

Additional quantitative and semi-quantitative information to the report

# **A more research-intensive and integrated European Research Area**

**Science, Technology and Competitiveness  
key figures report 2008/2009**

## **Disclaimer**

This document presents additional quantitative and semi-quantitative data from various sources. Eurostat, OECD and DG Research are the sources for most of the data, however, some data come from projects commissioned by DG Research or DG JRC and these data have not yet been validated by the Commission services. Further methodological verification is needed and the value of these data is mainly explorative, as a first step in an indicators development process.

The presentation of the additional data follows the structure of the Science, Technology and Competitiveness report. The list of graphs and tables complementing each chapter of the report can be found at the beginning of this annex. All chapters do not necessarily have complementary data. Some of the data in this document may form the basis for further analysis, notably in the next edition of the report.

In conclusion, the data provided here may be difficult to interpret, are not exhaustive and need further development. Comments by stakeholders on the coverage, relevance and interpretation of the indicators provided, as well as observations on new indicators that could be employed to improve the measurement of the development of the knowledge intensive economy and of the European Research Area, are welcomed by the Commission services at [RTD-KNOWLEDGE-ECONOMY-ANALYSIS-I@ec.europa.eu](mailto:RTD-KNOWLEDGE-ECONOMY-ANALYSIS-I@ec.europa.eu).

Any quotation of the data in this document should make reference to the above disclaimer.
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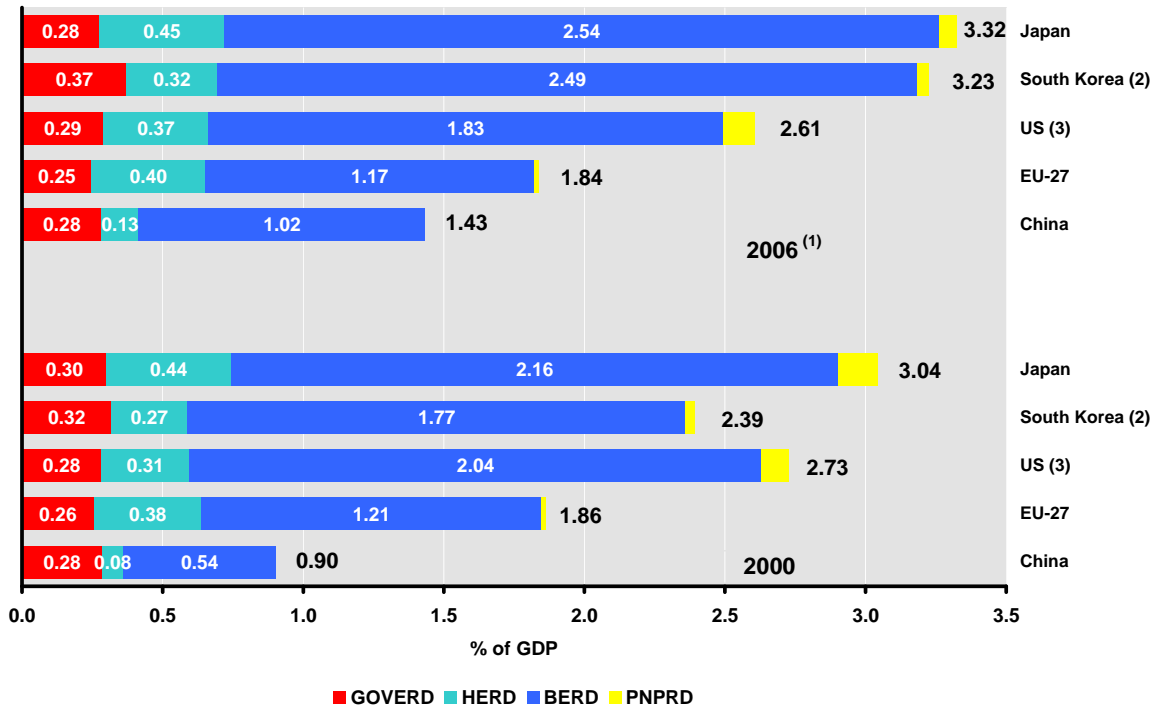
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# Part I: Investment in and performance of R&D in the European Research Area

