:	2 445	1 089	:	1 291	:	1 368
Oslo og Akershus	852	:	1 074	:	1 151	445	:	608	:	642
Hedmark og Oppland	198	:	216	:	217	169	:	181	:	180
Sør-Østlandet	52	:	60	:	42	41	:	48	:	27
Agder og Rogaland	150	:	183	:	200	134	:	162	:	175
Vestlandet	273	:	284	:	299	108	:	96	:	92
Trøndelag	305	:	346	:	420	179	:	186	:	237
Nord-Norge	89	:	105	:	115	12	:	10	:	16

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 16
R&D expenditure
At the regional level

In millions of ECU/EUR
At current prices and current exchange rates

Table 16B-4 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
390	403	399	420	470	442	462	586	654	765	Suomi-Finland
390	:	399	420	470	442	:	586	654	765	Manner-Suomi
18	:	19	22	25	44	:	61	64	77	Itä-Suomi
13	:	13	15	26	39	:	41	45	50	Väli-Suomi
31	:	30	33	37	50	:	70	78	91	Pohjois-Suomi
256	:	269	279	305	181	:	234	270	324	Uusimaa
72	:	68	70	78	128	:	180	197	222	Etelä-Suomi
1	:	-	-	-	-	:	-	-	-	Åland
239	:	274	277	289	1 394	:	1 671	1 624 e	1 842	Sverige
:	:	:	:	173	:	:	:	:	:	Stockholm
:	:	:	:	69	:	:	:	:	:	Östra Mellansverige
:	:	:	:	2	:	:	:	:	:	Sydsverige
:	:	:	:	16	:	:	:	:	:	Norra Mellansverige
:	:	:	:	4	:	:	:	:	:	Mellersta Norrland
:	:	:	:	21	:	:	:	:	:	Övre Norrland
:	:	:	:	-	:	:	:	:	:	Småland med Öarna
:	:	:	:	5	:	:	:	:	:	Västsverige
:	:	:	:	-	:	:	:	:	:	Not registered by region
2 464	2 544	2 913	3 072	2 714	3 252	3 431	4 177	4 493	5 073	United Kingdom
5	5	4	4	3	110	:	146	155	172	North East
75	68	90	84	73	269	:	329	352	395	North West
42	42	65	59	61	252	:	331	356	410	Yorkshire and The Humber
72	65	94	86	73	171	:	218	235	276	East Midlands
170	243	224	247	249	180	:	225	247	273	West Midlands
403	364	439	408	323	235	:	309	312	387	Eastern
294	258	283	313	301	808	:	1 054	1 146	1 271	London
778	922	942	961	846	487	:	627	680	748	South East
262	323	342	457	393	147	:	186	204	225	South West
33	25	36	68	71	123	:	160	167	196	Wales
311	215	371	364	304	405	:	516	554	624	Scotland
18	15	23	21	18	63	:	75	84	97	Northern Ireland
-	-	-	-	-	-	:	-	-	-	Not registered by region
20 428 s	20 783 s	20 582 s	21 557 s	22 008 s	25 950 s	27 477 s	28 686 s	29 725 s	31 852 s	EEA
31	35	36	55	48	23	21 ei	34	37	41	Iceland
332	:	373	:	377	500	:	604	:	700	Norge
196	:	213	:	215	211	:	254	:	294	Oslo og Akershus
23	:	26	:	26	5	:	9	:	12	Hedmark og Oppland
5	:	7	:	7	6	:	6	:	8	Sør-Østlandet
7	:	7	:	9	10	:	14	:	16	Agder og Rogaland
57	:	68	:	67	109	:	120	:	141	Vestlandet
22	:	25	:	25	103	:	135	:	159	Trøndelag
21	:	28	:	28	56	:	67	:	71	Nord-Norge

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17A-1 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**1.90 s**	**1.88 s**	**1.86 s**	**1.87 s**	**1.92 s**	**1.19 s**	**1.18 s**	**1.19 s**	**1.19 s**	**1.25 s**
EUR-12	1.83 s	1.82 s	1.80 s	1.80 s	1.86 s	1.13 s	1.12 s	1.13 s	1.13 s	1.18 s
Belgique-België	1.72	1.81	1.88	1.90	1.98	1.23	1.30	1.34	1.35	1.42
Région Bruxelles-capitale	:	:	:	:	:	1.35	1.40	1.38	1.34	:
Vlaams Gewest	:	:	:	:	:	1.21	1.30	1.39	1.44	:
Région Wallonne	:	:	:	:	:	1.19	1.22	1.22	1.15	:
Danmark	1.84	1.85 e	1.94	2.02 s	2.00 e	1.05	1.13 e	1.19	1.32	1.25 e
Deutschland	2.26	2.26 e	2.29	2.31 e	2.44 e	1.50	1.49 s	1.54	1.57 e	1.69 e
Baden-Württemberg	3.66	:	3.76	:	:	2.77	:	2.90	:	:
Stuttgart	4.60	:	4.79	:	:	4.07	:	4.27	:	:
Karlsruhe	3.13	:	3.27	:	:	1.52	:	1.76	:	:
Freiburg	1.96	:	1.96	:	:	1.28	:	1.26	:	:
Tübingen	4.12	:	4.05	:	:	3.37	:	3.31	:	:
Bayern	2.76	:	2.72	:	:	2.14	:	2.08	:	:
Oberbayern	4.57	:	4.38	:	:	3.58	:	3.38	:	:
Niederbayern	0.41	:	0.41	:	:	0.33	:	0.34	:	:
Oberpfalz	1.29	:	1.27	:	:	0.85	:	0.80	:	:
Oberfranken	0.95	:	1.07	:	:	0.64	:	0.73	:	:
Mittelfranken	2.33	:	2.52	:	:	1.77	:	1.95	:	:
Unterfranken	1.67	:	1.70	:	:	1.10	:	1.11	:	:
Schwaben	1.16	:	1.12	:	:	1.05	:	1.00	:	:
Berlin	3.09	:	3.41	:	:	1.27	:	1.58	:	:
Brandenburg	1.37	:	1.49	:	:	0.49	:	0.60	:	:
Bremen	2.97	:	2.07	:	:	1.93	:	1.02	:	:
Hamburg	1.94	:	1.95	:	:	1.15	:	1.18	:	:
Hessen	2.26	:	2.22	:	:	1.76	:	1.76	:	:
Darmstadt	2.64	:	2.59	:	:	2.20	:	2.18	:	:
Gießen	2.10	:	1.97	:	:	0.95	:	0.92	:	:
Kassel	0.70	:	0.75	:	:	0.45	:	0.51	:	:
Mecklenburg-Vorpommern	0.95	:	0.97	:	:	0.20	:	0.15	:	:
Niedersachsen	1.74	:	1.74	:	:	1.04	:	1.06	:	:
Braunschweig	4.75	:	4.84	:	:	2.80	:	2.94	:	:
Hannover	1.60	:	1.64	:	:	0.92	:	1.05	:	:
Lüneburg	0.55	:	0.50	:	:	0.48	:	0.30	:	:
Weser-Ems	0.41	:	0.39	:	:	0.24	:	0.20	:	:
Nordrhein-Westfalen	1.65	:	1.69	:	:	1.02	:	1.06	:	:
Düsseldorf	1.17	:	1.52	:	:	0.85	:	1.17	:	:
Köln	3.42	:	3.04	:	:	2.01	:	1.72	:	:
Münster	0.84	:	0.86	:	:	0.43	:	0.48	:	:
Detmold	1.07	:	1.00	:	:	0.78	:	0.72	:	:
Arnsberg	1.03	:	1.14	:	:	0.56	:	0.64	:	:
Rheinland-Pfalz	1.80	:	2.11	:	:	1.39	:	1.66	:	:
Koblenz	0.54	:	0.52	:	:	0.49	:	0.46	:	:
Trier	0.66	:	0.74	:	:	0.24	:	0.29	:	:
Rheinhessen-Pfalz	2.89	:	3.50	:	:	2.24	:	2.79	:	:
Saarland	0.90	:	0.96	:	:	0.29	:	0.33	:	:
Sachsen	1.94	:	2.19	:	:	0.86	:	1.07	:	:
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	1.33	:	1.28	:	:	0.50	:	0.51	:	:
Dessau	0.71	:	0.72	:	:	0.58	:	0.66	:	:
Halle	1.88	:	1.62	:	:	0.53	:	0.56	:	:
Magdeburg	1.15	:	1.26	:	:	0.44	:	0.40	:	:
Schleswig-Holstein	1.11	:	1.08	:	:	0.46	:	0.44	:	:
Thüringen	1.58	:	1.70	:	:	0.75	:	0.89	:	:
Not registered by region	-	:	-	:	:	-	:	-	:	:
Ellada	0.49	:	0.51	:	:	0.14	0.12	0.13	:	:
Voreia Ellada	0.40	:	0.42	:	:	0.10	0.07	0.08	:	:
Anatoliki Makedonia, Thraki	0.37	:	0.41	:	:	0.09	0.05	0.06	:	:
Kentriki Makedonia	0.52	:	0.52	:	:	0.10	0.09	0.09	:	:
Dytiki Makedonia	0.21	:	0.42	:	:	0.16	0.06	0.07	:	:
Thessalia	0.18	:	0.14	:	:	0.07	0.06	0.05	:	:
Kentriki Ellada	0.29	:	0.31	:	:	0.09	0.08	0.08	:	:
Ipeiros	0.50	:	0.69	:	:	0.04	0.09	0.07	:	:
Ionia Nisia	0.10	:	0.20	:	:	0.01	0.02	0.02	:	:
Dytiki Ellada	0.51	:	0.59	:	:	0.06	0.07	0.07	:	:
Sterea Ellada	0.24	:	0.12	:	:	0.15	0.12	0.10	:	:
Peloponnisos	0.11	:	0.19	:	:	0.10	0.06	0.09	:	:
Attiki	0.67	:	0.68	:	:	0.24	0.21	0.23	:	:
Nisia Aigaiou, Kriti	0.49	:	0.58	:	:	0.03	0.03	0.03	:	:
Voreio Aigaio	0.27	:	0.38	:	:	0.07	0.03	0.02	:	:
Notio Aigaio	0.11	:	0.06	:	:	0.02	0.01	0.01	:	:
Kriti	0.76	:	0.92	:	:	0.02	0.03	0.05	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17B-1 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.31 s	**0.30 s**	**0.28 s**	**0.28 s**	**0.27 s**	**0.39 s**	**0.39 s**	**0.39 s**	**0.38 s**	**0.39 s**	**EU-15**
0.31 s	0.31 s	0.29 s	0.29 s	0.29 s	0.37 s	0.38 s	0.38 s	0.37 s	0.38 s	EUR-12
0.06	0.06	0.06	0.07	0.07	0.41	0.43	0.45	0.46	0.47	Belgique-België
0.15	0.14	0.14	0.15	:	:	:	:	:	:	Région Bruxelles-capitale
0.05	**0.05**	**0.06**	**0.06**	:	:	:	:	:	:	Vlaams Gewest
0.03	0.04	0.03	0.03	:	:	:	:	:	:	Région Wallonne
0.31	0.30 e	0.30	0.29 e	0.31	0.45	0.40 e	0.43	0.41 e	0.42	Danmark
0.35	0.34	0.34	0.34 e	0.34 e	0.41	0.42	0.41	0.40 e	0.41 e	Deutschland
0.46	**0.45**	**0.44**	**0.43 e**	:	0.42	0.43	0.42	0.40 e	:	Baden-Württemberg
0.26	**0.26**	**0.27**	**0.27 e**	:	0.26	0.27	0.25	0.25 e	:	Stuttgart
1.06	**1.01**	**0.98**	**0.92 e**	:	0.55	0.53	0.53	0.49 e	:	Karlsruhe
0.26	**0.23**	**0.24**	**0.26 e**	:	0.42	0.45	0.46	0.44 e	:	Freiburg
0.14	**0.14**	**0.16**	**0.14 e**	:	0.61	0.64	0.59	0.63 e	:	Tübingen
0.26	**0.25**	**0.25**	**0.25 e**	:	0.37	0.39	0.39	0.38 e	:	Bayern
0.52	**0.51**	**0.50**	**0.51 e**	:	0.48	0.51	0.50	0.48 e	:	Oberbayern
-	**-**	**0.00**	**- e**	:	0.08	0.08	0.07	0.07 e	:	Niederbayern
0.02	**0.03**	**0.05**	**0.04 e**	:	0.42	0.43	0.42	0.44 e	:	Oberpfalz
0.04	**0.05**	**0.05**	**0.06 e**	:	0.27	0.27	0.29	0.29 e	:	Oberfranken
0.12	**0.12**	**0.12**	**0.11 e**	:	0.44	0.46	0.46	0.44 e	:	Mittelfranken
0.09	**0.11**	**0.10**	**0.10 e**	:	0.48	0.51	0.50	0.50 e	:	Unterfranken
0.02	**0.02**	**0.01**	**0.01 e**	:	0.08	0.09	0.10	0.11 e	:	Schwaben
1.05	**1.05**	**1.04**	**0.98 e**	:	0.77	0.76	0.79	0.76 e	:	Berlin
0.64	**0.64**	**0.60**	**0.67 e**	:	0.24	0.27	0.29	0.29 e	:	Brandenburg
0.56	**0.55**	**0.55**	**0.59 e**	:	0.48	0.49	0.50	0.47 e	:	Bremen
0.39	**0.38**	**0.36**	**0.34 e**	:	0.41	0.42	0.41	0.40 e	:	Hamburg
0.16	**0.16**	**0.15**	**0.15 e**	:	0.33	0.32	0.31	0.29 e	:	Hessen
0.20	**0.20**	**0.20**	**0.19 e**	:	0.24	0.23	0.21	0.20 e	:	Darmstadt
0.10	**0.07**	**0.05**	**0.04 e**	:	1.05	1.02	1.00	0.97 e	:	Gießen
0.04	**0.04**	**0.04**	**0.04 e**	:	0.21	0.22	0.21	0.20 e	:	Kassel
0.29	**0.31**	**0.32**	**0.43 e**	:	0.45	0.49	0.51	0.47 e	:	Mecklenburg-Vorpommern
0.33	**0.35**	**0.31**	**0.31 e**	:	0.37	0.38	0.36	0.36 e	:	Niedersachsen
1.12	**1.15**	**1.05**	**1.05 e**	:	0.84	0.86	0.85	0.82 e	:	Braunschweig
0.25	**0.22**	**0.19**	**0.18 e**	:	0.43	0.45	0.40	0.41 e	:	Hannover
0.02	**0.15**	**0.14**	**0.14 e**	:	0.05	0.06	0.06	0.04 e	:	Lüneburg
0.03	**0.04**	**0.02**	**0.02 e**	:	0.15	0.17	0.16	0.16 e	:	Weser-Ems
0.29	**0.27**	**0.26**	**0.27 e**	:	0.35	0.36	0.36	0.36 e	:	Nordrhein-Westfalen
0.09	**0.11**	**0.10**	**0.12 e**	:	0.23	0.24	0.25	0.25 e	:	Düsseldorf
0.88	**0.79**	**0.75**	**0.78 e**	:	0.54	0.57	0.58	0.56 e	:	Köln
0.12	**0.07**	**0.08**	**0.09 e**	:	0.29	0.32	0.30	0.30 e	:	Münster
0.03	**0.02**	**0.02**	**0.02 e**	:	0.27	0.27	0.25	0.26 e	:	Detmold
0.11	**0.11**	**0.13**	**0.14 e**	:	0.36	0.37	0.37	0.37 e	:	Arnsberg
0.12	**0.13**	**0.14**	**0.14 e**	:	0.29	0.30	**0.31**	**0.33 e**	:	Rheinland-Pfalz
0.02	**0.02**	**0.02**	**0.02 e**	:	0.04	0.04	0.05	0.05 e	:	Koblenz
0.11	**0.11**	**0.10**	**0.12 e**	:	0.31	0.33	0.35	0.32 e	:	Trier
0.20	**0.21**	**0.23**	**0.23 e**	:	0.45	0.47	0.48	0.51 e	:	Rheinhessen-Pfalz
0.18	**0.19**	**0.21**	**0.19 e**	:	0.43	0.42	0.42	0.41 e	:	Saarland
0.48	**0.50**	**0.51**	**0.56 e**	:	0.60	0.61	0.61	0.61 e	:	Sachsen
:	:	:	**0.25 e**	:	:	:	:	0.45 e	:	Chemnitz
:	:	:	**0.85 e**	:	:	:	:	0.67 e	:	Dresden
:	:	:	**0.50 e**	:	:	:	:	0.72 e	:	Leipzig
0.34	**0.34**	**0.34**	**0.37 e**	:	0.49	0.48	0.44	0.48 e	:	Sachsen-Anhalt
0.09	**-**	**0.01**	**0.03 e**	:	0.04	0.05	0.05	0.05 e	:	Dessau
0.57	**0.46**	**0.39**	**0.47 e**	:	0.78	0.76	0.67	0.77 e	:	Halle
0.26	**0.40**	**0.44**	**0.44 e**	:	0.46	0.45	0.42	0.43 e	:	Magdeburg
0.29	**0.31**	**0.30**	**0.30 e**	:	0.36	0.37	0.35	0.29 e	:	Schleswig-Holstein
0.33	**0.34**	**0.34**	**0.39 e**	:	0.51	0.53	0.47	0.47 e	:	Thüringen
-	-	-	- e	:	-	-	-	- e	:	Not registered by region
0.12	:	0.12	:	0.15	0.22	:	0.26	:	0.34	Ellada
0.07	:	0.07	:	:	0.23	:	0.27	:	:	Voreia Ellada
0.10	:	0.10	:	:	0.19	:	0.25	:	:	Anatoliki Makedonia, Thraki
0.08	:	**0.07**	:	:	0.33	:	0.35	:	:	Kentriki Makedonia
0.03	:	**0.12**	:	:	0.02	:	0.24	:	:	Dytiki Makedonia
0.04	:	**0.03**	:	:	0.07	:	0.06	:	:	Thessalia
0.05	:	**0.02**	:	:	0.15	:	0.21	:	:	Kentriki Ellada
0.04	:	**0.04**	:	:	0.41	:	0.59	:	:	Ipeiros
0.01	:	**0.01**	:	:	0.08	:	0.17	:	:	Ionia Nisia
0.08	:	**0.02**	:	:	0.36	:	0.51	:	:	Dytiki Ellada
0.07	:	**0.01**	:	:	0.02	:	0.01	:	:	Sterea Ellada
0.01	:	**0.05**	:	:	0.00	:	0.04	:	:	Peloponnisos
0.17	:	0.18	:	:	0.25	:	0.27	:	:	Attiki
0.27	:	**0.27**	:	:	0.19	:	0.27	:	:	Nisia Aigaiou, Kriti
0.02	:	**0.03**	:	:	0.17	:	0.34	:	:	Voreio Aigaio
0.02	:	**0.02**	:	:	0.06	:	0.03	:	:	Notio Aigaio
0.47	:	**0.48**	:	:	0.26	:	0.39	:	:	Kriti

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17A-2 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	0.81	0.83 e	0.82	0.90	0.89	0.39	0.40 e	0.40	0.47	0.46
Noroeste	0.50	0.51 e	0.52	0.58	:	0.10	0.11 e	0.14	0.22	:
Galicia	0.48	0.48 e	0.52	0.53	:	0.10	0.11 e	0.13	0.17	:
Principado de Asturias	0.53	0.57 e	0.51	0.54	:	0.12	0.12 e	0.16	0.23	:
Cantabria	0.55	0.53 e	0.57	0.83	:	0.08	0.08 e	0.14	0.45	:
Noreste	0.90	0.92 e	0.87	0.99	:	0.61	0.62 e	0.61	0.72	:
Pais Vasco	1.16	1.23 e	1.16	1.24	:	0.89	0.93 e	0.91	0.99	:
Comunidad Foral de Navarra	0.72	0.74 e	0.72	0.83	:	0.40	0.41 e	0.39	0.51	:
La Rioja	0.36	0.39 e	0.38	0.50	:	0.20	0.21 e	0.17	0.30	:
Aragón	0.61	0.57 e	0.52	0.70	:	0.27	0.27 e	0.25	0.39	:
Comunidad de Madrid	1.64	1.64 e	1.54	1.60	:	0.85	0.87 e	0.81	0.85	:
Centro (E)	0.44	0.45 e	0.50	0.49	:	0.18	0.18 e	0.20	0.19	:
Castilla y León	0.50	0.52 e	0.52	0.52	:	0.16	0.17 e	0.16	0.16	:
Castilla-la Mancha	0.43	0.40 e	0.51	0.48	:	0.28	0.28 e	0.35	0.29	:
Extremadura	0.28	0.34 e	0.39	0.43	:	0.04	0.04 e	0.02	0.07	:
Este	0.72	0.75 e	0.77	0.88	:	0.39	0.40 e	0.41	0.51	:
Cataluña	0.90	0.92 e	0.93	1.07	:	0.55	0.56 e	0.59	0.69	:
Comunidad Valenciana	0.50	0.56 e	0.57	0.63	:	0.15	0.15 e	0.16	0.25	:
Baleares	0.17	0.21 e	0.23	0.29	:	0.01	0.01 e	0.01	0.07	:
Sur	0.57	0.59 e	0.59	0.65	:	0.15	0.16 e	0.15	0.22	:
Andalucia	0.59	0.62 e	0.61	0.68	:	0.16	0.16 e	0.15	0.22	:
Murcia	0.51	0.50 e	0.53	0.57	:	0.15	0.15 e	0.20	0.21	:
Ceuta y Melilla (E)	-	- e	-	-	:	-	- e	-	-	:
Canarias (E)	0.45	0.50 e	0.44	0.53	:	0.06	0.06 e	0.06	0.06	:
France	2.31	2.30	2.22	2.17	2.19	1.41	1.41	1.39	1.35	1.38
Ile de France	3.40	3.27	3.49	3.43	:	2.54	2.44	2.41	2.33	:
Bassin Parisien	0.97	0.96	1.12	1.16	:	0.86	0.85	0.88	0.92	:
Champagne-Ardenne	0.39	0.40	0.57	0.54	:	0.37	0.38	0.41	0.39	:
Picardie	0.92	0.96	0.99	1.09	:	0.88	0.92	0.85	0.94	:
Haute-Normandie	1.33	1.24	1.44	1.55	:	1.28	1.19	1.25	1.35	:
Centre	1.27	1.24	1.50	1.50	:	1.06	1.01	1.16	1.16	:
Basse-Normandie	0.67	0.65	0.76	0.87	:	0.53	0.52	0.47	0.60	:
Bourgogne	0.88	0.95	1.07	1.04	:	0.76	0.83	0.82	0.78	:
Nord - Pas-de-Calais	0.49	0.49	0.69	0.67	:	0.38	0.38	0.37	0.36	:
Est	1.15	1.13	1.37	1.36	:	0.90	0.88	0.88	0.88	:
Lorraine	0.83	0.79	1.07	1.03	:	0.59	0.55	0.57	0.54	:
Alsace	1.06	1.11	1.37	1.35	:	0.69	0.74	0.73	0.73	:
Franche-Comté	1.97	1.86	1.98	2.03	:	1.92	1.82	1.75	1.81	:
Ouest	0.97	0.99	1.24	1.15	:	0.75	0.76	0.83	0.74	:
Pays de la Loire	0.78	0.81	1.03	0.97	:	0.61	0.64	0.72	0.65	:
Bretagne	1.41	1.42	1.76	1.58	:	1.08	1.08	1.19	1.00	:
Poitou-Charentes	0.58	0.57	0.75	0.76	:	0.42	0.42	0.40	0.42	:
Sud-Ouest	1.93	1.96	2.17	2.28	:	1.29	1.28	1.21	1.21	:
Aquitaine	1.31	1.23	1.39	1.39	:	1.11	1.03	0.97	0.98	:
Midi-Pyrénées	3.02	3.19	3.45	3.70	:	1.70	1.78	1.67	1.66	:
Limousin	0.55	0.56	0.76	0.74	:	0.52	0.53	0.53	0.53	:
Centre-Est	1.99	2.06	2.32	2.27	:	1.45	1.54	1.56	1.56	:
Rhône-Alpes	2.11	2.12	2.36	2.30	:	1.52	1.55	1.56	1.54	:
Auvergne	1.34	1.75	2.08	2.14	:	1.08	1.47	1.59	1.68	:
Méditerranée	1.75	2.01	2.00	1.99	:	1.03	1.25	1.02	0.99	:
Languedoc-Roussillon	1.50	1.55	1.93	2.10	:	0.50	0.46	0.53	0.56	:
Provence-Alpes-Côte d'Azur	1.94	2.29	2.11	2.03	:	1.30	1.65	1.27	1.23	:
Corse	0.14	0.14	0.30	0.25	:	-	-	0.03	0.02	:
Départements d'Outre-Mer	0.93	0.88	0.96	1.06	:	-	-	0.01	-	:
Not registered by region	-	-	-	-	:	-	-	-	-	:
Ireland	1.35 e	1.40 e	1.39 e	:	:	0.96 e	1.01 e	1.01 e	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17B-2 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.15	0.15 e	0.14	0.15	0.15	0.26	0.27	0.27	0.27	0.27	España
0.11	0.11 e	0.11	0.10	:	0.28	0.28	0.27	0.25	:	Noroeste
0.12	0.12 e	0.11	0.10	:	0.26	0.25	0.27	0.26	:	Galicia
0.10	0.10 e	0.09	0.09	:	0.32	0.34	0.25	0.22	:	Principado de Asturias
0.12	0.12 e	0.12	0.11	:	0.31	0.28	0.27	0.22	:	Cantabria
0.06	0.06 e	0.05	0.06	:	0.21	0.21	0.22	0.21	:	Noreste
0.04	0.04 e	0.03	0.03	:	0.19	0.21	0.22	0.22	:	Pais Vasco
0.03	0.03 e	0.02	0.02	:	0.29	0.29	0.31	0.29	:	Comunidad Foral de Navarra
0.05	0.05 e	0.05	0.04	:	0.11	0.13	0.16	0.16	:	La Rioja
0.11	0.11 e	0.09	0.14	:	0.24	0.19	0.18	0.18	:	Aragón
0.46	0.46 e	0.42	0.45	:	0.31	0.29	0.30	0.28	:	Comunidad de Madrid
0.05	0.05 e	0.06	0.05	:	0.21	0.22	0.24	0.25	:	Centro (E)
0.05	0.05 e	0.05	0.05	:	0.29	0.30	0.30	0.30	:	Castilla y León
0.05	0.05 e	0.05	0.04	:	0.10	0.07	0.11	0.15	:	Castilla-la Mancha
0.07	0.07 e	0.08	0.08	:	0.17	0.23	0.29	0.28	:	Extremadura
0.09	0.09 e	0.09	0.07	:	0.24	0.27	0.25	0.28	:	Este
0.09	0.09 e	0.10	0.08	:	0.24	0.25	0.23	0.28	:	Cataluña
0.08	0.08 e	0.07	0.06	:	0.27	0.32	0.33	0.32	:	Comunidad Valenciana
0.04	0.04 e	0.06	0.06	:	0.12	0.15	0.16	0.16	:	Baleares
0.12	0.13 e	0.11	0.13	:	0.29	0.30	0.33	0.31	:	Sur
0.13	0.13 e	0.11	0.13	:	0.31	0.33	0.35	0.33	:	Andalucia
0.12	0.12 e	0.12	0.13	:	0.24	0.22	0.21	0.23	:	Murcia
-	- e	-	-	:	-	-	-	-	:	Ceuta y Melilla
0.12	0.12 e	0.11	0.13	:	0.27	0.32	0.28	0.34	:	Canarias
0.49	0.47	0.41	0.40	0.40	0.39	0.39	0.39	0.38	0.38	France
0.53	0.51	0.52	0.52	:	0.29	0.29	0.53	0.54	:	Île de France
0.07	0.07	0.07	0.07	:	0.04	0.04	0.17	0.17	:	Bassin Parisien
0.01	0.01	0.02	0.01	:	0.01	0.01	0.14	0.14	:	Champagne-Ardenne
0.03	0.04	0.03	0.03	:	0.01	0.01	0.11	0.12	:	Picardie
0.02	0.02	0.02	0.03	:	0.03	0.02	0.17	0.17	:	Haute-Normandie
0.16	0.17	0.16	0.16	:	0.06	0.06	0.18	0.18	:	Centre
0.03	0.03	0.03	0.05	:	0.11	0.11	0.26	0.22	:	Basse-Normandie
0.08	0.08	0.09	0.09	:	0.03	0.03	0.17	0.16	:	Bourgogne
0.05	0.05	0.05	0.05	:	0.06	0.05	0.27	0.25	:	Nord - Pas-de-Calais
0.07	0.07	0.08	0.06	:	0.19	0.19	0.43	0.42	:	Est
0.09	0.09	0.09	0.09	:	0.15	0.15	0.41	0.41	:	Lorraine
0.06	0.07	0.06	0.06	:	0.31	0.30	0.57	0.55	:	Alsace
0.02	0.02	0.02	0.01	:	0.03	0.03	0.21	0.21	:	Franche-Comté
0.17	0.17	0.17	0.17	:	0.06	0.06	0.25	0.24	:	Ouest
0.13	0.13	0.12	0.12	:	0.04	0.04	0.19	0.19	:	Pays de la Loire
0.26	0.26	0.26	0.28	:	0.08	0.08	0.31	0.29	:	Bretagne
0.09	0.09	0.08	0.07	:	0.07	0.07	0.27	0.27	:	Poitou-Charentes
0.51	0.54	0.56	0.67	:	0.14	0.14	0.40	0.39	:	Sud-Ouest
0.09	0.09	0.09	0.10	:	0.11	0.11	0.33	0.32	:	Aquitaine
1.12	1.20	1.25	1.51	:	0.20	0.20	0.53	0.52	:	Midi-Pyrénées
0.01	0.01	0.01	0.01	:	0.02	0.02	0.22	0.21	:	Limousin
0.32	0.31	0.30	0.28	:	0.22	0.22	0.46	0.44	:	Centre-Est
0.34	0.33	0.31	0.29	:	0.26	0.25	0.49	0.47	:	Rhône-Alpes
0.22	0.22	0.23	0.21	:	0.05	0.06	0.26	0.25	:	Auvergne
0.51	0.55	0.54	0.56	:	0.21	0.21	0.44	0.44	:	Méditerranée
0.67	0.77	0.78	0.91	:	0.33	0.32	0.62	0.63	:	Languedoc-Roussillon
0.47	0.48	0.45	0.43	:	0.17	0.17	0.38	0.37	:	Provence-Alpes-Côte d'Azur
0.13	0.13	0.11	0.11	:	0.01	0.01	0.16	0.13	:	Corse
0.93	0.87	0.83	0.93	:	0.01	0.01	0.12	0.13	:	Départements d'Outre-Mer
-	-	-	-	:	-	-	-	-	:	Not registered by region
0.11 e	0.11 e	0.10 e	0.09 e	0.07 e	0.26 e	0.26 e	0.27 e	0.27 e	:	Ireland

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17A-3 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	1.00	1.01	0.99	0.99	1.04	0.53	0.54	0.52	0.52	0.56 e
Nord Ovest	1.51	1.54	:	:	:	1.18	1.15	1.17	1.14	:
Piemonte	1.68	1.67	:	:	:	1.44	1.42	1.39	1.39	:
Valle d'Aosta	0.06	0.17	:	:	:	0.06	0.15	0.05	0.14	:
Liguria	1.15	1.28	:	:	:	0.52	0.44	0.61	0.50	:
Lombardia	1.17	1.18	:	:	:	0.90	0.88	0.85	0.84	:
Nord Est	0.62	0.58	:	:	:	0.31	0.30	0.28	0.29	:
Trentino-Alto Adige	0.40	0.40	:	:	:	0.17	0.18	0.19	0.18	:
Veneto	0.53	0.50	:	:	:	0.25	0.24	0.21	0.22	:
Friuli-Venezia Giulia	1.13	1.07	:	:	:	0.65	0.64	0.61	0.66	:
Emilia-Romagna	0.82	0.83	:	:	:	0.41	0.43	0.46	0.48	:
Centro (I)	0.77	0.78	:	:	:	0.24	0.24	0.19	0.19	:
Toscana	0.93	0.94	:	:	:	0.32	0.31	0.24	0.24	:
Umbria	0.60	0.68	:	:	:	0.11	0.11	0.11	0.11	:
Marche	0.43	0.42	:	:	:	0.12	0.12	0.10	0.11	:
Lazio	1.88	1.88	:	:	:	0.62	0.66	0.67	0.62	:
Abruzzo-Molise	0.74	1.08	:	:	:	0.37	0.69	0.41	0.29	:
Abruzzo	0.86	1.26	:	:	:	0.46	0.82	0.51	0.34	:
Molise	0.18	0.32	:	:	:	0.00	0.13	-	0.11	:
Campania	0.78	0.83	:	:	:	0.27	0.29	0.31	0.28	:
Sud	0.43	0.40	:	:	:	0.12	0.10	0.10	0.08	:
Puglia	0.48	0.45	:	:	:	0.17	0.15	0.16	0.12	:
Basilicata	0.53	0.44	:	:	:	0.09	0.08	0.05	0.08	:
Calabria	0.28	0.26	:	:	:	0.02	0.00	0.00	0.01	:
Sicilia	0.55	0.51	:	:	:	0.04	0.03	0.05	0.17	:
Sardegna	0.61	0.67	:	:	:	0.08	0.09	0.09	0.06	:
Nederland	1.99	2.03	2.04	1.94	:	1.04	1.06	1.11	1.05	:
Noord-Nederland	:	:	1.14	1.12	:	:	0.49	0.57	0.53	:
Groningen	:	:	2.61	2.64	:	:	0.51	1.31	1.25	:
Friesland	:	:	-	-	:	:	0.41	-	-	:
Drenthe	:	:	-	-	:	:	0.54	-	-	:
Oost-Nederland	:	:	2.07	1.99	:	:	0.95	0.99	0.95	:
Overijssel	:	:	1.44	1.26	:	:	0.92	0.94	0.79	:
Gelderland	:	:	2.35	2.34	:	:	1.05	1.08	1.12	:
Flevoland	:	:	2.63	2.43	:	:	0.33	0.43	0.35	:
West-Nederland	:	:	2.02	1.92	:	:	0.79	0.85	0.80	:
Utrecht	:	:	2.53	2.07	:	:	0.99	1.12	0.74	:
Noord-Holland	:	:	1.75	1.71	:	:	0.79	0.82	0.80	:
Zuid-Holland	:	:	2.21	2.16	:	:	0.79	0.82	0.83	:
Zeeland	:	:	0.33	0.69	:	:	0.19	0.24	0.61	:
Zuid-Nederland	:	:	2.49	2.31	:	:	2.09	2.14	2.01	:
Noord-Brabant	:	:	2.57	2.37	:	:	2.27	2.23	2.11	:
Limburg (NL)	:	:	2.32	2.18	:	:	1.66	1.93	1.76	:
Österreich	1.56 e	1.60 e	1.69 e	1.81 e	1.83 e	:	:	:	:	:
Ostösterreich	:	:	:	:	:	:	:	:	:	:
Burgenland	:	:	:	:	:	:	:	:	:	:
Niederösterreich	:	:	:	:	:	:	:	:	:	:
Wien	:	:	:	:	:	:	:	:	:	:
Südösterreich	:	:	:	:	:	:	:	:	:	:
Kärnten	:	:	:	:	:	:	:	:	:	:
Steiermark	:	:	:	:	:	:	:	:	:	:
Westösterreich	:	:	:	:	:	:	:	:	:	:
Oberösterreich	:	:	:	:	:	:	:	:	:	:
Salzburg	:	:	:	:	:	:	:	:	:	:
Tirol	:	:	:	:	:	:	:	:	:	:
Vorarlberg	:	:	:	:	:	:	:	:	:	:
Portugal	0.57	:	0.62	:	0.76	0.12	:	0.14	:	0.17
Continente	0.57	:	0.63	:	:	0.12	:	0.15	:	:
Norte	0.37	:	0.40	:	:	0.09	:	0.10	:	:
Centro (P)	0.57	:	0.65	:	:	0.17	:	0.14	:	:
Lisboa e Vale do Tejo	0.78	:	0.85	:	:	0.15	:	0.21	:	:
Alentejo	0.31	:	0.40	:	:	0.06	:	0.05	:	:
Algarve	0.17	:	0.28	:	:	0.00	:	0.02	:	:
Açores	0.46	:	0.54	:	:	0.01	:	0.00	:	:
Madeira	0.59	:	0.50	:	:	0.02	:	-	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17B-3 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.21	0.20	0.20	0.22	0.22	0.26	0.27	0.26 e	0.25 e	0.26 e	Italia
0.15	0.19	0.16	0.14	:	0.19	0.20	:	:	:	Nord Ovest
0.10	0.10	0.09	0.08	:	0.15	0.16	:	:	:	Piemonte
0.01	0.02	0.03	0.01	:	-	-	:	:	:	Valle d'Aosta
0.31	0.49	0.36	0.34	:	0.32	0.34	:	:	:	Liguria
0.13	0.14	0.13	0.12	:	0.15	0.15	:	:	:	Lombardia
0.11	0.10	0.10	0.10	:	0.20	0.19	:	:	:	Nord Est
0.11	0.11	0.11	0.14	:	0.12	0.11	:	:	:	Trentino-Alto Adige
0.09	0.08	0.08	0.07	:	0.19	0.17	:	:	:	Veneto
0.20	0.13	0.15	0.19	:	0.29	0.30	:	:	:	Friuli-Venezia Giulia
0.13	0.11	0.12	0.12	:	0.27	0.29	:	:	:	Emilia-Romagna
0.17	0.15	0.15	0.16	:	0.36	0.39	:	:	:	Centro (I)
0.23	0.21	0.19	0.22	:	0.39	0.42	:	:	:	Toscana
0.08	0.08	0.09	0.09	:	0.41	0.49	:	:	:	Umbria
0.05	0.04	0.07	0.05	:	0.26	0.26	:	:	:	Marche
0.91	0.84	0.92	1.02	:	0.35	0.38	:	:	:	Lazio
0.10	0.10	0.09	0.08	:	0.26	0.29	:	:	:	Abruzzo-Molise
0.12	0.12	0.10	0.09	:	0.29	0.32	:	:	:	Abruzzo
0.03	0.03	0.07	0.02	:	0.16	0.16	:	:	:	Molise
0.17	0.16	0.18	0.20	:	0.35	0.39	:	:	:	Campania
0.09	0.06	0.06	0.09	:	0.22	0.24	:	:	:	Sud
0.09	0.05	0.07	0.11	:	0.23	0.25	:	:	:	Puglia
0.23	0.14	0.04	0.07	:	0.21	0.23	:	:	:	Basilicata
0.05	0.04	0.04	0.06	:	0.21	0.22	:	:	:	Calabria
0.10	0.09	0.09	0.11	:	0.41	0.39	:	:	:	Sicilia
0.14	0.15	0.13	0.14	:	0.39	0.43	:	:	:	Sardegna
0.36	0.38	0.37	0.36	:	0.57	0.58	0.56	0.53	:	Nederland
:	0.09	0.03	0.04	:	:	:	0.54	0.55	:	Noord-Nederland
:	0.18	0.08	0.09	:	:	:	1.23	1.31	:	Groningen
:	0.03	-	-	:	:	:	-	-	:	Friesland
:	0.01	-	-	:	:	:	-	-	:	Drenthe
:	0.55	0.48	0.47	:	:	:	0.61	0.57	:	Oost-Nederland
:	0.09	0.04	0.03	:	:	:	0.47	0.45	:	Overijssel
:	0.58	0.51	0.50	:	:	:	0.76	0.72	:	Gelderland
:	2.37	2.21	2.08	:	:	:	-	-	:	Flevoland
:	0.52	0.54	0.53	:	:	:	0.63	0.60	:	West-Nederland
:	0.67	0.53	0.51	:	:	:	0.88	0.82	:	Utrecht
:	0.45	0.38	0.37	:	:	:	0.56	0.54	:	Noord-Holland
:	0.56	0.72	0.71	:	:	:	0.66	0.63	:	Zuid-Holland
:	0.10	0.10	0.09	:	:	:	-	-	:	Zeeland
:	0.03	0.01	0.01	:	:	:	0.34	0.29	:	Zuid-Nederland
:	0.02	0.01	0.01	:	:	:	0.33	0.25	:	Noord-Brabant
:	0.03	0.03	0.03	:	:	:	0.37	0.39	:	Limburg (NL)
:	:	:	:	:	:	:	:	:	:	Österreich
:	:	:	:	:	:	:	:	:	:	Ostösterreich
:	:	:	:	:	:	:	:	:	:	Burgenland
:	:	:	:	:	:	:	:	:	:	Niederösterreich
:	:	:	:	:	:	:	:	:	:	Wien
:	:	:	:	:	:	:	:	:	:	Südösterreich
:	:	:	:	:	:	:	:	:	:	Kärnten
:	:	:	:	:	:	:	:	:	:	Steiermark
:	:	:	:	:	:	:	:	:	:	Westösterreich
:	:	:	:	:	:	:	:	:	:	Oberösterreich
:	:	:	:	:	:	:	:	:	:	Salzburg
:	:	:	:	:	:	:	:	:	:	Tirol
:	:	:	:	:	:	:	:	:	:	Vorarlberg
0.15	:	0.15	:	0.21	0.21	:	0.25	:	0.29	Portugal
0.15	:	0.15	:	:	0.21	:	0.25	:	:	Continente
0.04	:	0.03	:	:	0.18	:	0.20	:	:	Norte
0.02	:	0.02	:	:	0.29	:	0.39	:	:	Centro (P)
0.30	:	0.29	:	:	0.22	:	0.25	:	:	Lisboa e Vale do Tejo
0.05	:	0.08	:	:	0.18	:	0.21	:	:	Alentejo
0.03	:	0.04	:	:	0.13	:	0.21	:	:	Algarve
0.12	:	0.21	:	:	0.28	:	0.26	:	:	Açores
0.37	:	0.34	:	:	0.08	:	0.10	:	:	Madeira

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17A-4 — R&D expenditure at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Suomi-Finland	2.29	2.54	2.72	2.89	3.19	1.45	1.68	1.79	1.94	2.18
Manner-Suomi	2.30	:	2.73	2.91	:	1.45	:	1.80	1.95	:
Itä-Suomi	1.01	:	1.26	1.29	:	0.42	:	0.52	0.54	:
Väli-Suomi	1.29	:	1.67	1.73	:	0.86	:	1.23	1.27	:
Pohjois-Suomi	2.23	:	3.10	3.82	:	1.42	:	2.12	2.79	:
Uusimaa	3.48	:	3.72	3.73	:	2.15	:	2.38	2.39	:
Etelä-Suomi	1.92	:	2.39	2.63	:	1.31	:	1.69	1.90	:
Åland	0.15	:	0.06	0.03	:	0.04	:	0.03	0.03	:
Sverige	3.46	:	3.68	3.75 e	3.80	2.57	:	2.75	2.85 e	2.86
Stockholm	:	:	:	:	:	:	:	3.88	:	:
Östra Mellansverige	:	:	:	:	:	:	:	2.28	:	:
Sydsverige	:	:	:	:	:	:	:	2.81	:	:
Norra Mellansverige	:	:	:	:	:	:	:	0.95	:	:
Mellersta Norrland	:	:	:	:	:	:	:	0.76	:	:
Övre Norrland	:	:	:	:	:	:	:	0.89	:	:
Småland med Öarna	:	:	:	:	:	:	:	0.66	:	:
Västsverige	:	:	:	:	:	:	:	4.27	:	:
Not registered by region	:	:	:	:	:	:	:	-	:	:
United Kingdom	1.99	1.91	1.84	1.83	1.87	1.30	1.25	1.20	1.21	1.27
North East	1.28	:	0.97	0.99	:	0.90	0.71	0.59	0.62	:
North West	1.86	:	1.75	1.75	:	1.45	1.49	1.40	1.41	:
Yorkshire and The Humber	0.99	:	0.87	0.89	:	0.52	0.49	0.42	0.45	:
East Midlands	1.79	:	1.72	1.77	:	1.33	1.42	1.32	1.39	:
West Midlands	1.60	:	1.44	1.49	:	1.10	1.00	0.98	1.02	:
Eastern	4.06	:	3.91	3.64	:	3.18	3.12	3.21	3.02	:
London	1.42	:	1.10	1.05	:	0.69	0.55	0.46	0.42	:
South East	3.34	:	2.96	2.88	:	2.25	2.14	2.03	2.00	:
South West	2.02	:	1.84	2.09	:	1.38	1.25	1.25	1.40	:
Wales	0.78	:	0.79	0.86	:	0.33	0.35	0.36	0.38	:
Scotland	1.47	:	1.44	1.49	:	0.52	0.55	0.53	0.60	:
Northern Ireland	0.82	:	0.85	0.84	:	0.39	0.50	0.46	0.45	:
Not registered by region	-	:	-	-	-	-	-	-	-	:
EEA	**1.89 s**	**1.88 s**	**1.86 s**	**1.87 s**	**1.92 s**	**1.19 s**	**1.18 s**	**1.18 s**	**1.19 s**	**1.24 s**
Iceland	1.54	1.51 e	1.84	2.04	1.88	0.49	0.47 e	0.75	0.75	0.76
Norge	1.71	:	1.66	:	1.70	0.97	:	0.94	:	0.95
Oslo og Akershus	:	:	:	:	:	:	:	:	:	:
Hedmark og Oppland	:	:	:	:	:	:	:	:	:	:
Sør-Østlandet	:	:	:	:	:	:	:	:	:	:
Agder og Rogaland	:	:	:	:	:	:	:	:	:	:
Vestlandet	:	:	:	:	:	:	:	:	:	:
Trøndelag	:	:	:	:	:	:	:	:	:	:
Nord-Norge	:	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 17
R&D expenditure
At the regional level

As a % of GDP

Table 17B-4 — R&D expenditure at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.39	0.40	0.37	0.36	0.39	0.45	0.46	0.54	0.57	0.63	Suomi-Finland
0.40	:	0.37	0.37	:	0.45	:	0.55	0.57	:	Manner-Suomi
0.17	:	0.18	0.19	:	0.42	:	0.56	0.56	:	Itä-Suomi
0.11	:	0.10	0.12	:	0.32	:	0.33	0.35	:	Väli-Suomi
0.31	:	0.30	0.31	:	0.50	:	0.68	0.72	:	Pohjois-Suomi
0.78	:	0.71	0.66	:	0.55	:	0.61	0.64	:	Uusimaa
0.22	:	0.19	0.19	:	0.39	:	0.50	0.53	:	Etelä-Suomi
0.12	:	0.03	-	:	-	:	-	-	:	Åland
0.13	:	0.13	0.13 e	0.13	0.76	:	0.79	0.76 e	0.81	Sverige
:	:	:	:	:	:	:	:	:	:	Stockholm
:	:	:	:	:	:	:	:	:	:	Östra Mellansverige
:	:	:	:	:	:	:	:	:	:	Sydsverige
:	:	:	:	:	:	:	:	:	:	Norra Mellansverige
:	:	:	:	:	:	:	:	:	:	Mellersta Norrland
:	:	:	:	:	:	:	:	:	:	Övre Norrland
:	:	:	:	:	:	:	:	:	:	Småland med Öarna
:	:	:	:	:	:	:	:	:	:	Västsverige
-	-	-	-	-	-	-	-	-	-	Not registered by region
0.29	0.27	0.25	0.24	0.20	0.38	0.37	0.36	0.36	0.38	United Kingdom
0.02	0.02	0.01	0.01	:	0.35	:	0.37	0.36	:	North East
0.08	0.07	0.08	0.07	:	0.30	:	0.28	0.27	:	North West
0.07	0.06	0.07	0.06	:	0.39	:	0.38	0.38	:	Yorkshire and The Humber
0.13	0.11	0.12	0.10	:	0.31	:	0.28	0.28	:	East Midlands
0.23	0.31	0.23	0.24	:	0.25	:	0.24	0.24	:	West Midlands
0.52	0.43	0.41	0.35	:	0.31	:	0.29	0.27	:	Eastern
0.19	0.16	0.14	0.14	:	0.53	:	0.51	0.50	:	London
0.65	0.69	0.56	0.51	:	0.41	:	0.37	0.36	:	South East
0.40	0.45	0.39	0.48	:	0.22	:	0.21	0.21	:	South West
0.09	0.07	0.08	0.14	:	0.35	:	0.35	0.34	:	Wales
0.41	0.27	0.38	0.35	:	0.53	:	0.53	0.53	:	Scotland
0.10	0.07	0.09	0.08	:	0.33	:	0.30	0.31	:	Northern Ireland
-	-	-	-	:	-	-	-	-	:	Not registered by region
0.31 s	**0.30 s**	**0.28 s**	**0.28 s**	**0.27 s**	**0.39 s**	**0.39 s**	**0.39 s**	**0.38 s**	**0.39 s**	**EEA**
0.58	0.62 e	0.55	0.76	0.60	0.42	0.36 e	0.52	0.51	0.51	Iceland
0.30	:	0.27	:	0.26	0.45	:	0.44	:	0.49	Norge
:	:	:	:	:	:	:	:	:	:	Oslo og Akershus
:	:	:	:	:	:	:	:	:	:	Hedmark og Oppland
:	:	:	:	:	:	:	:	:	:	Sør-Østlandet
:	:	:	:	:	:	:	:	:	:	Agder og Rogaland
:	:	:	:	:	:	:	:	:	:	Vestlandet
:	:	:	:	:	:	:	:	:	:	Trøndelag
:	:	:	:	:	:	:	:	:	:	Nord-Norge

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 18
R&D personnel
At the national level

