EUROPEAN COMMISSION

European Research Area

GENERAL INFORMATION

She Figures 2009

Statistics and Indicators on Gender Equality in Science

EUR 23856 EN

CAPACITIES

ERRATA

Regarding the Spanish data included in She Figures 2009 in Chapter 3 , please note that Grade A positions wrongly include a category of professors called "catedráticos de escuela universitaria" considered as "catedráticos de Universidad" which is th e Spanish equivalent to a full professor. The correct data are the following:

Figure 3.3 Proportion of women in grade A academic positions:
13% in 2002 and 14% in 2007.

Annex 3.1 Academic Staff:
Grade A: 1300 women and 7772 men.
Grade B: 11259 women and 19600 men.
Grade C: 2858 women and 2835 men.

Annex 3.2 Senior academic staff (Grade A) by field of science and sex, 2007:
Women NS: 381 ET: 65 MS: 116 AS: 24 SS: 376 H: 314 Unknown: 24
Men NS: 2534 ET: 1006 MS: 800 AS: 221 SS: 2037 H: 1087 Unknown: 87

Interested in European research?

Research*eu is our monthly magazine keeping you in touch with main developments (results, programmes, events, etc.). It is available in English, French, German and Spanish. A free sample copy or free subscription can be obtained from:

European Commission
Directorate-General for Research
Communication Unit
B-1049 Brussels
Fax (32-2) 29-58220
E-mail: **research-eu@ec.europa.eu**
Internet: **http://ec.europa.eu/research/research-eu**

EUROPEAN COMMISSION

Directorate-General for Research
Directorate L — Science, Economy and Society
Unit L.4 — Scientific Culture and Gender Issues

Contact: Francesca Crippa

European Commission
Office SDME 07/88
B-1049 Brussels

Tel. (32-2) 29-91935
Fax (32-2) 29-93746
E-mail: Francesca.Crippa@ec.europa.eu

EUROPEAN COMMISSION

She Figures 2009

Statistics and Indicators on Gender Equality in Science

2009

Directorate-General for Research
Capacities Specific Programme

EUR 23856 EN

EUROPE DIRECT is a service to help you find answers to your questions about the European Union

Freephone number (*):

00 800 6 7 8 9 10 11

(*) Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed

Cataloguing data can be found at the end of this publication.

Luxembourg: Publications Office of the European Union, 2009

ISBN 978-92-79-11388-8
doi 10.2777/10329

Printed in Germany
PRINTED ON WHITE CHLORINE-FREE PAPER

Preface

This year the European Commission marks 10 years of 'Women in Science' activities. To understand the urgency and importance of this subject, She Figures 2009 offers numbers.

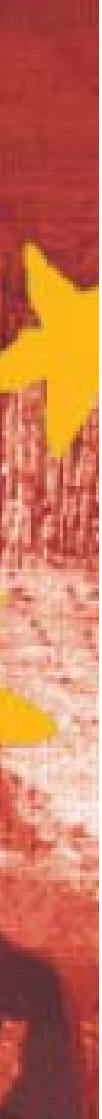
Take a snapshot of 2006: among European researchers, women remain a minority – only 30% of European researchers are women, to be precise. Browse the scientific fields: some are heavily staffed by women, others by men. In the Government Sector, across the EU-27, while there are equivalent numbers of women and men working in the field of Humanities, only 27% of researchers in Engineering and Technology are female. And what about researchers' career progression? Women account for 59% of graduates, whereas men account for 82% of full professors. Do you find it hard to believe? Check out chapter 3.

There is an imbalance in the number, seniority and influence of women and men in scientific studies and professions. She Figures 2009 is there to ground this statement in the data collected by Eurostat and the Statistical Correspondents of the Helsinki Group. It also aims to keep track of the progress made in this field, and to give all of us reasons to work for a better future of Europe's society and economy.

Indeed, She Figures 2009 tells us that the proportion of female researchers is actually growing faster than that of men (over the period 2002-2006, +6.3% for women and +3.7% for men). Also, the share of women among scientists and engineers has grown by 6.2%, compared to 3.7% for men over the same period. Moreover, the Glass Ceiling Index is generally decreasing everywhere in Europe. You don't know what the Glass Ceiling Index is? Another good reason to read chapter 3.

The figures are encouraging but the gender imbalance is not self-correcting. She Figures is recommended reading for all policy-makers, researchers, teachers, students, and parents who share a vision of a democratic, competitive and technologically advanced Europe.

JANEZ POTOČNIK
Commissioner for Science and Research

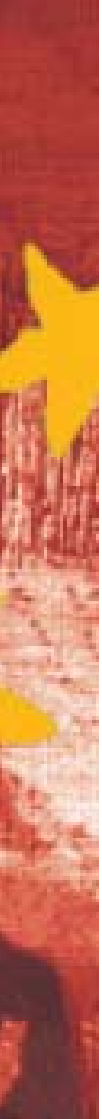


Acknowledgements

As for previous editions, She Figures 2009 is the outcome of a coordinated effort. I would particularly like to thank the following persons who have made valuable contributions to this booklet:

- The Statistical Correspondents of the Helsinki Group on Women and Science for providing data and technical advice (for detailed references please see annex 6);
- Síle O'Dorchai and Danièle Meulders at the Department of Applied Economics of Université Libre de Bruxelles (DULBEA, ULB) for drafting the text and analysing the data of the She Figures 2009 leaflet and booklet;
- Antonia Margherita at SOGETI Luxembourg S.A. (Luxembourg) for the data collection, layout and production of the She Figures 2009 leaflet and booklet;
- Florence Bouvret, Vera Fehnle, Camilla Gidlöf-Regnier, and Johannes Klumpers from different units of the Directorate-General for Research for scientific and practical support;
- Veijo Ritola, Tomas Meri, Reni Petkova and Bernard Felix at Eurostat for support with data quality and methodological issues;
- Francesca Crippa from the Directorate-General for Research for impetus and overall co-ordination of this project.

LUISA PRISTA
Head of Scientific Culture and Gender Issues Unit,
DG Research

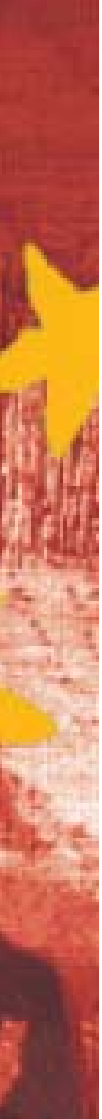


Executive summary

She Figures 2009 is the third publication (following She Figures 2003 and She Figures 2006) of a key set of indicators that are essential to correctly comprehend the situation of women in science and research. The She Figures data collection is undertaken every three years as a joint venture of the Scientific Culture and Gender Issues Unit of the Directorate-General for Research of the European Commission and the group of Statistical Correspondents of the Helsinki Group.

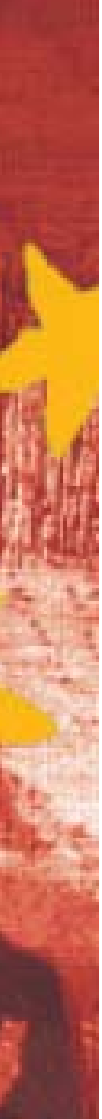
The major findings and trends put forward by She Figures 2009 can be summarised as follows:

- Women in scientific research remain a minority, accounting for 30% of researchers in the EU in 2006.
- In the EU, their proportion is growing faster than that of men (6.3% annually over 2002-2006 compared with 3.7% for men); the same goes for the proportion of women among scientists and engineers (6.2% annually compared with 3.7% for men).
- On average in the EU-27, women represent 37% of all researchers in the Higher Education Sector, 39% in the Government Sector and 19% in the Business Enterprise Sector, but in all three sectors there is a move towards a more gender-balanced research population.
- In the EU-27, 45% of all PhD graduates were women in 2006; they equal or outnumber men in all broad fields of study, except for science, mathematics and computing (41%), and engineering, manufacturing and construction (25%).
- Over the period 2002-2006, there has been an increase in the overall number of female researchers in almost all fields of science in the EU-27: the most positive growth figures characterised the fields of the medical sciences (+5.6% in HES and +12% in GOV), the humanities (+6.8% in HES and +4% in GOV), engineering and technology (+6.7% in HES and +10% in GOV) and the social sciences (+6.5% in HES and +3% in GOV).
- The highest shares of female researchers in the Business Enterprise Sector are in the fields of the agricultural and medical sciences and the lowest shares in engineering and technology.
- Women's academic career remains markedly characterised by strong vertical segregation: the proportion of female students (55%) and graduates (59%) exceeds that of male students, but men outnumber women among PhD students and graduates (the proportion of female students drops back to 48% and that of PhD graduates to 45%). Furthermore, women represent only 44% of grade C academic staff, 36% of grade B academic staff and 18% of grade A academic staff.



- The under-representation of women is even more striking in the field of science and engineering: the proportion of women increases from just 31% of the student population at the first level to 36% of PhD students and graduates but then falls back again to 33% of academic grade C staff, 22% at grade B and just 11% at grade A.
- The Glass Ceiling Index stood at 1.8 in the EU-27 in 2007 (the higher the score, the thicker the ceiling).
- The proportion of women among full professors is highest in the humanities and the social sciences (respectively 27.0% and 18.6%) and lowest in engineering and technology, at 7.2%.
- At the level of the EU-27, women account for 23% of grade A academics among 35 to 44-year-olds, 21% among 45 to 54-year-olds and 18% among those aged over 55. The situation thus appears more favourable for the youngest generations of female academics but the gender gap is still persistent.
- In the Higher Education Sector, in the EU-27, 61% of female R&D staff were researchers compared with 78% of men in 2006, but 21% of women in R&D hold technical occupations compared with 14% of men and, finally, 18% of women in R&D perform other supporting tasks compared with 8% of men. In the Government and the Business Enterprise Sectors, an even lower share of women are occupied as researchers than in the Higher Education Sector (respectively 47% and 41%), but instead relatively more women work as technicians (respectively 23% and 33%) or as supporting staff (respectively 30% and 26%).
- The official measure of the overall gender pay gap covering the entire economy stood at 25% in the EU-27 in 2006, a slight improvement from 2002 when it stood at 26%.
- On average throughout the EU-27, 13% of institutions in the Higher Education Sector are headed by women and just 9% of universities have a female head.
- On average in the EU-27, 22% of board members are women.
- R&D expenditure *per capita* researcher is usually the highest in the Business Enterprise Sector. There seems to be a negative correlation between the level of expenditure and women's representation, as the Business Enterprise Sector is precisely the sector in which women are the most under-represented.

To top off this summary of major findings, it is interesting to note that the indicators presented in She Figures 2009 show that the new Member States of the EU-27 are widely distributed at all levels of traditional EU-15 country classifications. These classifications were established over recent decades, mainly by economists and social scientists, in order to understand the various welfare states in Europe and the differences between them.



Compared to the EU-15, in some new Member States the situation was on average more favourable for female scientists, while in others the situation was much worse.

The policy implications of the results analysed in She Figures 2009 are numerous.

A transversal recommendation concerns the lack of harmonised and comparable data in general but particularly regarding the gender pay gap and the measurement of full-time equivalent employment rates to illustrate the part-time trap for women scientists that may turn out to be a major determinant of the persisting problem of vertical segregation in the academic world but also in the broader domain of research in general. Besides gender differences in part-time employment among scientists, in some countries there is also a pronounced gender gap in overtime hours, which cannot be captured in great detail using existing data.

Although in some countries the situation is more favourable for younger generations of women, the data by age groups reject the hypothesis of a spontaneous movement towards equality. Proactive policies are thus essential.

Given that the absence of a balanced gender composition in all study fields is due to the traditional choices made by girls and boys alike, policy-makers should give equal attention to girls' and boys' choices.

A gender-mixed composition of nominating commissions, an increase in the objectivity of the applied selection criteria, tutoring of women, or even the fixing of quotas are all policies that are generally evoked to balance out the unequal situation that continues to prevail in the academic sector and to work against the discriminatory snowball effect (cfr. chapter 4). Moreover, the fight against gender stereotypes and the introduction of measures to promote a gender mix in all primary and secondary school study fields could favour the entry of young girls into the field of engineering and technology where they are particularly under-represented.

The gender pay gap is the highest in those occupations that are most open to high-level female researchers, even though it is large everywhere, particularly in public enterprise. It also deepens as the age of the researcher increases. There is no spontaneous reduction of the gender pay gap over time, a conclusion that holds up for all gender inequalities that were set forth and analysed throughout She Figures 2009. Again proactive policies need to be implemented to tackle this gender pay gap, which can be largely explained by the Glass Ceiling Effect.

Table of contents

List of Tables and Figures		11
General Introduction		15
Chapter 1	Setting the scope	19
Chapter 2	Scientific fields	38
Chapter 3	Seniority	65
Chapter 4	Setting the scientific agenda	92
Annex 1	Data relating to Chapter 1	105
Annex 2	Data relating to Chapter 2	109
Annex 3	Data relating to Chapter 3	115
Annex 4	Data relating to Chapter 4	121
Annex 5	Methodological Notes	125
Annex 6	List of the Statistical Correspondents of the Helsinki Group on Women and Science	151
References		153

List of Tables and Figures

Chapter 1 Setting the scope

Figure 1.1 Proportion of women in the EU-27 for total employment, tertiary educated and employed (HRSTC) and scientists and engineers in 2007, compound annual growth rate for women and men 2002-2007 25
Figure 1.2 Employed professionals and technicians (HRSTC) as a percentage of tertiary educated (HRSTE) by sex, 2007 26
Figure 1.3 Proportion of scientists and engineers in the total labour force by sex, 2007 27
Figure 1.4 Proportion of female researchers, 2006 28
Figure 1.5 Compound annual growth rate for researchers by sex, 2002-2006 29
Figure 1.6 Researchers per thousand labour force by sex, 2006 30
Figure 1.7 Proportion of female researchers by sector, 2006 31
Figure 1.8 Distribution of researchers across sectors by sex, 2006 32
Figure 1.9 Compound annual growth rate for researchers in the Higher Education Sector (HES) by sex, 2002-2006 33
Figure 1.10 Compound annual growth rate for researchers in the Government Sector (GOV) by sex, 2002-2006 34
Figure 1.11 Compound annual growth rate for researchers in the Business Enterprise Sector (BES) by sex, 2002-2006 35
Figure 1.12 Distribution of researchers in the Higher Education Sector (HES) by sex and age group, 2006 36
Figure 1.13 Distribution of researchers in the Government Sector (GOV) by sex and age group, 2006 37

Chapter 2 Scientific fields

Figure 2.1 Proportion of female PhD (ISCED 6) graduates, 2006 49
Figure 2.2 Compound annual growth rate of PhD (ISCED 6) graduates by sex, 2002-2006 50
Table 2.1 Proportion of female PhD (ISCED 6) graduates by broad field of study, 2006 51
Figure 2.3 Distribution of PhD (ISCED6) graduates across the broad fields of study by sex, 2006 52
Table 2.2 Compound annual growth rates of PhD (ISCED6) graduates by narrow field of study in natural science and engineering (fields 400 & 500) by sex, 2002-2006 53
Table 2.3 Evolution of the proportion of female PhD (ISCED6) graduates by narrow field of study in natural science and engineering (fields 400 & 500), 2002-2006 54
Figure 2.4 Distribution of researchers in the Higher Education Sector (HES) across fields of science, 2006 55
Table 2.4 Compound annual growth rates of female researchers in the Higher Education Sector (HES) by field of science, 2002-2006 56
Table 2.5 Evolution of the proportion of female researchers in the Higher Education Sector (HES) by field of science, 2002-2006 57

Figure 2.5	Distribution of researchers in the Government Sector (GOV) across fields of science, 2006	58
Table 2.6	Compound annual growth rates of female researchers in the Government Sector (GOV) by field of science, 2002-2006	59
Table 2.7	Evolution of the proportion of female researchers in the Government Sector (GOV) by field of science, 2002-2006	60
Figure 2.6	Distribution of researchers across economic activities (NACE) in the Business Enterprise Sector (BES), 2006	61
Table 2.8	Proportion of female researchers by economic activity (NACE) in the Business Enterprise Sector (BES), 2006	62
Table 2.9	Evolution of the proportion of female researchers in the Business Enterprise Sector (BES) by field of science, 2002-2006	63
Table 2.10	Dissimilarity index for researchers in Higher Education Sector (HES) and Government Sector (GOV), 2006	64
Chapter 3	Seniority	
Figure 3.1	Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002/2006	73
Figure 3.2	Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-27, 2002/2006	74
Table 3.1	Proportion of female academic staff by grade and total, 2007	75
Figure 3.3	Proportion of women in grade A academic positions, 2002/2007	76
Figure 3.4	Percentage of grade A among all academic staff by sex, 2007	77
Figure 3.5	Glass Ceiling Index, 2004/2007	78
Table 3.2	Proportion of female grade A staff by main field of science, 2007	79
Figure 3.6	Distribution of grade A staff across fields of science by sex, 2007	80
Table 3.3	Proportion of female A grade staff by age group, 2007	81
Figure 3.7	Distribution of grade A staff across age groups by sex, 2007	82
Figure 3.8	Distribution of R&D personnel across occupations for the Higher Education Sector (HES) by sex, 2006	83
Figure 3.9	Distribution of R&D personnel across occupations for the Government Sector (GOV) by sex, 2006	84
Figure 3.10	Distribution of R&D personnel across occupations for the Business Enterprise Sector (BES), by sex, 2006	85
Figure 3.11	Distribution of R&D personnel across occupations in all Sectors (HES, GOV, BES) by sex, 2006	86
Figure 3.12	Gender pay gap in % for total economy, 2002/2006	87
Table 3.4	Gender pay gap in % by selected occupations for employees in private enterprise, EU-27 and EU-25, 2002/2006	88
Table 3.5	Gender pay gap in % by selected occupations for employees in public enterprise, EU-27 and EU-25, 2002/2006	89
Table 3.6	Gender pay gap in % by selected occupations in private and public enterprise, EU-27 and EU-25, 2002/2006	90
Table 3.7	Gender pay gap in % by age group for employees in private and public enterprise for ISCO occupations 100, 200 and 300 combined, EU-27 and EU-25, 2002/2006	91

Chapter 4 Setting the scientific agenda

Figure 4.1 Proportion of female heads of institutions in the Higher Education Sector (HES), 2007 97

Table 4.1 Proportion of female heads of universities or assimilated institutions based on capacity to deliver PhDs, 2007 98

Figure 4.2 Proportion of women on boards, 2007 99

Figure 4.3 Evolution in research funding success rate differences between women and men, 2002/2007 100

Table 4.2 Research funding success rate differences between women and men by field of science, 2007 101

Figure 4.4 Proportion of female researchers in FTE and R&D expenditure in Purchasing Power Standards (PPS) *per capita* researcher, 2006 102

Figure 4.5 R&D Expenditure in Purchasing Power Standards (PPS) *per capita* researchers in FTE by sector, 2006 103

Annex 1 Data relating to Chapter 1

Annex 1.1 Number of researchers by sex, HC, 2002-2006 105

Annex 1.2 Number of researchers in the Higher Education Sector (HES) by sex, HC, 2002-2006 106

Annex 1.3 Number of researchers in the Government Sector (GOV) by sex, HC, 2002-2006 107

Annex 1.4 Number of researchers in the Business Enterprise Sector (BES) by sex, HC, 2002-2006 108

Annex 2 Data relating to Chapter 2

Annex 2.1 Number of ISCED 6 graduates by sex, 2002-2006 109

Annex 2.2 Number of ISCED 6 graduates by broad field of study and sex, 2006 110

Annex 2.3 Number of ISCED 6 graduates by narrow fields of study and sex in natural science and engineering (400 & 500 fields), 2006 111

Annex 2.4 Number of researchers in the Higher Education Sector (HES) by fields of science and sex, 2006 112

Annex 2.5 Number of researchers in the Government Sector (GOV) by fields of science and sex, 2006 113

Annex 2.6 Number of researchers in the Business Enterprise Sector (BES) by economic activity (NACE) and sex, 2006 114

Annex 3 Data relating to Chapter 3

Annex 3.1 Number of academic staff by grade and sex, 2007 115

Annex 3.2 Number of senior academic staff (Grade A) by field of science and sex, 2007 116

Annex 3.3 Number of academic staff (Grade A) by age group and sex, 2007 117

Annex 3.4 Number of R&D personnel across occupations for the Higher Education Sector (HES) by sex, 2006 118

Annex 3.5 Number of R&D personnel across occupations for the Government Sector (GOV) by sex, 2006 119

Annex 3.6 Number of R&D personnel across occupations for the Business Enterprise Sector (BES) by sex, 2006 120

Annex 4 Data relating to Chapter 4

Annex 4.1	Number of heads of institutions in the Higher Education Sector (HES) by sex, HC, 2007	121
Annex 4.2	Number of applicants and beneficiaries of research funding by sex, 2002-2007	122
Annex 4.3	Number of applicants and beneficiaries of research funding by sex and field of science, 2007	123
Annex 4.4	Total intramural R&D expenditure (GERD) for all sectors (BES, GOV, HES) in million PPS, 2006	124

General introduction

Statistics and indicators on women in science are a key element of the mainstreaming approach to equal opportunities. She Figures 2009 is a collection of available data related to the situation of women in science and research. This data collection has evolved from the willingness to pay attention to the gender dimension of research and to monitor gender equality in a field where strong gender imbalances persist. It also reflects a clear wish to develop pan-European harmonised statistics facilitating cross-national comparisons and to build a base of gender disaggregated data available at the EU-level that allows to track changes over time and that has great value both to increase knowledge and to inform policies.

She Figures 2009 follows in the footsteps of She Figures 2003 and She Figures 2006. In general, chapters 1 and 2 are concerned with horizontal segregation, and chapters 3 and 4 with vertical segregation. Chapter 1 assesses the presence of women in research from a cross-country perspective. In particular, while it highlights the rapid progression of women in science, engineering and technology, it also draws the broad lines of the problem of gender segregation in science, fully analysed in chapter 2 on scientific fields. Chapter 2 also shows that a rapid catching up movement by women is taking place so that in the near future women will level with men at the PhD level. Chapter 3 on researchers' seniority illustrates the workings of a Glass Ceiling that women hit during their ascent in the academic hierarchy. Moreover, there is no spontaneous reduction of vertical segregation and of the gender pay gap over time. Finally, chapter 4 shows that women's under-representation at the highest hierarchical levels of the academic career severely cuts their chances of being at the head of higher education institutions, which makes it hard for young women in academia to find female role models, and it biases all decisions that are taken at these high ranks regarding scientific policies, research subjects and credits and nominating rules and criteria.

She Figures 2009 goes further than previous versions by introducing new sets of additional data. In chapter 1, the distribution of researchers by sex and age group was added for both the Higher Education Sector (HES) and the Government Sector (GOV). In chapter 3, the proportions of women at grade A level are presented for different age groups (<35 years, 35-44 years, 45-54 years, and +55 years) to at least partially assess the role played by a potential generation effect in women's under-representation at the highest hierarchical levels. Moreover, the gender pay gap in public and private enterprise is also broken down by these age groups. Finally, in chapter 4, a broader indicator measuring the proportion of female heads of institutions in the HES and a narrower one on the proportion of female heads of universities or assimilated institutions were added.

She Figures 2009 reveals that women in scientific research remain a minority (30% of researchers in the EU-27 in 2006). Their proportion is growing faster than that of men but not enough to indicate that the gender imbalance in science is self-correcting.

Positive trends can be observed such as the considerable growth in the proportion of female scientists and engineers or in the share of women graduating at PhD level in sciences. However, horizontal gender segregation across different economic sectors and fields of science persists everywhere. Female researchers are far more likely to be employed in the Higher Education and the Government Sectors than in the Business Enterprise Sector, which attracts the bulk of research efforts. Female researchers feature in higher proportions in social sciences, agricultural sciences, medical sciences, and humanities than in engineering and technology, a key research area. Despite an increase in the percentage of women at the different stages of a typical academic career between 2002 and 2006, vertical segregation of women in science is also extremely persistent.

It thus seems that women's massive entry and rapid progression in science is bringing about a more equal representation of men and women in all fields of science and at all stages of the academic career. However, it still fails to give them an equal opportunity to participate in decision-making concerning scientific policies, research subjects and grants, and so forth. In policy terms, it is crucial to promote a high representation of women on boards that determine scientific policy in all countries. Their presence is not only essential to promote the cause of women in science; in scientific research, diversity is a factor for higher chances of excellence.

The implications of these gender imbalances are highly relevant for the European economy.

Data sources

Most of the statistics used in this publication are drawn from Eurostat, the European Commission services' official data source. In addition, Statistical Correspondents from all EU Member States, together with Croatia, Iceland, Israel, Norway, Switzerland and Turkey provided data on the seniority of academic staff by sex and age group, differences between men and women for funding success rates, proportion of women on scientific boards and number of female heads of universities and other institutions in higher education. The Statistical Correspondents form a sub-group of the Helsinki Group on Women and Science led by the Scientific Culture and Gender Issues Unit of the Directorate-General for Research. A list of the Statistical Correspondents can be found in Annex 6.

Eurostat

The data from Eurostat all originate from a variety of different surveys conducted at national level:

- Researchers and R&D expenditure data are collected through the R&D Survey, which since 2004 has been carried out as a joint data collection between Eurostat and the OECD. R&D data for Japan and the United States come from the OECD's Main Science and Technology Indicators (MSTI).
- Human Resources in Science and Technology (HRST) data are collected through the European Union Labour Force Survey (EU LFS).
- Education data are collected through the UOE (UNESCO-UIS, OECD, Eurostat) questionnaire.

- Gender pay gap data have been collected through SES2002 and SES2006 (Structure of Earnings Surveys 2002 and 2006).

Statistical Correspondents

The statistics on the seniority of academic staff, research funding success rates, membership of scientific boards and heads of institutions are collected at the national level through Higher Education and R&D Surveys, Ministries and Academies of Science, Research Councils and Universities as part of their own monitoring systems and administrative records. It should be noted that these data are not always ready for cross-country comparison at EU level. Technical details relating to adherence to standards and categorisation and data sources can be found in Annex 5.

Key definitions

PhD/Doctorate or equivalent graduates: The International Standard Classification of Education (ISCED) identifies a specific level – ISCED 6 – as *"tertiary programmes which lead to the award of an advanced research qualification"* (UNESCO, 1997). Education programmes such as PhDs and their equivalents are included in this level for all countries, as well as some post-doctoral programmes and, in a few cases, some shorter post-graduate programmes that are a pre-requisite for the Doctorate (for example the D.E.A. in France).

Human Resources in Science & Technology (HRSTC): This section of the workforce is defined as those who are both qualified tertiary educated graduates in the labour force and those who are working in professional or technician occupations not formally qualified as above.

Scientists and Engineers (S&E): Data for this group are also drawn from the European Union Labour Force Survey, more specifically from the professional occupations category, but are restricted to "physical, mathematical and engineering occupations" and "life science and health occupations" and therefore exclude scientists in other occupational fields, such as social, or agricultural sciences.

Researchers: According to the common definition in the Frascati Manual (OECD, 2002), *"Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned".*

More detailed information on these definitions can be found in Annex 5.

Setting the scope

The purpose of this chapter is to assess the presence of women in research in a cross-country perspective and set the context for the chapters that follow. When reading She Figures 2009, one important consideration needs to be kept in mind. For reasons of data limitations, all data presented throughout the different chapters of this publication are measured in headcount and thus fail to take into account the prevalence of part-time employment in the female research population. Headcount data mask substantial variation in working hours both within the population of female researchers and when comparing men and women in research. It is therefore essential to temper the positive image of women's progression in science keeping in mind their greater likelihood of holding part-time jobs.

Figure 1.1 compares the proportion of women in total employment with their share among the highly educated employed as professionals or technicians and among those working as scientists and engineers for the year 2007. **The fact that the proportion of women is higher among highly educated professionals or technicians (52%) than in total employment (45%) illustrates that tertiary educated women are more successful in finding a job than their counterparts with a lower level of education. However, their proportion drops to 32% among employed scientists and engineers** which in turn exemplifies the problem of gender segregation in education. Between 2002 and 2007, women have been catching up with men as women's compound annual growth rate has exceeded that of men both in total employment and in the two more precise subgroups. The difference is largest among scientists and engineers, where the share of women has grown by an average of 6.2% per year between 2002 and 2007 compared with a male growth rate of just 3.7%. These growth rates are respectively 5.4% and 3.9% for highly educated women and men working as professionals or technicians. Employment in these subcategories thus seems to be expanding much more rapidly over recent years for both men and women than total employment. The growth in total employment was limited to 1.8% on average per year for women and to 1.1% for men over the period considered.

These trends should be confronted with the proportions of highly educated men and women who are employed as professionals or technicians (Figure 1.2) and the proportions of male and female scientists in the total labour force (Figure 1.3). Figure 1.2 does not present a high degree of discrepancy between men and women. For the year 2007, throughout the EU-27, on average 58% of highly educated women were working as professionals or technicians compared with 55% of men. A slightly higher percentage of women was indeed observed in most countries. In the Baltic States, the difference between the shares of highly educated men and women in professional or technical jobs was much larger than elsewhere, with the gap reaching as high as 25% in Lithuania. The opposite was noted in just four countries. In Italy, France, Cyprus and Turkey, more highly educated men than women were employed as professionals or technicians. Finally, in Belgium, there seems to be no gender dimension to the probability of the highly educated to work as professionals or technicians.

Gender differences stand out more in the field of science and engineering in most EU countries. Figure 1.3 shows that, in 2007, there were only three countries where the proportion of female scientists and engineers was at 50% or more: Latvia (50%), Lithuania (53%), and Poland (54%). On average 32% of scientists and engineers were women in the EU-27. In many countries, the share of women among scientists and engineers was at a much lower level still. Switzerland is at the very bottom of the country ranking with just 18% of women in this category. The gender distribution is very similar in the population of researchers (Figure 1.4). **The average proportion of female researchers in the EU-27 stood at 30% in 2006 but wide variations were noted between countries**: Japan, Luxembourg and the Netherlands respectively have 12%, 18% and 18% of female researchers. At the top of the country ranking according to the proportion of women in research, there are the Baltic States but also Bulgaria, Croatia, Portugal, Romania, and Slovakia, all of which have more than 40% of women in their research population. The compound annual growth rate of the numbers of female and male scientists over the period 2002-2006 is shown in Figure 1.5. Again women seem to be catching up with men over time as their share of the total research population has been growing at a faster rate over recent years (exceptions are the Czech Republic, Romania, Bulgaria, Hungary, Latvia and France). **In the EU-27 on average, the number of female researchers has increased at a rate of 6.3% per year compared with 3.7% for male researchers.** Given that the mean growth rate for women is higher in the EU-15 than in the EU-27 whereas both geographical entities put forth the same growth rate for male researchers, it appears that in the EU's most recent Member States, the share of women in research is increasing at a slower pace than in the older Member States. Important exceptions are Malta and Cyprus where the compound annual growth rates of female researchers were as high as 14% and 13% respectively between 2002 and 2006. Moreover, from Figure 1.5 it appears that the gender gap in growth rates is generally smaller in low-growth countries and higher in high-growth countries. It is the widest in Malta, Austria and Switzerland.

This positive trend over time should not mask the pattern of female under-representation as shown in Figure 1.4 (proportion of female researchers). A similar pattern was also noted in the analysis of the number of researchers in the total labour force by sex. Figure 1.6 plots these results per thousand for the year 2006. Five exceptions aside, **there are considerably fewer female researchers among active women than there are male researchers among active men.** The male rates were 10 or more points per thousand higher that the female rates in Finland, Denmark, Austria, Luxembourg and Germany. On average across the EU-27, 9‰ of the male labour force were researchers in 2006 compared with 5‰ of women on the labour market. Exceptions to this gendered pattern can be observed in Lithuania, Latvia, Croatia and Romania. In these countries, identical shares of active men and women are actually working in research. Turkey is the only country where more active women than men do research.

Figure 1.7 allows for a more detailed analysis of the proportions of female researchers as they were presented in Figure 1.4 for the year 2006. It yields the proportion of female researchers in three broad economic sectors: Higher Education, the Government Sector and the Business Enterprise Sector. Whereas women's presence appears to be relatively similar in the Government Sector and in Higher Education, it is considerably weaker in the Business Enterprise Sector. **On average in the EU-27, women represent 37% of all researchers in the Higher Education Sector, 39% in the Government Sector but merely 19% in the Business Enterprise Sector.** The degree of cross-country disparity is fairly low in the Higher Education and Government Sector but much larger in the Business Enterprise Sector. In the Higher Education Sector, 4 countries have proportions of women in research that are below 30% (the Netherlands, Japan, Luxembourg and Malta). On the contrary, female proportions of 50% or more are found in Lithuania and Latvia. In the Government Sector, below 30% of all researchers are women in the Netherlands, Japan, Turkey and Switzerland; and 50% or more in Lithuania, Estonia, Romania, Bulgaria, Portugal and Malta. In the Business Enterprise Sector, the country distribution in terms of the size of the proportion of female researchers is skewed downwards compared with the previous two sectors. Women represent less than 15% of the research population in 5 countries (the Netherlands, Japan, Austria, Germany, and Luxembourg). Their share is highest, although still only at 41%, in Romania. In sum, regardless of the sector, two countries systematically show the lowest proportions of female researchers, notably the Netherlands and Japan, whereas Lithuania and Romania always have the highest proportions of women in research.

Figure 1.8 presents the distribution of male and female researchers across four broad sectors of activity for the year 2006: the Higher Education Sector, the Government Sector, the Business Enterprise Sector and the Private Non-Profit Sector. It confirms the trends highlighted by Figure 1.7 and compares the share of female and male researchers across the economic sectors. Figures 1.9, 1.10 and 1.11 add valuable information as they show the rate at which the numbers of male and female researchers have been increasing (or decreasing) on an average annual basis between 2002 and 2006 in each of three broad economic sectors (HES, GOV and BES). Both Figure 1.8 and 1.7 show that, in most countries, women are more likely than men to opt for employment in the Higher Education and Government Sectors. These sectors are in contrast with the Business Enterprise Sector, which is more likely to be chosen by men. On average throughout the EU-27, the respective shares of female and male researchers in the Higher Education Sector stood at 57% and 41% in 2006. In the EU-27, 16% of female researchers and 11% of male researchers were employed in the Government Sector. As mentioned above, in the EU-27 the Business Enterprise Sector employed a higher proportion of male researchers than female researchers, with an average of 47% and 25% respectively in 2006.

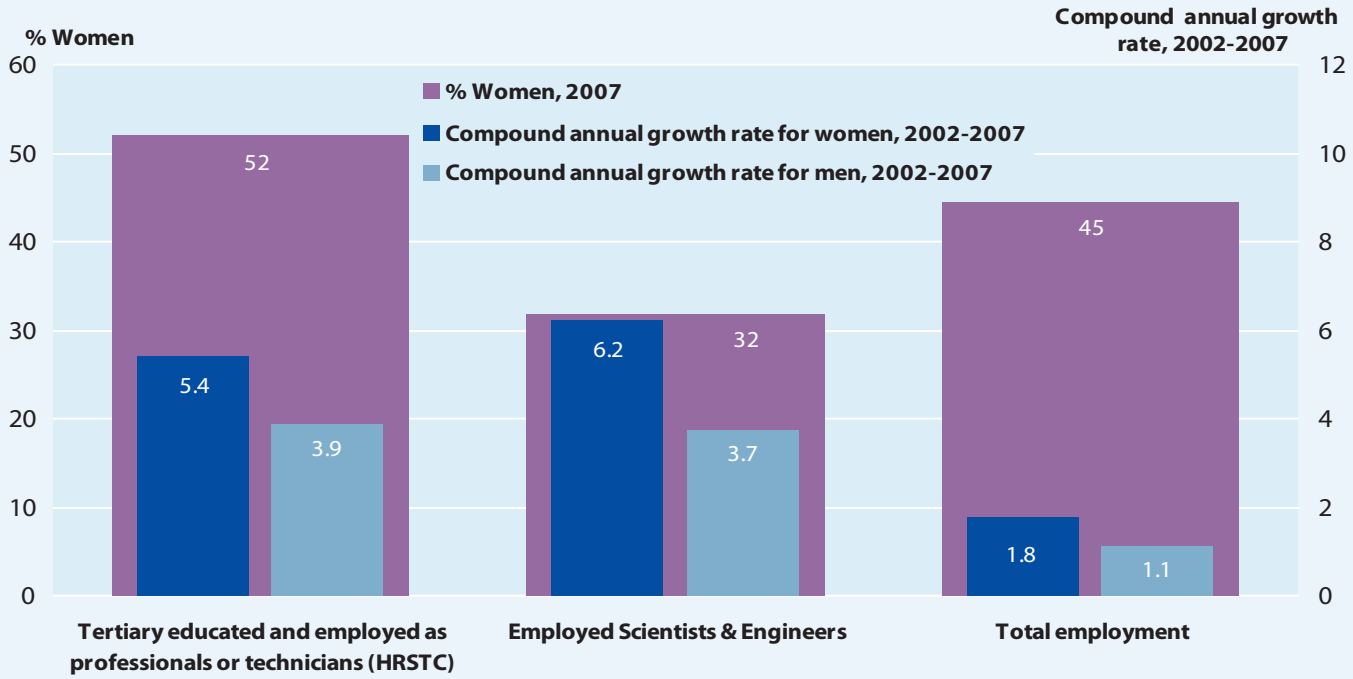
The Private Non-Profit Sector employs a share of researchers that is worth mentioning only in Italy, Cyprus, the UK, and particularly Portugal (12% of female researchers and 13% of male researchers in 2006). Has this gender imbalance across broad economic sectors been levelling out over recent years? From Figures 1.9, 1.10 and 1.11, it appears that this has not really been the case. **In the Higher Education Sector, which hosts a larger share of female researchers, the compound annual growth rate in the number of female researchers has been stronger than that of men over the period 2002-2006 in most countries (26 out of 31).** The opposite was observed only in 5 countries: the Czech Republic, Greece, the Netherlands, Latvia, and Sweden. However, the differences in growth rates are extremely modest in the former three countries. In Latvia, the compound annual growth rate over 2002-2006 of male researchers stood at 4.6% and that of female researchers at 3.6%. Only in Sweden has the gender difference in growth rates of male and female researchers been really sizeable; the number of female researchers has indeed been decreasing over recent years at an average annual pace of -3.5%, whereas the number of male researchers has been slowly on the rise at a rate of 1.4%. These exceptions aside, in most countries there seems to be no move towards a more gender-balanced research population in higher education. Throughout the EU-27, the average annual growth rate for female researchers has stood at 4.8%, compared with 2.0% for male researchers. Finally, growth rates for both female and male researchers are extremely variable between countries, ranging from 22% for women and 20% for men in Romania to the extremely low, or even negative, levels already mentioned for Sweden. **A very similar pattern was noted in the Government Sector, which employed a larger share of female researchers than male researchers and where in most countries women's presence has been strengthening over recent years.** On average, in the EU-27, the number of female researchers has been growing at a pace of 5.4% per year compared with 2.3% for men. There are just four exceptions to this overall pattern. In Hungary and Portugal, the growth rate of male researchers is only marginally higher than that of women. In Latvia and Luxembourg, male researchers have been reinforcing their predominance in this sector over the period 2002-2006, at an annual rate of 19.8% in Latvia (compared with an 8.7% for female researchers) and 10.8% in Luxembourg (compared with 5.9% for female researchers). Again, the cross-country distribution of growth rates is very wide, ranging from 21.3% for female researchers in Iceland to -3.8% in Croatia and from 19.8% for male researchers in Latvia to -4.8% in Croatia. Finally, **in the Business Enterprise Sector, where the proportion of female researchers is generally lower than that of men, the compound annual growth rate of female researchers has been stronger than that of men over the period 2002-2006 in roughly half of the countries under review (17 out of 33).** In these countries, there thus seems to be a move towards greater equality in this sector. There is nevertheless a high level of cross-country disparity in the level at which this balancing out is taking place.

For example, whereas in Lithuania the respective compound annual growth rates for female and male researchers stood at 33.6% and 29.6% over the period 2002-2006, in Norway, the number of female researchers decreased at a slightly lower pace than the number of male researchers (1.1% and 2.3% respectively). The opposite was observed in 13 countries, pointing towards a widening over time of the gender gap in the research population of the Business Enterprise Sector. These countries are Turkey, Poland, Hungary, France, Slovenia, the Czech Republic, Cyprus, Portugal, Germany, Bulgaria, Romania, Latvia and Slovakia. Finally, in Sweden, the UK and Croatia, similar growth rates were noted for the male and female researcher populations.

The picture of women in research is further completed by Figures 1.12 and 1.13, which break down the distribution of both male and female researchers into 4 different age groups (<35 years, 35-44 years, 45-54 years, and 55+ years). Figure 1.12 does this for the Higher Education Sector and Figure 1.13 for the Government Sector. In both of these large economic sectors, the greatest gender differences are in most countries observed in the two extreme age classes, among the youngest researchers aged under 35 and among those above 55 years of age. **Whereas women tend to outnumber men in the youngest age group, the opposite was observed for researchers above 55 years of age. Clearly, these figures illustrate the workings of a generation effect.**

Because of data limitations the analysis carried out in this chapter is based on headcount measures of employment, so that variations in working hours are not accounted for. However, part-time employment could be a major determinant of the high level of gender segregation that characterises the research population. In particular, part-time jobs are often behind vertical segregation as they slow down or prevent women from advancing their careers and getting promoted to high-responsibility positions in research. It thus appears to be the case that over time a situation of under-representation of female scientists was replaced by one of strong segregation which now tends to confine female researchers to some scientific fields and male researchers to others, creating a divide in the research population with great impact on their job conditions, prestige, and remuneration.