## 1. Supplementary data on R&D investment

FIGURE I.1.1 R&D intensity broken down by sector of performance, 2000 and 2006<sup>(1)</sup>



Source: DG Research

Data: Eurostat, OECD

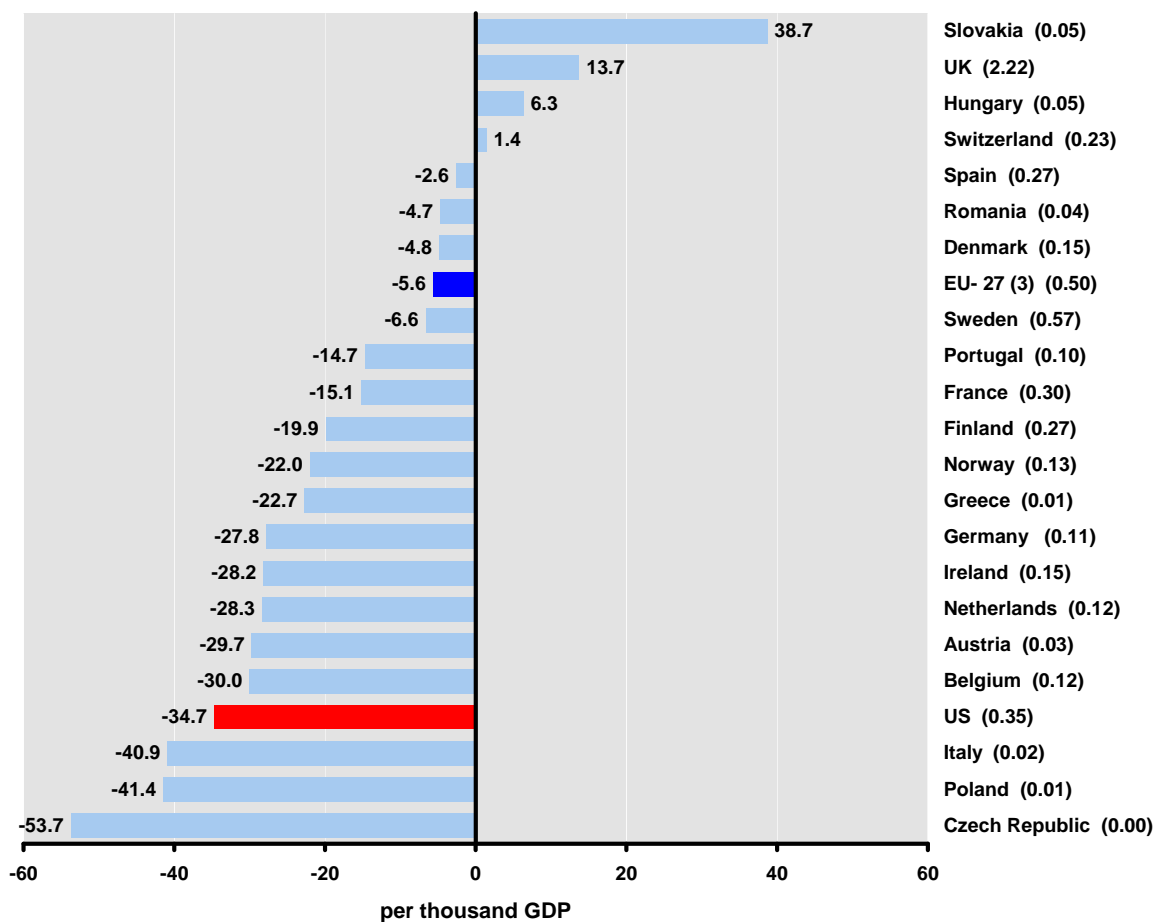
Notes: (1) JP : 2005

(2) KR : R&D in the social sciences and humanities is not included

(3) US : GERD, BERD and HERD do not include most or all capital expenditure; GOVERD refers to federal or central