In full-time equivalent

Table 18A — R&D personnel — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**1 568 079** s	**1 571 300** s	**1 580 231** s	**1 565 903** s	**1 579 616** s	**1 584 989** s	**1 636 370** s	**1 667 513** s	**1 683 112** s
EUR-12	1 214 538 s	1 209 542 s	1 221 128 s	1 219 077 s	1 236 147 s	1 242 326 s	1 272 783 s	1 298 420 s	1 312 263 s
B	:	36 799	38 779	39 848	42 548	44 221	46 428	49 476	:
DK	26 573 s	27 303	:	30 215	32 148 e	34 173	35 194 s	35 822 s	:
D	487 695 e	475 018	:	459 134	453 680 e	460 408	461 542	465 550	:
EL	:	14 549	:	17 572	:	20 172	:	:	:
E	73 320	76 581	80 401	79 990	87 261 s	87 150	97 099	102 237	103 259
F	311 062	312 811	313 372	315 528	316 804	303 411	307 310	:	:
IRL	8 488 e	7 837 e	8 654 e	9 662 e	10 838 e	12 030 e	:	:	:
I	142 855	142 170	143 823	141 789	142 288	141 737 e	:	:	:
NL	72 310	74 420	78 980	79 256	80 820	83 967	85 485	:	:
A	:	24 458	:	:	:	:	31 308	:	:
P	13 448	:	:	15 465	:	18 035	:	20 830	:
FIN	:	30 527	32 331	33 635	:	41 257	46 521	50 605	:
S	:	56 955	:	62 637	:	65 496	68 405 s	66 674	:
UK	271 689	277 500	:	:	:	:	:	:	:
EEA	**1 590 495** s	**1 594 754** s	**1 604 657** s	**1 591 533** s	**1 605 539** s	**1 612 017** s	**1 663 782** s	**1 695 320** s	**1 711 494** s
IS	1 244	1 363	1 412	1 694	1 516	2 151	2 273	2 405	:
NO	:	22 091	:	23 936	:	24 877	:	25 402	:
JP	939 483 ei	947 455 ei	945 823 ei	948 088 ei	891 783 ei	894 003	925 569	919 132	
US	:	:	:	:	:	:	:	:	:

Table 18B — R&D personnel — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**862 896** s	**855 235** s	**856 124** s	**846 427** s	**852 285** s	**871 956** s	**902 960** s	**920 751** s	**931 429** s
EUR-12	653 746 s	640 336 s	643 671 s	641 226 s	647 481 s	669 618 s	685 326 s	702 525 s	714 411 s
B	:	21 932	23 402	24 347	27 212	28 161	29 263	30 868	33 148
DK	15 607 s	15 972	:	17 195	18 615 e	20 037	21 198	21 191 e	:
D	306 925	293 774	:	283 314	276 794 e	286 271	288 090	293 130	:
EL	:	2 880	:	3 098	2 898	3 290	:	:	:
E	28 590	27 781	27 320	27 558	29 430 s	30 023	34 667	38 323	38 706
F	164 379	164 383	161 954	162 042	162 589	166 262	168 118	:	:
IRL	4 235 e	4 499 e	5 325 e	6 151 e	7 164 e	8 174 e	:	:	:
I	63 458	61 993	63 105	60 323	60 915	61 414	61 117	:	:
NL	29 440	30 900	36 040	37 456	39 498	42 408	43 871	44 807 e	:
A	:	15 114	:	:	:	:	20 385	:	:
P	1 882	:	:	1 917	:	1 981	:	3 260	:
FIN	:	15 180	16 900	17 798	20 756	22 304	25 011	27 818	:
S	:	35 330	:	41 637	:	43 881	46 741 s	44 170	:
UK	159 000	163 597	157 386	146 369	143 430	138 420	149 695	152 865	150 350
EEA	**873 516** s	**866 322** s	**867 932** s	**859 068** s	**865 262** s	**885 730** s	**917 001** s	**935 067** s	**946 144** s
IS	291	398	418	551	461	832	915	1 006	:
NO	:	10 689	:	12 090	:	12 942	:	13 310	:
JP	583 961 ei	583 485 ei	577 725 ei	573 714 ei	589 491 ei	586 156	613 160	604 544	:
US	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 18
R&D personnel
At the national level

In full-time equivalent

Table 18C — R&D personnel — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**266 084** s	**261 983** s	**264 721** s	**263 203** s	**262 520** s	**245 269** s	**250 911** s	**254 359** s	**252 643** s
EUR-12	220 740 s	219 584 s	224 025 s	225 286 s	226 100 s	210 377 s	212 478 s	215 256 s	213 638 s
B	:	2 019	2 026	2 020	2 071	2 145	2 071	2 229	:
DK	4 648 s	4 830	:	5 439	5 506 e	5 662	5 853 s	6 236	:
D	73 500 e	71 224	74 177	75 148	74 723	73 492	73 370	72 700	:
EL	:	4 828	:	4 908	:	4 481	:	4 431	:
E	16 679	17 267	17 549	17 155	17 865 s	19 189	20 170	22 283	22 506
F	62 253	61 885	62 322	62 525	62 815	47 531	47 554	:	:
IRL	927 e	927 e	942 e	959 e	945 e	938 e	941 e	884 e	882 e
I	32 868	33 163	32 768	33 039	32 225	31 292	31 284	:	:
NL	14 930	15 190	15 970	16 020	16 924	17 147	17 449	:	:
A	:	2 107	:	:	:	:	2 104	:	:
P	3 956	:	:	4 716	:	5 230	:	5 928	:
FIN	:	6 655	6 849	6 691	:	6 827	7 500	7 946	:
S	:	3 289	:	3 518	:	3 334	3 384 s	3 195	:
UK	37 569	34 280	32 158	28 960	27 488	25 896	29 196	29 672	29 734
EEA	**271 088** s	**267 265** s	**270 093** s	**268 658** s	**267 990** s	**250 771** s	**256 384** s	**259 805** s	**258 064** s
IS	476	538	554	563	588	629	647	667	:
NO	:	4 744	:	4 892	:	4 873	:	4 779	:
JP	55 376	56 015	55 633	55 990	56 176	56 554	58 762	59 025	:
US	:	:	:	:	:	:	:	:	:

Table 18D — R&D personnel — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**415 206** s	**428 498** s	**434 754** s	**435 473** s	**449 135** s	**450 411** s	**464 184** s	**473 420** s	**479 145** s
EUR-12	330 091 s	338 989 s	343 190 s	341 805 s	352 668 s	351 093 s	363 320 s	369 205 s	372 076 s
B	:	12 486	12 939	13 045	12 782	13 426	14 600	15 871	:
DK	6 006 s	6 216	:	7 213	7 676 e	8 139	7 693 s	8 019	:
D	107 270 e	110 020 e	:	100 672	102 163	100 645	100 082	99 720	:
EL	:	6 767	:	9 417	:	12 309	:	17 294	:
E	27 552	30 685	34 642	34 330	38 956 s	36 843	41 042	40 626	41 032
F	79 292	81 414	83 615	85 382	85 869	83 110	84 964	:	:
IRL	3 010 e	2 150 e	2 127 e	2 292 e	2 469 e	2 658 e	2 847 e	:	:
I	46 529	47 014	47 950	48 427	49 148	49 031 e	:	:	:
NL	26 170	26 530	26 050	24 860	24 398	24 412	24 165	:	:
A	:	7 136	:	:	:	:	8 670	:	:
P	6 249	:	:	6 484	:	8 442	:	9 187	:
FIN	:	8 422	8 582	9 146	:	11 854	13 653	14 841	:
S	:	17 766	:	17 302	:	18 198	18 197 s	19 176	:
UK	61 821	65 527	:	:	:	:	:	:	:
EEA	**421 942** s	**435 529** s	**441 945** s	**442 957** s	**456 551** s	**458 129** s	**472 047** s	**481 429** s	**487 355** s
IS	420	374	385	530	408	656	676	696	:
NO	:	6 658	:	6 954	:	7 062	:	7 313	:
JP	271 509 e i	279 046 e i	284 243 e i	290 549 e i	217 558 e i	222 285	225 179	227 562	
US	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 19
R&D researchers — RSE
At the national level

In full-time equivalent

Table 19A — R&D researchers — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**773 812** s	**785 510** s	**813 193** s	**829 398** s	**844 432** s	**861 241** s	**897 414** s	**915 440** s	:
EUR-12	597 274 s	601 944 s	620 356 s	627 360 s	646 454 s	660 177 s	682 454 s	696 743 s	:
B	:	20 839	22 772	23 491	24 466	25 580	28 149	30 219	:
DK	:	13 611	:	15 955	:	:	:	:	:
D	:	229 839	:	231 128	:	235 791	237 712	240 470	:
EL	:	8 015	:	9 706	:	10 972	:	:	:
E	41 687	43 368	47 868	47 344	51 632	53 883	60 269	61 568	:
F	142 198	145 824	148 638	149 824	152 533	152 740	155 006	:	:
IRL	5 561	6 425	:	:	:	:	:	:	:
I	74 422	74 434	75 722	75 536	76 441	:	:	:	:
NL	:	32 200	34 200	34 038	34 012	:	:	:	:
A	:	12 821	:	:	:	:	18 715	:	:
P	:	:	:	11 586	:	13 580	:	15 776	:
FIN	:	18 589	:	20 858	:	26 413	30 431	32 676	:
S	:	30 495	:	33 665	:	36 878	:	:	:
UK	135 064	139 183	145 792	:	145 863	:	:	:	:
EEA	**788 639** s	**801 097** s	**829 385** s	**846 413** s	**862 058** s	**880 187** s	**916 840** s	**935 349** s	:
IS	689	798	:	1 063	890	1 456	1 533	1 614	:
NO	:	14 763	:	15 931	:	17 490	:	18 295	:
JP	622 410 ei	641 083 ei	658 866 ei	673 421 ei	617 365 ei	625 442	652 845	658 910	:
US	:	964 800 ei	:	987 700 ei	:	1 114 100 ei	:	:	:

Table 19B — R&D researchers — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**380 997** s	**383 799** s	**389 378** s	**394 803** s	**404 396** s	**419 553** s	**438 740** s	**447 758** s	:
EUR-12	279 068 s	276 384 s	282 662 s	284 589 s	294 282 s	307 470 s	316 662 s	324 796 s	:
B	:	10 206	11 603	12 174	13 330	13 849	15 573	16 476	18 031
DK	:	5 884	:	6 675	:	:	8 009	:	:
D	:	128 956	:	129 370	:	132 685	133 529	136 020	:
EL	:	1 337	:	1 554	1 538	1 815	:	:	:
E	11 593	11 256	11 070	10 804	11 100	12 009	13 902	15 178	:
F	64 688	66 455	66 714	66 618	68 486	72 023	72 847	:	:
IRL	2 307	2 576	2 982	3 383	4 241	5 098	:	:	:
I	28 479	27 932	28 228	27 104	27 735	:	26 209	:	:
NL	:	11 370	13 140	13 245	13 797	:	:	:	:
A	:	6 995	:	:	:	:	11 716	:	:
P	:	:	:	1 076	:	1 193	:	1 994	:
FIN	:	8 481	:	10 378	:	13 752	15 783	17 309	:
S	:	15 500	:	19 054	:	20 924	:	:	:
UK	82 000	86 031	83 160	84 485	83 006	83 595	92 196	92 133	92 455
EEA	**388 107** s	**391 213** s	**397 196** s	**403 083** s	**413 347** s	**429 382** s	**448 812** s	**458 076** s	:
IS	178	273	287	359	316	481	529	581	:
NO	:	7 141	:	7 921	:	9 348	:	9 737	:
JP	356 406 ei	367 278 ei	376 639 ei	384 100 ei	400 361 ei	404 232	429 195	433 758	:
US	772 000	766 600	757 300	789 400	859 300	918 600	974 600 p	:	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 19
R&D researchers — RSE
At the national level

In full-time equivalent

Table 19C — R&D researchers — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**114 401** s	**112 599** s	**117 081** s	**120 830** s	**121 533** s	**119 302** s	**123 763** s	**126 441** s	:
EUR-12	94 566 s	93 307 s	97 265 s	100 844 s	102 281 s	100 657 s	103 151 s	105 142 s	:
B	:	1 002	1 007	1 013	1 045	1 118	1 120	1 210	:
DK	:	2 948	:	3 575	:	3 711	:	3 918	:
D	:	33 743	:	37 324	37 687	37 402	38 210	38 600	:
EL	:	1 905	:	2 012	:	1 985	:	2 000	:
E	7 661	7 738	7 820	8 361	9 125	10 490	11 021	11 935	:
F	20 905	20 882	21 893	22 234	22 687	20 203	20 532	:	:
IRL	533	559	:	:	:	:	:	:	:
I	13 117	13 298	13 587	13 916	13 637	:	12 900	:	:
NL	:	7 260	7 650	7 830	7 840	:	:	:	:
A	:	904	:	:	:	:	**954**	:	:
P	:	:	:	2 739	:	2 903	:	3 472	:
FIN	:	3 935	:	3 914	:	3 962	4 670	4 812	:
S	:	2 307	:	2 738	:	2 439	:	:	:
UK	15 064	14 037	14 032	13 673	13 021	12 496	14 367	14 958	15 069
EEA	**117 420** s	**115 804** s	**120 353** s	**124 169** s	**124 916** s	**122 765** s	**127 231** s	**129 915** s	:
IS	286	320	:	324	350	412	424	437	:
NO	:	2 885	:	3 017	:	3 051	:	3 037	:
JP	29 894	29 907	30 263	30 346	30 241	30 212	30 910	30 987	:
US	61 800 ei	60 000 ei	:	53 900 ei	52 100 ei	49 800 ei	:	:	:

Table 19D — R&D researchers — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**265 997** s	**276 236** s	**293 917** s	**300 357** s	**310 240** s	**312 870** s	**324 897** s	**330 787** s	:
EUR-12	218 547 s	226 730 s	234 687 s	235 964 s	244 480 s	245 561 s	255 872 s	260 080 s	:
B	:	9 417	9 900	10 027	9 789	10 305	11 148	12 209	:
DK	:	4 627	:	5 520	:	6 143	:	5 722	:
D	64 880	67 140	:	64 434	66 110	65 704	65 973	65 850	:
EL	:	4 773	:	6 069	:	7 127	:	10 471	:
E	22 168	24 006	28 592	27 666	30 858	30 649	34 524	33 840	:
F	54 323	56 154	57 432	58 542	59 094	57 394	58 421	:	:
IRL	2 721	3 290	3 858	4 524	:	:	:	:	:
I	32 826	33 204	33 907	34 516	35 069	:	:	:	:
NL	13 630	12 710	12 920	12 483	12 375	:	:	:	:
A	:	4 857	:	:	:	:	5 955	:	:
P	:	:	:	5 841	:	7 486	:	8 243	:
FIN	:	6 173	:	6 566	:	8 501	9 709	10 555	:
S	:	12 688	:	11 873	:	13 515	:	14 623	:
UK	31 000	32 190	41 876	:	47 235	:	:	:	:
EEA	**270 668** s	**281 178** s	**298 992** s	**305 729** s	**315 506** s	**318 508** s	**330 767** s	**336 888** s	:
IS	225	205	211	380	224	547	564	580	:
NO	:	4 737	:	4 993	:	5 091	:	5 521	:
JP	222 006 ei	229 164 ei	235 702 ei	242 862 ei	170 017 ei	174 093	176 627	178 418	:
US	:	128 000	:	134 300	:	135 800	:	:	:

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 20
R&D personnel
At the national level

In head count

Table 20A — R&D personnel — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**2 063 583** s	**2 062 741** s	**2 090 274** s	**2 101 302** s	**2 131 820** s	**2 160 487** s	**2 224 553** s	**2 273 133** s	**2 313 645** s
EUR-12	1 580 190 s	1 563 425 s	1 584 588 s	1 596 555 s	1 625 583 s	1 655 241 s	1 692 849 s	1 728 731 s	1 762 950 s
B	:	:	49 965 s	50 834 s	:	:	:	:	:
DK	42 589 s	43 851	:	50 726	51 754 s	52 370	56 363 s	54 854	:
D	:	614 951 s	:	585 670 s	573 748 s	581 688 s	584 909 s	:	:
EL	:	30 545	:	36 385	:	43 353	:	:	:
E	119 440	122 275	134 587 s	147 046	155 886 s	155 117	165 583 s	178 189	:
F	355 987	356 584	361 695	365 424	370 083	378 678	381 098	:	:
IRL	11 330 s	10 143 s	11 068 s	12 306 s	13 741 s	15 202 s	:	:	:
I	179 740	179 557	183 850	183 812	185 641	:	:	:	:
NL	100 720 s	102 909 s	106 896 s	105 269 s	107 567 s	109 416 s	:	:	:
A	:	43 130 s	:	:	:	:	52 956	:	:
P	20 581 s	:	:	25 024	:	29 413	:	36 898	:
FIN	:	42 508	42 732 s	47 866	:	55 489	60 888	66 965	:
S	:	79 603	:	97 955	:	102 216	101 913 s	107 520	:
UK	352 926 s	362 518 s	:	:	:	:	:	:	:
EEA	**2 098 538** s	**2 099 319** s	**2 130 417** s	**2 145 011** s	**2 177 441** s	**2 208 020** s	**2 272 235** s	**2 320 973** s	**2 364 424** s
IS	2 295 s	2 702	2 533 s	2 889	2 716 s	3 639	3 821	4 012	:
NO	:	33 876	:	40 820	:	43 894	:	43 828	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Table 20B — R&D personnel — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**1 000 308** s	**985 732** s	**988 482** s	**979 861** s	**992 205** s	**1 007 887** s	**1 044 352** s	**1 068 039** s	**1 085 198** s
EUR-12	754 167 s	733 734 s	737 734 s	735 964 s	750 671 s	771 126 s	792 142 s	810 904 s	828 503 s
B	:	:	25 461 s	26 318 s	:	:	:	:	:
DK	21 996 s	21 910	:	25 739	25 967 s	26 484	28 572	29 561	:
D	352 626 s	340 678 s	:	325 499 s	316 362 s	327 866 s	329 949 s	:	:
EL	:	4 462	:	5 285	5 112	5 739	:	:	:
E	35 141	34 478	33 771 s	33 068	33 637 s	36 061	42 457 s	46 429	:
F	180 842	178 484	177 941	179 244	178 783	184 167	184 279	:	:
IRL	4 850 s	5 153 s	6 099 s	7 045 s	8 205 s	9 362 s	:	:	:
I	69 326	68 147	70 402	67 885	68 321	68 453	72 185	:	:
NL	34 584 s	35 833 s	41 850 s	43 033 s	45 379 s	48 571 s	:	:	:
A	:	17 524 s	:	:	:	:	24 940	:	:
P	2 810 s	:	:	3 333	:	3 875	:	5 658	:
FIN	:	19 678	19 624 s	24 243	26 467	29 138	32 428	36 406	:
S	:	40 371	:	47 962	:	49 324	52 538 s	49 823	:
UK	184 386 s	189 717 s	182 757 s	170 739 s	164 270 s	158 532 s	171 536 s	:	:
EEA	**1 013 714** s	**999 713** s	**1 003 896** s	**996 709** s	**1 010 031** s	**1 026 692** s	**1 063 133** s	**1 086 799** s	**1 105 009** s
IS	501 s	779	720 s	911	793 s	1 256	1 319	1 385	:
NO	:	13 202	:	15 937	:	17 549	:	17 375	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 20
R&D personnel
At the national level

In head count

Table 20C — R&D personnel — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**346 997** s	**332 950** s	**338 671** s	**336 500** s	**329 723** s	**314 117** s	**319 804** s	**323 902** s	**328 064** s
EUR-12	283 475 s	273 982 s	280 806 s	281 525 s	277 179 s	264 160 s	265 498 s	268 963 s	273 147 s
B	:	:	2 422 s	2 413 s	2 405 s	2 475 s	:	:	:
DK	10 017 s	9 912	:	11 509	11 360 s	10 691	13 103 s	10 813	:
D	:	94 379 s	98 293 s	97 414 s	88 838 s	87 838 s	88 206 s	:	:
EL	:	7 145	:	10 259	:	9 773	:	7 911	:
E	24 453	24 428	23 497 s	22 562	21 240 s	25 620	27 992 s	28 851	:
F	63 847	64 173	64 358	64 574	65 683	51 594	50 364	:	:
IRL	1 108 s	1 108 s	1 126 s	1 146 s	1 129 s	1 121 s	1 125 s	1 057 s	1 054 s
I	39 308	39 550	40 713	40 985	41 878	41 435	41 843	:	:
NL	19 793 s	20 088 s	21 162 s	20 767 s	21 936 s	19 314 s	:	:	:
A	:	5 330	:	:	:	:	5 734	:	:
P	5 406 s	:	:	6 210	:	6 831	:	9 252	:
FIN	:	9 077	9 076 s	8 902	:	9 224	9 754	10 523	:
S	:	3 723	:	5 360	:	5 192	5 270 s	5 084	:
UK	49 683 s	45 333 s	42 613 s	38 375 s	32 854 s	30 951 s	30 791 s	30 802 s	30 826 s
EEA	**354 003** s	**340 341** s	**346 112** s	**343 990** s	**337 335** s	**321 850** s	**327 432** s	**331 428** s	**335 572** s
IS	667 s	780	776 s	800	823 s	1 036	1 088	1 142	:
NO	:	6 611	:	6 690	:	6 697	:	6 384	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Table 20D — R&D personnel — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**681 111** s	**706 887** s	**726 806** s	**748 219** s	**772 005** s	**799 600** s	**821 356** s	**842 688** s	**861 328** s
EUR-12	527 132 s	541 380 s	552 158 s	564 351 s	581 529 s	602 432 s	617 400 s	631 465 s	643 198 s
B	:	:	21 504 s	21 492 s	21 745 s	21 956 s	:	:	:
DK	10 163 s	11 651	:	12 948	13 974 s	14 729	14 108 s	14 006	:
D	:	179 894 s	:	162 756 s	168 549 s	165 984 s	166 754 s	:	:
EL	:	18 811	:	20 658	:	27 673	:	40 414	:
E	59 153	62 191	76 071 s	89 947	99 435	91 721	93 342 s	101 231	:
F	104 766	107 561	112 853	114 469	117 858	134 295	137 836	:	:
IRL	4 964 s	3 546 s	3 508 s	3 780 s	4 072 s	4 384 s	4 695 s	:	:
I	71 106	71 860	72 735	74 942	75 442	:	:	:	:
NL	43 860 s	44 463 s	42 594 s	40 191 s	40 252 s	40 259 s	:	:	:
A	:	20 039	:	:	:	:	21 933	:	:
P	10 472 s	:	:	12 098	:	14 788	:	17 766	:
FIN	:	13 344	14 032 s	14 721	:	16 685	18 165	20 036	:
S	:	34 369	:	44 182	:	47 537	43 943 s	52 421	:
UK	100 140 s	106 143 s	:	:	:	:	:	:	:
EEA	**695 573** s	**722 005** s	**744 017** s	**767 523** s	**792 124** s	**820 533** s	**842 563** s	**864 174** s	**884 720** s
IS	1 043 s	1 055	955 s	1 111	1 013 s	1 285	1 349	1 417	:
NO	:	14 063	:	18 193	:	19 648	:	20 069	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 21
R&D personnel
At the national level

As a % of the labour force
In head count

Table 21A — R&D personnel — Total of sectors

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**1.25 s**	**1.25 s**	**1.26 s**	**1.27 s**	**1.28 s**	**1.29 s**	**1.31 s**	**1.33 s**	**1.34 s**
EUR-12	1.23 s	1.21 s	1.22 s	1.23 s	1.24 s	1.25 s	1.27 s	1.28 s	1.30 s
B	:	:	1.20 s	1.22 s	:	:	:	:	:
DK	1.47 s	1.53	:	1.81	1.84 s	1.85	2.00 s	1.92	:
D	:	1.57 s	:	1.50 s	1.47 s	1.49 s	1.49 s	:	:
EL	:	0.75	:	0.87	:	1.02	:	:	:
E	0.79	0.80	0.87 s	0.95	0.98 s	0.97	1.02 s	1.09	:
F	1.45	1.44	1.45	1.46	1.46	1.49	1.49	:	:
IRL	0.84 s	0.74 s	0.78 s	0.86 s	0.93 s	0.99 s	:	:	:
I	0.79	0.79	0.81	0.81	0.82	:	:	:	:
NL	1.44 s	1.45 s	1.48 s	1.44 s	1.45 s	1.44 s	:	:	:
A	:	1.16 s	:	:	:	:	1.38	:	:
P	0.44 s	:	:	0.53	:	0.61	:	0.73	:
FIN	:	1.70	1.72 s	1.97	:	2.23	2.43	2.54	:
S	:	1.82	:	2.18	:	2.34	2.35 s	2.45	:
UK	1.24 s	1.28 s	:	:	:	:	:	:	:
EEA	**1.26 s**	**1.26 s**	**1.27 s**	**1.27 s**	**1.28 s**	**1.30 s**	**1.32 s**	:	:
IS	1.61 s	1.87	1.74 s	1.94	1.84 s	2.46	2.51	:	:
NO	:	1.59	:	1.87	:	1.92	:	1.88	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Table 21B — R&D personnel — Business enterprise sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.61 s**	**0.60 s**	**0.60 s**	**0.59 s**	**0.59 s**	**0.60 s**	**0.62 s**	**0.62 s**	**0.63 s**
EUR-12	0.59 s	0.57 s	0.57 s	0.57 s	0.57 s	0.58 s	0.59 s	0.60 s	0.61 s
B	:	:	0.61 s	0.63 s	:	:	:	:	:
DK	0.76 s	0.76	:	0.92	0.92 s	0.94	1.01	1.04	:
D	0.90 s	0.87 s	:	0.84 s	0.81 s	0.84 s	0.84 s	:	:
EL	:	0.11	:	0.13	0.12	0.14	:	:	:
E	0.23	0.23	0.22 s	0.21	0.21 s	0.22	0.26 s	0.28	:
F	0.74	0.72	0.72	0.72	0.71	0.73	0.72	:	:
IRL	0.36 s	0.38 s	0.43 s	0.49 s	0.55 s	0.61 s	:	:	:
I	0.30	0.30	0.31	0.30	0.30	0.30	0.31	:	:
NL	0.49 s	0.51 s	0.58 s	0.59 s	0.61 s	0.64 s	:	:	:
A	:	0.47 s	:	:	:	:	0.65	:	:
P	0.06 s	:	:	0.07	:	0.08	:	0.11	:
FIN	:	0.79	0.79 s	1.00	1.08	1.17	1.29	1.38	:
S	:	0.92	:	1.07	:	1.13	1.21 s	1.14	:
UK	0.65 s	0.67 s	0.64 s	0.60 s	0.58 s	0.55 s	0.60 s	:	:
EEA	**0.61 s**	**0.60 s**	**0.60 s**	**0.59 s**	**0.60 s**	**0.60 s**	**0.62 s**	:	:
IS	0.35 s	0.54	0.50 s	0.61	0.54 s	0.85	0.87	:	:
NO	:	0.62	:	0.73	:	0.77	:	0.75	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Methodological notes

In some cases, OECD labour force data were used.
More details are given in the methodological notes at the end of this part.
See abbreviations and other methodological notes starting on page 172.

Source: Eurostat

Table 21
R&D personnel
At the national level

As a % of the labour force
In head count

Table 21C — R&D personnel — Government sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.21** s	**0.20** s	**0.20** s	**0.20** s	**0.20** s	**0.19** s	**0.19** s	**0.19** s	**0.19** s
EUR-12	0.22 s	0.21 s	0.22 s	0.22 s	0.21 s	0.20 s	0.20 s	0.20 s	0.20 s
B	:	:	0.06 s	0.06 s	0.06 s	0.06 s	:	:	:
DK	0.35 s	0.35	:	0.41	0.40 s	0.38	0.46 s	0.38	:
D	:	0.24 s	0.25 s	0.25 s	0.23 s	0.22 s	0.22 s	:	:
EL	:	0.18	:	0.24	:	0.23	:	0.18	:
E	0.16	0.16	0.15 s	0.15	0.13 s	0.16	0.17 s	0.18	:
F	0.26	0.26	0.26	0.26	0.26	0.20	0.20	:	:
IRL	0.08 s	0.08 s	0.08 s	0.08 s	0.08 s	0.07 s	0.07 s	0.06 s	0.06 s
I	0.17	0.18	0.18	0.18	0.18	0.18	0.18	:	:
NL	0.28 s	0.28 s	0.29 s	0.28 s	0.30 s	0.25 s	:	:	:
A	:	0.14	:	:	:	:	0.15	:	:
P	0.12 s	:	:	0.13	:	0.14	:	0.18	:
FIN	:	0.36	0.37 s	0.37	:	0.37	0.39	0.40	:
S	:	0.09	:	0.12	:	0.12	0.12 s	0.12	:
UK	0.17 s	0.16 s	0.15 s	0.14 s	0.12 s	0.11 s	0.11 s	0.11 s	0.11 s
EEA	**0.21** s	**0.20** s	**0.21** s	**0.20** s	**0.20** s	**0.19** s	**0.19** s	:	:
IS	0.47 s	0.54	0.53 s	0.54	0.56 s	0.70	0.72	:	:
NO	:	0.31	:	0.31	:	0.29	:	0.27	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Table 21D — R&D personnel — Higher education sector

	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**0.41** s	**0.43** s	**0.44** s	**0.45** s	**0.46** s	**0.48** s	**0.48** s	**0.49** s	**0.50** s
EUR-12	0.41 s	0.42 s	0.42 s	0.43 s	0.44 s	0.46 s	0.46 s	0.47 s	0.47 s
B	:	:	0.52 s	0.51 s	0.52 s	0.52 s	:	:	:
DK	0.35 s	0.41	:	0.46	0.50 s	0.52	0.50 s	0.49	:
D	:	0.46 s	:	0.42 s	0.43 s	0.42 s	0.42 s	:	:
EL	:	0.46	:	0.49	:	0.65	:	0.91	:
E	0.39	0.41	0.49 s	0.58	0.63	0.57	0.58 s	0.62	:
F	0.43	0.44	0.45	0.46	0.47	0.53	0.54	:	:
IRL	0.37 s	0.26 s	0.25 s	0.26 s	0.28 s	0.29 s	0.29 s	:	:
I	0.31	0.32	0.32	0.33	0.33	:	:	:	:
NL	0.63 s	0.63 s	0.59 s	0.55 s	0.54 s	0.53 s	:	:	:
A	:	0.54	:	:	:	:	0.57	:	:
P	0.22 s	:	:	0.26	:	0.31	:	0.35	:
FIN	:	0.53	0.56 s	0.61	:	0.67	0.72	0.76	:
S	:	0.79	:	0.98	:	1.09	1.01 s	1.20	:
UK	0.35 s	0.37 s	:	:	:	:	:	:	:
EEA	**0.42** s	**0.43** s	**0.44** s	**0.46** s	**0.47** s	**0.48** s	**0.49** s	:	:
IS	0.73 s	0.73	0.66 s	0.75	0.69 s	0.87	0.89	:	:
NO	:	0.66	:	0.83	:	0.86	:	0.86	:
JP	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:

Methodological notes

In some cases, OECD labour force data were used.
More details are given in the methodological notes at the end of this part.
See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22A-1 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**1 565 903 s**	**1 579 616 s**	**1 584 989 s**	**1 636 370 s**	**1 667 513 s**	**846 427 s**	**852 285 s**	**871 956 s**	**902 960 s**	**920 751 s**
EUR-12	1 219 077 s	1 236 147 s	1 242 326 s	1 272 783 s	1 298 420 s	641 226 s	647 481 s	669 618 s	685 326 s	702 525 s
Belgique-België	39 848	42 548	44 221	46 428	49 476	24 347	27 212	28 161	29 263	30 868
Région Bruxelles-capitale	:	:	:	:	:	3 913	4 446	4 468	4 334	4 360
Vlaams Gewest	:	:	:	:	:	14 854	16 550	17 449	18 609	19 701
Région Wallonne	:	:	:	:	:	5 580	6 216	6 244	6 320	6 807
Danmark	30 215	32 148 e	34 173	35 194 s	35 822 s	17 195	18 615 e	20 037	21 198	21 191 e
Deutschland	459 134	453 680 e	460 408	461 542	465 550	283 314	276 794 e	286 271	288 090	293 130
Baden-Württemberg	91 844	:	93 345	:	:	66 025	:	68 271	:	:
Stuttgart	42 544	:	43 369	:	:	36 143	:	37 456	:	:
Karlsruhe	24 014	:	24 940	:	:	11 512	:	12 857	:	:
Freiburg	9 781	:	9 510	:	:	6 529	:	5 950	:	:
Tübingen	15 505	:	15 526	:	:	11 841	:	12 008	:	:
Bayern	87 000	:	86 806	:	:	64 684	:	64 288	:	:
Oberbayern	57 651	:	56 642	:	:	42 427	:	41 661	:	:
Niederbayern	1 192	:	1 259	:	:	1 020	:	1 084	:	:
Oberpfalz	3 140	:	3 004	:	:	2 098	:	1 935	:	:
Oberfranken	3 150	:	2 936	:	:	2 156	:	2 005	:	:
Mittelfranken	11 758	:	12 605	:	:	9 154	:	9 748	:	:
Unterfranken	5 364	:	5 680	:	:	3 385	:	3 560	:	:
Schwaben	4 746	:	4 680	:	:	4 444	:	4 295	:	:
Berlin	29 260	:	29 266	:	:	11 076	:	12 708	:	:
Brandenburg	6 978	:	6 795	:	:	2 821	:	2 860	:	:
Bremen	5 233	:	4 570	:	:	3 477	:	2 490	:	:
Hamburg	13 137	:	13 037	:	:	7 312	:	7 358	:	:
Hessen	39 658	:	38 388	:	:	29 549	:	28 637	:	:
Darmstadt	31 867	:	30 660	:	:	25 615	:	24 769	:	:
Giessen	5 599	:	5 405	:	:	2 515	:	2 348	:	:
Kassel	2 192	:	2 323	:	:	1 419	:	1 520	:	:
Mecklenburg-Vorpommern	3 937	:	3 691	:	:	1 018	:	724	:	:
Niedersachsen	32 435	:	32 884	:	:	18 382	:	18 764	:	:
Braunschweig	18 943	:	19 078	:	:	10 193	:	10 631	:	:
Hannover	9 248	:	9 577	:	:	5 100	:	5 635	:	:
Lüneburg	1 644	:	1 577	:	:	1 439	:	1 008	:	:
Weser-Ems	2 600	:	2 652	:	:	1 650	:	1 490	:	:
Nordrhein-Westfalen	76 293	:	75 293	:	:	44 541	:	43 569	:	:
Düsseldorf	18 545	:	20 488	:	:	13 135	:	14 883	:	:
Köln	34 089	:	30 917	:	:	17 384	:	14 136	:	:
Münster	5 687	:	5 902	:	:	2 976	:	3 279	:	:
Detmold	6 592	:	6 126	:	:	4 880	:	4 473	:	:
Arnsberg	11 379	:	11 860	:	:	6 166	:	6 798	:	:
Rheinland-Pfalz	16 902	:	17 559	:	:	12 684	:	13 082	:	:
Koblenz	1 856	:	1 748	:	:	1 669	:	1 556	:	:
Trier	787	:	829	:	:	319	:	337	:	:
Rheinhessen-Pfalz	14 259	:	14 982	:	:	10 696	:	11 189	:	:
Saarland	2 471	:	2 560	:	:	777	:	748	:	:
Sachsen	19 692	:	21 532	:	:	9 891	:	11 438	:	:
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	7 456	:	7 133	:	:	3 267	:	3 072	:	:
Dessau	946	:	876	:	:	832	:	817	:	:
Halle	3 568	:	3 241	:	:	1 231	:	1 099	:	:
Magdeburg	2 942	:	3 016	:	:	1 204	:	1 156	:	:
Schleswig-Holstein	8 014	:	7 934	:	:	3 272	:	3 340	:	:
Thüringen	8 255	:	8 892	:	:	4 538	:	4 922	:	:
Not registered by region	10 569	:	10 723	:	:	-	:	-	:	:
Ellada	17 572	:	20 172	:	:	3 098	2 898	3 290	:	:
Voreia Ellada	4 693	:	5 785	:	:	606	468	531	:	:
Anatoliki Makedonia, Thraki	732	:	778	:	:	69	34	42	:	:
Kentriki Makedonia	3 485	:	4 100	:	:	360	326	369	:	:
Dytiki Makedonia	132	:	522	:	:	81	32	34	:	:
Thessalia	344	:	386	:	:	96	76	86	:	:
Kentriki Ellada	2 229	:	3 035	:	:	434	361	356	:	:
Ipeiros	433	:	812	:	:	19	40	31	:	:
Ionia Nisia	65	:	204	:	:	5	11	12	:	:
Dytiki Ellada	1 192	:	1 472	:	:	109	83	82	:	:
Sterea Ellada	415	:	240	:	:	221	162	158	:	:
Peloponnisos	124	:	307	:	:	80	65	73	:	:
Attiki	8 811	:	9 157	:	:	1 991	2 017	2 334	:	:
Nisia Aigaiou, Kriti	1 839	:	2 195	:	:	67	52	69	:	:
Voreio Aigaio	119	:	434	:	:	23	15	9	:	:
Notio Aigaio	95	:	99	:	:	11	8	8	:	:
Kriti	1 625	:	1 662	:	:	33	29	52	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22B-1 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
263 203 s	**262 520** s	**245 269** s	**250 911** s	**254 359** s	**435 473** s	**449 135** s	**450 411** s	**464 184** s	**473 420** s	**EU-15**
225 286 s	226 100 s	210 377 s	212 478 s	215 256 s	341 805 s	352 668 s	351 093 s	363 320 s	369 205 s	EUR-12
2 020	2 071	2 145	2 071	2 229	13 045	12 782	13 426	14 600	15 871	Belgique-België
740	**764**	**798**	**675**	787	:	:	:	:	:	Région Bruxelles-capitale
874	**868**	**909**	**941**	981	:	:	:	:	:	Vlaams Gewest
406	439	438	**455**	461	:	:	:	:	:	Région Wallonne
5 439	5 506 e	5 662	5 853 s	6 236	7 213	7 676 e	8 139	7 693 s	8 019	Danmark
75 148	74 723	73 492	73 370	72 700	100 672	102 163	100 645	100 082	99 720	Deutschland
12 852	12 284	12 285	12 213	:	12 967	13 468	12 789	12 928	:	Baden-Württemberg
3 150	3 015	2 998	2 877	:	3 251	3 286	2 915	3 302	:	Stuttgart
7 639	7 135	7 095	7 034	:	4 863	5 054	4 988	4 709	:	Karlsruhe
1 246	1 287	1 337	1 473	:	2 006	2 209	2 223	2 068	:	Freiburg
817	847	855	829	:	2 847	2 919	2 663	2 849	:	Tübingen
9 939	9 844	9 778	9 834	:	12 377	12 800	12 740	12 645	:	Bayern
8 923	8 759	8 692	8 719	:	6 301	6 365	6 289	6 245	:	Oberbayern
-	-	4	3	:	172	180	171	164	:	Niederbayern
114	**130**	**134**	**88**	:	928	961	935	910	:	Oberpfalz
236	**229**	**199**	**192**	:	758	735	732	760	:	Oberfranken
348	**370**	**396**	**461**	:	2 256	2 446	2 461	2 427	:	Mittelfranken
277	**319**	**304**	**330**	:	1 702	1 852	1 816	1 810	:	Unterfranken
41	37	49	41	:	261	261	336	329	:	Schwaben
9 943	9 579	9 086	8 452	:	8 241	7 680	7 472	7 002	:	Berlin
2 911	2 762	2 721	2 824	:	1 246	1 267	1 214	1 253	:	Brandenburg
864	844	900	1 040	:	892	1 042	1 180	1 405	:	Bremen
2 789	2 809	2 798	2 616	:	3 036	3 099	2 881	2 623	:	Hamburg
3 215	3 214	2 987	3 069	:	6 894	6 622	6 764	6 710	:	Hessen
2 947	2 918	2 707	2 817	:	3 305	3 115	3 184	3 212	:	Darmstadt
106	121	119	104	:	2 978	2 887	2 938	2 877	:	Giessen
162	175	161	148	:	611	620	642	621	:	Kassel
1 122	1 180	1 177	1 270	:	1 797	1 749	1 790	1 712	:	Mecklenburg-Vorpommern
6 655	7 159	6 724	6 530	:	7 398	7 773	7 396	7 690	:	Niedersachsen
4 914	5 206	4 710	4 738	:	3 836	3 755	3 737	3 786	:	Braunschweig
1 460	1 319	1 357	1 198	:	2 688	2 940	2 585	2 742	:	Hannover
107	440	446	400	:	98	111	123	155	:	Lüneburg
174	194	211	194	:	776	967	951	1 007	:	Weser-Ems
13 781	13 659	13 142	13 174	:	17 971	18 185	18 582	18 698	:	Nordrhein-Westfalen
1 703	1 857	1 739	1 655	:	3 707	3 565	3 866	3 757	:	Düsseldorf
9 798	9 716	9 389	9 500	:	6 907	7 050	7 392	7 547	:	Köln
738	533	546	464	:	1 973	2 241	2 077	2 247	:	Münster
216	212	202	198	:	1 496	1 469	1 451	1 446	:	Detmold
1 326	1 341	1 266	1 357	:	3 887	3 860	3 796	3 701	:	Arnsberg
1 143	1 268	1 341	1 645	:	3 075	3 193	3 136	3 205	:	Rheinland-Pfalz
86	98	82	81	:	101	111	110	115	:	Koblenz
133	137	134	174	:	335	345	358	366	:	Trier
924	1 033	1 125	1 390	:	2 639	2 737	2 668	2 724	:	Rheinhessen-Pfalz
435	503	571	537	:	1 259	1 259	1 241	1 235	:	Saarland
3 863	3 952	4 083	4 250	:	5 938	6 281	6 011	5 939	:	Sachsen
:	:	:	539	:	:	:	:	1 437	:	Chemnitz
:	:	:	2 483	:	:	:	:	2 772	:	Dresden
:	:	:	1 228	:	:	:	:	1 730	:	Leipzig
1 548	1 577	1 589	1 701	:	2 641	2 502	2 472	2 496	:	Sachsen-Anhalt
4	-	12	38	:	110	69	47	83	:	Dessau
625	**590**	590	641	:	1 712	1 628	1 552	**1 566**	:	Halle
919	**987**	**987**	**1 022**	:	819	805	873	847	:	Magdeburg
2 362	2 238	2 414	2 351	:	2 380	2 374	2 180	2 291	:	Schleswig-Holstein
1 395	1 498	1 524	1 644	:	2 322	2 305	2 446	2 374	:	Thüringen
331	353	372	220	:	10 238	10 564	10 351	9 876	:	Not registered by region
4 908	:	4 481	:	4 431	9 417	:	12 309	:	17 294	Ellada
887	:	874	:	707	3 123	:	4 347	:	7 641	Voreia Ellada
220	:	**189**	:	194	442	:	546	:	694	Anatoliki Makedonia, Thraki
528	:	**450**	:	410	2 521	:	3 248	:	6 346	Kentriki Makedonia
26	:	**136**	:	25	25	:	352	:	95	Dytiki Makedonia
113	:	**98**	:	78	135	:	201	:	506	Thessalia
399	:	**249**	:	232	1 390	:	2 415	:	3 123	Kentriki Ellada
49	:	**39**	:	35	365	:	742	:	902	Ipeiros
8	:	**6**	:	7	52	:	186	:	123	Ionia Nisia
166	:	**44**	:	130	917	:	1 346	:	2 096	Dytiki Ellada
141	:	**41**	:	32	53	:	42	:	2	Sterea Ellada
35	:	**120**	:	28	3	:	100	:	-	Peloponnisos
2 490	:	2 448	:	2 692	4 264	:	4 331	:	5 851	Attiki
1 132	:	910	:	800	640	:	1 216	:	679	Nisia Aigaiou, Kriti
17	:	17	:	15	79	:	408	:	123	Voreio Aigaio
32	:	**23**	:	18	52	:	68	:	33	Notio Aigaio
1 083	:	**871**	:	767	509	:	739	:	523	Kriti