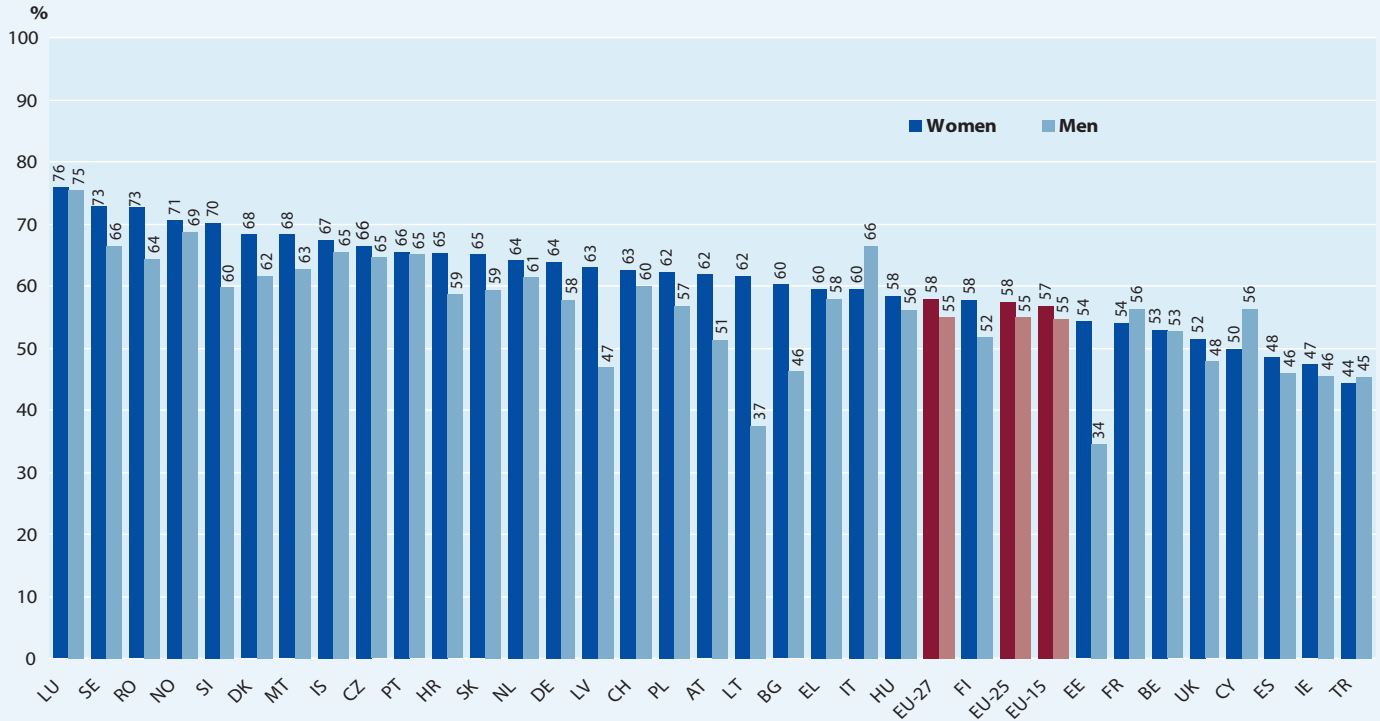
Figure 1.1: Proportion of women in the EU-27 for total employment, tertiary educated and employed (HRSTC) and scientists and engineers in 2007, compound annual growth rate for women and men, 2002-2007



Source: Labour Force Survey, HRST statistics (Eurostat)

Data estimated: EU-27 estimated by Eurostat (2002 - Employed Scientists & Engineers)

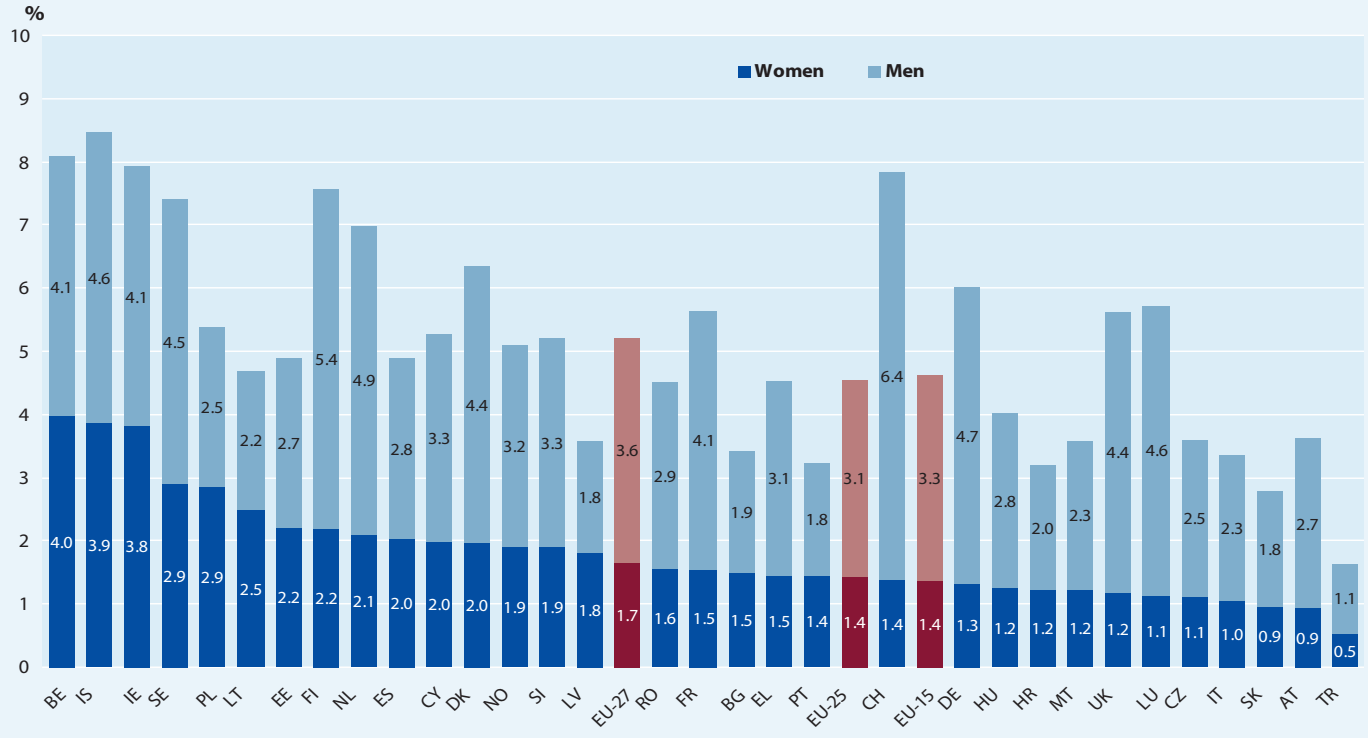
Figure 1.2: Employed professionals and technicians (HRSTC) as a percentage of tertiary educated (HRSTE) by sex, 2007



Source: HRST statistics (Eurostat)

Exceptions to the reference year: HR, IS: 2006
Data unavailable: IL
Data estimated: EU-27 (by Eurostat), EU-25, EU-15 (by DG Research)

Figure 1.3: Proportion of scientists and engineers in the total labour force by sex, 2007

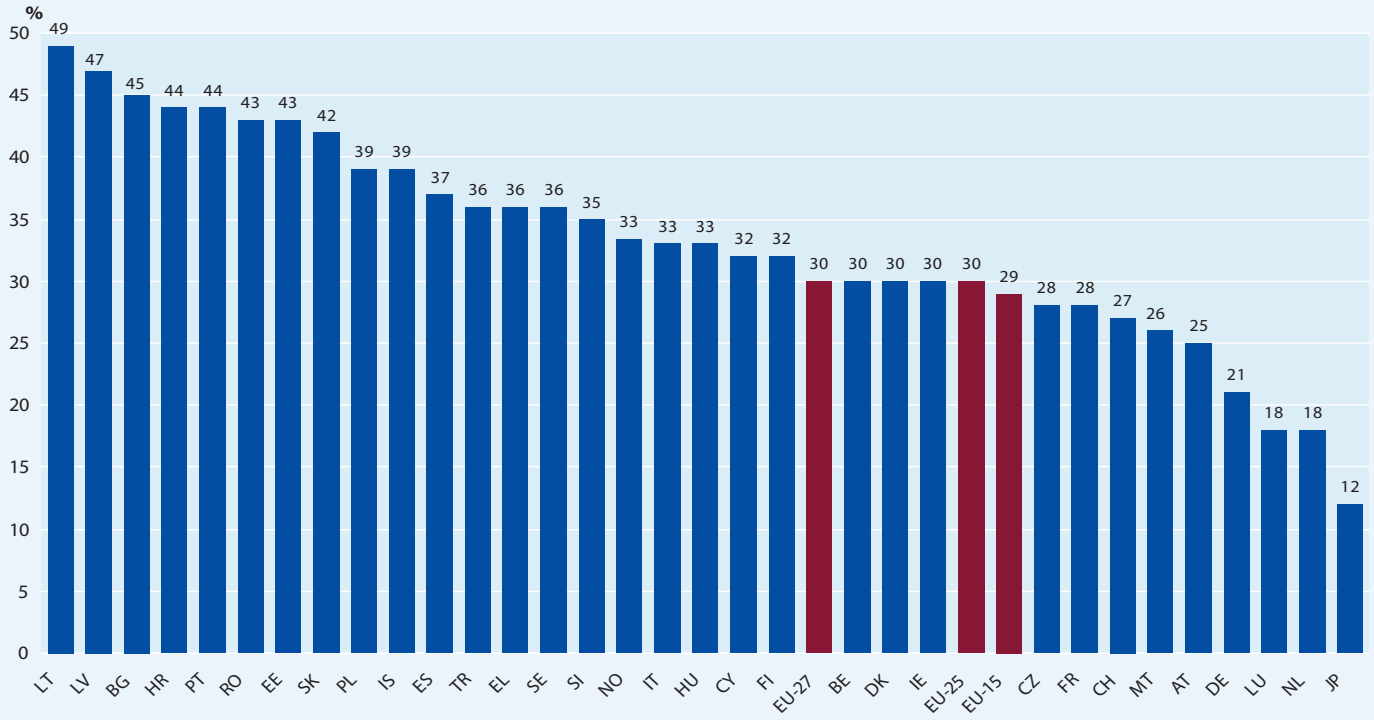


Source: Labour Force Survey, HRST statistics (Eurostat)

Exceptions to the reference year: HR, IS: 2006
Data unavailable: IL
Data estimated: EU-27 (by Eurostat), EU-25, EU-15 (by DG Research)
Confidential data: DK (women), EE (men), LU (women), HR (women)

The labour force is defined as the sum of employed and unemployed persons

Figure 1.4: Proportion of female researchers, 2006

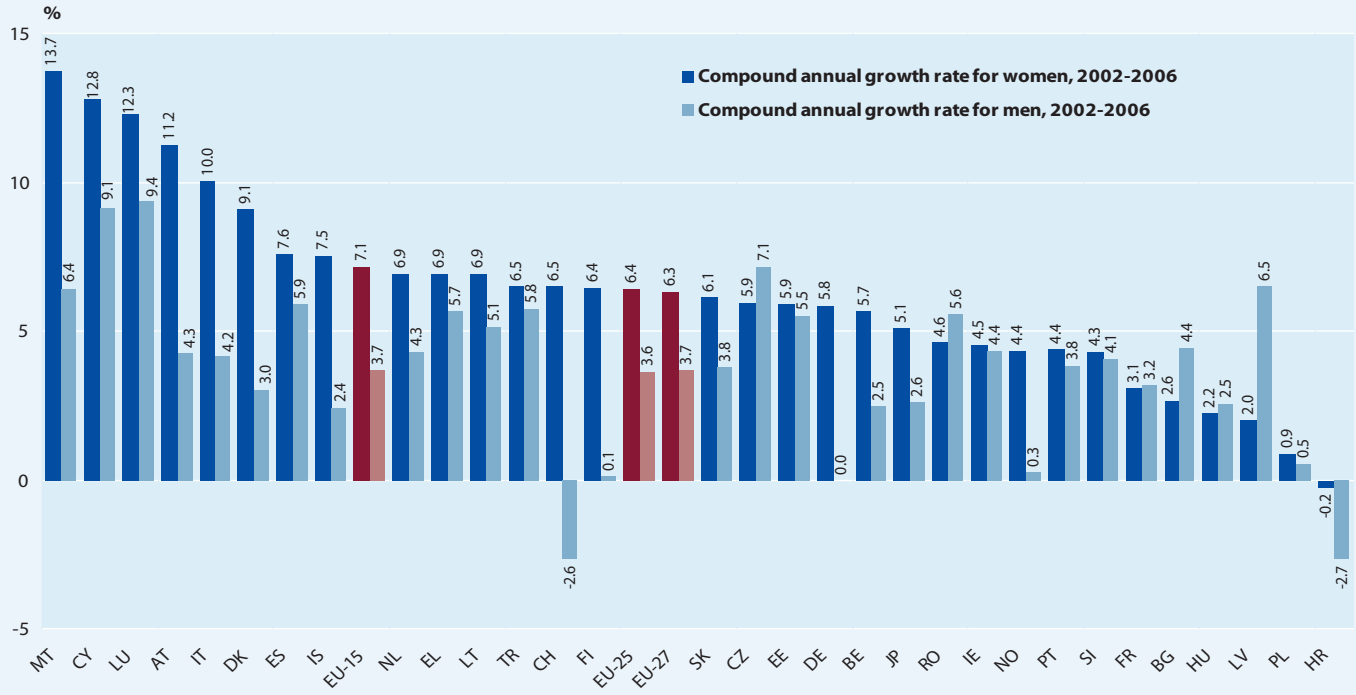


Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: CZ, EE, SK, NO: 2007; BE, DK, DE, IE, EL, LU, NL, PT, SE, IS, JP: 2005; CH: 2004
Data unavailable: UK, IL
Provisional data: NL
Data estimated: EU-27, EU-15 (by Eurostat), EU-25 (by DG Research), EE

Head count

Figure 1.5: Compound annual growth rate for researchers by sex, 2002-2006

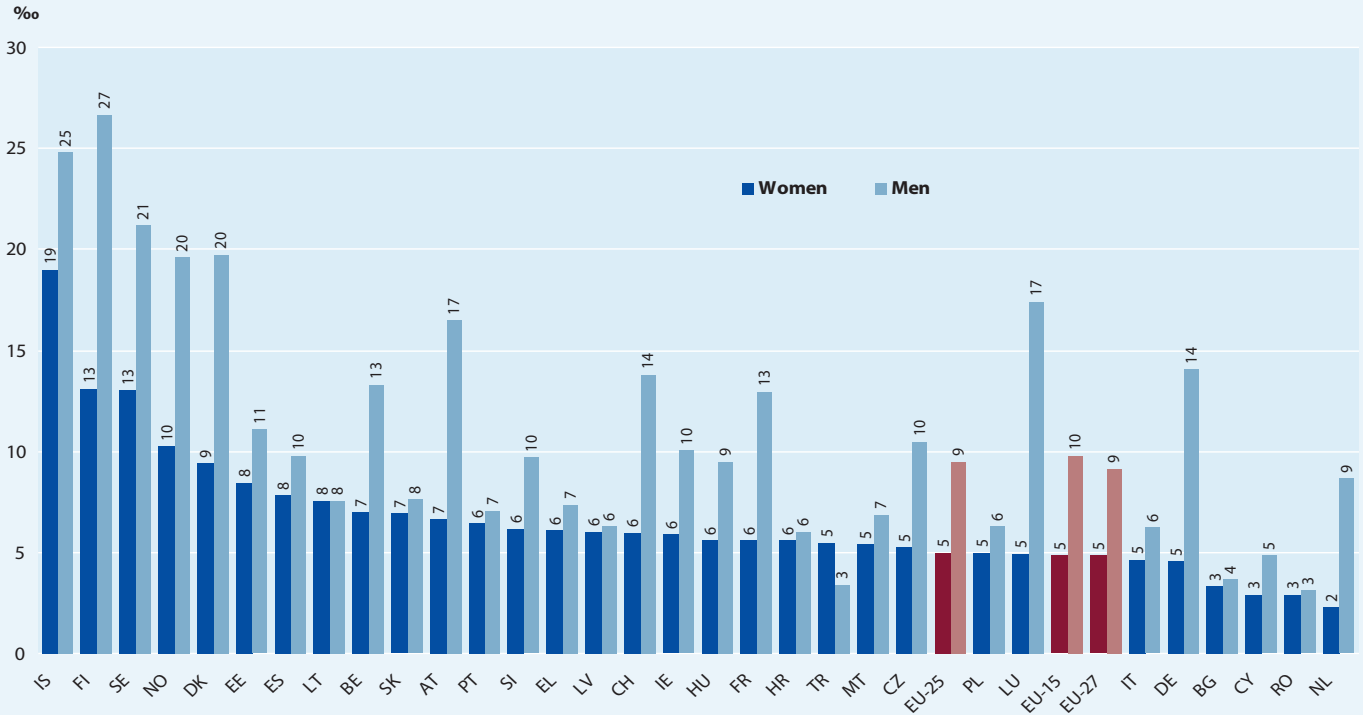


Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year (s): SK, CZ, EE: 2002-2007; CH: 2000-2004; EL, IS, NO: 2001-2005; BE, DK, IE, PT, JP: 2002-2005; DE, LU, NL: 2003-2005; PL: 2003-2006; MT, FI: 2004-2006
Data unavailable: UK, SE, IL
Break in series: MT (2004), DK (2002), FR (2002)
Provisional data: NL (2005)
Data estimated: EU-27, EU-25, EU-15 (by DG Research), LU (2003 - women), PT (2002), EE (2007)

Head count

Figure 1.6: Researchers per thousand labour force by sex, 2006

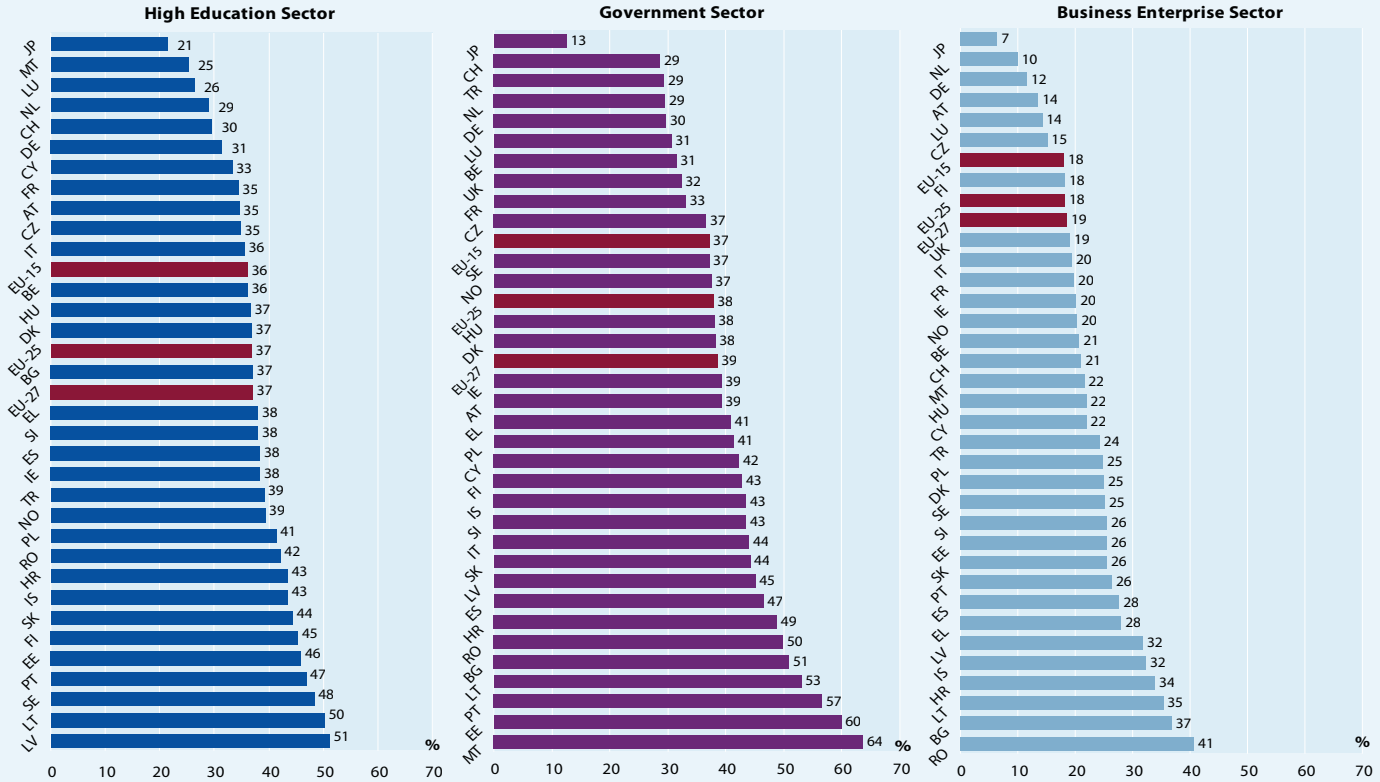


Source: Labour Force Survey, S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: Researchers: SK, CZ, EE: 2007; BE, DK, DE, IE, EL, LU, NL, PT, SE, IS, NO, JP: 2005; CH: 2004
Data unavailable: UK, IL
Provisional data: NL
Data estimated: EU-27, EU-25, EU-15 (by DG Research), EE

Researchers: Head count
The labour force is defined as the sum of employed and unemployed persons

Figure 1.7: Proportion of female researchers by sector, 2006

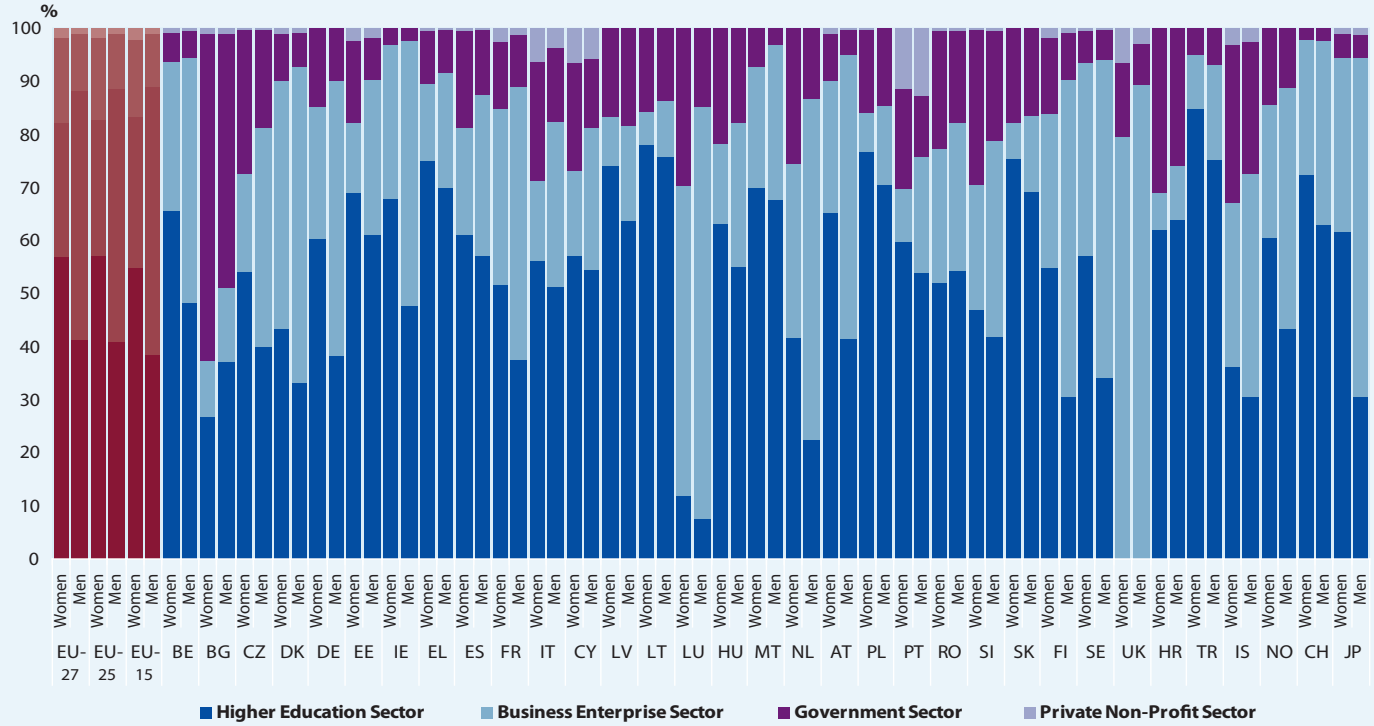


Source: S&T statistics (Eurostat)

Exceptions to the reference year: SK, CZ, EE, MT (HES, GOV), IE (GOV): 2007; BE (HES, GOV), DK (BES), DE (BES), IE (BES), EL, LU, NL, PT, SE, IS, NO, JP: 2005; CH (HES, BES): 2004
Data unavailable: IL, UK (HES)
Provisional data: **HES:** MT, NL; **GOV:** IE (total), MT, UK (total); **BES:** BE
Data estimated: EU-27, EU-25, EU-15 (by DG Research); **HES:** NL, CH; **BES:** EE, UK

Head count

Figure 1.8: Distribution of researchers across sectors by sex, 2006

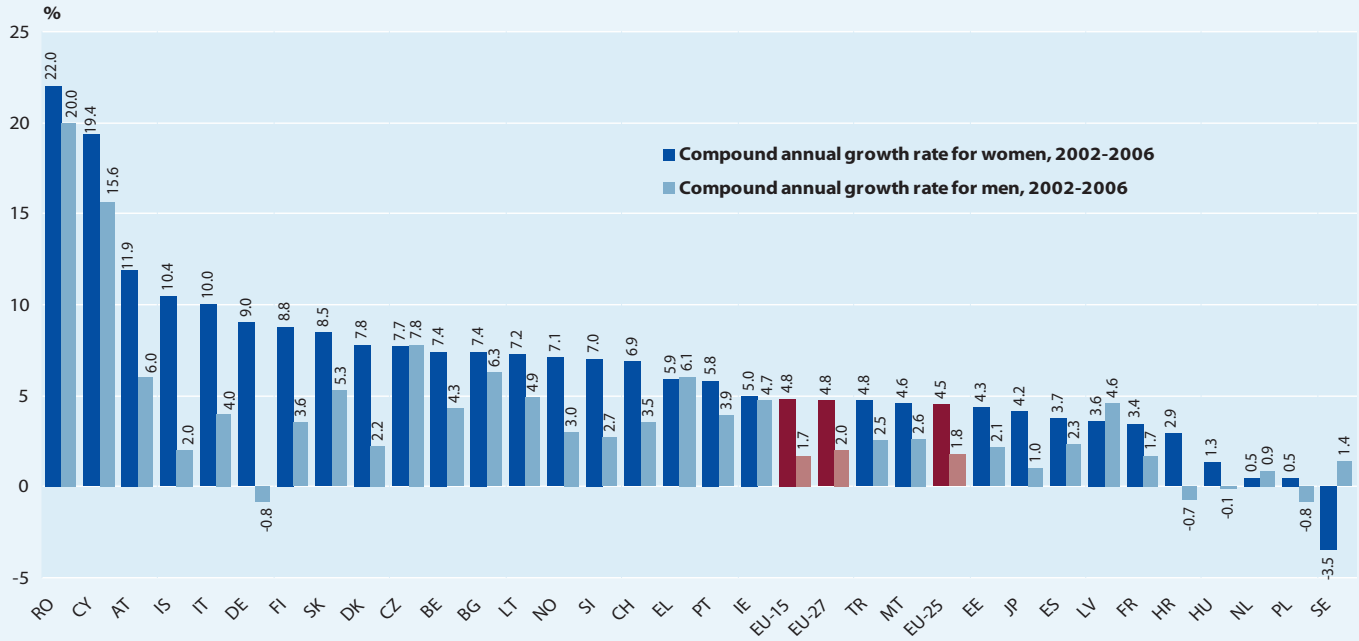


Source: S&T statistics (Eurostat)

Exceptions to the reference year: SK, CZ, EE: 2007; BE, DK, DE, IE, EL, LU, NL, PT, SE, IS, NO, JP: 2005; CH: 2004
Data unavailable: IL; **PNP:** DE, IE, LV, LT, LU, HU, NL, NO, CH, TR
Provisional data: **HES:** NL; **GOV:** UK (total)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); **BES:** EE, UK; **HES:** NL; **PNP:** UK

Head count

Figure 1.9: Compound annual growth rate for researchers in the Higher Education Sector (HES) by sex, 2002-2006

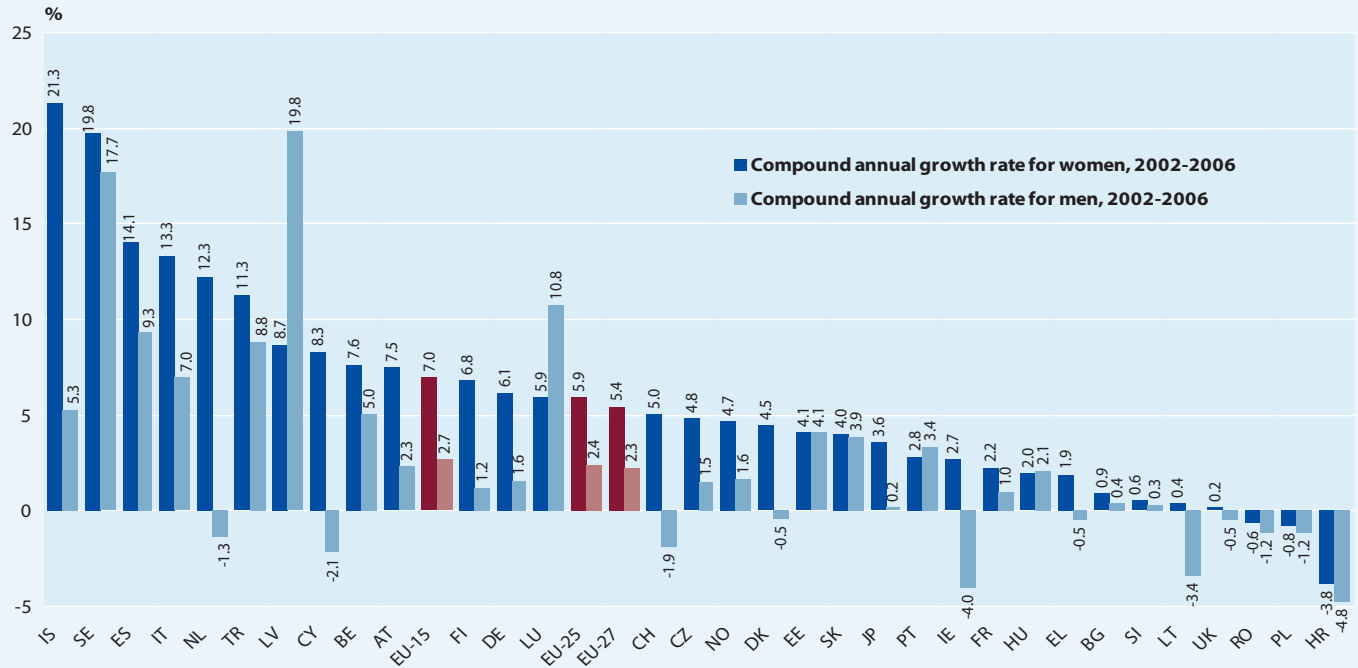


Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): CZ, EE, MT, SK: 2002-2007; DE, PL: 2003-2006; FI: 2004-2006; LU: 2000-2005; EL, SE, IS, NO: 2001-2005; BE, NL, PT, JP: 2002-2005; CH: 2002-2004
Data unavailable: UK, IL
Break in series: DK (2002), FR (2002), SE (2005)
Provisional data: MT (2007), NL (2005)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); PT (2002), CH (2002-2004), NL (2005)

Head count
Compound annual growth rates not presented for countries with less than 30 researchers: LU (2000)

Figure 1.10: Compound annual growth rate for researchers in the Government Sector (GOV) by sex, 2002-2006

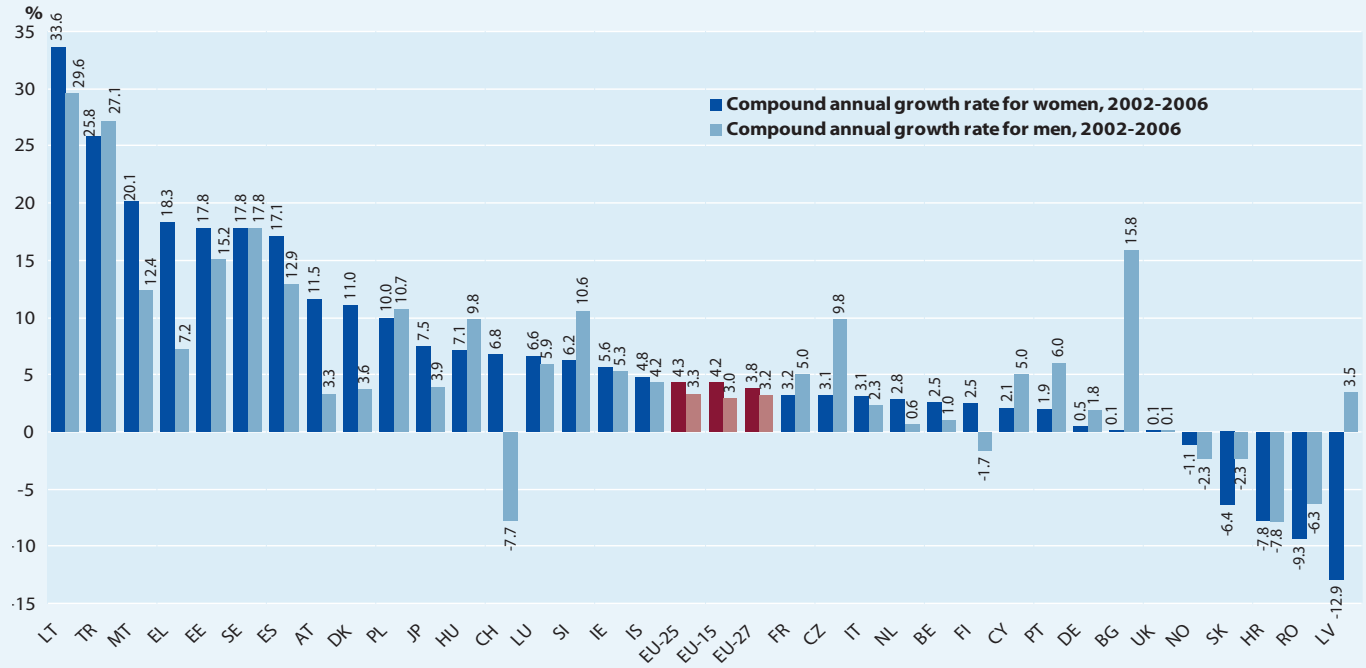


Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): CZ, EE, IE, MT, SK: 2002-2007; DE, PL: 2003-2006; FI: 2004-2006; SE: 2003-2005; EL, NL, IS, NO: 2001-2005; BE, LU, PT, JP: 2002-2005
Data unavailable: IL
Break in series: DK (2002), FR (2002), SE (2005)
Provisional data: IE (2007- total), MT (2007), UK (2006 - total)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); PT (2002)

Head count
Compound annual growth rates not presented for countries with less than 30 researchers: MT (2002-2007)

Figure 1.11: Compound annual growth rate for researchers in the Business Enterprise Sector (BES) by sex, 2002-2006

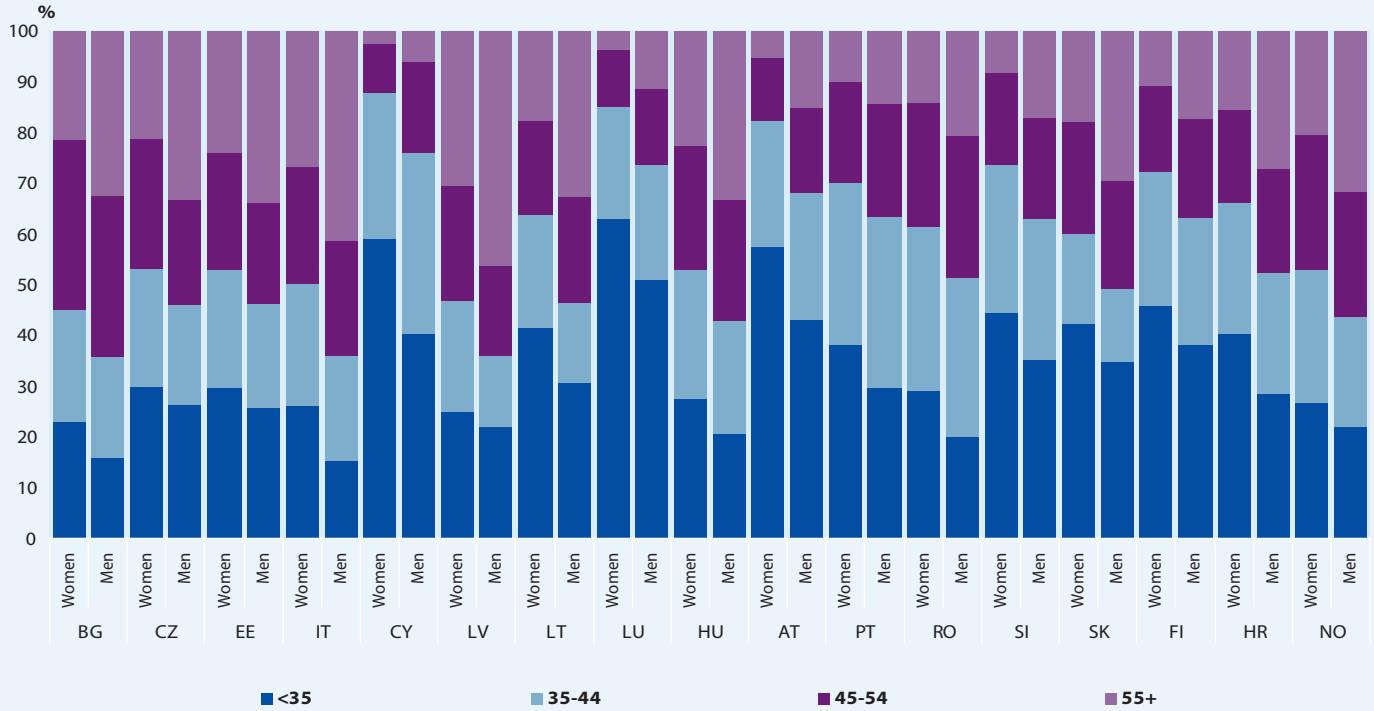


Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): CZ, EE, SK: 2002-2007; PL: 2003-2006; MT, FI: 2004-2006; LU, SE: 2003-2005; EL, NL, IS, NO: 2001-2005; IE, PT, JP: 2002-2005; CH: 2000-2004; UK: 2005-2006
Data unavailable: IL
Break in series: DK (2002), ES (2002), MT (2004), SE (2005)
Provisional data: BE (2006)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); PT (2002), LU (2003 - women), UK (2005-2006), EE (2007)

Head count

Figure 1.12: Distribution of researchers in the Higher Education Sector (HES) by sex and age group, 2006

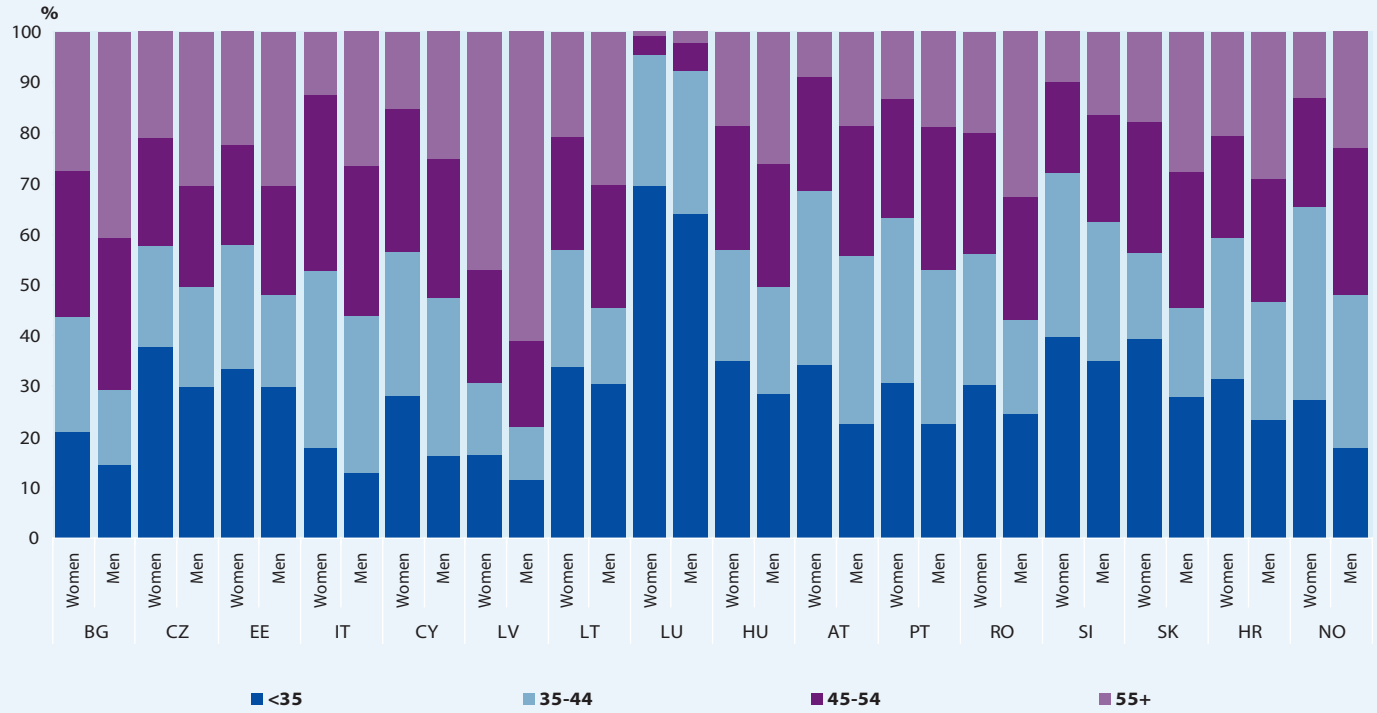


Source: S&T statistics (Eurostat)

Exceptions to the reference year: EE: 2007; IT, LU, PT, SK, NO: 2005
Data unavailable: BE, DK, DE, IE, EL, ES, FR, MT, NL, PL, SE, UK, IS, CH, TR, IL

Head count

Figure 1.13: Distribution of researchers in the Government Sector (GOV) by sex and age group, 2006



Source: S&T statistics (Eurostat)

Exceptions to the reference year: EE: 2007; IT, LU, PT, SK, NO: 2005
Data unavailable: BE, DK, DE, IE, EL, ES, FR, MT, NL, PL, FI, SE, UK, IS, CH, TR, IL

Head count

Scientific fields

Although girls are generally more successful than boys at school – they less often repeat a year and obtain better results (European Commission 2008a) –, when key study field choices need to be made girls often end up in literary and tertiary fields yielding uncertain professional prospects, whereas boys predominantly make their way towards scientific, technical and industrial fields from which it is generally easier to find a place in the labour market. This signals a gender pattern of study choice that needs to be addressed by considering both sexes equally. The reasons why study field choices are gendered include stereotypes often found in children's books and school manuals; gendered attitudes of teachers, gendered advice and guidance on courses to be followed; different parental expectations regarding the future of girls and boys; and so forth. As a result, some professions are thought of as feminine, others as masculine. If the aim is to change these trends and introduce more of a gender balance in all study fields, then it is with respect to the entire set of factors upstream of the study field choices that genuine theoretical and political questioning should take place, and while doing so equal attention should be given to both girls' and boys' choices.

In 2006, on average in the EU-27, 45% of all PhD graduates were women (Figure 2.1). However, in 11 countries, women accounted for more than half of all PhD graduates, reaching a maximum of 66% in Cyprus. Japan and Malta have particularly low proportions of women among PhD graduates, respectively 27% and 25%. With the exception of Italy, France, Norway, Finland, Hungary, Bulgaria and Estonia, women's under-representation among PhD graduates has been on the decline in recent years given that the compound annual growth rate of female PhD graduates has exceeded that of men in the majority of countries between 2002 and 2006 (Figure 2.2). Whereas these growth rates were fairly low (under 10%) in two thirds of the countries, they were much higher, especially for women, in Italy, Ireland, Croatia, Portugal, and Slovakia. Italy recorded an identical compound average growth rate for female and male PhD graduates, reaching 29% over the period 2002-2006. **On average in the EU-27, the number of female PhD graduates increased at a rate of 6.8% per year compared with 3.2% for male PhD graduates.** These figures clearly indicate that women are catching up with men. The strong increase in women's educational level will result in women being at least equally or even more present than men at the PhD level in the near future.