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**FIGURE I.1.2 Venture Capital - early stage per thousand GDP - average annual growth 2000-2006<sup>(1)</sup>; in brackets early stage per thousand GDP, 2006<sup>(2)</sup>**



Source: DG Research

Data: Eurostat

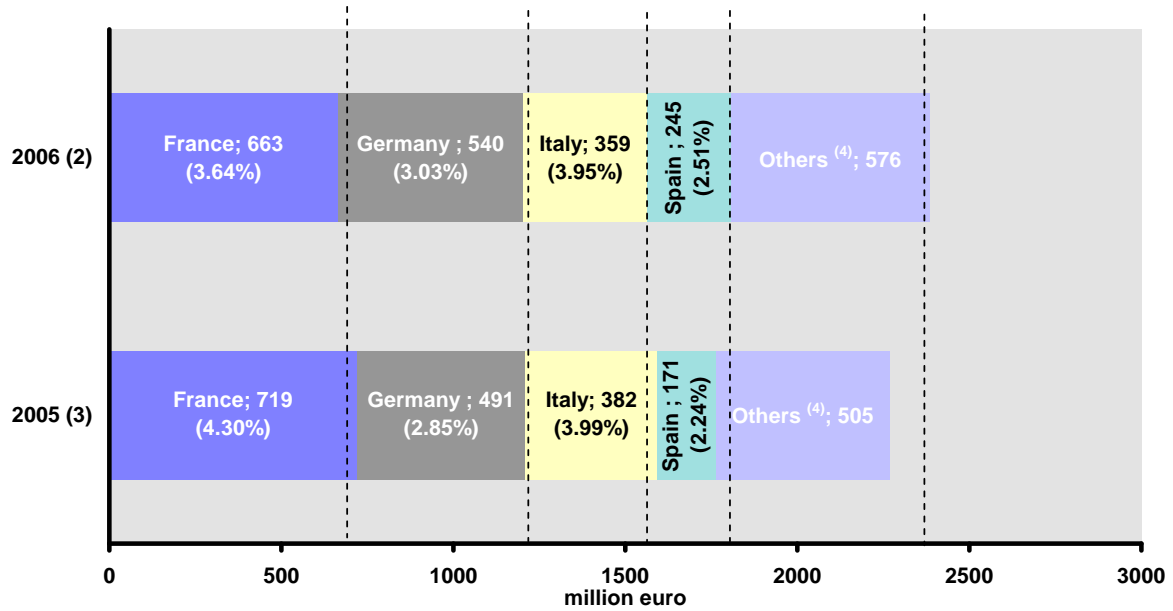
Notes: (1) SK, US : 2000-2005; RO : 2005-2006

(2) SK, US : 2005

(3) EU-27 does not include BG, EE, CY, LV, LT, LU, MT, SI

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**FIGURE I.1.3 Government budget appropriations for energy<sup>(1)</sup> (million euro); in brackets as % of total GBAORD**