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22A-2 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	79 990	87 261 e	87 150	97 099	102 237	27 558	29 430 e	30 023	34 667	38 323
Noroeste	5 330	5 253 e	6 574	7 261	6 811	844	901 e	1 007	1 521	1 475
Galicia	3 137	3 196 e	4 500	4 464	4 535	550	587 e	667	684	880
Principado de Asturias	1 535	1 128 e	1 443	1 517	1 556	214	229 e	239	416	355
Cantabria	658	929 e	631	1 280	720	80	85 e	101	421	240
Noreste	9 579	10 615 e	10 558	12 135	12 134	5 332	5 692 e	5 751	6 450	6 985
Pais Vasco	5 678	6 103 e	6 192	7 292	6 996	3 979	4 249 e	4 222	4 688	5 010
Comunidad Foral de Navarra	1 361	2 127 e	1 685	1 879	2 136	584	623 e	665	668	931
La Rioja	292	329 e	311	365	450	85	90 e	95	167	158
Aragón	2 248	2 056 e	2 370	2 599	2 552	684	730 e	769	927	886
Comunidad de Madrid	25 607	26 549 e	25 933	28 286	30 032	8 804	9 403 e	9 335	10 952	11 595
Centro (E)	4 853	6 680 e	6 535	7 146	7 548	1 025	1 096 e	1 141	1 524	1 639
Castilla y León	3 268	4 560 e	4 337	4 428	4 962	733	783 e	704	678	1 146
Castilla-la Mancha	941	1 290 e	1 203	1 603	1 506	213	228 e	389	761	388
Extremadura	644	830 e	995	1 115	1 080	79	85 e	48	85	105
Este	22 249	24 838 e	24 228	27 073	29 496	9 494	10 139 e	10 752	11 559	13 949
Cataluña	16 393	18 396 e	17 773	20 023	21 897	8 071	8 620 e	9 179	9 701	11 588
Comunidad Valenciana	5 391	5 713 e	5 992	6 367	7 050	1 386	1 480 e	1 547	1 748	2 313
Baleares	465	729 e	463	683	549	37	39 e	26	110	48
Sur	10 475	11 036 e	11 417	12 562	13 731	1 953	2 085 e	1 885	2 491	2 397
Andalucia	9 034	9 651 e	9 768	10 944	12 001	1 651	1 763 e	1 507	2 129	1 898
Murcia	1 441	1 385 e	1 649	1 618	1 730	302	322 e	378	362	499
Ceuta y Melilla	-	- e	-	-	-	-	- e	-	-	-
Canarias	1 897	2 290 e	1 905	2 636	2 485	106	114 e	152	170	283
France	315 528	316 804	303 411	307 310	:	162 042	162 589	166 262	168 118	:
Île de France	111 399	110 442	127 782	126 696	:	77 063	76 612	75 763	75 699	:
Bassin Parisien	21 420	21 532	27 224	28 804	:	18 157	18 119	18 878	20 039	:
Champagne-Ardenne	1 308	1 413	2 154	2 425	:	1 197	1 305	1 413	1 651	:
Picardie	3 521	3 673	4 119	4 454	:	3 383	3 425	3 182	3 494	:
Haute-Normandie	4 257	4 027	5 325	5 569	:	4 018	3 783	4 198	4 403	:
Centre	7 046	6 873	8 644	8 883	:	5 457	5 252	5 960	6 050	:
Basse-Normandie	2 027	2 216	2 876	3 186	:	1 552	1 681	1 473	1 722	:
Bourgogne	3 261	3 330	4 106	4 287	:	2 550	2 673	2 652	2 719	:
Nord - Pas-de-Calais	4 199	4 011	6 833	6 867	:	3 003	2 953	3 088	2 994	:
Est	13 269	13 521	18 405	18 922	:	9 348	9 633	10 002	10 329	:
Lorraine	4 450	4 425	6 675	6 476	:	2 669	2 690	3 007	2 772	:
Alsace	4 952	5 041	6 806	7 220	:	2 968	3 078	2 978	3 304	:
Franche-Comté	3 867	4 055	4 925	5 226	:	3 711	3 865	4 017	4 253	:
Ouest	14 922	15 159	21 557	22 168	:	10 356	10 654	11 970	12 095	:
Pays de la Loire	5 366	5 441	7 759	7 962	:	3 897	3 992	4 428	4 434	:
Bretagne	7 495	7 652	10 744	10 921	:	5 112	5 327	6 178	6 125	:
Poitou-Charentes	2 061	2 066	3 054	3 285	:	1 347	1 335	1 364	1 536	:
Sud-Ouest	19 026	18 812	25 203	25 840	:	12 623	12 445	12 875	13 174	:
Aquitaine	6 451	6 358	8 918	8 930	:	4 723	4 626	4 860	4 764	:
Midi-Pyrénées	11 650	11 510	14 815	15 393	:	7 048	6 955	7 061	7 436	:
Limousin	925	944	1 470	1 517	:	852	864	954	974	:
Centre-Est	28 987	29 620	37 448	37 901	:	21 066	21 606	23 017	22 825	:
Rhône-Alpes	24 691	24 748	31 434	31 975	:	17 925	17 817	19 068	19 039	:
Auvergne	4 296	4 872	6 014	5 926	:	3 141	3 789	3 949	3 786	:
Méditerranée	21 571	21 990	27 769	28 824	:	10 426	10 567	10 642	10 963	:
Languedoc-Roussillon	6 256	6 279	8 793	9 446	:	2 023	1 792	2 093	2 352	:
Provence-Alpes-Côte d'Azur	15 215	15 609	18 784	19 176	:	8 403	8 775	8 535	8 595	:
Corse	100	102	192	202	:	-	-	14	16	:
Départements d'Outre-Mer	1 415	1 486	1 698	1 770	:	-	-	27	-	:
Not registered by region	79 320	80 231	9 491	9 518	:	-	-	-	-	:
Ireland	9 662 ei	10 838 ei	12 030 ei	:	:	6 151 ei	7 164 ei	8 174 ei	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22B-2 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
17 155	17 865 e	19 189	20 170	22 283	34 330	38 956	36 843	41 042	40 626	España
1 249	1 299 e	1 382	1 242	1 376	3 205	2 993	4 155	4 465	3 950	Noroeste
850	885 e	884	768	896	1 733	1 694	2 945	3 008	2 759	Galicia
311	323 e	385	282	365	1 007	573	819	819	836	Principado de Asturias
88	91 e	113	192	115	465	726	391	638	355	Cantabria
772	803 e	1 088	942	1 059	3 322	3 957	3 700	4 722	4 051	Noreste
180	187 e	259	240	234	1 366	1 504	1 694	2 345	1 713	Pais Vasco
61	63 e	55	51	44	716	1 441	964	1 159	1 161	Comunidad Foral de Navarra
71	74 e	73	43	70	136	165	143	155	222	La Rioja
460	479 e	701	608	711	1 104	847	899	1 063	955	Aragón
9 065	9 441 e	9 684	10 669	11 301	7 370	7 338	6 626	6 344	6 757	Comunidad de Madrid
820	854 e	878	808	997	2 978	4 698	4 478	4 772	4 841	Centro (E)
373	389 e	478	413	545	2 132	3 356	3 126	3 305	3 204	Castilla y León
297	309 e	192	204	228	431	753	622	638	890	Castilla-la Mancha
150	156 e	208	191	224	415	589	730	829	747	Extremadura
2 453	2 556 e	3 044	3 129	3 789	9 965	11 784	9 740	11 614	11 299	Este
1 651	1 720 e	2 007	2 207	2 660	6 414	7 782	6 046	7 512	7 347	Cataluña
693	722 e	888	742	990	3 241	3 435	3 410	3 714	3 595	Comunidad Valenciana
109	114 e	149	180	139	310	567	284	388	357	Baleares
2 297	2 393 e	2 608	2 691	3 181	6 198	6 529	6 896	7 348	8 119	Sur
1 956	2 038 e	2 234	2 263	2 758	5 402	5 823	6 001	6 523	7 311	Andalucia
341	355 e	374	428	423	796	706	895	825	808	Murcia
-	- e	-	-	-	-	-	-	-	-	Ceuta y Melilla
499	519 e	505	689	580	1 292	1 657	1 248	1 777	1 609	Canarias
62 525	62 815	47 531	47 554	:	85 382	85 869	83 110	84 964	:	France
18 701	18 541	19 316	18 154	:	13 937	13 541	30 887	31 016	:	Île de France
1 936	2 072	2 049	2 123	:	1 327	1 341	6 297	6 642	:	Bassin Parisien
49	70	46	47	:	62	38	695	727	:	Champagne-Ardenne
93	201	164	147	:	45	47	773	813	:	Picardie
128	125	96	104	:	111	119	1 031	1 062	:	Haute-Normandie
1 096	1 109	1 064	1 104	:	493	512	1 620	1 729	:	Centre
60	116	196	228	:	415	419	1 207	1 236	:	Basse-Normandie
510	451	483	493	:	201	206	971	1 075	:	Bourgogne
607	498	469	483	:	588	559	3 276	3 390	:	Nord - Pas-de-Calais
1 157	1 181	1 126	1 145	:	2 764	2 707	7 278	7 448	:	Est
767	766	735	729	:	1 014	969	2 933	2 975	:	Lorraine
352	355	340	360	:	1 632	1 608	3 488	3 556	:	Alsace
38	60	51	56	:	118	130	857	917	:	Franche-Comté
3 219	3 206	3 268	3 465	:	1 347	1 299	6 319	6 608	:	Ouest
1 096	1 090	1 175	1 262	:	373	359	2 156	2 266	:	Pays de la Loire
1 714	1 696	1 716	1 808	:	669	629	2 850	2 988	:	Bretagne
409	420	377	395	:	305	311	1 313	1 354	:	Poitou-Charentes
3 949	3 886	3 929	3 960	:	2 454	2 481	8 399	8 706	:	Sud-Ouest
795	784	776	801	:	933	948	3 282	3 365	:	Aquitaine
3 119	3 066	3 136	3 140	:	1 483	1 489	4 618	4 817	:	Midi-Pyrénées
35	36	17	19	:	38	44	499	524	:	Limousin
4 355	4 466	4 210	4 567	:	3 566	3 548	10 221	10 509	:	Centre-Est
3 459	3 660	3 409	3 738	:	3 307	3 271	8 957	9 198	:	Rhône-Alpes
896	806	801	829	:	259	277	1 264	1 311	:	Auvergne
7 193	7 471	7 217	7 768	:	3 952	3 952	9 909	10 091	:	Méditerranée
2 838	3 099	3 165	3 443	:	1 395	1 388	3 535	3 651	:	Languedoc-Roussillon
4 260	4 275	3 964	4 241	:	2 552	2 559	6 284	6 338	:	Provence-Alpes-Côte d'Azur
95	97	88	84	:	5	5	90	102	:	Corse
1 383	1 450	1 275	1 350	:	18	15	380	413	:	Départements d'Outre-Mer
20 025	20 044	4 672	4 539	:	55 429	56 426	144	141	:	Not registered by region
959 ei	945 ei	938 ei	941 ei	884 ei	2 292 ei	2 469 ei	2 658 ei	2 847 ei	:	Ireland

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22A-3 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	141 789	142 288	141 737 ei	:	:	60 323	60 915	61 414	61 117	:
Nord Ovest	22 854	23 124	:	:	:	16 456	16 522	16 625	16 254	:
Piemonte	18 075	18 430	:	:	:	14 440	14 809	14 435	14 094	:
Valle d'Aosta	26	61	:	:	:	23	49	23	50	:
Liguria	4 753	4 633	:	:	:	1 993	1 664	2 167	2 110	:
Lombardia	30 121	29 815	:	:	:	20 174	19 988	19 604	19 111	:
Nord Est	11 254	11 276	:	:	:	4 873	5 033	4 953	5 460	:
Trentino-Alto Adige	1 220	1 312	:	:	:	461	505	537	593	:
Veneto	6 598	6 733	:	:	:	2 875	3 019	2 874	2 987	:
Friuli-Venezia Giulia	3 436	3 231	:	:	:	1 537	1 509	1 542	1 880	:
Emilia-Romagna	10 889	11 113	:	:	:	4 626	4 775	5 185	5 797	:
Centro (I)	12 664	12 666	:	:	:	2 984	2 999	3 103	2 655	:
Toscana	9 162	9 020	:	:	:	2 371	2 372	2 227	1 930	:
Umbria	1 592	1 801	:	:	:	232	223	238	259	:
Marche	1 910	1 845	:	:	:	381	404	638	466	:
Lazio	28 978	28 196	:	:	:	6 130	6 343	6 209	6 523	:
Abruzzo-Molise	2 871	3 364	:	:	:	1 241	1 546	1 143	1 107	:
Abruzzo	2 721	3 070	:	:	:	1 240	1 432	1 143	1 075	:
Molise	150	294	:	:	:	1	114	-	32	:
Campania	8 510	8 875	:	:	:	2 090	2 162	2 453	2 013	:
Sud	5 535	5 425	:	:	:	1 093	867	1 014	911	:
Puglia	3 886	3 810	:	:	:	938	785	936	804	:
Basilicata	653	656	:	:	:	85	62	61	91	:
Calabria	996	959	:	:	:	70	20	17	16	:
Sicilia	5 708	5 919	:	:	:	572	449	886	1 042	:
Sardegna	2 405	2 515	:	:	:	84	231	239	244	:
Nederland	79 256	80 820	83 967	85 485	:	37 456	39 498	42 408	43 871	44 807 ei
Noord-Nederland	:	:	5 342	4 788	:	:	2 148	2 755	2 224	:
Groningen	:	:	3 608	4 788	:	:	835	1 101	2 224	:
Friesland	:	:	1 015	-	:	:	797	947	-	:
Drenthe	:	:	719	-	:	:	516	707	-	:
Oost-Nederland	:	:	16 152	16 084	:	:	6 572	7 235	7 266	:
Overijssel	:	:	3 973	3 774	:	:	2 387	2 657	2 474	:
Gelderland	:	:	10 600	10 791	:	:	3 948	4 245	4 529	:
Flevoland	:	:	1 579	1 519	:	:	237	333	263	:
West-Nederland	:	:	43 188	45 016	:	:	16 044	16 486	18 136	:
Utrecht	:	:	9 215	9 169	:	:	3 375	3 516	3 395	:
Noord-Holland	:	:	13 652	14 508	:	:	5 936	6 333	6 966	:
Zuid-Holland	:	:	20 009	20 818	:	:	6 545	6 444	7 377	:
Zeeland	:	:	312	521	:	:	188	193	398	:
Zuid-Nederland	:	:	19 285	19 597	:	:	14 734	15 932	16 245	:
Noord-Brabant	:	:	13 342	13 789	:	:	10 615	11 403	11 908	:
Limburg (NL)	:	:	5 943	5 808	:	:	4 119	4 529	4 337	:
Österreich	:	:	:	31 308	:	:	:	:	20 385	:
Ostösterreich	:	:	:	16 597	:	:	:	:	10 230	:
Burgenland	:	:	:	92	:	:	:	:	77	:
Niederösterreich	:	:	:	2 119	:	:	:	:	1 904	:
Wien	:	:	:	14 387	:	:	:	:	8 249	:
Südösterreich	:	:	:	6 807	:	:	:	:	4 483	:
Kärnten	:	:	:	956	:	:	:	:	750	:
Steiermark	:	:	:	5 852	:	:	:	:	3 733	:
Westösterreich	:	:	:	7 904	:	:	:	:	5 672	:
Oberösterreich	:	:	:	3 828	:	:	:	:	3 187	:
Salzburg	:	:	:	942	:	:	:	:	470	:
Tirol	:	:	:	2 340	:	:	:	:	1 240	:
Vorarlberg	:	:	:	794	:	:	:	:	775	:
Portugal	15 465	:	18 035	:	20 830	1 917	:	1 981	:	3 260
Continente	14 906	:	17 332	:	20 154	1 906	:	1 981	:	3 235
Norte	3 559	:	3 827	:	4 833	726	:	550	:	1 137
Centro (P)	2 153	:	2 753	:	3 072	283	:	346	:	487
Lisboa e Vale do Tejo	8 531	:	9 775	:	11 253	867	:	1 045	:	1 552
Alentejo	438	:	608	:	600	30	:	30	:	29
Algarve	226	:	369	:	396	1	:	10	:	30
Açores	225	:	314	:	354	-	:	:	:	7
Madeira	334	:	389	:	322	10	:	:	:	18

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22B-3 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
33 039	32 225	31 292	31 284	:	48 427	49 148	49 031 ei	:	:	Italia
2 476	2 555	2 284	2 131	:	3 922	4 047	:	:	:	Nord Ovest
1 283	1 165	885	792	:	2 352	2 456	:	:	:	Piemonte
3	12	22	9	:	-	-	:	:	:	Valle d'Aosta
1 190	1 378	1 377	1 330	:	1 570	1 591	:	:	:	Liguria
4 603	4 324	4 196	4 313	:	5 344	5 503	:	:	:	Lombardia
1 970	1 873	1 874	1 852	:	4 411	4 370	:	:	:	Nord Est
369	392	403	435	:	390	415	:	:	:	Trentino-Alto Adige
944	1 036	1 016	907	:	2 779	2 678	:	:	:	Veneto
657	445	455	510	:	1 242	1 277	:	:	:	Friuli-Venezia Giulia
1 803	1 805	1 469	1 612	:	4 460	4 533	:	:	:	Emilia-Romagna
2 484	2 137	2 086	2 334	:	7 196	7 530	:	:	:	Centro (I)
2 128	1 780	1 713	1 968	:	4 663	4 868	:	:	:	Toscana
196	147	134	172	:	1 164	1 431	:	:	:	Umbria
160	210	239	194	:	1 369	1 231	:	:	:	Marche
14 866	14 718	14 786	14 769	:	7 982	7 135	:	:	:	Lazio
448	562	486	299	:	1 182	1 256	:	:	:	Abruzzo-Molise
431	**522**	**444**	**288**	:	1 050	1 116	:	:	:	Abruzzo
17	**40**	**42**	**11**	:	132	140	:	:	:	Molise
1 813	1 558	1 476	1 574	:	4 607	5 155	:	:	:	Campania
1 225	1 244	1 201	1 062	:	3 217	3 314	:	:	:	Sud
746	**764**	**918**	**840**	:	2 202	2 261	:	:	:	Puglia
320	**329**	**123**	**66**	:	248	265	:	:	:	Basilicata
159	**151**	**160**	**156**	:	767	788	:	:	:	Calabria
829	867	871	824	:	4 307	4 603	:	:	:	Sicilia
522	582	563	514	:	1 799	1 702	:	:	:	Sardegna
16 020	16 924	17 147	17 449	:	24 860	24 398	24 412	24 165	:	Nederland
:	485	199	208	:	:	:	2 388	2 356	:	Noord-Nederland
:	412	119	208	:	:	:	2 388	2 356	:	Groningen
:	**61**	**68**	**-**	:	:	:	-	-	:	Friesland
:	12	12	-	:	:	:	-	-	:	Drenthe
:	4 535	4 184	4 160	:	:	:	4 733	4 658	:	Oost-Nederland
:	237	125	109	:	:	:	1 191	1 191	:	Overijssel
:	3 061	2 813	2 795	:	:	:	3 542	3 467	:	Gelderland
:	1 237	1 246	1 256	:	:	:	-	-	:	Flevoland
:	11 622	12 609	12 911	:	:	:	14 093	13 969	:	West-Nederland
:	2 764	2 484	2 541	:	:	:	3 215	3 233	:	Utrecht
:	3 673	3 104	3 214	:	:	:	4 215	4 328	:	Noord-Holland
:	5 066	6 902	7 033	:	:	:	6 663	6 408	:	Zuid-Holland
:	119	119	123	:	:	:	-	-	:	Zeeland
:	**282**	**155**	**170**	:	:	:	3 198	3 182	:	Zuid-Nederland
:	**179**	**42**	**43**	:	:	:	1 897	1 838	:	Noord-Brabant
:	103	113	127	:	:	:	1 301	1 344	:	Limburg (NL)
:	:	:	2 104	:	:	:	:	8 670	:	Österreich
:	:	:	1 555	:	:	:	:	4 698	:	Ostösterreich
:	:	:	15	:	:	:	:	-	:	Burgenland
:	:	:	194	:	:	:	:	7	:	Niederösterreich
:	:	:	1 347	:	:	:	:	4 691	:	Wien
:	:	:	227	:	:	:	:	2 090	:	Südösterreich
:	:	:	**56**	:	:	:	:	144	:	Kärnten
:	:	:	**170**	:	:	:	:	1 946	:	Steiermark
:	:	:	**322**	:	:	:	:	1 883	:	Westösterreich
:	:	:	**171**	:	:	:	:	453	:	Oberösterreich
:	:	:	**55**	:	:	:	:	416	:	Salzburg
:	:	:	**78**	:	:	:	:	1 013	:	Tirol
:	:	:	**18**	:	:	:	:	-	:	Vorarlberg
4 716	:	5 230	:	5 928	6 484	:	8 442	:	9 187	Portugal
4 384	:	4 823	:	5 608	6 285	:	8 212	:	8 914	Continente
391	:	392	:	547	1 854	:	2 157	:	2 314	Norte
156	:	139	:	241	1 238	:	1 802	:	1 853	Centro (P)
3 672	:	4 045	:	4 519	2 764	:	3 622	:	4 147	Lisboa e Vale do Tejo
103	:	166	:	212	276	:	361	:	333	Alentejo
63	:	82	:	89	153	:	270	:	267	Algarve
62	:	136	:	101	149	:	151	:	199	Açores
270	:	271	:	219	50	:	80	:	74	Madeira

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22A-4 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Suomi-Finland	33 635	:	41 257	46 521	50 605	17 798	20 756	22 304	25 011	27 818
Manner-Suomi	33 612	:	41 252	46 517	50 598	17 795	:	22 302	25 009	27 813
Itä-Suomi	1 942	:	2 451	2 736	3 011	678	:	775	846	894
Väli-Suomi	2 273	:	2 804	3 041	3 449	1 247	:	1 707	1 777	2 055
Pohjois-Suomi	3 392	:	4 589	5 670	6 002	1 744	:	2 489	3 255	3 563
Uusimaa	16 359	:	19 356	21 544	23 146	8 387	:	10 171	11 066	11 966
Etelä-Suomi	9 646	:	12 052	13 526	14 990	5 739	:	7 160	8 065	9 335
Åland	23	:	5	4	7	3	:	2	2	5
Sverige	62 637	:	65 496	68 405 s	66 674	41 637	:	43 881	46 741 s	44 170
Stockholm	20 842	:	22 052	:	22 059	14 208	:	15 264	:	14 726
Östra Mellansverige	12 409	:	11 981	:	11 674	7 126	:	6 369	:	6 289
Sydsverige	7 129	:	7 847	:	8 421	4 246	:	4 819	:	5 191
Norra Mellansverige	2 203	:	2 231	:	2 098	1 515	:	1 683	:	1 499
Mellersta Norrland	854	:	818	:	782	727	:	659	:	596
Övre Norrland	3 038	:	2 906	:	3 242	1 013	:	949	:	1 048
Småland med Öarna	1 078	:	1 085	:	1 183	930	:	882	:	936
Västsverige	13 430	:	15 167	:	15 823	10 398	:	11 930	:	12 632
Not registered by region	1 654	:	1 409	:	1 392	1 474	:	1 326	:	1 253
United Kingdom	:	:	:	:	:	146 369	143 430	138 420	149 695	152 865
North East	:	:	:	:	:	:	3 623	3 161	3 293	2 996
North West	:	:	:	:	:	:	16 777	16 622	17 933	18 430
Yorkshire and The Humber	:	:	:	:	:	:	5 949	5 461	6 475	6 450
East Midlands	:	:	:	:	:	:	11 941	11 655	11 964	12 077
West Midlands	:	:	:	:	:	:	12 832	11 819	12 965	12 128
Eastern	:	:	:	:	:	:	27 125	27 697	27 719	30 346
London	:	:	:	:	:	:	10 162	8 474	9 292	10 093
South East	:	:	:	:	:	:	32 286	30 968	34 901	35 221
South West	:	:	:	:	:	:	11 738	11 726	13 137	13 073
Wales	:	:	:	:	:	:	2 181	2 372	2 796	3 141
Scotland	:	:	:	:	:	:	7 005	6 501	7 209	6 703
Northern Ireland	:	:	:	:	:	:	1 811	1 964	2 011	2 207
EEA	1 591 533 s	1 605 539 s	1 612 017 s	1 663 782 s	1 695 320 s	859 068 s	865 262 s	885 730 s	917 001 s	935 067 s
Iceland	1 694	1 516	2 151	2 273	2 405	551	461	832	915	1 006
Norge	23 936	:	24 877	:	25 402	12 090	:	12 942	:	13 310
Oslo og Akershus	10 333	:	11 834	:	11 693	4 478	:	5 931	:	5 733
Hedmark og Oppland	2 497	:	2 439	:	2 351	2 082	:	2 010	:	1 927
Sør-Østlandet	642	:	586	:	505	486	:	411	:	319
Agder og Rogaland	1 852	:	1 813	:	2 115	1 628	:	1 576	:	1 856
Vestlandet	3 667	:	3 402	:	3 435	1 327	:	1 091	:	1 092
Trøndelag	3 770	:	3 659	:	4 061	1 924	:	1 809	:	2 212
Nord-Norge	1 175	:	1 144	:	1 242	165	:	114	:	171

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 22
R&D personnel
At the regional level

In full-time equivalent

Table 22B-4 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
6 691	:	6 827	7 500	7 946	9 146	:	11 854	13 653	14 841	Suomi-Finland
6 671	:	6 824	7 498	7 944	9 146	:	11 854	13 653	14 841	Manner-Suomi
375	:	418	537	573	889	:	1 241	1 334	1 544	Itä-Suomi
229	:	**215**	**287**	325	797	:	874	962	1 069	Väli-Suomi
530	:	**576**	**654**	706	1 118	:	1 523	1 758	1 733	Pohjois-Suomi
4 235	:	4 326	4 651	4 902	3 737	:	4 676	5 590	6 278	Uusimaa
1 302	:	1 289	1 369	1 438	2 605	:	3 540	4 009	4 217	Etelä-Suomi
20	:	3	2	2	-	:	-	-	-	Åland
3 518	:	3 334	3 384 s	3 195	17 302	:	18 198	18 197 s	19 176	Sverige
1 855	:	1 820	:	1 743	4 779	:	4 968	:	5 590	Stockholm
910	:	**877**	:	841	4 373	:	4 735	:	4 544	Östra Mellansverige
22	:	**16**	:	24	2 861	:	3 012	:	3 206	Sydsverige
414	:	**306**	:	291	274	:	242	:	308	Norra Mellansverige
27	:	**16**	:	31	100	:	143	:	155	Mellersta Norrland
220	:	**225**	:	196	1 805	:	1 732	:	1 998	Övre Norrland
3	:	**4**	:	3	145	:	199	:	244	Småland med Öarna
67	:	70	:	60	2 965	:	3 167	:	3 131	Västsverige
-	:	-	:	6	-	:	-	:	-	Not registered by region
28 960	27 488	25 896	29 196	29 672	:	:	:	:	:	United Kingdom
:	**59**	**41**	45	25	:	:	:	:	:	North East
:	**845**	**794**	**795**	800	:	:	:	:	:	North West
:	678	581	568	662	:	:	:	:	:	Yorkshire and The Humber
:	869	841	812	798	:	:	:	:	:	East Midlands
:	2 091	1 987	2 345	2 729	:	:	:	:	:	West Midlands
:	4 530	3 897	3 881	3 532	:	:	:	:	:	Eastern
:	2 823	2 511	2 977	3 285	:	:	:	:	:	London
:	8 548	8 370	9 124	9 241	:	:	:	:	:	South East
:	3 175	3 046	4 338	4 294	:	:	:	:	:	South West
:	352	327	650	787	:	:	:	:	:	Wales
:	3 314	3 300	3 462	3 323	:	:	:	:	:	Scotland
:	204	201	199	196	:	:	:	:	:	Northern Ireland
268 658 s	**267 990** s	**250 771** s	**256 384** s	**259 805** s	**442 957** s	**456 551** s	**458 129** s	**472 047** s	**481 429** s	**EEA**
563	588	629	647	667	530	408	656	676	696	Iceland
4 892	:	4 873	:	4 779	6 954	:	7 062	:	7 313	Norge
2 862	:	2 855	:	2 790	2 993	:	3 048	:	3 170	Oslo og Akershus
338	:	**333**	:	309	77	:	96	:	115	Hedmark og Oppland
93	:	**108**	:	102	63	:	67	:	84	Sør-Østlandet
93	:	**96**	:	108	131	:	141	:	151	Agder og Rogaland
848	:	**826**	:	828	1 492	:	1 485	:	1 515	Vestlandet
339	:	**321**	:	307	1 507	:	1 529	:	1 542	Trøndelag
319	:	334	:	335	691	:	696	:	736	Nord-Norge

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23A-1 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**1.27 s**	**1.28 s**	**1.29 s**	**1.31 s**	**1.33 s**	**0.59 s**	**0.59 s**	**0.60 s**	**0.62 s**	**0.62 s**
EUR-12	1.23 s	1.24 s	1.25 s	1.27 s	1.28 s	0.57 s	0.57 s	0.58 s	0.59 s	0.60 s
Belgique-België	1.22 s	:	:	:	:	0.63 s	:	:	:	:
Région Bruxelles-capitale	2.37 s	:	:	:	:	0.76 s	:	:	:	:
Vlaams Gewest	1.20 s	:	:	:	:	0.72 s	:	:	:	:
Région Wallonne	0.90 s	:	:	:	:	0.42 s	:	:	:	:
Danmark	1.81	1.84	1.85	2.00	1.92	0.92	0.92	0.94	1.01	1.04
Deutschland	1.50 s	1.47 s	1.49 s	1.49 s	:	0.84 s	0.81 s	0.84 s	0.84 s	:
Baden-Württemberg	2.26 s	:	2.25 s	:	:	1.51 s	:	1.55 s	:	:
Stuttgart	2.65 s	:	2.67 s	:	:	2.16 s	:	2.23 s	:	:
Karlsruhe	2.45 s	:	2.47 s	:	:	1.05 s	:	1.16 s	:	:
Freiburg	1.22 s	:	1.18 s	:	:	0.74 s	:	0.67 s	:	:
Tübingen	2.33 s	:	2.28 s	:	:	1.65 s	:	1.64 s	:	:
Bayern	1.78 s	:	1.77 s	:	:	1.24 s	:	1.23 s	:	:
Oberbayern	3.41 s	:	3.33 s	:	:	2.36 s	:	2.32 s	:	:
Niederbayern	0.26 s	:	0.26 s	:	:	0.21 s	:	0.22 s	:	:
Oberpfalz	0.77 s	:	0.75 s	:	:	0.46 s	:	0.43 s	:	:
Oberfranken	0.74 s	:	0.69 s	:	:	0.45 s	:	0.42 s	:	:
Mittelfranken	1.78 s	:	1.88 s	:	:	1.28 s	:	1.34 s	:	:
Unterfranken	1.11 s	:	1.18 s	:	:	0.62 s	:	0.65 s	:	:
Schwaben	0.65 s	:	0.65 s	:	:	0.59 s	:	0.58 s	:	:
Berlin	2.13 s	:	2.13 s	:	:	0.70 s	:	0.82 s	:	:
Brandenburg	0.71 s	:	0.65 s	:	:	0.25 s	:	0.25 s	:	:
Bremen	2.10 s	:	1.91 s	:	:	1.28 s	:	0.93 s	:	:
Hamburg	1.97 s	:	1.95 s	:	:	0.98 s	:	1.00 s	:	:
Hessen	1.73 s	:	1.66 s	:	:	1.19 s	:	1.15 s	:	:
Darmstadt	2.17 s	:	2.05 s	:	:	1.65 s	:	1.58 s	:	:
Giessen	1.62 s	:	1.60 s	:	:	0.60 s	:	0.56 s	:	:
Kassel	0.48 s	:	0.51 s	:	:	0.28 s	:	0.30 s	:	:
Mecklenburg-Vorpommern	0.59 s	:	0.55 s	:	:	0.13 s	:	0.09 s	:	:
Niedersachsen	1.18 s	:	1.19 s	:	:	0.60 s	:	0.61 s	:	:
Braunschweig	3.18 s	:	3.18 s	:	:	1.53 s	:	1.61 s	:	:
Hannover	1.19 s	:	1.23 s	:	:	0.58 s	:	0.65 s	:	:
Lüneburg	0.26 s	:	0.26 s	:	:	0.22 s	:	0.16 s	:	:
Weser-Ems	0.33 s	:	0.34 s	:	:	0.18 s	:	0.16 s	:	:
Nordrhein-Westfalen	1.26 s	:	1.21 s	:	:	0.66 s	:	0.63 s	:	:
Düsseldorf	1.01 s	:	1.08 s	:	:	0.66 s	:	0.72 s	:	:
Köln	2.39 s	:	2.09 s	:	:	1.09 s	:	0.85 s	:	:
Münster	0.68 s	:	0.70 s	:	:	0.31 s	:	0.34 s	:	:
Detmold	0.92 s	:	0.86 s	:	:	0.62 s	:	0.57 s	:	:
Arnsberg	0.92 s	:	0.92 s	:	:	0.43 s	:	0.46 s	:	:
Rheinland-Pfalz	1.16 s	:	1.19 s	:	:	0.81 s	:	0.82 s	:	:
Koblenz	0.33 s	:	0.31 s	:	:	0.29 s	:	0.27 s	:	:
Trier	0.49 s	:	0.50 s	:	:	0.17 s	:	0.17 s	:	:
Rheinhessen-Pfalz	1.91 s	:	2.00 s	:	:	1.32 s	:	1.38 s	:	:
Saarland	0.79 s	:	0.79 s	:	:	0.20 s	:	0.19 s	:	:
Sachsen	1.15 s	:	1.22 s	:	:	0.50 s	:	0.58 s	:	:
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	0.72 s	:	0.69 s	:	:	0.27 s	:	0.26 s	:	:
Dessau	0.39 s	:	0.35 s	:	:	0.33 s	:	0.32 s	:	:
Halle	1.06 s	:	0.99 s	:	:	0.30 s	:	0.28 s	:	:
Magdeburg	0.61 s	:	0.63 s	:	:	0.22 s	:	0.21 s	:	:
Schleswig-Holstein	0.81 s	:	0.77 s	:	:	0.29 s	:	0.29 s	:	:
Thüringen	0.85 s	:	0.89 s	:	:	0.41 s	:	0.44 s	:	:
Not registered by region	:	:	:	:	:	:	:	:	:	:
Ellada	0.87	:	1.02	:	:	0.13	0.12	0.14	:	:
Voreia Ellada	0.77	:	0.93	:	:	0.08	0.08	0.08	:	:
Anatoliki Makedonia, Thraki	0.66	:	0.77	:	:	0.06	0.05	0.04	:	:
Kentriki Makedonia	1.06	:	1.19	:	:	0.09	0.10	0.10	:	:
Dytiki Makedonia	0.23	:	0.97	:	:	0.13	0.07	0.08	:	:
Thessalia	0.32	:	0.38	:	:	0.06	0.05	0.06	:	:
Kentriki Ellada	0.57	:	0.89	:	:	0.09	0.10	0.10	:	:
Ipeiros	0.95	:	1.92	:	:	0.06	0.09	0.08	:	:
Ionia Nisia	0.29	:	0.40	:	:	0.02	0.03	0.04	:	:
Dytiki Ellada	0.86	:	1.28	:	:	0.06	0.05	0.05	:	:
Sterea Ellada	0.53	:	0.46	:	:	0.25	0.27	0.25	:	:
Peloponnisos	0.21	:	0.49	:	:	0.06	0.05	0.06	:	:
Attiki	1.07	:	1.11	:	:	0.20	0.19	0.23	:	:
Nisia Aigaiou, Kriti	1.05	:	1.24	:	:	0.03	0.03	0.03	:	:
Voreio Aigaio	0.85	:	2.18	:	:	0.07	0.05	0.04	:	:
Notio Aigaio	0.58	:	0.48	:	:	0.02	0.02	0.02	:	:
Kriti	1.33	:	1.33	:	:	0.03	0.03	0.04	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23B-1 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.20 s	**0.20 s**	**0.19 s**	**0.19 s**	**0.19 s**	**0.45 s**	**0.46 s**	**0.48 s**	**0.48 s**	**0.49 s**	**EU-15**
0.22 s	0.21 s	0.20 s	0.20 s	0.20 s	0.43 s	0.44 s	0.46 s	0.46 s	0.47 s	EUR-12
0.06 s	0.06 s	0.06 s	:	:	0.51 s	0.52 s	0.52 s	:	:	Belgique-België
0.23 s	0.24 s	0.24 s	:	:	1.34 s	:	:	:	:	Région Bruxelles-capitale
0.04 s	0.04 s	0.04 s	:	:	0.42 s	:	:	:	:	Vlaams Gewest
0.04 s	0.04 s	0.04 s	:	:	0.45 s	:	:	:	:	Région Wallonne
0.41	0.40	0.38	0.46	0.38	0.46	0.50	0.52	0.50	0.49	Danmark
0.25 s	0.23 s	0.22 s	0.22 s	:	0.42 s	0.43 s	0.42 s	0.42 s	:	Deutschland
0.33 s	0.29 s	0.29 s	:	:	0.42 s	0.44 s	0.42 s	:	:	Baden-Württemberg
0.21 s	0.19 s	0.19 s	:	:	0.27 s	0.28 s	0.25 s	:	:	Stuttgart
0.78 s	0.66 s	0.67 s	:	:	0.62 s	0.65 s	0.65 s	:	:	Karlsruhe
0.16 s	0.15 s	0.16 s	:	:	0.32 s	0.36 s	0.36 s	:	:	Freiburg
0.13 s	0.12 s	0.12 s	:	:	0.56 s	0.58 s	0.52 s	:	:	Tübingen
0.21 s	0.20 s	0.19 s	:	:	0.33 s	0.35 s	0.35 s	:	:	Bayern
0.56 s	0.51 s	0.51 s	:	:	0.49 s	0.51 s	0.50 s	:	:	Oberbayern
-	-	0.00 s	:	:	0.05 s	0.05 s	0.05 s	:	:	Niederbayern
0.03 s	0.03 s	0.03 s	:	:	0.29 s	0.30 s	0.30 s	:	:	Oberpfalz
0.06 s	0.05 s	0.04 s	:	:	0.23 s	0.23 s	0.22 s	:	:	Oberfranken
0.06 s	0.05 s	0.06 s	:	:	0.44 s	0.48 s	0.49 s	:	:	Mittelfranken
0.06 s	0.06 s	0.06 s	:	:	0.44 s	0.48 s	0.47 s	:	:	Unterfranken
0.01 s	0.01 s	0.01 s	:	:	0.05 s	0.05 s	0.07 s	:	:	Schwaben
0.71 s	0.63 s	0.61 s	:	:	0.73 s	0.70 s	0.69 s	:	:	Berlin
0.30 s	0.25 s	0.25 s	:	:	0.16 s	0.16 s	0.15 s	:	:	Brandenburg
0.36 s	0.32 s	0.35 s	:	:	0.46 s	0.55 s	0.63 s	:	:	Bremen
0.42 s	0.40 s	0.40 s	:	:	0.57 s	0.61 s	0.56 s	:	:	Hamburg
0.15 s	0.13 s	0.13 s	:	:	0.39 s	0.38 s	0.39 s	:	:	Hessen
0.21 s	0.19 s	0.18 s	:	:	0.30 s	0.29 s	0.29 s	:	:	Darmstadt
0.03 s	0.03 s	0.03 s	:	:	1.00 s	0.97 s	1.01 s	:	:	Giessen
0.04 s	0.04 s	0.03 s	:	:	0.17 s	0.18 s	0.18 s	:	:	Kassel
0.16 s	0.15 s	0.15 s	:	:	0.31 s	0.31 s	0.31 s	:	:	Mecklenburg-Vorpommern
0.24 s	0.24 s	0.23 s	:	:	0.34 s	0.36 s	0.35 s	:	:	Niedersachsen
0.83 s	0.81 s	0.75 s	:	:	0.81 s	0.81 s	0.82 s	:	:	Braunschweig
0.19 s	0.16 s	0.16 s	:	:	0.43 s	0.48 s	0.43 s	:	:	Hannover
0.02 s	0.07 s	0.07 s	:	:	0.02 s	0.02 s	0.03 s	:	:	Lüneburg
0.02 s	0.02 s	0.02 s	:	:	0.12 s	0.15 s	0.15 s	:	:	Weser-Ems
0.23 s	0.21 s	0.20 s	:	:	0.37 s	0.38 s	0.39 s	:	:	Nordrhein-Westfalen
0.10 s	0.10 s	0.09 s	:	:	0.26 s	0.25 s	0.27 s	:	:	Düsseldorf
0.69 s	0.62 s	0.59 s	:	:	0.61 s	0.63 s	0.64 s	:	:	Köln
0.09 s	0.06 s	0.06 s	:	:	0.29 s	0.33 s	0.31 s	:	:	Münster
0.03 s	0.03 s	0.03 s	:	:	0.27 s	0.27 s	0.27 s	:	:	Detmold
0.10 s	0.10 s	0.09 s	:	:	0.38 s	0.39 s	0.37 s	:	:	Arnsberg
0.08 s	0.08 s	0.09 s	:	:	0.28 s	0.29 s	0.28 s	:	:	Rheinland-Pfalz
0.02 s	0.02 s	0.02 s	:	:	0.03 s	0.03 s	0.03 s	:	:	Koblenz
0.08 s	0.07 s	0.07 s	:	:	0.25 s	0.25 s	0.26 s	:	:	Trier
0.13 s	0.13 s	0.15 s	:	:	0.46 s	0.49 s	0.48 s	:	:	Rheinhessen-Pfalz
0.13 s	0.14 s	0.15 s	:	:	0.46 s	0.47 s	0.45 s	:	:	Saarland
0.22 s	0.21 s	0.21 s	:	:	0.43 s	0.45 s	0.44 s	:	:	Sachsen
:	:	:	:	:	:	:	:	:	:	Chemnitz
:	:	:	:	:	:	:	:	:	:	Dresden
:	:	:	:	:	:	:	:	:	:	Leipzig
0.14 s	0.14 s	0.14 s	:	:	0.31 s	0.30 s	0.30 s	:	:	Sachsen-Anhalt
0.00 s	- s	0.01 s	:	:	0.06 s	0.04 s	0.03 s	:	:	Dessau
0.17 s	0.15 s	0.15 s	:	:	0.59 s	0.57 s	0.56 s	:	:	Halle
0.19 s	0.19 s	0.19 s	:	:	0.21 s	0.21 s	0.23 s	:	:	Magdeburg
0.23 s	0.20 s	0.22 s	:	:	0.29 s	0.29 s	0.27 s	:	:	Schleswig-Holstein
0.14 s	0.14 s	0.14 s	:	:	0.30 s	0.30 s	0.31 s	:	:	Thüringen
-	-	-	:	:	-	-	-	:	:	Not registered by region
0.24	:	0.23	:	0.18	0.49	:	0.65	:	0.91	Ellada
0.18	:	0.17	:	0.11	0.51	:	0.68	:	1.27	Voreia Ellada
0.20	:	**0.20**	:	0.19	0.41	:	**0.53**	:	0.66	Anatoliki Makedonia, Thraki
0.20	:	**0.15**	:	0.10	0.76	:	0.92	:	1.96	Kentriki Makedonia
0.05	:	**0.21**	:	0.07	0.05	:	0.68	:	0.22	Dytiki Makedonia
0.15	:	**0.14**	:	0.09	0.11	:	0.18	:	0.36	Thessalia
0.16	:	**0.16**	:	0.12	0.31	:	0.63	:	0.69	Kentriki Ellada
0.17	:	**0.15**	:	0.11	0.72	:	**1.69**	:	**1.87**	Ipeiros
0.12	:	**0.07**	:	0.10	0.16	:	0.29	:	0.32	Ionia Nisia
0.15	:	**0.04**	:	0.15	0.66	:	1.20	:	1.42	Dytiki Ellada
0.22	:	**0.17**	:	0.09	0.06	:	0.04	:	0.00	Sterea Ellada
0.15	:	**0.33**	:	0.12	0.00	:	0.09	:	-	Peloponnisos
0.26	:	**0.26**	:	0.23	0.60	:	0.61	:	0.84	Attiki
0.61	:	**0.48**	:	0.32	0.40	:	0.73	:	0.41	Nisia Aigaiou, Kriti
0.42	:	**0.41**	:	0.35	0.36	:	1.74	:	**0.51**	Voreio Aigaio
0.42	:	**0.28**	:	0.14	0.13	:	**0.18**	:	0.08	Notio Aigaio
0.75	:	0.58	:	0.40	0.55	:	0.71	:	0.54	Kriti

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23A-2 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	0.95	0.98 s	0.97	1.02 s	1.09	0.21	0.21 s	0.22	0.26 s	0.28
Noroeste	0.69	0.60 s	0.72	0.81 s	0.82	0.07	0.06 s	0.08	0.11 s	0.12
Galicia	0.66	0.54 s	0.73	0.79 s	0.85	0.06	0.06 s	0.08	0.08 s	0.10
Principado de Asturias	0.77	0.53 s	0.70	0.71 s	0.75	0.09	0.07 s	0.09	0.13 s	0.12
Cantabria	0.68	1.05 s	0.74	1.08 s	0.82	0.05	0.05 s	0.07	0.25 s	0.17
Noreste	1.09	1.08 s	1.06	1.17 s	1.17	0.40	0.39 s	0.43	0.46 s	0.52
Pais Vasco	1.06	1.06 s	1.15	1.29 s	1.25	0.56	0.56 s	0.60	0.65 s	0.69
Comunidad Foral de Navarra	1.84	2.12 s	1.15	1.56 s	1.50	0.36	0.34 s	0.40	0.36 s	0.59
La Rioja	0.69	0.60 s	0.63	0.62 s	0.64	0.12	0.10 s	0.16	0.21 s	0.22
Aragón	0.88	0.75 s	0.93	0.90 s	0.99	0.18	0.18 s	0.19	0.23 s	0.22
Comunidad de Madrid	2.14	1.92 s	2.05	1.98 s	2.37	0.50	0.50 s	0.50	0.62 s	0.58
Centro (E)	0.57	0.72 s	0.72	0.68 s	0.80	0.07	0.06 s	0.07	0.09 s	0.09
Castilla y León	0.80	1.03 s	0.98	0.92 s	1.11	0.10	0.09 s	0.09	0.09 s	0.14
Castilla-la Mancha	0.31	0.42 s	0.48	0.41 s	0.53	0.05	0.04 s	0.09	0.14 s	0.07
Extremadura	0.39	0.45 s	0.48	0.56 s	0.48	0.03	0.02 s	0.02	0.03 s	0.03
Este	0.85	0.99 s	0.84	0.99 s	0.99	0.25	0.25 s	0.28	0.30 s	0.37
Cataluña	1.02	1.22 s	1.00	1.22 s	1.20	0.36	0.37 s	0.40	0.44 s	0.53
Comunidad Valenciana	0.68	0.70 s	0.70	0.72 s	0.80	0.12	0.10 s	0.13	0.13 s	0.19
Baleares	0.33	0.53 s	0.23	0.39 s	0.28	0.02	0.01 s	0.02	0.04 s	0.02
Sur	0.64	0.70 s	0.71	0.72 s	0.75	0.08	0.08 s	0.07	0.09 s	0.09
Andalucía	0.66	0.72 s	0.70	0.75 s	0.74	0.08	0.08 s	0.07	0.09 s	0.09
Murcia	0.58	0.62 s	0.86	0.65 s	0.88	0.08	0.09 s	0.10	0.10 s	0.13
Ceuta y Melilla	-	-	-	-	-	-	-	-	-	-
Canarias	0.70	0.80 s	0.70	0.79 s	0.59	0.02	0.02 s	0.03	0.03 s	0.05
France	1.46	1.46	1.49	1.49	:	0.72	0.71	0.73	0.72	:
Île de France	2.35 s	2.31 s	2.97 s	2.89 s	:	1.63	1.60	1.59	1.55	:
Bassin Parisien	0.53 s	0.54 s	0.76 s	0.80 s	:	0.45	0.45	0.47	0.50	:
Champagne-Ardenne	0.28 s	0.28 s	0.50 s	0.56 s	:	0.26	0.26	0.28	0.33	:
Picardie	0.52 s	0.55 s	0.66 s	0.72 s	:	0.49	0.51	0.47	0.52	:
Haute-Normandie	0.54 s	0.55 s	0.80 s	0.83 s	:	0.51	0.52	0.58	0.60	:
Centre	0.72 s	0.70 s	0.97 s	1.02 s	:	0.56	0.53	0.62	0.64	:
Basse-Normandie	0.42 s	0.46 s	0.70 s	0.73 s	:	0.32	0.34	0.30	0.33	:
Bourgogne	0.52 s	0.53 s	0.72 s	0.76 s	:	0.41	0.43	0.42	0.43	:
Nord - Pas-de-Calais	0.32 s	0.29 s	0.59 s	0.59 s	:	0.23	0.21	0.22	0.21	:
Est	0.64 s	0.71 s	1.11 s	1.09 s	:	0.44	0.50	0.51	0.50	:
Lorraine	0.49 s	0.54 s	0.96 s	0.88 s	:	0.29	0.32	0.36	0.31	:
Alsace	0.72 s	0.78 s	1.25 s	1.26 s	:	0.42	0.46	0.44	0.47	:
Franche-Comté	0.84 s	0.92 s	1.16 s	1.23 s	:	0.80	0.87	0.87	0.92	:
Ouest	0.49 s	0.50 s	0.81 s	0.82 s	:	0.35	0.35	0.40	0.39	:
Pays de la Loire	0.41 s	0.44 s	0.70 s	0.70 s	:	0.30	0.32	0.35	0.34	:
Bretagne	0.67 s	0.68 s	1.08 s	1.07 s	:	0.47	0.47	0.55	0.54	:
Poitou-Charentes	0.35 s	0.33 s	0.58 s	0.60 s	:	0.24	0.21	0.22	0.23	:
Sud-Ouest	0.82 s	0.77 s	1.18 s	1.24 s	:	0.56	0.51	0.52	0.54	:
Aquitaine	0.58 s	0.53 s	0.88 s	0.91 s	:	0.44	0.38	0.41	0.41	:
Midi-Pyrénées	1.24 s	1.17 s	1.69 s	1.78 s	:	0.77	0.71	0.71	0.75	:
Limousin	0.29 s	0.36 s	0.64 s	0.65 s	:	0.26	0.33	0.36	0.36	:
Centre-Est	1.03 s	1.03 s	1.48 s	1.52 s	:	0.76	0.75	0.81	0.81	:
Rhône-Alpes	1.06 s	1.04 s	1.52 s	1.56 s	:	0.77	0.75	0.81	0.82	:
Auvergne	0.91 s	0.98 s	1.33 s	1.33 s	:	0.69	0.77	0.80	0.77	:
Méditerranée	0.83 s	0.87 s	1.32 s	1.28 s	:	0.41	0.42	0.44	0.42	:
Languedoc-Roussillon	0.68 s	0.76 s	1.34 s	1.36 s	:	0.21	0.22	0.27	0.29	:
Provence-Alpes-Côte d'Azur	0.94 s	0.96 s	1.35 s	1.28 s	:	0.53	0.54	0.53	0.50	:
Corse	0.15 s	0.16 s	0.37 s	0.36 s	:	-	-	0.02	0.02	:
Départements d'Outre-Mer	-	-	-	-	:	-	-	-	-	:
Not registered by region	-	-	-	-	:	-	-	-	-	:
Ireland	0.86 s	0.93 s	0.99 s	:	:	0.49 s	0.55 s	0.61 s	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23B-2 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.15	0.13 s	0.16	0.17 s	0.18	0.58	0.63	0.57	0.58 s	0.62	España
0.16	0.09 s	0.17	0.10 s	0.18	0.45	0.45	0.46	0.60 s	0.52	Noroeste
0.21	0.09 s	0.22	0.10 s	0.23	0.39	0.39	0.43	0.62 s	0.52	Galicia
0.09	0.10 s	0.10	0.10 s	0.10	0.59	0.37	0.51	0.48 s	0.53	Principado de Asturias
0.06	0.05 s	0.08	0.13 s	0.08	0.50	0.93	0.52	0.69 s	0.55	Cantabria
0.08	0.06 s	0.10	0.08 s	0.10	0.60	0.61	0.53	0.63 s	0.56	Noreste
0.05	0.03 s	0.07	0.04 s	0.06	0.43	0.45	0.49	0.60 s	0.50	Pais Vasco
0.09	0.04 s	0.08	0.03 s	0.06	1.39	1.74	0.68	1.17 s	0.85	Comunidad Foral de Navarra
0.14	0.09 s	0.15	0.06 s	0.15	0.43	0.41	0.33	0.35 s	0.27	La Rioja
0.12	0.12 s	0.16	0.17 s	0.18	0.59	0.45	0.58	0.50 s	0.59	Aragón
0.51	0.52 s	0.50	0.68 s	0.59	1.11	0.87	1.02	0.66 s	1.17	Comunidad de Madrid
0.07	0.05 s	0.08	0.06 s	0.08	0.43	0.61	0.57	0.53 s	0.62	Centro (E)
0.08	0.05 s	0.10	0.06 s	0.11	0.62	0.88	0.79	0.77 s	0.87	Castilla y León
0.07	0.06 s	0.05	0.04 s	0.07	0.18	0.31	0.34	0.22 s	0.40	Castilla-la Mancha
0.04	0.05 s	0.06	0.07 s	0.06	0.32	0.38	0.40	0.46 s	0.39	Extremadura
0.07	0.07 s	0.09	0.09 s	0.11	0.52	0.66	0.46	0.57 s	0.50	Este
0.08	0.08 s	0.11	0.11 s	0.13	0.56	0.76	0.47	0.63 s	0.51	Cataluña
0.06	0.05 s	0.07	0.06 s	0.07	0.50	0.53	0.50	0.51 s	0.53	Comunidad Valenciana
0.07	0.04 s	0.07	0.08 s	0.07	0.23	0.46	0.14	0.27 s	0.19	Baleares
0.09	0.09 s	0.12	0.11 s	0.11	0.47	0.53	0.53	0.51 s	0.55	Sur
0.09	0.09 s	0.12	0.11 s	0.11	0.49	0.55	0.51	0.54 s	0.54	Andalucia
0.08	0.10 s	0.10	0.13 s	0.10	0.42	0.43	0.66	0.42 s	0.65	Murcia
-	-	-	-	-	-	-	-	-	-	Ceuta y Melilla
0.11	0.10 s	0.11	0.15 s	0.12	0.57	0.68	0.56	0.61 s	0.42	Canarias
0.26	0.26	0.20	0.20	:	0.46	0.47	0.53	0.54	:	France
0.38 s	0.37 s	0.40 s	0.36 s	:	0.30 s	0.30 s	0.95 s	0.94 s	:	Île de France
0.05 s	0.05 s	0.05 s	0.05 s	:	0.03 s	0.04 s	0.23 s	0.25 s	:	Bassin Parisien
0.01 s	0.01 s	0.01 s	0.01 s	:	0.01 s	0.01 s	0.20 s	0.22 s	:	Champagne-Ardenne
0.01 s	0.03 s	0.02 s	0.02 s	:	0.01 s	0.01 s	0.17 s	0.18 s	:	Picardie
0.02 s	0.02 s	0.01 s	0.01 s	:	0.01 s	0.02 s	0.21 s	0.22 s	:	Haute-Normandie
0.11 s	0.11 s	0.11 s	0.11 s	:	0.05 s	0.06 s	0.25 s	0.27 s	:	Centre
0.01 s	0.02 s	0.04 s	0.04 s	:	0.08 s	0.09 s	0.36 s	0.35 s	:	Basse-Normandie
0.08 s	0.07 s	0.08 s	0.08 s	:	0.03 s	0.04 s	0.23 s	0.25 s	:	Bourgogne
0.04 s	0.04 s	0.03 s	0.03 s	:	0.04 s	0.04 s	0.34 s	0.35 s	:	Nord - Pas-de-Calais
0.06 s	0.06 s	0.06 s	0.05 s	:	0.14 s	0.15 s	0.54 s	0.53 s	:	Est
0.08 s	0.09 s	0.09 s	0.08 s	:	0.12 s	0.13 s	0.51 s	0.49 s	:	Lorraine
0.05 s	0.05 s	0.05 s	0.05 s	:	0.25 s	0.26 s	0.75 s	0.74 s	:	Alsace
0.01 s	0.01 s	0.01 s	0.01 s	:	0.03 s	0.03 s	0.27 s	0.30 s	:	Franche-Comté
0.10 s	0.10 s	0.11 s	0.11 s	:	0.04 s	0.05 s	0.31 s	0.32 s	:	Ouest
0.08 s	0.09 s	0.09 s	0.10 s	:	0.02 s	0.03 s	0.25 s	0.26 s	:	Pays de la Loire
0.15 s	0.15 s	0.15 s	0.15 s	:	0.06 s	0.06 s	0.37 s	0.39 s	:	Bretagne
0.06 s	0.06 s	0.06 s	0.06 s	:	0.05 s	0.05 s	0.30 s	0.31 s	:	Poitou-Charentes
0.16 s	0.15 s	0.16 s	0.16 s	:	0.10 s	0.11 s	0.50 s	0.53 s	:	Sud-Ouest
0.07 s	0.06 s	0.06 s	0.07 s	:	0.08 s	0.09 s	0.40 s	0.43 s	:	Aquitaine
0.31 s	0.30 s	0.31 s	0.31 s	:	0.16 s	0.16 s	0.67 s	0.72 s	:	Midi-Pyrénées
0.01 s	0.01 s	0.01 s	0.01 s	:	0.02 s	0.02 s	0.27 s	0.29 s	:	Limousin
0.15 s	0.15 s	0.15 s	0.16 s	:	0.13 s	0.13 s	0.53 s	0.55 s	:	Centre-Est
0.14 s	0.15 s	0.14 s	0.16 s	:	0.14 s	0.15 s	0.56 s	0.59 s	:	Rhône-Alpes
0.17 s	0.16 s	0.16 s	0.16 s	:	0.05 s	0.06 s	0.37 s	0.40 s	:	Auvergne
0.26 s	0.29 s	0.29 s	0.29 s	:	0.16 s	0.17 s	0.59 s	0.57 s	:	Méditerranée
0.30 s	0.36 s	0.40 s	0.41 s	:	0.17 s	0.18 s	0.66 s	0.66 s	:	Languedoc-Roussillon
0.25 s	0.25 s	0.24 s	0.24 s	:	0.16 s	0.17 s	0.57 s	0.54 s	:	Provence-Alpes-Côte d'Azur
0.14 s	0.15 s	0.14 s	0.12 s	:	0.01 s	0.01 s	0.21 s	0.22 s	:	Corse
-	-	-	-	:	-	-	-	-	:	Départements d'Outre-Mer
-	-	-	-	:	-	-	-	-	:	Not registered by region
0.08 s	0.08 s	0.07 s	0.07 s	0.06 s	0.26 s	0.28 s	0.29 s	0.29 s	:	Ireland