The share of female PhD graduates varies considerably across the different fields of study. Table 2.1 shows that in 2006, on average throughout the EU-27, women PhD holders accounted for 64% of all PhD graduates in education. **A more or less balanced gender composition characterises the humanities (52% of women) and the agricultural and veterinary sciences (51% of women) and, to a lesser extent, also the social sciences and business law (47% of women) and the field of health and welfare (54% of women).**

On the contrary, the field of science, mathematics and computing and especially that of engineering, manufacturing and construction are characterised by higher numbers of male PhD holders. In the former, women constitute 41% of PhD graduates and in the latter their share drops even lower to 25%. The average figures for the EU-27 level out some very important cross-country variations. The feminisation of the field of education is most pronounced in Portugal, Slovenia and Finland where only one in four PhD graduates in this field is a man. Note that although education appears to be 100% feminised in Estonia, Cyprus, and Iceland, this is probably due to very small sample sizes of PhD graduates in this field in these countries. When comparing the degree of masculinisation of engineering, manufacturing and construction cross-nationally, it appears that less than one in five PhD holders in this field is a woman in Germany (14%), Switzerland (19%) and Japan (11%). On the contrary, in Estonia, engineering appears to be a feminised field of study, with 59% of female PhD graduates. Estonia is clearly an exceptional case. Nevertheless, the smallest relative degrees of masculinisation of this field (>35% of female PhDs) were observed in Italy, Portugal, Latvia, Lithuania, Croatia, and Turkey.

Very similar findings come out of Figure 2.3, which shows the distribution of female and male PhD holders across these broad study fields for the year 2006. On average in the EU-27, whether women or men, most PhD graduates are in the field of science, mathematics and computing (30.6% of men and 26.4% of women). The second largest share of female PhD holders was found in health and welfare (21.5%), whereas the second largest share of male PhD graduates was found in engineering, manufacturing and construction (19.2%). A little less than one fifth of female PhD graduates studied social sciences, business and law (19.1%), 15% took humanities and arts, 7.9% were in engineering, manufacturing and construction, 5% in education and 5% in agricultural and veterinary sciences. For the remaining male PhD holders, the distribution is as follows: 17.6% in social sciences, business and law, 15% in health and welfare, 11.3% in humanities and arts, 4% in agricultural and veterinary sciences and 2.3% in education. The largest differences between the shares of male and female PhD graduates were observed in the field of engineering, manufacturing and construction and in that of health and welfare. Compared with the EU-27 average (7.9%), the proportion of female PhD graduates in engineering, manufacturing, and construction was much lower in many countries, with the minimum being recorded in Germany (2.9%). Conversely, up to 20% of female PhD holders graduated in this field of study in Sweden. In contrast with these relatively low shares of female PhDs in engineering, more than 30% of male PhDs were in this field in Sweden, Finland, Denmark, Bulgaria, the Czech Republic, and Slovenia. There is even more cross-country disparity in the proportion of female PhDs in health and welfare. Although the EU-27 average stood at 21.5%, it ranged from a low of 2.6% in France to 41% in the Netherlands. The share of male PhDs in the field of health and welfare is generally well below that of women.

Nevertheless it should be noted that in Germany and Japan more than one quarter of male PhDs (26.8% and 30.2% respectively) are in this field. There is usually more gender balance in science, mathematics and computing and in social sciences, business and law. Across the countries, the share of female PhDs in science, mathematics and computing ranges from 9.3% in Latvia to 43.9% in France — the share recorded for Cyprus (63.2%) is probably overestimated due to the small numbers of female PhD graduates in some of the study fields. The share of male PhDs in this field varies between 6.4% in Romania and 53% in France. A few countries form exceptions to the overall picture of more balance between the proportions of male and female PhDs in the social sciences, business and law. In five countries, the proportion of female PhDs in this field was substantially larger than that of men. Indeed, the gender gap was above 5% in France, Lithuania, Finland, the UK, and the US, and reached a high of 10.1% in Austria. For the humanities and arts, the exceptional cases of Slovakia, Belgium, Lithuania Turkey, the US, and to a lesser extent Croatia, deserve special attention. In these countries the general trend was reversed and a higher share of male PhD graduates than female PhD graduates were in this field of study. Finally, agricultural and veterinary sciences and education accounted for only a small share of male and female PhD holders.

From the above it is thus clear that engineering, manufacturing and construction is one of the fields of study presenting the largest level of gender imbalance. Tables 2.2 and 2.3 allow for a more detailed analysis of this field by insisting on movements over time. Table 2.2 shows the compound annual growth rate of the number of male and female PhD graduates within subfields of natural science and engineering. These subfields are: life science, physical science, mathematics and statistics, computing, engineering and engineering trades, manufacturing and processes and architecture and building. For each of these subfields, Table 2.3 shows the evolution in the proportion of female PhDs between 2002 and 2006. Both tables allow for similar conclusions to be drawn. First of all, in absolute terms, the highest share of female PhD holders was observed in life science (56% in 2006). Female PhDs were least well represented in computing (18% in 2006) and engineering and engineering trades (22% in 2006). The proportion of female PhDs ranged between 32% and 37% in all other subfields. Between 2002 and 2006, the proportion of female PhDs has increased the most in architecture and building (by 6%) but also in physical science (+4%), mathematics and statistics (+4%), and engineering and engineering trades (+4%). **In all fields, the number of female PhD graduates has increased much more rapidly than the number of male PhD graduates**, even in life science where women already form a majority. Particularly high growth rates in the number of female PhDs over the period 2002-2006 were observed in computing (13% per year in the EU-27), mathematics and statistics (12% per year in the EU-27), engineering and engineering trades (11% per year in the EU-27) and in architecture and building (10% per year in the EU-27). The average proportion of female researchers in the EU-27 stood at 30% in 2006 (see chapter 1).

Whereas women's presence appeared to be similar in the Government Sector and in Higher Education, it turned out considerably weaker in the Business Enterprise Sector. On average in the EU-27, women accounted for 37% of all researchers in the Higher Education Sector, 39% in the Government Sector but merely 19% in the Business Enterprise Sector in 2006. Figure 2.4 focuses on the Higher Education Sector showing the distribution of male and female researchers across the different fields of science in 2006. In the Higher Education Sector, female researchers were best represented in the medical sciences (23% on average in the EU-27) and the least present in agriculture (5% on average in the EU-27). The widest gender gap was not surprisingly observed in engineering, which hosts the largest share of male researchers (23% on average in the EU-27 in 2006) and, agriculture aside, the smallest share of female researchers (13% on average in the EU-27 in 2006). There are many cross-country differences in the relative importance of each of the fields of science. Just 4% of female researchers were in the natural sciences in Malta, compared with 35% in Cyprus. In engineering and technology, the low proportions of female researchers observed in Malta (4.5%), Austria (7.3%), Denmark (7.4%) and Cyprus (7.6%) contrast sharply with the much higher shares of women in Romania (35%), Luxembourg (28%) and Bulgaria (24%). Such contrasting national patterns characterise the medical sciences also with particularly high shares of female researchers in medicine in Malta (42%), and Denmark (42%) and particularly low shares in Estonia (9%), Latvia (8%) and Portugal (9%). Women accounted for only 1% of researchers in humanities in Romania, compared with 35% in Hungary. The lowest cross-country variation in the proportions of researchers was observed in the social sciences. Finally, agriculture generally hosts more female than male researchers but the overall share of this field in research is very small everywhere, with the exception of countries such as Romania, Slovenia and Croatia, which still count a sizeable proportion of researchers in this field.

Table 2.4 completes this picture by showing the evolution of the number of female researchers in the Higher Education Sector by fields of science between 2002 and 2006. Table 2.4 shows that **the compound annual growth rate of female researchers in the Higher Education Sector over the period 2002-2006 has been positive in all subfields of science except for natural sciences.** On average, throughout the EU-27, the most positive growth figures characterised the fields of medical sciences (+5.6%), humanities (+6.8%), engineering and technology (+6.7%), and social sciences (+6.5%). In agricultural sciences, a yearly growth rate of 2.2% was observed at the EU-27 level. Finally, only in the natural sciences has the number of female researchers actually shrunk at a yearly rate of -0.3% over recent years. The situation varies widely according to the different European countries. Given the severe under-representation of female researchers in engineering and technology, the extremely high growth rates observed in this field in some countries are most encouraging.

For example, in engineering and technology, the number of female researchers has increased by more than 20% annually over 2002-2006 in Denmark, Italy, and Malta and by more than 30% in Cyprus. In the natural sciences, although in absolute terms there tend to be more female researchers in this field than in engineering, the trend was much more negative. In the Czech Republic, Spain and Latvia, the number of female researchers has decreased by respectively 14.2%, 9.1% and 8.9% per year between 2002 and 2006. Negative growth rates of around 3% were also observed over this period for Ireland (-2.8%), Hungary (-3.5%), Poland (-3.2%) and Croatia (-2.6%). Conversely, the number of female researchers in the natural sciences increased in the remaining countries.

Given this overall picture of positive growth in the number of female researchers between 2002 and 2006, it is not surprising that the share of female researchers has generally grown or at least stabilised in most fields of science in the Higher Education Sector between 2002 and 2006 (Table 2.5). In the social sciences, the share of female researchers has decreased in five countries (Bulgaria, the Czech Republic, Germany, Slovenia and Croatia), but remained stable or increased in the other countries. The same holds true for female researchers in agriculture (the share of female researchers decreased in the Czech Republic, Denmark, Lithuania and Slovakia, whereas it was stable or increased everywhere else) and humanities (except for Bulgaria, the Czech Republic, Italy, Latvia and Slovakia, the share of female researchers was stable or increased between 2002 and 2006). In two fields, the recent growth in the number of female researchers is less visible through their proportions of the total number of researchers in 2006. Indeed, in the medical and natural sciences, the share of female researchers has shrunk in 7 of the 21 countries (6 of the 22 countries in natural sciences). In medicine, the largest reductions in the proportion of female researchers were noted in Ireland (-17%), Lithuania (-16%) and Slovenia (-7%). The number of female researchers in the natural sciences decreased strongly in the Czech Republic, falling by 8% between 2002 and 2006.

An analysis similar to the previous one can be carried out for the Government Sector, starting with the distribution of researchers across the different fields of science in 2006 (Figure 2.5), and then looking at their growth rates in the different fields over recent years (Table 2.6) to illustrate the way these affected their relative proportions in the different science fields (Table 2.7).

In the EU-27, women accounted for 39% of all researchers in the Government Sector in 2006.

As in the Higher Education Sector, female researchers in the Government Sector are best represented in the medical sciences (29% on average in the EU-27) but also, and this was not found in the HES, in the natural sciences (29% on average in the EU-27).

Whereas in medicine the share of female researchers was 12% higher than that of male researchers, the natural sciences, even though they host one of the largest shares of female researchers, employ an even greater proportion of male researchers (37%). A very wide gender gap once again marks the research population in the field of engineering. Whereas engineering hosts a quarter of all male researchers, only 14% of female researchers were in this field (the gap stood at 11% in 2006 throughout the EU-27). As in Higher Education, female researchers are the least present in agriculture (9% on average in the EU-27) and social sciences (also 9% on average in the EU-27). There are many cross-country differences in the relative importance of each of the fields of science. Whereas just 7% of female researchers were in natural sciences in Malta, 46% were in Bulgaria. In engineering and technology, the low proportions of female researchers observed in Estonia (5%), Slovenia (5%), Latvia (4%), Cyprus (3%) and Croatia (1%) contrast sharply with the much higher shares of women in Belgium (44%), Turkey (34%), Luxembourg (28%), and Romania (26%). Such contrasting national patterns characterise the medical sciences also with particularly high shares of female researchers in medicine in Spain (58%) and Portugal (48%) and particularly low shares in Lithuania (1%), Belgium (3%), Cyprus (5%) and Turkey (5%). The share of female researchers in humanities was the lowest in Luxembourg (3%), whereas it peaked at 46% in Estonia. Whereas there was the least cross-country variation in the proportions of researchers in the social sciences in the Higher Education Sector, in the Government Sector, this fails to hold true. Indeed, the proportion of female researchers ranges from 2% in Turkey to 50% in Malta. Finally, the field of agriculture represents only a small part of research in general, with the exception of countries such as Ireland, Malta, and Turkey.

Tables 2.6 and 2.7 complete this picture by informing on the evolution of the number of female researchers in the Government Sector by fields of science between 2002 and 2006. Table 2.6 shows that **the compound annual growth rate of female researchers in the Government Sector over the period 2002-2006 has been positive in all subfields of science**, as it was also the case in Higher Education (except for natural sciences). On average throughout the EU-27, the most positive growth figures characterised the fields of the medical sciences (+12%) and engineering and technology (+10%). These average growth rates mask substantial cross-country variations. Nevertheless, given the severe under-representation of female researchers in engineering and technology, the extremely positive growth rates observed in this field in Ireland (+95%), Croatia (+50%), Spain (+39%), Latvia (+36%), Italy (+31%) and Lithuania (+26%) are an encouraging signal.

Only in seven countries has the number of female researchers actually dropped in this field between 2002 and 2006: Malta (-100%), Cyprus (12%), the Czech Republic (-4%), Poland (-3%), Slovenia (-3%), Denmark (-1%) and Norway (-1%). In the medical sciences, the trend is rather similar with very high growth rates in the number of female researchers in some countries (+73% in Latvia, +45% in Turkey, +25% in Italy, +22% in Denmark and Norway, and +21% in Spain) and very negative figures in others (-16% in Slovenia, -14% in Lithuania, and -9% in Austria).

As in Higher Education, this trend of overall growth in the number of female researchers between 2002 and 2006 has translated into a growth or at least stabilisation of their relative proportions in most fields of science in the Government Sector (Table 2.7). It is least felt in the fields of the humanities and the social sciences. Indeed, of the 22 countries for which the data allow for a 2002-2006 comparison, 12 countries reported a decrease in the share of female researchers in the field of humanities (of up to -19% in Latvia and -12% in Slovakia) and 9 countries reported a decrease in social sciences (of up to -13% in Latvia and -10% in Portugal). On the contrary, in engineering and technology and in the natural sciences, only five countries reported a decrease in the proportion of female researchers. In the natural sciences the largest decrease was noted in Ireland, where the share of female researchers in this field dropped by 11%. In engineering and technology, reductions of respectively 6% and 7% marked the shares of female researchers in Latvia and Slovenia. In medicine, seven countries reported reductions in the proportion of their female research population, especially Latvia (-8%). Finally, the proportion of female researchers in agriculture increased in most countries, six exceptions aside. Only in Romania was the reduction in the share of female researchers considerable, as it dropped from 43% in 2002 to 26% in 2006.

In the Business Enterprise Sector, researchers can be distributed across fields of science but also across different economic activities. In Figure 2.6, two sectors of activity are singled out, manufacturing on the one hand and real estate, renting and business activities on the other. These two economic sectors are compared with all other economic activities taken together. Figure 2.6 thus shows the distribution of male and female researchers across manufacturing, real estate, renting and business and all other economic activities for the year 2006. It is clear that most research activities are indeed conducted within these two specific sectors (manufacture and real estate) as all other sectors of economic activity taken together account for merely 11% of female researchers and 8% of male researchers on average in the EU-27 (at the national level the proportions are highest at 32% of female researchers in Bulgaria and 35% of male researchers in Croatia). In most countries, the highest shares of both male and female researchers were found in manufacturing. At EU-27 level, the share of women in this sector stood at 65% and that of men at 71% in 2006. However, some countries form exception to this rule.

The share of female researchers was the highest in real estate, renting and business activities rather than in manufacturing in the Czech Republic, Estonia, Greece, Spain, Poland, Slovakia, and Norway. The share of male researchers was also the highest in this sector of economic activity in Denmark, Estonia, Greece, Cyprus, Latvia, Slovakia, Croatia and Norway. Table 2.8 shows that if one focuses on pharmaceuticals as a subgroup of the overall manufacturing sector, the share of female researchers at the level of the EU-27 ranges from 17.3% in the broad sector of manufacturing to 38.5% in pharmaceuticals. This illustrates that, **in the Business Enterprise Sector, women are relatively better represented in the manufacture of pharmaceuticals than in that of other products.** Besides manufacturing, the share of female researchers in real estate, renting and business activities stood at 20.5% in the EU-27 in 2006 and at 24.4% in all other economic sectors taken together.

As it was done for the Higher Education and Government Sectors, the evolution in the proportion of female researchers in different scientific subfields can be analysed in the Business Enterprise Sector between 2002 and 2006 (Table 2.9). However, such a comparison through time is possible for just a subset of countries. First of all, it should be noted that agricultural and medical sciences accounted for the highest shares of female researchers in the Business Enterprise Sector. Women accounted for 86% of researchers in agriculture in Bulgaria and 90% of researchers in the medical sciences in Greece. **As in the other sectors, the lowest shares of female researchers in the Business Enterprise Sector were found in engineering and technology.** In most countries, around one fifth of all researchers in this field are women, with the exception of Romania and Bulgaria where their share is much higher at 38% and 32% respectively. In Cyprus and the Czech Republic women accounted for less than 15% of researchers in engineering and technology.

The Dissimilarity Index (DI) provides a theoretical measurement of the percentage of women and men in a given field who would have to move to an occupation in another field of science to ensure that the proportions of women were the same across all fields. It can therefore be interpreted as the hypothetical distance from a balanced gender distribution across fields of science. In order to interpret this index correctly, it is important to know which gender is in the majority overall. The maximum value is 1, which indicates the presence of only either women or men in each of the occupations, depending on the majority gender. The minimum value of 0 indicates a distribution between women and men within each occupation which is equal to the overall average proportion of women. Therefore the closer the index is to 1 the higher the level of dissimilarity and thus the more men and women would have to move across science fields in order to achieve a balanced gender distribution. Table 2.10 presents the 2006 values of the dissimilarity index in the different countries for two sectors: Higher Education and Government. Seven fields of occupation were considered in computing the DI: natural sciences, engineering and technology, medical and health sciences, agricultural sciences, social sciences, humanities and any other field of science.

At EU-27 level, the DI stood at 0.14 in Higher Education compared with 0.18 in the Government Sector. This points towards somewhat less gender segregation across occupations in Higher Education as the DI's value is closer to zero. In Higher Education, the level of segregation was the highest (at or above 0.25) in Latvia (0.25), Slovenia (0.25), Ireland (0.26), Bulgaria (0.27), and Sweden (0.31). It was the lowest in Spain (0.03). In the Government Sector, the countries that appeared to be the furthest from a gender balanced distribution of researchers across the different fields of science were Malta (0.32), Cyprus (0.33) and Estonia (0.34). Again Spain reported one of the lowest levels of gender segregation (0.07) as well as Portugal (0.06).

To sum up, the substantial rise in women's level of education that has marked the last 20 years and women's massive flow into all educational levels is now also very clearly visible at the PhD level. Moreover, the growth rate in the number of female PhD graduates is systematically higher than that of men in all fields and subfields of science. These are all very positive signals of a rapid catching up movement by women, so that in the near future women will level with men at the PhD level, if not surpass them. The downside is the problem of persisting gender segregation. Given that the absence of a balanced gender composition in all study fields is equally due to the traditional choices boys make as to those girls make, policy-makers should give balanced attention to both boys' and girls' choices. Policies can work to improve a number of biases, such as stereotypes and gendered images conveyed by children's books and school manuals; gendered attitudes of teachers, gendered advice and guidance on courses to be followed; and so forth.

Box 1

Dissimilarity Index

The Dissimilarity Index (DI) provides a theoretical measurement of the percentage of women and men in a group who would have to move to another occupation to ensure that the proportions of women were the same across all the possible occupations. It can therefore be interpreted as the hypothetical distance from a balanced gender distribution across occupations, based upon the overriding proportion of women (NSF, 2000). The formula for the Dissimilarity Index is:

$$DI = 1/2 \sum i \left| Fi / F - Mi / M \right|$$

where: i denotes each occupation

Fi is the number of female researchers in each occupation

Mi is the number of male researchers in each occupation

F is the total number of female researchers across all occupations

M is the total number of male researchers across all occupations

|| indicates that the absolute value is , but not the sign

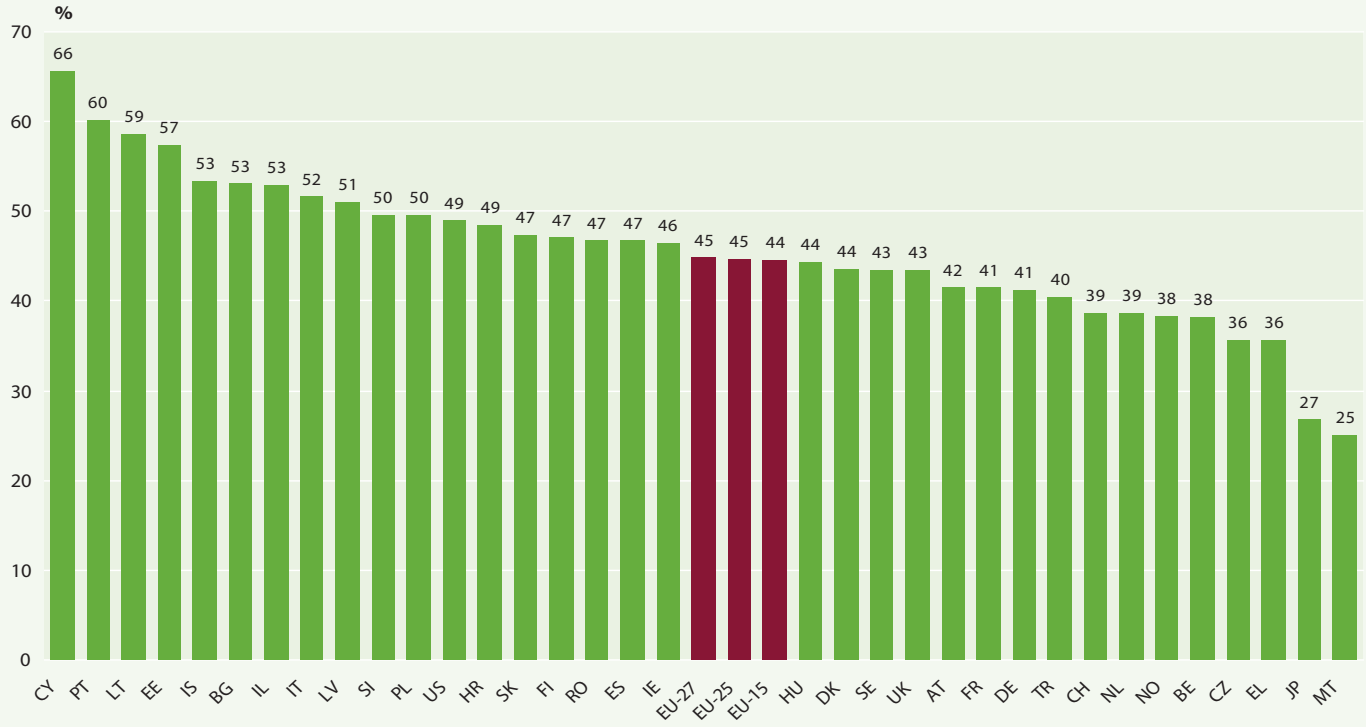
For example, if we have three occupations, A, B and C with 17, 37 and 91 women and 108, 74, 182 men respectively, the overall proportion of women is 28.5%. We therefore need to calculate:

$$\frac{\left|\frac{17}{145} - \frac{108}{364}\right| + \left|\frac{37}{145} - \frac{74}{364}\right| + \left|\frac{91}{145} - \frac{182}{364}\right|}{2} = \frac{0.1795 + 0.0519 + 0.1276}{2} = 0.1795$$

This means that 18% of researchers will have to change occupation in order to maintain the background proportion of 28.5% women in each occupation.

In order to interpret the DI correctly, it is important to know which gender is in the majority overall. The maximum value is 1, which indicates the presence of only either women or men in each of the occupations, depending on the majority gender. The minimum value of 0 indicates a distribution between women and men within each occupation which is equal to the overall average proportion of women. If the same occupational categories are used for different countries, the DI yields a comparable and descriptive statistic that reflects the extent to which the two sexes are differently distributed. The results also depend on the number of categories. If more categories are used, the indicator will reflect greater variability in the distribution, which in turn will yield results indicating a higher level of segregation.

Figure 2.1: Proportion of female PhD (ISCED 6) graduates, 2006

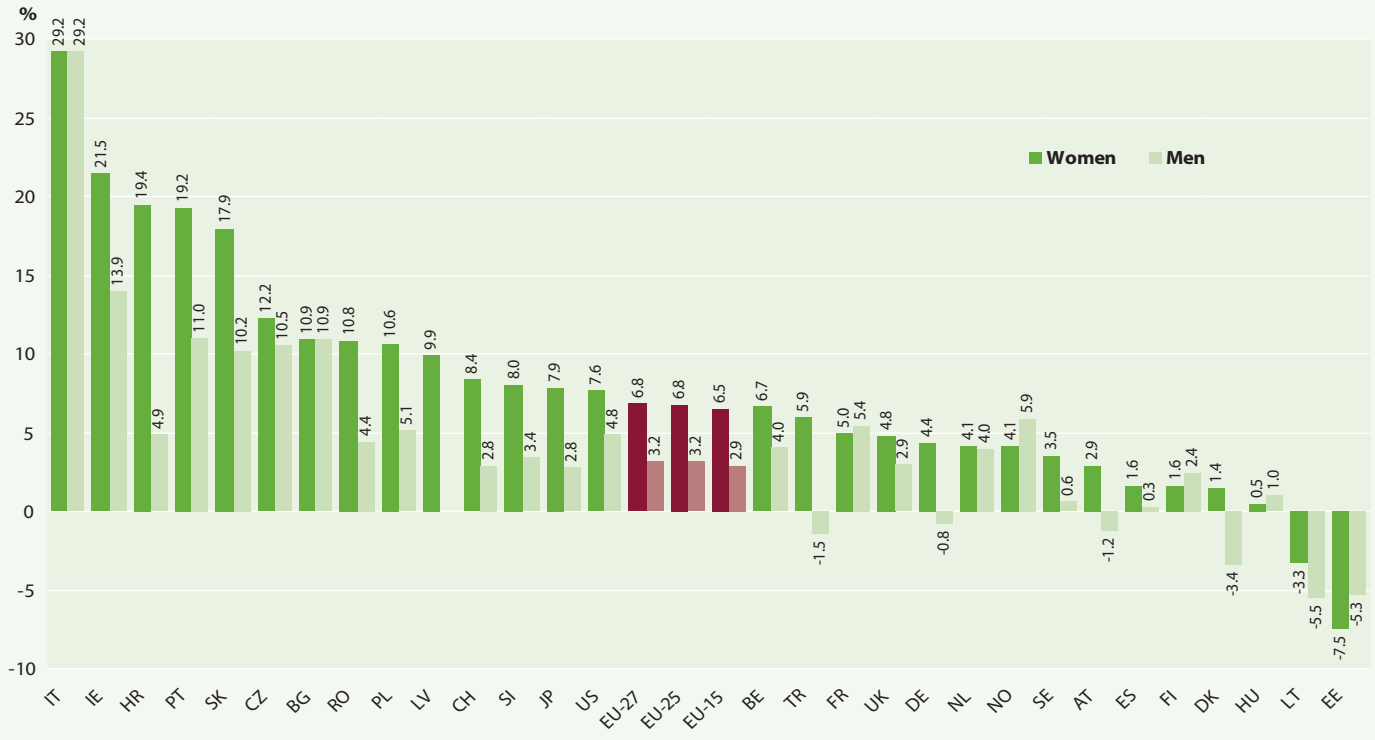


Source: Education Statistics (Eurostat), Central Bureau of Statistics (Israel), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: EL, IT: 2005
Data unavailable: LU
Data estimated: EU-27 (by Eurostat), EU-25, EU-15 (by DG Research)

Countries with small numbers of female PhD graduates: CY (19), IS (8), MT (1)
Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS

Figure 2.2: Compound annual growth rate of PhD (ISCED 6) graduates by sex, 2002-2006



Source: Education Statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year (s): FR, RO, HR: 2003-2006; IT: 2002-2005
Data unavailable: LU, IL, EL (not shown as only two consecutive years are available resulting in extreme values)
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

Compound annual growth rates not presented for countries with less than 30 graduates: CY, LV (men), MT, IS
The negative growth rate for Estonia is a result of the change in legislation — resident physicians were counted as ISCED 6 students until 2004, but no longer afterwards

Table 2.1: Proportion of female PhD (ISCED 6) graduates by broad field of study, 2006

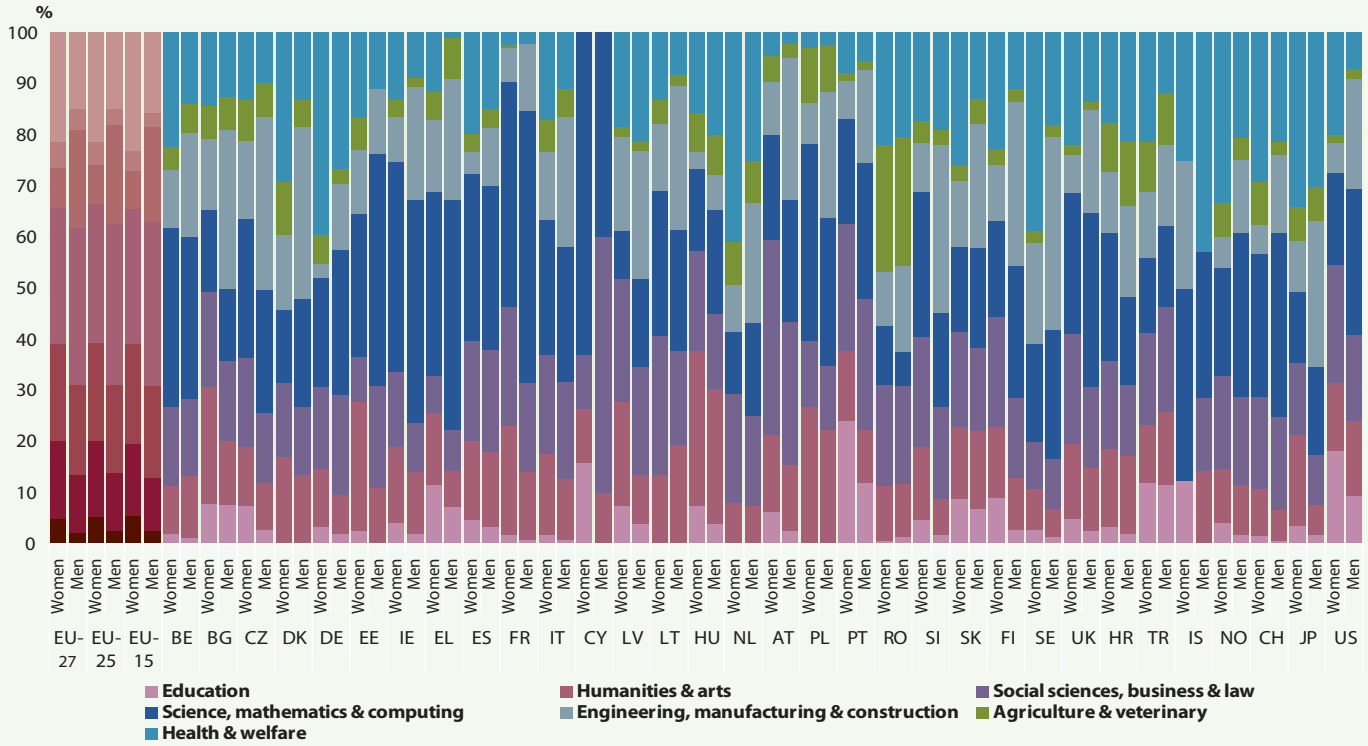
	Education	Humanities & arts	Social sciences, business & law	Science, mathematics & computing	Engineering, manufacturing & construction	Agriculture & veterinary	Health & welfare
EU-27	64	52	47	41	25	51	54
EU-25	64	52	47	41	25	52	54
EU-15	64	52	47	40	25	52	54
BE	50	32	38	40	26	35	49
BG	52	68	58	56	33	54	56
CZ	62	42	41	39	20	41	43
DK	-	50	46	34	25	61	63
DE	53	51	37	35	14	60	51
EE	100	77	39	47	59	100	68
IE	64	52	57	45	26	61	57
EL	47	52	33	31	25	27	86
ES	57	48	46	48	25	44	54
FR	59	54	48	37	27	65	46
IT	68	59	52	52	36	55	62
CY	100	67	29	75	-	-	-
LV	67	69	54	36	43	50	48
LT	-	50	68	63	40	75	69
HU	61	49	52	39	29	45	39
MT	0	-	-	100	0	-	0
NL	:	40	44	29	20	38	51
AT	64	45	49	38	21	55	60
PL	:	54	51	57	24	54	54
PT	76	67	60	55	39	55	69
RO	30	47	47	62	35	46	49
SI	75	66	54	60	22	57	47
SK	54	46	52	44	33	38	65
FI	75	55	55	39	24	51	65
SE	58	54	42	37	29	46	62
UK	59	48	51	38	22	48	55
HR	64	48	54	58	38	42	44
TR	41	35	38	38	36	38	55
IS	100	0	0	60	100	-	40
NO	65	42	42	31	23	52	52
CH	67	49	38	33	19	68	46
JP	45	51	35	22	11	26	29
US	65	46	57	38	21	41	73

Source: S&T statistics (Eurostat)

Exceptions to the reference year: IT: 2005; EL: 2005
Data unavailable: IL, LU
Data estimated: EU-27, EU-25 (by Eurostat), EU-15 (by DG Research)

':': not available; '-': not applicable
Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS
Countries with small numbers of female PhD graduates: CY (19), IS (8), MT (1)

Figure 2.3: Distribution of PhD (ISCED6) graduates across the broad fields of study by sex, 2006



Source: Education Statistics (Eurostat)

Exceptions to the reference year: IT: 2005; EL: 2005
Data unavailable: IL, LU, MT (due to small numbers); NL, PL: education
Data estimated: EU-27, EU-25 (by Eurostat), EU-15 (by DG Research)

Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS
Countries with small numbers of PhD graduates: CY, IS, MT

Table 2.2: Compound annual growth rates of PhD (ISCED6) graduates by narrow field of study in natural science and engineering (fields 400 & 500) by sex, 2002-2006

	400 Science, Mathematics & Computing								500 Engineering, Manufacturing & Construction					
	Life science		Physical science		Mathematics & statistics		Computing		Engineering & engineering trades		Manufacturing & processing		Architecture & building	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
EU-27	3	0	6	1	12	7	13	9	11	5	3	0	10	3
EU-25	3	0	6	1	12	7	13	9	12	5	3	0	13	6
EU-15	2	0	6	1	11	6	14	10	12	5	1	0	14	6
BE	9	3	1	-6	0	6	-11	-4	22	12	26	32	46	13
BG	22	-6	-3	10	-5	32	-	-	22	24	0	12	50	-5
CZ	16	4	14	1	30	23	-11	-24	20	29	19	6	8	11
DK	-	-	-	-	-	-	-	-	10	6	-	-	-	-
DE	7	0	4	-5	6	1	13	7	6	-2	-14	-9	9	-4
EE	7	0	19	6	-	0	0	7	26	15	-	-	-	-
IE	12	-2	-1	-3	26	8	48	54	26	9	0	-19	0	4
EL	-35	-15	3	-3	13	7	-86	-75	121	93	140	94	217	170
ES	3	3	4	1	0	-6	-10	-1	5	4	-11	4	4	-2
FR	6	5	2	6	10	7	6	11	21	15	-45	-42	27	15
IT	23	34	25	24	14	24	34	55	38	19	40	29	28	32
CY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LV	-16	19	32	-10	-	-	-	-	-11	44	-	-	-	-
LT	24	6	14	5	11	0	0	-7	2	5	-	-	-10	-16
HU	27	-5	5	-2	14	8	0	-10	-37	-30	6	4	-13	41
MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	-	-	-2	3	-	-	-	-	19	1	-	-	-	-
AT	5	-8	2	-4	2	10	3	-3	18	9	-53	-37	23	6
PT	36	27	30	16	21	21	61	64	15	9	13	6	10	7
RO	58	15	-	-	-	-	-	-	12	-9	-	-	-80	-86
SI	10	-26	-14	-1	-	19	-	0	-3	6	3	-11	-24	-11
SK	6	22	12	3	27	21	0	36	17	5	10	1	6	18
FI	-2	5	10	6	5	5	17	4	3	6	-12	-13	0	7
SE	-1	-4	1	-2	18	5	23	17	11	5	1	0	5	-4
UK	-10	-5	4	1	8	2	22	16	14	6	-5	-11	7	3
HR	62	145	13	-20	12	-29	-	-50	4	-21	32	-23	0	-39
TR	5	8	7	-7	1	-3	41	30	10	-6	6	0	5	23
NO	-	-	-	-	-	-	-	-	-	-	-	-	82	75
CH	20	2	10	8	-2	-15	14	9	14	2	41	-	6	-5
US	9	4	6	3	8	8	16	18	5	2	-	-	39	57

Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): IE, IT: 2002-2005; EL: 2004-2005; FR: 2003-2006; NL: 2002-2004; RO, HR: 2004-2006

Data unavailable: PL, LU, IL, IS (not shown because of low figures)

Data estimated: EU-27, EU-25, EU-15 (by DG Research)

'-': not applicable

Most tertiary students study abroad and are not included: CY

Table 2.3: Evolution of the proportion of female PhD (ISCED6) graduates by narrow field of study in natural science and engineering (fields 400 & 500), 2002-2006

	400 Science, Mathematics & Computing								500 Engineering, Manufacturing & Construction					
	Life science		Physical science		Mathematics & statistics		Computing		Engineering & engineering trades		Manufacturing & processing		Architecture & building	
	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006	2002	2006
EU-27	53	56	31	35	30	34	16	18	18	22	30	32	31	37
EU-25	53	56	31	35	30	34	16	18	17	21	30	32	31	37
EU-15	53	55	31	35	30	34	17	18	17	21	30	30	30	37
BE	45	51	30	38	46	40	10	8	18	24	50	45	15	33
BG	57	79	56	44	63	31	-	-	35	33	29	20	17	56
CZ	50	60	21	30	23	27	9	16	22	17	42	53	26	24
DK	37	-	-	-	-	34	-	-	23	25	-	-	-	-
DE	47	53	21	27	22	25	10	12	8	10	23	19	18	26
EE	50	57	21	30	0	88	25	20	33	42	0	100	-	100
IE	52	61	32	33	14	21	27	25	11	16	19	30	25	23
EL	37	31	35	36	36	38	12	7	17	19	24	28	38	41
ES	59	59	42	44	37	44	25	18	24	25	53	37	17	21
FR	53	54	34	32	24	26	19	17	23	26	38	33	28	34
IT	72	67	44	45	52	46	39	30	15	22	23	27	53	51
CY	-	-	-	85	-	0	-	50	-	-	-	-	-	-
LV	67	33	25	60	-	0	-	20	73	28	-	100	-	-
LT	71	83	45	53	50	60	33	40	41	39	-	-	43	50
HU	22	47	31	38	18	21	36	45	24	17	35	38	70	25
MT	-	100	-	-	-	-	-	-	-	0	-	-	-	-
NL	-	-	40	38	-	-	-	-	18	23	-	-	-	-
AT	46	59	24	29	30	24	12	15	17	21	36	14	13	20
PT	68	73	53	64	59	59	22	21	30	34	54	61	38	42
RO	46	62	-	-	-	-	-	-	27	35	-	-	33	50
SI	74	93	50	37	0	14	0	17	18	13	39	53	43	29
SK	72	59	28	35	38	43	17	6	19	26	37	44	58	48
FI	66	59	33	36	25	25	16	23	23	21	59	60	24	19
SE	48	51	35	38	16	23	17	21	23	27	30	31	39	47
UK	57	52	32	35	23	27	19	23	15	19	27	33	23	26
HR	79	62	39	56	33	56	0	33	17	26	44	70	43	67
TR	47	44	24	36	36	40	25	32	13	21	44	51	64	49
NO	-	-	0	-	-	-	-	31	13	-	-	-	20	23
CH	34	49	24	25	16	25	11	13	12	17	100	29	18	26
US	44	49	28	30	29	30	23	22	17	19	-	25	36	26

Source: Education Statistics (Eurostat)

Exceptions to the reference year (s): IE, IT: 2002-2005; EL: 2004-2005; FR: 2003-2006; NL: 2002-2004; RO, HR: 2004-2006

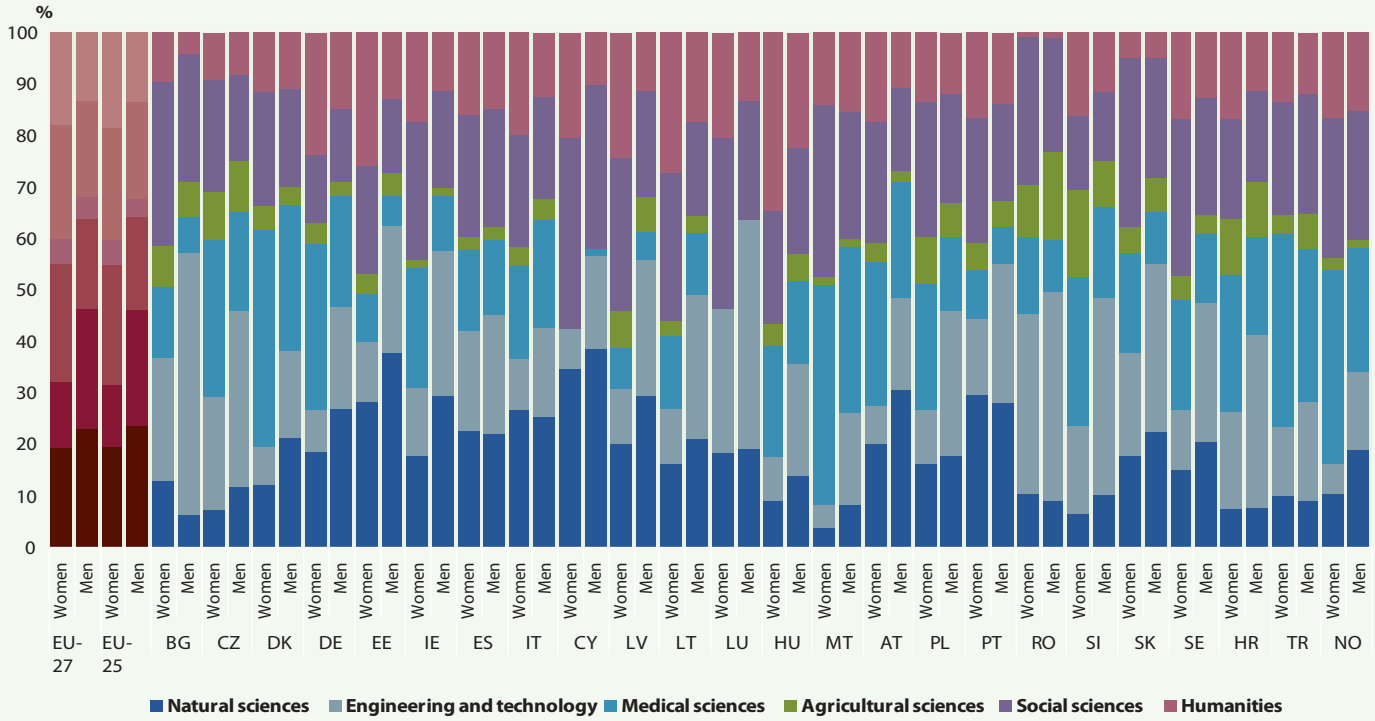
Data unavailable: PL, LU, IL, IS (not shown because of low figures)