Source: DG Research

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Data: Eurostat

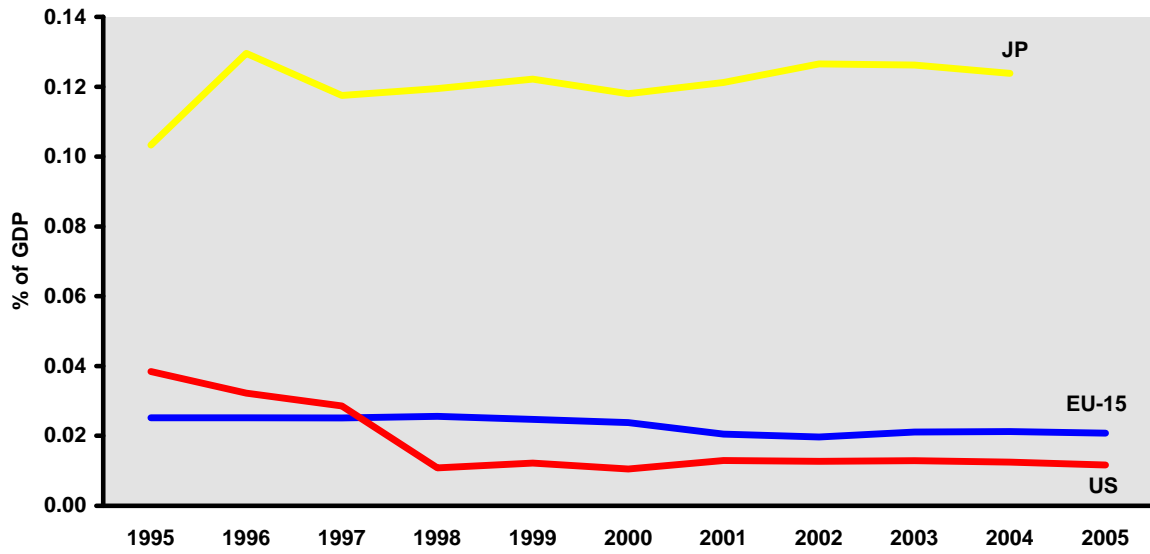
Notes: (1) Production, distribution and rational utilisation of energy (NABS 05)

(2) LV, HU, UK : 2005

(3) CH : 2004

(4) Others: all other EU-27 member states (excluding BG), NO, CH, IS

**FIGURE I.1.4 Evolution of government budget appropriations for energy  
(<sup>1</sup>) as % of GDP**



Source: DG Research

Data: Eurostat

Note: (1) Production, distribution and rational utilisation of energy (NABS 05)

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### **Box I.1.1: Energy specialization in Member States - public expenditure<sup>1</sup>**

The International Energy Agency (IEA) collects data from its members on government R&D expenditure on energy and provides a detailed breakdown by energy sources. This makes it possible to identify the energy technologies favoured by the countries covered in the IEA database. 17 EU Member States are members of the IEA.

In 2005, in the 17 EU Member States for which data are available in the ERA database, nuclear energy research accounted for 40% of total public expenditure on energy, compared to 15% in the US and 64% in Japan. France is the EU Member State with the highest public investment in nuclear research, accounting for 62% of government R&D expenditure on energy, compared with from 0% to one third in the other Member States. In absolute terms, France also has the highest expenditure on non-nuclear research of the 17 Member States. The high share of nuclear research in the French government's R&D energy budget accounts for much of the relatively high share of nuclear research (40%) in the 17 Member States' at aggregated level.