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23A-3 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	0.81	0.82	:	:	:	0.30	0.30	0.30	0.31	:
Nord Ovest	1.04	1.07	:	:	:	0.70	0.69	0.71	0.70	:
Piemonte	1.11	1.12	:	:	:	0.84	0.84	0.84	0.83	:
Valle d'Aosta	0.06	0.15	:	:	:	0.06	0.10	0.06	0.19	:
Liguria	0.94	0.99	:	:	:	0.36	0.32	0.39	0.38	:
Lombardia	1.02	1.01	:	:	:	0.59	0.58	0.56	0.55	:
Nord Est	0.56	0.53	:	:	:	0.21	0.21	0.21	0.27	:
Trentino-Alto Adige	0.38	0.40	:	:	:	0.14	0.15	0.15	0.16	:
Veneto	0.49	0.47	:	:	:	0.18	0.18	0.19	0.20	:
Friuli-Venezia Giulia	0.99	0.89	:	:	:	0.39	0.38	0.37	0.62	:
Emilia-Romagna	0.84	0.88	:	:	:	0.30	0.31	0.32	0.37	:
Centro (I)	0.72	0.75	:	:	:	0.15	0.14	0.14	0.13	:
Toscana	0.83	0.86	:	:	:	0.19	0.18	0.17	0.15	:
Umbria	0.69	0.83	:	:	:	0.09	0.08	0.08	0.09	:
Marche	0.48	0.44	:	:	:	0.08	0.09	0.12	0.09	:
Lazio	1.76	1.64	:	:	:	0.35	0.35	0.35	0.44	:
Abruzzo-Molise	0.62	0.69	:	:	:	0.21	0.26	0.20	0.20	:
Abruzzo	0.73	0.79	:	:	:	0.27	0.30	0.25	0.25	:
Molise	0.17	0.27	:	:	:	0.00	0.09	-	0.03	:
Campania	0.57	0.60	:	:	:	0.11	0.11	0.12	0.11	:
Sud	0.32	0.33	:	:	:	0.05	0.04	0.05	0.04	:
Puglia	0.38	0.39	:	:	:	0.07	0.06	0.07	0.06	:
Basilicata	0.36	0.37	:	:	:	0.04	0.03	0.03	0.04	:
Calabria	0.20	0.21	:	:	:	0.01	0.00	0.00	0.00	:
Sicilia	0.49	0.51	:	:	:	0.04	0.03	0.05	0.06	:
Sardegna	0.58	0.58	:	:	:	0.02	0.04	0.04	0.04	:
Nederland	1.44 s	1.45 s	1.44 s	:	:	0.59 s	0.61 s	0.64 s	:	:
Noord-Nederland	:	:	:	:	:	:	0.45 s	:	:	:
Groningen	:	:	:	:	:	:	0.38 s	:	:	:
Friesland	:	:	:	:	:	:	0.33 s	:	:	:
Drenthe	:	:	:	:	:	:	0.70 s	:	:	:
Oost-Nederland	:	:	:	:	:	:	0.50 s	:	:	:
Overijssel	:	:	:	:	:	:	0.56 s	:	:	:
Gelderland	:	:	:	:	:	:	0.51 s	:	:	:
Flevoland	:	:	:	:	:	:	0.21 s	:	:	:
West-Nederland	:	:	:	:	:	:	0.50 s	:	:	:
Utrecht	:	:	:	:	:	:	0.71 s	:	:	:
Noord-Holland	:	:	:	:	:	:	0.56 s	:	:	:
Zuid-Holland	:	:	:	:	:	:	0.43 s	:	:	:
Zeeland	:	:	:	:	:	:	0.13 s	:	:	:
Zuid-Nederland	:	:	:	:	:	:	1.02 s	:	:	:
Noord-Brabant	:	:	:	:	:	:	1.09 s	:	:	:
Limburg (NL)	:	:	:	:	:	:	0.89 s	:	:	:
Österreich	:	:	:	1.38	:	:	:	:	0.65	:
Ostösterreich	:	:	:	1.73	:	:	:	:	0.74	:
Burgenland	:	:	:	0.13	:	:	:	:	0.08	:
Niederösterreich	:	:	:	0.44	:	:	:	:	0.36	:
Wien	:	:	:	3.14	:	:	:	:	1.18	:
Südösterreich	:	:	:	1.43	:	:	:	:	0.71	:
Kärnten	:	:	:	0.61	:	:	:	:	0.40	:
Steiermark	:	:	:	1.80	:	:	:	:	0.84	:
Westösterreich	:	:	:	0.93	:	:	:	:	0.51	:
Oberösterreich	:	:	:	0.84	:	:	:	:	0.60	:
Salzburg	:	:	:	0.71	:	:	:	:	0.25	:
Tirol	:	:	:	1.47	:	:	:	:	0.49	:
Vorarlberg	:	:	:	0.61	:	:	:	:	0.57	:
Portugal	0.53	:	0.61	:	0.73	0.07	:	0.08	:	0.11
Continente	0.53	:	0.61	:	0.73	0.07	:	0.08	:	0.12
Norte	0.35	:	0.38	:	0.48	0.07	:	0.07	:	0.11
Centro (P)	0.44	:	0.52	:	0.64	0.05	:	0.07	:	0.10
Lisboa e Vale do Tejo	0.81	:	0.93	:	1.12	0.10	:	0.12	:	0.15
Alentejo	0.42	:	0.54	:	0.56	0.03	:	0.03	:	0.03
Algarve	0.32	:	0.37	:	0.43	0.00	:	0.01	:	0.03
Açores	0.42	:	0.54	:	0.71	0.00	:	0.00	:	0.01
Madeira	0.47	:	0.65	:	0.54	0.03	:	-	:	0.02

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23B-3 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.18	0.18	0.18	0.18	:	0.33	0.33	:	:	:	Italia
0.10	0.13	0.13	0.11	:	0.24	0.24	:	:	:	Nord Ovest
0.07	0.08	0.06	0.05	:	0.20	0.20	:	:	:	Piemonte
0.01	0.05	0.07	0.04	:	-	-	:	:	:	Valle d'Aosta
0.21	0.30	0.33	0.28	:	0.37	0.37	:	:	:	Liguria
0.21	0.21	0.21	0.26	:	0.22	0.22	:	:	:	Lombardia
0.11	0.09	0.09	0.10	:	0.24	0.23	:	:	:	Nord Est
0.10	0.10	0.12	0.11	:	0.15	0.15	:	:	:	Trentino-Alto Adige
0.08	0.08	0.07	0.05	:	0.22	0.21	:	:	:	Veneto
0.22	0.12	0.13	0.25	:	0.38	0.39	:	:	:	Friuli-Venezia Giulia
0.15	0.17	0.15	0.14	:	0.40	0.40	:	:	:	Emilia-Romagna
0.11	0.12	0.11	0.11	:	0.47	0.49	:	:	:	Centro (I)
0.15	0.16	0.14	0.15	:	0.49	0.52	:	:	:	Toscana
0.06	0.06	0.07	0.07	:	0.54	0.69	:	:	:	Umbria
0.03	0.04	0.04	0.04	:	0.37	0.32	:	:	:	Marche
0.80	0.77	0.77	0.73	:	0.61	0.52	:	:	:	Lazio
0.12	0.13	0.14	0.07	:	0.28	0.30	:	:	:	Abruzzo-Molise
0.15	0.15	0.17	0.09	:	0.32	0.34	:	:	:	Abruzzo
0.03	0.03	0.03	0.01	:	0.14	0.15	:	:	:	Molise
0.09	0.09	0.09	0.08	:	0.37	0.40	:	:	:	Campania
0.08	0.07	0.08	0.07	:	0.22	0.22	:	:	:	Sud
0.06	0.08	0.10	0.10	:	0.25	0.25	:	:	:	Puglia
0.15	0.17	0.08	0.04	:	0.16	0.18	:	:	:	Basilicata
0.02	0.03	0.04	0.02	:	0.17	0.18	:	:	:	Calabria
0.07	0.07	0.07	0.05	:	0.38	0.41	:	:	:	Sicilia
0.10	0.12	0.11	0.09	:	0.46	0.42	:	:	:	Sardegna
0.28 s	0.30 s	0.25 s	:	:	0.55 s	0.54 s	0.53 s	:	:	Nederland
:	0.04 s	:	:	:	:	:	:	:	:	Noord-Nederland
:	0.06 s	:	:	:	:	:	:	:	:	Groningen
:	0.03 s	:	:	:	:	:	:	:	:	Friesland
:	0.01 s	:	:	:	:	:	:	:	:	Drenthe
:	0.34 s	:	:	:	:	:	:	:	:	Oost-Nederland
:	0.02 s	:	:	:	:	:	:	:	:	Overijssel
:	0.39 s	:	:	:	:	:	:	:	:	Gelderland
:	1.23 s	:	:	:	:	:	:	:	:	Flevoland
:	0.47 s	:	:	:	:	:	:	:	:	West-Nederland
:	0.56 s	:	:	:	:	:	:	:	:	Utrecht
:	0.33 s	:	:	:	:	:	:	:	:	Noord-Holland
:	0.58 s	:	:	:	:	:	:	:	:	Zuid-Holland
:	0.09 s	:	:	:	:	:	:	:	:	Zeeland
:	0.01 s	:	:	:	:	:	:	:	:	Zuid-Nederland
:	0.01 s	:	:	:	:	:	:	:	:	Noord-Brabant
:	0.02 s	:	:	:	:	:	:	:	:	Limburg (NL)
:	:	:	0.15	:	:	:	:	0.57	:	Österreich
:	:	:	0.26	:	:	:	:	0.71	:	Ostösterreich
:	:	:	0.05	:	:	:	:	-	:	Burgenland
:	:	:	0.08	:	:	:	:	0.00	:	Niederösterreich
:	:	:	0.47	:	:	:	:	1.46	:	Wien
:	:	:	0.06	:	:	:	:	0.66	:	Südösterreich
:	:	:	0.04	:	:	:	:	0.16	:	Kärnten
:	:	:	0.07	:	:	:	:	0.88	:	Steiermark
:	:	:	0.06	:	:	:	:	0.35	:	Westösterreich
:	:	:	0.07	:	:	:	:	0.16	:	Oberösterreich
:	:	:	0.06	:	:	:	:	0.41	:	Salzburg
:	:	:	0.07	:	:	:	:	0.91	:	Tirol
:	:	:	0.03	:	:	:	:	-	:	Vorarlberg
0.13	:	0.14	:	0.18	0.26	:	0.31	:	0.35	Portugal
0.13	:	0.13	:	0.18	0.26	:	0.31	:	0.35	Continente
0.03	:	0.03	:	0.06	0.19	:	0.22	:	0.24	Norte
0.03	:	0.02	:	0.07	0.29	:	0.35	:	0.39	Centro (P)
0.29	:	0.32	:	0.39	0.31	:	0.38	:	0.47	Lisboa e Vale do Tejo
0.09	:	0.11	:	0.13	0.28	:	0.34	:	0.38	Alentejo
0.06	:	0.07	:	0.09	0.24	:	0.29	:	0.29	Algarve
0.11	:	0.21	:	0.18	0.29	:	0.28	:	0.43	Açores
0.30	:	0.39	:	0.29	0.13	:	0.20	:	0.20	Madeira

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23A-4 — R&D personnel at NUTS level 0, 1 and 2

	Total of sectors					Business enterprise sector				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Suomi-Finland	1.97	:	2.23	2.43	2.54	1.00	1.08	1.17	1.29	1.38
Manner-Suomi	1.98	:	2.24	-	2.55	1.00	:	1.17	-	1.38
Itä-Suomi	0.97	:	1.14	1.17	1.35	0.35	:	0.40	0.42	0.46
Väli-Suomi	1.01	:	1.23	1.27	1.36	0.53	:	0.74	0.74	0.82
Pohjois-Suomi	2.05	:	2.26	2.70	2.84	0.98	:	1.14	1.52	1.57
Uusimaa	-	:	-	-	3.90	-	:	-	-	2.00
Etelä-Suomi	-	:	-	-	2.19	-	:	-	-	1.35
Åland	0.27	:	0.12	0.07	0.11	0.06	:	0.05	0.05	0.09
Sverige	2.18	:	2.34	2.35 s	2.45	1.07	:	1.13	1.21 s	1.14
Stockholm	3.21	:	3.65	:	3.72	1.75	:	1.92	:	1.91
Östra Mellansverige	2.66	:	2.70	:	2.73	1.09	:	0.96	:	0.94
Sydsverige	1.87	:	1.84	:	2.35	0.78	:	0.91	:	0.95
Norra Mellansverige	0.90	:	0.93	:	0.91	0.41	:	0.46	:	0.39
Mellersta Norrland	0.79	:	0.83	:	0.91	0.42	:	0.38	:	0.36
Övre Norrland	2.41	:	2.52	:	2.87	0.45	:	0.41	:	0.49
Småland med Öarna	-	:	0.64	:	0.63	-	:	0.25	:	0.26
Västsverige	-	:	2.58	:	2.67	-	:	1.55	:	1.64
Not registered by region	-	:	-	:	-	-	:	-	:	-
United Kingdom	:	:	:	:	:	0.60 s	0.58 s	0.55 s	0.60 s	:
North East	:	:	:	:	:	:	0.35 s	0.31 s	0.33 s	:
North West	:	:	:	:	:	:	0.60 s	0.59 s	0.65 s	:
Yorkshire and The Humber	:	:	:	:	:	:	0.28 s	0.26 s	0.31 s	:
East Midlands	:	:	:	:	:	:	0.66 s	0.64 s	0.66 s	:
West Midlands	:	:	:	:	:	:	0.57 s	0.53 s	0.57 s	:
Eastern	:	:	:	:	:	:	1.16 s	1.18 s	1.16 s	:
London	:	:	:	:	:	:	-	-	0.31 s	:
South East	:	:	:	:	:	:	0.92 s	0.88 s	0.99 s	:
South West	:	:	:	:	:	:	0.57 s	0.55 s	0.62 s	:
Wales	:	:	:	:	:	:	0.19 s	0.21 s	0.25 s	:
Scotland	:	:	:	:	:	:	0.33 s	0.30 s	0.33 s	:
Northern Ireland	:	:	:	:	:	:	0.29 s	0.31 s	0.32 s	:
EEA	**1.27**	**1.28**	**1.30**	**1.32**	:	**0.59**	**0.60**	**0.60**	**0.62**	:
Iceland	1.94	1.84 s	2.46	2.51	:	0.61	0.54 s	0.85	0.87	:
Norge	1.87	:	1.92	:	1.88	0.73	:	0.77	:	0.75
Oslo og Akershus	:	:	:	:	:	:	:	:	:	:
Hedmark og Oppland	:	:	:	:	:	:	:	:	:	:
Sør-Østlandet	:	:	:	:	:	:	:	:	:	:
Agder og Rogaland	:	:	:	:	:	:	:	:	:	:
Vestlandet	:	:	:	:	:	:	:	:	:	:
Trøndelag	:	:	:	:	:	:	:	:	:	:
Nord-Norge	:	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 23
R&D personnel
At the regional level

As a % of the labour force
In head count

Table 23B-4 — R&D personnel at NUTS levels 0, 1 and 2

Government sector					Higher education sector					
1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	
0.37	:	0.37	0.39	0.40	0.61	:	0.67	0.72	0.76	Suomi-Finland
0.37	:	0.37	-	0.40	0.61	:	0.67	-	0.76	Manner-Suomi
0.16	:	0.18	0.20	0.23	0.46	:	0.55	0.55	0.67	Itä-Suomi
0.10	:	0.09	0.12	0.11	0.37	:	0.40	0.41	0.43	Väli-Suomi
0.26	:	0.25	0.29	0.31	0.80	:	0.87	0.89	0.96	Pohjois-Suomi
-	:	-	-	0.88	-	:	-	-	1.02	Uusimaa
-	:	-	-	0.20	-	:	-	-	0.65	Etelä-Suomi
0.21	:	0.07	0.02	0.02	-	:	-	-	-	Åland
0.12	:	0.12	0.12 s	0.12	0.98	:	1.09	1.01 s	1.20	Sverige
0.30	:	0.32	:	0.32	1.16	:	1.42	:	1.49	Stockholm
0.18	:	0.18	:	0.18	1.38	:	1.56	:	1.62	Östra Mellansverige
0.01	:	0.00	:	0.01	1.09	:	0.92	:	1.39	Sydsverige
0.15	:	0.12	:	0.11	0.34	:	0.36	:	0.41	Norra Mellansverige
0.02	:	0.01	:	0.03	0.35	:	0.44	:	0.52	Mellersta Norrland
0.13	:	0.14	:	0.13	1.82	:	1.97	:	2.25	Övre Norrland
-	:	0.00	:	0.00	-	:	0.40	:	0.37	Småland med Öarna
-	:	0.01	:	0.01	-	:	1.01	:	1.02	Västsverige
-	:	-	:	-	-	:	-	:	-	Not registered by region
0.14 s	0.12 s	0.11 s	0.11 s	0.11 s	:	:	:	:	:	United Kingdom
:	0.01 s	0.00 s	0.00 s	:	:	:	:	:	:	North East
:	0.03 s	0.03 s	0.03 s	:	:	:	:	:	:	North West
:	0.03 s	0.03 s	0.03 s	:	:	:	:	:	:	Yorkshire and The Humber
:	0.05 s	0.05 s	0.04 s	:	:	:	:	:	:	East Midlands
:	0.10 s	0.09 s	0.10 s	:	:	:	:	:	:	West Midlands
:	0.20 s	0.17 s	0.15 s	:	:	:	:	:	:	Eastern
:	-	-	0.09 s	:	:	:	:	:	:	London
:	0.26 s	0.25 s	0.24 s	:	:	:	:	:	:	South East
:	0.16 s	0.15 s	0.19 s	:	:	:	:	:	:	South West
:	0.03 s	0.03 s	0.05 s	:	:	:	:	:	:	Wales
:	0.16 s	0.16 s	0.15 s	:	:	:	:	:	:	Scotland
:	0.03 s	0.03 s	0.03 s	:	:	:	:	:	:	Northern Ireland
0.20	**0.20**	**0.19**	**0.19**	**:**	**0.46**	**0.47**	**0.48**	**0.49**	**:**	**EEA**
0.54	0.56 s	0.70	0.72	:	0.75	0.69 s	0.87	0.89	:	Iceland
0.31	:	0.29	:	0.27	0.83	:	0.86	:	0.86	Norge
:	:	:	:	:	:	:	:	:	:	Oslo og Akershus
:	:	:	:	:	:	:	:	:	:	Hedmark og Oppland
:	:	:	:	:	:	:	:	:	:	Sør-Østlandet
:	:	:	:	:	:	:	:	:	:	Agder og Rogaland
:	:	:	:	:	:	:	:	:	:	Vestlandet
:	:	:	:	:	:	:	:	:	:	Trøndelag
:	:	:	:	:	:	:	:	:	:	Nord-Norge

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 24
Patent applications to the EPO
At the national level

Table 24A — Patent applications to the EPO — Total number

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**32 310**	**29 142**	**30 730**	**30 782**	**31 895**	**34 205**	**36 180**	**40 397**	**48 671**	**44 775**
EUR-12	25 927	23 088	24 711	24 552	25 369	27 210	28 741	31 972	39 248	36 442
B	698	612	747	887	910	952	956	1 144	1 427	1 196
DK	424	463	472	536	591	626	683	761	740	716
D	13 715	11 549	12 421	12 380	12 733	13 833	14 558	15 834 p	20 317	19 522
EL	29	34	44	45	35	43	48	55	75	66
E	281	332	356	376	462	476	511	657	828	696
F	5 501	5 252	5 464	5 159	5 259	5 584	5 773	6 417	7 325	6 665
IRL	78	69	88	111	92	133	142	159	204	210
I	2 518	2 275	2 625	2 448	2 539	2 635	2 904	3 266	3 707	3 347
L	33	40	35	24	41	29	42	58	61	67
NL	1 838	1 624	1 647	1 672	1 731	1 809	2 109	2 568	2 791	2 454
A	728	707	724	705	755	807	793	898	1 149	988
P	5	9	13	16	22	16	15	27	24	30
FIN	503	585	547	729	789	893	891	890 p	1 339	1 202
S	1 233	1 210	1 239	1 325	1 450	1 761	1 927	2 339	2 716	2 103
UK	4 725	4 381	4 309	4 370	4 486	4 609	4 830	5 325	5 967	5 514
EEA	**32 626**	**29 403**	**31 054**	**31 099**	**32 187**	**34 544**	**36 599**	**40 922**	**49 256**	**45 280**
IS	5	7	11	5	7	9	8	17	23	29
LI	35	34	37	21	28	25	30	48	41	47
NO	276	220	276	291	257	305	380	460	522	430
CA	865	743	854	848	996	1 074	1 197	1 437	1 765	1 557
JP	13 449	13 146	12 022	11 105	11 216	11 084	12 641	14 342	15 500	14 236
US	19 077	18 195	20 511	20 054	20 962	22 471	24 817	27 418	28 755	31 157

Table 24B — Patent applications to the EPO — Per million population

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**93**	**83**	**87**	**83**	**86**	**92**	**97**	**108**	**130**	**119**
EUR-12	94	83	88	83	85	91	96	106	130	121
B	70	61	75	88	90	94	94	112	140	117
DK	83	90	91	104	114	120	130	144	140	135
D	219	181	193	153	157	170	178	193 p	248	238
EL	3	3	4	4	3	4	5	5	7	6
E	7	9	9	10	12	12	13	17	21	18
F	97	92	95	90	91	96	99	110	125	113
IRL	22	20	25	31	26	37	39	44	55	56
I	44	40	46	43	44	46	51	57	64	58
L	86	104	90	61	103	72	101	139	143	155
NL	123	108	109	110	113	117	136	165	178	156
A	95	91	92	88	94	100	98	111	142	122
P	1	1	1	2	2	2	2	3	2	3
FIN	101	117	109	144	155	175	174	173 p	260	233
S	145	141	143	152	166	200	218	264	307	237
UK	82	76	74	75	77	79	82	90	101	93
EEA	**93**	**83**	**87**	**83**	**86**	**92**	**97**	**108**	**130**	**119**
IS	20	27	42	19	26	32	30	63	85	104
LI	1 230	1 171	1 256	701	925	818	971	1 540	1 307	1 468
NO	65	52	65	68	59	70	87	105	118	97
CA	31	27	30	30	34	37	40	48	58	51
JP	109	106	97	89	90	88	101	115	123	113
US	77	73	81	78	81	86	94	103	107	115

Table 24C — Patent applications to the EPO — Per million labour force

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**206**	**185**	**196**	**186**	**192**	**206**	**216**	**240**	**287**	**261**
EUR-12	216	190	204	190	194	209	218	242	293	269
B	179	153	185	218	219	228	228	271	336	274
DK	146	160	163	187	214	224	243	269	262	251
D	450	379	401	317	324	355	372	404 p	516	493
EL	7	9	11	11	8	10	11	13	17	15
E	19	22	23	25	30	31	32	41	51	43
F	228	216	223	209	211	223	228	253	286	258
IRL	59	51	65	81	65	93	96	104	126	124
I	107	95	115	108	112	117	127	143	160	143
L	205	243	209	143	244	176	243	335	347	371
NL	271	235	235	236	240	248	285	338	360	311
A	207	196	197	189	195	210	208	236	299	256
P	1	2	3	3	5	3	3	6	5	6
FIN	193	228	216	291	317	368	364	357 p	533	455
S	271	267	278	302	333	391	437	535	627	479
UK	164	153	151	154	158	162	169	186	208	189
EEA (1)	**205**	**184**	**195**	**186**	**191**	**205**	**215**	**240**	**286**	**260**
IS	39	50	76	35	48	57	55	117	155	185
LI	:	:	:	:	:	:	:	:	:	:
NO	129	103	130	136	120	140	171	202	225	185
CA	60	52	59	58	68	73	80	94	114	99
JP	211	202	183	168	169	166	188	211	228	210
US (2)	149	142	158	143	158	168	183	199	207	221

Methodological notes

1999: provisional data. (1) EEA excludes Liechtenstein as no reference data exist for this country.
(2) US: 1993-94 and 1996-97 break in series in MSTI data.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat — Data EPO.

Table 25
Patent applications to the EPO
At the national level

Number of applications

Table 25A — Patent applications to the EPO by IPC section — 1997

	A	B	C	D	E	F	G	H	Total
EU-15	**6 419**	**8 789**	**6 352**	**955**	**1 967**	**4 111**	**5 405**	**6 418**	**40 397**
EUR-12	4 825	7 295	5 030	778	1 585	3 341	4 117	5 001	31 972
B	157	176	373	36	48	54	187	113	1 144
DK	215	117	164	19	45	67	63	70	761
D	1 910 p	4 000 p	2 459 p	371 p	823 p	1 893 p	2 003 p	2 373 p	15 834 p
EL	15	11	7	-	7	6	6	2	55
E	162	166	100	25	32	64	60	48	657
F	1 231	1 268	954	84	272	636	893	1 079	6 417
IRL	49	26	18	3	8	7	22	28	159
I	633	870	422	115	159	353	355	357	3 266
L	3	16	15	2	4	6	3	8	58
NL	416	414	450	39	111	149	429	559	2 568
A	151	213	138	31	86	118	70	91	898
P	6	4	9	-	4	-	2	2	27
FIN	90 p	130 p	84 p	73 p	31 p	55 p	87 p	341 p	890 p
S	404	508	161	71	107	246	287	554	2 339
UK	975	849	996	87	230	457	937	793	5 325
EEA	**6 520**	**8 902**	**6 400**	**958**	**2 026**	**4 164**	**5 486**	**6 465**	**40 922**
IS	**4**	**3**	-	1	4	1	-	4	17
LI	**13**	**10**	6	-	6	9	1	3	48
NO	**84**	120	43	1	49	43	80	40	460
CA	295	225	259	25	66	85	210	271	1 437
JP	1 268	2 340	2 653	166	150	1 046	3 186	3 532	14 342
US	4 175	4 356	6 325	430	562	1 627	4 310	5 633	27 418

Table 25B — Patent applications to the EPO by IPC section — 1998

	A	B	C	D	E	F	G	H	Total
EU-15	**7 587**	**10 414**	**7 244**	**1 111**	**2 290**	**4 959**	**6 548**	**8 517**	**48 671**
EUR-12	5 820	8 777	5 802	928	1 891	4 214	5 104	6 712	39 248
B	211	256	427	45	66	66	188	169	1 427
DK	198	110	128	12	37	65	81	110	740
D	2 495	4 905	2 955	423	974	2 588	2 677	3 299	20 317
EL	25	17	7	-	4	13	5	4	75
E	196	212	107	18	52	72	78	93	828
F	1 357	1 392	1 061	119	320	673	1 082	1 322	7 325
IRL	55	33	17	1	8	14	36	40	204
I	750	1 026	438	136	186	390	350	431	3 707
L	5	26	12	2	2	7	3	3	61
NL	415	444	505	18	144	151	463	650	2 791
A	182	287	150	42	91	164	96	136	1 149
P	5	4	3	1	3	4	3	1	24
FIN	124	173	120	124	41	71	122	564	1 339
S	437	525	197	79	97	230	321	830	2 716
UK	1 133	1 003	1 117	91	265	450	1 042	865	5 967
EEA	**7 699**	**10 552**	**7 324**	**1 114**	**2 350**	**5 015**	**6 623**	**8 579**	**49 256**
IS	11	3	-	-	1	2	2	5	23
LI	11	10	6	2	1	6	3	2	41
NO	89	124	73	1	58	50	71	55	522
CA	339	249	337	24	70	130	258	358	1 765
JP	1 388	2 408	2 598	208	123	1 228	3 570	3 976	15 500
US	3 722	4 917	5 979	459	700	1 881	4 839	6 259	28 755

Table 25C — Patent applications to the EPO by IPC section — 1999 (provisional)

	A	B	C	D	E	F	G	H	Total
EU-15	**6 807**	**9 609**	**6 427**	**976**	**2 158**	**4 548**	**6 311**	**7 939**	**44 775**
EUR-12	5 256	8 198	5 139	839	1 812	3 845	4 914	6 438	36 442
B	167	212	382	54	31	43	153	154	1 196
DK	197	113	138	10	31	65	79	85	716
D	2 293	4 774	2 751	392	1 028	2 392	2 648	3 245	19 522
EL	27	5	10	-	2	9	7	6	66
E	162	164	95	21	30	57	70	96	696
F	1 257	1 236	867	87	295	660	972	1 291	6 665
IRL	60	25	37	2	12	14	28	32	210
I	671	905	365	115	174	338	324	455	3 347
L	4	19	24	1	-	8	7	5	67
NL	364	408	392	27	101	146	459	557	2 454
A	141	258	119	25	107	116	110	113	988
P	7	4	9	-	2	5	2	2	30
FIN	103	188	89	115	31	58	134	484	1 202
S	380	422	166	54	81	192	278	530	2 103
UK	974	877	984	73	234	446	1 040	886	5 514
EEA	**6 906**	**9 716**	**6 481**	**977**	**2 217**	**4 603**	**6 386**	**7 995**	**45 280**
IS	10	3	1	-	-	2	5	8	29
LI	12	11	3	1	3	11	4	2	47
NO	76	93	50	-	56	41	67	46	430
CA	306	213	315	28	58	94	234	309	1 557
JP	1 224	2 322	2 343	151	80	1 062	3 207	3 846	14 236
US	6 310	4 164	5 941	347	589	1 633	6 356	5 818	31 157

Methodological notes

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat — Data EPO.

Table 26

Patent applications to the EPO in high technology fields
At the national level

Table 26A — High tech patent applications to the EPO — Total number

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**3 001**	**2 743**	**2 932**	**3 267**	**3 204**	**3 880**	**4 367**	**5 303**	**7 281**	**7 161**
EUR-12	2 248	2 059	2 301	2 460	2 381	2 865	3 181	3 869	5 417	5 449
B	45	68	87	104	87	110	124	123	172	181
DK	46	43	49	52	59	72	68	111	131	116
D	1 070	876	932	944	896	1 108	1 338	1 626 p	2 431	2 490
EL	-	2	6	5	2	5	3	4	6	6
E	11	22	23	34	31	41	36	56	79	98
F	614	616	687	662	656	738	716	894	1 177	1 249
IRL	12	10	18	12	9	24	25	30	38	50
I	165	149	164	209	217	231	269	269	309	285
L	-	-	-	-	-	1	1	3	3	4
NL	258	208	259	289	287	316	357	503	600	569
A	30	42	35	43	47	64	61	63	88	79
P	0	1	3	3	0	0	1	5	2	4
FIN	43	64	87	156	149	226	250	295 p	512	434
S	100	88	98	150	136	233	319	394	642	464
UK	607	554	484	604	628	710	799	929	1 091	1 133
EEA	**3 023**	**2 755**	**2 944**	**3 281**	**3 219**	**3 902**	**4 389**	**5 349**	**7 363**	**7 210**
IS	2	1	-	1	1	4	1	4	5	9
LI	1	3	-	0	2	1	-	3	2	0
NO	20	8	12	12	12	17	22	39	75	40
CA	86	86	91	95	143	184	239	333	425	396
JP	2 915	3 221	2 878	2 370	2 477	2 464	2 787	3 361	3 678	3 558
US [1]	3 618	2 718	3 950	3 256	3 562	4 110	4 849	5 633	5 674	8 191

Table 26B — High tech patent applications to the EPO — Per million population

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**8.640**	**7.851**	**8.346**	**8.854**	**8.648**	**10.441**	**11.717**	**14.191**	**19.439**	**19.078**
EUR-12	8.138	7.406	8.230	8.283	7.986	9.580	10.608	12.866	17.975	18.050
B	4.487	6.796	8.702	10.336	8.644	10.853	12.264	12.072	16.912	17.716
DK	9.022	8.363	9.492	10.003	11.305	13.753	12.908	21.105	24.773	21.757
D	17.075	13.750	14.451	11.653	11.010	13.591	16.357	19.823	29.626 p	30.357
EL	-	0.241	0.590	0.438	0.170	0.463	0.273	0.393	0.563	0.531
E	0.294	0.574	0.586	0.873	0.800	1.054	0.927	1.414	2.012	2.482
F	10.850	10.830	12.011	11.510	11.355	12.725	12.283	15.278	20.041	21.176
IRL	3.393	2.832	5.192	3.432	2.489	6.777	6.986	8.214	10.233	13.465
I	2.903	2.621	2.884	3.674	3.806	4.034	4.697	4.678	5.359	4.955
L	-	-	-	-	-	3.296	1.599	5.977	6.490	9.320
NL	17.345	13.876	17.120	18.996	18.729	20.460	23.044	32.321	38.351	36.100
A	3.842	5.464	4.460	5.364	5.849	7.957	7.578	7.749	10.948	9.794
P	0.045	0.052	0.289	0.267	0.012	0.017	0.057	0.458	0.151	0.367
FIN	8.616	12.792	17.230	30.774	29.278	44.301	48.798	57.561	99.457 p	84.165
S	11.737	10.186	11.361	17.303	15.510	26.413	36.044	44.520	72.613	52.352
UK	10.558	9.603	8.356	10.403	10.770	12.138	13.613	15.778	18.465	19.105
EEA	**8.593**	**7.784**	**8.273**	**8.782**	**8.582**	**10.371**	**11.632**	**14.135**	**19.412**	**18.969**
IS	5.989	5.237	-	3.811	1.886	15.732	1.866	14.822	17.108	31.011
LI	35.147	91.623	-	11.049	76.872	32.649	-	80.275	63.857	8.121
NO	4.701	1.852	2.763	2.901	2.851	3.958	5.105	8.922	17.007	9.093
CA	3.127	3.059	3.229	3.302	4.907	6.250	8.022	11.074	13.980	12.983
JP	23.584	25.967	23.124	18.995	19.807	19.625	22.208	26.962	29.164	28.135
US [1]	14.581	10.845	15.576	12.693	13.745	15.707	18.354	21.139	21.086	30.154

Methodological notes

1999: provisional data.

([1]) US: 1993-94 and 1996-97 break in series in MSTI data.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat — Data EPO.

Table 27

Patent applications to the EPO
At the regional level

Total number

Table 27-1 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**32 310**	**29 142**	**30 730**	**30 782**	**31 895**	**34 205**	**36 180**	**40 397**	**48 671**	**44 775**
EUR-12	25 927	23 088	24 711	24 552	25 369	27 210	28 741	31 972	39 248	36 442
Belgique-België	698	612	747	887	910	952	956	1 144	1 427	1 196
Région Bruxelles-capitale	78	52	80	80	86	96	100	118	150	117
Vlaams Gewest	419	385	501	614	636	666	659	777	927	784
Antwerpen	146	115	212	293	275	298	277	294	317	257
Limburg (B)	28	24	22	25	26	37	34	61	75	48
Oost-Vlaanderen	72	79	77	87	93	93	97	123	167	143
Vlaams Brabant	97	105	123	139	163	158	170	198	241	219
West-Vlaanderen	76	61	67	70	78	80	81	101	128	117
Région Wallonne	149	158	159	180	185	187	193	246	346	291
Brabant Wallon	28	52	52	62	71	71	67	60	98	115
Hainaut	18	26	27	26	33	28	31	51	75	57
Liège	88	57	60	68	57	64	67	103	113	79
Luxembourg (B)	7	7	7	8	10	6	11	11	19	15
Namur	8	16	13	14	13	19	18	21	40	24
Not registered by region	52	18	6	13	3	3	3	3	4	3
Danmark	424	463	472	536	591	626	683	761	740	716
Deutschland	13 715	11 549	12 421	12 380	12 733	13 833	14 558	15 834	20 317	19 522
Baden-Württemberg	3 207	2 762	2 877	2 774	2 931	3 200	3 380	3 800	4 809	4 395
Stuttgart	1 175	1 099	1 134	1 088	1 248	1 362	1 520	1 715	2 158	1 928
Karlsruhe	730	625	703	755	694	771	771	792	1 049	984
Freiburg	762	569	657	519	569	608	658	782	885	854
Tübingen	540	470	383	412	421	459	432	511	718	629
Bayern	2 831	2 400	2 622	2 655	2 716	2 943	3 249	3 616	4 830	4 628
Oberbayern	2 087	1 680	1 760	1 239	1 298	1 427	1 638	1 818	2 486	2 538
Niederbayern	109	121	116	85	123	103	126	137	188	155
Oberpfalz	65	56	60	170	145	148	205	256	349	326
Oberfranken	45	47	41	138	142	143	174	149	229	203
Mittelfranken	36	37	50	450	430	482	496	542	675	623
Unterfranken	162	152	225	234	251	275	288	313	401	333
Schwaben	327	308	369	339	328	364	323	402	502	451
Berlin	319	269	287	241	325	369	441	432	508	491
Brandenburg	55	46	59	30	35	61	79	80	134	139
Bremen	91	65	45	41	39	43	38	25	46	52
Hamburg	232	179	204	226	262	281	221	28	340	293
Hessen	1 436	1 276	1 387	1 420	1 519	1 637	1 638	1 640	1 935	1 873
Darmstadt	1 214	1 088	1 158	1 162	1 245	1 371	1 325	1 357	1 561	1 510
Gießen	122	102	139	176	159	173	201	191	238	235
Kassel	99	86	90	82	115	93	113	93	135	128
Mecklenburg-Vorpommern	43	28	53	18	15	19	22	23	37	41
Niedersachsen	452	432	443	718	741	704	759	985	1 309	1 355
Braunschweig	36	40	45	136	164	152	160	277	418	502
Hannover	248	232	244	279	288	256	299	378	468	404
Lüneburg	89	78	74	164	153	157	164	177	212	243
Weser-Ems	79	82	80	138	136	139	136	154	210	205
Nordrhein-Westfalen	3 217	2 590	2 774	2 860	2 925	3 235	3 290	3 447	4 197	3 990
Düsseldorf	1 340	1 097	1 085	1 110	1 097	1 214	1 188	1 229	1 540	1 385
Köln	1 028	762	886	824	872	1 024	1 021	980	1 197	1 177
Münster	268	239	230	276	263	299	333	367	409	429
Detmold	233	164	198	185	205	216	259	284	414	361
Arnsberg	348	328	375	465	488	482	489	587	637	638
Rheinland-Pfalz	1 059	810	899	813	797	936	974	961	1 080	983
Koblenz	428	309	362	171	166	202	168	156	225	232
Trier	60	45	43	42	33	36	52	32	37	37
Rheinhessen-Pfalz	571	456	494	600	597	698	754	773	818	714
Saarland	75	39	57	82	103	96	102	108	137	151
Sachsen	92	75	106	:	:	:	:	220	295	294
Chemnitz	-	3	5	:	:	:	:	220	71	75
Dresden	37	33	60	:	:	:	:	:	192	189
Leipzig	54	39	40	:	:	:	:	:	32	31
Sachsen-Anhalt	6	13	7	41	41	64	67	74	97	79
Dessau	-	2	1	13	8	14	11	17	15	15
Halle	1	1	1	15	20	26	29	29	45	37
Magdeburg	5	10	5	12	13	24	28	28	38	27
Schleswig-Holstein	166	137	169	233	226	195	230	214	300	329
Thüringen	249	238	223	:	:	:	:	84	143	137
Not registered by region	186	191	210	229	59	50	68	96	120	293
Ellada	29	34	44	45	35	43	48	55	75	66
Voreia Ellada	8	8	3	8	4	7	11	6	17	13
Anatoliki Makedonia, Thraki	1	1	1	-	1	-	-	-	1	1
Kentriki Makedonia	7	6	1	7	2	6	7	5	14	12
Dytiki Makedonia	-	-	0	1	-	0	3	-	-	-
Thessalia	-	1	1	-	1	1	1	1	2	-
Kentriki Ellada	4	1	3	2	4	2	6	2	3	2
Ipeiros	1	1	-	-	-	1	1	-	1	-
Ionia Nisia	-	-	-	-	-	-	-	-	-	-
Dytiki Ellada	3	-	3	2	4	1	2	1	2	2
Sterea Ellada	-	-	-	-	-	-	1	1	1	-
Peloponnisos	-	-	0	-	-	-	1	1	-	-
Attiki	16	20	31	30	22	30	26	44	49	48
Nisia Aigaiou, Kriti	1	4	2	5	6	2	5	3	3	2
Voreio Aigaio	-	-	-	-	-	-	-	-	-	-
Notio Aigaio	-	-	-	-	1	-	1	1	-	-
Kriti	1	4	2	5	5	2	4	2	3	2
Not registered by region	-	1	3	-	-	1	-	-	2	1

1999: provisional data. D: 1997 — provisional data.

Sources: Eurostat — Data EPO.