Data estimated: EU-27, EU-25, EU-15 (by DG Research)

'-': not applicable

Most tertiary students study abroad and are not included: CY

Figure 2.4: Distribution of researchers in the Higher Education Sector (HES) across fields of science, 2006



Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education, WiS database for Sweden (DG Research)

Exceptions to the reference year: CZ, EE, MT, SK, SE, NO: 2007; LU, PT: 2005
Data unavailable: BE, EL, FR, NL, FI, UK, IS, CH, IL
Provisional data: MT (2007)
Data estimated: EU-27, EU-25 (by DG Research)

Head count

Table 2.4: Compound annual growth rates of female researchers in the Higher Education Sector (HES) by field of science, 2002-2006

	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
EU-27	-0.3	6.7	5.6	2.2	6.5	6.8
EU-25	-0.6	6.1	5.6	0.6	5.9	6.9
BG	13.8	4.6	5.6	13.8	8.8	1.9
CZ	-14.2	5.0	26.0	6.9	5.6	23.4
DK	0.9	26.2	18.0	-1.5	30.8	-13.7
DE	12.3	11.7	6.5	10.9	2.1	13.5
EE	8.5	2.8	-1.9	-4.8	1.5	8.4
IE	-2.8	16.9	6.2	8.4	3.2	8.1
ES	-9.1	5.0	6.7	-16.2	15.9	23.3
IT	2.6	26.4	11.3	9.8	7.2	-4.3
CY	22.2	36.8	-	-	18.6	12.5
LV	-8.9	16.5	3.6	14.6	17.5	2.5
LT	1.1	0.9	-3.8	-1.2	7.8	12.4
HU	-3.5	3.4	4.3	-0.9	4.6	-1.0
MT	18.5	21.7	3.2	:	1.0	10.8
AT	13.4	18.2	8.3	11.0	16.6	9.0
PL	-3.2	4.1	2.4	1.7	0.0	-0.7
PT	3.0	14.5	3.9	2.8	1.5	14.6
RO	27.1	16.4	7.0	156.7	32.0	-6.9
SI	3.7	10.3	26.4	15.3	-13.1	5.7
SK	2.9	5.3	15.2	-2.2	17.2	-3.0
SE	0.7	0.3	2.6	1.5	3.6	2.5
HR	-2.6	0.1	2.9	3.1	-2.7	24.8
TR	4.6	4.3	5.6	2.4	5.8	3.9
NO	6.0	10.4	11.8	1.6	7.8	3.7

Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education, WiS database for Sweden (DG Research)

Exceptions to the reference year (s): CZ, EE, MT, SK, SE: 2002-2007; DK, DE, LV, LT, PL, TR: 2003-2006; PT: 2002-2005; NO: 2003-2007; IT: 2005-2006
Data unavailable: BE, EL, FR, NL, LU, FI, UK, CH, IL, IS; MT: Agricultural Sciences (2002)
Break in series: DK (2006 - Humanities and Social sciences); IE (2006 - Engineering and technology and Natural sciences)

Provisional data: MT (2007)
Data estimated: EU-27, EU-25 (by DG Research), PT (2002)

':': not available; '-': not applicable
Head count

Table 2.5: Evolution of the proportion of female researchers in the Higher Education Sector (HES) by field of science, 2002-2006

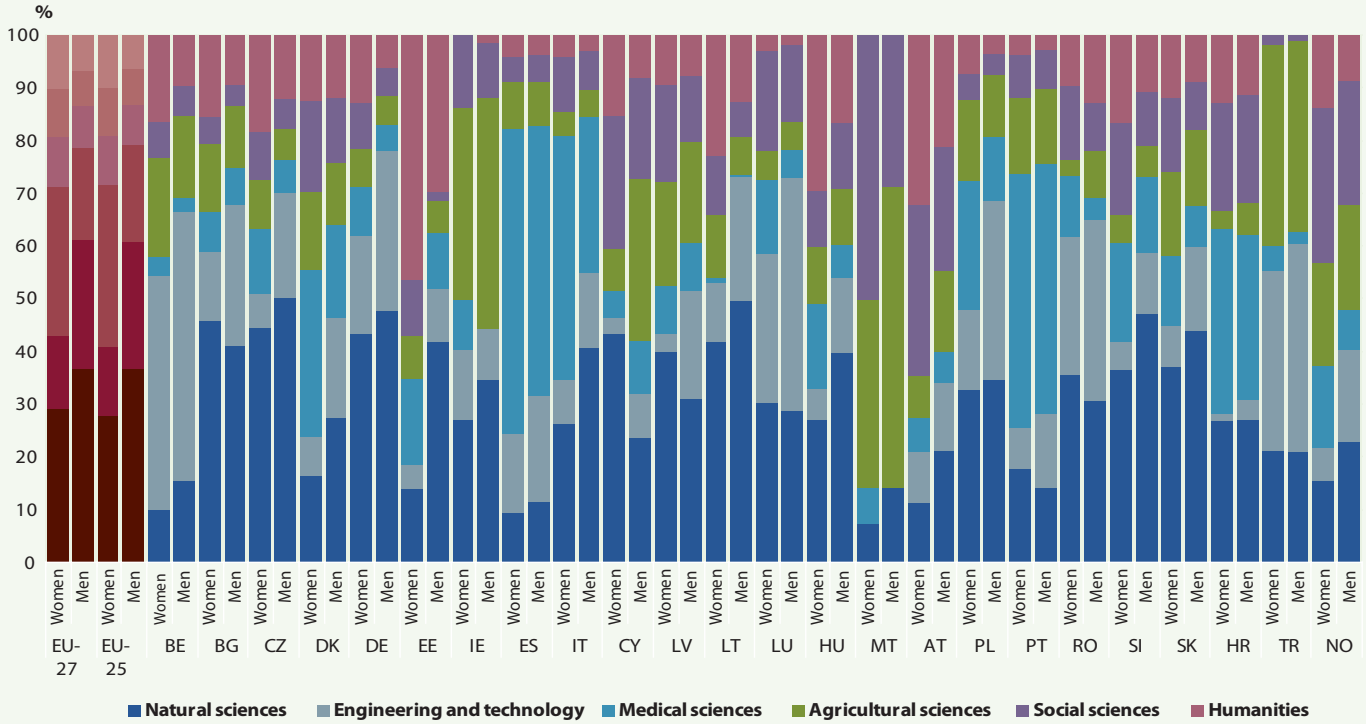
	2002						2006					
	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
BG	43	22	52	33	44	62	55	22	53	41	43	58
CZ	33	25	48	44	42	45	25	25	46	34	41	38
DK	23	14	37	46	30	38	25	20	47	45	40	38
DE	18	12	35	32	31	31	24	16	41	42	30	42
EE	35	26	62	42	53	62	39	29	58	42	55	63
IE	31	18	74	30	43	41	27	23	57	42	47	49
ES	38	32	40	36	38	38	39	35	40	39	39	40
IT	36	21	30	32	36	49	37	24	32	34	37	47
CY	26	13	-	-	33	43	31	17	0	-	37	50
LV	44	30	62	42	59	85	41	30	60	54	60	69
LT	47	28	70	48	54	52	43	28	54	46	62	61
LU	:	:	:	:	:	:	26	18	-	-	34	35
HU	27	18	44	29	33	47	27	19	44	33	38	47
MT	6	5	30	:	31	17	14	8	31	25	32	23
AT	22	13	36	41	36	43	26	18	40	49	44	46
PT	49	29	51	46	49	50	48	33	54	50	53	51
RO	43	34	53	29	47	30	46	39	51	30	49	33
SI	25	17	57	40	43	43	28	22	50	53	40	47
SK	39	31	50	42	49	50	39	33	60	39	53	44
SE	32	21	51	43	45	46	34	23	53	48	48	48
HR	43	27	49	41	48	42	42	30	52	43	46	53
TR	40	29	43	26	36	41	42	31	45	27	38	42
IS	35	45	45	36	47	41	:	:	:	:	:	:
NO	26	17	47	39	41	42	29	22	53	50	44	44

Source: S&T statistics (Eurostat), The Icelandic Centre for Research (Survey on R&D), Norwegian Institute for Studies in Innovation, Research and Education, WiS database for Sweden (DG Research)

Exceptions to the reference year (s): CZ, EE, MT, SK, SE: 2002-2007; DK, DE, LV, LT, TR: 2003-2006; PT: 2002-2005; NO: 2003-2007; IT: 2005-2006; LU: 2005; IS: 2003
Data unavailable: BE, EL, FR, NL, PL, FI, UK, CH, IL, LU (2002), IS (2006); MT: Agricultural Sciences (2002)
Break in series: DK (2006 - Humanities and Social sciences); IE (2006 - Engineering and technology and Natural sciences)
Provisional data: MT (2007)
Data estimated: PT (2002)

':': not available; '-': not applicable
Head count

Figure 2.5: Distribution of researchers in the Government Sector (GOV) across fields of science, 2006



Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, IE, MT, SK: 2007; BE, LU, PT, NO: 2005; TR: 2004
Data unavailable: EL, FR, NL, FI, UK, CH, IL, SE, IS
Provisional data: IE (2007), MT (2007)
Data estimated: EU-27, EU-25 (by DG Research)

Head count

Table 2.6: Compound annual growth rates of female researchers in the Government Sector (GOV) by field of science, 2002-2006

	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
EU-27	2	10	12	1	3	4
EU-25	3	11	13	1	4	5
BE	14	11	0	4	3	4
BG	2	6	-2	-1	-1	-1
CZ	7	-4	7	-1	11	5
DK	-9	-1	22	-12	27	-3
DE	11	8	3	2	1	0
EE	3	6	4	7	11	3
IE	26	95	2	-10	8	-
ES	-15	39	21	7	26	28
IT	7	31	25	-5	1	28
CY	11	-12	6	-3	10	14
LV	0	36	73	28	24	69
LT	1	26	-14	4	15	-6
HU	7	3	-1	1	0	1
MT	0	-100	:	:	-14	:
AT	7	19	-9	-4	11	10
PL	-3	-3	2	1	3	-1
PT	0	8	8	-2	-10	1
RO	-2	6	-3	1	-6	3
SI	9	-3	-16	10	-7	99
SK	4	1	0	17	-8	46
HR	-7	50	-6	-6	8	-4
TR	9	6	45	1	-4	-100
NO	2	-1	22	3	2	6

Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): CZ, EE, IE, MT, SK: 2002-2007; BE, PT: 2002-2005; DK, DE, IT, LV, LT, PL: 2003-2006; NO: 2003-2005; TR: 2003-2004
Data unavailable: EL, FR, NL, LU, FI, SE, UK, CH, IL, IS
Break in series: DK (2006 - Humanities and Social sciences)

Provisional data: IE (2007), MT (2007)
Data estimated: EU-27, EU-25 (by DG Research); PT (2002)

':': not available; '-': not applicable
Head count

Table 2.7: Evolution of the proportion of female researchers in the Government Sector (GOV) by field of science, 2002-2006

	2002						2006					
	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
EU-27	34	22	48	43	47	50	35	27	52	44	48	50
EU-25	32	21	48	43	46	49	33	26	52	44	47	50
BE	20	25	38	35	36	47	23	28	39	36	36	43
BG	51	33	54	51	62	65	54	33	53	53	58	63
CZ	31	15	50	50	49	44	34	16	53	47	49	47
DK	28	23	44	41	35	44	27	20	53	44	46	39
DE	24	17	42	35	41	47	28	20	44	36	41	46
EE	36	36	71	54	78	73	33	40	70	67	90	70
IE	45	7	51	30	29	0	34	47	100	35	45	0
ES	41	31	44	48	46	51	42	39	50	49	45	47
IT	32	22	46	39	52	52	34	32	55	41	52	52
CY	44	21	25	14	52	47	57	21	26	16	49	58
LV	58	19	53	50	68	69	51	12	45	45	55	50
LT	44	27	55	60	69	69	49	35	70	65	66	67
LU	:	:	:	:	:	:	32	22	54	30	37	40
HU	26	21	63	40	40	48	30	20	60	39	34	52
MT	50	14	:	:	63	:	50	-	100	56	78	-
AT	22	26	39	26	42	45	25	33	42	25	47	49
PL	43	22	62	52	44	60	40	24	59	48	48	58
PT	60	37	59	54	67	62	62	42	57	57	57	66
RO	46	43	70	43	62	43	54	43	74	26	60	43
SI	37	34	47	34	53	35	37	26	50	41	57	54
SK	40	30	56	45	53	63	40	28	58	47	55	51
SE	36	36	37	35	36	37	:	:	:	:	:	:
HR	44	18	53	30	48	54	49	25	51	37	48	52
TR	26	26	45	30	48	17	29	26	43	30	41	0
IS	26	41	50	25	49	52	:	:	:	:	:	:
NO	28	17	49	36	42	48	29	17	54	37	43	48

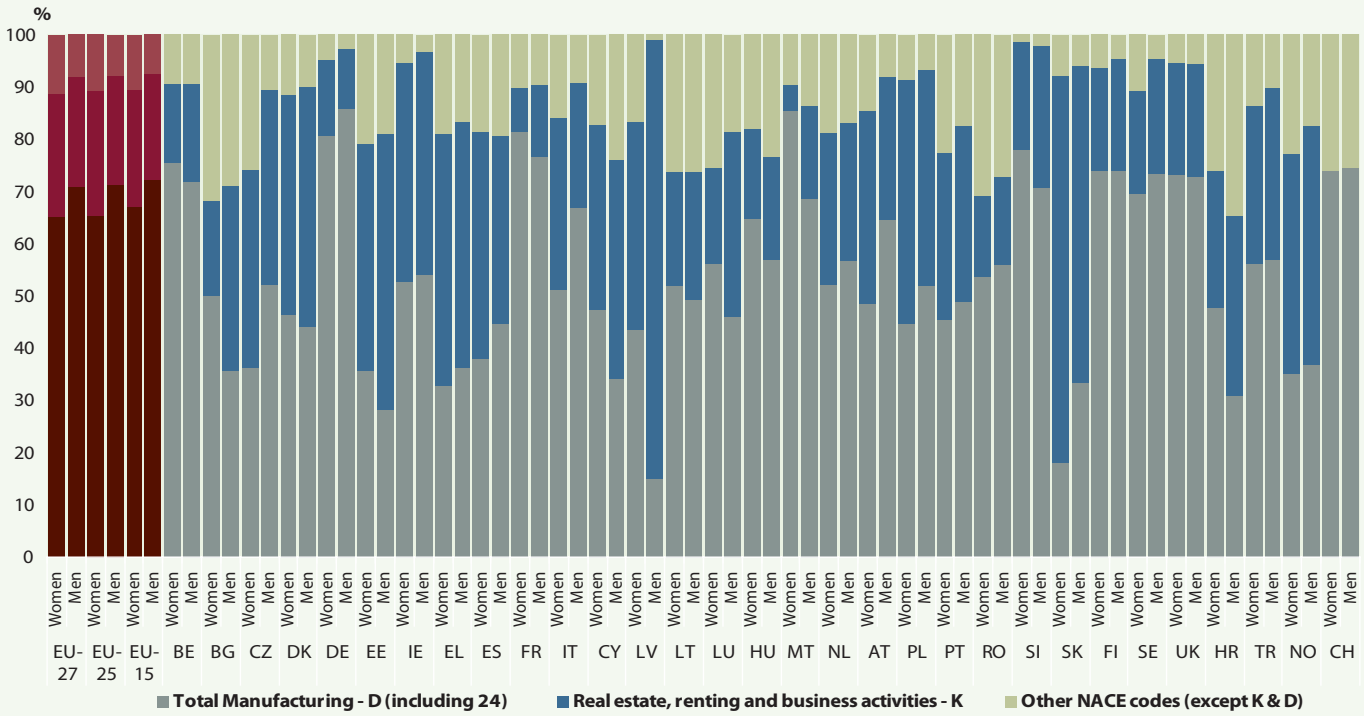
Source: S&T statistics (Eurostat), The Icelandic Centre for Research (Survey on R&D)

Exceptions to the reference year (s): CZ, EE, IE, MT, SK: 2002-2007; BE, PT: 2002-2005; DE, DK, IT, LT, LV, PL: 2003-2006; NO: 2003-2005; TR: 2003-2004; LU: 2005; SE: 2003; IS: 2003
Data unavailable: EL, FR, NL, FI, UK, CH, IL, LU (2002), SE (2006), IS (2006)
Break in series: DK (2006 - Humanities and Social sciences)

Provisional data: IE (2007), MT (2007)
Data estimated: EU-27, EU-25 (by DG Research), PT (2002)

':': not available; '-': not applicable
Head count

Figure 2.6: Distribution of researchers across economic activities (NACE) in the Business Enterprise Sector (BES), 2006



Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ: 2007; BG, DK, DE, EE, IE, EL, IT, NL, PT, SK, UK, NO: 2005; FR, CH: 2004; LU, SE: 2003
Data unavailable: IS, IL; CH: Real estate, renting and business activities - K
Provisional value: BE (2006)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); UK (2005), LU (2003)

Head count

Table 2.8: Proportion of female researchers by economic activity (NACE) in the Business Enterprise Sector (BES), 2006

	Total manufacturing - D (including 24)	Nace code 24.4 - Pharmaceuticals	Nace code 24 (-24.4) - Chemicals and chemical products (less pharmaceuticals)	Nace code 24 - Manufacture of chemicals and chemical products	Real estate, renting and business activities - K	Other nace codes (except K & D)
EU-27	17.3	38.5	28.6	35.2	20.5	24.4
EU-25	17.0	38.2	28.2	35.0	20.3	23.5
EU-15	16.9	37.2	27.5	34.0	20.1	23.1
BE	21.6	48.9	28.7	40.6	17.3	20.8
BG	57.1	75.2	52.3	71.9	33.1	51.2
CZ	11.1	47.5	28.9	36.4	15.3	30.3
DK	26.0	46.2	39.5	45.0	23.2	27.9
DE	11.0	31.4	27.4	29.3	14.3	18.5
EE	28.7	72.7	55.8	58.7	20.6	26.0
IE	19.8	42.5	19.4	34.4	20.0	29.5
EL	26.0	:	:	45.2	28.5	30.7
ES	24.4	56.3	37.5	47.7	31.7	27.0
FR	21.6	54.3	38.7	49.6	13.4	21.7
IT	16.2	50.0	24.8	36.9	26.0	31.1
CY	28.1	56.7	25.0	42.6	19.3	16.9
LV	57.7	:	:	63.8	18.1	86.9
LT	36.6	:	:	65.1	32.8	35.3
LU	16.8	:	:	:	7.9	18.4
HU	24.3	51.7	36.7	49.1	19.6	17.8
MT	25.6	64.4	0.0	61.7	7.0	16.2
NL	9.3	16.6	15.9	16.1	11.0	11.1
AT	10.6	49.2	23.2	38.9	17.3	22.3
PL	22.1	73.4	61.4	69.5	27.2	29.7
PT	25.0	:	:	:	25.5	31.8
RO	39.8	69.2	69.8	:	38.0	43.9
SI	27.5	58.6	46.9	54.3	20.7	17.3
SK	20.6	:	:	53.9	36.9	38.2
FI	18.2	:	:	51.2	17.0	23.7
SE	24.2	52.1	40.0	49.4	23.0	44.1
UK	19.2	19.2	19.2	19.2	19.2	18.3
HR	44.3	81.6	84.6	82.8	28.0	27.8
TR	24.1	:	:	:	22.7	30.1
NO	19.6	55.2	32.4	42.7	19.0	25.0
CH	20.9	32.7	19.8	:	:	21.4

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ: 2007; BG, DK, DE, EE, IE, EL, IT, NL, PT, SK, UK, NO: 2005; FR, CH: 2004; LU, SE: 2003
Data unavailable: IS, IL
Provisional value: BE (2006)

Data estimated: EU-27, EU-25, EU-15 (by DG Research); UK (2005), LU (2003)

':': not available
Head count

Table 2.9: Evolution of the proportion of female researchers in the Business Enterprise Sector (BES) by field of science, 2002-2006

	2002						2006					
	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
BG	46	48	63	86	86	-	48	32	61	86	27	-
CY	35	11	29	22	27	-	35	11	16	22	32	-
CZ	19	11	46	40	35	53	18	10	46	40	38	21
EL	57	27	65	48	47	54	31	22	90	48	54	30
HU	27	22	33	26	28	69	29	21	41	26	28	17
MT	:	:	:	20	:	:	8	15	57	20	40	-
PL	35	23	38	44	71	:	43	21	71	44	46	40
PT	50	20	53	41	43	57	35	21	58	41	56	45
RO	53	42	79	47	:	:	41	38	70	47	29	43
SI	55	21	60	33	49	67	27	19	57	33	32	100
SK	33	24	68	58	52	-	20	22	67	58	54	-
HR	64	21	83	60	:	:	65	23	82	60	0	-
TR	36	22	43	33	41	44	35	23	49	33	42	32

Source: S&T statistics (Eurostat)

Exceptions to the reference year (s): SK, CZ: 2002-2007; EL: 2003-2005; PL, TR: 2003-2006; PT: 2002-2005
Data unavailable: BE, DK, DE, EE, IE, ES, FR, IT, LV, LT, LU, NL, AT, FI, SE, UK, IS, NO, CH, IL
Data estimated: PT (2002)

':': not available; '-': not applicable
Head count

Table 2.10: Dissimilarity index for researchers in Higher Education Sector (HES) and Government Sector (GOV), 2006

	Dissimilarity Index HES (DI)	Dissimilarity Index GOV (DI)
EU-27	0.14	0.18
EU-25	:	0.19
EU-15	:	0.20
BE	:	0.12
BG	0.27	0.14
CZ	0.17	0.19
DK	0.19	0.23
DE	0.21	0.16
EE	0.23	0.34
IE	0.26	0.16
ES	0.03	0.07
IT	0.11	0.21
CY	0.16	0.33
LV	0.25	0.17
LT	0.23	0.20
LU	0.17	0.16
HU	0.19	0.23
MT	0.20	0.32
AT	0.21	0.20
PL	:	0.21
PT	0.12	0.06
RO	0.13	0.17
SI	0.25	0.18
SK	0.19	0.15
SE	0.31	0.00
HR	0.15	0.05
TR	0.10	0.05
NO	0.18	0.19

Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Exceptions to the reference year: **HES:** CZ, EE, MT, SK, NO: 2007; LU, PT, SE: 2005; **GOV:** CZ, EE, IE, MT, SK: 2007; BE, LU, PT, NO: 2005; TR: 2004; SE: 2003
Data unavailable: EL, FR, NL, FI, UK, IS, CH, IL, BE (HES), PL (HES)
Provisional data: **HES:** MT (2007); **GOV:** IE (2007), MT (2007)

Data estimated: EU-27, EU-25, EU-15 (by DG Research)

':': not available
Head count

Seniority

Although the feminisation of the student population is one of the most striking aspects of the evolution of research over the last 30 years, in most European countries women's academic career remains markedly characterised by strong vertical segregation. This is illustrated by Figure 3.1. At the first two levels of university education (students and graduates of largely theoretically-based programmes to provide sufficient qualifications for gaining entry to advanced research programmes and professions with high skills requirements), respectively 55% and 59% of enrolled students are female. However, men outnumber women as of the third level (students in programmes leading to the award of an advanced research qualification such as the PhD that are devoted to advanced study and original research) at which the proportion of female students enrolled drops back to 48%. At this level of education, where the total number of students has already fallen back substantially as compared with the first level, men are more numerous among enrolled students and the gender gap widens at the PhD level. Indeed, women comprise only 45% of PhD graduates. The PhD degree is often required to embark on an academic career, which means that the attrition of women at this level will have a knock-on effect on their relative representation at the first stage of the academic career. Whereas 45% of PhD holders are women, they account for only 44% of grade C academic staff (the first grade/post into which a newly qualified PhD graduate would normally be recruited). The take-off phase in the academic career will also be more hazardous for women, as shown by the fact that their proportion drops to 36% among grade B academics (researchers working in positions not as senior as top position but more senior than newly qualified PhD holders). These figures illustrate the workings of a sticky floor, a metaphor to illustrate the difficulties graduate women face when trying to gain access to the first levels of the academic career. Although women are more successful than men in completing tertiary education programmes (European Commission 2008a), they are less successful in entering the PhD level and the lowest steps of the academic career. The question is thus to know why women fall victim to such rarefaction: is it because of direct discrimination that derives from choices and decisions made by selection committees that are composed mainly of men, because of indirect discrimination that operates through gender-biased selection criteria or because of self-censuring rooted in gender stereotypes? **The proportion of women is the smallest at the top of the academic hierarchy, falling back to just 18% of grade A academic staff** (the highest grade/post at which research is normally conducted). This figure clearly indicates the existence of a Glass Ceiling composed of difficultly identifiable obstacles that hold women back from accessing the highest positions in the hierarchy.

A comparison between 2002 and 2006 shows an improvement in women's relative position at the PhD level and at the different stages of the academic career, as captured by grades A, B and C.

This positive progress is nevertheless slow and should not mask the fact that, in the absence of proactive policies, it will take decades to close the gender gap and bring about a higher degree of gender equality.

Although a picture of strong vertical segregation transpires through the analysis of the overall situation in the academic world, the situation can vary considerably according to the field of science considered. **The under-representation of women is indeed even more striking in the field of science and engineering** (Figure 3.2). In this field, women account for only 31% of the student population at the first level. In contrast with what was observed for all fields of study taken together, the proportion of women increases throughout the first hierarchical echelons to reach 36% at the levels of PhD students and graduates. The lack of appeal of science and engineering studies for girls is particularly problematic at the earliest stage of a typical academic career in this field, as women tend to be better represented among PhD students and graduates. However, the problem of gender segregation in education is almost always presented from the perspective of the educational choices made by girls, even though gender segregation is also due to boys' preferences for certain fields of study: why are there so few boys in disciplines such as history, philosophy, and so forth? The absence of a mixed gender composition in the different fields of study can already be observed in secondary education, which is in turn reflected in higher education. Therefore, it is crucial that policies should tackle this issue by taking into account girls' and boys' study choices because working towards a more mixed composition of all study fields should not mean an alignment on the male model.

The same pattern was noted for academic careers in science and engineering as in all fields of study. From 36% of female PhD holders, the proportion of women drops to 33% in grade C academic staff, 22% in grade B and just 11% in grade A. Women's attrition in science and engineering is thus comparable to all study fields taken together. A comparison between 2002 and 2006 points towards an improvement in the proportion of female scientists and engineers that is slightly more pronounced than for all study fields taken together.

These results refer to the EU-27 average and as such mask important cross-country disparities. Given the variation in nationally applied classifications of academic grades, the analysis was restricted to the presence of women at grade A of the academic career; in most countries, grade A corresponds to Full Professors. Table 3.1 indicates that female representation is on average higher in the new EU Member States than in the EU-15, where there are on average 17% of women at grade A level, compared with 19% throughout the EU-27. The five European countries where the share of women among grade A academic staff is the highest are Romania, Latvia, Bulgaria, Finland and Portugal. In contrast, the proportion of women was the lowest in Malta, Luxembourg, Cyprus, Ireland, Belgium, Greece and the Netherlands. Their proportions ranged from 32% in Romania to 2% in Malta. Between 2002 and 2007, women's presence at grade A level has strengthened in the majority of countries.

As shown in Figure 3.4, **the share of female grade A staff among all women working in academia is always lower than the share of male grade A staff among all men working in academia.** On average, throughout the EU-27, 7% of women and 18% of men working in the academic sector are at grade A. Women are thus relatively more present at the lower levels of the academic career. The share of female grade A staff among all women in academia varies between 26% and 0%, with the highest proportions being recorded in Romania, Italy, France and Slovenia. Conversely, the lowest shares were reported by Malta, Lithuania, Cyprus, Germany and Spain. However, even at its highest levels, the gap between the proportions of women and men at this grade level remains sizeable. Differences between national grading systems may partly explain the variations between countries.

The Glass Ceiling Index (GCI) better illustrates the difficulties women have in gaining access to the highest hierarchical levels. This index measures the relative chance for women, as compared with men, of reaching a top position. The GCI compares the proportion of women in grade A positions (equivalent to Full Professors in most countries) to the proportion of women in academia (grade A, B, and C), indicating the opportunity, or lack of it, for women to move up the hierarchical ladder in their profession. The GCI can range from 0 to infinity. A GCI of 1 indicates that there is no difference between women and men being promoted. A score of less than 1 means that women are over-represented at grade A level and a GCI score of more than 1 points towards a Glass Ceiling Effect, meaning that women are under-represented in grade A positions. In other words, the interpretation of the GCI is that the higher the value, the thicker the Glass Ceiling and the more difficult it is for women to move into a higher position. On average, throughout the EU-27, the GCI equals 1.8. In no country is the GCI equal to or below 1. Its value ranges from 11.7 in Malta to 1.3 in Romania. Aside from Malta, the highest GCI was reported in Ireland, Cyprus, Lithuania, Luxembourg, Sweden and Belgium. The case of Malta is extreme in that it is the only country where so few female academics get into grade A positions. This can be partly explained by the fact that there is only one university in Malta. Between 2004 and 2007, the GCI has decreased or remained stable in all countries (except for Norway).

When looking at the different fields of study separately (Table 3.2), it can be noted that, **in 2007, on average throughout the EU-27, the proportion of women among grade A academic staff was the highest in humanities and social sciences (respectively 27.0% and 18.6%). In contrast, in engineering and technology, the under-representation of women was most striking, with 7.2% of women among academic personnel at grade A.** The proportion of women stood in between these two extremes in the natural, agricultural and medical sciences, respectively at 13.4%, 16.8% and 17%. This pattern was also observed at national level, although to varying degrees. However, the medical sciences score better than the social sciences and humanities in the Czech Republic, Poland, Slovenia, the United Kingdom and Turkey, pointing towards a stronger feminisation of medicine in these countries.

The share of women at grade A level in the field of engineering and technology is particularly small in Denmark, Cyprus, Lithuania, and Malta.

A possible explanation for women's under-representation at the highest hierarchical level could be that a generation effect is at work, meaning that women who are currently at grade A only accounted for a very small proportion of female students at the different study levels when they were young. To test this hypothesis, it would have been necessary to use data on cohorts of women in order to monitor their progression in the academic career at different points in time. Such data are unfortunately not available. To assess this potential generation effect, Table 3.3 presents the proportion of women at grade A level for the different age groups (<35 years, 35-44 years, 45-54 years, and +55 years). Given that in some countries, the proportion of academic staff at grade A level is very small in the youngest age group (those aged under 35), it is best not to comment on this group for these countries. The existence of a generation effect could be exemplified by the fact that the proportion of women is larger in the younger age groups. At EU-27 level, women account for 23% of grade A academics among 35 to 44-year-olds, 21% among 45 to 54-year-olds and 18% among those aged over 55. The situation thus appears more favourable for the youngest generations of female academics, but the gender gap is still disproportionately high compared with the increase in the proportion of women among students and thus casts doubt on the hypothesis that women will automatically catch up. Of the 12 European countries for which data by age groups are available, 4 put forward a different picture. In Sweden, the pattern was reversed as the proportion of women is smaller in the youngest age groups. In the United Kingdom, Finland and Lithuania, the share of women at grade A level was the highest among 45 to 54-year-olds. In sum, **although in some countries the situation is more favourable for younger generations of women, the data currently available by age group reject the hypothesis of a spontaneous movement towards equality.**

Proactive policies need to be implemented in order to balance out the unequal situation that continues to prevail in the academic sector. A gender-mixed composition of nominating commissions, an increase in the objectivity of the applied selection criteria, tutoring of women, or even the fixing of targets and/or quotas are policies that are generally evoked in this context. Moreover, the fight against gender stereotypes and the introduction of measures to promote a gender mix in all primary and secondary school study fields could favour the entry of young girls into the field of engineering and technology, where they are particularly under-represented.

Unfortunately, there are currently no data allowing an analysis of the hierarchical position of female scientists in the sectors other than the Higher Education Sector.

Available data refer to the distribution by sex of R&D staff within different occupations (researchers, technicians and others) in the Higher Education Sector (Figure 3.8), the Government Sector (Figure 3.9), the Business Enterprise Sector (Figure 3.10) and in all of these broad sectors together (Figure 3.11) in 2006. According to the Frascati Manual, researchers are "professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned"; technicians 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"; and other supporting staff includes "skilled and unskilled craftsmen, secretarial and clerical staff participating in R&D projects or directly associated with such projects". For the purpose of describing these indicators, a hierarchy can be defined with researchers placed highest, followed by technicians and other supporting R&D staff. **In all three sectors and in nearly all countries studied, the proportion of male researchers exceeds that of female researchers.** The reverse pattern marks the two lower occupational levels of technicians and other supporting staff, where the proportion of women exceeds that of men. As regards the Higher Education Sector, the average EU-27 figures for 2006 show that 61% of female R&D staff are researchers compared with 78% of men; at the same time 21% of women in R&D hold technical occupations compared with 14% of men; finally, 18% of women in R&D perform other supporting tasks compared with 8% of men. The proportion of female researchers in the Higher Education Sector is particularly high (above 90%) in Luxembourg, Slovakia, and Portugal and it is particularly low in Switzerland (46%), Italy (41%) and the Netherlands (26%). The highest shares of female technicians are observed in the Czech Republic (29%), the Netherlands (28%) and Greece (26%). Women in R&D are particularly likely to perform supporting tasks in Switzerland (52%), the Netherlands (46%), Ireland (39%), Malta (35%) and Germany (31%). In the Government and the Business Enterprise Sectors, Figures 3.9 and 3.10 show that, on average and throughout the EU-27, an even lower share of women are occupied as researchers than in the Higher Education Sector (respectively 47% and 41%) but instead relatively more women work as technicians (respectively 23% and 33%). **The higher share of women in relation to men among other supporting staff is also more pronounced in the Business Enterprise Sector (26%) than in Higher Education, and even more so in the Government Sector (30%).**

The gender pay gap is the final object of analysis in this chapter. The gender pay gap is a component of all gender inequalities in research as well as in other occupational sectors. The gender wage gap is in a sense the final and most synthetic indicator of the inequalities between men and women that structure the labour market. It can generally be decomposed into two parts.

The first part relates to the proportion of the overall gender wage gap observed that can be explained by differences in men's and women's so-called 'exogenous characteristics': differences in educational attainments, in labour market experience and tenure, in sectoral affiliation, in occupation, and so forth. The second part, often labelled the 'unexplained' part, is due to direct discrimination or to unobserved heterogeneity. However, such a decomposition of the gender wage gap may seem arbitrary because some characteristics of women such as not working in the same sector or occupation as men could also have been induced by earlier discriminatory processes.

Of all countries observed in She Figures 2009, there is none where female wages are equal to men's, despite the almost universal existence of legislation to impose gender wage equality. Regarding the European Union, Article 119 of the Treaty of Rome established the principle of equal pay for equal work as early as 1957. Since 1975, a series of European Directives approved by the European Parliament have obliged Member States to transpose the principle of equal pay for equal work or work of equal value into their national legislative frameworks.

The gender pay gap is presented here for the entire economy comparing two years: 2002 and 2006 (Figure 3.12). It is also presented by selected occupational group in private enterprise (Table 3.4) for 2002 and 2006; in the public sector (Table 3.5); or in both private and public sectors together (Table 3.6). Moreover, as compared with previous editions of She Figures, a novelty in the 2009 version is the breakdown of the gender pay gap in public and private enterprise by age group (15-34 years, 35-44 years, 45-54 years, and 55-64 years) for the years 2002 and 2006 (Table 3.7).

The official measure of the overall gender pay gap covering the entire economy stood at 25% in the EU-27 in 2006, a slight improvement from 2002 when it stood at 26% (Figure 3.12). At national level, the widest pay gaps were observed in Cyprus (33%), Estonia (32%), the Netherlands (28%) and the United Kingdom (28%) while the narrowest gaps were found in Belgium (13%), Malta, Romania, Sweden, and Slovenia (14%).

Table 3.4 focuses on the gender pay gap for a selection of occupations in private enterprise. Three occupations were selected as most relevant. The first group selected relates to decision-making occupations (ISCO 100 – Legislators, senior officials and managers). Due to small sample size, the data aggregates for the EU-27 are not reliable for the subcategory of legislators, senior officials, and managers. For corporate managers a gender wage gap of 30% was observed for the year 2006, compared with a gap of 28% for managers of small enterprises. More importantly, these figures reflect a deterioration of the gender balance in the occupation of private-sector corporate managers over time, as in 2002, the wage gap stood at 28% in this occupation in the EU-27. For managers of small enterprises in the private sector, the pay gap decreased by 4 percentage points between 2002 and 2006.

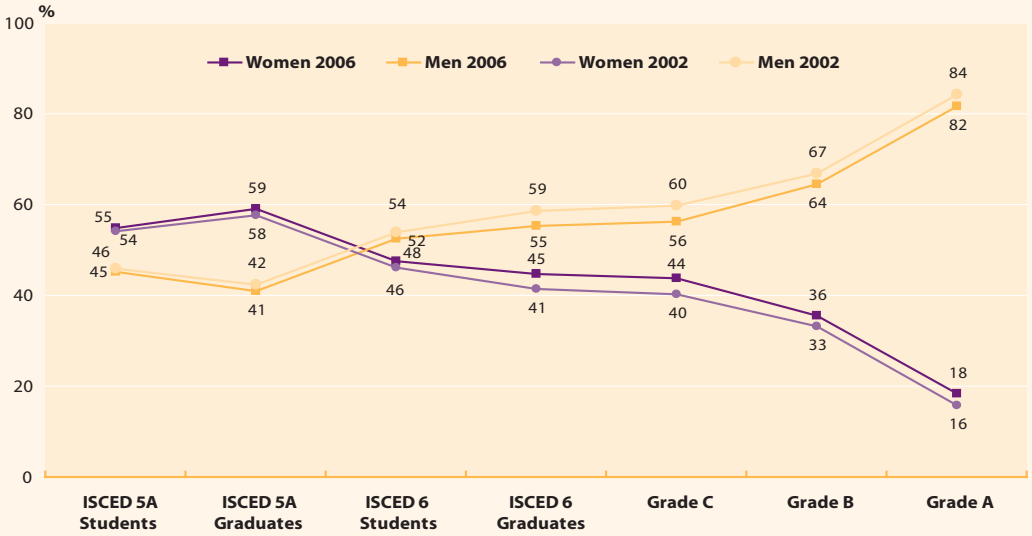
The second group selected refers to "Professional" occupations (ISCO 200) and the third to "Technical and Associate Professional" occupations (ISCO 300). Within the "professional" group, in the EU-27 the gender pay gap for physical, mathematical and engineering science professionals stood at 22% in 2002 and remained at this level in 2006. It was slightly higher for technical and associate professionals in physical, mathematical and engineering science, at 25%. A much wider gap was reported in the group of Life science, health, teaching and other professionals, at 33% (having dropped from 36% in 2002) and also in the group of Technical and Associate Professionals at 28% (down from 30% in 2002).

Comparing these findings with the gender pay gaps in public enterprise as shown in Table 3.5, we find that for most selected occupations, the gap is much wider in the public sector than in the private sector. For both subcategories of professionals, the gap is 7 percentage points higher in the public sector than in the private sector. This finding can be surprising given that it is generally believed that the stronger regulation in the public sector better protects women against discrimination. This is thus not certified by our data which could tentatively lead towards a different explanation: could it be that private enterprise is more efficient than the public sector and as such cannot go without recruiting bright women and appreciate their true worth in their pay? For legislators, senior officials and managers, the gender pay gap is nevertheless 2 percentage points lower in public enterprise, at 28% in 2006 in the EU-27.

Table 3.6 provides average figures for public and private enterprise and no new striking results are set forth. In contrast, Table 3.7 breaks down the gender pay gap into four different age groups and reveals that in the EU-27, in 2006, the gender pay gap was greatest among 45 to 54-year-olds, at 38%, closely followed by the group of 55 to 64-year-olds, where the gap stood at 37%. The pay difference was roughly 10 percentage points lower among 35 to 44-year-olds, at 28%, and it further drops to 17% for 15 to 34-year-olds. For all age groups, particularly for 35 to 44-year-olds and for 45 to 54-year-olds, this suggests an improvement of the gap as compared with 2002.

To sum up, this analysis shows that the gender pay gap is the widest in those occupations that are most open to high-level female researchers. However, the gender pay gap is large everywhere, even more so in public enterprise. It also widens as the age of researchers increases. This illustrates the workings of a Glass Ceiling that women hit during their ascent in the academic hierarchy. It is important to highlight that there is no spontaneous reduction of the gender pay gap over time, a conclusion that holds up for all gender inequalities that were set forth and analysed in the present chapter.

Figure 3.1: Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002/2006



Definition of grades:

A: The single highest grade/post at which research is normally conducted.
B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders.
C: The first grade/post into which a newly qualified PhD graduate would normally be recruited.

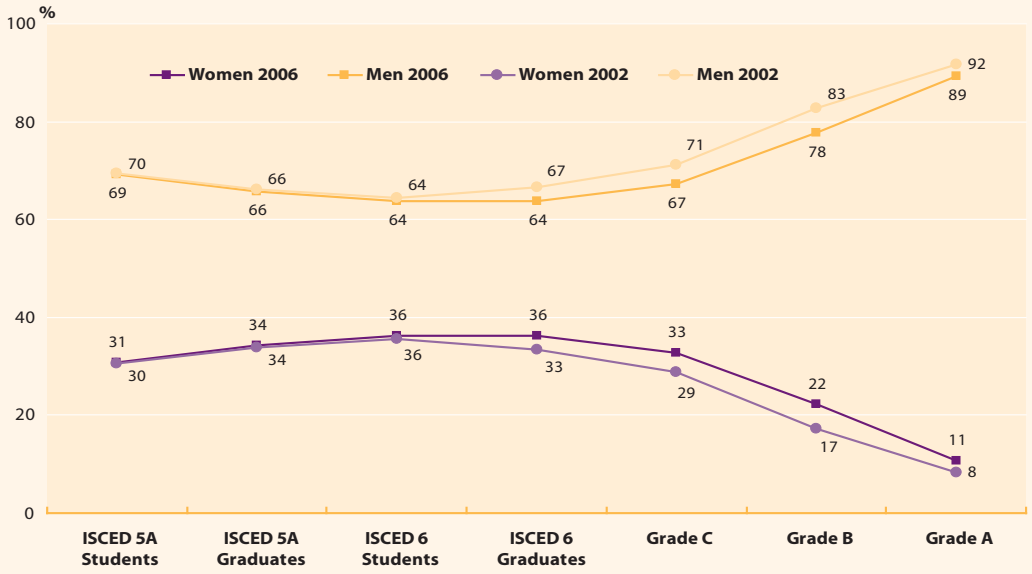
ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements.
ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD).