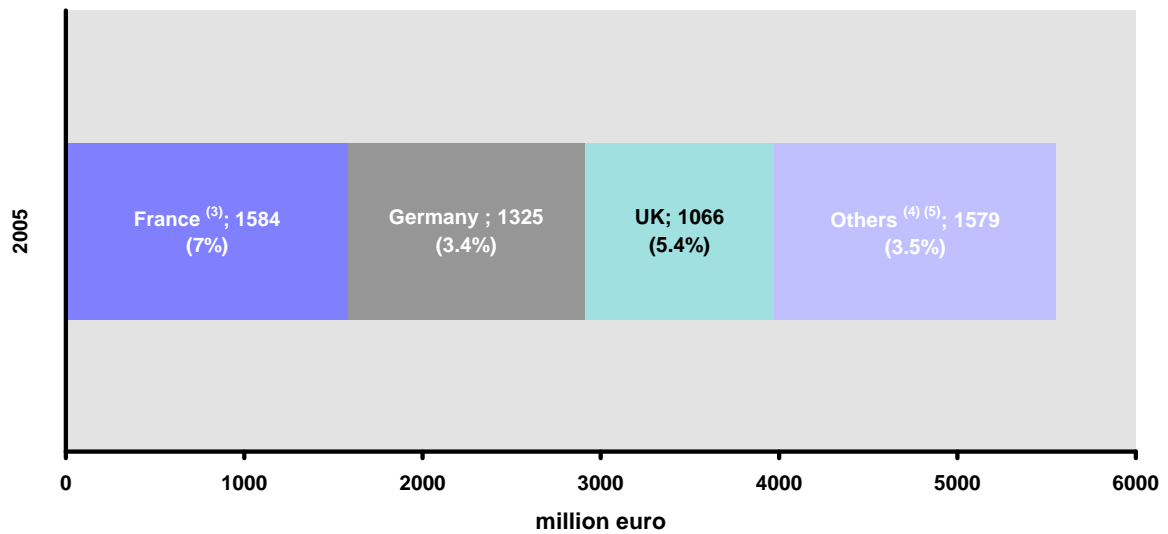
There are large differences between Member States in the setting of priorities. Although some Member States invest in R&D on a wide range of energy technologies, other Member States tend to specialise. For example, Austria and the Netherlands spend about 60% of their R&D energy budgets on energy efficiency and renewables compared to an EU average of 30%. Denmark and Spain spend 16% and 15% of their respective budgets on wind energy; research on solar heating accounts for 52% of the Portuguese budget; and 75% of the Hungarian budget goes to research in bioenergy. Danish spending on research in hydrogen and fuel cells is the second highest in the EU after Germany. The specialisation of some smaller countries can be an important element in the construction of an ERA in non-nuclear energy R&D.

At EU level, most of the R&D funding for energy goes to nuclear research, followed by renewable energies, fossil fuels and energy efficiency. Compared to the US, the EU spends much more on R&D in nuclear energy and renewable energies and less on fossil fuels. Compared to Japan, the 17 EU Member States in the IEA database give a much higher priority to R&D expenditure on renewable energies both in absolute and relative terms.

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<sup>1</sup> This short analysis of Member States' specialization based on IEA data was done in the Staff working document accompanying the SET-Plan (pp 48 to 51).

**FIGURE 1.1.5 Business enterprise expenditure on R&D (BERD)<sup>(1)</sup> in the energy sector<sup>(2)</sup> (million euro), 2005; in brackets: as % of total BERD**



Source: DG Research

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Data: Eurostat, OECD

Notes: (1) BE, FR, UK : R&D by industry served (production field); Other countries : R&D by main activity

(2) NACE sectors : Mining and quarrying; Electrical machinery and apparatus; Coke, refined petroleum products and nuclear fuel; Electricity, gas and water supply

(3) FR: 2004

(4) Other EU-27 Member States (not including DK, LV and LU) and NO

(5) AT refers to 2004 and does not include Coke refined petroleum products and nuclear fuel

(6) IS, CH : Data are not available

### **Box I.1.2: Energy specialization in Member States - private expenditure<sup>2</sup>**

A detailed analysis of private sector expenditure on R&D in the energy sector in individual EU Member States reveals that in 2005 France invested five times more in research in the electricity, gas and water supply sector than the second ranking Member State, Germany (followed by Italy, Spain, Austria and Finland). The high level of expenditure in France is mainly due to the importance of nuclear R&D and complements the 62% of total public expenditure on energy research that is allocated to nuclear research in France (see Box I.1.1). For the same reason, R&D investment in the manufacture of coke, refined petroleum products and nuclear fuels is led by France, followed by Belgium and Spain. Germany shows a clearly decreasing trend, which may reflect a government commitment to phase out nuclear power and the decreasing importance of domestic coal mining. Germany and France have the highest levels of private expenditure on research in the manufacture of electrical machinery, however, Spain is catching up with increasing levels of investment since 2000.

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<sup>2</sup> This short analysis is part of the Staff working document accompanying the SET-Plan, p79.