Table 27
Patent applications to the EPO
At the regional level

Total number

Table 27-2 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
España	281	332	356	376	462	476	511	657	828	696
Noroeste	5	8	13	15	19	10	25	24	41	24
Galicia	1	4	4	3	9	2	15	15	27	14
Principado de Asturias	3	4	5	6	9	7	7	6	10	8
Cantabria	1	-	5	6	2	1	3	2	4	2
Noreste	27	47	52	65	61	51	68	125	132	104
Pais Vasco	16	25	21	31	39	26	30	73	77	38
Comunidad Foral de Navarra	5	14	16	13	10	12	22	23	22	25
La Rioja	-	2	2	3	3	-	1	1	1	4
Aragón	6	6	13	17	9	13	15	28	32	37
Comunidad de Madrid	75	92	90	107	102	120	123	132	157	168
Centro (E)	5	6	9	19	12	22	20	34	48	29
Castilla y León	4	4	6	14	9	14	11	18	29	15
Castilla-la Mancha	1	-	3	4	3	7	7	12	13	12
Extremadura	-	2	-	1	-	1	2	5	6	2
Este	154	155	172	145	224	247	238	284	387	330
Cataluña	133	133	150	114	164	185	185	219	292	249
Comunidad Valenciana	20	22	21	28	54	59	51	59	85	72
Baleares	2	-	1	4	6	3	3	5	10	8
Sur	9	21	18	23	31	21	29	47	55	31
Andalucia	9	19	11	19	27	18	24	44	41	23
Murcia	-	1	7	4	4	3	5	3	14	8
Ceuta y Melilla	-	-	-	-	-	-	-	-	-	-
Canarias	3	3	1	1	11	5	8	9	10	8
Not registered by region	3	1	1	1	2	-	-	2	-	2
France	5 501	5 252	5 464	5 159	5 259	5 584	5 773	6 417	7 325	6 665
Ile de France	2 308	2 254	2 373	2 163	2 168	2 259	2 362	2 550	2 923	2 813
Bassin Parisien	663	607	625	588	629	682	704	842	906	778
Champagne-Ardenne	72	69	73	66	62	51	58	64	95	65
Picardie	129	116	132	126	95	131	122	147	183	153
Haute-Normandie	108	112	90	86	92	111	135	157	173	149
Centre	150	136	153	146	196	190	202	251	234	204
Basse-Normandie	49	58	72	60	79	63	55	80	79	74
Bourgogne	155	116	104	105	104	135	132	142	142	133
Nord - Pas-de-Calais	123	129	132	133	132	122	152	144	157	145
Est	441	402	449	422	425	421	430	490	618	488
Lorraine	152	116	119	103	111	137	125	145	194	147
Alsace	209	197	252	233	223	199	205	236	297	241
Franche-Comté	80	90	78	86	91	85	100	109	128	100
Ouest	275	272	258	325	321	374	329	339	462	432
Pays de la Loire	106	103	100	141	108	140	135	153	165	181
Bretagne	123	125	107	120	133	148	125	133	207	170
Poitou-Charentes	47	45	51	63	80	86	70	53	90	81
Sud-Ouest	308	284	302	268	296	298	343	351	413	359
Aquitaine	140	127	124	117	112	109	131	133	156	122
Midi-Pyrénées	147	139	156	130	162	167	190	190	232	208
Limousin	21	17	21	21	21	23	22	28	24	29
Centre-Est	991	880	910	906	922	1 010	1 026	1 218	1 313	1 195
Rhône-Alpes	918	809	838	839	853	933	957	1 112	1 209	1 092
Auvergne	73	72	72	67	69	76	69	106	104	103
Méditerranée	382	410	399	343	349	405	418	465	525	441
Languedoc-Roussillon	78	85	90	77	78	92	107	116	119	104
Provence-Alpes-Côte d'Azur	303	321	309	265	268	310	310	347	404	335
Corse	1	4	0	1	3	3	1	2	2	2
Départements d'Outre-Mer	1	3	1	3	2	1	2	5	3	1
Guadeloupe	1	1	1	1	1	-	1	2	-	1
Martinique	-	-	-	1	1	-	1	0	-	0
Guyane	-	0	-	0	-	-	-	0	-	0
Réunion	-	2	-	1	-	1	-	2	3	-
Not registered by region	9	10	14	9	16	12	7	14	5	13
Ireland	78	69	88	111	92	133	142	159	204	210
Border, Midlands and Western	18	10	6	12	11	7	24	14	35	43
Southern and Eastern	57	54	81	95	82	115	108	139	168	165
Not registered by region	3	4	1	4	0	11	11	6	1	1

Methodological notes

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 27

Patent applications to the EPO
At the regional level

Total number

Table 27-3 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Italia	2 518	2 275	2 625	2 448	2 539	2 635	2 904	3 266	3 707	3 347
Nord Ovest	434	374	406	416	399	410	457	480	508	521
Piemonte	379	328	332	319	315	323	382	408	422	438
Valle d'Aosta	3	2	2	1	5	3	1	0	0	3
Liguria	52	44	72	95	79	83	74	72	86	81
Lombardia	950	813	965	909	896	905	968	1 142	1 313	1 096
Nord Est	389	329	368	363	385	424	466	498	572	508
Trentino-Alto Adige	34	20	22	23	32	47	33	37	45	42
Veneto	248	217	253	266	256	274	346	332	408	373
Friuli-Venezia Giulia	106	92	93	74	96	104	87	129	119	94
Emilia-Romagna	281	315	358	303	348	405	447	469	538	508
Centro (I)	214	176	229	174	195	189	213	260	277	256
Toscana	142	130	176	116	133	121	137	146	195	160
Umbria	20	14	9	18	15	19	24	44	24	24
Marche	51	32	43	40	47	50	53	71	59	72
Lazio	160	148	184	161	155	147	164	197	228	192
Abruzzo-Molise	15	24	17	14	20	33	65	69	74	78
Abruzzo	15	23	17	12	20	32	63	68	73	74
Molise	-	1	1	2	0	0	3	1	1	4
Campania	12	21	29	38	41	26	37	47	50	54
Sud	18	19	25	22	21	19	39	44	59	50
Puglia	11	16	17	15	17	14	23	25	37	35
Basilicata	-	1	3	1	3	2	7	10	11	9
Calabria	7	2	5	5	1	3	9	9	11	7
Sicilia	29	37	28	34	56	58	35	43	68	63
Sardegna	9	8	7	7	10	8	12	10	16	14
Not registered by region	8	11	9	6	13	10	1	6	4	6
Luxembourg	33	40	35	24	41	29	42	58	61	67
Nederland	1 838	1 624	1 647	1 672	1 731	1 809	2 109	2 568	2 791	2 454
Noord-Nederland	82	80	70	76	96	101	138	115	122	101
Groningen	31	21	22	26	32	37	49	38	41	40
Friesland	26	27	21	28	36	36	48	36	42	26
Drenthe	24	32	28	22	28	28	41	41	39	35
Oost-Nederland	259	248	232	241	310	338	363	381	401	391
Overijssel	98	107	83	76	98	118	110	129	138	124
Gelderland	147	137	139	154	201	203	236	226	233	243
Flevoland	14	4	10	11	11	17	17	26	29	24
West-Nederland	629	616	592	598	632	703	781	849	944	762
Utrecht	97	98	72	85	99	102	124	134	168	156
Noord-Holland	212	219	212	181	187	211	207	255	284	235
Zuid-Holland	302	282	301	316	325	370	428	418	463	347
Zeeland	19	17	7	16	21	20	22	42	29	24
Zuid-Nederland	861	678	750	755	694	668	820	1 220	1 317	1 196
Noord-Brabant	758	589	638	641	584	558	654	975	1 107	1 030
Limburg (NL)	103	88	112	114	109	110	166	246	210	166
Not registered by region	6	2	3	2	0	-	7	3	8	4
Österreich	728	707	724	705	755	807	793	898	1 149	988
Ostösterreich	252	290	298	261	295	318	278	328	397	359
Burgenland	5	10	7	7	3	6	8	6	16	14
Niederösterreich	99	131	113	108	130	136	121	147	174	172
Wien	148	149	177	145	162	176	150	175	207	173
Südösterreich	151	151	153	154	129	158	157	142	237	175
Kärnten	26	24	37	30	40	36	48	37	74	52
Steiermark	126	127	116	124	90	122	109	105	163	123
Westösterreich	324	261	267	285	328	324	355	416	507	444
Oberösterreich	160	123	98	147	141	152	183	201	245	214
Salzburg	43	26	42	29	41	38	48	55	48	53
Tirol	50	46	71	54	74	62	53	58	77	66
Vorarlberg	71	66	56	56	72	71	72	102	137	112
Not registered by region	1	5	7	5	3	8	3	11	8	10
Portugal	5	9	13	16	22	16	15	27	24	30
Continente	5	9	13	16	21	14	14	27	24	29
Norte	1	3	3	5	8	5	2	5	6	8
Centro (P)	-	-	-	1	3	1	1	6	4	4
Lisboa e Vale do Tejo	4	6	10	8	10	8	10	14	13	14
Alentejo	-	-	1	-	-	1	1	1	1	1
Algarve	-	-	-	1	0	-	1	1	0	2
Açores	-	-	-	-	-	-	-	-	-	1
Madeira	-	-	-	-	1	1	1	-	-	-
Not registered by region	-	-	-	-	-	1	-	-	0	-
Suomi-Finland	503	585	547	729	789	893	891	890	1 339	1 202
Manner-Suomi	495	578	543	721	782	886	883	880	1 330	1 199
Itä-Suomi	32	32	22	25	41	39	36	31	49	51
Väli-Suomi	52	55	45	62	70	52	72	52	85	105
Pohjois-Suomi	29	50	62	63	83	96	97	100	175	98
Uusimaa	191	230	194	328	347	405	407	420	647	553
Etelä-Suomi	191	211	220	242	241	295	271	277	375	392
Åland	1	-	-	1	-	-	-	3	3	1
Not registered by region	7	7	4	7	7	7	7	7	6	2

Methodological notes

1999: provisional data.
FIN: 1997 — provisional data.

Sources: Eurostat — Data EPO.

Table 27
Patent applications to the EPO
At the regional level

Total number

Table 27-4 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sverige	1 233	1 210	1 239	1 325	1 450	1 761	1 927	2 339	2 716	2 103
Stockholm	339	361	381	430	422	554	654	783	946	744
Östra Mellansverige	204	172	190	208	202	260	285	378	447	323
Sydsverige	170	175	183	181	214	273	293	336	382	315
Norra Mellansverige	104	97	100	103	144	145	117	158	170	113
Mellersta Norrland	33	31	32	48	41	38	51	44	54	52
Övre Norrland	39	33	53	37	42	43	58	74	88	71
Småland med Öarna	82	70	75	55	70	79	90	108	90	64
Västsverige	248	251	213	237	301	344	353	434	525	413
Not registered by region	14	20	12	26	15	24	25	23	15	7
United Kingdom	4 725	4 381	4 309	4 370	4 486	4 609	4 830	5 325	5 967	5 514
North East	139	99	132	137	163	188	168	180	192	167
Tees Valley and Durham	96	51	63	57	80	58	65	53	74	82
Northumberland, Tyne and Wear	44	48	69	80	84	129	103	127	118	85
North West	532	500	508	514	479	475	488	519	561	481
Cumbria	22	21	11	21	21	25	30	39	42	26
Cheshire	163	150	213	176	170	155	167	166	181	146
Greater Manchester	142	144	145	147	135	130	144	149	161	128
Lancashire	66	54	71	72	64	78	71	80	96	88
Merseyside	140	131	68	98	89	86	77	86	80	93
Yorkshire and The Humber	234	233	267	200	246	273	292	291	360	288
East Riding and North Lincolnshire	37	44	34	33	42	40	64	50	40	49
North Yorkshire	69	51	46	46	63	76	53	69	94	67
South Yorkshire	44	23	35	41	43	37	47	52	64	43
West Yorkshire	85	115	151	79	98	120	129	119	161	129
East Midlands	292	266	283	290	251	294	292	366	376	375
Derbyshire and Nottinghamshire	121	116	139	101	117	130	151	176	162	177
Leicestershire, Rutland and Northamptonshire	152	125	123	166	120	146	122	169	184	170
Lincolnshire	19	24	21	23	13	18	20	21	30	27
West Midlands	357	343	324	322	383	357	359	397	415	423
Herefordshire, Worcestershire and Warwickshire	166	161	118	133	154	139	156	169	170	168
Shropshire and Staffordshire	50	73	73	64	80	69	67	79	87	90
West Midlands	140	109	132	126	149	150	136	149	158	165
Eastern	746	764	683	699	733	699	789	976	1 095	902
East Anglia	326	355	278	297	347	348	407	496	542	446
Bedfordshire, Hertfordshire	274	259	229	241	229	193	216	249	271	235
Essex	146	150	175	161	157	158	167	232	283	220
London	428	453	447	423	463	429	467	481	600	513
Inner London	146	147	124	156	151	155	197	205	236	215
Outer London	282	306	323	267	312	274	271	276	363	298
South East	1 094	984	867	1 003	950	987	1 045	1 146	1 242	1 213
Berkshire, Buckinghamshire and Oxfordshire	384	388	342	376	361	397	420	451	512	466
Surrey, East and West Sussex	294	318	253	328	303	314	315	362	346	273
Hampshire and Isle of Wight	227	178	183	209	184	178	194	205	232	316
Kent	189	100	89	90	102	97	116	129	152	158
South West	395	329	366	335	353	395	426	442	497	510
Gloucestershire, Wiltshire and North Somerset	260	198	247	218	217	277	298	297	332	372
Dorset and Somerset	80	74	63	57	66	67	67	52	89	68
Cornwall and Isles of Scilly	29	21	19	17	19	19	27	37	26	23
Devon	26	36	37	43	52	32	34	56	50	46
Wales	141	115	121	117	126	118	122	121	156	170
West Wales and The Valleys	77	59	60	58	63	40	52	49	68	80
East Wales	64	56	61	58	63	79	70	72	87	91
Scotland	197	193	184	227	212	276	299	307	362	343
North Eastern Scotland	28	38	38	44	38	65	71	61	85	63
Eastern Scotland	80	94	88	85	88	123	135	153	173	156
South Western Scotland	85	58	54	96	79	78	89	89	96	117
Highlands and Islands	4	4	3	2	8	10	4	4	8	7
Northern Ireland	21	20	38	21	23	35	27	24	33	30
Not registered by region	149	82	89	81	102	82	54	75	79	100
EEA (1)	**32 626**	**29 403**	**31 054**	**31 099**	**32 187**	**34 544**	**36 599**	**40 922**	**49 256**	**45 280**
Iceland	5	7	11	5	7	9	8	17	23	29
Liechtenstein	35	34	37	21	28	25	30	48	41	47
Norge	276	220	276	291	257	305	380	460	522	430
Oslo og Akershus	103	85	100	117	107	107	109	169	203	148
Hedmark og Oppland	14	4	10	5	9	5	6	14	11	5
Sør-Østlandet	42	46	52	51	44	56	89	83	88	86
Agder og Rogaland	39	31	47	51	39	64	68	91	109	80
Vestlandet	32	20	27	21	22	28	47	37	55	53
Trøndelag	34	22	29	32	24	28	32	37	36	35
Nord-Norge	11	6	6	8	4	9	13	11	10	11
Not registered by region	2	7	6	5	9	8	17	19	11	12

Methodological notes

1999: provisional data.

(1) EEA regions correspond to the statistical territorial units proposed by Eurostat in Statistical Regions for the EFTA Countries, Annex, Eurostat, June 2001.

Sources: Eurostat — Data EPO.

Table 28
Patent applications to the EPO
At the regional level

Number of applications
1998

Table 28-1 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
EU-15	**7 587**	**10 414**	**7 244**	**1 111**	**2 290**	**4 959**	**6 548**	**8 517**	**48 671**
EUR-12	5 820	8 777	5 802	928	1 891	4 214	5 104	6 712	39 248
Belgique-België	211	256	427	45	66	66	188	169	1 427
Région Bruxelles-capitale	29	17	63	4	6	6	12	13	150
Vlaams Gewest	139	179	201	39	41	36	158	136	927
Antwerpen	44	74	52	3	9	11	93	31	317
Limburg (B)	15	20	13	1	7	7	8	5	75
Oost-Vlaanderen	22	29	40	7	9	6	15	39	167
Vlaams Brabant	36	39	85	8	5	6	31	30	241
West-Vlaanderen	22	17	10	19	11	6	11	31	128
Région Wallonne	43	59	160	2	19	25	18	20	346
Brabant Wallon	14	15	46	1	6	5	5	5	98
Hainaut	11	14	37	0	5	3	2	4	75
Liège	14	15	50	1	5	15	6	8	113
Luxembourg (B)	0	14	4	-	0	1	-	-	19
Namur	4	2	24	-	2	1	5	2	40
Not registered by region	0	1	3	-	-	-	0	-	4
Danmark	198	110	128	12	37	65	81	110	740
Deutschland	2 495	4 905	2 955	423	974	2 588	2 677	3 299	20 317
Baden-Württemberg	497	1 254	382	150	227	925	648	725	4 809
Stuttgart	111	627	68	75	76	555	269	378	2 158
Karlsruhe	133	268	148	11	69	130	144	145	1 049
Freiburg	146	182	113	14	35	118	162	113	885
Tübingen	106	177	54	50	46	122	74	89	718
Bayern	427	1 014	431	69	176	593	828	1 292	4 830
Oberbayern	214	421	238	25	64	221	486	816	2 486
Niederbayern	25	48	16	2	19	29	21	27	188
Oberpfalz	22	82	16	2	11	43	59	113	349
Oberfranken	23	62	24	4	15	37	30	35	229
Mittelfranken	61	93	46	8	15	120	141	191	675
Unterfranken	40	153	56	5	15	65	23	44	401
Schwaben	42	155	35	22	37	78	69	66	502
Berlin	75	76	78	13	9	16	102	139	508
Brandenburg	14	27	29	5	5	11	23	21	134
Bremen	5	15	3	2	3	5	10	3	46
Hamburg	60	79	32	2	12	19	63	74	340
Hessen	348	471	400	25	95	187	216	191	1 935
Darmstadt	284	380	364	20	59	125	176	155	1 561
Gießen	40	56	31	4	23	23	31	30	238
Kassel	25	35	6	1	12	39	10	7	135
Mecklenburg-Vorpommern	10	7	5	1	1	5	5	4	37
Niedersachsen	172	417	124	12	73	165	172	174	1 309
Braunschweig	30	156	47	1	16	74	59	34	418
Hannover	50	119	36	4	21	43	85	112	468
Lüneburg	36	79	32	2	11	22	19	11	212
Weser-Ems	56	63	9	5	25	26	9	17	210
Nordrhein-Westfalen	532	1 048	920	118	267	491	377	445	4 197
Düsseldorf	192	379	466	58	84	145	109	107	1 540
Köln	160	262	303	24	60	152	112	125	1 197
Münster	60	112	79	13	31	37	27	50	409
Detmold	65	116	15	13	34	55	68	48	414
Arnsberg	55	179	57	10	58	103	61	116	637
Rheinland-Pfalz	182	210	389	17	52	62	87	80	1 080
Koblenz	40	74	27	6	20	18	21	19	225
Trier	2	11	2	-	9	7	2	4	37
Rheinhessen-Pfalz	140	125	359	11	24	38	64	57	818
Saarland	17	43	12	1	13	23	14	12	137
Sachsen	18	81	56	5	7	28	38	62	295
Chemnitz	4	25	9	3	2	15	6	7	71
Dresden	12	45	41	2	4	9	26	52	192
Leipzig	2	10	6	0	-	4	6	3	32
Sachsen-Anhalt	15	21	35	0	5	7	9	5	97
Dessau	2	3	5	0	1	2	2	1	15
Halle	3	8	22	-	2	3	4	3	45
Magdeburg	11	10	8	-	2	2	3	2	38
Schleswig-Holstein	89	76	23	0	18	24	37	35	300
Thüringen	19	29	22	1	7	15	32	18	143
Not registered by region	17	36	13	4	5	13	16	18	120
Ellada	25	17	7	-	4	13	5	4	75
Voreia Ellada	7	3	-	-	1	4	2	-	17
Anatoliki Makedonia, Thraki	1	-	-	-	-	-	-	-	1
Kentriki Makedonia	5	3	-	-	1	3	2	-	14
Dytiki Makedonia	-	-	-	-	-	-	-	-	-
Thessalia	1	-	-	-	-	1	-	-	2
Kentriki Ellada	1	1	0	-	-	-	1	0	3
Ipeiros	0	-	0	-	-	-	-	-	1
Ionia Nisia	-	-	-	-	-	-	-	-	-
Dytiki Ellada	-	1	-	-	-	-	1	0	2
Sterea Ellada	1	-	-	-	-	-	-	-	1
Peloponnisos	-	-	-	-	-	-	-	-	-
Attiki	15	13	5	-	2	8	2	4	49
Nisia Aigaiou, Kriti	1	-	1	-	1	-	0	-	3
Voreio Aigaio	-	-	-	-	-	-	-	-	-
Notio Aigaio	-	-	-	-	-	-	-	-	-
Kriti	1	-	1	-	1	-	0	-	3
Not registered by region	1	-	0	-	-	1	-	-	2

Sources: Eurostat — Data EPO.

Table 28
Patent applications to the EPO
At the regional level

Number of applications
1998

Table 28-2 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
España	196	212	107	18	52	72	78	93	828
Noroeste	10	12	3	0	5	3	4	3	41
Galicia	9	9	2	-	1	1	3	2	27
Principado de Asturias	1	2	1	0	3	1	-	1	10
Cantabria	0	1	0	-	1	1	1	-	4
Noreste	21	37	10	12	13	20	9	10	132
Pais Vasco	13	20	6	5	10	11	3	10	77
Comunidad Foral de Navarra	3	7	1	-	1	4	6	1	22
La Rioja	1	-	-	-	-	-	-	-	1
Aragón	4	11	3	7	2	6	-	-	32
Comunidad de Madrid	40	24	32	1	3	11	19	28	157
Centro (E)	12	13	8	-	6	3	2	3	48
Castilla y León	4	11	6	-	3	3	1	1	29
Castilla-la Mancha	5	1	1	-	3	-	1	2	13
Extremadura	3	1	1	-	-	0	-	-	6
Este	99	104	49	6	19	28	37	45	387
Cataluña	67	80	39	6	13	19	26	42	292
Comunidad Valenciana	27	22	10	-	6	8	8	3	85
Baleares	4	2	-	-	-	1	3	-	10
Sur	12	19	5	-	5	6	6	2	55
Andalucía	5	15	4	-	4	6	5	2	41
Murcia	7	5	1	-	1	-	1	-	14
Ceuta y Melilla	-	-	-	-	-	-	-	-	-
Canarias	2	4	0	-	1	1	2	-	10
Not registered by region	-	-	-	-	-	-	-	-	-
France	1 357	1 392	1 061	119	320	673	1 082	1 322	7 325
Île de France	520	501	374	22	75	275	526	630	2 923
Bassin Parisien	160	247	135	19	47	126	63	109	906
Champagne-Ardenne	18	29	8	9	10	10	4	6	95
Picardie	34	46	39	2	14	21	9	17	183
Haute-Normandie	23	44	52	4	4	29	4	14	173
Centre	39	67	17	1	11	52	13	33	234
Basse-Normandie	22	16	5	2	2	5	9	17	79
Bourgogne	23	45	13	-	6	10	23	22	142
Nord - Pas-de-Calais	32	38	37	8	4	13	14	11	157
Est	115	129	103	19	74	53	68	58	618
Lorraine	27	47	26	2	42	21	12	18	194
Alsace	67	52	70	17	22	22	19	29	297
Franche-Comté	21	30	7	1	10	11	36	11	128
Ouest	93	109	37	2	20	45	53	102	462
Pays de la Loire	39	39	5	2	11	22	22	25	165
Bretagne	34	40	28	0	5	14	26	60	207
Poitou-Charentes	21	31	4	0	4	8	4	17	90
Sud-Ouest	83	70	64	7	15	32	57	84	413
Aquitaine	36	29	33	4	7	9	18	19	156
Midi-Pyrénées	45	38	31	3	8	18	37	51	232
Limousin	2	3	0	-	-	5	1	14	24
Centre-Est	253	213	234	40	58	95	168	252	1 313
Rhône-Alpes	236	168	216	37	56	85	162	249	1 209
Auvergne	17	44	18	3	2	11	6	3	104
Méditerranée	99	82	76	1	25	33	134	76	525
Languedoc-Roussillon	33	17	29	-	6	5	17	11	119
Provence-Alpes-Côte d'Azur	66	64	46	1	19	27	116	64	404
Corse	-	-	-	-	-	1	-	1	2
Départements d'Outre-Mer	2	-	-	-	1	-	-	0	3
Guadeloupe	-	-	-	-	-	-	-	-	-
Martinique	-	-	-	-	-	-	-	-	-
Guyane	-	-	-	-	-	-	-	-	-
Réunion	2	-	-	-	1	-	-	0	3
Not registered by region	1	3	0	-	-	1	0	1	5
Ireland	55	33	17	1	8	14	36	40	204
Border, Midlands and Western	21	3	1	-	2	-	1	7	35
Southern and Eastern	34	30	16	1	6	14	35	33	168
Not registered by region	-	-	-	-	-	-	1	-	1

Sources: Eurostat — Data EPO.

Table 28

Patent applications to the EPO
At the regional level

Number of applications
1998

Table 28-3 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
Italia	750	1 026	438	136	186	390	350	431	3 707
Nord Ovest	73	180	38	6	17	73	55	68	508
Piemonte	59	153	32	6	11	65	35	62	422
Valle d'Aosta	-	0	-	-	-	-	-	-	0
Liguria	14	27	5	-	6	8	20	6	86
Lombardia	223	285	180	76	57	128	130	234	1 313
Nord Est	153	156	50	25	37	71	51	28	572
Trentino-Alto Adige	13	12	4	1	4	3	7	2	45
Veneto	117	105	37	18	30	45	36	20	408
Friuli-Venezia Giulia	23	39	9	7	4	23	9	6	119
Emilia-Romagna	86	248	42	7	26	60	41	28	538
Centro (I)	61	70	29	18	26	28	26	19	277
Toscana	38	55	21	14	21	13	16	15	195
Umbria	3	5	5	2	2	1	6	0	24
Marche	19	10	4	2	3	14	4	3	59
Lazio	75	33	71	1	9	8	21	9	228
Abruzzo-Molise	41	13	8	1	3	3	2	3	74
Abruzzo	41	13	7	1	3	3	2	3	73
Molise	-	0	1	-	-	-	-	-	1
Campania	15	16	9	-	3	2	4	1	50
Sud	10	13	4	-	4	13	10	5	59
Puglia	7	7	2	-	2	12	5	2	37
Basilicata	2	4	1	-	-	-	2	3	11
Calabria	1	2	1	-	2	1	3	1	11
Sicilia	7	7	4	-	2	3	9	37	68
Sardegna	5	3	2	-	3	1	2	-	16
Not registered by region	2	2	0	-	-	-	1	-	4
Luxembourg	5	26	12	2	2	7	3	3	61
Nederland	415	444	505	18	144	151	463	650	2 791
Noord-Nederland	26	35	16	2	6	10	15	10	122
Groningen	9	8	9	1	2	0	8	4	41
Friesland	11	15	6	1	2	1	4	1	42
Drenthe	6	13	1	-	2	8	4	5	39
Oost-Nederland	67	106	82	7	24	29	46	41	401
Overijssel	19	30	25	0	5	14	15	30	138
Gelderland	42	65	52	7	15	14	28	11	233
Flevoland	5	11	5	-	4	1	3	1	29
West-Nederland	210	174	234	6	80	68	85	87	944
Utrecht	35	30	32	2	9	20	11	31	168
Noord-Holland	59	67	76	0	15	22	25	21	284
Zuid-Holland	112	74	112	4	53	26	47	35	463
Zeeland	4	4	14	1	3	-	2	1	29
Zuid-Nederland	111	127	171	2	31	45	317	512	1 317
Noord-Brabant	73	96	80	2	26	36	296	497	1 107
Limburg (NL)	37	31	91	0	5	9	21	15	210
Not registered by region	1	1	2	-	2	-	0	1	8
Österreich	182	287	150	42	91	164	96	136	1 149
Ostösterreich	74	92	51	10	27	45	35	61	397
Burgenland	2	5	2	0	-	5	1	1	16
Niederösterreich	19	42	19	9	17	26	9	32	174
Wien	53	45	31	1	10	14	25	28	207
Südösterreich	22	64	23	10	22	28	26	42	237
Kärnten	9	15	2	2	12	5	9	20	74
Steiermark	13	50	21	8	9	23	17	22	163
Westösterreich	83	129	76	21	41	91	35	32	507
Oberösterreich	29	70	43	16	21	46	14	7	245
Salzburg	15	11	3	-	5	8	5	1	48
Tirol	14	13	16	1	5	14	4	9	77
Vorarlberg	24	35	13	4	10	23	12	16	137
Not registered by region	3	2	1	1	2	0	-	-	8
Portugal	5	4	3	1	3	4	3	1	24
Continente	5	4	3	1	3	4	3	1	24
Norte	2	1	2	-	-	1	1	-	6
Centro (P)	0	0	-	-	3	1	-	-	4
Lisboa e Vale do Tejo	2	3	1	1	0	2	2	1	13
Alentejo	-	-	-	-	-	-	-	1	1
Algarve	-	-	0	-	-	-	0	-	0
Açores	-	-	-	-	-	-	-	-	-
Madeira	-	-	-	-	-	-	-	-	-
Not registered by region	0	-	-	-	-	-	-	-	0
Suomi-Finland	124	173	120	124	41	71	122	564	1 339
Manner-Suomi	123	170	120	124	41	71	119	563	1 330
Itä-Suomi	5	13	2	2	5	13	8	2	49
Väli-Suomi	5	8	5	37	2	13	4	11	85
Pohjois-Suomi	10	6	7	3	3	3	11	131	175
Uusimaa	55	69	76	36	12	18	62	320	647
Etelä-Suomi	48	74	30	46	20	23	35	100	375
Åland	-	-	-	-	-	-	3	-	3
Not registered by region	1	3	-	-	-	0	-	1	6

Sources: Eurostat — Data EPO.

Number of applications
1998

Table 28
Patent applications to the EPO
At the regional level

Table 28-4 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
Sverige	437	525	197	79	97	230	321	830	2 716
Stockholm	147	103	68	14	16	55	127	417	946
Östra Mellansverige	40	80	35	3	19	45	64	161	447
Sydsverige	86	85	31	3	16	21	42	97	382
Norra Mellansverige	9	54	7	16	12	21	7	44	170
Mellersta Norrland	8	18	-	12	4	2	5	5	54
Övre Norrland	12	20	11	2	7	6	11	19	88
Småland med Öarna	10	38	3	6	5	15	7	6	90
Västsverige	122	125	41	22	19	64	57	75	525
Not registered by region	2	3	2	1	1	2	1	4	15
United Kingdom	1 133	1 003	1 117	91	265	450	1 042	865	5 967
North East	19	45	84	5	8	10	11	11	192
Tees Valley and Durham	8	20	30	3	-	4	4	4	74
Northumberland, Tyne and Wear	11	25	54	2	8	5	6	7	118
North West	87	102	156	26	21	36	84	48	561
Cumbria	9	11	5	1	0	1	14	1	42
Cheshire	35	36	62	5	3	9	21	9	181
Greater Manchester	18	21	43	6	6	16	26	25	161
Lancashire	4	23	13	12	10	9	17	9	96
Merseyside	21	11	33	2	1	2	5	5	80
Yorkshire and The Humber	62	85	82	18	19	29	43	21	360
East Riding and North Lincolnshire	11	7	16	1	1	2	3	1	40
North Yorkshire	25	22	18	3	4	6	11	4	94
South Yorkshire	11	16	13	3	5	7	7	3	64
West Yorkshire	15	40	34	12	10	14	22	14	161
East Midlands	92	81	49	9	22	42	49	32	376
Derbyshire and Nottinghamshire	41	41	23	2	10	16	19	10	162
Leicestershire, Rutland and Northamptonshire	42	32	24	7	10	21	28	20	184
Lincolnshire	10	8	2	0	2	5	2	2	30
West Midlands	40	119	50	7	32	66	61	40	415
Herefordshire, Worcestershire and Warwickshire	17	45	18	2	10	26	26	26	170
Shropshire and Staffordshire	8	23	10	2	9	18	13	5	87
West Midlands	15	51	22	4	13	22	22	9	158
Eastern	214	128	235	2	16	52	227	221	1 095
East Anglia	76	72	106	1	7	16	141	123	542
Bedfordshire, Hertfordshire	73	30	45	1	7	12	48	55	271
Essex	65	26	84	-	2	24	38	43	283
London	166	66	109	5	19	30	94	110	600
Inner London	79	28	32	4	8	11	35	39	236
Outer London	87	37	77	1	11	20	60	71	363
South East	248	180	200	9	46	115	232	212	1 242
Berkshire, Buckinghamshire and Oxfordshire	91	80	106	3	14	30	114	75	512
Surrey, East and West Sussex	78	53	43	1	18	36	54	62	346
Hampshire and Isle of Wight	32	35	15	1	10	22	49	68	232
Kent	47	13	36	4	5	26	14	7	152
South West	85	85	43	6	19	29	127	104	497
Gloucestershire, Wiltshire and North Somerset	53	37	31	3	12	16	95	84	332
Dorset and Somerset	17	29	3	0	3	5	18	13	89
Cornwall and Isles of Scilly	4	9	6	2	2	2	1	0	26
Devon	11	9	3	0	2	5	13	6	50
Wales	35	37	22	2	10	8	32	11	156
West Wales and The Valleys	8	24	9	1	7	5	11	3	68
East Wales	26	13	12	1	3	3	21	8	87
Scotland	62	48	72	3	40	28	69	40	362
North Eastern Scotland	10	10	11	1	34	10	6	3	85
Eastern Scotland	27	21	40	2	4	7	49	24	173
South Western Scotland	25	12	22	-	2	11	13	12	96
Highlands and Islands	1	4	-	-	-	1	1	1	8
Northern Ireland	8	12	2	-	2	2	5	3	33
Not registered by region	14	16	14	-	11	2	8	13	79
EEA (1)	**7 699**	**10 552**	**7 324**	**1 114**	**2 350**	**5 015**	**6 623**	**8 579**	**49 256**
Iceland	11	3	-	-	1	2	2	5	23
Liechtenstein	11	10	6	2	1	6	3	2	41
Norge	89	124	73	1	58	50	71	55	522
Oslo og Akershus	39	39	23	1	10	11	43	36	203
Hedmark og Oppland	5	3	0	-	-	3	-	-	11
Sør-Østlandet	9	19	25	-	8	13	11	4	88
Agder og Rogaland	11	34	10	-	26	10	6	12	109
Vestlandet	13	16	7	-	9	5	4	-	55
Trøndelag	6	6	6	-	2	5	7	3	36
Nord-Norge	5	1	2	-	2	-	-	-	10
Not registered by region	1	5	0	-	1	4	0	-	11

Methodological notes

(1) EEA regions correspond to the statistical territorial units proposed by Eurostat in Statistical Regions for the EFTA Countries, Annex, Eurostat, June 2001.

Sources: Eurostat — Data EPO.

Table 29

Patent applications to the EPO
At the regional level

Number of applications
1999

Table 29-1 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
EU-15	**6 807**	**9 609**	**6 427**	**976**	**2 158**	**4 548**	**6 311**	**7 939**	**44 775**
EUR-12	5 256	8 198	5 139	839	1 812	3 845	4 914	6 438	36 442
Belgique-België	167	212	382	54	31	43	153	154	1 196
Région Bruxelles-capitale	20	12	43	5	-	3	11	23	117
Vlaams Gewest	104	145	211	44	25	19	117	119	784
Antwerpen	32	59	58	2	7	7	50	42	257
Limburg (B)	5	13	16	0	2	1	6	4	48
Oost-Vlaanderen	21	24	47	6	3	3	20	19	143
Vlaams Brabant	28	31	81	9	3	3	30	33	219
West-Vlaanderen	17	18	9	26	10	4	11	21	117
Région Wallonne	41	56	128	4	6	21	24	12	291
Brabant Wallon	25	14	55	2	4	4	8	4	115
Hainaut	3	11	32	-	1	2	5	2	57
Liège	10	17	28	1	2	13	6	4	79
Luxembourg (B)	0	12	2	-	-	1	1	-	15
Namur	4	2	11	1	1	2	3	1	24
Not registered by region	0	0	1	1	-	-	1	1	3
Danmark	197	113	138	10	31	65	79	85	716
Deutschland	2 293	4 774	2 751	392	1 028	2 392	2 648	3 245	19 522
Baden-Württemberg	431	1 141	429	118	213	783	619	661	4 395
Stuttgart	93	560	71	64	98	435	261	346	1 928
Karlsruhe	109	249	173	9	39	133	148	125	984
Freiburg	144	158	136	9	37	99	145	126	854
Tübingen	86	173	49	36	39	116	65	64	629
Bayern	410	968	319	55	188	577	846	1 265	4 628
Oberbayern	191	425	193	16	64	280	567	802	2 538
Niederbayern	18	37	14	2	14	27	21	21	155
Oberpfalz	17	77	10	2	10	53	58	100	326
Oberfranken	16	54	11	3	18	30	24	48	203
Mittelfranken	77	123	29	7	15	82	99	192	623
Unterfranken	45	109	41	4	17	49	27	41	333
Schwaben	47	143	22	22	50	57	50	60	451
Berlin	70	61	81	7	12	22	95	141	491
Brandenburg	11	18	27	2	11	14	24	31	139
Bremen	6	14	3	-	6	6	12	5	52
Hamburg	87	62	36	2	6	14	47	39	293
Hessen	335	452	411	27	83	150	217	196	1 873
Darmstadt	269	361	384	21	51	107	165	152	1 510
Gießen	43	50	24	3	10	27	43	35	235
Kassel	24	40	3	3	22	16	10	9	128
Mecklenburg-Vorpommern	8	7	10	0	2	3	7	3	41
Niedersachsen	143	483	125	12	83	158	178	173	1 355
Braunschweig	28	233	46	1	17	78	49	51	502
Hannover	29	108	35	4	21	31	89	88	404
Lüneburg	37	88	28	4	18	23	25	21	243
Weser-Ems	50	54	16	3	27	25	15	14	205
Nordrhein-Westfalen	426	1 010	794	128	319	458	367	488	3 990
Düsseldorf	146	382	350	71	97	120	106	112	1 385
Köln	136	233	278	31	72	144	130	153	1 177
Münster	51	101	96	7	43	41	34	56	429
Detmold	50	117	20	10	27	33	44	60	361
Arnsberg	43	177	50	8	79	121	53	107	638
Rheinland-Pfalz	167	210	352	15	32	71	66	69	983
Koblenz	59	83	23	0	15	24	12	15	232
Trier	2	13	3	2	3	3	6	5	37
Rheinhessen-Pfalz	106	114	327	13	14	44	48	49	714
Saarland	25	41	23	1	24	12	18	6	151
Sachsen	29	76	45	11	12	32	25	65	294
Chemnitz	8	24	6	9	5	9	4	11	75
Dresden	19	49	28	1	4	18	18	51	189
Leipzig	2	3	11	-	4	5	4	3	31
Sachsen-Anhalt	7	19	27	-	6	7	8	5	79
Dessau	1	4	5	-	2	2	-	1	15
Halle	2	7	16	-	2	3	5	3	37
Magdeburg	4	8	6	-	3	2	2	1	27
Schleswig-Holstein	97	79	24	2	7	45	42	33	329
Thüringen	13	31	13	1	12	8	43	16	137
Not registered by region	27	100	32	10	13	31	32	48	293
Ellada	27	5	10	-	2	9	7	6	66
Voreia Ellada	2	1	4	-	2	3	0	-	13
Anatoliki Makedonia, Thraki	-	1	-	-	-	-	-	-	1
Kentriki Makedonia	2	0	4	-	2	3	0	-	12
Dytiki Makedonia	-	-	-	-	-	-	-	-	-
Thessalia	-	-	-	-	-	-	-	-	-
Kentriki Ellada	-	-	1	-	-	-	0	1	2
Ipeiros	-	-	0	-	-	-	-	-	0
Ionia Nisia	-	-	-	-	-	-	-	-	-
Dytiki Ellada	-	-	1	-	-	-	0	1	2
Sterea Ellada	-	-	-	-	-	-	-	-	-
Peloponnisos	-	-	-	-	-	-	-	-	-
Attiki	23	4	5	-	-	5	6	5	48
Nisia Aigaiou, Kriti	2	-	-	-	-	-	-	-	2
Voreio Aigaio	-	-	-	-	-	-	-	-	-
Notio Aigaio	-	-	-	-	-	-	-	-	-
Kriti	2	-	-	-	-	-	-	-	2
Not registered by region	-	-	-	-	-	-	1	-	1

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 29
Patent applications to the EPO
At the regional level

Number of applications
1999

Table 29-2 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
España	162	164	95	21	30	57	70	96	696
Noroeste	8	5	5	-	-	1	2	3	24
Galicia	4	4	2	-	-	-	1	3	14
Principado de Asturias	3	1	3	-	-	-	1	-	8
Cantabria	1	-	-	-	-	1	-	-	2
Noreste	24	30	4	9	6	15	13	4	104
Pais Vasco	13	13	1	1	1	6	3	-	38
Comunidad Foral de Navarra	3	4	1	-	1	8	8	1	25
La Rioja	-	4	-	-	-	-	-	-	4
Aragón	8	9	1	8	4	1	2	4	37
Comunidad de Madrid	30	32	26	-	3	14	17	46	168
Centro (E)	5	6	6	-	5	2	3	1	29
Castilla y León	3	3	4	-	2	1	1	1	15
Castilla-la Mancha	2	3	1	-	2	1	2	0	12
Extremadura	-	-	1	-	1	-	-	-	2
Este	78	84	48	13	14	21	31	41	330
Cataluña	53	66	40	13	9	14	21	34	249
Comunidad Valenciana	24	14	7	-	4	7	10	6	72
Baleares	1	4	1	-	1	-	-	1	8
Sur	14	4	6	-	2	3	2	0	31
Andalucia	11	2	4	-	2	2	2	0	23
Murcia	3	2	2	-	1	1	-	-	8
Ceuta y Melilla	-	-	-	-	-	-	-	-	-
Canarias	3	3	-	-	-	1	2	-	8
Not registered by region	1	-	0	-	-	-	1	-	2
France	1 257	1 236	867	87	295	660	972	1 291	6 665
Ile de France	511	418	357	10	71	304	460	683	2 813
Bassin Parisien	149	226	71	10	51	107	87	76	778
Champagne-Ardenne	11	21	6	3	5	10	6	3	65
Picardie	29	46	17	5	18	16	9	13	153
Haute-Normandie	21	56	25	1	10	24	5	7	149
Centre	37	49	9	0	10	44	25	30	204
Basse-Normandie	26	13	3	2	6	1	13	11	74
Bourgogne	25	40	12	-	3	12	29	12	133
Nord - Pas-de-Calais	26	39	36	5	8	18	7	7	145
Est	92	101	73	22	50	37	48	66	488
Lorraine	27	35	19	2	18	15	16	13	147
Alsace	53	39	50	20	22	11	11	35	241
Franche-Comté	12	27	4	-	9	11	20	17	100
Ouest	87	93	25	6	20	51	50	100	432
Pays de la Loire	42	38	7	4	14	33	14	30	181
Bretagne	26	21	12	0	3	12	32	65	170
Poitou-Charentes	19	34	6	2	3	6	5	5	81
Sud-Ouest	75	73	54	2	19	29	32	75	359
Aquitaine	37	23	27	1	9	9	6	10	122
Midi-Pyrénées	38	41	25	1	10	16	24	54	208
Limousin	0	9	1	-	1	4	2	11	29
Centre-Est	222	228	190	28	56	85	173	213	1 195
Rhône-Alpes	206	174	180	28	46	79	169	211	1 092
Auvergne	16	54	10	0	11	6	5	2	103
Méditerranée	91	56	58	3	19	30	115	68	441
Languedoc-Roussillon	32	14	22	1	5	5	16	8	104
Provence-Alpes-Côte d'Azur	59	40	35	2	14	25	99	61	335
Corse	-	2	-	-	-	-	-	-	2
Départements d'Outre-Mer	1	-	0	-	-	-	-	-	1
Guadeloupe	1	-	-	-	-	-	-	-	1
Martinique	0	-	-	-	-	-	-	-	0
Guyane	-	-	0	-	-	-	-	-	0
Réunion	-	-	-	-	-	-	-	-	-
Not registered by region	3	2	3	-	1	1	0	3	13
Ireland	60	25	37	2	12	14	28	32	210
Border, Midlands and Western	24	9	1	1	-	3	2	3	43
Southern and Eastern	36	15	36	1	12	11	26	27	165
Not registered by region	-	-	-	-	-	-	-	1	1

Methodological notes

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 29

Patent applications to the EPO
At the regional level

Number of applications
1999

Table 29-3 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
Italia	671	905	365	115	174	338	324	455	3 347
Nord Ovest	67	164	39	9	29	84	57	73	521
Piemonte	51	142	36	9	23	78	38	60	438
Valle d'Aosta	1	0	-	-	1	0	-	-	3
Liguria	15	22	3	-	5	5	18	13	81
Lombardia	180	224	134	56	51	112	123	217	1 096
Nord Est	148	149	29	16	29	52	37	48	508
Trentino-Alto Adige	12	13	0	-	6	5	3	3	42
Veneto	114	107	25	10	19	40	23	35	373
Friuli-Venezia Giulia	22	29	4	6	4	8	11	11	94
Emilia-Romagna	77	235	49	11	20	54	42	20	508
Centro (I)	51	65	28	22	18	20	24	28	256
Toscana	28	40	22	17	7	10	17	20	160
Umbria	4	4	3	1	2	5	2	3	24
Marche	19	21	3	4	9	5	6	5	72
Lazio	61	29	50	2	7	4	19	20	192
Abruzzo-Molise	43	13	10	0	2	4	1	4	78
Abruzzo	42	12	10	0	1	4	1	4	74
Molise	1	2	0	-	1	-	-	-	4
Campania	19	9	12	0	5	2	4	3	54
Sud	16	8	7	0	5	3	7	5	50
Puglia	12	5	5	0	3	2	3	4	35
Basilicata	1	0	1	-	1	1	3	2	9
Calabria	2	3	1	-	0	-	0	-	7
Sicilia	6	5	4	-	6	-	7	34	63
Sardegna	2	5	3	-	-	2	1	1	14
Not registered by region	2	0	0	0	-	1	2	1	6
Luxembourg	4	19	24	1	-	8	7	5	67
Nederland	364	408	392	27	101	146	459	557	2 454
Noord-Nederland	28	16	21	2	9	15	7	3	101
Groningen	13	3	12	0	6	1	3	2	40
Friesland	8	7	4	0	2	3	2	0	26
Drenthe	6	6	5	2	2	11	2	1	35
Oost-Nederland	74	99	64	8	22	44	45	36	391
Overijssel	12	30	21	1	7	17	17	19	124
Gelderland	55	59	39	7	14	27	25	16	243
Flevoland	6	10	4	-	2	-	2	-	24
West-Nederland	173	162	176	5	53	44	83	67	762
Utrecht	30	33	34	0	12	12	21	14	156
Noord-Holland	50	64	60	1	7	11	23	20	235
Zuid-Holland	92	58	73	3	32	19	37	33	347
Zeeland	1	8	9	0	2	2	2	0	24
Zuid-Nederland	90	129	129	12	17	44	325	450	1 196
Noord-Brabant	66	98	59	8	16	34	312	438	1 030
Limburg (NL)	25	31	70	4	1	9	13	13	166
Not registered by region	-	2	1	-	-	-	-	1	4
Österreich	141	258	119	25	107	116	110	113	988
Ostösterreich	52	90	38	6	31	36	49	57	359
Burgenland	4	3	0	1	2	0	1	2	14
Niederösterreich	16	49	18	3	20	25	16	25	172
Wien	32	38	20	2	9	11	33	29	173
Südösterreich	20	39	25	6	22	14	21	27	175
Kärnten	9	7	4	1	6	2	6	17	52
Steiermark	11	32	21	5	16	13	15	10	123
Westösterreich	67	125	56	13	52	66	39	27	444
Oberösterreich	21	70	31	10	28	31	16	7	214
Salzburg	13	9	7	1	8	7	8	1	53
Tirol	11	13	14	1	7	7	1	12	66
Vorarlberg	21	33	5	1	9	21	15	7	112
Not registered by region	2	3	-	-	2	0	0	3	10
Portugal	7	4	9	-	2	5	2	2	30
Continente	7	4	9	-	2	4	2	2	29
Norte	2	2	1	-	-	1	1	0	8
Centro (P)	-	-	-	-	2	2	-	-	4
Lisboa e Vale do Tejo	4	1	8	-	-	1	-	2	14
Alentejo	-	-	1	-	-	-	-	-	1
Algarve	1	-	-	-	-	-	1	-	2
Açores	-	-	-	-	-	1	-	-	1
Madeira	-	-	-	-	-	-	-	-	-
Not registered by region	-	-	-	-	-	-	-	-	-
Suomi-Finland	103	188	89	115	31	58	134	484	1 202
Manner-Suomi	103	188	89	114	31	57	132	484	1 199
Itä-Suomi	10	10	4	6	5	6	7	3	51
Väli-Suomi	4	12	4	44	4	12	8	17	105
Pohjois-Suomi	5	2	5	1	-	2	9	74	98
Uusimaa	47	76	57	23	12	14	54	271	553
Etelä-Suomi	37	88	19	41	11	24	54	119	392
Åland	-	-	-	-	-	-	1	-	1
Not registered by region	0	-	0	1	-	1	0	0	2

Methodological notes

1999: provisional data.

Sources: **Eurostat — Data EPO.**

Number of applications
1999

Table 29
Patent applications to the EPO
At the regional level

Table 29-4 — Patent applications to the EPO by IPC section at NUTS levels 0, 1 and 2

	A	B	C	D	E	F	G	H	Total
Sverige	380	422	166	54	81	192	278	530	2 103
Stockholm	143	78	53	7	20	58	110	274	744
Östra Mellansverige	43	83	28	1	10	43	44	72	323
Sydsverige	66	70	28	4	15	21	37	73	315
Norra Mellansverige	10	43	7	11	8	5	9	20	113
Mellersta Norrland	4	14	6	12	2	5	4	5	52
Övre Norrland	7	16	7	-	4	2	17	18	71
Småland med Öarna	6	25	1	2	4	13	6	8	64
Västsverige	101	90	33	17	18	45	48	60	413
Not registered by region	1	2	2	0	-	1	1	0	7
United Kingdom	974	877	984	73	234	446	1 040	886	5 514
North East	23	31	65	5	4	12	15	11	167
Tees Valley and Durham	12	22	24	3	1	6	10	3	82
Northumberland, Tyne and Wear	11	10	41	2	3	6	5	7	85
North West	75	80	135	18	9	36	77	51	481
Cumbria	1	8	2	0	-	2	10	3	26
Cheshire	20	13	58	5	4	10	19	16	146
Greater Manchester	15	22	36	4	2	7	25	17	128
Lancashire	9	22	11	7	3	13	10	12	88
Merseyside	30	15	28	1	1	3	13	3	93
Yorkshire and The Humber	64	67	68	9	16	25	21	19	288
East Riding and North Lincolnshire	8	9	27	-	2	1	3	0	49
North Yorkshire	20	11	14	1	4	6	5	6	67
South Yorkshire	7	16	4	1	4	3	4	3	43
West Yorkshire	29	32	23	7	5	14	9	10	129
East Midlands	72	83	42	7	13	50	66	41	375
Derbyshire and Nottinghamshire	36	43	24	3	7	24	26	14	177
Leicestershire, Rutland and Northamptonshire	29	28	16	4	5	24	39	25	170
Lincolnshire	7	12	1	1	0	2	2	2	27
West Midlands	39	112	39	6	44	59	70	54	423
Herefordshire, Worcestershire and Warwickshire	10	48	17	3	12	19	35	24	168
Shropshire and Staffordshire	16	15	8	1	13	17	10	13	90
West Midlands	13	50	13	3	19	23	26	17	165
Eastern	169	116	194	3	15	38	177	190	902
East Anglia	58	55	85	2	8	15	112	113	446
Bedfordshire, Hertfordshire	75	32	48	1	3	7	28	41	235
Essex	36	30	61	-	5	16	37	36	220
London	120	58	70	3	15	34	131	83	513
Inner London	60	24	39	3	7	12	45	26	215
Outer London	60	34	30	0	7	22	86	57	298
South East	223	145	204	3	40	101	248	250	1 213
Berkshire, Buckinghamshire and Oxfordshire	80	56	92	0	16	33	100	90	466
Surrey, East and West Sussex	56	45	49	1	11	33	44	34	273
Hampshire and Isle of Wight	39	31	20	1	4	14	89	116	316
Kent	49	13	42	1	9	21	14	10	158
South West	77	70	38	10	29	38	115	132	510
Gloucestershire, Wiltshire and North Somerset	50	43	25	6	23	29	84	111	372
Dorset and Somerset	12	14	4	-	6	3	13	16	68
Cornwall and Isles of Scilly	2	2	7	3	0	2	6	1	23
Devon	13	10	2	1	1	4	12	4	46
Wales	26	39	38	4	5	19	24	16	170
West Wales and The Valleys	13	18	16	2	4	7	14	5	80
East Wales	13	21	22	2	1	11	9	11	91
Scotland	56	39	69	5	41	24	80	29	343
North Eastern Scotland	9	7	3	1	29	5	8	2	63
Eastern Scotland	24	15	34	3	5	11	48	16	156
South Western Scotland	21	15	32	1	6	7	23	11	117
Highlands and Islands	2	2	1	-	1	1	1	-	7
Northern Ireland	6	9	7	1	3	1	4	1	30
Not registered by region	24	27	16	2	1	8	13	10	100
EEA (1)	**6 906**	**9 716**	**6 481**	**977**	**2 217**	**4 603**	**6 386**	**7 995**	**45 280**
Iceland	10	3	1	-	-	2	5	8	29
Liechtenstein	12	11	3	1	3	11	4	2	47
Norge	76	93	50	-	56	41	67	46	430
Oslo og Akershus	31	25	13	-	14	12	35	18	148
Hedmark og Oppland	-	4	-	-	1	-	-	1	5
Sør-Østlandet	12	26	15	-	8	9	6	10	86
Agder og Rogaland	12	21	5	-	24	7	6	6	80
Vestlandet	11	6	7	-	4	7	10	8	53
Trøndelag	5	6	5	-	3	4	10	2	35
Nord-Norge	2	3	4	-	1	1	1	-	11
Not registered by region	3	2	1	-	2	1	0	2	12

Methodological notes

1999: provisional data.