Source: Education Statistics (Eurostat); WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year (s): **ISCED 5A Graduates 2002**: DK (2003), FR (2003); **ISCED 6 Graduates 2006**: IT (2004); **2002**: DK (2003), FR (2003), RO (2003); **WiS 2006**: EE (2004), IE (Grade A: 2002-2003), EL (2000), MT (2004), PT (2003), SI (2007), SK (2007), FI (2007); **2002**: IE (2004), EL (1999), NL (2003), UK (2003)
Data unavailable: **ISCED 6 students 2006**: DE, LU; **2002**: DE, LU, RO, SI; **ISCED 5A - 6 Graduates** LU; **WiS 2002**: LU, IE (2004 - no grade A); Grade C unavailable: BG, RO (included in B)
Break in series: CZ (2005)
Provisional data: ES
Data estimated: EU-27 (by DG Research) for WiS, ISCED 6 students, ISCED 5A-6 graduates; SI

Head count (Grades A, B, C)
NO: before 2007 biannual data
Data for Ireland on Grade A professors does not include the Institutes of Technology

Figure 3.2: Proportions of men and women in a typical academic career in science and engineering, students and academic staff, EU-27, 2002/2006



Source: Education Statistics (Eurostat); WiS database (DG Research)

Exceptions to the reference year (s): **ISCED 6 students 2002**: RO (men 2003), SI (men 2005); **WiS 2006**: ES (2007), MT (2004), PT (2003), SI (2007), SK (2007), FI (2007); **2002**: IE (2004), FR (2000), LT (2005), NL (2003), UK (2003)
Data unavailable: **ISCED 6 students 2002**: DE, FR, LU, NL, SI (Women); **WiS 2006**: BG, EE, EL, FR, LV, LU, HU, RO, IE (Grade A); **2002**: BG, EE, EL, ES, LV, LU, HU, RO, IE (Grade A)
Break in series: CZ (2005)
Provisional data: ES
Data estimated: EU-27 (by DG Research) for WiS, ISCED 6 students, SI

Head count (Grades A, B, C)
NO: before 2007 biannual data

Definition of grades:

A: The single highest grade/post at which research is normally conducted.
B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders.
C: The first grade/post into which a newly qualified PhD graduate would normally be recruited.

ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements.
ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD).

SET fields of education = 400 Science, maths and computing + 500 Engineering, manufacturing and construction.
SET fields of science = Engineering and Technology + Natural Sciences.

Table 3.1: Proportion of female academic staff by grade and total, 2007

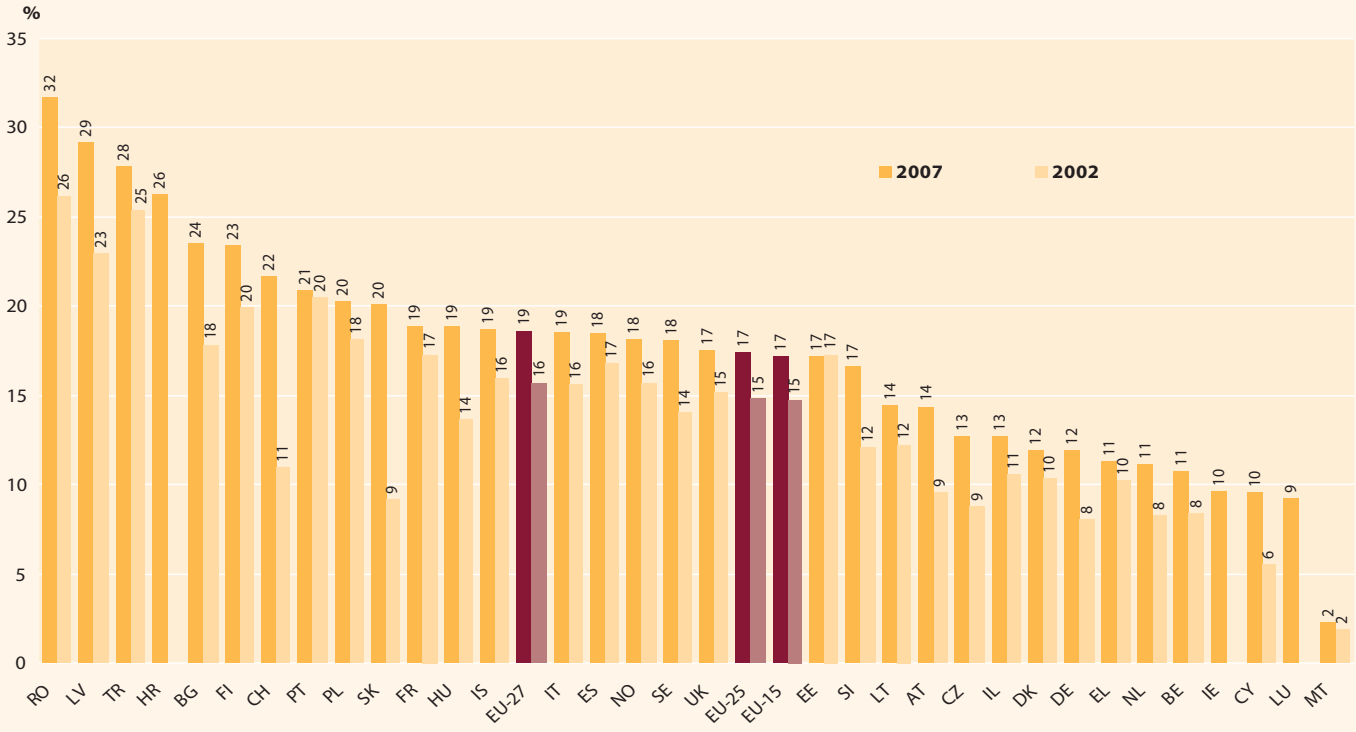
	GRADE A	GRADE B	GRADE C	GRADE D	TOTAL
EU-27	19	36	44	44	38
EU-25	17	35	44	44	38
EU-15	17	35	43	43	38
BE	11	25	31	48	35
BG	24	38	:	54	46
CZ	13	31	31	46	35
DK	12	25	37	44	33
DE	12	18	33	38	33
EE	17	37	57	67	49
IE	10	40	47	46	40
EL	11	23	32	39	29
ES	18	36	48	52	43
FR	19	39	34	42	35
IT	19	34	45	:	33
CY	10	20	46	30	33
LV	29	42	61	:	56
LT	14	42	54	63	53
LU	9	29	31	:	26
HU	19	32	45	39	37
MT	2	32	14	25	27
NL	11	18	32	42	34
AT	14	19	40	41	35
PL	20	28	43	:	37
PT	21	34	43	50	42
RO	32	49	x	55	43
SI	17	30	46	45	35
SK	20	35	50	55	43
FI	23	49	56	45	43
SE	18	47	42	51	44
UK	17	37	47	46	42
HR	26	45	52	53	45
TR	28	34	46	47	40
IS	19	32	53	:	35
NO	18	34	46	54	42
CH	22	24	38	48	34
IL	13	22	36	46	26

Source: WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; EL: 2000
Data unavailable: Grade C unavailable: BG, RO (included in B); Grade D unavailable: BE (French-speaking community), IT, LV, LU, PL, IS
Provisional data: ES
Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Data for Ireland on Grade A professors does not include the Institutes of Technology
Head count
Some differences exist in coverage and definitions between countries
'x': data included in another cell; ':': not available

Figure 3.3: Proportion of women in grade A academic positions, 2002/2007



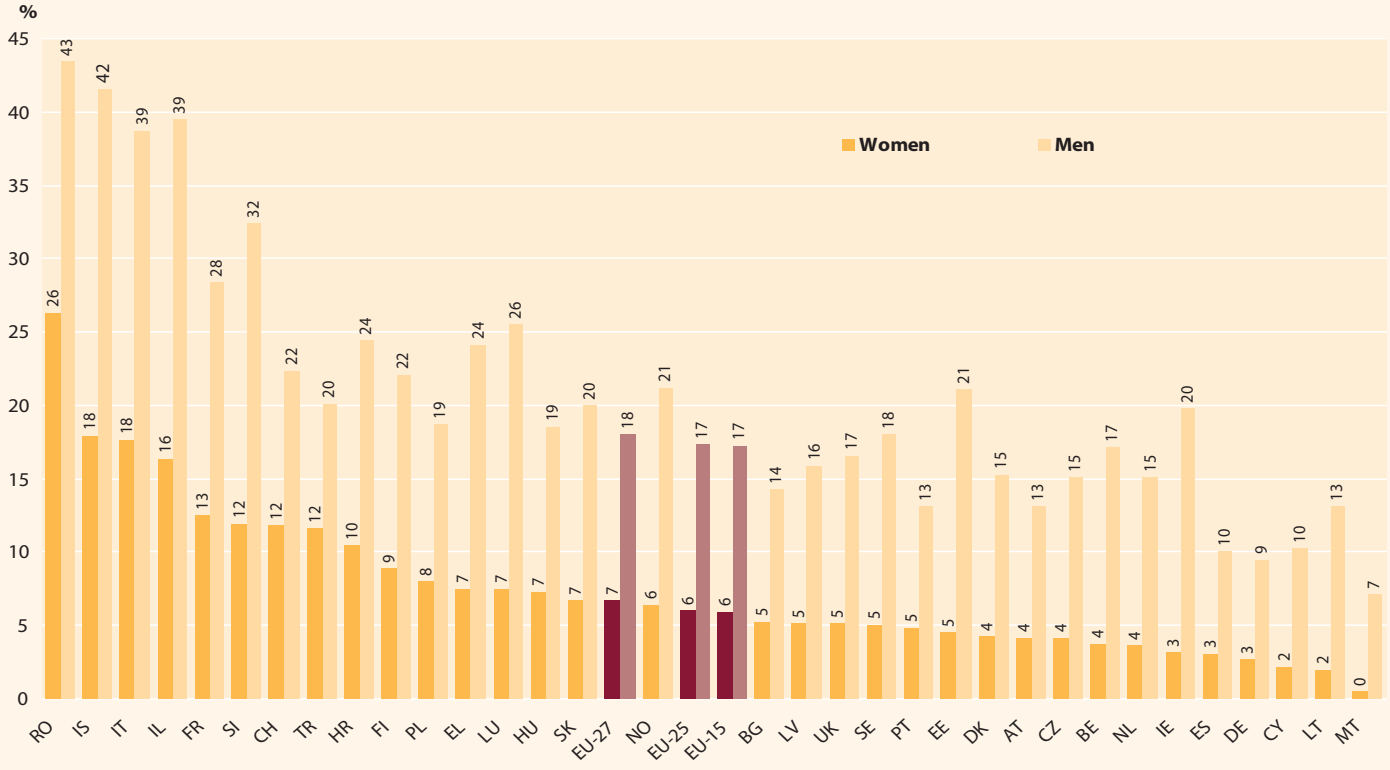
Source: WiS database (DG Research); Higher Education Authority for Ireland

Exceptions to the reference year (s): **2007** HR: 2008; UK: 2007/2006; DK, FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; IE: 2002-2003; EL: 2000; **2002** NO, UK, NL: 2003; IL: 2001; EL: 1999
Data unavailable: HR, LU, IE: 2002
Break in series: CZ (2005)
Provisional data: ES

Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Head count
NO: before 2007 biannual data
Data for Ireland on Grade A professors does not include the Institutes of Technology

Figure 3.4: Percentage of grade A staff among all academic staff by sex, 2007



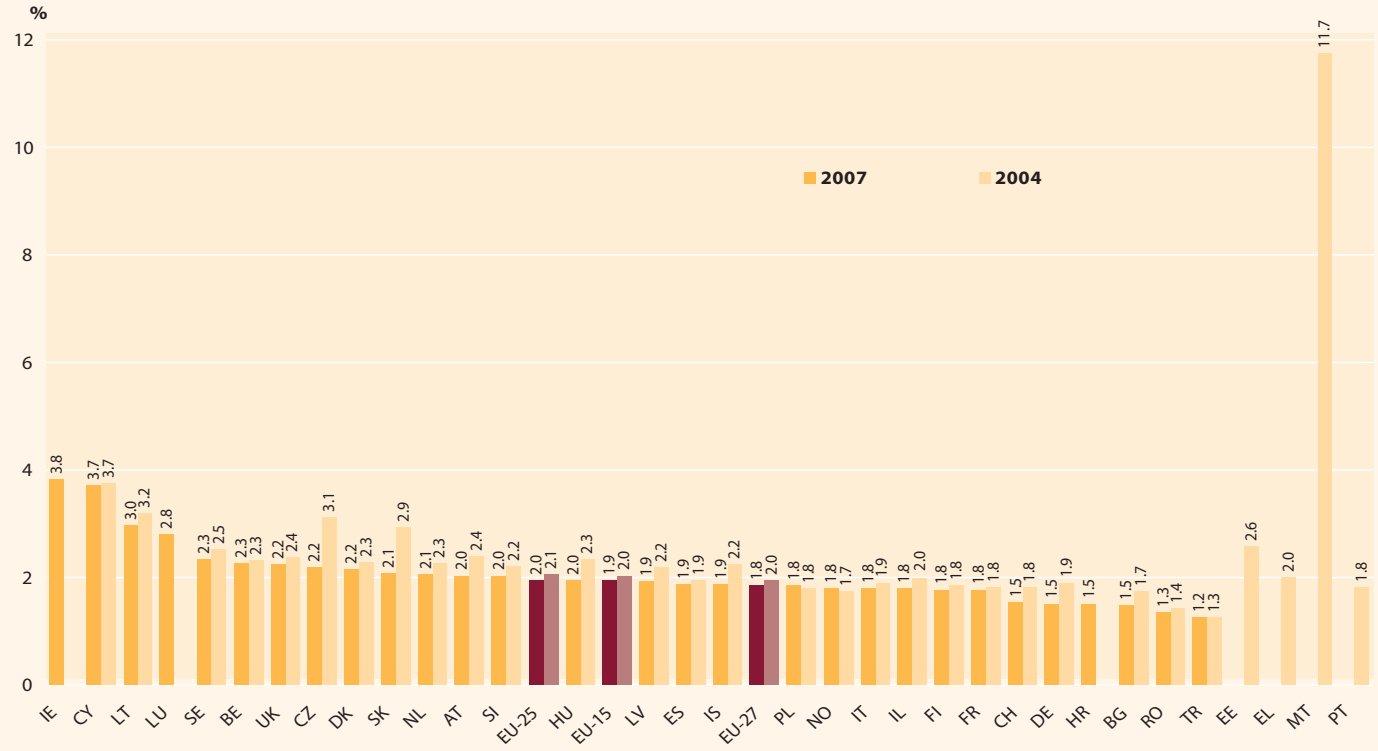
Source: WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; EL: 2000
Data unavailable: Grade C unavailable: BG, RO (included in B); Grade D unavailable: BE (French-speaking community), IT, LV, LU, PL, IS
Provisional data: ES

Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Head count
Some differences exist in coverage and definitions between countries
Data for Ireland on Grade A professors does not include the Institutes of Technology

Figure 3.5: Glass Ceiling Index, 2004/2007



Source: WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year (s): **2007** HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; **2004** PT, NO: 2003; IL: 2001; EL: 2000
Data unavailable: **2004**: LU, IE, HR; **2007**: EE, EL, MT, PT; Grade C unavailable for BG, RO (included in B)
Break in series: CZ (2005)
Provisional data: ES
Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Head count
Some differences exist in coverage and definitions between countries
Country with small numbers of academic staff: CY, MT, LU, IS
NO: before 2007 biannual data
Data for Ireland on Grade A professors does not include the Institutes of Technology

Table 3.2: Proportion of female grade A staff by main field of science, 2007

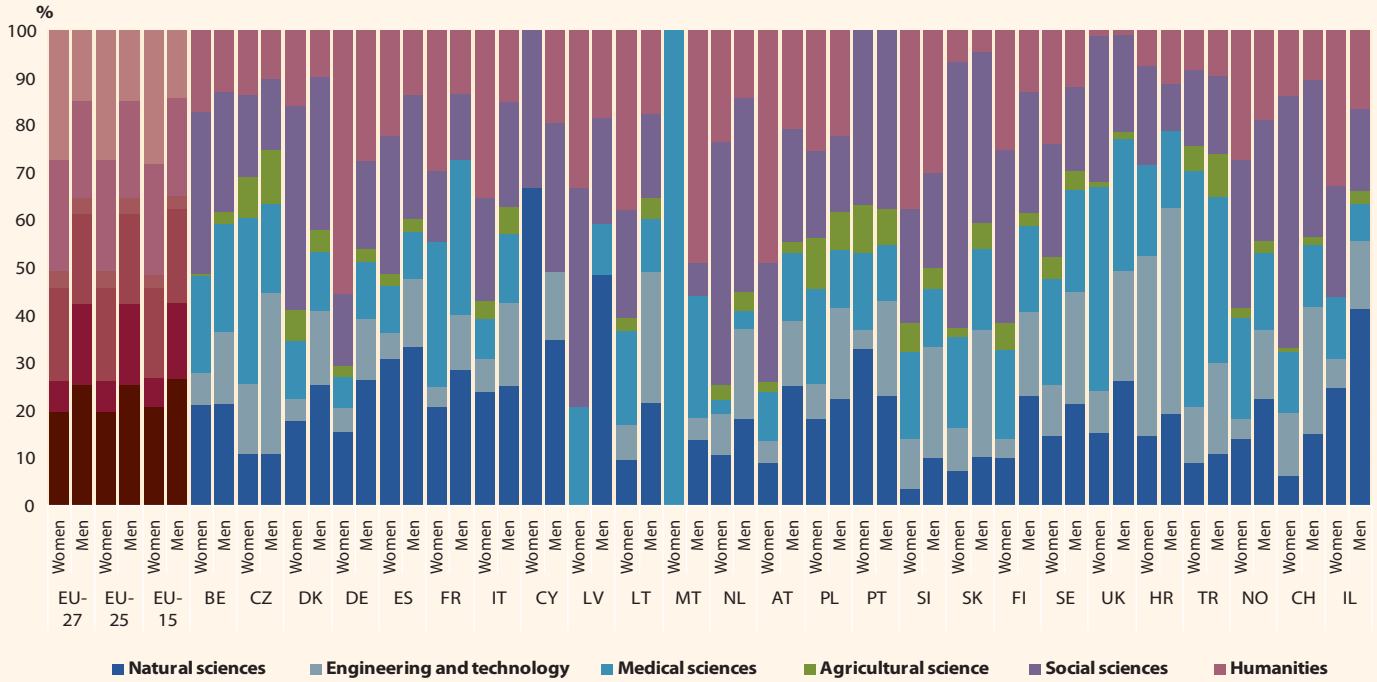
	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
EU-27	13.4	7.2	17.0	16.8	18.6	27.0
EU-25	13.4	7.2	17.0	16.8	18.6	27.0
EU-15	13.1	7.0	15.8	14.9	18.0	28.0
BE	10.7	5.2	9.6	3.6	14.0	13.6
CZ	12.7	6.0	21.4	9.9	14.4	16.3
DK	8.7	4.0	11.5	16.4	15.2	18.2
DE	7.4	5.0	7.0	11.1	9.8	21.5
ES	17.2	8.1	18.1	16.1	20.0	27.0
FR	12.3	6.5	15.3	x	17.0	30.1
IT	17.8	8.4	11.2	13.1	18.3	34.9
CY	16.7	0.0	-	-	10.0	0.0
LV	0.0	:	38.5	:	39.3	36.4
LT	6.8	4.5	22.6	10.3	17.8	26.5
MT	0.0	0.0	8.3	-	0.0	0.0
NL	6.8	5.3	8.9	9.0	13.5	16.9
AT	5.7	5.2	11.0	11.8	15.1	28.3
PL	17.1	9.1	29.2	25.5	22.4	22.6
PT	27.5	5.0	26.2	27.0	20.4	x
SI	6.4	8.6	23.2	22.4	19.5	20.4
SK	14.7	8.2	21.7	8.6	28.3	26.1
FI	11.9	6.4	24.2	37.5	30.5	37.1
SE	12.2	8.3	17.4	19.6	21.2	29.0
UK	10.1	7.0	23.2	13.4	22.6	18.8
HR	21.6	23.6	29.5	-	43.1	19.0
TR	24.0	19.2	35.3	18.8	27.0	25.3
NO	12.1	6.0	22.4	15.5	21.4	24.2
CH	10.6	11.7	21.3	8.9	30.6	26.6
IL	6.6	4.8	16.4	0.0	13.7	18.9

Source: WiS database (DG Research)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, CY, AT: 2006; MT: 2004; PT: 2003; IL: 2001; FR, LV: 2000
Data unavailable: BG, EE, IE, EL, HU, RO, LU, IS
Provisional data: ES
Data estimated: EU-27, EU-25, EU-15 (by DG Research); SI

Head count
Medical sciences exclude female professors at university hospitals for Denmark
FR: NS includes AS; PT: SS includes H
Some differences exist in coverage and definitions between countries
'x': data included in another cell; ':': not available; '-': not applicable

Figure 3.6: Distribution of grade A staff across fields of science by sex, 2007



Source: WiS database (DG Research)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, CY, AT: 2006; MT: 2004; PT: 2003; IL: 2001; FR, LV: 2000
Data unavailable: BG, EE, IE, EL, HU, RO, LU, IS; LV (Agricultural sciences and Engineering and technology); FR (Agricultural sciences); PT (Humanities)
Provisional data: ES

Data estimated: EU-27, EU-25, EU-15 (by DG Research), SI

Head count
FR: NS includes AS; PT: SS includes H
Some differences exist in coverage and definitions between countries

Table 3.3: Proportion of female A grade staff by age group, 2007

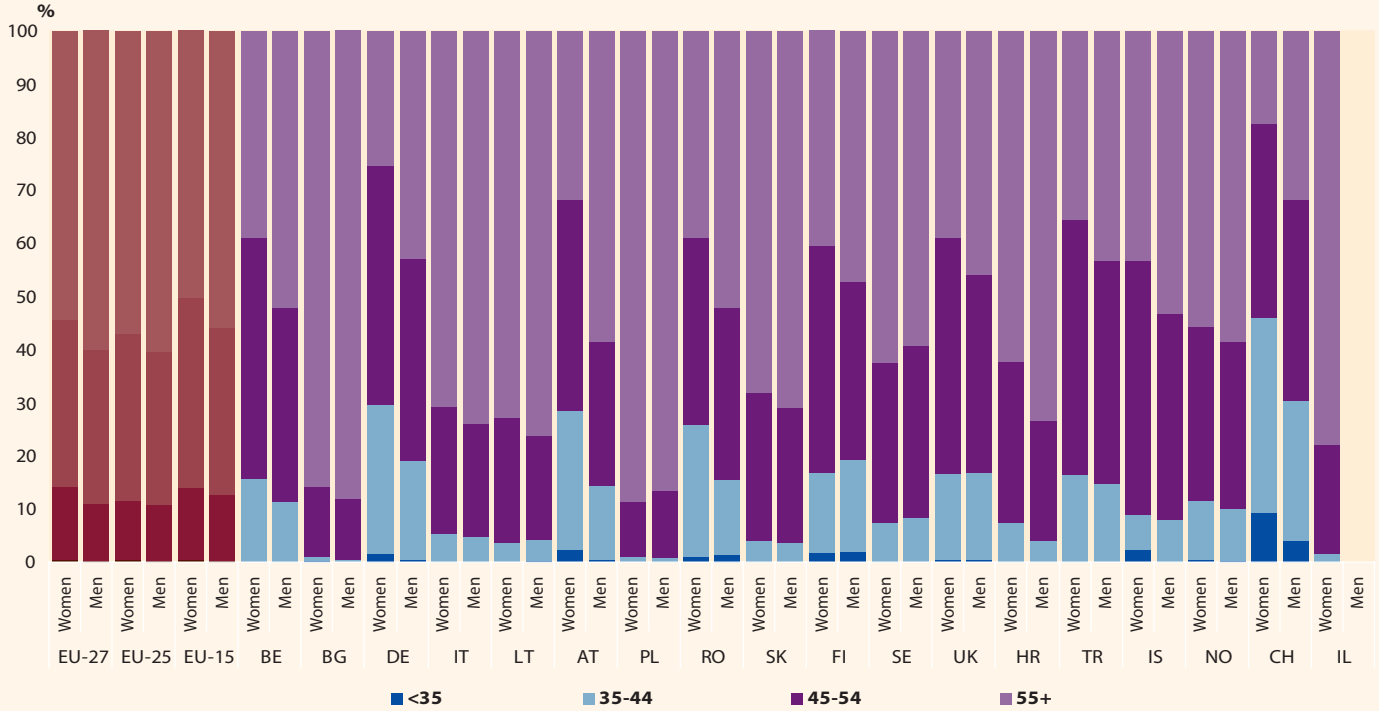
	<35	35-44	45-54	55+	Total
EU-27	25	23	21	18	19
EU-25	22	18	18	16	17
EU-15	23	18	18	15	17
BE	i	14	13	8	11
BG	i	38	26	23	24
DE	28	17	14	7	12
IT	i	20	20	18	19
LT	i	13	17	14	14
AT	39	24	20	8	14
PL	i	21	17	21	20
RO	28	45	34	26	32
SK	i	22	22	19	20
FI	24	21	28	21	23
SE	i	16	17	19	18
UK	15	17	20	15	17
HR	i	41	32	23	26
TR	i	30	31	24	28
IS	i	17	22	16	19
NO	i	20	19	17	18
CH	39	27	21	13	22

Source: WiS database (DG Research)

Exceptions to the reference year: BE (French-speaking community), HR: 2008; RO, UK: 2006/2007; AT: 2006
Data unavailable: CZ, DK, EE, IE, EL, ES, FR, CY, LV, LU, HU, MT, NL, PT, SI, IL
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

Head count
i: Countries with less than 10 members of academic staff not shown

Figure 3.7: Distribution of grade A staff across age groups by sex, 2007

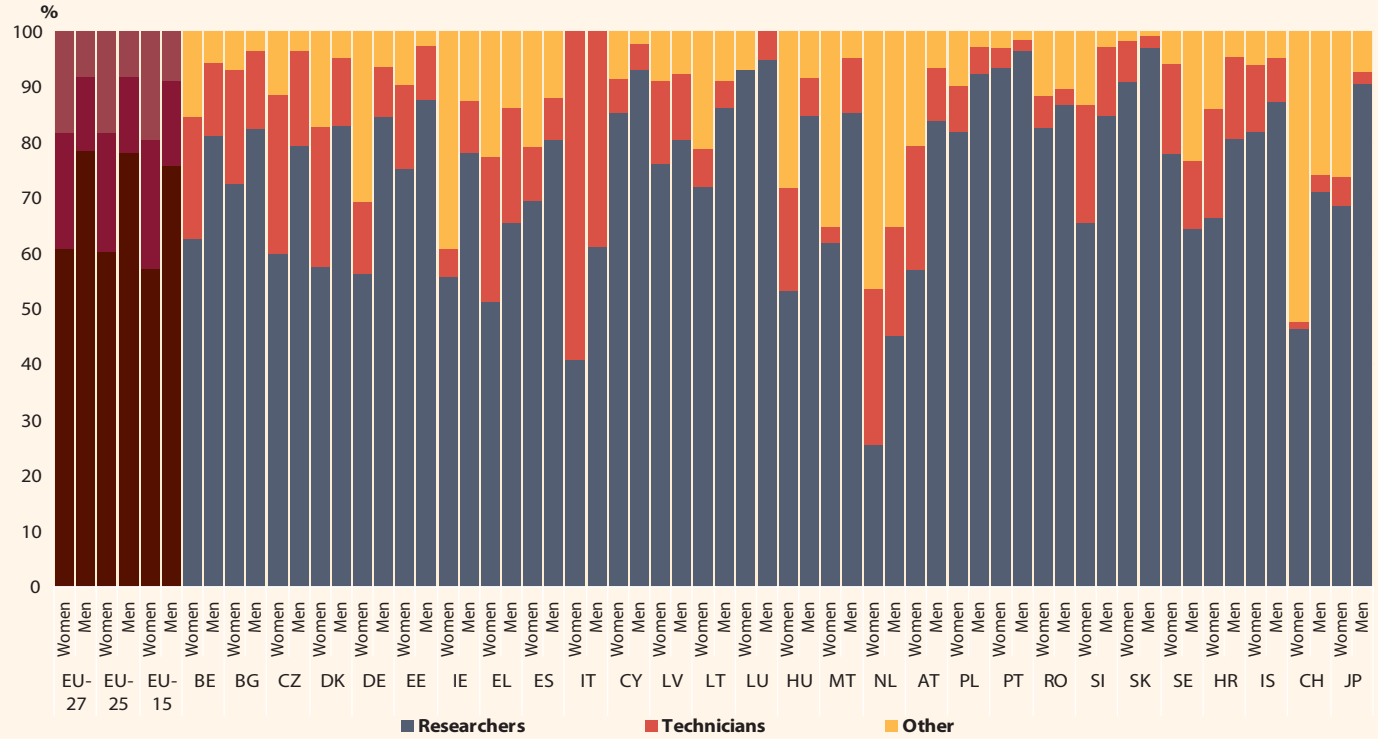


Source: WiS database (DG Research)

Exceptions to the reference year: BE (French-speaking community), HR: 2008; RO, UK: 2007/2006; AT, IL: 2006
Data unavailable: CZ, DK, EE, IE, EL, ES, FR, CY, LV, LU, HU, MT, NL, PT, SI, IL (Men)
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

Head count

Figure 3.8: Distribution of R&D personnel across occupations for the Higher Education Sector (HES) by sex, 2006



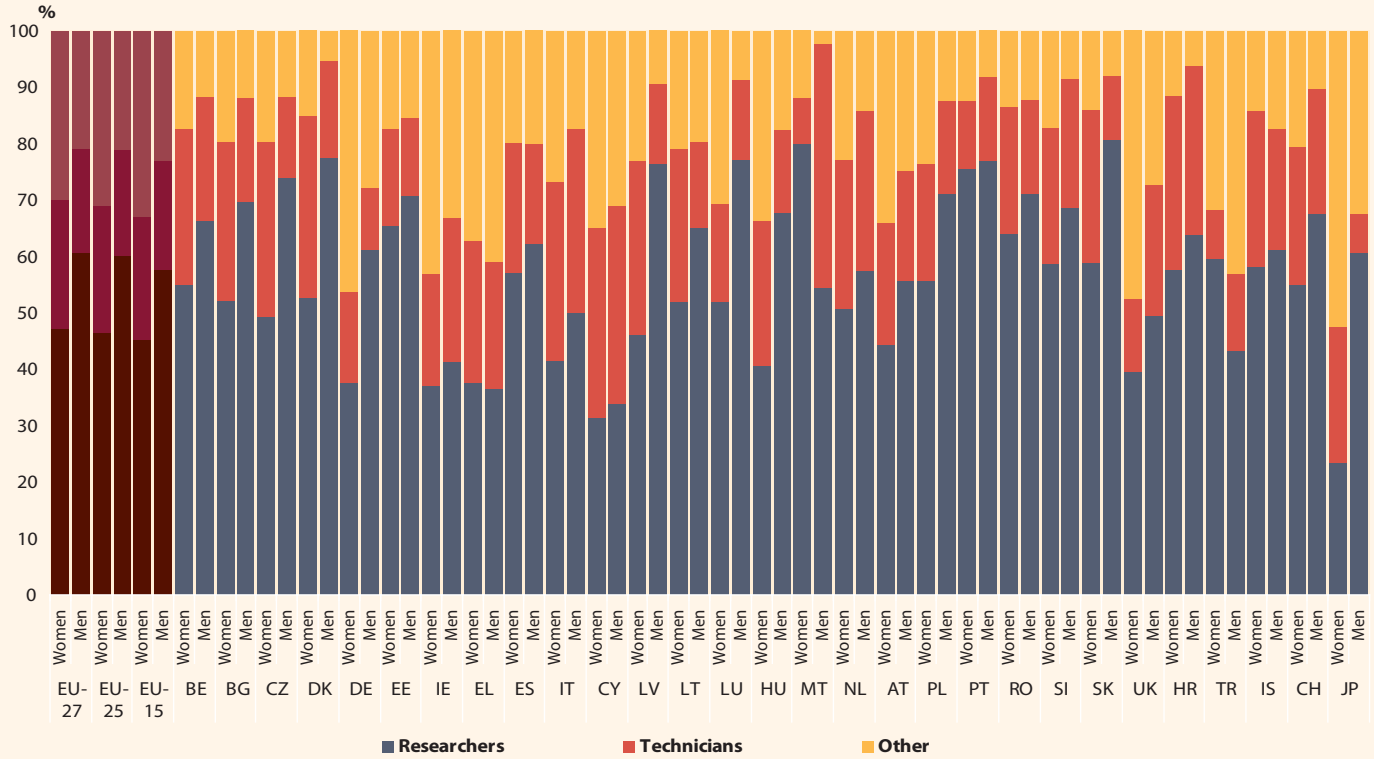
Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, SK: 2007; BE, EL, LU, NL, PT, IS, JP: 2005; CH: 2002; SE: 2001
Data unavailable: FR, FI, UK, NO, TR, IL; Other for IT (included in Technicians)
Provisional data: NL

Data estimated: EU-27, EU-25, EU-15 (by DG Research); CH, NL

Head count
Individual information for technicians and other occupations is not available for Italy

Figure 3.9: Distribution of R&D personnel across occupations for the Government Sector (GOV) by sex, 2006

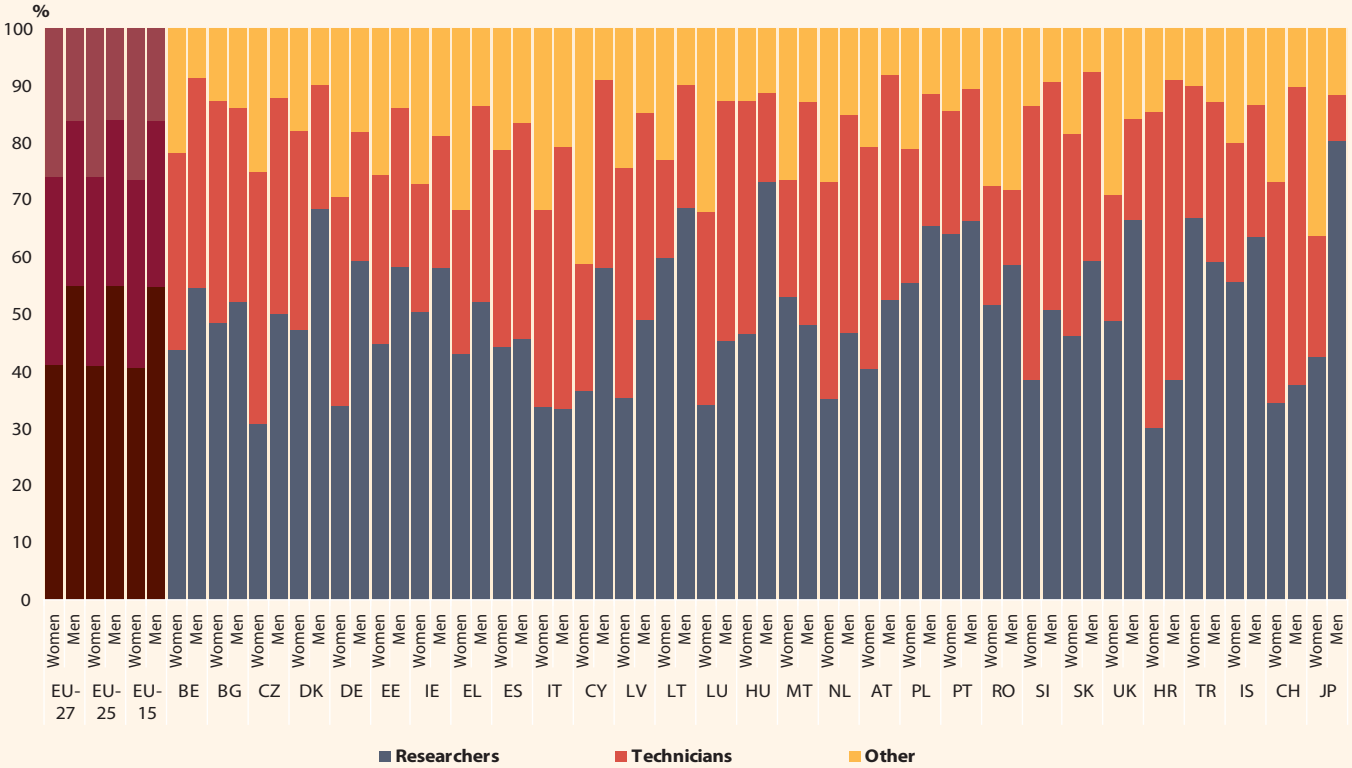


Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, SK: 2007; BE, EL, LU, NL, PT, UK, IS, JP: 2005
Data unavailable: FR, FI, SE, NO, IL
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

Head count

Figure 3.10: Distribution of R&D personnel across occupations for the Business Enterprise Sector (BES), by sex, 2006

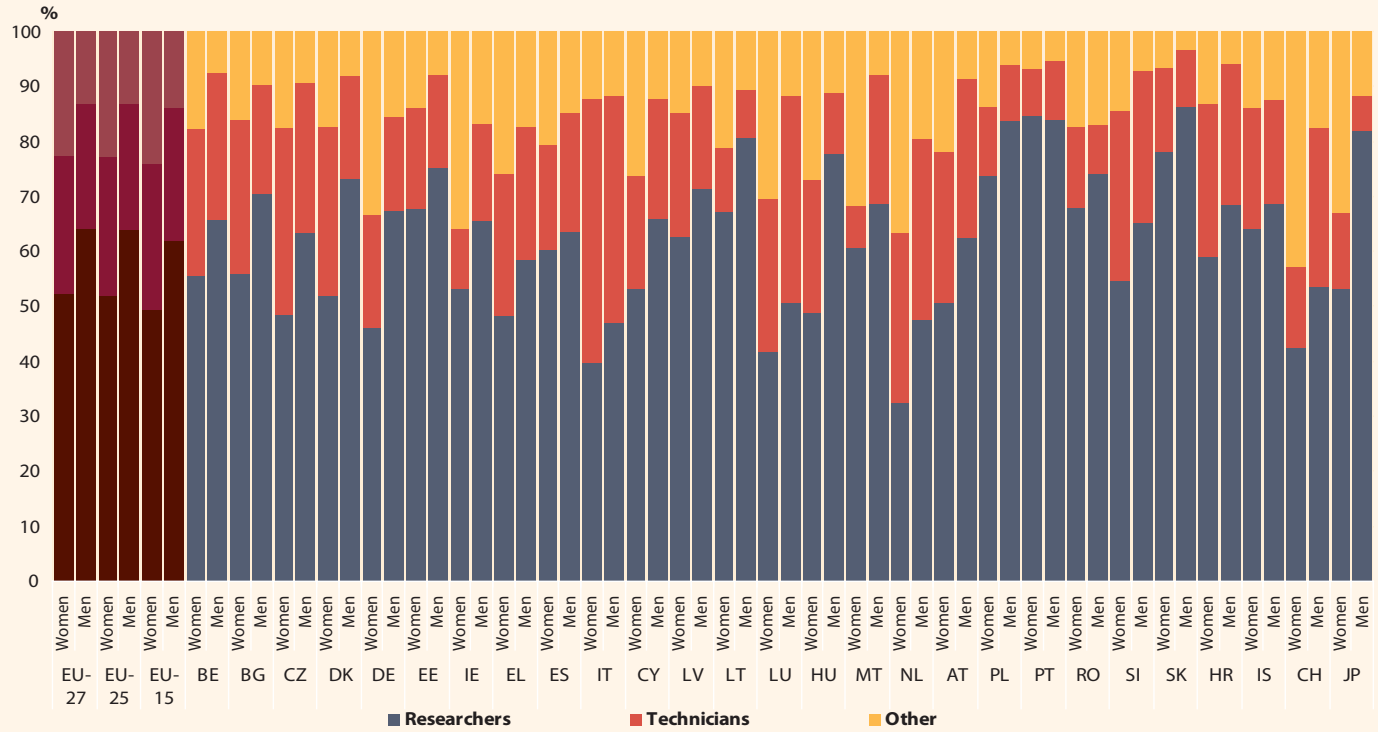


Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, SK: 2007; BE, DK, DE, IE, EL, LU, NL, PT, IS, JP: 2005
Data unavailable: FR, FI, SE, NO, IL
Data estimated: EU-27, EU-25, EU-15 (by DG Research); UK

Head count

Figure 3.11: Distribution of R&D personnel across occupations in all Sectors (HES, GOV, BES) by sex, 2006

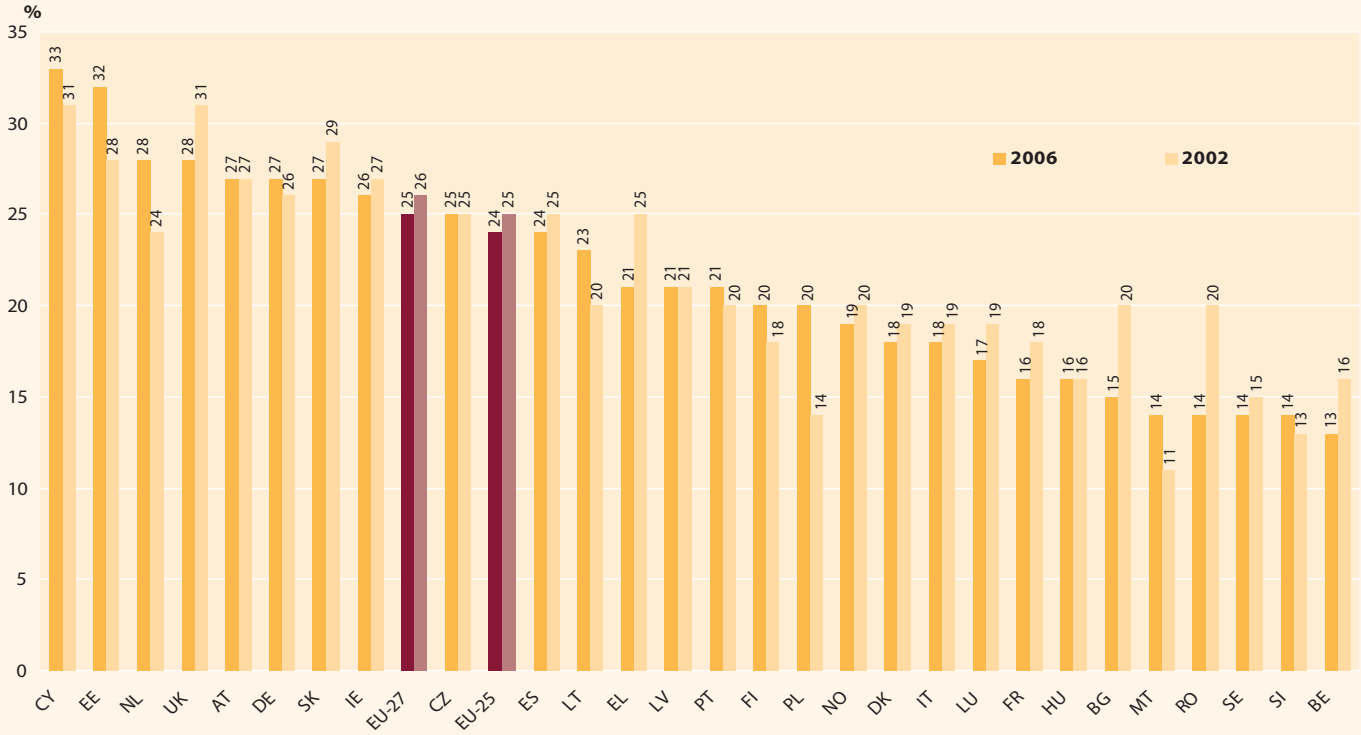


Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, SK: 2007; EE (GOV, HES): 2007; BE, EL, LU, NL, PT, IS, JP: 2005; DK, DE, IE (BES): 2005; UK (GOV): 2005; CH (HES): 2002; SE (HES): 2001
Data unavailable: FR, FI, SE, NO, IL, UK, TR; **HES**: Other for IT (included in Technicians)
Provisional data: NL (HES)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); CH, NL (HES); UK (BES)

Head count
HES: Individual information for technicians and other occupations is not available for Italy

Figure 3.12: Gender pay gap in % for total economy, 2002/2006



Source: Structure of Earnings Surveys 2002 and 2006 (Eurostat)

Data unavailable: HR, TR, IS, CH, IL

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees

Table 3.4: Gender pay gap in % by selected occupations for employees in private enterprise, EU-27 and EU-25, 2002/2006

			2002	2006
	ISCO Codes			
EU-27	**100**	**Legislators, senior officials and managers**	**29**	**30**
	110	Legislators, senior officials and managers	u	u
	120	Corporate managers	28	30
	130	Managers of small enterprises	32	28
	200	**Professionals**	**31**	**29**
	210	Physical, mathematical and engineering science professionals	22	22
	220, 230, 240	Life science, health, teaching and other professionals	36	33
	300	**Technicians and associate professionals**	**28**	**26**
	310	Physical and engineering science associate professionals	26	25
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	30	28
EU-25	**100**	**Legislators, senior officials and managers**	**28**	**30**
	110	Legislators, senior officials and managers	u	u
	120	Corporate managers	28	30
	130	Managers of small enterprises	32	28
	200	**Professionals**	**28**	**26**
	210	Physical, mathematical and engineering science professionals	18	19
	220, 230, 240	Life science, health, teaching and other professionals	35	31
	300	**Technicians and associate professionals**	**27**	**25**
	310	Physical and engineering science associate professionals	24	23
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	29	27

Source: Structure of Earnings Surveys 2002 and 2006 (Eurostat)

'u': unreliable due to small sample size

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees

Table 3.5: Gender pay gap in % by selected occupations for employees in public enterprise, EU-27 and EU-25, 2002/2006

			2002	2006
	ISCO Codes			
EU-27	**100**	**Legislators, senior officials and managers**	**22**	**28**
	200	**Professionals**	**46**	**38**
	210	Physical, mathematical and engineering science professionals	42	29
	220, 230, 240	Life science, health, teaching and other professionals	42	40
	300	**Technicians and associate professionals**	**36**	**27**
	310	Physical and engineering science associate professionals	35	25
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	40	32
EU-25	**100**	**Legislators, senior officials and managers**	**25**	**30**
	200	**Professionals**	**42**	**35**
	210	Physical, mathematical and engineering science professionals	30	21
	220, 230, 240	Life science, health, teaching and other professionals	39	38
	300	**Technicians and associate professionals**	**34**	**27**
	310	Physical and engineering science associate professionals	30	22
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	37	32

Source: Structure of Earnings Surveys 2002 and 2006 (Eurostat)

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees

Table 3.6: Gender pay gap in % by selected occupations in private and public enterprise, EU-27 and EU-25, 2002/2006

			2002	2006
	ISCO Codes			
EU-27	**100**	**Legislators, senior officials and managers**	**29**	**30**
	110	Legislators, senior officials and managers	u	u
	120	Corporate managers	28	30
	130	Managers of small enterprises	u	u
	200	**Professionals**	**34**	**31**
	210	Physical, mathematical and engineering science professionals	25	23
	220, 230, 240	Life science, health, teaching and other professionals	38	34
	300	**Technicians and associate professionals**	**28**	**26**
	310	Physical and engineering science associate professionals	27	25
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	31	28
EU-25	**100**	**Legislators, senior officials and managers**	**28**	**30**
	110	Legislators, senior officials and managers	u	u
	120	Corporate managers	28	30
	130	Managers of small enterprises	38	29
	200	**Professionals**	**30**	**28**
	210	Physical, mathematical and engineering science professionals	19	19
	220, 230, 240	Life science, health, teaching and other professionals	36	32
	300	**Technicians and associate professionals**	**27**	**25**
	310	Physical and engineering science associate professionals	24	23
	320, 330, 340	Life science, health associate, teaching associate professionals and other associates professionals	30	28

Source: Structure of Earnings Surveys 2002 and 2006 (Eurostat)

'u': unreliable due to small sample size

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees

Table 3.7: Gender pay gap in % by age group for employees in private and public enterprise for ISCO occupations 100, 200 and 300 combined, EU-27 and EU-25, 2002/2006

		2002	2006
EU-27	**15-34**	19	17
	35-44	32	28
	45-54	43	38
	55-64	38	37
EU-25	**15-34**	18	17
	35-44	30	26
	45-54	41	36
	55-64	37	37

Source: Structure of Earnings Surveys 2002 and 2006 (Eurostat)

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees

Setting the scientific agenda

Women's under-representation at the highest hierarchical levels of the academic career severely hampers women's chances of being at the head of universities or similar institutions in higher education. The small proportion of women at the head of institutions in the Higher Education Sector or in decision-making committees has various consequences. On the one hand, it implies great difficulties for young women in academia to find female role models, and thus to identify with the highest levels of academic life. On the other hand, from a gender point of view, the weak presence of women in high-power positions, and the male dominance that results from this, bias (often unconsciously) decisions that are taken at these high ranks and that shape scientific policies, determine the choice of research subjects, orient research credits and fix nominating rules and criteria. What could be called a discriminatory snowball effect is thus revealed: women's under-representation at the highest echelons is an obstacle for the access of young women into the PhD level and the first stages of the academic career.