## 2. Supplementary data on human resources

### Expenditure on education

TABLE I.2.1 Expenditure on educational institutions by source as % of GDP, for all levels of education combined, 2005

	From public sources <sup>(1)</sup>	From private sources <sup>(2)</sup>
Belgium	5.65	0.35
Bulgaria	3.83	0.62
Czech Republic	4.17	0.61
Denmark	6.83	0.57
Germany	4.17	0.92
Estonia	4.81	:
Ireland	4.26	0.29
Greece	3.95	0.25
Spain	4.1	0.53
France	5.45	0.55
Italy	4.23	0.44
Cyprus	6.01	1.21
Latvia	4.74	0.76
Lithuania	4.54	0.49
Luxembourg	3.73	:
Hungary	5.12	0.49
Malta	2.93	0.16
Netherlands	4.59	0.43
Austria	5.04	0.47
Poland	5.38	0.55
Portugal	5.26	0.42
Romania	3.33	0.4
Slovenia	5.31	0.81
Slovakia	3.66	0.7
Finland	5.84	0.13
Sweden	6.19	0.19
UK	5.03	1.25
<b>EU-27</b>	4.73	0.67
Croatia	4.59	0.15
Former Yugoslav Republic of Macedonia	3.31	:
Turkey	3.81	0.11
Iceland	7.12	0.74
Liechtenstein	2.14	:
Norway	5.67	0.05
Switzerland	5.54	0.57
Albania	:	:
<b>US</b>	4.85	2.36
Japan	3.38	1.54

Source: DG Research

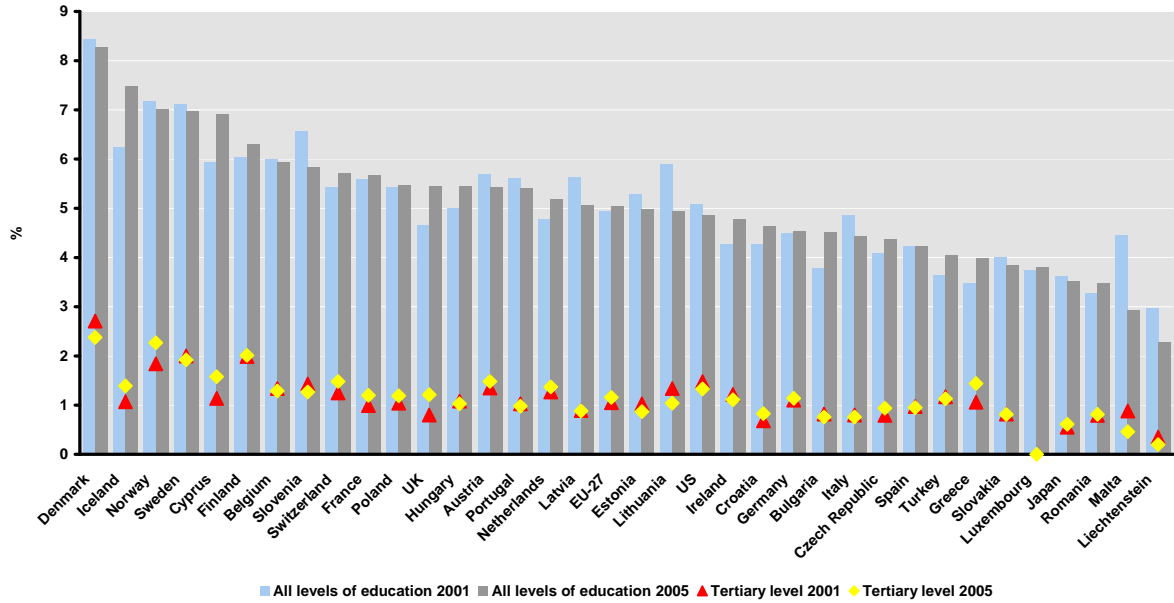
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Data: Eurostat