(1) EEA regions correspond to the statistical territorial units proposed by Eurostat in Statistical Regions for the EFTA Countries, Annex, Eurostat, June 2001.

Sources: Eurostat — Data EPO.

Table 30

Patent applications to the EPO
At the regional level

Table 30-1 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	Per million population					Per million labour force				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**92**	**97**	**108**	**130**	**119**	**206**	**216**	**240**	**287**	**261**
EUR-12	91	96	106	130	121	209	218	242	293	269
Belgique-België	94	94	112	140	117	228	228	271	336	274
Région Bruxelles-capitale	100	106	124	157	123	249	262	302	376	291
Vlaams Gewest	114	112	132	157	132	268	265	311	369	302
Antwerpen	183	170	180	193	157	444	416	440	474	370
Limburg (B)	48	44	78	96	61	118	108	187	232	142
Oost-Vlaanderen	69	72	91	123	105	158	166	210	284	234
Vlaams Brabant	159	170	197	239	217	363	385	444	534	475
West-Vlaanderen	71	72	90	114	104	167	170	213	265	238
Région Wallonne	57	58	74	104	87	143	147	185	258	213
Brabant Wallon	210	196	174	285	331	502	466	414	670	768
Hainaut	21	24	40	59	44	56	62	103	150	113
Liège	63	66	101	111	78	154	165	252	272	185
Luxembourg (B)	25	47	47	78	63	61	119	116	193	151
Namur	44	41	48	92	54	113	100	119	226	131
Not registered by region	-	-	-	-	-	-	-	-	-	-
Danmark	120	130	144	140	135	224	243	269	262	251
Deutschland	170	178	193	248	238	355	372	404	516	493
Baden-Württemberg	312	328	366	463	422	637	670	751	950	865
Stuttgart	355	393	442	555	495	710	793	892	1 116	989
Karlsruhe	292	291	298	394	369	610	604	623	820	779
Freiburg	294	315	372	420	404	599	649	764	873	842
Tübingen	268	250	294	412	360	555	517	608	857	737
Bayern	247	271	300	400	383	489	540	602	799	759
Oberbayern	361	412	455	623	635	689	793	883	1 204	1 210
Niederbayern	91	111	119	162	133	183	221	237	319	262
Oberpfalz	141	194	241	327	305	281	390	491	671	618
Oberfranken	130	156	134	206	183	262	323	275	421	373
Mittelfranken	291	297	323	402	371	587	593	649	817	757
Unterfranken	210	219	237	302	250	435	453	496	628	517
Schwaben	213	188	232	290	259	423	383	475	582	519
Berlin	106	127	125	148	144	202	245	243	292	285
Brandenburg	24	31	31	52	54	48	61	60	100	102
Bremen	63	56	37	68	78	136	122	81	149	168
Hamburg	165	129	17	200	173	328	263	33	395	340
Hessen	274	273	272	321	310	573	571	573	674	647
Darmstadt	374	359	367	422	408	769	736	755	866	827
Gießen	165	190	180	225	221	358	410	397	493	485
Kassel	74	89	73	106	100	158	194	158	231	218
Mecklenburg-Vorpommern	10	12	12	20	23	20	24	24	39	44
Niedersachsen	91	98	126	167	172	198	211	280	361	372
Braunschweig	91	95	165	250	301	200	209	367	540	652
Hannover	120	140	176	218	188	252	297	377	468	405
Lüneburg	99	102	109	130	148	211	218	246	274	315
Weser-Ems	60	58	65	88	85	135	127	147	196	187
Nordrhein-Westfalen	182	184	192	234	222	415	420	433	525	492
Düsseldorf	230	224	232	291	263	527	511	522	654	584
Köln	246	244	232	283	277	559	549	517	625	601
Münster	117	129	142	158	165	268	299	328	356	372
Detmold	108	129	140	203	177	238	289	315	450	382
Arnsberg	126	128	153	167	167	293	297	348	384	378
Rheinland-Pfalz	237	245	240	269	244	518	532	526	581	525
Koblenz	137	113	104	149	154	306	249	233	328	336
Trier	72	103	63	73	73	165	225	139	160	163
Rheinhessen-Pfalz	354	380	388	409	356	752	814	835	868	750
Saarland	89	94	100	126	140	217	230	240	296	321
Sachsen	:	:	48	65	66	:	:	97	129	128
Chemnitz	:	:	:	42	45	:	:	:	:	:
Dresden	:	:	:	110	109	:	:	:	:	:
Leipzig	:	:	:	29	28	:	:	:	:	:
Sachsen-Anhalt	23	24	27	36	29	45	49	54	71	58
Dessau	24	19	30	26	26	49	38	59	50	51
Halle	28	31	32	50	42	54	61	64	98	84
Magdeburg	19	22	22	31	22	37	44	44	61	43
Schleswig-Holstein	72	84	78	109	119	148	173	161	225	248
Thüringen	-	-	34	58	56	-	-	65	111	108
Not registered by region	-	-	-	-	-	-	-	-	-	-
Ellada	4	5	5	7	6	10	11	13	17	15
Voreia Ellada	2	3	2	5	4	5	8	4	12	9
Anatoliki Makedonia, Thraki	-	-	-	2	2	-	-	-	4	4
Kentriki Makedonia	3	4	3	8	7	8	9	6	19	15
Dytiki Makedonia	1	11	-	-	-	2	27	-	-	-
Thessalia	1	1	1	3	-	4	3	3	6	-
Kentriki Ellada	1	2	1	1	1	2	6	3	4	2
Ipeiros	3	3	-	1	1	9	9	-	4	2
Ionia Nisia	-	-	-	-	-	-	-	-	-	-
Dytiki Ellada	1	3	1	3	2	4	8	4	7	6
Sterea Ellada	-	2	2	2	-	-	6	5	5	-
Peloponnisos	-	2	1	-	-	-	5	2	-	-
Attiki	9	8	13	14	14	19	16	28	29	28
Nisia Aigaiou, Kriti	2	5	3	3	2	5	13	8	8	5
Voreio Aigaio	-	-	-	-	-	-	-	-	-	-
Notio Aigaio	-	4	4	-	-	-	10	10	-	-
Kriti	4	7	4	6	4	9	17	10	13	8
Not registered by region	-	-	-	-	-	-	-	-	-	-

1999: provisional data.

Sources: **Eurostat — Data EPO.**

Table 30
Patent applications to the EPO
At the regional level

Table 30-2 — Patent applications to the EPO at NUTS level 0, 1 and 2

	Per million population					Per million labour force				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	12	13	17	21	18	31	32	41	51	43
Noroeste	2	6	6	9	5	6	15	14	24	14
Galicia	1	5	6	10	5	2	13	14	24	12
Principado de Asturias	6	7	6	9	7	17	18	16	25	20
Cantabria	2	6	4	8	4	5	16	12	21	10
Noreste	13	17	31	33	26	31	41	73	77	61
Pais Vasco	12	15	35	37	19	29	35	82	86	43
Comunidad Foral de Navarra	24	41	43	42	47	60	103	101	97	112
La Rioja	-	2	4	4	15	-	5	10	10	39
Aragón	11	13	24	27	31	27	31	59	66	76
Comunidad de Madrid	24	25	26	31	33	59	57	62	72	76
Centro (E)	4	4	7	9	6	11	10	17	23	14
Castilla y León	6	4	7	11	6	15	11	18	29	15
Castilla-la Mancha	4	4	7	8	7	12	11	19	21	18
Extremadura	1	2	5	5	2	3	6	13	14	5
Este	23	22	27	36	31	54	52	61	83	71
Cataluña	30	30	36	48	41	70	70	82	108	93
Comunidad Valenciana	15	13	15	22	18	37	31	36	52	44
Baleares	4	4	8	14	11	10	10	17	31	26
Sur	3	3	6	7	4	7	9	15	17	9
Andalucia	3	3	6	6	3	7	9	16	15	8
Murcia	3	5	3	13	7	7	12	7	31	18
Ceuta y Melilla	-	-	-	-	-	-	-	-	-	-
Canarias	3	5	6	6	5	8	13	14	14	12
Not registered by region	-	-	-	-	-	-	-	-	-	-
France (1)	96	99	110	125	113	223	228	253	286	258
Île de France	206	214	231	264	239 s	429	447	483	547	513
Bassin Parisien	65	67	80	86	:	157	160	190	207	174
Champagne-Ardenne	38	43	48	70	64 s	94	104	117	174	118
Picardie	71	66	79	98	89 s	176	167	196	247	197
Haute-Normandie	63	76	88	97	88 s	139	168	195	217	179
Centre	78	83	102	95	86 s	182	186	234	225	194
Basse-Normandie	45	39	57	56	50 s	121	103	147	139	131
Bourgogne	83	81	87	87	79 s	198	191	204	206	189
Nord - Pas-de-Calais	30	38	36	39	35 s	81	99	91	99	88
Est	82	84	95	120	:	196	202	225	273	212
Lorraine	59	54	63	84	76 s	142	136	158	197	150
Alsace	118	121	138	172	156 s	269	281	316	382	296
Franche-Comté	77	90	97	114	104 s	189	206	213	253	200
Ouest	49	43	44	60	:	112	99	102	136	123
Pays de la Loire	45	43	48	52	47 s	99	98	110	117	121
Bretagne	52	44	46	72	65 s	120	100	107	165	130
Poitou-Charentes	53	43	33	55	50 s	124	100	76	125	115
Sud-Ouest	49	56	57	67	:	115	127	129	156	134
Aquitaine	38	45	46	54	49 s	86	99	101	123	93
Midi-Pyrénées	67	76	75	92	83 s	158	175	172	214	194
Limousin	32	31	39	34	31 s	81	76	94	82	103
Centre-Est	147	148	175	188	:	329	323	388	426	394
Rhône-Alpes	168	171	197	213	193 s	368	364	429	475	438
Auvergne	58	53	81	79	72 s	143	128	193	193	192
Méditerranée	59	60	66	74	:	147	150	172	183	158
Languedoc-Roussillon	42	48	51	52	47 s	101	117	135	133	123
Provence-Alpes-Côte d'Azur	70	70	77	90	81 s	176	172	195	214	182
Corse	10	4	9	8	38 s	36	15	34	26	15
Départements d'Outre-Mer	-	-	-	2	:	-	-	-	-	-
Guadeloupe	-	-	-	-	:	-	-	-	-	-
Martinique	-	-	-	-	:	-	-	-	-	-
Guyane	-	-	-	-	:	-	-	-	-	-
Réunion	-	-	-	5	:	-	-	-	-	-
Not registered by region	-	-	-	-	:	-	-	-	-	-
Ireland (1)	37	39	44	55	56	93	96	104	126	124
Border, Midlands and Western	:	:	:	36	37 s	:	:	:	:	:
Southern and Eastern	:	:	:	62	63 s	:	:	:	:	:
Not registered by region	:	:	:	-	-	:	:	:	:	:

Methodological notes

1999: provisional data.

(1) 1999 Population data for France and Ireland were estimated by Eurostat.

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat — Data EPO.

Table 30

Patent applications to the EPO
At the regional level

Table 30-3 — Patent applications to the EPO at NUTS levels 0, 1 and 2

	Per million population					Per million labour force				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	46	51	57	64	58	117	127	143	160	143
Nord Ovest	67	75	79	84	86	161	177	189	201	202
Piemonte	75	89	95	98	102	176	204	221	231	235
Valle d'Aosta	28	11	4	3	22	61	23	8	6	47
Liguria	50	44	44	52	49	127	112	112	132	122
Lombardia	102	109	127	146	121	233	248	291	329	272
Nord Est	65	71	76	87	77	152	165	175	200	176
Trentino-Alto Adige	52	36	41	48	45	118	82	92	109	101
Veneto	62	78	75	91	83	144	179	171	209	188
Friuli-Venezia Giulia	87	73	108	101	79	210	174	260	239	187
Emilia-Romagna	103	114	119	136	128	231	252	258	300	281
Centro (I)	33	37	45	48	44	78	88	108	116	105
Toscana	34	39	41	55	45	81	93	99	133	108
Umbria	23	29	53	29	29	57	71	132	72	70
Marche	35	36	49	40	50	83	87	117	97	117
Lazio	28	31	38	43	36	72	79	94	108	89
Abruzzo-Molise	20	41	43	46	49	53	104	112	121	128
Abruzzo	26	49	54	57	58	66	125	140	150	153
Molise	1	9	3	3	12	3	23	8	8	30
Campania	5	6	8	9	9	13	19	23	24	26
Sud	3	6	6	9	7	8	17	19	25	21
Puglia	4	6	6	9	8	11	17	18	25	24
Basilicata	3	11	16	18	15	8	32	45	51	42
Calabria	1	4	5	5	3	4	13	14	15	9
Sicilia	11	7	8	13	12	35	21	25	39	36
Sardegna	5	7	6	10	8	13	19	17	25	21
Not registered by region	-	-	-	-	-	-	-	-	-	-
Luxembourg	72	101	139	143	155	176	243	335	347	371
Nederland	117	136	165	178	156	248	285	338	360	311
Noord-Nederland	62	85	70	74	61	139	186	152	158	126
Groningen	66	88	68	73	72	147	193	147	155	147
Friesland	60	78	58	68	42	135	173	128	149	86
Drenthe	61	89	89	84	74	135	193	188	173	156
Oost-Nederland	106	113	118	123	119	225	240	245	251	240
Overijssel	112	104	122	130	116	242	225	255	277	237
Gelderland	109	126	120	123	127	228	264	248	246	255
Flevoland	66	61	92	100	79	138	127	185	198	155
West-Nederland	97	108	117	129	104	203	223	236	258	205
Utrecht	96	116	124	155	142	191	227	241	300	271
Noord-Holland	86	84	103	114	94	175	169	202	223	184
Zuid-Holland	111	128	125	138	103	239	274	259	280	207
Zeeland	54	61	113	77	64	118	132	244	166	134
Zuid-Nederland	196	240	355	381	344	412	496	722	768	684
Noord-Brabant	245	285	423	477	441	510	584	851	948	865
Limburg (NL)	97	147	216	184	146	208	312	451	383	298
Not registered by region	-	-	-	-	-	-	-	-	-	-
Österreich	100	98	111	142	122	210	208	236	299	256
Ostösterreich	94	82	96	116	105	193	170	200	239	215
Burgenland	22	29	23	57	50	46	64	50	122	106
Niederösterreich	90	79	96	113	112	187	167	203	240	237
Wien	111	94	109	129	108	223	190	222	257	214
Südösterreich	89	89	80	134	99	199	198	180	296	215
Kärnten	63	85	67	131	91	143	193	152	298	203
Steiermark	101	90	87	136	102	225	199	192	295	220
Westösterreich	112	123	144	175	153	231	256	303	369	321
Oberösterreich	110	132	146	178	156	226	276	306	378	329
Salzburg	76	94	107	94	103	153	188	222	192	210
Tirol	95	80	88	116	99	199	170	191	249	209
Vorarlberg	207	210	297	396	322	425	439	620	829	672
Not registered by region	-	-	-	-	-	-	-	-	-	-
Portugal	2	2	3	2	3	3	3	6	5	6
Continente	2	2	3	3	3	3	3	6	5	6
Norte	1	1	1	2	2	3	1	3	3	4
Centro (P)	0	0	4	3	2	1	1	7	5	4
Lisboa e Vale do Tejo	3	3	4	4	4	5	6	8	8	9
Alentejo	1	2	2	1	3	2	4	5	2	7
Algarve	-	3	3	0	6	-	6	6	1	12
Açores	-	-	-	-	2	-	-	-	-	5
Madeira	2	4	-	-	-	5	9	-	-	-
Not registered by region	-	-	-	-	-	-	-	-	-	-
Suomi-Finland	175	174	173	260	233	368	364	357	533	455
Manner-Suomi	175	174	172	260	233	366	363	355	-	456
Itä-Suomi	55	52	45	71	73	127	113	102	154	159
Väli-Suomi	73	102	73	120	149	164	232	163	261	306
Pohjois-Suomi	172	174	178	313	176	392	384	377	677	355
Uusimaa	313	310	317	481	406	-	-	-	-	723
Etelä-Suomi	163	150	153	206	216	-	-	-	-	423
Åland	-	-	119	119	39	-	-	250	302	82
Not registered by region	-	-	-	-	-	-	-	-	-	-

Methodological notes

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 30
Patent applications to the EPO
At the regional level

Table 30-4 — Patent applications to the EPO at NUTS level 0, 1 and 2

	Per million population					Per million labour force				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Sverige	200	218	264	307	237	391	437	535	627	479
Stockholm	324	379	449	538	417	591	768	876	1 123	854
Östra Mellansverige	173	190	253	299	217	346	371	506	598	426
Sydsverige	217	232	266	301	248	435	491	568	634	511
Norra Mellansverige	167	135	184	200	134	339	266	379	380	261
Mellersta Norrland	95	130	113	140	135	191	250	227	275	275
Övre Norrland	82	110	141	169	137	169	215	285	334	296
Småland med Öarna	-	-	136	112	80	-	-	270	225	157
Västsverige	-	-	245	299	235	-	-	503	628	474
Not registered by region	-	-	-	-	-	-	-	-	-	-
United Kingdom	79	82	90	101	93	162	169	186	208	189
North East	72	65	69	74	65	:	142	152	166	144
Tees Valley and Durham	50	56	45	64	71	:	121	99	145	157
Northumberland, Tyne and Wear	90	72	89	82	60	:	158	195	184	134
North West	69	71	75	81	70	:	152	162	177	149
Cumbria	51	60	79	86	54	:	123	167	180	109
Cheshire	159	171	169	184	149	:	350	342	367	295
Greater Manchester	50	56	58	63	50	:	118	123	134	104
Lancashire	55	49	56	68	62	:	104	118	150	132
Merseyside	60	54	60	56	66	:	126	142	136	158
Yorkshire and The Humber	54	58	58	71	57	:	121	121	148	119
East Riding and North Lincolnshire	45	72	57	46	56	:	146	122	98	116
North Yorkshire	105	72	94	123	90	:	148	189	243	184
South Yorkshire	28	36	40	49	33	:	80	89	108	69
West Yorkshire	57	61	57	76	61	:	124	115	156	127
East Midlands	72	71	88	90	90	:	141	175	180	178
Derbyshire and Nottinghamshire	65	76	88	81	89	:	156	178	165	182
Leicestershire, Rutland and Northamptonshire	96	80	110	121	110	:	152	210	229	210
Lincolnshire	30	32	35	46	43	:	63	71	97	85
West Midlands	67	68	75	78	79	:	139	154	159	161
Herefordshire, Worcestershire and Warwickshire	116	130	140	141	138	:	248	261	264	262
Shropshire and Staffordshire	47	45	53	58	61	:	89	107	117	117
West Midlands	57	52	57	60	63	:	113	125	129	136
Eastern	133	150	184	204	167	:	294	363	399	330
East Anglia	164	191	230	250	203	:	380	465	495	405
Bedfordshire, Hertfordshire	125	138	158	170	147	:	261	300	319	288
Essex	101	105	146	177	137	:	212	293	352	271
London	-	-	68	84	71	:	-	-	172	144
Inner London	-	-	76	86	76	:	-	-	181	162
Outer London	-	-	63	82	67	:	-	-	167	134
South East	126	133	145	153	150	:	261	286	307	296
Berkshire, Buckinghamshire and Oxfordshire	196	204	217	225	221	:	381	403	452	407
Surrey, East and West Sussex	126	125	143	137	105	:	255	285	276	215
Hampshire and Isle of Wight	102	111	117	131	178	:	223	236	259	349
Kent	63	75	82	97	100	:	146	170	198	202
South West	82	88	91	102	104	:	180	183	204	206
Gloucestershire, Wiltshire and North Somerset	131	140	139	154	171	:	266	264	300	329
Dorset and Somerset	58	58	45	76	58	:	123	92	158	115
Cornwall and Isles of Scilly	-	-	76	54	47	:	-	-	112	101
Devon	-	-	53	47	43	:	-	-	95	89
Wales	41	42	42	57	58	:	94	92	121	130
West Wales and The Valleys	-	-	26	36	43	:	-	-	85	99
East Wales	-	-	68	82	85	:	-	-	181	178
Scotland	54	58	-	71	-	:	121	124	146	139
North Eastern Scotland	-	-	-	-	-	:	-	-	363	244
Eastern Scotland	-	-	-	-	-	:	-	-	180	166
South Western Scotland	-	-	-	-	-	:	-	-	89	111
Highlands and Islands	-	-	-	-	-	:	-	-	37	33
Northern Ireland	21	16	-	20	-	:	38	34	45	41
Not registered by region	-	-	-	-	-	:	-	-	-	-
EEA [1]	**92**	**97**	**108**	**130**	**119**	**205**	**215**	**240**	**286**	**260**
Iceland	32	30	63	85	104	57	55	117	155	185
Liechtenstein	818	971	1 540	1 307	1 468	:	:	:	:	:
Norge	70	87	105	118	97	140	171	202	225	185
Oslo og Akershus	:	:	:	:	153	:	:	:	:	:
Hedmark og Oppland	:	:	:	:	14	:	:	:	:	:
Sør-Østlandet	:	:	:	:	100	:	:	:	:	:
Agder og Rogaland	:	:	:	:	128	:	:	:	:	:
Vestlandet	:	:	:	:	68	:	:	:	:	:
Trøndelag	:	:	:	:	89	:	:	:	:	:
Nord-Norge	:	:	:	:	24	:	:	:	:	:
Not registered by region	:	:	:	:	-	:	:	:	:	:

Methodological notes

1999: provisional data.

(1) Patent applications to the EPO per million labour force from the EEA excludes Liechtenstein as no reference data exist for this country.
EEA regions correspond to the statistical territorial units proposed by Eurostat in Statistical Regions for the EFTA Countries, Annex, Eurostat, June 2001.

(2) Regional population data for Norway have been obtained from the Statistics Norway database.

Sources: **Eurostat — Data EPO.**

Table 31

Patent applications to the EPO in high technology fields
At the regional level

Table 31-1 — High tech patent applications to the EPO at NUTS levels 0, 1 and 2

	Total number					Per million population				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
EU-15	**3 880**	**4 367**	**5 303**	**7 281**	**7 161**	**10**	**12**	**14**	**19**	**19**
EUR-12	2 865	3 181	3 869	5 417	5 449	10	11	13	18	18
Belgique-België	110	124	123	172	181	11	12	12	17	18
Région Bruxelles-capitale	19	23	17	20	28	20	24	18	21	29
Vlaams Gewest	79	92	94	139	129	14	16	16	23	22
Antwerpen	42	47	35	43	40	26	29	21	26	24
Limburg (B)	1	2	3	5	5	2	2	3	6	7
Oost-Vlaanderen	18	11	20	40	32	13	8	15	29	23
Vlaams Brabant	15	26	29	43	43	15	26	29	43	42
West-Vlaanderen	3	6	8	8	9	3	6	7	7	8
Région Wallonne	11	9	11	13	23	3	3	3	4	7
Brabant Wallon	8	4	6	4	13	25	12	17	12	39
Hainaut	2	1	1	2	2	1	0	1	2	2
Liège	1	3	3	4	5	1	3	3	3	5
Luxembourg (B)	-	-	1	-	-	-	-	2	-	-
Namur	-	2	2	4	3	-	3	4	8	6
Not registered by region	-	-	0	0	1	-	-	-	-	-
Danmark	72	68	111	131	116	14	13	21	25	22
Deutschland	1 108	1 338	1 626	2 431	2 490	14	16	20	30	30
Baden-Württemberg	263	259	329	398	436	26	25	32	38	42
Stuttgart	132	103	174	222	245	34	27	45	57	63
Karlsruhe	57	63	62	69	80	21	24	24	26	30
Freiburg	52	62	65	61	73	25	30	31	29	34
Tübingen	22	32	27	46	38	13	18	16	26	22
Bayern	428	554	683	1 050	1 073	36	46	57	87	89
Oberbayern	315	408	492	808	833	80	103	123	202	209
Niederbayern	18	10	25	23	16	16	9	22	20	14
Oberpfalz	18	33	55	39	50	17	31	52	37	47
Oberfranken	4	9	13	12	12	4	8	12	11	10
Mittelfranken	50	64	54	107	106	30	38	32	64	63
Unterfranken	5	8	8	15	14	4	6	6	11	10
Schwaben	19	22	35	46	42	11	13	20	26	24
Berlin	60	64	75	121	94	17	19	22	35	28
Brandenburg	7	10	10	17	24	3	4	4	6	9
Bremen	3	3	4	4	5	4	5	6	7	8
Hamburg	55	30	3	66	48	32	17	2	39	28
Hessen	68	96	110	131	137	11	16	18	22	23
Darmstadt	49	77	87	108	111	13	21	24	29	30
Gießen	10	13	13	19	21	10	13	12	18	20
Kassel	9	6	10	4	5	7	4	8	3	4
Mecklenburg-Vorpommern	1	1	3	6	5	1	1	2	3	3
Niedersachsen	58	79	110	132	133	8	10	14	17	17
Braunschweig	14	13	25	38	40	9	8	15	23	24
Hannover	31	49	73	82	71	15	23	34	38	33
Lüneburg	10	13	11	7	18	7	8	7	4	11
Weser-Ems	2	4	2	5	4	1	2	1	2	2
Nordrhein-Westfalen	119	169	204	326	342	7	9	11	18	19
Düsseldorf	34	31	45	87	99	6	6	8	17	19
Köln	46	68	79	118	124	11	16	19	28	29
Münster	11	20	31	42	43	4	8	12	16	16
Detmold	8	14	25	31	34	4	7	12	15	17
Arnsberg	21	35	24	48	41	5	9	6	13	11
Rheinland-Pfalz	21	22	17	46	46	5	5	4	11	11
Koblenz	3	3	3	9	10	2	2	2	6	6
Trier	-	0	1	4	4	-	1	2	9	7
Rheinhessen-Pfalz	18	18	13	33	33	9	9	7	16	16
Saarland	1	1	3	7	7	1	1	3	7	6
Sachsen	:	:	11	48	51	:	:	3	11	11
Chemnitz	:	:	11	4	7	:	:	:	2	4
Dresden	:	:	:	42	41	:	:	:	24	24
Leipzig	:	:	:	2	3	:	:	:	2	3
Sachsen-Anhalt	7	6	8	8	8	2	2	3	3	3
Dessau	4	3	2	1	0	7	4	4	2	1
Halle	1	1	2	2	4	2	1	3	3	5
Magdeburg	1	3	3	5	4	1	2	3	4	3
Schleswig-Holstein	13	28	20	30	30	5	10	7	11	11
Thüringen	-	-	12	23	13	-	-	5	9	5
Not registered by region	4	15	24	18	36	-	-	-	-	-
Ellada	5	3	4	6	6	0	0	0	1	1
Voreia Ellada	-	1	-	-	0	-	0	-	-	0
Anatoliki Makedonia, Thraki	-	-	-	-	-	-	-	-	-	-
Kentriki Makedonia	-	1	-	-	0	-	0	-	-	0
Dytiki Makedonia	-	-	-	-	-	-	-	-	-	-
Thessalia	-	-	-	-	-	-	-	-	-	-
Kentriki Ellada	-	1	1	1	1	-	0	0	0	0
Ipeiros	-	-	-	0	0	-	-	-	0	1
Ionia Nisia	-	-	-	-	-	-	-	-	-	-
Dytiki Ellada	-	1	1	1	1	-	1	1	1	1
Sterea Ellada	-	-	-	-	-	-	-	-	-	-
Peloponnisos	-	0	-	-	-	-	0	-	-	-
Attiki	2	1	2	4	5	1	0	1	1	1
Nisia Aigaiou, Kriti	2	-	1	1	-	2	-	1	1	-
Voreio Aigaio	-	-	-	-	-	-	-	-	-	-
Notio Aigaio	-	-	-	-	-	-	-	-	-	-
Kriti	2	-	1	1	-	4	-	2	2	-
Not registered by region	1	-	-	-	-	-	-	-	-	-

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 31

Patent applications to the EPO in high technology fields
At the regional level

Table 31-2 — High tech patent applications to the EPO at NUTS level 0, 1 and 2

	Total number					Per million population				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
España	41	36	56	79	98	1	1	1	2	2
Noroeste	0	4	2	2	5	0	1	0	0	1
Galicia	-	3	2	1	4	-	1	1	0	2
Principado de Asturias	0	2	1	0	1	0	1	0	0	1
Cantabria	-	-	-	0	-	-	-	-	0	-
Noreste	2	-	1	3	2	1	-	0	1	1
Pais Vasco	-	-	1	3	1	-	-	0	1	0
Comunidad Foral de Navarra	1	-	0	-	1	2	-	0	-	2
La Rioja	-	-	-	-	-	-	-	-	-	-
Aragón	1	-	-	-	-	1	-	-	-	-
Comunidad de Madrid	22	13	22	27	46	4	3	4	5	9
Centro (E)	5	2	3	3	3	1	0	1	1	1
Castilla y León	4	2	3	2	3	1	1	1	1	1
Castilla-la Mancha	1	-	0	1	0	1	-	0	1	0
Extremadura	-	-	-	-	-	-	-	-	-	-
Este	10	16	26	40	38	1	1	2	4	4
Cataluña	9	12	21	33	31	2	2	3	5	5
Comunidad Valenciana	1	4	3	8	7	0	1	1	2	2
Baleares	-	-	2	-	1	-	-	2	-	2
Sur	1	2	2	3	2	0	0	0	0	0
Andalucia	1	2	1	3	2	0	0	0	0	0
Murcia	-	0	1	1	-	-	0	1	1	-
Ceuta y Melilla	-	-	-	-	-	-	-	-	-	-
Canarias	-	-	-	0	-	-	-	-	0	-
Not registered by region	-	-	-	-	-	-	-	-	-	-
France	738	716	894	1 177	1 249	13	12	15	20	21
Ile de France	398	401	482	621	646	36	36	44	56	:
Bassin Parisien	30	35	59	50	64	3	3	6	5	:
Champagne-Ardenne	1	2	1	2	5	1	2	1	1	:
Picardie	1	5	7	13	8	0	3	4	7	:
Haute-Normandie	3	0	4	7	4	2	0	2	4	:
Centre	15	19	34	19	26	6	8	14	8	:
Basse-Normandie	7	5	7	6	8	5	4	5	4	:
Bourgogne	3	3	6	3	14	2	2	4	2	:
Nord - Pas-de-Calais	7	6	10	15	13	2	2	3	4	:
Est	52	38	42	63	64	10	7	8	12	:
Lorraine	20	12	9	18	14	8	5	4	8	:
Alsace	21	22	30	33	42	13	13	18	19	:
Franche-Comté	11	4	2	12	9	10	4	2	11	:
Ouest	48	40	50	82	80	6	5	7	11	:
Pays de la Loire	6	7	8	10	6	2	2	3	3	:
Bretagne	41	33	41	69	71	14	12	14	24	:
Poitou-Charentes	2	1	1	4	3	1	0	0	2	:
Sud-Ouest	22	27	37	46	50	4	4	6	7	:
Aquitaine	3	1	3	8	1	1	0	1	3	:
Midi-Pyrénées	18	26	34	37	49	7	10	13	14	:
Limousin	1	-	-	1	-	2	-	-	1	:
Centre-Est	105	103	144	174	204	15	15	21	25	:
Rhône-Alpes	103	100	141	170	201	19	18	25	30	:
Auvergne	2	3	4	5	3	2	2	3	3	:
Méditerranée	75	64	69	126	125	11	9	10	18	:
Languedoc-Roussillon	7	13	5	9	10	3	6	2	4	:
Provence-Alpes-Côte d'Azur	68	51	65	116	115	15	11	14	26	:
Corse	-	-	-	-	-	-	-	-	-	:
Départements d'Outre-Mer	-	-	-	-	-	-	-	-	-	:
Guadeloupe	-	-	-	-	-	-	-	-	-	:
Martinique	-	-	-	-	-	-	-	-	-	:
Guyane	-	-	-	-	-	-	-	-	-	:
Réunion	-	-	-	-	-	-	-	-	-	:
Not registered by region	1	1	1	0	3	-	-	-	-	:
Ireland	24	25	30	38	50	7	7	8	10	13
Border, Midlands and Western	-	-	-	3	-	:	:	:	3	:
Southern and Eastern	23	24	30	34	50	:	:	:	13	:
Not registered by region	1	1	-	1	-	:	:	:	-	:

Methodological notes

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 31

Patent applications to the EPO in high technology fields
At the regional level

Table 31-3 — High tech patent applications to the EPO at NUTS levels 0, 1 and 2

	Total number					Per million population				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Italia	231	269	269	309	285	4	5	5	5	5
Nord Ovest	33	46	33	37	32	5	8	6	6	5
Piemonte	30	37	28	32	30	7	9	7	7	7
Valle d'Aosta	-	-	0	-	-	-	-	2	-	-
Liguria	3	9	5	5	2	2	6	3	3	1
Lombardia	100	138	132	157	149	11	15	15	17	16
Nord Est	15	14	7	14	20	2	2	1	2	3
Trentino-Alto Adige	5	1	1	1	1	6	1	1	2	1
Veneto	7	8	4	10	13	2	2	1	2	3
Friuli-Venezia Giulia	3	4	2	3	5	2	3	2	2	5
Emilia-Romagna	23	23	28	29	14	6	6	7	7	3
Centro (I)	4	13	10	12	13	1	2	2	2	2
Toscana	4	10	5	8	10	1	3	2	2	3
Umbria	0	1	4	2	1	0	2	4	2	1
Marche	0	2	1	3	3	0	1	1	2	2
Lazio	17	17	30	20	19	3	3	6	4	4
Abruzzo-Molise	4	1	4	4	4	3	1	3	3	2
Abruzzo	4	1	4	4	4	4	1	3	3	3
Molise	-	1	-	-	-	-	2	-	-	-
Campania	3	1	8	5	3	1	0	1	1	0
Sud	1	1	4	5	4	0	0	1	1	1
Puglia	1	1	1	3	2	0	0	0	1	0
Basilicata	-	0	2	2	2	-	1	4	2	4
Calabria	-	-	0	1	-	-	-	0	0	-
Sicilia	26	17	12	24	25	5	3	2	5	5
Sardegna	-	-	-	2	2	-	-	-	1	1
Not registered by region	4	-	1	-	1	-	-	-	-	-
Luxembourg	1	1	3	3	4	3	2	6	6	9
Nederland	316	357	503	600	569	20	23	32	38	36
Noord-Nederland	11	14	10	17	11	7	8	6	11	7
Groningen	5	9	8	11	6	9	15	15	20	11
Friesland	3	3	1	3	2	4	4	2	4	3
Drenthe	3	3	0	4	3	7	6	1	8	6
Oost-Nederland	28	31	38	38	33	9	10	12	12	10
Overijssel	8	9	20	17	12	8	8	18	16	11
Gelderland	19	21	17	19	19	10	11	9	10	10
Flevoland	1	1	2	2	2	5	5	7	8	8
West-Nederland	118	108	132	148	118	16	15	18	20	16
Utrecht	14	21	21	33	27	13	19	20	30	24
Noord-Holland	22	17	35	33	36	9	7	14	13	14
Zuid-Holland	82	70	69	81	54	25	21	21	24	16
Zeeland	0	0	8	1	1	1	0	20	2	2
Zuid-Nederland	158	205	323	396	407	46	60	94	115	117
Noord-Brabant	145	189	303	369	382	64	82	131	159	164
Limburg (NL)	13	16	20	28	25	11	14	17	24	22
Not registered by region	-	-	-	0	-	-	-	-	-	-
Österreich	64	61	63	88	79	8	8	8	11	10
Ostösterreich	45	44	44	48	43	13	13	13	14	13
Burgenland	1	-	0	1	0	2	-	0	5	1
Niederösterreich	13	10	14	15	10	8	6	9	10	7
Wien	32	34	30	32	32	20	21	19	20	20
Südösterreich	9	12	9	23	21	5	7	5	13	12
Kärnten	5	7	5	17	15	9	12	8	31	26
Steiermark	5	5	4	6	6	4	4	3	5	5
Westösterreich	9	6	10	17	14	3	2	3	6	5
Oberösterreich	2	2	6	7	5	2	2	4	5	4
Salzburg	0	1	3	2	5	1	3	6	3	9
Tirol	4	2	1	5	2	6	2	1	7	3
Vorarlberg	2	1	-	3	2	6	1	-	9	7
Not registered by region	0	0	0	-	1	-	-	-	-	-
Portugal	0	1	5	2	4	0	0	0	0	0
Continente	0	1	5	2	4	0	0	0	0	0
Norte	-	1	-	1	1	-	0	-	0	0
Centro (P)	0	-	0	-	-	0	-	0	-	-
Lisboa e Vale do Tejo	-	0	4	1	3	-	0	1	0	1
Alentejo	-	-	0	-	-	-	-	0	-	-
Algarve	-	-	-	-	-	-	-	-	-	-
Açores	-	-	-	-	-	-	-	-	-	-
Madeira	-	-	-	-	-	-	-	-	-	-
Not registered by region	-	-	-	-	-	-	-	-	-	-
Suomi-Finland	226	250	295	512	434	44	49	58	99	84
Manner-Suomi	226	247	295	512	434	45	49	58	100	84
Itä-Suomi	3	-	1	5	3	4	-	1	7	4
Väli-Suomi	4	10	5	6	7	5	14	7	8	9
Pohjois-Suomi	45	49	55	109	60	81	88	98	195	107
Uusimaa	123	131	177	298	256	95	100	133	222	188
Etelä-Suomi	52	57	57	94	108	29	32	32	52	59
Åland	-	-	-	-	-	-	-	-	-	-
Not registered by region	-	2	0	-	1	-	-	-	-	-

Methodological notes

1999: provisional data.

Sources: Eurostat — Data EPO.

Table 31

Patent applications to the EPO in high technology fields
At the regional level

Table 31-4 — High tech patent applications to the EPO at NUTS level 0, 1 and 2

	Total number					Per million population				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Sverige	233	319	394	642	464	26	36	45	73	52
Stockholm	130	201	249	405	268	76	116	143	231	150
Östra Mellansverige	28	34	37	61	49	18	23	25	41	33
Sydsverige	48	56	48	74	61	38	44	38	59	48
Norra Mellansverige	4	-	13	22	12	4	-	15	26	14
Mellersta Norrland	2	4	1	4	3	6	10	1	11	8
Övre Norrland	4	10	20	23	22	7	20	38	45	43
Småland med Öarna	0	2	4	4	5	-	-	5	5	6
Västsverige	17	11	21	45	42	-	-	12	25	24
Not registered by region	1	1	1	4	2	-	-	-	-	-
United Kingdom	710	799	929	1 091	1 133	12	14	16	18	19
North East	5	9	8	6	7	2	3	3	2	3
Tees Valley and Durham	2	6	3	2	2	2	5	2	1	2
Northumberland, Tyne and Wear	3	3	6	5	5	2	2	4	3	3
North West	32	42	35	55	49	5	6	5	8	7
Cumbria	4	1	-	2	3	8	2	-	5	5
Cheshire	8	11	10	23	17	8	11	10	23	17
Greater Manchester	8	21	17	18	16	3	8	7	7	6
Lancashire	7	5	2	7	9	5	4	1	5	6
Merseyside	5	5	5	5	5	4	3	4	3	4
Yorkshire and The Humber	14	13	20	23	14	3	3	4	5	3
East Riding and North Lincolnshire	2	1	3	1	-	2	1	3	1	-
North Yorkshire	5	2	4	8	3	7	2	6	10	4
South Yorkshire	1	5	5	5	1	1	4	4	4	1
West Yorkshire	5	6	8	9	10	3	3	4	4	5
East Midlands	24	33	32	30	32	6	8	8	7	8
Derbyshire and Nottinghamshire	12	19	14	15	12	6	10	7	7	6
Leicestershire, Rutland and Northamptonshire	10	8	16	13	18	7	5	10	9	12
Lincolnshire	1	5	3	2	2	2	9	4	3	3
West Midlands	18	26	23	29	37	3	5	4	5	7
Herefordshire, Worcestershire and Warwickshire	12	17	13	13	20	10	14	10	11	16
Shropshire and Staffordshire	-	3	4	3	8	-	2	3	2	6
West Midlands	5	7	7	13	9	2	3	3	5	3
Eastern	180	212	288	364	286	34	40	54	68	53
East Anglia	132	146	189	224	184	63	68	88	104	84
Bedfordshire, Hertfordshire	26	40	60	71	49	17	26	38	45	30
Essex	22	27	39	68	54	14	17	25	42	33
London	74	95	101	165	132	-	-	14	23	18
Inner London	31	54	43	66	55	-	-	16	24	20
Outer London	43	41	58	98	77	-	-	13	22	17
South East	195	218	219	220	315	25	28	28	27	39
Berkshire, Buckinghamshire and Oxfordshire	59	83	81	82	121	29	40	39	36	57
Surrey, East and West Sussex	64	68	66	65	37	25	27	26	26	14
Hampshire and Isle of Wight	68	61	66	64	148	39	35	37	36	84
Kent	5	5	5	8	8	3	3	3	5	5
South West	88	77	117	115	159	18	16	24	23	32
Gloucestershire, Wiltshire and North Somerset	62	62	90	95	135	29	29	42	44	62
Dorset and Somerset	18	11	13	13	16	16	10	11	11	13
Cornwall and Isles of Scilly	0	-	2	-	2	-	-	3	-	4
Devon	7	3	12	7	6	-	-	12	6	5
Wales	15	15	14	11	18	5	5	5	4	6
West Wales and The Valleys	3	6	6	5	7	-	-	3	3	4
East Wales	12	9	8	6	11	-	-	7	6	10
Scotland	44	44	59	58	65	9	9	-	11	-
North Eastern Scotland	2	2	4	6	1	-	-	-	-	-
Eastern Scotland	24	29	34	41	38	-	-	-	-	-
South Western Scotland	18	13	19	9	26	-	-	-	-	-
Highlands and Islands	-	-	1	1	-	-	-	-	-	-
Northern Ireland	9	4	1	4	3	5	3	-	2	-
Not registered by region	13	10	13	13	16	-	-	-	-	-
EEA (1)	**3 902**	**4 389**	**5 349**	**7 363**	**7 210**	**10**	**12**	**14**	**19**	**19**
Iceland	4	1	4	5	9	16	2	15	17	31
Liechtenstein	4	1	4	5	9	33	-	80	64	8
Norge	17	22	39	75	40	4	5	9	17	9
Oslo og Akershus	9	13	22	52	23	:	:	:	:	:
Hedmark og Oppland	1	-	-	0	-	:	:	:	:	:
Sør-Østlandet	1	5	4	6	3	:	:	:	:	:
Agder og Rogaland	-	2	6	11	4	:	:	:	:	:
Vestlandet	1	-	0	2	6	:	:	:	:	:
Trøndelag	4	3	4	2	3	:	:	:	:	:
Nord-Norge	1	-	3	1	0	:	:	:	:	:
Not registered by region	-	1	-	-	2	:	:	:	:	:

Methodological notes

1999: provisional data.

(1) EEA regions correspond to the statistical territorial units proposed by Eurostat in Statistical Regions for the EFTA Countries, Annex, Eurostat, June 2001.

Sources: Eurostat — Data EPO.