Figure 4.1 and Table 4.1 illustrate these phenomena[1]. **On average throughout the EU-27, 13% of institutions in the Higher Education Sector are headed by women.** This proportion varies between 32% and 0%. The five countries where it is highest (above 18%) are Norway, Sweden, Finland, Italy and Estonia. By contrast, it is the lowest (under 7%) in Austria, Luxembourg, Denmark and Slovakia. **This situation of female under-representation at the head of institutions is even more pronounced when only universities are taken into account, meaning only institutions able to award PhD degrees. On average throughout the EU-27, just 9% of universities have a female head.** The highest shares of female rectors are observed in Sweden, Iceland, Norway, Finland, but also in Israel. In contrast, in Denmark, Cyprus, Lithuania, Luxembourg and Hungary, no single university is headed by a woman. Women's proportion of rectors is very low (7% at most) in a further eight countries: Romania, Austria, Slovakia, Italy, the Netherlands, the Czech Republic, Belgium and Germany. It is interesting to compare these figures with the proportions of women among grade A academic staff as they were analysed in the previous chapter on seniority. Whereas the average proportion of women among grade A academics stood at 18% in the EU-27 in 2006, just 9% of universities were headed by women in 2007. The image of the leaky pipeline is thus felt everywhere. The more we advance along the academic ladder, the less women we find.

Another indicator can be usefully added to this overall pattern: the proportion of women on boards. The coverage of boards shows considerable cross-country variation. A list of boards covered in each country is provided in the annex of this publication. However, in general, data on boards cover scientific commissions, R&D commissions, boards, councils, committees and foundations, academy assemblies and councils, and also different field-specific boards, councils and authorities.

(1) Figure 4.1 yields the proportion of female heads of any institution belonging to the large sector of Higher Education whereas Table 4.1 focuses on the narrower group of women heading a university or an institution that is also accredited to deliver PhD degrees.

Figure 4.2 indicates to what extent women are involved in top decision-making committees that have a crucial impact on the orientation of research. **On average in the EU-27, 22% of board members are women. The most important institutions in the scientific landscape are thus dominantly led and managed by men.** Less than a quarter of all board members are women. In these boards, a gender bias, subtle and largely unconscious, is likely to influence the decisions that are made. The usefulness of fixing quotas in order to reach a critical minimal proportion of women in decision-making at this level has been the object of fierce debate. In terms of women's presence on boards, the Nordic countries stand out from the others. Indeed, in Sweden, Norway and Finland, the share of female board members exceeds 44%. This is consistent with the obligation in some of these countries to have at least 40% of members of each sex in all national research committees and equivalent bodies. Female participation on boards was higher than 30% in Croatia, Bulgaria, Iceland and Denmark. In contrast, less than 20% of board members are women in Hungary, Lithuania, Switzerland, Slovakia, the Czech Republic, Cyprus, Israel, Poland and Luxembourg. In policy terms, it is crucial to promote a high representation of women on boards that determine scientific policy. Their presence is absolutely essential to promote the cause of women in science; avoid a discriminatory snowball effect; and ensure better chances for diversity and excellence in research objectives and strategies.

This leads to the following question: is the degree to which research funding is applied for and successfully obtained gender biased? Data have been collected in order to answer this question. Figure 4.3 presents research funding success rate differences between women and men for two years, 2002 and 2007. In other words, it compares the gender gap in the number of applicants for research grants who were successful in obtaining them between two years. Note that there is an important degree of cross-country disparity in the total number of funds that were taken into account, their definition and coverage (for more details, please refer to the annex). A positive difference between men and women in the obtention of research funding indicates that more male than female applicants for funding are successful in actually obtaining them. **Out of the 28 countries presented, 21 reported higher success rates in the obtention of research funding for men and 7 reported higher success rates for women in 2007.** Of these 21 countries, none presented a difference of more than 10% between men and women. Of the 7 countries which reported greater success rates for women, the gap varies between -0.5% (Slovenia) and -47.5% (Cyprus). Note that between 2002 and 2007, in most countries, there is no trend towards a closing of the gap in success rates between men and women. However, at EU-27 level, a slight decrease in the gap was observed, from 7.2% to 6.4%.

Table 4.2 presents these same success rate differences between men and women in the obtention of research funding but within different fields of science for the year 2007. As shown by Table 4.2, considerable cross-country variations were noted in the gender gap in success rates to obtain funding; moreover, no clear pattern emerged from the table.

In the field of natural sciences, men are more likely than women to successfully obtain funding in 14 of the 19 countries. The greatest difference in success rates was observed in Israel, Slovenia, Hungary and Estonia. In contrast, in engineering and technology, the balance was slightly in favour of women, with 10 countries where women are more successful in obtaining funds and 8 where the opposite was observed. In medical and agricultural sciences and in humanities, there were slightly more countries with positive success rate differences, indicating that male applicants are somewhat more likely than female applicants to actually obtain research funding. In medical sciences, positive differences were observed in 11 countries and negative ones in 8; in agricultural sciences, 8 countries reported positive differences and 7 countries negative ones; and in humanities, positive differences were reported in 8 countries and negative ones in 7. Finally, in social sciences, positive differences were observed in 8 countries and negative ones in 9.

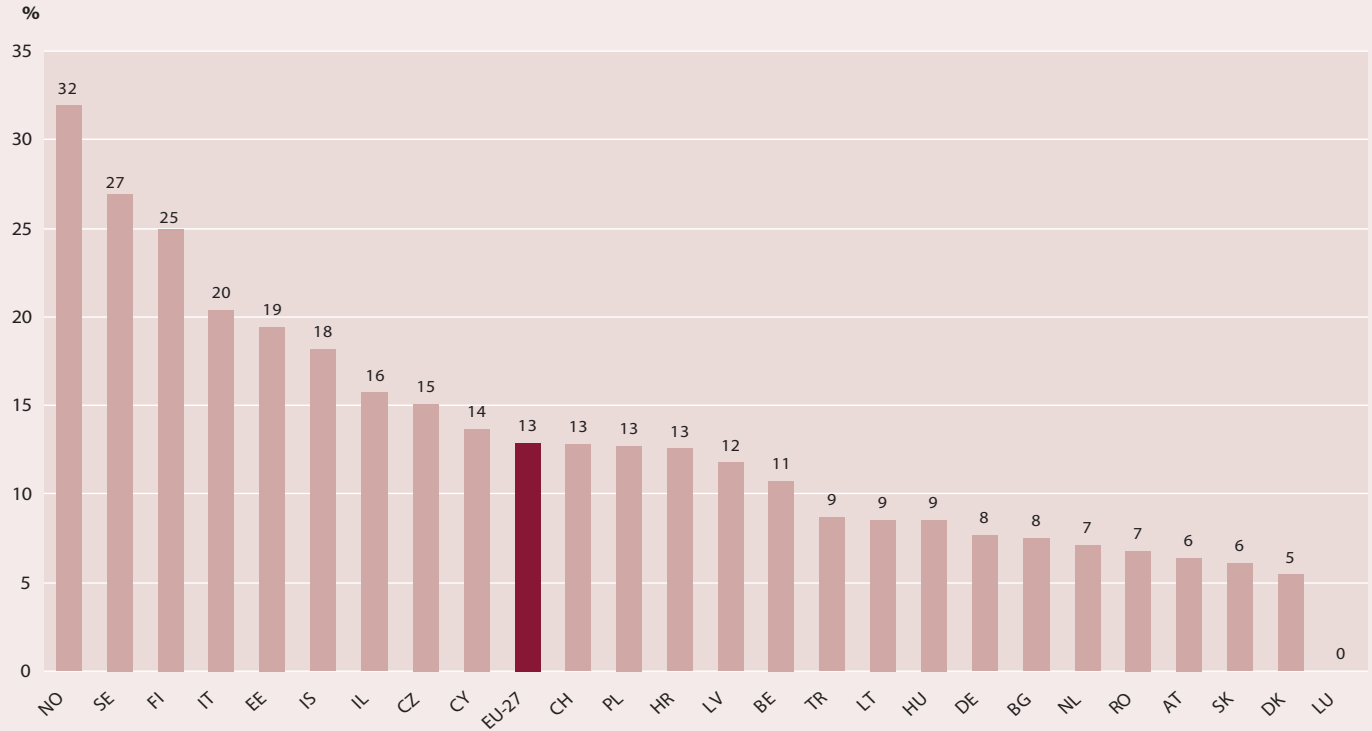
To sum up, the data do not enable a clear relationship to be drawn between the relative proportion of women present in a given field and their relative success in obtaining research funding. However, equal rates of success for men and women may mask a high degree of discrepancy between the absolute numbers of men and women in some of the fields of science. Moreover, besides the absolute numbers of men and women in the different fields of science, it is important to know how many of them have actually applied to obtain research funds. It could turn out that even if there appears to be a gender balance in success rates, the proportion of women applying for research funds within the pool of potential female applicants is much smaller than the number of men who apply as a proportion of all potential male applicants. This exercise was carried out for 14 countries and for the year 2002 taking the ratio by sex of the number of applicants for research funds and the total number of researchers (see chapter 1). In 9 of the 14 countries studied, a larger proportion of male researchers than female researchers applied for funding. The gap was the largest in Estonia (23% of male researchers applied for funding versus 11% of female researchers), Cyprus (17% and 9% respectively), Latvia (19% and 9% respectively), and Austria (8% and 4% respectively). In 4 of the 14 countries, more female than male researchers applied for funding: Belgium (5% of women versus 3% of men), Denmark (8% and 7% respectively), Portugal (6% and 4% respectively), and Slovenia (18% and 12% respectively). In Japan, no gender difference was found. From this illustrative exercise, it becomes clear that policies should not only target the promotion of gender balance at the stage of application for research funding, but also at the stage at which funds are actually granted.

Besides their actual presence in the different fields of science and their propensity to apply for research funds, women's success in obtaining funding might also be determined by the overall level of R&D expenditure in the different sectors and countries. Figure 4.4 cross-tabulates macro-level R&D expenditure data and the proportion of female researchers in 2006.

Figure 4.5 breaks down R&D expenditure by sector (Business Enterprise, Government and Higher Education). To account for differences in prices, currency and exchange rates, the data are expressed in purchasing power standards. From Figure 4.4 we see that countries such as Bulgaria, Romania, Poland, Lithuania, and Latvia, with the lowest levels of expenditure per capita researcher (less than 60 000 PPS), have among the highest proportions of women in research (between 38% in Poland and 49% in Lithuania). The countries with the highest R&D expenditure per capita researcher are Austria, Germany, Italy and Luxembourg (expenditure above 180 000 PPS), followed closely by Sweden. Among these countries we again find those with the lowest proportions of female researchers (18% in Luxembourg, 18% in Germany and 19% in Austria). To quantify the observed **negative relationship between the level of spending on R&D *per capita* researcher and the proportion of women in R&D**, we computed the correlation coefficient between both series of data. As expected, it turned out strongly negative at -81.8. It should be noted that the correlation coefficient can range between 0 and 100 in the case of an increasing linear relationship and between 0 and -100 in the case of a decreasing linear relationship. The degree of linear dependence between the variables is indicated by the level of the coefficient. The closer the coefficient is to either −100 or 100, the stronger the correlation between the variables. If the variables are independent then the correlation is 0.

Figure 4.5 shows the level of R&D expenditure per capita researcher in the three broad sectors of Higher Education, Business Enterprise and Government, for the year 2006. Except for Austria, France, the Netherlands, Japan, Ireland, Cyprus and Greece, R&D expenditure per capita researcher is always the highest in the Business Enterprise Sector. Again there seems to be a negative correlation between level of expenditure and women's representation, as women are most under-represented in the Business Enterprise Sector. While it is difficult to explain this negative correlation, the fact that women are far better represented in low-cost sectors of activity and fields of science offers at least a partial explanation. R&D expenditure per capita researcher was the highest in the Government Sector in Austria, France, Japan, Ireland, Greece and Cyprus, while in the Netherlands it was the highest in the Higher Education Sector.

Figure 4.1: Proportion of female heads of institutions in the Higher Education Sector (HES), 2007



Source: WiS database (DG Research)

Exceptions to the reference year: IT: 2009; BE (Dutch-speaking community), DE, EE, HU, AT, PL, SK, FI, SE, HR, CH, IL: 2008; DK, CY: 2008/2007; RO: 2007/2006
Data unavailable: BE (French-speaking community), IE, EL, ES, FR, MT, PT, SI, UK

Data estimated: EU-27 (by DG Research)

BE data refer to Dutch-speaking community

Table 4.1: Proportion of female heads of universities or assimilated institutions based on capacity to deliver PhDs, 2007

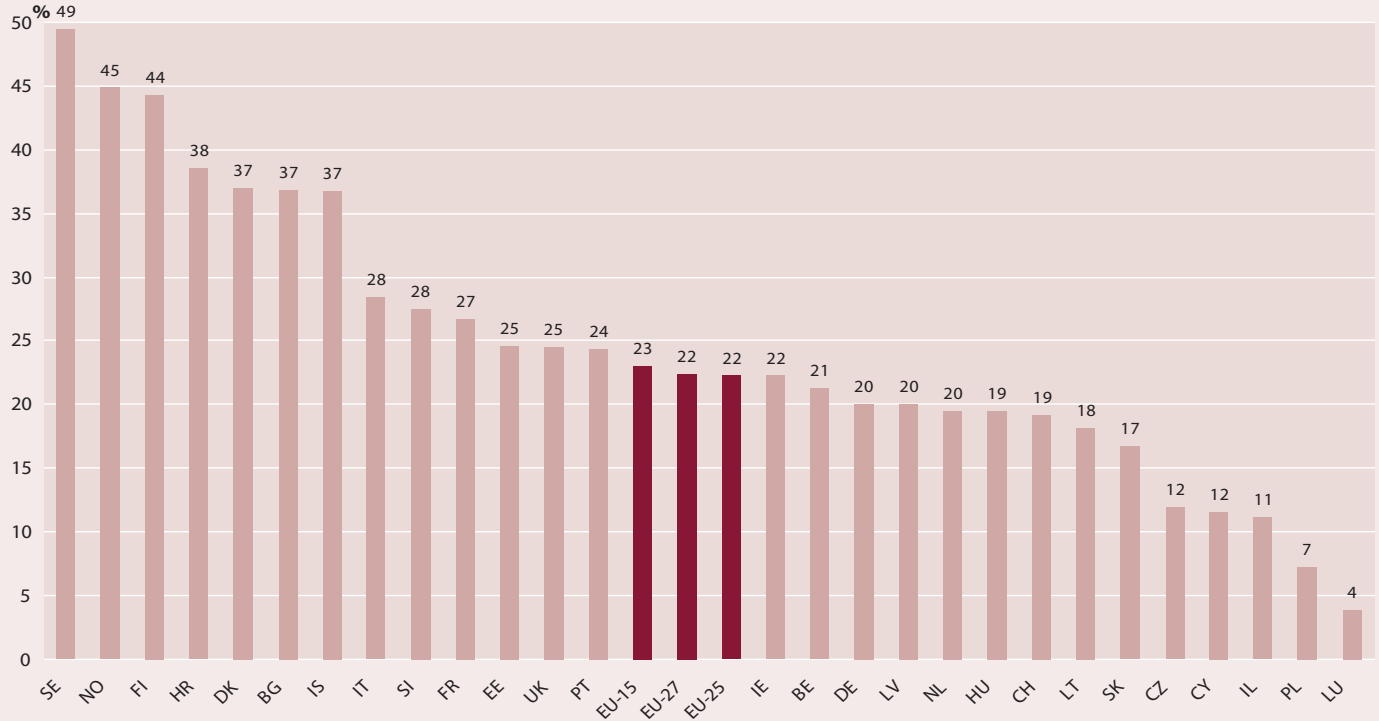
	Women	Men
EU-27	9	91
BE	7	93
BG	9	91
CZ	7	93
DK	0	100
DE	7	93
EE	18	82
IT	6	94
CY	0	100
LV	20	80
LT	0	100
LU	0	100
HU	0	100
NL	7	93
AT	4	96
PL	8	92
RO	2	98
SI	15	85
SK	4	96
FI	25	75
SE	43	57
HR	14	86
TR	9	91
IS	33	67
NO	29	71
CH	8	92
IL	29	71

Source: WiS database (DG Research)

Exceptions to the reference year: BE, DK, DE, EE, HU, AT, PL, SI, SK, FI, SE, CH, HR, IL: 2008; CY, LT, IT, IS: 2008/2007; RO: 2007/2006

Data unavailable: IE, EL, ES, FR, MT, PT, UK
Data estimated: EU-27 (by DG Research)

Figure 4.2: Proportion of women on boards, 2007

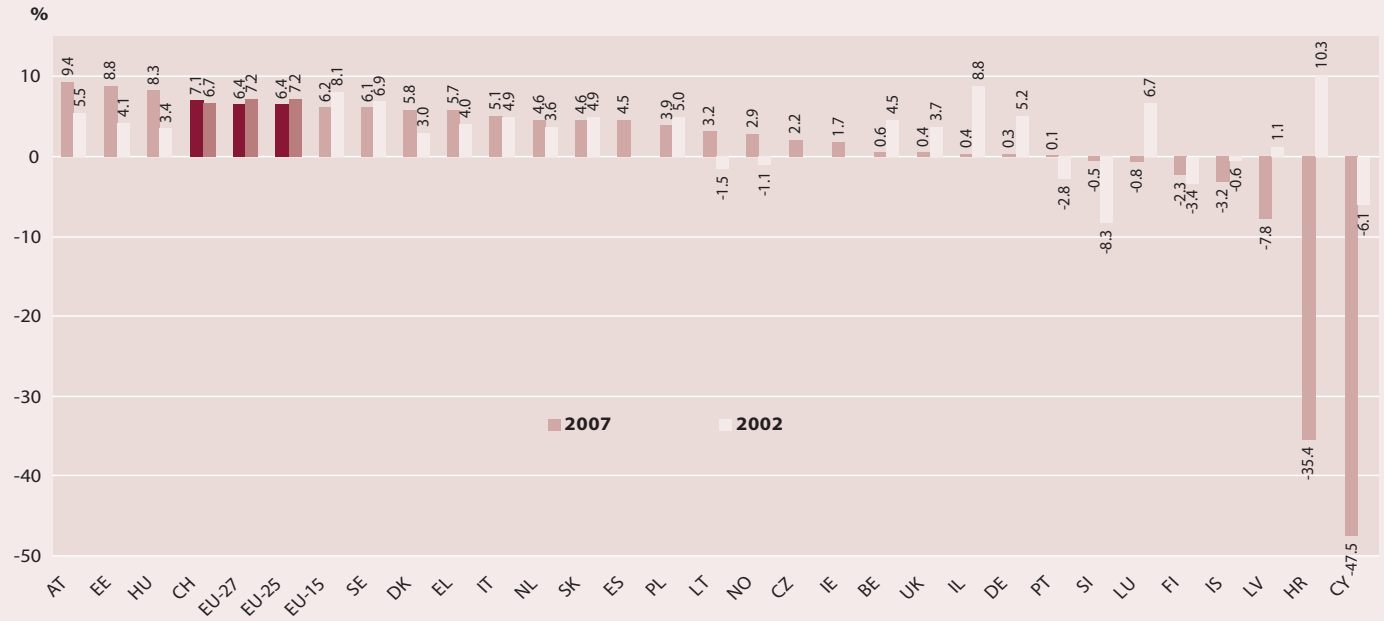


Source: WiS database (DG Research)

Exceptions to the reference year: IT: 2009; CZ, SK, IL: 2008; IE: 2004; PT: 2003; FR, PL: 2002
Data unavailable: BE (Dutch-speaking community), EL, ES, MT, AT, RO, TR
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

There is no common definition of boards
The total number of boards varies considerably between countries
BE data refer to French-speaking community

Figure 4.3: Evolution in research funding success rate differences between women and men, 2002/2007



Source: WiS database (DG Research)

Exceptions to the reference year (s): **2007** CZ, IE, LV: 2003; EL, PT: 2002; SE: 1999; **2002** UK, HR: 2005; NL, SK: 2003; LV, SI: 2001; IL: 2000; EL, PT: 1999; SE: 1995
Data unavailable: BE (French-speaking community), BG, CZ (2002), IE (2002), ES (2002), FR, MT, RO, TR
Break in series: DK (2004), AT (2007): incl. ÖAW
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

There is no common definition of funds
The total number of funds varies considerably between countries and over the period considered
Male success rate minus female success rate
BE data refer to Dutch-speaking community

Table 4.2: Research funding success rate differences between women and men by field of science, 2007

	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities
CZ	4.2	-0.8	-1.2	4.4	0.5	:
DE	3.2	-3.0	-0.7	:	-2.3	x
EE	14.5	-1.9	16.0	3.6	4.6	-2.6
IT	8.7	7.2	2.3	-2.0	7.3	6.7
CY	-9.1	-63.6	-30.0	-	-	-100.0
LV	-6.6	-8.0	-15.9	-4.3	-10.4	-5.9
LT	5.4	23.7	7.1	-100.0	1.8	-4.6
HU	14.2	14.1	10.4	12.4	-0.1	-3.0
PL	7.5	2.9	4.9	-4.6	4.1	4.2
PT	-0.5	4.8	-6.8	5.2	-3.2	x
SI	13.9	-13.0	-20.3	-29.9	5.3	0.2
SK	11.1	-1.0	11.4	5.7	-27.1	-13.5
SE	6.3	5.1	7.3	5.4	-0.1	-
UK	-0.2	1.2	1.3	7.9	-3.8	-1.4
HR	-72.9	-97.9	-4.2	-	2.6	20.0
IS	4.0	-5.6	-5.0	-9.2	1.9	13.4
NO	2.2	-4.5	3.2	-6.4	-2.1	6.5
CH	8.9	27.7	2.2	40.0	-0.7	1.3
IL	12.9	-	5.0	-	:	9.1

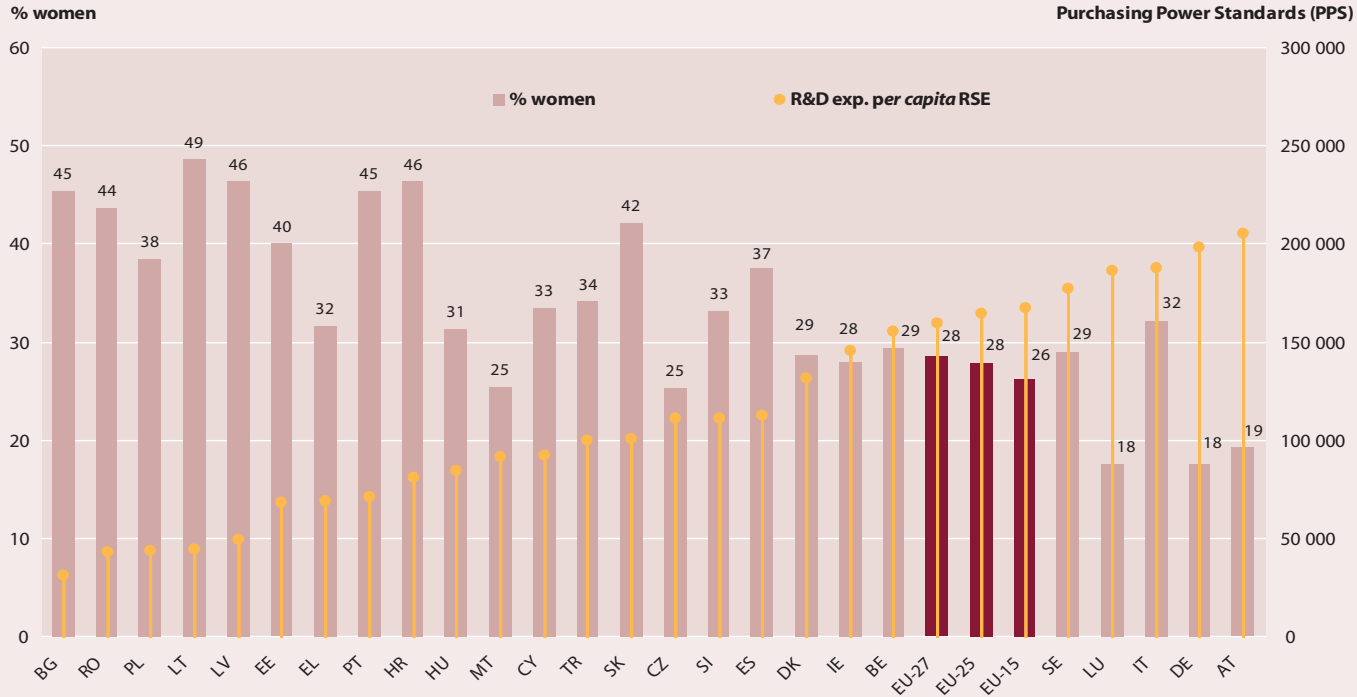
Source: WiS database (DG Research)

Exceptions to the reference year: CZ LV: 2003; PT: 2002; IL: 2000; SE: 1999
Data unavailable: BE, BG, DK, EL, ES, IE, FR, LU, MT, NL, AT, FI, RO, TR

DE, PT: SS includes H; DE: MS includes biology
There is no common definition of funds

The total number of funds varies considerably between countries and over the period considered
Male success rate minus female success rate
'x': data included in another cell; ':': not available; '-': not applicable

Figure 4.4: Proportion of female researchers in FTE and R&D expenditure in Purchasing Power Standards (PPS) *per capita* researcher, 2006



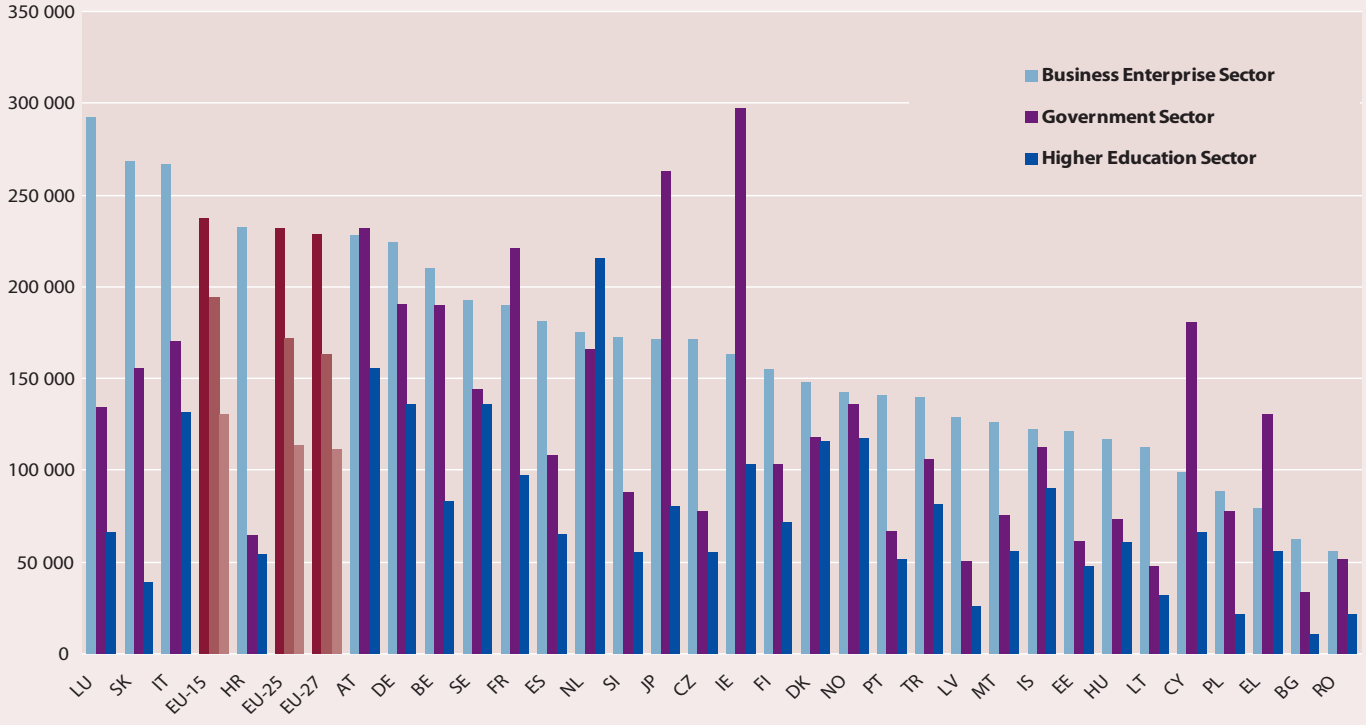
Source: S&T statistics (Eurostat)

Exceptions to the reference year: BE, DK, DE, IE, EL, LU, PT: 2005
Data unavailable: FR, NL, FI, UK, IS, CH, NO, IL
Provisional data: R&D Expenditure: SE (HES)
Data estimated: EU-27, EU-25, EU-15 (by DG Research)

Researchers: FTE

Purchasing power parties (PPPs) are defined as currency conversion rates that both convert national currencies to a common currency and equalise the purchasing power of different currencies.
Purchasing power standard (PPS) is the artificial common currency into which national currencies are converted.

Figure 4.5: R&D Expenditure in Purchasing Power Standards (PPS) *per capita* researcher in FTE by sector, 2006



Source: WiS database (DG Research)

Exceptions to the reference year: BE, DE, IE, IS, JP: 2005
Data unavailable: UK, CH, IL
Provisional data: Expenditure: FR, SE (HES), NL (HES); Researchers: NL (HES)
Data estimated: EU-27, EU-25, EU-15 (by DG Research); Expenditure: EL, PT, NL (HES); Researchers: NL (HES)

Researchers: FTE

Annexes

Annex 1.1: Number of researchers by sex, HC, 2002-2006

	2002		2003		2004		2005		2006	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	12221	31912	12522	31978	13635	33728	14413	34344	:	:
BG	4837	5608	5070	5806	5258	6119	5429	6491	5367	6666
CZ	9024	21611	8905	22516	9730	24422	10827	26715	11295	28381
DK	9943	27940	10134	25912	:	:	12908	30552	:	:
DE	:	:	77449	319681	:	:	86733	319520	:	:
EE	2168	2921	2340	3084	2412	3266	2337	3397	2636	3585
IE	4686	10826	4801	11076	4985	11656	5349	12304	:	:
EL	:	:	10402	17656	:	:	12147	21249	:	:
ES	52850	97248	57515	101051	61377	108594	66418	114605	70830	122194
FR	64333	167483	66713	173473	69272	180261	70347	181252	72656	189765
IT	31220	77662	31483	75971	33064	77531	40610	84924	45729	91434
CY	298	716	337	752	393	833	464	960	482	1015
LV	3159	2942	2926	2587	2972	2653	2963	2785	3418	3782
LT	4536	4981	5101	5451	5658	5978	5798	6120	5926	6087
LU	:	:	353	1670	:	:	445	1998	:	:
HU	10039	19725	10647	19645	10484	19936	10731	20676	10973	21813
MT	:	:	:	:	211	682	255	717	273	772
NL	:	:	7852	37702	:	:	8980	40999	:	:
AT	8192	31365	:	:	10427	33700	:	:	12541	37056
PL	:	:	37065	57367	37594	58937	38426	59449	38065	58309
PT	14734	18767	15895	19960	16326	20486	16757	21012	:	:
RO	10886	13750	11179	14789	11632	15621	13409	16199	13035	17087
SI	2466	4561	1748	3680	1900	3942	2659	4985	2918	5352
SK	6086	9299	6543	9565	7152	10202	7268	10258	7856	10960
FI	:	:	:	:	14834	36385	15349	35424	16808	36465
SE	:	:	:	:	:	:	29494	53002	:	:
HR	4641	6495	4843	6621	5404	7735	4619	5748	4595	5833
TR	25407	45881	26738	47782	28075	49035	30239	53617	32686	57432
IS	:	:	1384	2133	:	:	1501	2320	:	:
NO	:	:	10529	25211	:	:	11750	25263	:	:
CH	:	:	:	:	11555	31665	:	:	:	:
JP	88674	702550	96133	734412	98690	731784	102948	758953	:	:

Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education

Data unavailable: UK, IL
Break in series: DK (2002), FR (2002), HU (2004), MT (2004), SE (2005)
Provisional data: IE (2006 - total), NL (2004 - total, 2005)

Data estimated: LU (2003 - women), NL (2004 - total), PT (2002-2004)

':': not available
Head count

Annex 1.2: Number of researchers in the Higher Education Sector (HES) by sex, HC, 2002-2006

	2002		2003		2004		2005		2006	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	7612	14645	7879	14440	8921	16314	9437	16622	:	:
BG	1087	1929	1144	1880	1288	2091	1451	2443	1446	2463
CZ	4483	8364	4205	8584	4565	9536	5633	11148	5949	11222
DK	4383	9300	4379	9612	4771	9450	5591	10091	5919	10151
DE	:	:	44797	129434	44812	127020	52272	122351	57978	126395
EE	1607	2100	1696	2066	1726	2118	1583	2035	1763	2183
IE	3180	5164	3256	5344	3333	5600	3630	5870	3862	6216
EL	:	:	7567	12940	:	:	9106	14878	:	:
ES	37388	63631	38670	63902	39573	65820	41376	67447	43318	69757
FR	32811	66543	34835	67275	35151	68629	36704	70652	37538	71225
IT	17590	39943	17371	39109	17938	39463	24311	45876	25721	46683
CY	136	310	172	383	231	472	270	537	276	554
LV	2199	2013	2181	1970	2363	2089	2259	2109	2533	2412
LT	3504	3801	4040	4264	4568	4726	4524	4600	4632	4604
LU	:	:	21	28	:	:	54	151	:	:
HU	6576	12072	6976	11995	6904	12140	6979	12107	6928	12000
MT	143	466	155	484	156	492	181	495	191	523
NL	3690	8963	3589	8809	:	:	3747	9197	:	:
AT	5216	12198	:	:	6841	14047	:	:	8190	15419
PL	:	:	28758	42211	29099	42807	29652	42609	29171	41160
PT	8467	10124	9143	10763	9584	11061	10025	11359	:	:
RO	3061	4483	3841	5685	4439	6779	4701	6791	6789	9293
SI	1047	2009	824	1677	877	1694	1291	2273	1374	2235
SK	4117	5984	4558	6444	5284	7130	5268	6981	5832	7547
FI	:	:	:	:	7794	10387	8088	10407	9226	11141
SE	:	:	16439	21141	:	:	16882	18060	:	:
HR	2544	3833	2682	3954	2943	4247	2884	3724	2857	3727
TR	23040	39167	23975	39886	25014	40521	25968	41536	27770	43249
IS	:	:	467	617	:	:	543	706	:	:
NO	:	:	6099	10117	:	:	7121	10966	:	:
CH	7330	18600	:	:	8370	19925	:	:	:	:
JP	56115	225189	57989	226341	61425	229722	63407	232069	:	:

Source: S&T statistics (Eurostat)

Data unavailable: UK, IL
Break in series: DK (2002), FR (2002), SE (2005)
Provisional data: NL (2005)
Data estimated: LU (2003), NL (2005), PT (2002-2004), CH (2002-2004)

':': not available
Head count

Annex 1.3: Number of researchers in the Government Sector (GOV) by sex, HC, 2002-2006

	2002		2003		2004		2005		2006	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	633	1486	657	1523	757	1674	789	1722	:	:
BG	3188	3138	3235	3142	3291	3183	3263	3209	3308	3185
CZ	2582	5268	2611	5386	2787	5170	2970	5391	3252	5729
DK	1055	2063	1142	2127	1191	2162	1131	1973	1256	2026
DE	:	:	11895	32040	13416	33910	12795	32103	14223	33560
EE	363	242	379	258	371	265	370	252	443	293
IE	185	402	204	462	182	406	162	295	204	341
EL	:	:	1176	1851	:	:	1190	1726	:	:
ES	7686	10451	9548	11919	11026	13219	13135	15077	13019	14938
FR	8325	17648	8449	17927	8710	17935	9112	18559	9094	18347
IT	6190	9896	6721	10668	7204	10613	7500	11318	10207	12964
CY	72	147	87	130	88	124	98	124	99	135
LV	408	336	366	294	331	291	427	346	569	693
LT	919	947	874	862	894	859	997	881	934	825
LU	111	220	104	261	:	:	132	299	:	:
HU	2189	3546	2323	3499	2284	3637	2371	3842	2367	3850
MT	17	16	2	7	12	12	15	19	20	24
NL	:	:	2138	6489	2490	6043	2299	5508	:	:
AT	820	1548	:	:	839	1476	:	:	1095	1694
PL	:	:	6150	8814	5906	8471	5691	8403	6002	8509
PT	2915	2204	2909	2118	3039	2276	3168	2434	:	:
RO	2997	3085	3083	3187	3237	3349	4077	3190	2923	2941
SI	839	1100	507	714	539	774	795	1051	858	1115
SK	1201	1521	1286	1558	1154	1552	1215	1630	1262	1677
FI	:	:	:	:	2142	3184	2356	3266	2443	3260
SE	:	:	1237	2162	:	:	1775	2996	:	:
UK	3128	6720	3227	6789	3289	6715	3456	6732	3149	6598
HR	1667	1824	1787	2109	1983	2738	1399	1442	1426	1499
TR	1047	2757	1284	3285	1355	3379	1481	3919	1606	3862
IS	:	:	430	592	:	:	446	580	:	:
NO	:	:	1540	2790	:	:	1699	2843	:	:
CH	230	755	:	:	245	715	:	:	280	700
JP	4138	31914	4233	32035	4492	32233	4600	32075	:	:

Source: S&T statistics (Eurostat)

Data unavailable: IL
Break in series: DK (2002), FR (2002), HU (2004), NL (2003), SE (2005)
Provisional data: UK (2006 - total)
Data estimated: PT (2002-2004)

':': not available
Head count

Annex 1.4: Number of researchers in the Business Enterprise Sector (BES) by sex, HC, 2002-2006