Notes: (1) MK : 2003; CZ, EE, TR, IS : 2004

(2) HR : 2002; CZ, TR, IS, NO : 2004

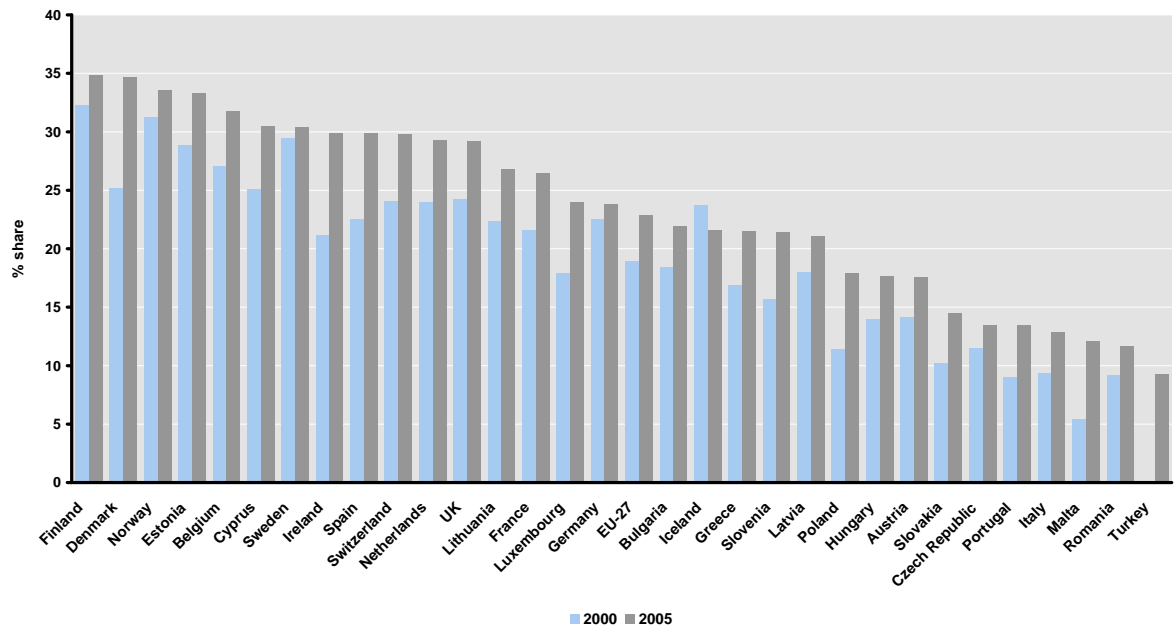
**FIGURE I.2.1 Total public expenditure on education as % of GDP, for all levels of education combined and at tertiary level (ISCED 5-6), 2001<sup>(1)</sup> and 2005<sup>(2)</sup>**



Source: DG Research  
 Data: Eurostat  
 Notes: (1) HR, LI : 2002  
 (2) CZ, EE, TR, IS : 2004

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**FIGURE I.2.2 % share of population aged 25-64 with tertiary education, 2000<sup>(1)</sup> and 2005**



Source: DG Research  
 Data: Eurostat  
 Note: (1) LT : 2001

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## Education inflows

TABLE I.2.2 Graduates from tertiary education by field of education, 2005, and average annual growth, 2000-2005 <sup>(1)</sup>