Tables 32 and 33
Reference data
At the national level

Exchange rates

Table 32 — 1 ECU/EUR = ...national currency

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	-	-	-	-	-	-	-	-	-	-	-
EUR-12	-	-	-	-	-	-	-	-	-	-	-
BEF	42.4257	42.2233	41.5932	40.4713	39.6565	38.5519	39.2986	40.5332	40.6207	40.3399	40.3399
DKK	7.85652	7.90859	7.80925	7.59359	7.54328	7.32804	7.35934	7.48361	7.49930	7.43556	7.45382
DEM	2.05209	2.05076	2.02031	1.93639	1.92453	1.87375	1.90954	1.96438	1.96913	1.95583	1.95583
GRD	201.412	225.216	247.026	268.568	288.026	302.989	305.546	309.355	330.731	325.763	336.630
ESP	129.411	128.469	132.526	149.124	158.918	163.000	160.748	165.887	167.184	166.386	166.386
FRF	6.91412	6.97332	6.84839	6.63368	6.58262	6.52506	6.49300	6.61260	6.60141	6.55957	6.55957
IEP	0.767768	0.767809	0.760718	0.799952	0.793618	0.815525	0.793448	0.747516	0.786245	0.787564	0.787564
ITL	1 521.98	1 533.24	1 595.52	1 841.23	1 915.06	2 130.14	1 958.96	1 929.30	1 943.65	1 936.27	1 936.27
LUF	42.4257	42.2233	41.5932	40.4713	39.6565	38.5519	39.2986	40.5332	40.6207	40.3399	40.3399
NLG	2.31212	2.31098	2.27482	2.17521	2.15827	2.09891	2.13973	2.21081	2.21967	2.20371	2.20371
ATS	14.4399	14.4309	14.2169	13.6238	13.5396	13.1824	13.4345	13.8240	13.8545	13.7603	13.7603
PTE	181.109	178.614	174.714	188.370	196.896	196.105	195.761	198.589	201.695	200.482	200.482
FIM	4.85496	5.00211	5.80703	6.69628	6.19077	5.70855	5.82817	5.88064	5.98251	5.94573	5.94573
SEK	7.52051	7.47927	7.53295	9.12151	9.16308	9.33192	8.51472	8.65117	8.91593	8.80752	8.44519
GBP	0.713851	0.701012	0.737650	0.779988	0.775903	0.828789	0.813798	0.692304	0.676434	0.658735	0.609478
EEA	-	-	-	-	-	-	-	-	-	-	-
ISK	:	73.0018	74.6584	79.2528	83.1063	84.6853	84.6558	80.4391	79.6976	77.1824	72.5848
NOK	7.94851	8.01701	8.04177	8.30954	8.37420	8.28575	8.19659	8.01861	8.46587	8.31041	8.11292
JPY	183.6600	166.4930	164.2230	130.1480	121.3220	123.0120	138.0840	137.0770	146.4150	121.3170	99.4748
USD	1.273430	1.239160	1.298100	1.171000	1.189520	1.308010	1.269750	1.134040	1.121090	1.065780	0.921937

Table 33 — 1 PPS = ...national currency

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	-	-	-	-	-	-	-	-	-	-	-
EUR-12	-	-	-	-	-	-	-	-	-	-	-
BEF	42.45000	41.61000	40.86902	40.25398	40.09836	40.49500	40.06510	39.78960	39.67640	39.46490	38.87120
DKK	10.16000	9.750000	9.891912	9.485490	9.365417	9.276220	9.153460	9.073410	9.102230	9.144750	9.079650
DEM	2.250000	2.220000	2.234302	2.269440	2.225305	2.221480	2.159800	2.131930	2.137340	2.101600	2.048270
GRD	151.4800	171.2500	183.9517	198.9122	210.9951	223.8220	231.5870	246.7720	252.6400	253.4900	254.2130
ESP	117.7000	117.3000	124.1342	126.1938	130.4568	134.5440	134.0500	134.6990	138.5690	139.1910	140.0640
FRF	7.120000	6.920000	6.941542	7.092458	7.122036	7.119920	7.086670	7.137990	7.114430	6.987580	6.852880
IEP	0.743000	0.708000	0.689977	0.706586	0.686533	0.699511	0.724873	0.716967	0.764369	0.781836	0.804655
ITL	1 527.000	1 554.000	1 577.713	1 655.002	1 648.975	1 708.630	1 735.650	1 745.210	1 719.270	1 707.050	1 707.910
LUF	42.71000	41.95000	42.05580	42.75427	43.01920	42.84210	42.95620	43.79370	44.08910	43.79820	43.64260
NLG	2.330000	2.320000	2.309756	2.303315	2.284228	2.234500	2.263840	2.159310	2.125650	2.124410	2.110100
ATS	15.1500	15.0600	15.1300	14.9600	14.9700	15.1354	14.7355	14.4383	14.5633	14.3710	14.1414
PTE	111.600	116.800	124.997	126.170	127.009	131.234	133.650	129.781	136.485	136.880	137.704
FIM	6.89000	6.88000	6.88000	6.57000	6.61000	6.46007	6.48244	6.41595	6.51911	6.52348	6.53297
SEK	10.0800	10.5700	10.6000	10.6100	10.6500	10.7215	10.5940	10.3939	10.4565	10.3999	10.2255
GBP	0.657000	0.675000	0.666046	0.687762	0.694196	0.720685	0.707366	0.690900	0.691867	0.686854	0.671048
EEA	-	-	-	-	-	-	-	-	-	-	-
ISK	82.60000	85.30000	85.70000	88.76628	90.38975	83.62030	83.83160	85.09130	88.52450	89.31210	90.88450
NOK	9.73000	9.59000	9.22000	9.43469	9.80619	10.07800	10.20380	9.89496	10.15790	10.16220	10.17440
JPY	211.000	205.000	199.000	197.711	194.795	189.251	181.860	178.218	175.220	169.114	161.064
USD	1.08000	1.07000	1.05000	1.07947	1.07900	1.07529	1.06350	1.05235	1.04708	1.03926	1.02449

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Gross domestic product

Table 34 — GDP deflator — 1995 = 100

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	-	-	-	-	-	-	-	-	-	-	-
EUR-12	-	-	-	-	-	-	-	-	-	-	-
B	87.3	89.7	93.0	96.5	98.3	100.0	101.2	102.5	104.2	105.2	106.5
DK	90.1	92.6	95.3	96.6	98.3	100.0	102.5	104.7	106.7	109.9	114.0
D	83.8 s	87.8	92.2	95.6	98.0	100.0	101.0	101.9	103.0	103.9	103.5
EL	52.1	62.4	71.6	81.9	91.1	100.0	107.4	114.7	120.6	124.1	127.8
E	76.7 s	82.3 s	87.9 s	91.6 s	95.4 s	100.0	103.5	105.8	108.2	111.3	115.1 f
F	90.0	92.7	94.5	96.7	98.4	100.0	101.4	102.8	103.7	104.2	105.2
IRL	86.7	88.3	90.7	95.4	97.1	100.0	102.3	106.8	113.0	117.3	124.6 f
I	78.7	84.7	88.5	92.0	95.2	100.0	105.3	107.8	110.7	112.5	115.0
L	83.7	86.9	89.8	94.3	99.2	100.0	101.8	104.7	107.5	110.2	114.2
NL	89.6	92.0	94.1	95.9	98.2	100.0	101.2	103.2	105.2	107.0	110.5 f
A	85.8	89.1	92.3	95.0	97.6	100.0	101.3	102.6	103.3	104.2	105.5 f
P	67.7 s	76.0 s	83.6 s	89.2 s	94.9 s	100.0	103.0	106.8	110.9	114.5	118.2
FIN	89.6	91.2	92.0	94.2	96.0	100.0	99.8	101.8	104.9	105.4	108.4
S	84.4 s	90.8 s	91.8 s	94.4	96.6	100.0	101.4	103.2	104.1	104.6	105.5
UK	84.3	90.0	93.5	96.1	97.5	100.0	103.3	106.3	109.5	112.0	114.0
EEA	-	-	-	-	-	-	-	-	-	-	-
IS	83.7	90.0	93.4	95.5	97.3	100.0	102.0	105.5	111.1	115.2	122.3 f
NO	93.3	95.5	95.1	97.2	97.0	100.0	104.3	107.5	106.6	113.7	130.5 f
JP	95.2	98.0	99.7	100.3	100.4	100.0	99.2	99.6	99.5	98.1	96.5
US	88.2	91.4	93.6	95.9	97.9	100.0	101.9	103.9	105.2	106.8	109.0

Table 35 — GDP in millions of ECU/EUR at current prices and current exchange rates

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**5 383 947**	**5 768 219**	**6 012 000**	**6 027 275**	**6 319 429**	**6 567 463**	**6 897 159**	**7 265 002**	**7 604 818**	**7 985 671**	**8 489 449**
EUR-12	4 312 468	4 625 533	4 875 648	4 924 846	5 143 891	5 384 599	5 617 682	5 741 653	5 976 200	6 241 219	6 532 804
B	155 448	163 627	174 877	183 598	196 508	210 982	211 910	215 305	223 569	233 597	246 004
DK	105 048	108 446	113 694	118 541	128 024	137 793	144 155	149 169	155 881	165 366	176 050
D	1 302 151 s	1 432 638	1 561 740	1 670 845	1 763 760	1 880 187	1 878 200	1 866 496	1 921 866	1 982 381	2 032 948
EL	66 168	73 081	77 024	79 771	84 353	89 888	97 972	107 010	108 466	117 101	121 499
E	402 618	444 901	464 098	426 007	425 439	446 882	480 536	494 672	523 646	563 109	606 257
F	957 587	987 210	1 040 541	1 089 370	1 139 320	1 188 101	1 224 606	1 241 129	1 297 574	1 350 159	1 404 775
IRL	37 248	38 648	41 447	42 570	46 148	50 776	57 514	70 581	77 052	87 677	103 055
I	867 836	939 613	951 165	849 037	863 369	839 041	971 065	1 029 991	1 068 802	1 107 779	1 165 677
L	8 783	9 585	10 426	11 715	13 049	13 967	14 339	15 409	16 389	18 141	20 505
NL	232 629	244 462	259 112	278 334	296 347	317 324	324 479	332 654	351 621	373 907	400 574
A	127 315	136 573	146 955	158 511	168 108	179 840	182 364	181 819	188 723	197 091	205 950
P	55 736 s	64 951 s	74 838 s	73 238 s	76 170 s	82 680	88 513	93 924	99 625	106 993	114 026
FIN	107 732	99 829	83 851	73 565	84 369	98 898	100 523	108 072	115 256	121 425	132 039
S	187 253 s	200 394 s	198 195 s	164 188	174 216	183 597	206 273	210 815	213 702	226 494	246 619
UK	779 178	833 846	824 463	819 700	873 298	861 474	929 049	1 163 365	1 259 035	1 352 592	1 533 976
EEA	**5 479 829**	**5 868 919**	**6 114 970**	**6 131 602**	**6 428 309**	**6 684 882**	**7 026 902**	**7 408 228**	**7 743 748**	**8 137 855**	**8 674 414**
IS	4 959 s	5 476 s	5 363	5 199	5 280	5 330	5 717	6 523	7 245	8 093	9 459
NO	90 923	95 224	97 607	99 128	103 600	112 089	124 026	136 703	131 685	144 091	175 506
JP	2 406 152	2 818 298	2 932 484	3 738 206	4 053 961	4 046 234	3 699 213	3 807 064	3 523 100	4 224 698	5 145 353
US	4 556 214	4 829 085	4 866 330	5 670 374	5 928 449	5 656 703	6 151 619	7 333 083	7 838 788	8 723 218	10 804 391

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Tables 36 and 37
Reference data
At the national level

Table 36 — Labour force
Table 37 — General government expenditure

Table 36 — Labour force in thousands

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**156 504**	**157 398**	**156 818**	**165 132**	**165 956**	**166 173**	**167 397**	**168 211**	**169 752**	**171 686**	**172 814**
EUR-12	120 268	121 311	120 906	129 459	130 445	130 475	131 658	132 370	133 937	135 314	136 262
B	3 908	3 998	4 041	4 073	4 148	4 183	4 188	4 215	4 253	4 365	4 411
DK	2 898	2 899	2 898	2 875	2 759	2 796	2 815	2 828	2 821	2 855	2 843
D	30 492	30 488	31 001	39 113	39 267	38 961	39 083	39 162	39 393	39 595	39 448
EL	3 994	3 929	3 993	4 066	4 154	4 201	4 282	4 261	4 445	4 463	4 437
E	14 990	15 014	15 141	15 263	15 488	15 561	15 872	16 066	16 226	16 339	16 803
F	24 131	24 347	24 536	24 718	24 869	25 033	25 342	25 360	25 569	25 882	26 057
IRL	1 320	1 346	1 352	1 368	1 413	1 434	1 481	1 529	1 621	1 689	1 743
I	23 507	23 923	22 770	22 652	22 584	22 607	22 788	22 859	23 165	23 347	23 475
L	160	165	168	169	170	167	171	173	175	180	185
NL	6 786	6 911	7 003	7 085	7 224	7 304	7 407	7 605	7 742	7 890	8 080
A	3 526 i	3 607 i	3 679 i	3 734 i	3 880 i	3 842	3 819	3 805	3 838	3 859	3 864
P	4 848	5 012	4 696	4 714	4 759	4 753	4 780	4 842	4 999	5 063	5 095
FIN	2 606 i	2 571 i	2 526 i	2 504 i	2 489	2 429	2 445	2 493	2 511	2 642	2 664
S	4 548 i	4 530 i	4 456 i	4 379 i	4 354 i	4 498	4 409	4 369	4 333	4 388	4 364
UK	28 790	28 658	28 558	28 419	28 398	28 404	28 515	28 644	28 661	29 129	29 345
EEA	**158 774**	**159 665**	**159 091**	**167 407**	**168 252**	**168 502**	**169 767**	**170 634**	**172 224**	**174 168**	**175 327**
IS	128 i	141 i	143 i	144 i	145 i	149 i	146	145	149	154	160
LI	:	:	:	:	:	:	:	:	:	:	:
NO	2 142 i	2 126 i	2 130 i	2 131 i	2 151 i	2 180	2 224	2 278	2 323	2 328	2 353
CA	14 320 i	14 408 i	14 438 i	14 580 i	14 700 i	14 820 i	14 964 i	15 214 i	15 478 i	15 781 i	:
JP	63 840 i	65 050 i	65 780 i	66 150 i	66 450 i	66 660 i	67 110 i	67 870 i	67 930 i	67 790 i	
US	128 007 i	128 464 i	130 071 i	139 960 i	132 773 i	133 924 i	135 503 i	137 810 i	139 163 i	140 825 i	:

Table 37 — Total general government expenditure in millions of ECU/EUR

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
EU-15	**:**	**:**	**:**	**:**	**:**	**:**	**3 488 108**	**3 601 874**	**3 695 583**	**3 827 021**	**:**
EUR-12	:	:	:	:	:	:	2 855 997	2 892 519	2 963 142	3 055 385	:
B	:	:	:	:	:	:	109 442	111 699	114 593	118 439	:
DK	:	:	:	:	:	:	86 187	86 504	88 714	91 610	94 230
D	:	:	:	:	:	:	921 599	923 189	940 593	963 790	:
EL	:	:	:	:	:	:	48 195	50 737	51 366	56 546	:
E	:	:	:	:	:	:	203 102	208 331	219 704	229 535	:
F	:	:	:	:	:	:	672 517	687 719	703 069	724 465	:
IRL	:	:	:	:	:	:	22 993	25 322	27 386	31 376	:
I	:	:	:	:	:	:	522 573	524 244	530 591	540 692	:
L	:	:	:	:	:	:	6 503	6 679	7 093	7 761	8 223
NL	:	:	:	:	:	:	156 372	160 956	166 892	173 914	:
A	:	:	:	:	:	:	100 774	98 361	103 012	105 739	:
P	:	:	:	:	:	:	39 374	41 202	44 033	48 046	:
FIN	:	:	:	:	:	:	59 056	60 759	61 903	62 843	64 147
S	:	:	:	:	:	:	135 382	133 786	130 762	137 759	:
UK	:	:	:	:	:	:	410 542	489 065	512 965	542 267	616 109
EEA	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**
IS	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:
JP	:	:	:	:	:	:	:	:	:	:	:
US	:	:	:	:	:	:	:	:	:	:	:

Methodological notes

i: MSTI data. See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 38
Reference data
At the regional level

Table 38-1 — GDP in millions of ECU/EUR at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**5 383 947**	**5 768 219**	**6 012 000**	**6 027 275**	**6 319 429**	**6 567 463**	**6 897 159**	**7 265 002**	**7 604 818**	**7 985 671**
EUR-12	4 312 468	4 625 533	4 875 648	4 924 846	5 143 891	5 384 599	5 617 682	5 741 653	5 976 200	6 241 219
Belgique-België	155 448	163 627	174 877	183 598	196 508	210 982	211 910	215 305	223 569	233 597
Région Bruxelles-capitale	23 499	24 332	25 764	26 904	28 351	29 942	30 559	30 554	31 727	:
Vlaams Gewest	92 900	96 834	102 886	108 216	117 261	126 212	126 455	129 231	134 191	:
Région Wallonne	40 546	43 306	46 067	48 151	51 124	54 828	54 896	55 520	57 652	:
Danmark	105 048	108 446	113 694	118 541	128 024	137 793	144 155	149 169	155 881	165 366
Deutschland	1 302 151 s	1 432 638	1 561 740	1 670 845	1 763 760	1 880 187	1 878 200	1 866 496	1 921 866	1 982 381
Baden-Württemberg	204 042	216 493	230 993	238 412	250 300	264 890	266 262	265 311	277 302	:
Stuttgart	83 325	88 052	93 610	95 762	99 667	105 476	105 649	105 272	110 030	:
Karlsruhe	55 489	59 169	63 409	65 812	69 467	73 516	74 309	74 043	77 390	:
Freiburg	35 197	37 225	39 605	41 236	43 658	46 202	46 481	46 315	48 409	:
Tübingen	29 932	31 968	34 307	35 571	37 510	39 696	39 823	39 681	41 475	:
Bayern	222 928	241 869	263 888	278 961	292 906	310 711	312 364	311 305	322 684	:
Oberbayern	95 007	103 739	113 794	120 104	125 919	133 573	135 533	135 073	140 011	:
Niederbayern	16 832	18 254	19 909	21 267	22 550	23 921	24 021	23 939	24 814	:
Oberpfalz	14 949	16 293	17 845	18 908	19 897	21 107	21 128	21 056	21 826	:
Oberfranken	17 801	19 236	20 916	22 150	23 296	24 712	24 437	24 354	25 245	:
Mittelfranken	31 058	33 423	36 213	37 902	39 418	41 814	41 856	41 714	43 239	:
Unterfranken	19 993	21 485	23 249	24 737	26 133	27 721	27 828	27 734	28 747	:
Schwaben	27 226	29 408	31 963	33 895	35 694	37 864	37 561	37 434	38 802	:
Berlin	44 585	58 620	64 870	73 777	77 822	81 184	78 374	75 153	75 860	:
Brandenburg	:	19 681	25 301	31 588	36 091	38 516	39 338	38 948	39 655	:
Bremen	15 893	17 031	17 962	18 636	19 348	20 445	20 180	20 447	21 054	:
Hamburg	48 060	51 845	55 380	58 914	62 030	66 054	66 389	66 641	68 656	:
Hessen	118 809	130 112	142 441	151 400	157 171	167 566	168 778	168 046	172 473	:
Darmstadt	86 363	93 487	101 344	108 061	112 519	119 962	121 408	120 882	124 066	:
Gießen	14 145	15 855	17 691	18 687	19 284	20 559	20 477	20 388	20 926	:
Kassel	18 337	20 780	23 388	24 642	25 368	27 045	26 893	26 776	27 482	:
Mecklenburg-Vorpommern	:	14 433	18 502	22 167	25 513	27 393	27 794	27 332	27 718	:
Niedersachsen	118 752	129 300	139 176	148 516	155 440	165 456	164 764	163 532	169 951	:
Braunschweig	26 201	28 946	31 542	32 899	33 683	35 853	34 835	34 574	35 932	:
Hannover	37 090	40 033	42 767	45 850	48 197	51 302	50 755	50 376	52 353	:
Lüneburg	19 594	21 275	22 845	24 548	25 860	27 527	27 756	27 549	28 630	:
Weser-Ems	35 819	38 981	41 941	45 178	47 700	50 774	51 418	51 034	53 037	:
Nordrhein-Westfalen	320 435	340 387	362 871	380 693	399 151	425 012	420 291	418 750	429 374	:
Düsseldorf	104 040	110 128	117 034	121 649	126 411	134 601	132 850	132 363	135 722	:
Köln	78 331	83 201	88 689	93 929	99 369	105 808	105 410	105 023	107 688	:
Münster	40 483	43 120	46 079	48 682	51 384	54 713	54 149	53 950	55 319	:
Detmold	33 195	35 405	37 879	40 192	42 595	45 355	44 840	44 676	45 809	:
Arnsberg	64 285	68 431	73 087	76 187	79 391	84 535	83 042	82 737	84 836	:
Rheinland-Pfalz	64 932	68 652	73 025	76 002	79 380	84 047	83 185	83 029	85 296	:
Koblenz	22 290	23 566	25 067	26 280	27 640	29 265	29 216	29 161	29 957	:
Trier	7 631	8 232	8 913	9 206	9 544	10 105	10 280	10 261	10 541	:
Rheinhessen-Pfalz	35 007	36 857	39 057	40 523	42 196	44 676	43 689	43 607	44 798	:
Saarland	18 048	19 226	20 293	20 878	22 152	23 583	22 671	22 620	23 277	:
Sachsen	:	34 938	44 702	56 145	64 609	70 485	71 315	69 474	69 958	:
Chemnitz	:	:	:	:	21 247	23 179	23 310	22 708	22 866	:
Dresden	:	:	:	:	25 786	28 131	28 611	27 872	28 067	:
Leipzig	:	:	:	:	17 576	19 174	19 395	18 894	19 026	:
Sachsen-Anhalt	:	20 240	26 418	33 114	36 862	39 126	39 848	39 542	39 929	:
Dessau	:	3 914	5 109	6 399	7 119	7 557	7 837	7 777	7 853	:
Halle	:	7 567	9 876	12 264	13 553	14 385	14 424	14 313	14 453	:
Magdeburg	:	8 757	11 430	14 450	16 190	17 184	17 587	17 452	17 623	:
Schleswig-Holstein	43 418	46 488	49 915	53 909	56 339	60 043	60 155	59 681	61 115	:
Thüringen	:	16 662	23 127	29 131	33 364	35 679	36 494	36 688	37 563	:
Ellada	66 168	73 081	77 024	79 771	84 353	89 888	97 972	107 010	108 466	117 101
Voreia Ellada	19 827	22 109	23 078	23 649	25 141	26 789	30 096	32 872	33 319	:
Anatoliki Makedonia, Thraki	3 072	3 405	3 548	3 599	3 821	4 072	4 393	4 798	4 864	:
Kentriki Makedonia	10 608	11 824	12 639	13 098	13 931	14 844	17 119	18 697	18 952	:
Dytiki Makedonia	1 999	2 157	2 143	2 120	2 206	2 350	2 565	2 802	2 840	:
Thessalia	4 148	4 717	4 748	4 835	5 184	5 524	6 019	6 575	6 664	:
Kentriki Ellada	15 064	16 823	17 382	17 845	18 930	20 171	22 126	24 167	24 496	:
Ipeiros	1 479	1 654	1 781	1 833	1 920	2 046	2 199	2 402	2 435	:
Ionia Nisia	1 033	1 148	1 224	1 279	1 362	1 451	1 595	1 742	1 766	:
Dytiki Ellada	3 570	4 042	4 256	4 398	4 707	5 016	5 477	5 983	6 064	:
Sterea Ellada	5 611	6 222	6 133	6 272	6 613	7 047	7 874	8 600	8 717	:
Peloponnisos	3 462	3 848	4 005	4 075	4 328	4 612	4 980	5 440	5 514	:
Attiki	24 912	27 114	29 155	30 620	32 115	34 221	35 933	39 247	39 781	:
Nisia Aigaiou, Kriti	6 306	6 956	7 345	7 622	8 172	8 707	9 817	10 723	10 869	:
Voreio Aigaio	1 055	1 175	1 233	1 265	1 340	1 427	1 575	1 721	1 744	:
Notio Aigaio	1 863	2 044	2 152	2 264	2 402	2 559	2 938	3 209	3 252	:
Kriti	3 394	3 745	3 967	4 099	4 430	4 721	5 305	5 794	5 873	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 38
Reference data
At the regional level

GDP by region

Table 38-2 — GDP in millions of ECU/EUR at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
España	402 618	444 901	464 098	426 007	425 439	446 882	480 536	494 672	523 646	563 109
Noroeste	38 088	41 702	43 556	39 931	39 508	41 740	44 462	45 643	47 800	:
Galicia	22 525	24 778	25 873	23 827	23 598	25 063	26 813	27 401	28 621	:
Principado de Asturias	10 385	11 314	11 756	10 778	10 571	11 097	11 657	12 104	12 592	:
Cantabria	5 159	5 596	5 913	5 318	5 332	5 580	5 992	6 138	6 587	:
Noreste	50 088	55 141	56 846	51 809	51 619	53 978	57 881	59 801	63 521	:
Pais Vasco	26 430	28 949	29 736	27 121	26 938	28 156	29 875	30 902	33 362	:
Comunidad Foral de Navarra	7 146	7 905	8 209	7 388	7 404	7 834	8 475	8 739	9 215	:
La Rioja	2 995	3 327	3 482	3 173	3 190	3 310	3 601	3 753	3 966	:
Aragón	13 515	14 958	15 418	14 118	14 080	14 679	15 930	16 409	16 977	:
Comunidad de Madrid	66 309	73 556	77 241	71 237	71 124	75 261	81 236	84 637	90 829	:
Centro (E)	46 039	50 741	52 834	49 200	48 707	51 145	54 820	55 255	58 014	:
Castilla y León	24 049	26 451	27 433	26 008	25 573	27 340	28 983	29 111	30 360	:
Castilla-la Mancha	14 870	16 302	16 986	15 464	15 365	15 998	17 392	17 672	18 752	:
Extremadura	7 110	7 968	8 386	7 712	7 744	7 807	8 446	8 473	8 902	:
Este	123 527	136 665	142 969	130 276	130 810	137 515	148 394	152 936	161 575	:
Cataluña	75 497	83 471	87 486	79 706	80 356	85 161	92 172	94 861	99 774	:
Comunidad Valenciana	39 491	43 612	45 360	41 188	40 952	42 417	45 459	46 783	49 773	:
Baleares	8 570	9 609	10 144	9 392	9 505	9 937	10 763	11 292	12 028	:
Sur	65 918	72 896	75 082	68 300	68 285	70 856	75 915	77 801	81 802	:
Andalucia	55 173	61 146	62 914	57 272	57 228	59 360	63 536	64 915	68 213	:
Murcia	9 740	10 619	11 000	9 921	9 963	10 253	11 036	11 496	12 094	:
Ceuta y Melilla	1 010	1 141	1 175	1 113	1 100	1 243	1 342	1 390	1 495	:
Canarias	14 217	15 577	16 694	15 615	15 720	16 388	17 828	18 600	20 106	:
France	957 587	987 210	1 040 541	1 089 370	1 139 320	1 188 101	1 224 606	1 241 129	1 297 574	1 350 159
Île de France	267 052	277 676	292 754	310 605	326 105	336 064	348 167	350 367	362 117	:
Bassin Parisien	154 173	157 965	165 071	169 975	179 097	187 476	191 856	194 320	202 524	:
Champagne-Ardenne	22 109	21 753	22 395	22 289	23 473	24 749	25 474	25 587	27 121	:
Picardie	25 582	26 295	27 542	28 331	29 840	31 352	32 072	32 491	33 940	:
Haute-Normandie	26 006	26 991	28 004	29 806	31 810	33 103	33 690	34 097	35 245	:
Centre	37 314	38 446	40 430	40 898	42 804	44 861	45 738	46 391	48 243	:
Basse-Normandie	18 938	19 742	21 222	22 110	23 444	24 222	24 908	25 260	26 242	:
Bourgogne	24 386	24 866	25 627	26 568	27 695	29 189	29 975	30 494	31 732	:
Nord - Pas-de-Calais	50 781	52 785	54 781	56 559	59 938	63 158	65 237	66 192	69 353	:
Est	76 179	77 888	82 212	85 357	90 819	95 139	97 102	98 421	102 371	:
Lorraine	32 481	33 262	34 668	35 861	37 853	39 788	40 227	40 565	42 051	:
Alsace	27 757	28 620	30 730	32 255	34 404	35 703	36 914	37 463	39 037	:
Franche-Comté	15 916	15 992	16 813	17 254	18 574	19 648	19 962	20 393	21 283	:
Ouest	102 724	105 794	112 978	116 959	123 426	128 876	133 158	135 887	141 788	:
Pays de la Loire	43 999	44 542	47 940	49 783	52 956	54 883	56 816	58 178	60 850	:
Bretagne	37 420	39 391	41 573	43 130	45 051	47 469	49 293	50 214	52 312	:
Poitou-Charentes	21 305	21 865	23 469	24 046	25 416	26 524	27 050	27 495	28 626	:
Sud-Ouest	86 492	88 100	92 793	95 926	100 499	106 509	109 435	112 208	117 853	:
Aquitaine	41 285	41 880	44 169	45 407	47 681	50 847	52 406	53 850	56 560	:
Midi-Pyrénées	35 766	36 569	38 299	39 771	41 582	43 978	45 084	46 286	48 774	:
Limousin	9 441	9 661	10 331	10 768	11 250	11 684	11 945	12 073	12 519	:
Centre-Est	107 946	111 776	116 232	120 941	126 446	133 466	138 520	140 835	147 306	:
Rhône-Alpes	90 280	93 618	97 290	101 070	105 662	111 852	116 375	118 285	123 884	:
Auvergne	17 667	18 158	18 942	19 871	20 784	21 613	22 145	22 549	23 423	:
Méditerranée	97 027	100 259	104 538	107 990	113 584	119 792	123 010	124 595	130 655	:
Languedoc-Roussillon	27 146	28 311	29 443	30 780	32 699	34 314	35 505	35 954	37 768	:
Provence-Alpes-Côte d'Azur	66 862	68 842	71 825	73 789	77 238	81 571	83 533	84 600	88 517	:
Corse	3 044	3 127	3 291	3 432	3 648	3 907	3 972	4 042	4 370	:
Départements d'Outre-Mer	:	:	:	:	:	17 623	18 120	18 306	19 137	:
Ireland	37 248	38 648	41 447	42 570	46 148	50 776	57 514	70 581	77 052	87 677

Source: Eurostat

Table 38-3 — GDP in millions of ECU/EUR at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Italia	867 836	939 613	951 165	849 037	863 369	839 041	971 065	1 029 991	1 068 802	1 107 779
Nord Ovest	106 877	113 838	114 135	100 373	103 355	101 413	116 604	122 939	126 506	:
Piemonte	78 090	82 280	82 568	72 327	74 893	73 938	84 722	89 572	91 906	:
Valle d'Aosta	2 376	2 572	2 671	2 388	2 445	2 347	2 699	2 768	2 842	:
Liguria	26 417	28 880	28 815	25 556	25 965	25 129	29 183	30 599	31 759	:
Lombardia	182 166	194 269	194 082	173 071	177 238	173 809	201 663	213 572	221 868	:
Nord Est	111 521	120 556	123 414	112 035	115 396	114 165	132 674	140 399	144 952	:
Trentino-Alto Adige	17 168	18 850	19 358	17 578	18 322	17 708	20 973	21 916	23 065	:
Veneto	74 433	80 344	82 483	75 158	77 048	76 416	88 745	94 394	97 319	:
Friuli-Venezia Giulia	19 892	21 365	21 596	19 334	20 074	20 041	22 957	24 090	24 568	:
Emilia-Romagna	74 208	79 686	81 684	73 425	74 871	73 652	85 708	89 876	93 560	:
Centro (I)	92 263	99 717	101 188	90 401	91 510	89 134	103 193	109 163	112 731	:
Toscana	58 358	63 190	63 745	57 134	57 697	56 216	65 019	68 486	71 196	:
Umbria	12 162	13 263	13 561	12 015	12 207	11 859	13 548	14 444	14 837	:
Marche	21 744	23 275	23 883	21 255	21 607	21 059	24 626	26 233	26 699	:
Lazio	90 287	98 815	101 083	90 230	89 855	86 176	99 164	104 725	108 736	:
Abruzzo-Molise	20 185	22 059	22 507	19 703	20 084	19 501	22 523	23 811	24 220	:
Abruzzo	16 368	17 902	18 306	16 035	16 304	15 864	18 254	19 102	19 487	:
Molise	3 819	4 159	4 201	3 667	3 780	3 638	4 269	4 709	4 733	:
Campania	58 354	62 277	62 164	55 293	56 006	53 243	61 013	65 868	67 769	:
Sud	64 707	71 844	71 709	63 852	65 287	62 623	72 758	77 000	79 578	:
Puglia	40 478	44 715	44 748	39 179	40 697	38 538	44 870	47 043	48 625	:
Basilicata	6 016	6 499	6 632	6 041	6 205	6 085	7 214	7 720	8 019	:
Calabria	18 155	20 583	20 273	18 641	18 339	18 001	20 674	22 238	22 934	:
Sicilia	50 406	55 858	56 006	50 174	49 784	47 467	55 158	58 775	60 792	:
Sardegna	18 586	21 072	21 537	19 186	19 091	17 858	20 608	22 145	23 116	:
Luxembourg	8 783	9 585	10 426	11 715	13 049	13 967	14 339	15 409	16 389	:
Nederland	232 629	244 462	259 112	278 334	296 347	317 324	324 479	332 654	351 621	373 907
Noord-Nederland	24 505	26 686	27 433	29 208	29 911	31 924	33 458	33 536	34 144	:
Groningen	10 372	11 897	11 978	12 670	12 686	13 609	14 894	14 656	14 469	:
Friesland	7 926	8 331	8 764	9 459	9 774	10 462	10 626	10 825	11 432	:
Drenthe	6 210	6 445	6 683	7 073	7 453	7 853	7 937	8 055	8 244	:
Oost-Nederland	40 769	42 804	45 811	49 680	52 752	56 442	57 496	59 114	62 336	:
Overijssel	13 745	14 278	15 374	16 573	17 405	18 559	18 976	19 415	20 463	:
Gelderland	24 286	25 580	27 295	29 643	31 437	33 698	34 310	35 251	37 083	:
Flevoland	2 717	2 930	3 124	3 450	3 912	4 188	4 210	4 447	4 791	:
West-Nederland	119 877	125 607	132 674	142 534	151 380	162 438	165 595	170 876	181 713	:
Utrecht	18 148	19 066	20 736	22 618	24 247	26 151	27 175	28 550	30 809	:
Noord-Holland	42 996	45 282	47 929	51 484	54 165	58 308	59 369	61 341	65 081	:
Zuid-Holland	52 941	55 323	58 163	62 393	66 112	70 684	72 012	73 940	78 452	:
Zeeland	5 712	5 863	5 815	6 030	6 842	7 294	7 039	7 044	7 370	:
Zuid-Nederland	47 793	50 257	53 390	57 132	61 018	66 520	67 930	69 129	73 428	:
Noord-Brabant	33 025	35 010	37 333	40 014	42 367	46 176	47 529	48 297	51 545	:
Limburg (NL)	14 761	15 252	16 069	17 133	18 650	20 344	20 402	20 833	21 884	:
Österreich	127 315	136 573	146 955	158 511	168 108	179 840	182 364	181 819	188 723	197 091
Ostösterreich	59 125	63 635	68 263	74 288	78 334	84 089	85 428	85 112	87 794	:
Burgenland	2 602	2 821	3 026	3 340	3 612	3 774	3 907	3 879	3 995	:
Niederösterreich	18 513	19 757	21 122	22 856	24 736	26 323	27 277	27 650	29 349	:
Wien	38 013	41 076	44 143	48 135	49 959	53 992	54 244	53 583	54 451	:
Südösterreich	22 675	24 157	25 793	27 627	29 592	31 828	32 353	32 355	33 509	:
Kärnten	7 362	7 933	8 415	9 028	9 594	10 232	10 377	10 373	10 804	:
Steiermark	15 313	16 225	17 379	18 600	19 999	21 596	21 976	21 981	22 705	:
Westösterreich	46 043	49 449	53 254	56 891	60 284	63 923	64 583	64 353	67 420	:
Oberösterreich	21 141	22 653	23 948	25 329	26 953	28 699	29 030	28 831	30 176	:
Salzburg	8 866	9 558	10 508	11 400	12 034	12 731	12 871	12 919	13 420	:
Tirol	10 586	11 440	12 508	13 480	14 166	14 767	14 870	14 721	15 734	:
Vorarlberg	5 452	5 802	6 297	6 694	7 140	7 726	7 813	7 881	8 091	:
Portugal	55 736 s	64 951 s	74 838 s	73 238 s	76 170 s	82 680	88 513	93 924	99 625	106 993
Continente	53 907	62 776	72 267	70 718	73 559	79 795	85 524	90 121	95 473	:
Norte	16 925	19 770	23 392	22 896	24 050	26 101	27 888	29 380	31 125	:
Centro (P)	7 822	8 921	10 682	10 394	11 129	12 270	13 196	13 856	14 679	:
Lisboa e Vale do Tejo	24 331	28 748	32 152	31 579	32 429	34 909	37 271	39 316	41 651	:
Alentejo	2 813	2 967	3 220	3 195	3 298	3 641	4 053	4 268	4 521	:
Algarve	2 016	2 370	2 822	2 654	2 653	2 874	3 117	3 301	3 497	:
Açores	976	1 126	1 318	1 290	1 328	1 415	1 528	1 584	1 679	:
Madeira	994	1 213	1 441	1 414	1 474	1 677	1 777	1 862	1 973	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 38
Reference data
At the regional level

GDP by region

Table 38-4 — GDP in millions of ECU/EUR at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Suomi-Finland	107 732	99 829	83 851	73 565	84 369	98 898	100 523	108 072	115 256	121 425
Manner-Suomi	108 455	100 227	83 835	73 567	84 309	98 447	99 969	107 499	114 570	:
Itä-Suomi	12 427	11 443	9 487	8 042	9 315	10 654	10 294	10 946	11 485	:
Väli-Suomi	13 540	12 296	10 236	9 018	10 148	11 897	11 729	12 334	12 964	:
Pohjois-Suomi	10 660	9 814	8 332	7 369	8 433	10 003	9 598	10 254	10 732	:
Uusimaa	:	:	:	:	28 472	32 994	35 225	38 127	42 166	:
Etelä-Suomi	:	:	:	:	27 942	32 899	33 123	35 838	37 224	:
Åland	537	512	444	384	426	451	555	573	686	:
Sverige	187 253 s	200 394 s	198 195 s	164 188	174 216	183 597	206 273	210 815	213 702	226 494
Stockholm	44 546	48 726	47 944	41 188	42 328	44 646	51 645	54 646	56 886	:
Östra Mellansverige	29 137	30 945	30 754	25 112	26 825	28 400	32 181	33 217	32 694	:
Sydsverige	23 754	25 495	25 537	20 705	21 898	22 809	25 577	26 251	27 468	:
Norra Mellansverige	17 017	17 935	17 663	14 635	15 766	16 891	18 569	19 100	19 106	:
Mellersta Norrland	8 523	8 883	8 826	7 128	7 531	8 210	8 821	8 824	8 999	:
Övre Norrland	11 160	11 781	11 793	9 558	10 132	10 819	11 669	12 153	12 030	:
Småland med Öarna	:	:	:	:	16 084	16 982	18 511	19 539	19 027	:
Västsverige	:	:	:	:	32 900	34 840	39 300	37 086	37 493	:
United Kingdom	779 178	833 846	824 463	819 700	873 298	861 474	929 049	1 163 365	1 259 035	1 352 592
North East	:	:	:	30 006	31 554	31 002	32 904	39 815	42 805	:
North West	:	:	:	87 058	92 849	90 693	96 683	119 745	128 511	:
Yorkshire and The Humber	:	:	:	61 015	64 681	64 798	70 196	87 997	94 069	:
East Midlands	:	:	:	53 215	56 699	55 676	61 255	77 395	82 690	:
West Midlands	:	:	:	68 635	73 270	72 634	77 459	95 829	103 145	:
Eastern	:	:	:	72 348	77 901	76 906	83 945	107 077	116 044	:
London	:	:	:	149 372	156 802	153 413	164 427	208 910	228 677	:
South East	:	:	:	113 554	122 415	119 742	133 007	169 169	187 638	:
South West	:	:	:	61 955	65 870	66 020	71 252	89 000	95 748	:
Wales	:	:	:	33 049	35 492	35 304	37 496	45 810	48 867	:
Scotland	:	:	:	71 600	76 594	76 356	80 285	97 219	103 944	:
Northern Ireland	:	:	:	17 840	18 931	18 931	20 140	25 400	26 898	:

EEA	**5 479 829**	**5 868 919**	**6 114 970**	**6 131 602**	**6 428 309**	**6 684 882**	**7 026 902**	**7 408 228**	**7 743 748**	**8 137 855**
Iceland	4 959 s	5 476 s	5 363	5 199	5 280	5 330	5 717	6 523	7 245	8 093
Norge	90 923	95 224	97 607	99 128	103 600	112 089	124 026	136 703	131 685	144 091
Oslo og Akershus	:	:	:	:	:	:	:	:	:	:
Hedmark og Oppland	:	:	:	:	:	:	:	:	:	:
Sør-Østlandet	:	:	:	:	:	:	:	:	:	:
Agder og Rogaland	:	:	:	:	:	:	:	:	:	:
Vestlandet	:	:	:	:	:	:	:	:	:	:
Trøndelag	:	:	:	:	:	:	:	:	:	:
Nord-Norge	:	:	:	:	:	:	:	:	:	:

See abbreviations and other methodological notes starting on page 172.

Source: Eurostat.

Table 39
Reference data
At the regional level

Labour force by region

Table 39-1 — Labour force in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**156 343 s**	**165 904 s**	**164 643 s**	**164 983 s**	**165 786 s**	**166 006 s**	**167 227 s**	**168 039 s**	**169 576 s**	**171 266 s**
EUR-12	120 107 s	129 817 s	128 732 s	129 290 s	130 276 s	130 307 s	131 486 s	132 198 s	133 761 s	135 135 s
Belgique-België	3 908	3 998	4 041	4 073	4 148	4 183	4 188	4 215	4 253	4 365
Région Bruxelles-capitale	364	374	371	390	387	384	383	390	399	402
Vlaams Gewest	2 305	2 361	2 403	2 414	2 456	2 487	2 488	2 497	2 515	2 595
Antwerpen	612	629	652	656	667	672	666	669	668	696
Limburg (B)	294	308	305	300	306	314	320	325	325	338
Oost-Vlaanderen	542	558	569	574	578	588	588	585	588	610
Vlaams Brabant	:	:	:	424	437	436	440	446	451	461
West-Vlaanderen	449	445	455	461	469	478	475	472	484	491
Région Wallonne	1 239	1 263	1 267	1 269	1 306	1 312	1 316	1 328	1 340	1 368
Brabant Wallon	:	:	:	137	135	141	143	144	147	150
Hainaut	470	473	470	466	494	489	498	499	501	505
Liège	391	406	402	401	408	414	402	409	414	428
Luxembourg (B)	90	91	92	96	96	97	95	98	99	102
Namur	161	163	168	169	173	171	178	179	178	183
Danmark	2 898	2 899	2 898	2 875	2 759	2 796	2 815	2 828	2 821	2 855
Deutschland	30 492	39 086	38 994	39 113	39 267	38 961	39 083	39 162	39 393	39 595
Baden-Württemberg	4 901	4 881	4 974	5 005	4 998	5 026	5 041	5 059	5 064	5 082
Stuttgart	1 887	1 849	1 901	1 893	1 896	1 919	1 915	1 923	1 934	1 950
Karlsruhe	1 256	1 248	1 262	1 278	1 266	1 265	1 277	1 272	1 278	1 264
Freiburg	974	978	987	990	1 006	1 015	1 015	1 024	1 013	1 014
Tübingen	785	807	824	844	830	827	835	839	838	854
Bayern	5 834	5 873	5 973	6 054	6 066	6 018	6 016	6 011	6 046	6 094
Oberbayern	1 987	2 015	2 024	2 075	2 086	2 070	2 064	2 057	2 066	2 097
Niederbayern	563	567	568	561	551	563	572	578	588	590
Oberpfalz	497	484	514	519	521	525	525	520	520	527
Oberfranken	559	555	574	568	568	546	538	543	545	546
Mittelfranken	803	829	823	822	832	821	837	834	827	823
Unterfranken	613	605	630	630	637	632	636	633	639	643
Schwaben	812	818	841	880	872	861	844	846	862	868
Berlin	1 123	1 833	1 818	1 811	1 833	1 830	1 800	1 775	1 739	1 721
Brandenburg	:	1 417	1 324	1 298	1 302	1 276	1 291	1 322	1 344	1 359
Bremen	319	306	320	320	317	313	311	308	309	310
Hamburg	820	822	817	845	852	857	839	847	860	862
Hessen	2 786	2 785	2 795	2 829	2 865	2 855	2 871	2 861	2 869	2 896
Darmstadt	1 761	1 762	1 792	1 795	1 811	1 783	1 799	1 796	1 803	1 826
Gießen	468	462	456	471	480	483	490	480	483	484
Kassel	558	561	548	563	574	589	581	584	583	586
Mecklenburg-Vorpommern	:	1 034	969	948	945	933	933	939	941	925
Niedersachsen	3 408	3 431	3 548	3 555	3 614	3 550	3 594	3 518	3 621	3 638
Braunschweig	744	758	781	777	782	764	764	754	773	771
Hannover	984	989	1 044	1 045	1 046	1 015	1 006	1 001	1 001	998
Lüneburg	696	694	707	718	737	740	752	717	773	772
Weser-Ems	985	990	1 015	1 015	1 049	1 032	1 072	1 045	1 074	1 098
Nordrhein-Westfalen	7 809	7 748	7 895	8 030	7 948	7 801	7 838	7 959	7 999	8 115
Düsseldorf	2 354	2 297	2 334	2 388	2 389	2 301	2 325	2 357	2 354	2 371
Köln	1 862	1 846	1 879	1 895	1 864	1 833	1 860	1 896	1 914	1 958
Münster	1 090	1 082	1 130	1 157	1 141	1 115	1 112	1 119	1 150	1 153
Detmold	856	867	886	914	898	905	898	901	920	945
Arnsberg	1 647	1 656	1 666	1 677	1 657	1 646	1 644	1 687	1 661	1 688
Rheinland-Pfalz	1 745	1 786	1 802	1 810	1 821	1 807	1 831	1 827	1 860	1 873
Koblenz	653	674	674	657	663	659	676	673	685	692
Trier	213	221	225	225	222	220	230	228	233	229
Rheinhessen-Pfalz	879	892	904	928	936	928	926	926	942	952
Saarland	466	467	466	463	457	444	443	452	462	470
Sachsen	:	2 509	2 312	2 220	2 255	2 261	2 281	2 280	2 287	2 295
Chemnitz	:	:	:	:	:	:	:	:	:	:
Dresden	:	:	:	:	:	:	:	:	:	:
Leipzig	:	:	:	:	:	:	:	:	:	:
Sachsen-Anhalt	:	1 530	1 409	1 364	1 397	1 402	1 382	1 379	1 381	1 355
Dessau	:	316	288	278	285	289	289	293	295	285
Halle	:	542	502	487	465	471	468	458	455	441
Magdeburg	:	672	620	599	647	642	625	629	632	629
Schleswig-Holstein	1 282	1 274	1 296	1 293	1 303	1 317	1 332	1 332	1 331	1 324
Thüringen	:	1 390	1 276	1 269	1 296	1 272	1 280	1 293	1 281	1 276
Ellada	4 001	3 935	3 993	4 066	4 154	4 201	4 282	4 261	4 445	4 463
Voreia Ellada	1 304	1 287	1 303	1 328	1 359	1 397	1 423	1 432	1 410	1 413
Anatoliki Makedonia, Thraki	248	245	251	258	251	255	265	251	242	245
Kentriki Makedonia	666	667	684	687	713	747	746	765	738	768
Dytiki Makedonia	112	106	103	116	118	117	122	120	112	106
Thessalia	278	270	265	267	276	278	290	296	318	295
Kentriki Ellada	913	832	835	838	863	849	873	849	898	881
Ipeiros	125	107	107	107	112	113	110	109	117	119
Ionia Nisia	84	77	80	77	79	80	82	80	79	82
Dytiki Ellada	283	238	237	240	252	239	250	253	267	253
Sterea Ellada	197	187	185	187	184	183	188	183	209	203
Peloponnisos	225	223	225	227	237	234	244	224	227	224
Attiki	1 429	1 460	1 496	1 517	1 548	1 574	1 590	1 591	1 701	1 745
Nisia Aigaiou, Kriti	354	356	360	383	384	381	396	389	436	423
Voreio Aigaio	66	67	67	57	56	57	64	59	67	62
Notio Aigaio	85	86	93	105	106	104	102	102	107	113
Kriti	204	202	201	222	223	220	230	229	263	249

See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 39
Reference data
At the regional level

Labour force by region

Table 39-2 — Labour force in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
España	14 990	15 014	15 141	15 263	15 488	15 561	15 872	16 066	16 226	16 339
Noroeste	1 800	1 760	1 774	1 765	1 743	1 702	1 717	1 706	1 705	1 704
Galicia	1 166	1 150	1 160	1 152	1 143	1 110	1 121	1 112	1 108	1 116
Principado de Asturias	432	415	421	412	399	392	396	393	387	388
Cantabria	202	195	193	201	200	200	200	201	210	200
Noreste	1 610	1 622	1 637	1 625	1 658	1 655	1 652	1 695	1 703	1 701
Pais Vasco	856	862	873	866	881	876	862	883	889	894
Comunidad Foral de Navarra	201	206	205	199	204	208	211	223	226	224
La Rioja	97	100	100	100	100	102	103	103	100	102
Aragón	456	453	459	459	474	469	477	486	488	482
Comunidad de Madrid	1 858	1 854	1 896	1 925	1 955	2 019	2 154	2 134	2 181	2 222
Centro (E)	1 993	1 982	2 007	2 010	1 977	1 908	1 980	1 991	2 039	2 069
Castilla y León	998	988	999	983	975	941	971	966	977	990
Castilla-la Mancha	598	597	613	615	603	583	612	626	654	666
Extremadura	397	396	394	413	400	385	398	399	408	413
Este	4 284	4 323	4 294	4 375	4 495	4 566	4 588	4 663	4 676	4 659
Cataluña	2 517	2 524	2 505	2 538	2 603	2 646	2 631	2 689	2 700	2 672
Comunidad Valenciana	1 491	1 517	1 525	1 560	1 598	1 616	1 645	1 654	1 648	1 664
Baleares	276	282	264	277	294	304	312	320	327	323
Sur	2 878	2 891	2 944	2 980	3 048	3 088	3 156	3 221	3 262	3 304
Andalucia	2 441	2 467	2 511	2 533	2 589	2 621	2 688	2 735	2 760	2 804
Murcia	391	380	391	406	417	418	419	436	448	445
Ceuta y Melilla	46	43	41	41	43	48	49	51	54	55
Canarias	568	583	591	584	611	623	624	657	660	679
France	24 049	24 347	24 536	24 719	24 869	25 033	25 342	25 360	25 569	25 882
Ile de France	5 124	5 238	5 317	5 316	5 247	5 265	5 283	5 282	5 343	5 481
Bassin Parisien	4 199	4 387	4 389	4 267	4 242	4 343	4 412	4 417	4 382	4 476
Champagne-Ardenne	554	600	593	572	539	545	558	552	545	553
Picardie	714	754	766	693	707	743	734	749	742	777
Haute-Normandie	757	744	755	743	743	802	805	805	799	836
Centre	947	994	984	977	1 032	1 047	1 086	1 070	1 040	1 048
Basse-Normandie	631	652	610	567	524	524	538	546	569	560
Bourgogne	596	644	682	715	697	682	691	696	689	704
Nord - Pas-de-Calais	1 525	1 514	1 551	1 568	1 521	1 509	1 534	1 575	1 586	1 642
Est	2 151	2 082	2 141	2 191	2 187	2 154	2 134	2 179	2 267	2 297
Lorraine	966	887	918	972	987	961	918	923	986	984
Alsace	758	739	763	763	729	742	730	748	776	813
Franche-Comté	428	456	460	456	471	451	487	509	505	499
Ouest	3 206	3 215	3 181	3 218	3 293	3 345	3 318	3 331	3 390	3 505
Pays de la Loire	1 337	1 377	1 381	1 422	1 396	1 408	1 374	1 388	1 414	1 489
Bretagne	1 276	1 232	1 156	1 171	1 230	1 237	1 243	1 240	1 256	1 309
Poitou-Charentes	594	606	643	625	667	699	702	703	720	707
Sud-Ouest	2 478	2 522	2 611	2 553	2 531	2 603	2 702	2 722	2 654	2 669
Aquitaine	1 124	1 120	1 149	1 145	1 213	1 268	1 327	1 319	1 268	1 316
Midi-Pyrénées	1 049	1 106	1 168	1 125	1 039	1 053	1 085	1 108	1 088	1 075
Limousin	306	296	294	284	279	281	290	296	298	279
Centre-Est	2 771	2 758	2 795	2 940	3 100	3 069	3 174	3 143	3 083	3 031
Rhône-Alpes	2 246	2 236	2 281	2 418	2 574	2 534	2 630	2 595	2 545	2 495
Auvergne	525	522	514	522	526	535	545	548	538	536
Méditerranée	2 595	2 632	2 551	2 666	2 748	2 747	2 785	2 710	2 864	2 782
Languedoc-Roussillon	811	859	764	834	923	915	917	861	896	845
Provence-Alpes-Côte d'Azur	1 726	1 730	1 711	1 761	1 746	1 757	1 800	1 780	1 892	1 838
Corse	58	44	76	72	79	75	68	69	76	98
Départements d'Outre-Mer	:	:	:	:	:	:	:	:	:	:
Ireland	1 321	1 347	1 352	1 368	1 413	1 434	1 481	1 529	1 621	1 689
Border, Midlands and Western	:	:	:	:	:	:	:	:	:	:
Southern and Eastern	:	:	:	:	:	:	:	:	:	:

Sources: Eurostat, OECD.