	2002		2003		2004		2005		2006	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	3862	15621	3873	15856	3844	15584	4080	15847	4265	16251
BG	548	527	658	727	652	793	611	640	551	949
CZ	1926	7862	2030	8387	2354	9634	2186	10114	2064	11348
DK	4423	16371	4541	13979	:	:	6048	18216	:	:
DE	:	:	20757	158207	:	:	21666	165066	:	:
EE	170	555	226	727	264	839	338	1064	358	1042
IE	1321	5260	1341	5270	1470	5650	1557	6139	:	:
EL	:	:	1585	2800	:	:	1780	4577	:	:
ES	7547	22856	9080	25025	10599	29409	11712	31915	14190	37083
FR	21273	80417	21813	85588	23688	91242	22747	89519	24159	97692
IT	6110	25937	5872	24628	6165	25511	6392	25093	6904	28446
CY	70	221	57	199	58	199	71	246	76	269
LV	550	590	379	323	278	272	277	329	316	676
LT	113	233	187	325	196	393	277	639	360	658
LU	:	:	228	1381	:	:	259	1548	:	:
HU	1274	4107	1348	4151	1296	4159	1381	4727	1678	5963
MT	:	:	:	:	43	178	59	203	62	225
NL	:	:	2125	22404	:	:	2934	26294	:	:
AT	2012	17383	:	:	2591	17996	:	:	3109	19806
PL	:	:	2128	6324	2561	7628	3029	8374	2830	8578
PT	1546	3818	1811	4291	1724	4420	1636	4550	:	:
RO	4828	6182	4215	5871	3844	5420	4515	6129	3269	4767
SI	534	1324	412	1257	477	1436	569	1634	680	1980
SK	765	1792	696	1559	704	1477	782	1632	759	1723
FI	:	:	:	:	4619	22563	4630	21492	4849	21817
SE	:	:	7715	22898	:	:	10701	31775	:	:
UK	:	:	:	:	:	:	18312	77349	18336	77453
HR	430	838	374	558	478	750	333	573	311	605
TR	1320	3957	1479	4611	1706	5135	2790	8162	3310	10321
IS	:	:	420	854	:	:	464	975	:	:
NO	:	:	2866	12288	2977	11880	2920	11449	:	:
CH	:	:	:	:	2940	11025	:	:	:	:
JP	27204	432849	32596	465024	31541	459010	33791	485569	:	:

Source: S&T statistics (Eurostat)

Data unavailable: IL
Break in series: DK (2002), ES (2002), MT (2004), SE (2005)
Provisional data: BE (2006), IE (2006 - total)
Data estimated: PT (2002-2004), LU (2003 - women), UK (2005-2006)

':': not available
Head count

Annex 2.1: Number of ISCED 6 graduates by sex, 2002-2006

	2002		2003		2004		2005		2006	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	506	907	509	923	501	978	589	1012	656	1062
BG	204	181	207	194	199	193	255	273	309	274
CZ	455	872	545	1001	616	1116	657	1251	722	1301
DK	375	589	315	544	283	505	393	562	397	513
DE	8672	15166	8724	14319	9030	14108	10272	15680	10284	14662
EE	112	76	132	94	130	79	58	73	82	61
IE	209	311	338	330	312	371	366	444	455	524
EL	:	:	:	:	494	801	444	804	:	:
ES	3136	3769	3384	4095	3878	4290	3221	3681	3347	3812
FR	:	:	3514	4906	:	:	3939	5639	4067	5751
IT	2303	2153	3231	3120	4364	4102	4965	4639	:	:
CY	2	0	1	0	8	5	4	1	19	10
LV	37	15	43	21	49	35	67	47	54	52
LT	218	169	155	97	173	128	188	133	191	135
HU	440	543	458	609	383	510	458	611	448	564
MT	3	5	1	4	:	:	0	5	1	3
NL	984	1572	1063	1521	1056	1623	1098	1781	1157	1836
AT	799	1326	891	1306	989	1454	973	1255	896	1262
PL	1957	2443	2434	3016	2563	2897	2704	3018	2931	2986
PT	1589	1402	2085	1638	2166	1797	2347	1803	3213	2129
RO	:	:	1092	1488	1321	1359	1897	1974	1487	1693
SI	144	174	152	215	144	211	176	193	196	199
SK	298	436	1172	954	384	470	476	546	576	642
FI	838	913	857	902	:	:	912	1045	893	1005
SE	1429	2088	1522	2036	1632	2202	1230	1548	1639	2142
UK	5925	8307	6192	8743	6575	8682	6829	8949	7134	9332
HR	:	:	125	196	150	207	174	211	213	226
TR	833	1639	1055	1760	1019	1661	1147	1691	1049	1545
IS	2	3	2	4	5	5	8	6	8	7
NO	296	443	280	443	307	475	343	512	346	558
CH	948	1852	999	1743	1088	1864	1194	2109	1309	2072
IL	:	:	:	:	:	:	:	:	5285	9972
JP	3157	10485	3611	10901	3776	11384	4009	11277	4272	11707
US	20452	23708	21644	24350	23055	25323	25658	26973	27433	28634

Source: Education Statistics (Eurostat), Central Bureau of Statistics (Israel), Norwegian Institute for Studies in Innovation, Research and Education

Data unavailable: LU

':': not available

Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS

Annex 2.2: Number of ISCED 6 graduates by broad field of study and sex, 2006

	Education		Humanities & arts		Social sciences, business & law		Science, mathematics & computing		Engineering, manufacturing & construction		Agriculture & veterinary		Health & welfare	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	12	12	60	126	99	162	225	334	73	213	31	58	143	149
BG	23	21	69	33	57	42	48	38	42	84	20	17	43	34
CZ	52	32	81	111	120	170	190	293	105	413	56	80	92	120
DK	0	0	68	69	57	68	57	109	58	173	41	26	116	68
DE	337	295	1156	1120	1628	2823	2194	4161	296	1891	563	371	4043	3905
EE	2	0	20	6	7	11	22	25	10	7	5	0	13	6
IE	18	10	68	62	65	50	185	225	40	115	14	9	60	46
EL	51	57	62	58	31	63	160	359	62	189	24	65	51	8
ES	153	114	491	527	623	719	1055	1148	132	399	112	141	633	532
FR	70	49	867	745	931	1000	1772	3018	272	751	17	9	105	123
IT	82	39	792	549	945	873	1311	1224	657	1170	309	257	850	513
CY	3	0	2	1	2	5	12	4	0	0	0	0	0	0
LV	4	2	11	5	13	11	5	9	10	13	1	1	10	11
LT	0	0	26	26	52	25	54	32	25	38	9	3	25	11
HU	33	21	135	143	86	79	71	110	15	37	34	42	70	109
MT	0	1	0	0	0	0	1	0	0	1	0	0	0	1
NL	:	:	91	139	247	319	141	338	109	426	95	155	474	459
AT	55	31	131	159	335	349	180	296	90	343	44	36	41	27
PL	:	:	780	654	377	368	1132	850	232	723	313	268	87	73
PT	918	285	527	254	950	624	795	640	283	438	56	46	308	136
RO	9	21	160	178	294	325	173	108	155	285	370	430	326	346
SI	9	3	27	14	41	35	54	36	18	64	8	6	33	37
SK	49	42	79	92	105	97	93	119	73	147	18	29	145	79
FI	80	27	121	101	187	156	164	252	98	319	26	25	200	109
SE	44	32	134	115	147	205	313	542	327	812	36	43	635	392
UK	343	240	1051	1152	1530	1448	1948	3188	526	1871	148	161	1559	1262
HR	7	4	32	34	36	31	53	38	25	40	20	28	37	47
TR	123	177	116	220	185	308	152	245	133	237	98	159	222	179
IS	1	0	0	1	0	1	3	2	2	0	0	0	2	3
NO	15	8	37	52	64	89	75	167	22	75	23	21	118	107
CH	20	10	117	122	231	371	358	725	70	306	111	53	372	432
JP	151	183	727	711	586	1100	576	2039	412	3267	275	781	1421	3499
US	4920	2664	3509	4132	6221	4691	4877	8096	1601	6071	376	551	5410	2043

Source: Education Statistics (Eurostat)

Exceptions to the reference year: IT: 2005; EL: 2005
Data unavailable: IL, LU

':': not available

Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS

Annex 2.3: Number of ISCED 6 graduates by narrow field of study and sex in natural science and engineering (400 & 500 fields), 2006

	400 Science, Mathematics & Computing								500 Engineering, Manufacturing & Construction					
	Life science		Physical science		Mathematics & statistics		Computing		Engineering & engineering trades		Manufacturing & processing		Architecture & building	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	127	122	72	120	21	31	5	61	59	189	5	6	9	18
BG	27	7	17	22	4	9	0	0	35	72	2	8	5	4
CZ	107	70	55	126	20	55	8	42	70	339	16	14	19	60
DK	0	0	0	0	57	109	0	0	58	173	0	0	0	0
DE	1140	999	861	2281	126	382	67	499	161	1467	31	133	104	291
EE	8	6	6	14	7	1	1	4	5	7	4	0	1	0
IE	88	56	29	58	4	15	13	40	10	51	3	7	3	10
EL	111	251	38	68	9	15	2	25	31	131	12	31	19	27
ES	499	342	454	572	71	91	31	143	99	303	13	22	20	74
FR	852	714	740	1597	89	255	91	451	231	673	9	18	31	60
IT	582	288	572	713	126	149	31	74	87	308	182	486	388	376
CY	0	0	11	2	0	1	1	1	0	0	0	0	0	0
LV	1	2	3	2	0	1	1	4	5	13	5	0	0	0
LT	24	5	25	22	3	2	2	3	23	36	0	0	2	2
HU	29	33	32	52	5	19	5	6	2	10	9	15	4	12
MT	1	0	0	0	0	0	0	0	0	1	0	0	0	0
NL	0	0	188	311	0	0	0	0	113	370	0	0	0	0
AT	104	72	56	138	11	34	9	52	73	274	1	6	16	63
PT	307	112	297	168	183	125	68	253	154	297	53	34	79	110
RO	173	108	0	0	0	0	0	0	152	282	0	0	3	3
SI	41	3	10	17	1	6	2	10	8	52	8	7	2	5
SK	54	38	25	47	13	17	1	17	38	106	16	20	19	21
FI	70	48	68	120	11	33	15	51	73	276	12	8	7	29
SE	126	122	130	215	27	89	30	116	256	698	31	69	40	45
UK	866	810	801	1498	121	329	161	551	333	1388	78	161	116	323
HR	29	18	18	14	5	4	1	2	12	34	7	3	6	3
TR	43	55	72	129	29	44	8	17	36	138	45	44	52	55
IS	2	1	1	1	0	0	0	0	1	0	1	0	0	0
NO	0	0	0	0	0	0	75	167	0	0	0	0	22	75
CH	201	211	133	403	14	42	10	69	56	267	4	10	10	29
US	2842	2933	1346	3143	382	911	307	1109	1113	4655	241	707	247	709

Source: Education Statistics (Eurostat)

Exceptions to the reference year: IE, EL, IT: 2005; NL: 2004
Data unavailable: PL, LU, IL

Most tertiary students study abroad and are not included: CY
Most PhD (ISCED 6) graduates study abroad and are not included: IS

Annex 2.4: Number of researchers in the Higher Education Sector (HES) by field of science and sex, 2006

	Natural sciences		Engineering and technology		Medical sciences		Agricultural Sciences		Social sciences		Humanities	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BG	188	153	347	1256	199	175	114	166	459	612	139	101
CZ	484	1449	1406	4163	1985	2337	615	1192	1405	2043	598	991
DK	714	2151	436	1740	2506	2875	276	341	1299	1932	688	1112
DE	10827	34100	4620	25178	18698	26995	2498	3482	7576	17993	13759	18647
EE	562	881	233	576	184	135	75	102	417	340	516	299
IE	687	1826	505	1737	891	670	69	96	1022	1170	670	695
ES	9757	15400	8498	16123	6792	10272	1066	1681	10340	15852	6865	10429
IT	6833	11782	2562	8054	4631	9808	923	1832	5524	9312	5081	5701
CY	96	214	21	100	0	8	0	0	103	175	56	57
LV	506	714	275	637	201	132	185	158	755	501	611	270
LT	752	978	493	1285	655	549	139	162	1333	828	1260	802
LU	10	29	15	67	0	0	0	0	18	35	11	20
HU	626	1684	593	2612	1487	1907	311	641	1500	2475	2411	2681
MT	7	43	8	95	76	170	3	9	60	129	25	82
AT	1658	4713	600	2769	2267	3464	335	342	1901	2462	1429	1669
PL	4719	7409	3083	11506	7110	5950	2717	2709	7643	8664	3899	4922
PT	2976	3182	1483	3080	943	809	546	549	2423	2175	1654	1564
RO	712	839	2373	3765	1004	963	695	1588	1951	2028	54	110
SI	89	227	237	857	396	395	230	204	197	294	225	258
SK	1107	1745	1225	2516	1206	799	314	498	2023	1801	302	382
SE	2191	4220	1637	5555	3086	2744	686	758	4339	4690	2426	2584
HR	209	286	546	1251	758	707	312	407	554	657	478	419
TR	2834	3979	3695	8334	10403	12857	1050	2856	6053	10052	3735	5171
NO	878	2163	476	1724	3115	2763	182	184	2261	2871	1369	1715

Source: S&T statistics (Eurostat), Norwegian Institute for Studies in Innovation, Research and Education, WiS database for Sweden (DG Research)

Exceptions to the reference year: CZ, EE, MT, SK, SE, NO: 2007; LU, PT: 2005
Data unavailable: BE, EL, FR, NL, FI, UK, IS, CH, IL
Provisional data: MT (2007)

Head count

Annex 2.5: Number of researchers in the Government Sector (GOV) by field of science and sex, 2006

	Natural sciences		Engineering and technology		Medical sciences		Agricultural Sciences		Social sciences		Humanities	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	79	266	350	881	27	43	150	267	55	97	128	168
BG	1519	1309	428	853	252	224	423	375	174	124	512	300
CZ	1456	2841	207	1125	403	363	304	347	298	312	598	686
DK	204	552	95	388	397	358	186	237	219	253	155	238
DE	6183	15987	2630	10226	1343	1687	999	1762	1255	1790	1814	2108
EE	62	124	20	30	73	31	36	18	47	5	206	88
IE	57	113	28	32	20	0	77	143	29	35	0	4
ES	1238	1713	1955	3000	7507	7648	1177	1240	629	765	514	571
IT	2671	5291	847	1826	4753	3825	461	652	1061	985	414	385
CY	43	32	3	11	5	14	8	41	25	26	15	11
LV	227	215	20	141	52	64	111	134	106	86	53	53
LT	391	409	106	195	7	3	111	59	107	55	212	104
LU	40	86	37	132	19	16	7	16	25	43	4	6
HU	644	1532	134	542	381	249	258	403	249	484	701	640
MT	1	1	0	0	1	0	5	4	7	2	0	0
AT	122	359	108	220	69	97	89	261	355	397	352	360
PL	1957	2941	929	2908	1454	1023	926	995	309	335	427	307
PT	558	343	246	342	1530	1156	457	342	254	189	123	62
RO	1041	901	764	1009	337	121	92	266	405	269	284	375
SI	312	527	46	129	163	160	46	66	149	114	142	119
SK	542	811	112	290	196	141	231	265	208	169	171	163
HR	383	404	20	59	499	471	50	86	292	311	182	168
TR	288	708	462	1329	64	84	515	1220	26	37	0	1
NO	263	647	104	494	266	223	331	563	504	669	231	247

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, IE, MT, SK: 2007; BE, LU, PT, NO: 2005; TR: 2004
Data unavailable: EL, FR, NL, FI, UK, CH, IL, SE, IS

Provisional data: IE (2007), MT (2007)

Head count

Annex 2.6: Number of researchers in the Business Enterprise Sector (BES) by economic activity (NACE) and sex, 2006

	Total manufacturing - D (including 24)		Nace code 24.4 - Pharmaceuticals		Nace code 24 (-24.4) - Chemicals and chemical products (less pharmaceuticals)		Nace code 24 - Manufacture of chemicals and chemical products		Real estate, renting and business activities - K		Other nace codes (except K & D)	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	3223	11668	1428	1495	579	1441	2007	2936	637	3044	405	1539
BG	305	229	197	65	23	21	220	86	112	226	194	185
CZ	818	6538	135	149	118	291	252	440	849	4701	579	1330
DK	2810	8012	1293	1507	245	375	1538	1883	2533	8385	705	1819
DE	17465	141477	1976	4310	1885	4987	3861	9297	3156	18984	1045	4605
EE	121	300	8	3	29	23	37	26	146	562	71	202
IE	819	3320	214	289	53	220	267	509	654	2618	84	201
EL	583	1658	:	:	:	:	166	201	857	2153	340	766
ES	5362	16586	1363	1056	768	1280	2131	2335	6191	13354	2637	7143
FR	19323	69996	6037	5088	1865	2951	7902	8039	1920	12409	2445	8837
IT	3261	16814	863	864	463	1401	1326	2265	2109	6017	1022	2262
CY	36	92	17	13	6	18	23	31	27	113	13	64
LV	138	101	:	:	:	:	118	67	125	567	53	8
LT	187	324	:	:	:	:	69	37	78	160	95	174
LU	128	633	:	:	:	:	:	:	42	490	58	258
HU	1089	3395	616	576	91	157	707	733	288	1178	301	1390
MT	53	154	29	16	0	2	29	18	3	40	6	31
NL	1528	14945	260	1307	554	2934	814	4241	852	6920	554	4429
AT	1508	12754	419	432	129	428	548	860	1148	5476	453	1576
PL	1264	4454	502	182	204	128	706	310	1324	3550	242	574
PT	745	2232	:	:	:	:	:	:	522	1526	369	792
RO	1760	2665	81	36	210	91	:	:	496	809	1013	1293
SI	531	1402	198	140	92	104	290	244	140	535	9	43
SK	141	543	:	:	:	:	48	41	581	992	60	97
FI	3585	16155	:	:	:	:	660	630	950	4649	314	1013
SE	5375	16790	1656	1524	355	533	2011	2057	1517	5066	823	1042
UK	13395	56398	3286	13833	1011	4256	4296	18090	3917	16494	1000	4457
HR	149	187	31	7	22	4	53	11	81	208	81	210
TR	1861	5873	:	:	:	:	:	:	998	3403	451	1045
NO	1031	4220	192	156	134	280	325	436	1225	5237	664	1992
CH	2170	8205	1120	2300	200	810	:	:	:	:	770	2820

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ: 2007; BG, DK, DE, EE, IE, EL, IT, NL, PT, SK, UK, NO: 2005; FR, CH: 2004; LU, SE: 2003
Data unavailable: IS, IL
Provisional value: BE (2006)

Data estimated: UK (2005), LU (2003)

':' : not available
Head count

Annex 3.1: Number of academic staff by grade and sex, 2007

	Grade A		Grade B		Grade C		Grade D	
	Women	Men	Women	Men	Women	Men	Women	Men
BE	246	2047	657	1997	1475	3341	4175	4548
BG	551	1792	2776	4480	:	:	7324	6284
CZ	267	1832	2669	5862	253	566	3304	3915
DK	150	1107	917	2753	672	1128	1783	2271
DE	1509	11138	4854	21747	1618	3311	49342	81434
EE	94	454	372	630	966	740	653	328
IE	58	544	458	690	589	663	720	857
EL	216	1699	431	1468	753	1608	1481	2280
ES	2041	9034	24926	43754	2200	2368	37682	35059
FR	6069	26084	30870	48522	3036	5781	8523	11685
IT	3631	15994	6280	12453	10658	12913	:	:
CY	6	57	21	85	142	166	107	246
LV	157	382	254	346	2631	1683	:	:
LT	106	628	925	1297	1135	979	3246	1879
LU	5	49	12	30	50	113	:	:
HU	502	2166	1571	3379	4006	4918	778	1225
MT	1	43	193	415	23	139	2	6
NL	318	2552	422	1938	1586	3413	6453	9050
AT	309	1847	615	2708	2579	3930	3972	5641
PL	1940	7628	3254	8280	19219	24982	:	:
PT	303	1148	917	1750	2751	3581	2349	2312
RO	3644	7869	8935	9209	x	x	1260	1047
SI	214	1073	307	718	994	1182	275	336
SK	350	1388	869	1631	3520	3497	514	425
FI	609	1991	1660	1723	773	608	3804	4717
SE	841	3811	10848	12260	416	578	4647	4518
UK	2885	13601	12374	21273	24591	27340	16816	19927
HR	148	416	444	549	106	97	715	640
TR	3675	9541	8037	15380	3754	4336	16188	18209
IS	44	192	74	158	128	112	:	:
NO	537	2427	1863	3548	1109	1291	4841	4197
CH	1304	4708	626	2001	7837	12997	1294	1402
IL	184	1267	232	835	434	782	273	324

Source: WiS database (DG Research); Higher Education Authority for Ireland (Grade A)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, IE (except for grade A: 2002-2003), FR, CY, LU, AT, IL: 2006; EE, MT: 2004; PT: 2003; EL: 2000
Data unavailable: Grade C unavailable: BG, RO (included in B); Grade D unavailable: BE (French-speaking community), IT, LV, LU, PL, IS
Provisional data: ES
Data estimated: SI

Head count
Data for Ireland on Grade A professors does not include the Institutes of Technology
Some differences exist in coverage and definitions between countries
'x': data included in another cell; ':': not available

Annex 3.2: Number of senior academic staff (Grade A) by field of science and sex, 2007

	Natural sciences		Engineering and technology		Medical sciences		Agricultural Sciences		Social sciences		Humanities		Unknown	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	52	435	17	310	49	460	2	53	83	508	42	267	1	8
CZ	29	200	40	623	93	342	23	209	46	273	36	185	:	:
DK	27	283	7	170	18	138	10	51	64	357	24	108	:	:
DE	231	2910	74	1416	100	1326	36	288	221	2026	828	3027	19	145
ES	618	2980	113	1274	192	867	53	276	582	2324	444	1203	39	110
FR	777	5527	158	2278	1136	6300	x	x	557	2718	1104	2567	:	:
IT	871	4028	257	2804	294	2341	139	919	786	3510	1284	2392	:	:
CY	4	20	0	8	0	0	0	0	2	18	0	11	:	:
LV	0	37	:	:	5	8	:	:	11	17	8	14	54	233
LT	10	137	8	171	21	72	3	26	24	111	40	111	:	:
MT	0	6	0	2	1	11	0	0	0	3	0	21	:	:
NL	33	453	27	483	9	92	10	101	158	1016	73	358	8	49
AT	28	466	14	256	32	258	6	45	78	439	151	383	:	:
PL	354	1712	145	1456	386	938	210	614	351	1214	494	1694	:	:
PT	100	264	12	230	49	138	31	84	111	432	x	x	:	:
SI	7	103	23	243	38	126	13	45	50	206	79	309	4	41
SK	25	145	33	369	66	238	7	74	196	497	23	65	:	:
FI	62	460	24	351	115	361	33	55	222	505	153	259	:	:
SE	111	799	80	889	168	796	37	152	178	663	181	444	86	68
UK	279	2470	167	2204	784	2597	24	155	563	1925	19	82	:	:
HR	22	80	56	181	28	67	0	0	31	41	11	47	:	:
TR	328	1039	433	1818	1828	3356	195	844	587	1587	304	897	:	:
NO	76	550	22	347	114	395	11	60	168	618	146	457	:	:
CH	82	694	165	1244	163	604	8	82	671	1519	174	481	41	84
IL	39	560	10	197	21	105	0	33	37	236	52	224	:	:

Source: WiS database (DG Research)

Exceptions to the reference year: HR: 2008; UK: 2007/2006; DK, CY, AT: 2006; MT: 2004; PT: 2003; IL: 2001; FR, LV: 2000
Data unavailable: BG, EE, IE, EL, HU, RO, LU, IS
Provisional data: ES
Data estimated: SI

Head count
Medical sciences exclude female professors at university hospitals for Denmark
FR: NS includes AS; PT: SS includes H
Some differences exist in coverage and definitions between countries
'x': data included in another cell; ':': not available

Annex 3.3: Number of academic staff (Grade A) by age group and sex, 2007

	<35		35-44		45-54		55+		Unknown	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
BE	0	2	38	226	112	744	95	1055	:	:
BG	1	0	5	8	72	205	473	1579	:	:
DE	22	57	427	2073	678	4228	382	4778	0	2
IT	0	3	193	764	873	3412	2565	11815	:	:
LT	0	1	4	26	25	122	77	479	:	:
AT	7	11	81	251	123	507	98	1078	:	:
PL	0	0	19	70	201	952	1719	6603	:	:
RO	35	89	844	1036	1190	2339	1321	3780	:	:
SK	0	0	14	51	98	353	238	984	:	:
FI	11	35	92	349	260	669	246	938	:	:
SE	0	4	62	322	255	1222	524	2263	:	:
UK	12	67	469	2235	1284	5081	1120	6218	:	:
HR	0	0	11	16	45	95	92	305	:	:
TR	3	4	599	1411	1775	4019	1298	4107	:	:
IS	1	0	3	15	21	75	19	102	:	:
NO	3	4	60	237	176	766	298	1420	:	:
CH	118	181	468	1236	467	1761	222	1485	29	45

Source: WiS database (DG Research)

Exceptions to the reference year: BE (French-speaking community), HR: 2008; RO, UK: 2006/2007; AT: 2006
Data unavailable: CZ, DK, EE, IE, EL, ES, FR, CY, LV, LU, HU, MT, NL, PT, SI, IL

Head count
':': not available

Annex 3.4: Number of R&D personnel across occupations for the Higher Education Sector (HES) by sex, 2006

	Researchers		Technicians		Other	
	Women	**Men**	**Women**	**Men**	**Women**	**Men**
BE	9437	16622	3289	2698	2351	1118
BG	1446	2463	409	416	139	103
CZ	6493	12175	3118	2621	1229	526
DK	5919	10151	2579	1485	1770	591
DE	57978	126395	13122	13732	31690	9411
EE	1987	2333	398	265	253	67
IE	3862	6216	354	748	2706	985
EL	9106	14878	4629	4762	4012	3099
ES	43318	69757	5996	6712	12907	10303
IT	25721	46683	37186	29627	x	x
CY	276	554	20	27	28	13
LV	2533	2412	491	356	298	227
LT	4632	4604	436	256	1355	469
LU	54	151	0	8	4	0
HU	6928	12000	2423	964	3660	1190
MT	191	523	9	61	109	29
NL	3747	9197	4109	4023	6794	7190
AT	8190	15419	3223	1731	2935	1217
PL	29171	41160	2912	2182	3530	1207
PT	10025	11359	363	257	336	172
RO	6789	9293	468	287	954	1115
SI	1374	2235	450	331	275	73
SK	6177	7741	490	185	129	55
SE	19429	17109	4036	3240	1484	6167
HR	2857	3727	842	675	597	209
IS	543	706	80	64	40	39
CH	7330	18600	205	755	8265	6800
JP	63407	232069	5134	5154	24151	19119

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, SK: 2007; BE, EL, LU, NL, PT, IS, JP: 2005; CH: 2002; SE: 2001
Data unavailable: FR, FI, UK, NO, TR, IL; Other for IT (included in Technicians)
Provisional data: NL
Data estimated: CH; NL

Head count
'x': data included in another cell
Individual information for technicians and other occupations is not available for Italy

Annex 3.5: Number of R&D personnel across occupations for the Government Sector (GOV) by sex, 2006

	Researchers		Technicians		Other	
	Women	**Men**	**Women**	**Men**	**Women**	**Men**
BE	789	1722	397	571	250	299
BG	3308	3185	1792	840	1242	545
CZ	3266	5674	2071	1106	1288	899
DK	1256	2026	773	454	358	135
DE	14223	33560	5996	6133	17510	15294
EE	444	296	118	58	117	64
IE	204	341	108	211	237	274
EL	1190	1726	790	1057	1174	1924
ES	13019	14938	5276	4177	4521	4794
IT	10207	12964	7758	8523	6578	4490
CY	99	135	107	139	110	123
LV	569	693	384	128	283	85
LT	934	825	490	195	375	247
LU	132	299	44	54	78	34
HU	2367	3850	1493	824	1959	1005
MT	20	24	2	19	3	1
NL	2299	5508	1206	2735	1035	1358
AT	1095	1694	537	592	842	751
PL	6002	8509	2258	1978	2524	1473
PT	3168	2434	517	467	518	256
RO	2923	2941	1037	695	608	502
SI	858	1115	351	374	251	139
SK	1460	1839	679	262	342	179
UK	3456	6732	1114	3164	4134	3692
HR	1426	1499	768	698	279	146
TR	1606	3862	236	1199	850	3847
IS	446	580	212	205	109	164
CH	280	700	125	230	105	105
JP	4600	32075	4751	3595	10282	17196

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, EE, SK: 2007; BE, EL, LU, NL, PT, UK, IS, JP: 2005
Data unavailable: FR, FI, SE, NO, IL

Head count

Annex 3.6: Number of R&D personnel across occupations for the Business Enterprise Sector (BES) by sex, 2006

	Researchers		Technicians		Other	
	Women	**Men**	**Women**	**Men**	**Women**	**Men**
BE	4080	15847	3202	10729	2016	2517
BG	551	949	442	620	144	254
CZ	2246	12569	3204	9478	1837	3046
DK	6048	18216	4461	5809	2286	2623
DE	21666	165066	23340	62325	18674	50760
EE	358	1042	237	497	205	247
IE	1557	6139	681	2414	841	1989
EL	1780	4577	1028	2994	1315	1202
ES	14190	37083	11074	30583	6867	13353
IT	6904	28446	7018	38834	6515	17640
CY	76	269	46	151	85	42
LV	316	676	359	499	219	206
LT	360	658	105	205	138	95
LU	259	1548	254	1420	243	433
HU	1678	5963	1461	1276	454	916
MT	62	225	24	183	31	60
NL	2934	26294	3160	21492	2241	8449
AT	3109	19806	2972	14757	1595	3097
PL	2830	8578	1188	3006	1077	1515
PT	1636	4550	550	1591	367	729
RO	3269	4767	1318	1054	1733	2297
SI	680	1980	842	1556	242	367
SK	549	1595	422	890	218	205
UK	18336	77453	8273	20439	10927	18393
HR	311	605	567	828	150	142
TR	3310	10321	1143	4907	496	2236
IS	464	975	202	351	167	206
CH	2940	11025	3310	15265	2280	3000
JP	33791	485569	16619	48514	28723	70488

Source: S&T statistics (Eurostat)

Exceptions to the reference year: CZ, SK: 2007; BE, DK, DE, IE, EL, LU, NL, PT, IS, JP: 2005
Data unavailable: FR, FI, SE, NO, IL
Data estimated: UK

Head count

Annex 4.1: Number of heads of institutions in the Higher Education Sector (HES) by sex, HC, 2007

	Women	Men
BE	3	25
BG	6	74
CZ	11	62
DK	3	52
DE	26	315
EE	7	29
IT	93	363
CY	6	38
LV	2	15
LT	3	32
LU	0	1
HU	6	64
NL	1	13
AT	5	73
PL	56	383
RO	7	96
SK	2	31
FI	12	36
SE	7	19
HR	17	118
TR	11	116
IS	2	9
NO	15	32
CH	5	34
IL	11	59

Source: WiS database (DG Research)

Exceptions to the reference year: IT: 2009; BE (Dutch-speaking community), DE, EE, HU, AT, PL, SK, FI, SE, HR, CH, IL: 2008; DK, CY: 2008/2007; RO: 2007/2006
Data unavailable: BE (French-speaking community), IE, EL, ES, FR, MT, PT, SI, UK

BE data refer to Dutch-speaking community

Annex 4.2: Number of applicants and beneficiaries of research funding by sex, 2002-2007

	BENEFICIARIES				APPLICANTS			
	2002		2007		2002		2007	
	Women	Men	Women	Men	Women	Men	Women	Men
BE	217	351	364	428	551	799	837	971
CZ	:	:	571	2747	:	:	744	3480
DK	255	708	247	747	796	2023	964	2378
DE	1557	11646	2042	8045	2713	18611	3339	13088
EE	194	588	189	442	232	670	256	535
IE	:	:	214	292	:	:	1451	1778
EL	374	330	222	229	1135	894	888	745
ES	:	:	1202	1432	:	:	3932	4079
IT	117	740	154	733	374	2044	796	3003
CY	8	29	10	21	27	123	10	40
LV	231	471	239	460	285	573	244	510
LT	28	42	51	96	84	132	172	292
LU	23	37	6	29	29	43	16	79
HU	178	506	99	389	315	844	291	920
NL	312	1253	339	1146	774	2852	1062	3136
AT	176	1465	399	2279	341	2564	796	3830
PL	707	2100	990	2297	2556	6439	2920	6081
PT	453	391	621	560	828	753	1365	1228
SI	219	215	185	422	446	527	387	893
SK	24	110	22	113	45	189	148	582
FI	127	271	285	442	481	1178	1138	1942
SE	233	1677	472	1827	599	3663	1206	4039
UK	704	2832	822	2768	2663	9406	2970	9848
HR	2	10	264	269	13	39	216	310
IS	187	303	176	330	330	540	305	606
NO	460	1477	528	1499	1285	4258	1432	3772
CH	310	1138	475	1507	538	1770	829	2341
IL	71	435	40	86	236	1119	182	385

Source: WiS database (DG Research)

Exceptions to the reference year (s): **2007** CZ, IE, LV: 2003; EL, PT: 2002; SE: 1999; **2002** UK, HR: 2005; NL, SK: 2003; LV, SI: 2001; IL: 2000; EL, PT: 1999; SE: 1995
Data unavailable: BE (French-speaking community), BG, CZ (2002), IE (2002), ES (2002), FR, MT, RO, TR
Break in series: DK (2004), AT (2007): incl. ÖAW

There is no common definition of funds
The total number of funds varies considerably between countries and over the period considered
BE data refer to Dutch-speaking community
':' : not available

Annex 4.3: Number of applicants and beneficiaries of research funding by sex and field of science, 2007

		Women								Men							
		Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities	Unknown	Total	Natural sciences	Engineering and technology	Medical sciences	Agricultural Sciences	Social sciences	Humanities	Unknown	Total
CZ	Beneficiaries	92	162	85	158	74	:	:	571	926	915	214	428	264	:	:	2747
	Applicants	125	197	108	224	90	:	:	744	1190	1124	276	571	319	:	:	3480
DE	Beneficiaries	313	131	843	:	755	x	0	2042	2308	1588	2502	:	1647	x	0	8045
	Applicants	502	203	1381	:	1251	x	2	3339	3523	2580	4143	:	2837	x	5	13088
EE	Beneficiaries	56	17	34	17	28	37	:	189	216	69	48	27	35	47	:	442
	Applicants	82	20	52	19	41	42	:	256	261	83	59	29	48	55	:	535
IT	Beneficiaries	46	10	28	18	18	34	:	154	229	117	121	55	120	91	:	733
	Applicants	262	83	138	77	85	151	:	796	871	607	535	257	421	312	:	3003
CY	Beneficiaries	4	3	2	0	0	1	:	10	10	4	7	0	0	0	:	21
	Applicants	4	3	2	0	0	1	:	10	11	11	10	0	6	2	:	40
LV	Beneficiaries	82	22	44	14	53	24	:	239	228	71	55	44	43	19	:	460
	Applicants	82	23	46	14	53	26	:	244	244	81	69	46	48	22	:	510
LT	Beneficiaries	8	1	25	2	7	8	:	51	29	19	38	0	7	3	:	96
	Applicants	31	11	89	2	20	19	:	172	93	58	108	6	19	8	:	292
HU	Beneficiaries	32	1	15	8	21	22	:	99	187	28	63	40	36	35	:	389
	Applicants	110	3	54	32	46	46	:	291	432	59	165	107	79	78	:	920
PL	Beneficiaries	268	173	204	117	139	89	:	990	612	836	285	154	233	177	:	2297
	Applicants	825	510	595	304	419	267	:	2920	1532	2271	728	454	625	471	:	6081
PT	Beneficiaries	243	96	88	22	172	x	0	621	239	125	31	24	141	x	0	560
	Applicants	403	247	183	120	407	x	5	1365	400	286	75	102	361	x	4	1228
SI	Beneficiaries	44	40	20	31	17	23	10	185	103	190	29	22	36	37	5	422
	Applicants	145	55	37	57	38	55	0	387	233	318	86	90	72	88	6	893
SK	Beneficiaries	6	6	2	2	1	3	2	22	36	35	9	11	1	4	17	113
	Applicants	42	36	20	19	3	11	17	148	142	224	42	68	16	29	61	582
SE	Beneficiaries	77	10	184	63	54	:	84	472	464	156	739	202	102	:	164	1827
	Applicants	200	49	298	196	265	:	198	1206	1036	612	1070	538	504	:	279	4039
UK	Beneficiaries	216	135	144	8	167	152	:	822	1080	928	278	55	177	250	:	2768
	Applicants	738	491	579	38	587	537	:	2970	3715	3236	1062	190	717	928	:	9848
HR	Beneficiaries	38	104	69	0	38	15	:	264	18	131	72	0	28	20	:	269
	Applicants	41	43	68	0	39	25	:	216	91	91	74	1	28	25	:	310
IS	Beneficiaries	32	15	40	16	48	14	11	176	82	45	52	46	44	24	37	330
	Applicants	60	33	67	28	73	33	11	305	143	113	95	96	65	43	51	606
NO	Beneficiaries	68	196	49	44	121	50	:	528	242	759	106	104	208	80	:	1499
	Applicants	300	321	213	81	322	195	:	1432	973	1342	404	217	587	249	:	3772
CH	Beneficiaries	146	10	89	2	128	100	0	475	670	155	246	4	235	197	0	1507
	Applicants	218	25	182	5	229	158	12	829	883	229	481	5	426	305	12	2341
IL	Beneficiaries	6	:	25	:	:	20	20	71	140	:	107	:	:	54	134	435
	Applicants	30	:	100	:	:	73	33	236	425	:	357	:	:	148	189	1119

Source: WiS database (DG Research)

Exceptions to the reference year: CZ, LV: 2003; PT: 2002; IL: 2000; SE: 1999
Data unavailable: BE, BG, DK, EL, ES, IE, FR, LU, MT, NL, AT, FI, RO, TR

DE, PT: SS includes H; DE: MS includes biology

There is no common definition of funds
The total numbers of funds varies considerably over countries and period considered
'x': data included in another cell; ':' not available

Annex 4.4: Total intramural R&D expenditure (GERD) for all sectors (BES, GOV, HES) in million PPS, 2006

	BES	GOV	HES
BE	3515	432	1153
BG	81	204	31
CZ	1929	512	463
DK	2624	257	1016
DE	37344	7601	8909
EE	106	31	97
IE	1103	124	456
EL	427	296	680
ES	7235	2174	3603
FR	21633	5657	6584
IT	7997	2822	4961
CY	16	20	29
LV	100	30	69
LT	99	81	174
LU	426	58	11
HU	731	384	369
MT	32	2	13
NL	5130	1180	2355
AT	4206	312	1440
PL	827	971	813
PT	891	216	614
RO	431	287	157
SI	391	159	98
SK	510	388	286
FI	3516	461	924
SE	7280	437	2011
UK	18647	3022	7901
HR	171	124	171
TR	1577	497	2184
NO	1662	481	927
CH	4640	67	1441
IS	124	57	53
US	175249	30949	36253
JP	82403	8936	14448

Source: S&T statistics (Eurostat)

Exceptions to the reference year: BE, DE, IE, IS, JP: 2005; CH, US: 2004
Data unavailable: IL
Provisional data: FR, NL (HES), SE (HES)
Data estimated: EL, PT, NL (HES)

These notes are intended to provide a quick reference guide for the reader about the coverage and identification of groups, units and concepts presented in this booklet.

Statistical terms & classifications

1. Students and Graduates

The International Standard Classification of Education (ISCED-97) categorises education programmes by level. Tertiary Education or Higher Education involves 2 stages: the first includes largely theoretically-based programmes to provide sufficient qualifications for gaining entry to advanced research programmes and professions with high skills requirements (ISCED 5A) and programmes generally more practical/technical/occupationally specific than ISCED 5A (ISCED 5B). The second stage leads to the award of an advanced research qualification (e.g. PhD, Doctorate). The programmes are devoted to advanced study and original research (ISCED 6).

The number of graduates refers to those graduating in the reference year and not to the number of graduates in the population. The number of graduates also refers to non-nationals graduating in the country, but does not include nationals graduating abroad. In some countries, France and Portugal, for example, non-PhD programmes with an advanced research component are included in ISCED 6.

2. Human Resources in Science and Technology (HRST)

This methodology is based upon identifying individuals from the European Union Labour Force Survey case data, according to educational attainment and occupation, and is proposed by the Canberra Manual (OECD, 1994). The types of HRST presented in this publication are:

- HRST people who fulfil one or the other of the following conditions:
  - Successfully completed education at the third level in an S&T (Science and Technology) field of study (see S&T fields of study below).
  - Not formally qualified as above but employed in a S&T occupation (ISCO-2 "Professionals" and ISCO-3 "Technicians") where the above qualifications are normally required.
- HRSTE: HRST Education – People who have successfully completed tertiary education in a S&T field of study (see S&T fields of study below).
- HRSTO: HRST Occupation – People who are employed in a S&T occupation (ISCO '88 COM, codes 2 "Professionals" and 3 "Technicians") (see ISCO 88 definitions for explanation of S&T occupations).
- HRSTC: HRST Core – People who are both HRSTE and HRSTO.

3. S&T (Science and Technology) fields of study

ISCED distinguishes twenty-one main fields of study. For macro-measurement of HRST, it is recommended that they are regrouped into the following seven broad fields of study in S&T: natural sciences; engineering and technology; medical sciences; agricultural sciences; social sciences; humanities; other fields (Canberra manual §71). In other words all fields of study are included in the HRST population presented in this publication.

4. ISCO-88 definitions

Two of the ISCO-88 major groups are used in the definition of HRST, HRSTO and HRSTC. They are:

Major group 2 - "Professionals" (ISCO-2): "This major group includes occupations whose main tasks require a high level of professional knowledge and experience in the fields of physical and life sciences, or social sciences and humanities. The main tasks consist of increasing the existing stock of knowledge, applying scientific and artistic concepts and theories to the solution of problems, and teaching about the foregoing in a systematic manner".

Researchers are classified as ISCO-2.

Major group 3 - "Technicians and associate professionals" (ISCO-3): "This major group includes occupations whose main tasks require technical knowledge and experience in one or more fields of physical and life sciences, or social sciences and humanities. The main tasks consist of carrying out technical work connected with the application of concepts and operational methods in the above-mentioned fields, and in teaching at certain educational levels."

5. Scientists and Engineers (S&E) in employment

- Physical, mathematical and engineering occupations (ISCO '88 COM code 21).
- Life science and health occupations (ISCO '88 COM code 22).

6. Researchers and R&D personnel

The Frascati Manual (Proposed standard practice for Surveys on Research and Experimental Development, OECD, 2002) provides an international definition for R&D personnel, §294: "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".

R&D personnel is composed of three categories:

- Researchers §301: "Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned".
- Technicians and equivalent staff §306: "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 (Others) §309: "Other supporting staff includes skilled and unskilled craftsmen, secretarial and clerical staff participating in R&D projects or directly associated with such projects".

7. Main fields of science

The Frascati Manual (OECD 2002) also provides definitions for the six main fields of science (page 67), which are adhered to in this publication, unless indicated otherwise. The following abbreviations have been used:

- NS: Natural sciences
- ET: Engineering and Technology
- MS: Medical sciences
- AS: Agricultural sciences
- SS: Social sciences
- H: Humanities

The breakdown of researchers by field of science is according to the field in which they work and not according to the field of study of their qualification.

8. NACE categories

Researchers in the Business Enterprise Sector are categorised using the Statistical Classification of Economic Activities in the European Community, Rev. 1.1 (NACE Rev.1.1) as recommended by the Frascati Manual §169.

For a full listing of the NACE Rev.1.1 categories see Table 3.1 of the Frascati Manual which can be accessed through the OECD website http://www.oecd.org

9. Sectors of the economy

The Frascati Manual (OECD 2002) identifies and defines four sectors of the economy (§156):

- HES (§206): Higher Education Sector which includes 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 institutions.
- GOV (§184): Government Sector which includes 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) as well as non-profit institutes (NPIs) controlled and mainly financed by government.

- BES (§163): Business Enterprise Sector which includes 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. It includes the private non-profit institutes mainly serving them.
- PNP (§194): Private Non-Profit Sector which covers non-market, private non-profit institutions serving households (i.e. the general public) but also private individuals or households.

The sector entitled "Abroad" is not referred to in this booklet.

10. Units (Head count & Full-time equivalence)

The units of measurement of personnel employed on R&D as proposed by the Frascati Manual are:

- HC (§329): Head count. The number of persons engaged in R&D at a given date or the average number of persons engaged in R&D during the (calendar) year or the total number of persons engaged in R&D during the (calendar) year.
- FTE (§333): Full-time equivalence. One FTE corresponds to one year's work by one person.

Data are presented in HC unless indicated otherwise.

11. R&D expenditure

The Frascati Manual defines Intramural expenditures on R&D (§358) as all expenditures for R&D performed within a statistical unit or sector of the economy during a specific period, whatever the source of funds. It recommends using purchasing power parities (PPP) to express R&D statistics in monetary terms (§36).

PPPs are defined as currency conversion rates that both convert to a common currency and equalise the purchasing power of different currencies. They eliminate the differences in price levels between countries in the process of conversion of economic indicators expressed in a national currency to an artificial common currency, called Purchasing Power Standard (PPS).

12. Gender Pay Gap

GPG (unadjusted) = The unadjusted Gender Pay Gap (GPG) represents the difference between the average gross hourly earnings of male paid employees and of female paid employees as a percentage of the average gross hourly earnings of male paid employees.

The target population consists of all paid employees aged 15-64 having worked at least 30 weeks during the reference year. The statistics refer to enterprises with at least 10 employees in the areas of economic activity defined by sections C- K of NACE Rev.1.1.

Five gender pay gaps are presented in this publication:

- Gender pay gap in % for total economy
- Gender pay gap in % by selected occupations for employees in private enterprise
- Gender pay gap in % by selected occupations for employees in public enterprise
- Gender pay gap in % by selected occupations in private and public enterprise

- Gender pay gap in % by age group for employees in private and public enterprise for ISCO occupations 100, 200 and 300 combined

13. Compound Annual Growth Rates

The average annual rate of growth g of I between an initial year (year a) and a final year (year b) in percent is given by:

$g = [(I_b / I_a)^{1/(b-a)} -1] \times 100$

14. Seniority grades / Academic staff

The statistics on the seniority of academic staff are collected at the national level through Higher Education and R&D Surveys or directly from higher education institutions as part of their own monitoring systems and administrative records. It is important to note that these data are not always completely cross-country comparable as the seniority grades are not yet part of a formal international classification. Furthermore it is not always possible to distinguish research staff from teaching staff, although the target population for 'academic staff' in the Women and Science Questionnaire has been defined as researchers in higher education institutions (excluding staff involved only in teaching or administration and not at all in research).

The grades presented in this publication are based upon national mappings according to the following definitions:

A: The single highest grade/post at which research is normally conducted.

B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders (ISCED 6).

C: The first grade/post into which a newly qualified PhD graduate would normally be recruited.

D: Either postgraduate students not yet holding a PhD degree who are engaged as researchers, or researchers working in posts that do not normally require a PhD.

A complete list of the grades reported for each country is included later in this Annex.

Data sources

Data for **ISCED 6 graduates** come from the UOE (UNESCO-UIS/OECD/Eurostat) questionnaire on education and have been downloaded from Eurostat's online database NewCronos, except for Israel which directly provided data to the Scientific Culture and Gender Issues Unit's WiS (Women in Science) database. The reference year is the calendar year in which the academic year began. Eurostat data represent the numbers of people who are studying in the reference country but exclude nationals studying abroad.

Data on **researchers, R&D personnel** and **R&D expenditure** come from the R&D survey and have been extracted from NewCronos.

Data referring to the **labour force** are drawn from the European Union Labour Force Survey (EU LFS) in different ways. The HRST and Scientists & Engineers in the total labour force data have been extracted from NewCronos.

Data on the **Gender Pay Gap** come from the Structure of Earnings Surveys 2002 and 2006 and were supplied to the DG Research by Eurostat.

The Statistical Correspondents of the Helsinki Group on Women and Science report data on **academic staff** (see Seniority grades/ Academic staff above), on the applicants and beneficiaries of **research funding**, the sex-composition of **scientific boards** and **heads of Institutions** in the HES and in universities or assimilated institutions by sex to the WiS database on a goodwill basis. A complete list of the source institutions can be found at the end of this Annex.

Other data considerations

Age Groups

Data referring to the labour force refer to all persons aged 15+ living in private households and include the employed and unemployed populations. Data referring to HRST refer to the age group 25-64.

Small numbers

For some countries with small populations, raw data relating to small numbers of people have been reported here. The percentages and indicators have not always been included (mostly growth rates) and this is identified in the footnotes to the indicators. The reader is therefore asked to bear this in mind when interpreting the most disaggregated data, in particular for Luxembourg, Cyprus and Malta, and, in some cases, for Estonia, Iceland and Latvia.

EU estimates

EU totals estimated by DG Research (as noted in the footnotes) are based upon existing data for the reference year in combination with the next available year if the reference year is unavailable, in the following sequence (n-1, n+1, n-2, n+2 etc…).

The aggregates were estimated by DG Research only when at least 60% of the EU population on a given indicator was available. This rule is often applied by Eurostat. These estimates are not official, but are intended as a guide to the reader.

Rounding Error

In some cases, the row or column totals do not match the sum of the data. This may be due to rounding error.

Decimal places

All the data in the figures have been calculated and presented to one decimal space. However the values have been rounded up so that all the values can fit on each figure. This explains why in some cases the same number can be displayed slightly different.

Cut-off date

The cut-off date for data downloaded from Eurostat's NewCronos database was May 2009.

Country Codes

Country names have been abbreviated in accordance with the ISO Alpha-2 codes in the footnotes with the exceptions of Greece and the United Kingdom, as follows:

EU Member States

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EL	Greece
EE	Estonia
ES	Spain
FI	Finland
FR	France
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LV	Latvia
LU	Luxembourg
MT	Malta
NL	The Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

Associated Countries

This term refers to the following countries:

HR	Croatia
TR	Turkey
CH	Switzerland
IS	Iceland
IL	Israel
NO	Norway

Other Countries

JP	Japan
US	United States of America

Countries listed in the tables and figures throughout this booklet are displayed in one of the following ways:

- Ranked according to the data on women.
- Country codes listed in alphabetical order according to the abbreviations listed above (EU-27 presented first, followed by non-EU-27, followed by JP and US).

Flags

The following flags have been used, where necessary:

– = data item not applicable

0 = real zero or < 0.5 of the unit

: = data not available

x = data included in another cell

For more detailed methodological notes on the data presented in She Figures 2009 please access Eurostat's online database NewCronos at:

http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/

Or the statistics and indicators page of the Women and Science website at:

http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=27

Or the She Figures 2009 CD-ROM that accompanies the publication.

Academic staff

AUSTRIA

A

(Ordentliche/r) Universitätsprofessor/in
Professor/in gem. § 49 f-k VBG 1948 (neues Dienstrecht)
Vertragsprofessor/in
Stiftungsprofessor/in
Gastprofessor/in mit F&E-Tätigkeit
Emeritierte/r Universitätsprofessor/in mit F&E-Tätigkeit
Professor/in in Ruhestand mit F&E-Tätigkeit

B

Universitätsdozent/in (im öffentl.-rechtl. DV zum Bund, Amtstitel: Ao.Univ.Prof.)
Vertragsdozent/in (im Angestelltenverhältnis zur Universität, Funktionsbez.: Ao.Univ.Prof.)

C

Assistenzprofessor/in
Universitätsassistent/in
Assistent/in gem. § 49 l VBG 1948 (Funktionsbez. Univ.Ass. bzw. Ass.Arzt) (neues Dienstrecht)
Staff Scientist
Vertragsassistent/in
Wissenschaftl./Künstl. Mitarbeiter/in (in Ausbildung) gem. § 6 UniAbgG (neues Dienstrecht)
Oberarzt, Oberärztin
Assistenzarzt, Assistenzärztin
Arzt, Ärztin in Ausbildung
Arzt, Ärztin für Allgemeinmedizin
Facharzt, Fachärztin
Zahnarzt, Zahnärztin
Ärztl. Mitarbeiter/in mit DV zum Krankenanstaltenbetreiber (KAGes, KAV, TILAK)

D

Forschungsassistent/in
Bundeslehrer/in und Vertragslehrer/in
Wissenschaftliche/r Beamter, Beamtin
Wissenschaftliche/r Vertragsbedienstete/r
Studienassistent/in
Demonstrator/in
Sonstiges wissenschaftliches Personal

Comment: Data relate to the Public Universities incl. University hospitals and Universities of Arts.

DUTCH-SPEAKING COMMUNITY IN BELGIUM

A

ZAP1 - Gewoon/buitengewoon hoogleraar
ZAP2 - Hoogleraar

B

ZAP3 - Hoofddocent
ZAP4 – Docent
ZAP5 – Other

C
AAP2 - Doctor-assistant
WP3 - Postdoctoral of unlimited duration
WP4 - Postdoctoral of limited duration
Unpaid researchers (postdoctoral)

D
AAP1 - Assistant
AAP3 – Other
WP1 – Pre-doctoral of unlimited duration
WP2 – Pre-doctoral of limited duration
Unpaid researchers (pre-doctoral)

FRENCH-SPEAKING COMMUNITY IN BELGIUM

A
Professeur extraordinaire
Professeur ordinaire

B
Professeur

C
Chargé(e) de cours

BULGARIA

A
Professor

B
Associate Professor

D
Assistant
Lecturer
Research associate

CYPRUS

A
Professor

B
Associate Professor

C
Assistant Professor
Lecturer
Teaching Support Staff

D
Research associate and other staff

CZECH REPUBLIC

A
Since 2005 Professor – Researcher
Before 2005 Professor

B
Since 2005 Researcher below A & above C
Before 2005 Associate professor

C
Since 2005 newly qualified PhDs
Before 2005 Senior assistant

D
Since 2005 Researcher below C
Before 2005 Assistant and lecture

DENMARK

A
Professor
Academic directors
Department directors
B
Associate professor
Senior researchers
C
Assistant professor
Post docs
D
PhD student
Other researcher

ESTONIA

A
Full and extraordinary professor
B
Senior lecturer
Senior researcher
C
Lecturer
Senior teacher
Researcher
D
Teacher
Assistant
Other

FINLAND

A
Professor
B
Lecturer
Senior assistant
C
Assistant
Full-time teacher
D
Researcher

FRANCE

A
Directeur de Recherche
Professeur d'université
B
Chargé de recherche
Maître de conférence
C
Ingénieur de recherche
D
Boursiers de thèse

GERMANY

A

C4 an allen Hochschularten

W3 an allen Hochschularten

B

C3 an allen Hochschularten

C2 auf Dauer an allen Hochschularten

C2 auf Zeit an allen Hochschularten

Hochschuldozenten, R1, C2, C3, A9-A15, BAT I-IIa, III, AT

Universitätsdozenten, H1-H3, BAT Ia, Ib, AT

Oberassistenten, C2, H1, H2, A14, BAT Ia-IIa

Oberingenieure, C2, H1, H2, A14, BAT Ib

W2

C

Hochschulassistenten, C1, H2, BAT Ia-IIa

Wissenschaftliche und künstlerische Assistenten, C1, H1, A13-A14, BAT Ib, IIa

Akademische (Ober)Räte -auf Zeit-, A13, A14

Akademische Räte, Oberräte und Direktoren, A13-A16, C1-C3, R1, R2, H1-H3, BAT I-IIa, AT

W1 (Juniorprofessuren)

D

Wissenschaftliche und künstlerische. Mitarbeiter im Angestelltenverhältnis. BAT I-IVb, Va, AT, Verg. entspr. A13

Ärzte im Praktikum, Tarif für AIP

Wissenschaftliche Mitarbeiter im unbefristeten Arbeitsverhältnis 7), WM 2-6, BAT I-IIa

Studienräte, -direktoren im Hochschuldienst, A13-A16, BAT I-IIb

Fachlehrer, Technische Lehrer, A9-A13, AT

Lektoren, A13-A14, BAT I-II, AT

Sonstige Lehrkräfte für besondere Aufgaben, A9-A13, BAT I-Vc, Kr. VIII-XIII, AT

Lektoren, WM 3, BAT IIa

Lehrer im Hochschuldienst, WM 4-6, BAT IIa, IIb

GREECE

A

Professor

B

Associate Professor

C

Assistant Professor

D

Assistant staff

Lecturer

Post-graduate scholars

Temporary teaching staff

HUNGARY

A

Professor

B

Assistant professor

C
Lecturer
D
Researchers

IRELAND
A
Academic staff
B
Post Doctoral Fellows
C
Contract lecturer
D
Other contract researchers

Comment: A Grade data in the publication refers to Professor and Associate professor. The source is Higher Education Authority.

ITALY
A
Full professor
B
Associate professor
C
Academic researcher

LATVIA
A
Full Professor
B
Associate Professor
C
Assistant Professor
Assistant
Lecturer
Researcher

LITHUANIA
A
Professor
B
Associate professor
C
Assistant professor
D
Other teaching staff

LUXEMBOURG
A
Professor
B
Associate professor
C
Autres

MALTA

A

Professor

B

Associate Professor

C

Senior Lecturer

D

Researcher assistant

NETHERLANDS

A

Full Professor

B

Associate Professor

C

Assistant Professor

D

Other scientific personnel

Postgraduate

Comment: Student assistants are excluded.

POLAND

A

Full Professor

B

Doctor hab.

Professor of high school

C

Doctor

PORTUGAL

A

Reitor

Vice Reitor

Professor Catedrático

B

Professor Associado

Professor Coordenator

C

Professor Auxiliar

Professor Adjunto

D

Assistente

Assistente Politecnico

Leitor

Assistente estagiaro

ROMANIA

A

Professor

B

Lectures

Assistant professor

Assistant

D
Teaching assistant

Comment: Grade C is included in B.

SLOVAKIA

A
Full Professor
B
Associate professor
C
Lecturer
D
Assistant lecturer
Lector

SLOVENIA

A
Full Professor
B
Associate Professor
C
Assistant Professor
D
Young researcher

SPAIN

A
Head of Department
B
Permanent and part-time professor
Emeritus professor
Visiting professor
C
Assistant Professor
D
PhD student

SWEDEN

A
Professor
B
Residual grade
For 2004, 2003 and 2002: Senior lecturer and other research and teaching staff
C
Post-doctoral fellow
D
Postgraduate student (not yet holding a PhD), having a university post
For 2004, 2003 and 2002: residual grade

UNITED KINGDOM

A
Professor
B
Senior lecturer
Senior researcher

C
Lecturer
D
Researcher

CROATIA

A
Full professor
Scientific advisor
B
Associate professor
Senior research associate
Assistant professor
Research associate
C
Senior assistant
D
Assistant
Professional Associate
Professional Advisor
Junior Researcher

ICELAND

A
Full professors
B
Associate Professor
C
Assistant Professor

ISRAEL

A
Full professor
B
Associate Professor
C
Senior Lecturer
D
Lecturer

NORWAY

A
Full Professor
B
Associate Professor
Department chief physician, chief physician Senior lecturer
College reader
Senior researcher
C
Post.doc. fellowshipholder
Researcher
D
Assistant Professor
PhD student

University/college lecturer
Assistant physician
Research assistant

SWITZERLAND

A

Doctorate with experience – Category I, II

B

Doctorate with experience – Category III, IV
University degree – category V
Independent Professor – Category VI

C

Doctorate – Category VII, VIII
University degree Category IX

D

No university degree – Category X

TURKEY

A

Professor

B

Associate professor
Assistant professor

C

Instructor

D

Research Assistant

Research Funds

The following list details each of the national funding bodies which have provided data for both applicants and beneficiaries of research funds.

For the funding success rate, only those funds that have data available for both applicants and beneficiaries have been used in the calculation.

AUSTRIA

Fonds zur Förderung der wissenschaftlichen Forschung (FWF - 2000-2007)

Österreichische Akademie der Wissenschaften (ÖAW - 2003-2007)

Österreichische Forschungsförderungsgesellschaft (FFG - 2000-2007)

DUTCH-SPEAKING COMMUNITY IN BELGIUM

Fund for scientific research Flanders (FWO)

Funds for industrial research (IWT)

FRENCH-SPEAKING COMMUNITY IN BELGIUM

Fonds de la Recherche Scientifique (FRS-FNRS)

Fonds de la Recherche Fondamentale Collective (FRFC)

Fonds pour le Formation à la Recherche dans l'Industrie et dans l'Agriculture (FRIA)

Fonds de la Recherche Scientifique Médicale (FRSM)

Institut Interuniversitaire des Sciences Nucléaires (IISN)

BULGARIA

Ministry of Education and Science

CYPRUS

Research Promotion Foundation (RPF)

CZECH REPUBLIC

Grant Agency of Academy of Science

DENMARK

From 2004 and onwards

The Danish Council for Research Policy - Advisory Council (DCRP)

The Danish Councils for Independent Research (DCIR)

The Danish Council for Strategic Research (DCSR)

The Danish National Research Foundation (DNRF)

Before 2004

The Danish Research Council for the Humanities (SHF)

The Danish Agricultural and Veterinary Research Council (SJVF)

The Danish Natural Science Research Council (SNF)

The Danish Social Science Research Council (SSF)

The Danish Medical Research Council (SSVF)

The Danish Technical Research Council (STVF)

European Space Agency-related research (ESA)

ESTONIA
Estonian Science Fund

FINLAND
Academy of Finland

FRANCE
Ministère de l'Education Nationale (MEN)
Ministère de l'enseignement supérieur et de la Recherche (MESR)

GERMANY
Deutsche Forschungsgemeinschaft (DFG)

GREECE
Hellenic Public Foundation for Grants (IKY)

HUNGARY
The Hungarian Scientific Research Fund Office (OTKA)

IRELAND
Enterprise Ireland
Teagasc
IRCSET
IRCHSS
HEA
HRB
IDA Ireland

ITALY
MIUR
Universities

LATVIA
Latvian Council of Science

LITHUANIA
Ministry of Education and Science of the Republic of Lithuania
Lithuanian State Science and Studies Foundation

LUXEMBOURG
Fonds National de la Recherche

NETHERLANDS
Royal Netherlands Academy of Arts and Sciences council (KNAW)
The Netherlands Organisation for Scientific Research Council (NOW)

POLAND
Government

PORTUGAL
PRAXIS XXI
POCTI
POSI

SLOVAKIA
Ministry of Education
Research and Development Agency

SLOVENIA
Ministry of Science and Technology
Slovenian Research Agency

SPAIN
Ministry of Science and Innovation

SWEDEN
Swedish Council for Forestry and Agricultural Research
Swedish Council for Planning and Coordination of Research
Swedish Council for Research in the Humanities and Social Sciences
Swedish Medical Research Council
Swedish Natural Science Research Council

UNITED KINGDOM
Since 2005
Arts and Humanities Research Council (AHRC)
Biotechnology and Biological Sciences Research Council (BBSRC)
Engineering and Physical Sciences Research Council (EPSRC)
Medical Research Council (MRC)
Natural Environment Research Council (NERC)
Economic and Social Research Council (ESRC)
Science and Technology Facilities Council (STFC)
Before 2004
Biotechnology and Biological Sciences Research Council (BBSRC)
Engineering and Physical Sciences Research Council (EPSRC)
Economic and Social Research Council (ESRC)
Medical Research Council (MRC)
Natural Environment Research Council (NERC)
Particle Physics and Astronomy Research Council (PPARC)
Royal Academy of Engineering (RAE)
Royal Society (RS)

CROATIA
Ministry of Science, Education and Sport (MSES)
The National Foundation for Science, Higher Education and Technological Development (NZZ)
Unity through Knowledge Fund (UKF)
Hrvatske vode
Ministry of Agriculture, Fisheries and Rural Development
The National Institutes of Health (NIH), (the U.S. Department of Health and Human Services)
FP6

ICELAND

Graduate Research Fund
Programme for Information technology and Environmental Sciences
The Science Fund
The Technology fund
The Research Fund
The Research Development Fund
The Fund for Research Equipment
The Research Fund of the University of Iceland
The Christianity Millennium Fund
AVS R&D Fund of Ministry of Fisheries in Iceland
The Research Fund of the University of Akureyri
The Research Fund of the University of Education

ISRAEL

Bilateral (US-Israel) Science foundation (BSF)
Israel Science Foundation (ISF)

NORWAY

The Research Council of Norway (RCN)

SWITZERLAND

Swiss National Science Foundation (SNSF)

Boards

The following lists the boards to which reference is made in chapter 4.

FRENCH-SPEAKING COMMUNITY IN BELGIUM

Commission scientifique (FNRS)
Commission scientifique (FRIA)

BULGARIA

Scientific and Expert Commission at the Ministry of Education and Science

CYPRUS

Agricultural Research and Development Board
Research Promotion Foundation Board of Directors
University of Cyprus Council
University of Cyprus Research Committee
University of Cyprus Senate

CZECH REPUBLIC

Academy Assembly (ASCR)
Academy Council (ASCR)
R&D Council
Czech Rectors Conference

DENMARK

The Danish Council for Research Policy
The Danish Councils for Independent Research
The Danish Social Science Research Council
The Danish Research Council for Technology and Production Sciences
The Danish Research Council for the Humanities
The Danish Natural Science Research Council
The Danish Medical Research Council
The Danish Council for Strategic Research
The Danish Council for Strategic Research, subcommittees
The Danish National Research Foundation

ESTONIA

General Assembly of the Estonian Academy of Sciences
Estonian Science Foundation Council and its 11 Expert commissions
Research Council of 23 universities or scientific institutes
Council of 21 universities or academy
Senate of the Estonian Business School
Senate of the Tallinn University
Council of the Research Competency of the Ministry of Education and Research

FINLAND

Academy Board
Academy of Finland Research councils
Council of Finland Science and Technology Policy
National Technology Agency of Finland Board

FRANCE

Board of Trustees

Scientific strategic council

Scientific Committees

GERMANY

Higher Education Institutions

Public Research Institutions

Deutsche Forschungsgemeinschaft, German Research Foundation (DFG)

German Science Council (Wissenschaftsrat)

HUNGARY

The Hungarian Scientific Research Fund Office (OTKA)

IRELAND

Board Iascaigh Mhara

Central and Regional Fisheries Board

Central Bank

National Council for Forest Research and Development (COFORD)

Dublin Institute of Advanced Education (DIAS)

Enterprise Ireland

Environmental Protection Agency (EPA)

Economic & Social Research Institute (ESRI)

Training and Employment Authority (FAS)

Policy advisory and co-ordination board for industrial development and science and technology in Ireland (Forfas)

Health Research Board

Higher Education Authority (HEA)

Industrial Development Authority (IDA Ireland)

Irish Research Council for Science Technology and Innovation (ICSTI)

Marine Institute

National Roads Authority

Department of the Taoiseach (NESC)

National Economic and Social Council

Tyndall Institute National Microelectronics Research Centre

Industry Board

Scientific Board

Radiological Protection Institute

Royal Irish Academy

SFI

Agriculture and Food Development Authority (Teagasc)

Agency to encourage the preservation and extinction of the Irish language (Udaras)

ITALY

Consortium for Scientific and Technological Research Area of Trieste (AREA)

Italian Space Agency (ASI)

Italian Aerospace Research Centre (CIRA)

Italian Centre on Early Middle Ages Studies (CISAM)

National Research Council (CNR)

Tropical Herbarium of Florence

National Institute for the S&T of the Mountains (IMONT)

National Institute for Meteorological Research (INRIM)
Astrophysics National Institute (INAF)
"Francesco Severi" National Institute of High Mathematics (INDAM)
National Institute for the Physics of Matter (INFM)
National Institute of Nuclear Physics (INFN)
National Institute of Geophysics and Vulcanology (INGV)
National Institute of Applied Optics (INOA)
Papyrologic Institute "G. Viteli"
Museum of the Physics and Centre of Studies and Researches
National Institute of Oceanography and Experimental Geophysics (OGS)
"A. Dohrn" Zoological Station (SZN)
Italian Association for Cancer Research (AIRC)
National Council of Economy and Labour (CNEL)
Agency for New Technologies, Energy and Environment (ENEA)
Italian National Institute of Health (ISS)
Muscular dystrophy research (TELETHON ITALY)
Italian National Statistical Institute (ISTAT)
University boards
Research Programmes of National Interest
Excellence centres for university research

LATVIA
Latvian Council of Science

LITHUANIA
Lithuanian Science Council

LUXEMBOURG
Centre de Recherche Public Gabriel Lippmann Centre de Recherche Public Henri Tudor
Centre de Recherche Public Santé
Centre d'Études de Populations, de Pauvreté et de Politiques Socio-économiques
Centre Universitaire de Luxembourg
Fonds National de Recherche

NETHERLANDS
Royal Netherlands Academy of Arts and Sciences council (KNAW)
The Netherlands Organisation for Scientific Research Council (NWO)
TNO
University/ university board

POLAND
Governmental bodies

PORTUGAL
R&D Units

SLOVAKIA
The Council of Government of the Slovak Republic for Science and Technology

The Council of the national R&D program
Slovak Research and Development Agency
Council of Universities of the Slovak Republic
Slovak Rector's Conference
Slovak Academy of Sciences
Board of the national R&D programmes

SLOVENIA

Council for Science and Technology of the Republic of Slovenia
National Scientific Research Council; since 2005 Scientific Council of the Slovenian Research Agency
Scientific research councils for individual fields; since 2006 inside expert system of the Slovenian Research Agency

SWEDEN

The Swedish Research Council
Scientific councils
Swedish council for working life and social research
Swedish Agency for Innovation Systems

UNITED KINGDOM

Agriculture and Fishery Research Council (AFRC)
Biotechnology and Biological Sciences Research Council (BBSRC)
Council for the Central Laboratory of the Research Councils (CCLRC)
Council for Sciences and Technologies (CST)
Engineering and Physical Sciences Research Council (EPSRC)
Economic and Social Research Council (ESRC)
Medical Research Council (MRC)
Natural Environment Research Council (NERC)
Particle Physics and Astronomy Research Council (PPARC)
Department of Culture, Media and Sport (DCMS)
Department of Trade and Industry (DTI)
Department for the Environment, Transport and the Regions (DETR)
Department for Education and Employment (DfEE)
Department of Health (DoH)
Ministry of Agriculture, Fisheries and Food (MAFF)
Ministry of Defence (MOD)
Northern Ireland Office (NIO)
Scottish Office (SO)
Welsh Office (WO)
Research Career Awards (RCA)
Training and Career Development Board (T&CDB)
Other boards

CROATIA

The National Science Council
The National Council for Higher Education
The Board for Financing Scientific Activity and Higher Education
The Rectors' Conference
The Ethics Committee
The Council of Polytechnics and Schools of Professional Higher Education

Scientific and Artistic Areas Councils and Field Committees
The Scientific Council
The Faculty council
University Senate
University Council
Management Council
The faculty council
The Academy council
University department
Other boards

ICELAND

Board of ICR (replaced in 2003 by Council for Science and Technology Policy)
Advisory Boards of ICR
Grant committee
Board of the Research Fund of the UI
Board of the Graduate Research Refund
University Councils
Boards of the governmental sectoral research institutions
Council for Science and Technology Policy
Science Board
Technology Board
Research Fund Board
Technology Development Fund
Fund for Research Equipment
Programme for IT and Environmental Sci.
The Research Fund of the University of Akureyri
Christianity Millennium Fund
AVS R&D Fund of Ministry of Fisheries
Programme for Post Genomic Biomedicine and Nanotechnology

ISRAEL

Bilateral (US-Israel) Science Foundation (BSF)
GIF

NORWAY

The Research Council of Norway (RCN)

SWITZERLAND

National Research Council of the Swiss National Science Foundation (SNSF)

Heads of institutions in the Higher Education Sector - Heads of universities or assimilated institutions

An institution is assimilated to a university if it is able to deliver PhD degrees.

Annex 6: List of Statistical Correspondents of the Helsinki Group on Women and Science

Country	Contact Person	Department	Organisation	Fax	Email
Austria	Ms Gabriele SPÖRKER	Science, Technology & Education Statistics	Statistics Austria	+431711287680	gabriele.spoerker@statistik.gv.at
Belgium, French-speaking Community	Ms Elizabeth KOKKELKOREN	Relations extérieures	Fonds de la Recherche Scientifique - FNRS	+3225140006	kokkelkoren@fnrs.be
	Mr Xavier FORET	IT service	Fonds de la Recherche Scientifique - FNRS	+3225140006	foret@cref.be
Belgium, Dutch-speaking Community	Mr Koen WAEYAERT	Economy, Science and Innovation	Ministry of Flanders	+3225536007	koen.waeyaert@ewi.vlaanderen.be
	Mr Kris MAISON	Economy, Science and Innovation	Ministry of Flanders	+3225536007	kris.maison@ewi.vlaanderen.be
Bulgaria	Ms Svetoslava FILIPOVICH	Regional and Multi-domain statistics	National Statistical Institute of Bulgaria	+35929857640	sfilipovich@nsi.bg
Cyprus	Mr Pantelis PROTOPAPAS	STI Statistics Section	Statistical Service of Cyprus	+35722661313	pprotopapas@cystat.mof.gov.cy
	Mr Georgios DOGORITIS	STI Statistics Section	Statistical Service of Cyprus	+35722661313	gdogoritis@cystat.mof.gov.cy
Czech Republic	Ms Miluse KOPACKOVA	Department of Statistics Development of Society	Czech Statistical Office	+420274054130	miluse.kopackova@czso.cz
Denmark	Mr Ebbe GRAVERSEN	The Danish Centre for Studies in Research and Research Policy, CFA	University of Aarhus	+4589422399	ebbe.krogh.graversen@cfa.au.dk
Estonia	Mr Aavo HEINLO	Enterprise Statistics Department	Statistical Office of Estonia	+3726259370	aavo.heinlo@stat.ee
Finland	Ms Marjut PIETILAINEN	Demographic and Gender Statistics	Statistics Finland	+358917342990	Marjut.Pietilainen@stat.fi
France	Ms Claudette-Vincent NISSLE	Bureau des Etudes Statistiques sur la Recherche et l'Innovation	Ministère de l'enseignement supérieur et de la recherche	+33155557656	claudette-vincent.nissle@education.gouv.fr
Germany	Ms Andrea LÖTHER	Center of Excellence Women and Science	GESIS	+4902282281550	andrea.loether@gesis.org
Greece	Ms Paraskevi REPA	Programming & Planning Directorate	General Secretariat of Research and Technology	+3017711427	ekyb@gsrt.gr
	Ms Maria KATI	International Science and Technology Directorate	General Secretariat for Research and Technology	+302107714153	mika@gsrt.gr
Hungary	Ms Katalin JANAK	Social Services Statistics Department	Hungarian Central Statistical Office	+3613456751	katalin.janak@ksh.hu
Ireland	Mr Andrew STOCKMAN	Policy and Planning, Science & Technology Division	Forfas	+35316073260	Andrew.stockman@forfas.ie
Italy	Ms Simonetta SAGRAMORA	MIUR, Ministero Istruzione Università e Ricerca	Ufficio di Statistica	+390697726178	simonetta.sagramora@miur.it
Latvia	Ms Inga PRIBITOKA	Social Statistical Department	Central Statistical Bureau	+3717830137	Inga.Pribitoka@csb.gov.lv

Country	Contact Person	Department	Organisation	Fax	Email
Lithuania	Ms Gaile DAPSIENE	Education and Culture Statistics	Statistics Lithuania	+37052364911	gaile.dapsiene@stat.gov.lt
Luxembourg	Mr Vincent DAUTEL	Département Entreprises	CEPS/INSTEAD	+352585560	vincent.dautel@ceps.lu
Malta	Ms Nicola VELLA HABER	Social Statistics and Information Society	National Statistics Office	+35625997205	nicola.vella-haber@gov.mt
Netherlands	Mr Jan VAN STEEN		Ministry of Education, Culture and Science	+31704122080	j.c.g.vansteen@minocw.nl
Poland	Ms Dorota MACIEJKO		Information Processing Centre	+48228253319	dorota.maciejko@opi.org.pl
Portugal	Ms Joana DUARTE	R&D Statistics Department	OCES Observatory for Science and Higher Education	+351213950979	JDuarte@oces.mctes.pt
Romania	Ms Camelia COSCA	Department of short term economic statistics indicators	National Institute of Statistics	+40213181866	camelia.cosca@insse.ro
	Mr Sergiu PARVAN	Department of short term economic statistics indicators	National Institute of Statistics	+40213112389	ciu@insse.ro
Slovak Republic	Ms Marta MOSNA	Division of Science & Technology	Ministry of Education	+421269252203	marta.mosna@minedu.sk
Slovenia	Ms Tatjana ŠKRBEC	Social services statistics department	Statistical Office, Republic of Slovenia	+38612415344	tatjana.skrbec@gov.si
	Ms Darja URBANCIC	Social services statistics department	Statistical Office, Republic of Slovenia	+38612415344	darja.urbancic@gov.si
Spain	Ms Marta Cangas FERNANDEZ	Subdirección General de Estadísticas de los Servicios	Instituto Nacional de Estadística		mcangas@ine.es
	Ms Belén GONZALEZ OLMOS	Subdirección General de Estadísticas de las Empresas	Instituto Nacional de Estadística	+915830849	bgolmos@ine.es
Sweden	Ms Anna BENGTSSON NOTSTRAND	Higher Education Statistics	Statistics Sweden	+4619177082	anna.bengtsson@scb.se
United Kingdom	Ms Stephanie ROBSON	Science and Innovation unit	Office of Science & Technology/DTI		stephanie.robson@dti.gsi.gov.uk
Croatia	Ms Emira BECIC	Directorate for Science	Ministry of Science, Education and Sports (MSES)	+38514594429	emira.becic@mzos.hr
Turkey	Ms Hediye ILOGLU TEKIN	Industry & Business Statistics Department, Sectoral Statistics Group, Science and Technology	Turkish Statistical Institute		hediye.iloglutekin@tuik.gov.tr
Switzerland	Ms Elisabeth PASTOR	Federal Department of Home Affairs	Federal Statistical Office	+41327136857	elisabeth.pastor@bfs.admin.ch
Iceland	Ms Sigridur VILHJALMSDOTTIR	Labour market and social statistics	Statistics Iceland	+3545281199	sigridur.vilhjalmsdottir@hagstofa.is
Norway	Ms Kaja WENDT		NIFU STEP Norwegian Institute for Studies in Innovation, Research and Education	+4722595101	kaja.wendt@nifustep.no
Israel	Ms Mina TEICHER		Ministry of Science & Technology	+97236357364	teicher@macs.biu.ac.il

References

Andrén B., (2005), "17 million tertiary students in the European Union" in Statistics in Focus, OPOCE, Luxembourg, Catalogue Number: KS-NK-05-019-EN-N, ISSN 1024-4352.

Blackburn R., Browne J., Brooks B. & Jarman J., (2002), "Explaining Gender Segregation" in The British Journal of Sociology, Volume 53, Number 4, (December 2002), pp. 513-536, ISSN: 0007-1315.

European Commission (2000) Science policies in the European Union – Promoting excellence through mainstreaming gender equality – A report from the ETAN Expert Working Group on Women and Science. Directorate-General for Research, Science and Society, 158 p.

European Commission, (2003a), "Third European Report on Science & Technology Indicators – Towards a Knowledge-based Economy" OPOCE, Luxembourg, 451pp. ISBN: 92-894-1795-1.

European Commission, (2003b), "Waste of talents: turning private struggles into a public issue –Women and Science in the Enwise countries", OPOCE, Luxembourg, 178pp. ISBN 92-894-6750-9

European Commission (2003c) She Figures 2003 - Women and Science – Statistics and Indicators. Directorate-General for Research, Science and Society.

European Commission (2003d) Women in industrial research – A wake up call for European industry. Directorate-General for Research, Science and Society, 64 p.

European Commission (2003e) Women in industrial research – Analysis of statistical data and good practices of companies. Directorate-General for Research, Science and Society, 171 p.

European Commission, (2004), "Gender and Excellence in the Making", OPOCE, Luxembourg, 179pp.
ISBN 92-894-7479-3

European Commission, (2005a), "Key Data on Education in Europe", OPOCE, Luxembourg, 332pp. ISBN 92-894-9422-0

European Commission, (2005b), "Key Figures 2005 - Towards a European Research Area Science, Technology and Innovation", OPOCE, Luxembourg, 84pp.
ISBN 92-894- 8174-9

European Commission, (2005c), "Women and Science, Excellence and Innovation-Gender Equality in Science", OPOCE, Luxembourg, 29pp. ISBN 92-894-9905-2

European Commission, (2005d), "Women and Science, Excellence and Innovation-Gender Equality in Science", OPOCE, Luxembourg, 29pp. ISBN 92-894-9905-2

European Commission (2006a) She Figures 2006 - Women and Science – Statistics and Indicators. Directorate-General for Research, Science and Society.

European Commission (2006b) Women in science and technology – The business perspective. Directorate-General for Research, Directorate C - Science and Society, Unit C4 - Women and Science, 144 p. KI-NA-22065-EN-C, ISBN 92-79-01722-5

European Commission (2008a) The life of women and men in Europe - A statistical portrait. Eurostat Statistical books, Luxembourg: office for official publications of the European Communities, 243p. ISBN 978-92-79-07069-3, Catalogue number: Ks-80-07-135-En-C

European Commission (2008b) A more research-intensive and integrated European Research Area – Science, Technology and Competitiveness key figures report 2008/2009. Directorate-General for Research, Directorate C – European Research Area : Knowledge-based economy, 167 p.

European Commission (2008c) Mapping the maze: Getting more women to the top in research. Directorate-General for Research, Directorate L – Science, economy and society, Unit L.4 – Scientific culture and gender issues, 76 p. KI-NA-23311-EN-C, ISBN 978-92-79-07618-3

Frank S., (2006), "R&D personnel" Statistics in Focus, OPOCE, Luxembourg, Catalogue number: KS-NS-06-007-EN-N, ISSN 1609-5995

Götzfried A., (2004), Women, science and technology: Measuring recent progress towards gender equality" in Statistics in Focus, OPOCE, Luxembourg, Catalogue Number: KS-NS-04-006-EN-N, ISSN 1609-5995.

ILO, (1990), "International standard classification of Occupations: ISCO-88", International Labour Organization, Geneva, 467pp. ISBN 92-2-106438-7.

Jouhette S., & Romans F., (2005), "EU Labour Force Survey: Principal results 2004" in Statistics in Focus, OPOCE, Luxembourg, Catalogue number: KS-NK-05-009-EN-N, ISSN 1024-4352.

Meri T., (2008), "Women employed in science and technology" in Statistics in Focus, OPOCE, Luxembourg, Catalogue number: KS-SF-08-010-EN-C, ISSN 1977-0316.

National Science Board, (2006), "Science and Engineering Indicators 2006. Two volumes", Arlington, VA: National Science Foundation (volume 1, NSB 06-01; volume 2, NSB 06-01A).

OECD, (1994), "Manual of the measurement of human resources devoted to S&T" – Canberra Manual. OECD, Paris, 112pp.

OECD, (2002), "Proposed Standard Practice for Surveys on Research and Experimental Development" – Frascati Manual. OECD, Paris, 257pp. ISBN 92-64-19903-9.

OECD, (2006) Women in Scientific Careers: Unleashing the Potential. pp. 1-209 (Complete Edition - ISBN 9264025375)

OECD, (2007a) Gender Differences in Student Engagement with Mathematics. Education & Skills, Centre for Educational Research and Innovation, vol. 2006, n°. 14, pp. 158-187.

OECD, (2007b) PISA 2006: Science Competencies for Tomorrow's World: Volume 1 Analysis. Education & Skills , vol. 2007, no. 18, pp. 1-390 (Complete Edition - ISBN 9264040005)

OECD, (2007c) PISA 2006: Science Competencies for Tomorrow's World: Volume 2 Data. Education & Skills , pp. 1-310 (Complete Edition - ISBN 978-92-64-04014-4)

Travail, Genre et Sociétés (journal director: Margaret Maruani), Armand Colin, Paris, special issue 14/2005 "Sciences, recherché et genre", 236 p.

Travail, Genre et Sociétés (journal director: Margaret Maruani), Armand Colin, Paris, special issue 18/2007 "Formation et orientation: l'empreinte du genre", 233 p.

UNESCO (United Nations Educational Scientific and Cultural Organization), (1997), "International Standard Classification of Education, ISCED 1997", UNESCO, Paris, 42pp. BPE-98/WS/1.

Wennerås C. & Wold A., (1997), "Nepotism and sexism in peer review", Nature, vol. 347, pp 341-3.

Visser A., (2004), Women and Science – Review of Indicators and Benchmarks within the Framework of the EQUAL Project "Breaking through the Gender Divide at Universities", Dutch Women's Studies Association, 23pp.

Wilen H., (2006), "Which are the characteristics of Europe's highly qualified human resources?" in Statistics in Focus, OPOCE, Luxembourg, Catalogue number: KS-NS-06-008-EN-N, ISSN 1609-5995.

European Commission

EUR 23856 —She Figures 2009 – *Statistics and Indicators on Gender Equality in Science*

Luxembourg: Publications Office of the European Union

2009 — 158 pp. — 14.8 x 21.0 cm

ISBN 978-92-79-11388-8
doi 10.2777/10329

HOW TO OBTAIN EU PUBLICATIONS

Publications for sale:

- via EU Bookshop (http://bookshop.europa.eu);
- from your bookseller by quoting the title, publisher and/or ISBN number;
- by contacting one of our sales agents directly. You can obtain their contact details on the Internet (http://book shop.europa.eu) or by sending a fax to +352 2929-42758.

Free publications:

- via EU Bookshop (http://bookshop.europa.eu);
- at the European Commission's representations or delegations. You can obtain their contact details on the Internet (http://ec.europa.eu) or by sending a fax to +352 2929-42758.

KI-NA-23856-EN-C

What is the proportion of female and male researchers in Europe and how is this balance evolving over time? In which scientific fields are women better represented? Do the career paths of female and male researchers follow similar patterns? How many senior research positions are held by women in Europe? And is there any age trend that can be observed?

Published by the European Commission's Directorate General for Research in 2003, 2006 and 2009, She Figures is an ongoing work to present statistics and indicators on women in science from tertiary education to the job market. Along with the 27 EU Member States, She Figures covers Croatia, Iceland, Israel, Norway, Switzerland and Turkey. The cooperation of the Member States, Associated Countries, and colleagues from Eurostat in preparing She Figures is gratefully acknowledged.

Publications Office

ISBN 978-92-79-11388-8

9 789279 113888