Labour force by region

Table 39-3 — Labour force in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Italia	23 535	23 947	22 770	22 652	22 584	22 607	22 788	22 860	23 165	23 347
Nord Ovest	2 626	2 649	2 559	2 512	2 513	2 545	2 583	2 544	2 535	2 580
Piemonte	1 887	1 906	1 871	1 816	1 825	1 836	1 871	1 849	1 831	1 862
Valle d'Aosta	51	55	52	54	54	54	54	54	54	55
Liguria	688	687	635	642	634	655	658	642	650	663
Lombardia	3 866	3 997	3 918	3 916	3 899	3 878	3 904	3 919	3 986	4 025
Nord Est	2 730	2 805	2 793	2 782	2 773	2 785	2 832	2 843	2 860	2 894
Trentino-Alto Adige	382	397	399	396	397	396	404	404	411	416
Veneto	1 863	1 912	1 900	1 901	1 888	1 893	1 929	1 945	1 950	1 977
Friuli-Venezia Giulia	486	496	494	485	488	496	499	494	499	501
Emilia-Romagna	1 758	1 834	1 777	1 766	1 772	1 754	1 773	1 817	1 793	1 809
Centro (I)	2 494	2 517	2 409	2 410	2 390	2 414	2 418	2 407	2 397	2 442
Toscana	1 520	1 531	1 481	1 488	1 477	1 485	1 479	1 470	1 464	1 485
Umbria	333	350	320	325	321	332	334	332	331	340
Marche	640	637	608	597	591	598	606	605	602	618
Lazio	2 149	2 204	2 082	2 040	2 028	2 051	2 081	2 091	2 116	2 145
Abruzzo-Molise	660	666	608	618	607	618	628	616	614	613
Abruzzo	525	527	482	488	479	491	501	487	487	487
Molise	135	140	126	130	128	127	127	129	126	126
Campania	2 175	2 204	1 955	1 979	2 020	1 975	1 983	2 029	2 078	2 033
Sud	2 554	2 522	2 379	2 331	2 308	2 293	2 296	2 280	2 401	2 410
Puglia	1 513	1 510	1 442	1 395	1 378	1 356	1 386	1 386	1 442	1 462
Basilicata	242	240	216	210	211	210	208	211	218	212
Calabria	800	772	722	726	719	727	703	683	741	736
Sicilia	1 866	1 887	1 677	1 673	1 653	1 684	1 672	1 686	1 744	1 741
Sardegna	659	662	613	625	622	610	617	628	641	655
Luxembourg	160	165	168	169	170	167	171	173	175	181
Nederland	6 801	6 928	7 003	7 085	7 224	7 305	7 407	7 605	7 742	7 891
Noord-Nederland	674	694	699	701	708	725	744	755	770	800
Groningen	238	241	242	240	246	249	256	257	264	274
Friesland	249	257	260	253	261	270	277	280	281	302
Drenthe	187	196	197	208	201	206	211	217	225	223
Oost-Nederland	1 373	1 376	1 392	1 431	1 464	1 500	1 513	1 557	1 596	1 632
Overijssel	445	443	454	463	475	488	488	506	500	524
Gelderland	830	834	833	855	868	888	895	911	948	951
Flevoland	97	99	105	113	121	125	131	141	149	157
West-Nederland	3 250	3 333	3 368	3 398	3 445	3 458	3 498	3 603	3 660	3 710
Utrecht	492	508	503	507	524	536	544	555	561	575
Noord-Holland	1 142	1 169	1 181	1 190	1 180	1 209	1 224	1 260	1 272	1 281
Zuid-Holland	1 456	1 495	1 523	1 537	1 572	1 547	1 560	1 618	1 654	1 676
Zeeland	160	161	161	165	168	167	170	170	172	177
Zuid-Nederland	1 504	1 525	1 544	1 556	1 608	1 622	1 652	1 690	1 715	1 749
Noord-Brabant	1 008	1 030	1 038	1 048	1 089	1 095	1 119	1 145	1 167	1 190
Limburg (NL)	496	495	506	508	519	527	533	545	548	559
Österreich	3 526 i	3 607 i	3 679 i	3 734 i	3 880 i	3 841	3 619	3 805	3 838	3 859
Ostösterreich	:	:	:	:	:	1 645	1 635	1 640	1 661	1 664
Burgenland	:	:	:	:	:	130	126	128	130	130
Niederösterreich	:	:	:	:	:	726	722	725	724	725
Wien	:	:	:	:	:	789	787	788	807	809
Südösterreich	:	:	:	:	:	792	794	792	802	812
Kärnten	:	:	:	:	:	249	247	246	248	254
Steiermark	:	:	:	:	:	543	546	546	554	558
Westösterreich	:	:	:	:	:	1 405	1 391	1 373	1 376	1 383
Oberösterreich	:	:	:	:	:	674	663	658	649	651
Salzburg	:	:	:	:	:	250	253	247	253	252
Tirol	:	:	:	:	:	314	311	303	308	315
Vorarlberg	:	:	:	:	:	167	165	165	165	166
Portugal	4 878	5 038	4 696	4 714	4 759	4 752	4 780	4 842	4 999	5 063
Continente	4 648	4 804	4 487	4 502	4 549	4 551	4 575	4 633	4 777	4 845
Norte	1 727	1 809	1 630	1 656	1 670	1 695	1 671	1 692	1 810	1 834
Centro (P)	844	894	831	820	859	856	904	935	935	948
Lisboa e Vale do Tejo	1 675	1 696	1 636	1 636	1 635	1 616	1 615	1 622	1 638	1 669
Alentejo	252	256	236	236	228	233	231	229	228	223
Algarve	150	150	154	155	158	152	155	156	167	172
Açores	97	100	92	94	94	94	95	96	98	100
Madeira	133	134	117	117	116	108	111	113	124	119
Suomi-Finland	2 606 i	2 571 i	2 526 i	2 504 i	2 489 i	2 429	2 445	2 493	2 511	2 642
Manner-Suomi	:	:	:	:	:	2 417	2 431	2 481	:	2 629
Itä-Suomi	:	:	:	:	:	307	322	309	321	319
Väli-Suomi	:	:	:	:	:	315	310	319	326	343
Pohjois-Suomi	:	:	:	:	:	245	253	264	258	277
Uusimaa	:	:	:	:	:	:	:	:	:	765
Etelä-Suomi	:	:	:	:	:	:	:	:	:	926
Åland	:	:	:	:	:	12	13	12	10	12

Methodological notes

i: MSTI data.

Sources: Eurostat, OECD.

Table 39
Reference data
At the regional level

Table 39-4 — Labour force in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sverige	4 548 i	4 530 i	4 456 i	4 379 i	4 354 i	4 498	4 410	4 369	4 333	4 388
Stockholm	:	:	:	:	:	938	851	894	842	871
Östra Mellansverige	:	:	:	:	:	752	769	748	747	759
Sydsverige	:	:	:	:	:	628	598	593	602	617
Norra Mellansverige	:	:	:	:	:	427	438	416	448	433
Mellersta Norrland	:	:	:	:	:	198	204	195	197	189
Övre Norrland	:	:	:	:	:	257	270	260	263	240
Småland med Öarna	:	:	:	:	:	:	:	399	398	409
Västsverige	:	:	:	:	:	:	:	864	836	871
United Kingdom	28 790	28 658	28 558	28 419	28 398	28 404	28 515	28 644	28 661	28 889
North East	:	:	:	:	:	:	1 187	1 185	1 156	1 154
Tees Valley and Durham	:	:	:	:	:	:	538	533	514	522
Northumberland, Tyne and Wear	:	:	:	:	:	:	649	652	642	632
North West	:	:	:	:	:	:	3 221	3 204	3 167	3 222
Cumbria	:	:	:	:	:	:	241	234	235	242
Cheshire	:	:	:	:	:	:	477	485	493	496
Greater Manchester	:	:	:	:	:	:	1 213	1 205	1 208	1 233
Lancashire	:	:	:	:	:	:	677	677	644	664
Merseyside	:	:	:	:	:	:	613	603	586	588
Yorkshire and The Humber	2 440	2 439	2 441	2 448	2 419	2 434	2 416	2 396	2 428	2 421
East Riding and North Lincolnshire	:	:	:	:	:	:	435	415	415	424
North Yorkshire	:	:	:	:	:	:	357	365	388	367
South Yorkshire	:	:	:	:	:	:	586	579	594	614
West Yorkshire	:	:	:	:	:	:	1 038	1 038	1 031	1 016
East Midlands	2 064	2 067	2 043	2 047	2 022	2 049	2 078	2 094	2 093	2 103
Derbyshire and Nottinghamshire	:	:	:	:	:	:	968	987	982	978
Leicestershire, Rutland and Northamptonshire	:	:	:	:	:	:	800	805	804	811
Lincolnshire	:	:	:	:	:	:	310	301	308	314
West Midlands	2 665	2 638	2 583	2 577	2 601	2 577	2 584	2 577	2 612	2 622
Herefordshire, Worcestershire and Warwickshire	:	:	:	:	:	:	628	645	643	642
Shropshire and Staffordshire	:	:	:	:	:	:	752	741	745	770
West Midlands	:	:	:	:	:	:	1 204	1 192	1 225	1 210
Eastern	:	:	:	:	:	:	2 685	2 687	2 745	2 732
East Anglia	1 074	1 051	1 052	1 064	1 073	1 078	1 071	1 067	1 094	1 102
Bedfordshire, Hertfordshire	:	:	:	:	:	:	828	829	848	817
Essex	:	:	:	:	:	:	786	791	802	814
London	:	:	:	:	:	:	:	:	3 482	3 559
Inner London	:	:	:	:	:	:	:	:	1 305	1 324
Outer London	:	:	:	:	:	:	:	:	2 176	2 236
South East	:	:	:	:	:	:	4 005	4 013	4 051	4 100
Berkshire, Buckinghamshire and Oxfordshire	:	:	:	:	:	:	1 103	1 120	1 133	1 147
Surrey, East and West Sussex	:	:	:	:	:	:	1 236	1 269	1 254	1 269
Hampshire and Isle of Wight	:	:	:	:	:	:	867	868	897	904
Kent	:	:	:	:	:	:	800	756	768	780
South West	2 324	2 349	2 340	2 342	2 358	2 373	2 365	2 424	2 434	2 476
Gloucestershire, Wiltshire and North Somerset	:	:	:	:	:	:	1 122	1 125	1 107	1 130
Dorset and Somerset	:	:	:	:	:	:	545	568	567	594
Cornwall and Isles of Scilly	:	:	:	:	:	:	:	:	235	231
Devon	:	:	:	:	:	:	:	:	524	520
Wales	1 348	1 339	1 307	1 278	1 297	1 302	1 302	1 324	1 286	1 313
West Wales and The Valleys	:	:	:	:	:	:	:	:	803	802
East Wales	:	:	:	:	:	:	:	:	484	511
Scotland	2 514	2 476	2 543	2 479	2 512	2 492	2 467	2 484	2 480	2 459
North Eastern Scotland	:	:	:	:	:	:	:	:	235	258
Eastern Scotland	:	:	:	:	:	:	:	:	956	937
South Western Scotland	:	:	:	:	:	:	:	:	1 074	1 050
Highlands and Islands	:	:	:	:	:	:	:	:	215	213
Northern Ireland	690	689	687	690	680	698	709	726	728	730
EEA	**158 613 e**	**168 170 e**	**166 916 e**	**167 238 e**	**168 082 e**	**168 341 e**	**169 613 e**	**170 474 e**	**172 051 e**	**173 599 e**
Iceland	128 i	141 i	143 i	144 i	145 i	149 i	148 i	148 i	152 i	:
Norge	2 142 i	2 126 i	2 130 i	2 131 i	2 151 i	2 186 i	2 239 i	2 287 i	2 323 i	2 333 i
Oslo og Akershus	:	:	:	:	:	:	:	:	:	:
Hedmark og Oppland	:	:	:	:	:	:	:	:	:	:
Sør-Østlandet	:	:	:	:	:	:	:	:	:	:
Agder og Rogaland	:	:	:	:	:	:	:	:	:	:
Vestlandet	:	:	:	:	:	:	:	:	:	:
Trøndelag	:	:	:	:	:	:	:	:	:	:
Nord-Norge	:	:	:	:	:	:	:	:	:	:

Methodological notes

I:MSTI data. See abbreviations and other methodological notes starting on page 172.

Sources: Eurostat, OECD.

Table 40
Reference data
At the regional level

Population by region

Table 40-1 — Population in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	**347 330**	**349 407**	**351 283**	**368 994**	**370 433**	**371 589**	**372 670**	**373 717**	**374 584**	**375 346**
EUR-12	276 208	277 985	279 569	297 023	298 198	299 057	299 878	300 692	301 352	301 899
Belgique-België	9 948	9 987	10 022	10 068	10 101	10 131	10 143	10 170	10 192	10 214
Région Bruxelles-capitale	964	960	951	950	949	952	948	951	953	955
Vlaams Gewest	5 740	5 768	5 795	5 825	5 847	5 866	5 880	5 899	5 912	5 927
Antwerpen	1 597	1 605	1 611	1 620	1 625	1 629	1 631	1 636	1 638	1 641
Limburg (B)	745	750	756	762	767	772	775	780	784	788
Oost-Vlaanderen	1 332	1 336	1 340	1 344	1 347	1 349	1 352	1 355	1 358	1 360
Vlaams Brabant	963	971	977	983	989	995	999	1 005	1 008	1 012
West-Vlaanderen	1 103	1 107	1 112	1 116	1 119	1 121	1 123	1 124	1 125	1 127
Région Wallonne	3 244	3 259	3 276	3 293	3 305	3 313	3 315	3 321	3 327	3 333
Brabant Wallon	315	321	326	330	333	337	339	342	345	347
Hainaut	1 278	1 280	1 283	1 286	1 287	1 287	1 285	1 284	1 283	1 280
Liège	998	1 001	1 006	1 011	1 015	1 015	1 014	1 015	1 017	1 018
Luxembourg (B)	231	233	235	237	238	240	241	243	244	245
Namur	421	424	426	430	432	434	436	437	439	441
Danmark	5 135	5 146	5 162	5 181	5 197	5 216	5 251	5 275	5 295	5 314
Deutschland	62 679	63 726	64 485	80 975	81 338	81 539	81 817	82 012	82 057	82 037
Baden-Württemberg	9 619	9 822	10 002	10 149	10 234	10 267	10 319	10 375	10 397	10 426
Stuttgart	3 610	3 683	3 751	3 807	3 832	3 840	3 862	3 882	3 889	3 898
Karlsruhe	2 484	2 533	2 577	2 613	2 637	2 644	2 644	2 657	2 661	2 666
Freiburg	1 935	1 978	2 013	2 041	2 059	2 070	2 087	2 100	2 107	2 115
Tübingen	1 590	1 629	1 661	1 687	1 706	1 714	1 726	1 736	1 741	1 747
Bayern	11 221	11 449	11 596	11 770	11 863	11 916	11 994	12 044	12 066	12 087
Oberbayern	3 721	3 802	3 848	3 919	3 948	3 957	3 978	3 992	3 992	3 996
Niederbayern	1 057	1 078	1 093	1 109	1 121	1 131	1 143	1 152	1 158	1 163
Oberpfalz	991	1 009	1 020	1 032	1 041	1 047	1 055	1 060	1 065	1 069
Oberfranken	1 056	1 075	1 084	1 094	1 100	1 104	1 111	1 114	1 114	1 114
Mittelfranken	1 566	1 599	1 622	1 641	1 652	1 659	1 667	1 674	1 678	1 679
Unterfranken	1 235	1 259	1 273	1 290	1 300	1 308	1 318	1 323	1 327	1 329
Schwaben	1 594	1 628	1 656	1 685	1 701	1 710	1 722	1 729	1 733	1 737
Berlin	3 400	3 434	3 446	3 466	3 475	3 470	3 471	3 459	3 426	3 399
Brandenburg	2 641	2 578	2 543	2 543	2 538	2 536	2 542	2 554	2 573	2 590
Bremen	674	682	684	686	683	680	680	678	674	668
Hamburg	1 626	1 652	1 669	1 689	1 703	1 705	1 708	1 708	1 705	1 700
Hessen	5 661	5 763	5 837	5 923	5 967	5 977	6 010	6 027	6 032	6 035
Darmstadt	3 491	3 547	3 596	3 650	3 671	3 668	3 685	3 695	3 698	3 703
Gießen	982	1 003	1 016	1 032	1 043	1 049	1 056	1 060	1 061	1 061
Kassel	1 188	1 213	1 225	1 241	1 254	1 261	1 269	1 272	1 273	1 271
Mecklenburg-Vorpommern	1 964	1 924	1 892	1 865	1 844	1 832	1 823	1 817	1 808	1 799
Niedersachsen	7 284	7 387	7 476	7 578	7 648	7 711	7 780	7 815	7 845	7 866
Braunschweig	1 614	1 640	1 655	1 670	1 675	1 678	1 680	1 678	1 674	1 670
Hannover	2 032	2 061	2 082	2 109	2 121	2 129	2 139	2 147	2 151	2 149
Lüneburg	1 467	1 491	1 512	1 536	1 561	1 580	1 602	1 616	1 631	1 646
Weser-Ems	2 170	2 195	2 226	2 263	2 292	2 324	2 360	2 374	2 390	2 402
Nordrhein-Westfalen	17 104	17 350	17 510	17 679	17 759	17 806	17 893	17 948	17 975	17 976
Düsseldorf	5 168	5 220	5 253	5 293	5 289	5 284	5 291	5 291	5 285	5 269
Köln	3 963	4 025	4 068	4 114	4 142	4 160	4 189	4 216	4 236	4 249
Münster	2 438	2 477	2 505	2 532	2 547	2 557	2 574	2 587	2 595	2 601
Detmold	1 850	1 895	1 925	1 954	1 975	1 990	2 013	2 027	2 036	2 041
Arnsberg	3 685	3 732	3 759	3 787	3 807	3 815	3 828	3 827	3 823	3 815
Rheinland-Pfalz	3 702	3 764	3 821	3 881	3 926	3 949	3 978	4 001	4 018	4 025
Koblenz	1 377	1 402	1 423	1 445	1 464	1 476	1 490	1 500	1 508	1 512
Trier	478	484	489	494	499	502	505	508	509	511
Rheinhessen-Pfalz	1 847	1 877	1 910	1 942	1 963	1 971	1 983	1 993	2 001	2 002
Saarland	1 065	1 073	1 077	1 084	1 085	1 084	1 084	1 084	1 081	1 074
Sachsen	4 901	4 764	4 679	4 641	4 608	4 582	4 567	4 546	4 522	4 489
Chemnitz	:	:	:	:	:	:	:	:	1 670	1 655
Dresden	:	:	:	:	:	:	:	:	1 748	1 736
Leipzig	:	:	:	:	:	:	:	:	1 104	1 099
Sachsen-Anhalt	2 965	2 874	2 823	2 797	2 778	2 758	2 739	2 724	2 702	2 675
Dessau	619	597	586	581	577	577	573	570	565	559
Halle	1 058	1 026	1 007	997	988	917	909	903	895	886
Magdeburg	1 288	1 250	1 230	1 219	1 214	1 264	1 256	1 250	1 242	1 230
Schleswig-Holstein	2 595	2 626	2 649	2 680	2 695	2 707	2 726	2 742	2 757	2 766
Thüringen	2 684	2 611	2 572	2 546	2 533	2 517	2 504	2 491	2 478	2 463
Ellada	10 121	10 200	10 294	10 349	10 410	10 443	10 465	10 487	10 511	10 522
Voreia Ellada	3 258	3 286	3 317	3 336	3 357	3 370	3 375	3 388	3 400	3 408
Anatoliki Makedonia, Thraki	557	559	561	561	562	562	560	561	562	562
Kentriki Makedonia	1 684	1 703	1 724	1 738	1 754	1 763	1 771	1 782	1 792	1 799
Dytiki Makedonia	288	292	296	298	301	302	302	302	303	303
Thessalia	729	733	737	739	741	742	741	742	743	743
Kentriki Ellada	2 356	2 412	2 469	2 516	2 566	2 585	2 631	2 638	2 644	2 647
Ipeiros	329	337	345	352	360	362	367	370	372	373
Ionia Nisia	187	190	192	194	197	197	198	200	202	203
Dytiki Ellada	698	705	714	719	725	728	731	735	737	739
Sterea Ellada	556	577	598	616	635	643	663	663	663	662
Peloponnisos	586	603	620	635	650	655	672	671	670	669
Attiki	3 533	3 521	3 519	3 503	3 487	3 485	3 449	3 448	3 451	3 450
Nisia Aigaiou, Kriti	974	982	990	995	999	1 003	1 010	1 013	1 016	1 018
Voreio Aigaio	192	191	190	189	188	187	185	184	184	183
Notio Aigaio	249	253	256	259	262	264	267	269	270	271
Kriti	533	538	544	547	550	552	558	560	562	564

Sources: Eurostat, OECD.

Table 40
Reference data
At the regional level

Population by region

Table 40-2 — Population in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
España	38 826	38 875	38 965	39 051	39 121	39 177	39 242	39 299	39 348	39 394
Noroeste	4 373	4 356	4 352	4 348	4 343	4 334	4 326	4 317	4 308	4 299
Galicia	2 745	2 734	2 733	2 732	2 731	2 728	2 725	2 722	2 719	2 715
Principado de Asturias	1 101	1 095	1 092	1 089	1 085	1 079	1 074	1 069	1 063	1 058
Cantabria	528	528	527	527	527	527	527	527	527	526
Noreste	4 089	4 077	4 073	4 066	4 058	4 049	4 041	4 032	4 023	4 013
Pais Vasco	2 115	2 105	2 100	2 094	2 088	2 080	2 073	2 066	2 058	2 050
Comunidad Foral de Navarra	519	519	521	522	523	525	526	527	528	530
La Rioja	263	264	263	262	262	261	261	260	260	259
Aragón	1 192	1 190	1 188	1 187	1 186	1 183	1 181	1 179	1 177	1 174
Comunidad de Madrid	4 932	4 947	4 964	4 985	4 998	5 004	5 013	5 019	5 025	5 031
Centro (E)	5 287	5 268	5 267	5 267	5 269	5 273	5 277	5 281	5 283	5 285
Castilla y León	2 562	2 547	2 541	2 532	2 525	2 519	2 513	2 507	2 500	2 493
Castilla-la Mancha	1 659	1 659	1 664	1 670	1 676	1 683	1 691	1 698	1 704	1 711
Extremadura	1 066	1 062	1 063	1 065	1 068	1 071	1 074	1 077	1 079	1 082
Este	10 599	10 627	10 648	10 667	10 679	10 690	10 703	10 714	10 723	10 731
Cataluña	6 054	6 060	6 065	6 070	6 071	6 068	6 067	6 064	6 061	6 057
Comunidad Valenciana	3 839	3 857	3 869	3 879	3 888	3 898	3 908	3 918	3 927	3 936
Baleares	706	709	714	718	720	724	728	731	735	739
Sur	8 059	8 107	8 156	8 202	8 246	8 285	8 326	8 366	8 403	8 441
Andalucia	6 897	6 938	6 978	7 014	7 049	7 080	7 113	7 144	7 174	7 203
Murcia	1 038	1 045	1 053	1 060	1 068	1 074	1 081	1 088	1 094	1 101
Ceuta y Melilla	124	124	126	128	129	131	132	134	135	137
Canarias	1 487	1 493	1 505	1 516	1 528	1 542	1 556	1 570	1 583	1 596
France	56 577	56 893	57 218	57 530	57 779	58 020	58 258	58 492	58 728	58 973
Île de France	10 645	10 721	10 804	10 868	10 932	10 978	11 027	11 056	11 088	:
Bassin Parisien	10 262	10 306	10 349	10 391	10 422	10 454	10 479	10 506	10 526	:
Champagne-Ardenne	1 347	1 349	1 349	1 350	1 351	1 353	1 352	1 351	1 351	:
Picardie	1 809	1 819	1 830	1 841	1 848	1 855	1 863	1 869	1 872	:
Haute-Normandie	1 736	1 746	1 756	1 764	1 771	1 777	1 782	1 785	1 789	:
Centre	2 370	2 384	2 399	2 412	2 422	2 433	2 443	2 454	2 463	:
Basse-Normandie	1 391	1 395	1 399	1 405	1 408	1 413	1 416	1 422	1 426	:
Bourgogne	1 609	1 613	1 616	1 619	1 621	1 624	1 624	1 626	1 627	:
Nord - Pas-de-Calais	3 962	3 967	3 974	3 983	3 988	3 995	4 002	4 007	4 009	:
Est	5 024	5 040	5 058	5 080	5 098	5 115	5 130	5 143	5 152	:
Lorraine	2 304	2 304	2 306	2 309	2 311	2 312	2 312	2 311	2 309	:
Alsace	1 623	1 636	1 649	1 665	1 678	1 690	1 702	1 714	1 724	:
Franche-Comté	1 096	1 100	1 103	1 107	1 109	1 113	1 116	1 117	1 119	:
Ouest	7 445	7 475	7 505	7 541	7 569	7 606	7 640	7 683	7 728	:
Pays de la Loire	3 055	3 070	3 087	3 106	3 122	3 140	3 156	3 174	3 192	:
Bretagne	2 794	2 804	2 813	2 825	2 834	2 847	2 861	2 879	2 898	:
Poitou-Charentes	1 595	1 600	1 605	1 609	1 613	1 619	1 623	1 630	1 638	:
Sud-Ouest	5 950	5 980	6 011	6 040	6 057	6 080	6 101	6 128	6 155	:
Aquitaine	2 796	2 813	2 828	2 844	2 855	2 866	2 877	2 892	2 907	:
Midi-Pyrénées	2 431	2 445	2 461	2 476	2 483	2 494	2 506	2 520	2 532	:
Limousin	724	722	722	721	720	719	718	717	716	:
Centre-Est	6 668	6 718	6 770	6 821	6 852	6 885	6 923	6 961	6 997	:
Rhône-Alpes	5 346	5 398	5 451	5 503	5 536	5 569	5 608	5 646	5 682	:
Auvergne	1 322	1 320	1 318	1 318	1 316	1 315	1 315	1 315	1 315	:
Méditerranée	6 622	6 688	6 747	6 807	6 861	6 909	6 957	7 009	7 073	:
Languedoc-Roussillon	2 115	2 138	2 159	2 182	2 203	2 221	2 244	2 267	2 294	:
Provence-Alpes-Côte d'Azur	4 257	4 298	4 336	4 370	4 400	4 428	4 452	4 481	4 517	:
Corse	250	252	252	255	258	260	261	261	262	:
Départements d'Outre-Mer	:	:	:	:	:	:	:	:	1 636	:
Ireland	3 507	3 521	3 547	3 569	3 583	3 598	3 620	3 652	3 694	3 735
Border, Midlands and Western	:	:	:	:	:	:	:	:	979	:
Southern and Eastern	:	:	:	:	:	:	:	:	2 726	:

Sources: Eurostat, OECD.

Population by region

Table 40-3 — Population in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Italia	56 694	56 744	56 757	56 960	57 138	57 269	57 333	57 461	57 563	57 613
Nord Ovest	6 133	6 108	6 089	6 090	6 088	6 080	6 066	6 064	6 053	6 041
Piemonte	4 324	4 308	4 300	4 304	4 307	4 298	4 289	4 294	4 291	4 288
Valle d'Aosta	114	115	116	117	118	119	119	119	120	120
Liguria	1 694	1 685	1 673	1 669	1 663	1 664	1 659	1 651	1 642	1 633
Lombardia	8 837	8 850	8 854	8 882	8 901	8 911	8 925	8 959	8 989	9 029
Nord Est	6 448	6 458	6 467	6 487	6 512	6 522	6 535	6 558	6 578	6 601
Trentino-Alto Adige	883	887	891	897	904	909	913	919	924	930
Veneto	4 364	4 373	4 380	4 395	4 415	4 422	4 433	4 453	4 469	4 488
Friuli-Venezia Giulia	1 200	1 198	1 197	1 195	1 193	1 191	1 189	1 186	1 185	1 184
Emilia-Romagna	3 901	3 906	3 907	3 920	3 924	3 923	3 925	3 938	3 947	3 960
Centro (I)	5 765	5 768	5 767	5 778	5 786	5 790	5 792	5 802	5 810	5 817
Toscana	3 533	3 531	3 527	3 529	3 528	3 526	3 523	3 525	3 527	3 529
Umbria	810	811	812	815	819	823	826	830	832	833
Marche	1 423	1 426	1 429	1 434	1 438	1 441	1 443	1 448	1 451	1 455
Lazio	5 116	5 130	5 142	5 162	5 185	5 193	5 202	5 217	5 243	5 255
Abruzzo-Molise	1 573	1 576	1 580	1 587	1 595	1 600	1 602	1 604	1 606	1 606
Abruzzo	1 243	1 246	1 249	1 256	1 263	1 268	1 271	1 274	1 276	1 277
Molise	330	331	331	332	332	332	331	331	330	329
Campania	5 608	5 621	5 628	5 669	5 709	5 746	5 763	5 785	5 797	5 793
Sud	6 705	6 712	6 711	6 736	6 756	6 763	6 768	6 770	6 771	6 759
Puglia	4 013	4 025	4 032	4 050	4 066	4 076	4 083	4 088	4 090	4 086
Basilicata	611	611	610	611	611	611	609	608	610	608
Calabria	2 081	2 076	2 070	2 075	2 080	2 076	2 076	2 074	2 071	2 065
Sicilia	4 970	4 971	4 966	4 998	5 025	5 083	5 095	5 101	5 108	5 098
Sardegna	1 638	1 644	1 647	1 652	1 657	1 660	1 661	1 663	1 661	1 655
Luxembourg	379	384	390	395	401	407	413	418	424	429
Nederland	14 893	15 010	15 129	15 239	15 342	15 424	15 494	15 567	15 654	15 760
Noord-Nederland	1 594	1 598	1 603	1 608	1 615	1 622	1 628	1 634	1 641	1 648
Groningen	554	555	555	555	557	558	558	558	558	560
Friesland	599	600	602	604	607	610	612	615	618	621
Drenthe	441	444	446	448	451	455	457	461	465	467
Oost-Nederland	3 036	3 065	3 094	3 122	3 150	3 177	3 203	3 226	3 253	3 284
Overijssel	1 020	1 026	1 032	1 039	1 045	1 050	1 054	1 058	1 064	1 070
Gelderland	1 804	1 817	1 829	1 840	1 851	1 865	1 876	1 886	1 896	1 907
Flevoland	212	222	233	243	254	262	273	282	293	307
West-Nederland	6 969	7 029	7 092	7 146	7 192	7 218	7 239	7 267	7 304	7 351
Utrecht	1 016	1 027	1 037	1 047	1 056	1 064	1 071	1 079	1 089	1 099
Noord-Holland	2 376	2 397	2 422	2 440	2 457	2 464	2 468	2 475	2 486	2 503
Zuid-Holland	3 222	3 247	3 274	3 297	3 315	3 325	3 333	3 345	3 359	3 379
Zeeland	356	358	359	361	364	366	367	368	370	371
Zuid-Nederland	3 293	3 319	3 341	3 364	3 385	3 406	3 424	3 440	3 457	3 477
Noord-Brabant	2 190	2 209	2 225	2 244	2 260	2 276	2 290	2 304	2 319	2 338
Limburg (NL)	1 104	1 110	1 116	1 120	1 125	1 130	1 134	1 136	1 138	1 139
Österreich	7 690	7 769	7 868	7 962	8 015	8 040	8 055	8 068	8 075	8 083
Ostösterreich	3 241	3 274	3 318	3 355	3 378	3 382	3 389	3 404	3 410	3 414
Burgenland	269	270	272	273	273	274	275	276	277	278
Niederösterreich	1 456	1 471	1 485	1 501	1 508	1 515	1 522	1 528	1 533	1 536
Wien	1 515	1 533	1 560	1 581	1 597	1 593	1 593	1 601	1 599	1 600
Südösterreich	1 724	1 730	1 743	1 758	1 762	1 765	1 770	1 771	1 769	1 768
Kärnten	544	547	551	557	559	560	562	564	564	564
Steiermark	1 180	1 184	1 191	1 201	1 203	1 205	1 208	1 207	1 205	1 204
Westösterreich	2 725	2 765	2 808	2 848	2 875	2 893	2 896	2 893	2 897	2 902
Oberösterreich	1 308	1 327	1 348	1 367	1 379	1 388	1 384	1 378	1 376	1 375
Salzburg	472	481	488	498	503	505	508	511	514	514
Tirol	621	627	636	645	652	657	660	661	662	665
Vorarlberg	324	330	335	339	341	343	344	344	345	347
Portugal	9 920	9 877	9 865	9 869	9 892	9 912	9 921	9 934	9 957	9 979
Continente	:	9 415	9 374	9 378	9 398	9 415	9 422	9 434	9 454	9 474
Norte	:	3 519	3 477	3 486	3 503	3 519	3 531	3 545	3 562	3 578
Centro (P)	:	1 714	1 718	1 714	1 714	1 714	1 711	1 710	1 710	1 710
Lisboa e Vale do Tejo	:	3 309	3 297	3 298	3 304	3 309	3 311	3 314	3 320	3 327
Alentejo	:	529	541	538	533	529	524	519	515	510
Algarve	:	345	342	342	344	345	345	346	347	349
Açores	:	241	238	238	239	241	242	243	244	245
Madeira	:	257	253	254	255	257	257	258	259	260
Suomi-Finland	4 974	4 998	5 029	5 055	5 078	5 099	5 117	5 132	5 147	5 160
Manner-Suomi	4 950	4 974	5 004	5 030	5 053	5 074	5 092	5 107	5 122	5 134
Itä-Suomi	706	707	708	709	709	708	705	701	697	691
Väli-Suomi	696	699	702	704	706	707	706	706	705	704
Pohjois-Suomi	540	544	548	552	554	556	558	559	559	557
Uusimaa	1 220	1 232	1 248	1 262	1 278	1 294	1 311	1 327	1 345	1 363
Etelä-Suomi	1 788	1 793	1 799	1 803	1 806	1 809	1 812	1 814	1 816	1 819
Åland	24	25	25	25	25	25	25	25	25	26

Sources: Eurostat, OECD.

Table 40
Reference data
At the regional level

Population by region

Table 40-4 — Population in thousands at NUTS levels 0, 1 and 2

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Sverige	8 527	8 591	8 644	8 692	8 745	8 816	8 837	8 844	8 848	8 854
Stockholm	1 630	1 642	1 655	1 670	1 686	1 709	1 726	1 744	1 757	1 783
Östra Mellansverige	1 446	1 459	1 470	1 479	1 490	1 501	1 501	1 498	1 495	1 492
Sydsverige	1 208	1 219	1 229	1 238	1 245	1 259	1 265	1 266	1 268	1 272
Norra Mellansverige	857	862	864	864	865	866	863	857	850	843
Mellersta Norrland	395	397	397	397	397	397	394	391	388	384
Övre Norrland	513	516	519	522	525	527	527	524	522	518
Småland med Öarna	:	:	:	:	:	:	:	791	803	802
Västsverige	:	:	:	:	:	:	:	1 772	1 757	1 760
United Kingdom	57 459	57 685	57 907	58 099	58 293	58 500	58 704	58 905	59 090	59 280
North East	2 596	2 600	2 606	2 610	2 611	2 607	2 603	2 597	2 602	2 576
Tees Valley and Durham	1 160	1 163	1 166	1 167	1 168	1 167	1 166	1 165	1 164	1 160
Northumberland, Tyne and Wear	1 436	1 437	1 439	1 443	1 444	1 440	1 437	1 432	1 438	1 416
North West	6 862	6 876	6 888	6 896	6 903	6 901	6 896	6 888	6 885	6 867
Cumbria	490	489	490	490	490	490	490	491	493	491
Cheshire	960	963	967	969	974	977	979	981	983	981
Greater Manchester	2 558	2 566	2 572	2 576	2 579	2 578	2 577	2 574	2 575	2 572
Lancashire	1 403	1 408	1 412	1 417	1 422	1 425	1 425	1 425	1 424	1 423
Merseyside	1 452	1 450	1 448	1 443	1 438	1 431	1 424	1 417	1 411	1 401
Yorkshire and The Humber	4 956	4 973	4 993	5 008	5 020	5 027	5 033	5 036	5 068	5 037
East Riding and North Lincolnshire	870	875	879	883	887	889	888	886	884	880
North Yorkshire	713	717	721	722	724	728	733	736	768	746
South Yorkshire	1 300	1 301	1 303	1 305	1 306	1 305	1 304	1 305	1 304	1 300
West Yorkshire	2 073	2 080	2 089	2 098	2 103	2 105	2 108	2 110	2 112	2 111
East Midlands	4 004	4 025	4 049	4 072	4 093	4 113	4 133	4 149	4 182	4 183
Derbyshire and Nottinghamshire	1 953	1 960	1 968	1 976	1 982	1 987	1 992	1 996	2 013	2 003
Leicestershire, Rutland and Northamptonshire	1 467	1 476	1 487	1 497	1 507	1 517	1 527	1 536	1 516	1 553
Lincolnshire	585	589	594	599	604	609	614	618	653	627
West Midlands	5 246	5 258	5 272	5 284	5 292	5 301	5 312	5 319	5 341	5 325
Herefordshire, Worcestershire and Warwickshire	1 168	1 172	1 179	1 185	1 192	1 195	1 195	1 201	1 206	1 214
Shropshire and Staffordshire	1 452	1 458	1 463	1 466	1 469	1 474	1 477	1 481	1 506	1 490
West Midlands	2 626	2 628	2 630	2 632	2 631	2 633	2 640	2 637	2 629	2 622
Eastern	5 102	5 131	5 163	5 184	5 208	5 240	5 275	5 313	5 356	5 408
East Anglia	2 051	2 070	2 085	2 091	2 099	2 114	2 132	2 152	2 163	2 192
Bedfordshire, Hertfordshire	1 510	1 517	1 526	1 535	1 544	1 553	1 561	1 571	1 592	1 602
Essex	1 541	1 545	1 551	1 558	1 565	1 574	1 582	1 591	1 601	1 615
London	:	:	:	:	:	:	:	7 098	7 155	7 275
Inner London	:	:	:	:	:	:	:	2 718	2 744	2 814
Outer London	:	:	:	:	:	:	:	4 381	4 411	4 461
South East	7 625	7 660	7 696	7 725	7 761	7 816	7 871	7 927	8 137	8 061
Berkshire, Buckinghamshire and Oxfordshire	1 955	1 969	1 982	1 996	2 010	2 033	2 057	2 076	2 276	2 112
Surrey, East and West Sussex	2 443	2 454	2 466	2 474	2 484	2 498	2 513	2 532	2 529	2 588
Hampshire and Isle of Wight	1 698	1 704	1 711	1 716	1 724	1 736	1 747	1 758	1 767	1 777
Kent	1 530	1 534	1 537	1 539	1 543	1 549	1 554	1 562	1 566	1 584
South West	4 685	4 706	4 732	4 757	4 783	4 813	4 834	4 859	4 888	4 925
Gloucestershire, Wiltshire and North Somerset	2 058	2 069	2 083	2 095	2 107	2 120	2 130	2 142	2 159	2 176
Dorset and Somerset	1 121	1 126	1 133	1 139	1 146	1 155	1 162	1 169	1 174	1 183
Cornwall and Isles of Scilly	:	:	:	:	:	:	:	486	489	494
Devon	:	:	:	:	:	:	:	1 062	1 066	1 072
Wales	2 874	2 885	2 895	2 903	2 910	2 915	2 919	2 924	2 705	2 931
West Wales and The Valleys	:	:	:	:	:	:	:	1 870	1 868	1 863
East Wales	:	:	:	:	:	:	:	1 054	1 062	1 068
Scotland	5 099	5 105	5 109	5 116	5 127	5 135	5 132	:	5 121	:
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Eastern Scotland	:	:	:	:	:	:	:	:	:	:
South Western Scotland	:	:	:	:	:	:	:	:	:	:
Highlands and Islands	:	:	:	:	:	:	:	:	:	:
Northern Ireland	1 586	1 595	1 610	1 625	1 637	1 645	1 663	:	1 685	:
EEA	351 845	353 942	355 846	373 586	375 053	376 235	377 339	378 410	379 305	380 100
Iceland	254	256	260	262	265	267	268	270	272	276
Norge	4 233	4 250	4 274	4 299	4 325	4 348	4 370	4 393	4 418	4 445
Oslo og Akershus	:	:	:	:	:	:	:	:	:	:
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Sources: Eurostat, OECD.

Abbreviations and other methodological notes to the Tables

General abbreviations

a	aggregates for EEA have been calculated excluding Iceland
e	national estimation or by other sources
f	forecast
s	Eurostat estimation
i	more information below and/or in Part 2, 'Definitions and methodological notes'
p	provisional
:	not available
-	not applicable or real zero
0	less than a half of the unit used
|	break in series

R&D expenditure and personnel

R&D expenditure in national currencies, ECU/EUR and PPS

• **Japan**		
All sectors, BES and HES	1981-95	Overestimated or based on overestimated data
	1996	Break in series with previous year for which data are available – MSTI data.
• **United States**		
All sectors	1990-97	Excludes most or all capital expenditures – MSTI data
BES	1981-98	Excludes most or all capital expenditures – MSTI data
GOV	1981-98	Federal or central government only – MSTI data
HES	1990-97	Excludes most or all capital expenditures – MSTI data
All sectors, GOV and HES	1981-95	Break in series with previous year for which data is available – MSTI data.
• **Data for Japan and the United States**		Main science and technology indicators – MSTI 2001-1 data.

GDP — R&D expenditure as a % of GDP

• **At the national level**	
Iceland – 1981-91 Portugal – 1981-94 Sweden – 1981-92	GDP estimated using the year on year growth rates of GDP with ESA '79 data and applying these growth rates retrospectively to the missing ESA '95 series.
• **At the regional level**	
All EEA countries – 1981-94	ESA '79 data.

Abbreviations and other methodological notes to the Tables

R&D expenditure and personnel (cont.)

GDP deflator — R&D expenditure in constant ECU/EUR

• **Estimated ESA '79 data**	Germany – 1990; Portugal and Spain – 1990-94 Sweden – 1990-92.
• **GDP 2000 forecasted**	Austria, Iceland, Ireland, the Netherlands, Norway and Spain.

PPS exchange rate — R&D expenditure in current PPS

• **All EEA countries — 1981-94**	ESA '79 data.
• **All EEA countries — 2000**	PPS exchange rates forecasted.

R&D personnel in FTE

• **Japan** All sectors, BES and HES – 1981-95	Overestimated or based on overestimated data – MSTI data.
• **Japan** All sectors, BES and HES – 1996	Break in series with previous year for which data is available – MSTI data.

R&D researchers, scientist and engineers in FTE

• **Japan** All sectors, BES and HES – 1981-95	Overestimated or based on overestimated data – MSTI data.
• **Japan** All sectors, BES and HES – 1996	Break in series with previous year for which data is available – MSTI data.
• **United States** All sectors – 1985-97	Underestimated or based on underestimated data.
• **United States** GOV – 1981-97 GOV – 1987-97	Federal or central government only. Overestimated or based on overestimated data.

Labour force — R&D personnel as a % of the labour force

• **Austria — 1981-94** **Iceland — 1981-94** **Finland — 1981-94** **Norway — 1981-94** **Portugal — 1981-95** **Sweden — 1981-94**	MSTI data for the labour force.

European patent applications

International patent classification section titles

Section A	Human necessities;
Section B	Performing operations; transporting;
Section C	Chemistry; metallurgy;
Section D	Textiles; paper;
Section E	Fixed constructions;
Section F	Mechanical engineering; lighting; heating; weapons; blasting;
Section G	Physics;
Section H	Electricity.

Nomenclature of territorial units for statistics — NUTS

- The Nomenclature of Territorial Units for Statistics – NUTS – is defined only for the Member States of the European Union. For the candidate countries that are in the process of accession to the EU, for the additional countries comprising the European Economic Area – EEA – and also for Switzerland, a coding of Statistical Regions has been defined by Eurostat in agreement with the countries concerned. The purpose of both nomenclatures is to define a set of hierarchical regions in a comparable manner. Thus, a map referring to NUTS 2 refers also, where relevant, to Level 2 Statistical Regions.

- Arbitrary breakdown of NUTS codes due to the changes that appeared between NUTS '95 and NUTS '98.
Germany: **Meissen** – NUTS code DED25 – includes Hoyerswerda, Kreisfreie Stadt – DED23, Saechsische Schweiz – DED29 – and Kamenz – DED2B.

Abbreviations and symbols

Abbreviations

A

AAGR . . . . . .annual average growth rate

B

BES . . . . . .business enterprise sector

C

CD-ROM . . . . . .compact disc read-only memory
CEC . . . . . .Central European countries
CERN . . . . . .European Centre for Nuclear Research
CIMPS . . . . . .conférence interministérielle de la politique scientifique
CSF . . . . . .Community Support Framework

D

DG . . . . . .directorate-general

E

EC . . . . . .European Community/Communities
EEA . . . . . .European Economic Area
EEC . . . . . .European Economic Community (now EC)
EPO . . . . . .European Patents Office
ESA . . . . . .European system of integrated accounts
EU/EU-15 . . . . . .European Union
EUR-12 . . . . . .Eurozone (B, D, EL, E, F, IRL, I, L, NL, A, P, FIN)
Eurostat . . . . . .Statistical Office of the European Communities

F

FTE . . . . . .full-time equivalent

G

GBAORD . . . . . .Government budget appropriations or outlays for R&D
GDP . . . . . .gross domestic product
GERD . . . . . .gross domestic expenditure on R&D
GISCO . . . . . .Geographic Information System for the Commission (Eurostat)
GOV . . . . . .Government sector
GUF . . . . . .General University Funds

Abbreviations and symbols

H

HC . . . . . .head count
HES . . . . . .higher education sector

I

IPC . . . . . .International Patent Classification
ISBN . . . . . .International Standard Book Number
IT . . . . . .information technology

J

JPO . . . . . .Japanese Patent Office

K

KAU . . . . . .kind-of-activity unit

L

LF . . . . . .labour force
LKAU . . . . . .local-kind-of activity unit
LU . . . . . .local unit

M

MECU . . . . . .million ECU
MERNT . . . . . .Ministère de l'éducation nationale, de la recherche et de la technologie (F)
MEUR . . . . . .millions of euro
Mio . . . . . .million
MSTI . . . . . .Main Science and Technological Indicators
MURST . . . . . .Ministry of University and Scientific anc Technological Research

N

NABS . . . . . .Nomenclature for the analysis and comparison of science budgets and programmes
NACE . . . . . .General Industrial Classification of Economic Activities within the European Communities
NESTI . . . . . .Group of National Experts on Science and Technology Indicators; Nesti Group
NewCronos . . . . . .Eurostat's statistical reference database
NHS . . . . . .National Health Service
NIFU . . . . . .Norwegian Institute for studies in Research and higher Education
NUTS . . . . . .Nomenclature of Territorial Units for Statistics

Abbreviations and symbols

O

OCT . . . . . .Observatório das Ciênas e das Technologia
OECD . . . . . .Organisation for Economic Cooperation and Development
OPOCE . . . . . .Office for Official Publications of the European Communities
OST . . . . . .Office of Science and Technology (UK)

P

PCT . . . . . .Patent Cooperation Treaty
PHARE . . . . . .Poland-Hungary: aid for economic restructuring
PHD . . . . . .Philosophiae Doctor (doctor of philosophy)
PNP . . . . . .private non-profit sector
PPS . . . . . .purchasing power standard

R

R&D . . . . . .research and development
RTD . . . . . .research and technological development

S

S&T . . . . . .science and technology

T

TACIS . . . . . .technical assistance to the Commonwealth of Independent States
TRIPS . . . . . .Trade-Related Aspects of Intellectual Property Rights

U

USPTO . . . . . .United States Patent and Trademark Office

W

WIPO . . . . . .United States Patent and Trademark Office

Abbreviations and symbols

Statistical symbols and abbreviations

e . . . . . national estimation or by other sources
f . . . . . forecast
fax . . . . . facsimile number
i . . . . . more information in abbreviations and other methodological notes to the Tables and/or in Part 2, Definitions and methodological notes
No. . . . . number
p . . . . . provisional
p. . . . . page
pp. . . . . pages
s . . . . . Eurostat estimation
tel . . . . . telephone number
% . . . . . Percentage
: . . . . . data not available
- . . . . . not applicable or real zero
0 . . . . . less than fifty percent of the indicated unit
| . . . . . break in series
1990-92 . . . . . period of several calendar years (e.g. from 1.1.1990 to 31.12.92)
1991/92 . . . . . period of 12 consecutive months

Countries

EU-15

B . . . . . Belgium
DK . . . . . Denmark
D . . . . . Germany
EL . . . . . Greece
E . . . . . Spain
F . . . . . France
IRL . . . . . Ireland
I . . . . . Italy
L . . . . . Luxembourg
NL . . . . . Netherlands
A . . . . . Austria
P . . . . . Portugal
FIN . . . . . Finland
S . . . . . Sweden
UK . . . . . United Kingdom

Countries (cont.)

Other countries

IS . . . . . Iceland
JP . . . . . Japan
LI . . . . . Liechtenstein
NO . . . . . Norway
US . . . . . United States

Currencies

EU-15

ECU . . . . . ecu (European currency unit - up to 1998)
EUR . . . . . euro (European currency unit - from 1999)
ATS . . . . . Austrian shilling
BEF . . . . . Belgian franc
DEM . . . . . German mark
DKK . . . . . Danish crown (krone)
ESP . . . . . Spanish peseta
FIM . . . . . Finnish markka
FRF . . . . . French franc
GBP . . . . . pound sterling
GRD . . . . . Greek drachma
IEP . . . . . Irish pound (punt)
ITL . . . . . Italian lira
LUF . . . . . Luxembourg franc
NLG . . . . . Dutch guilder
PTE . . . . . Portuguese escudo
SEK . . . . . Swedish crown (krona)

Other countries

CHF . . . . . Swiss franc
ISK . . . . . Icelandic króna
JPY . . . . . Yen
NOK . . . . . Norwegian krone
USD . . . . . US dollar

Notice to the reader

Analyses in this publication refer to the data on the Eurostat database *NewCronos* at the time of writing. Because NewCronos is regularly updated as and when new data are received, it may be that data in extractions made or requested subsequently differ somewhat to those available at the time of writing.

The periods under analysis presented in this publication were chosen according to availability. Data included in the time series either cover the period 1985 to 2000 or 1990 to 2000.

For the analysis, the general aim was to keep the year that ensured the greatest degree of harmonisation between countries. For this reason it was not possible in some cases to present all the data for all countries. The complete data time series are available from Eurostat on the *NewCronos* database.

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