	All fields		Science		Engineering		Science and Engineering	
	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %
Belgium	79612	3.1	6538	5.5	7589	-0.8	14127	1.8
Bulgaria	46038	-0.3	229	5.4	7429	3.3	9719	3.8
Czech Republic	55055	7.5	4436	1.1	8728	11.1	13164	7.1
Denmark	49704	5.0	416	5.6	5221	-0.3	9381	2.1
Germany	343874	2.6	37452	6.1	55998	1.4	9345	3.1
Estonia	11793	8.8	1251	20.3	1133	2.8	2384	10
Ireland	5965	7.3	9658	1.3	7157	5.7	16815	3.0
Greece	59872	:	8951	:	7374	:	16325	:
Spain	288158	2.1	30471	2.8	4803	4.5	78501	3.8
France	664711	5.5	81783	0.9	97198	4.9	178981	3.0
Italy	297603	8.0	20416	5.6	49124	9.6	6954	8.3
Cyprus	3676	5.5	357	18.0	66	-18.2	423	4.7
Latvia	26124	11.4	1244	4.6	2036	7.2	328	6.2
Lithuania	41466	10.4	2142	11.8	689	5.2	9032	6.6
Luxembourg	:	:	:	:	:	:	:	:
Hungary	73769	4.3	2638	13.9	5217	-2.2	7855	1.8
Malta	2741	6.5	105	4.8	101	-0.4	206	2.1
Netherlands	106684	6.1	7983	13.6	894	1.6	16923	6.3
Austria	32925	5.7	3377	12.6	6704	3.5	10081	6.1
Poland	501393	7.5	33531	23.5	37304	6.2	70835	12.5
Portugal	70023	5.2	8111	20.9	10585	8.8	18696	13.1
Romania	156565	18.2	7769	13.0	27501	16.4	3527	15.6
Slovenia	15787	6.5	638	11.8	2259	0.1	2897	2.0
Slovakia	36337	9.9	33	18.6	6085	12.9	9385	14.7
Finland	3927	1.7	3439	4.7	8329	2.5	11768	3.1
Sweden	57611	6.3	4704	2.6	10623	3.8	15327	3.4
UK	633042	4.7	89059	1.0	50704	-1.9	139763	-0.1
<b>EU-27</b>	<b>3753483</b>	<b>5.9</b>	<b>375803</b>	<b>5.0</b>	<b>478325</b>	<b>4.6</b>	<b>854128</b>	<b>4.8</b>
Croatia	19548	:	1179	:	2319	:	3498	:
Former Yugoslav Republic of Macedonia	5687	8.0	479	10.1	802	-1.9	1281	1.7
Turkey	271841	7.4	25308	7.6	51145	5.3	76453	6.0
Iceland	2914	10.4	262	1.7	168	8.8	430	4.1
Liechtenstein	132	:	10	:	46	:	56	:
Norway	31929	1.3	2607	1.1	2449	0.8	5056	1.0
Switzerland	63372	3.2	5935	-1.0	8639	5.5	14574	2.7
Albania	:	:	:	:	:	:	:	:
<b>US</b>	<b>2557595</b>	<b>3.5</b>	<b>239722</b>	<b>4.7</b>	<b>189938</b>	<b>1.2</b>	<b>42966</b>	<b>3.1</b>
Japan	1059386	-0.4	30684	2.8	19567	-1.4	226354	-0.9

Source: DG Research  
Data: Eurostat  
Note: (1) CH : 2002-2005

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TABLE I.2.3 Total population, population aged 20-29 and share of age group 20-29 in total, 2000 and 2005 and average annual growth between 2000 and 2005

	Total population			Population aged 20-29			Share of age-group 20-29 in total		
	2000	2005	Average annual growth 2000-2005 %	2000	2005	Average annual growth 2000-2005 %	2000	2005	Average annual growth 2000-2005 %
Belgium	10251250	10478617	0.44	1320362	1301231	-0.29	12.9	12.4	-0.73
Bulgaria	8170172	7739900	-1.08	1224399	1118660	-1.79	15.0	14.5	-0.72
Czech Republic	10272322	10235828	-0.07	1717148	1581080	-1.64	16.7	15.4	-1.57
Denmark	5339616	5419432	0.30	717193	631522	-2.51	13.4	11.7	-2.80
Germany	82211508	82469422	0.06	9661733	9670675	0.02	11.8	11.7	-0.04
Estonia	1369515	1346097	-0.34	189328	197730	0.87	13.8	14.7	1.22
Ireland	3805368	4159096	1.79	605499	702090	3.00	15.9	16.9	1.19
Greece	10917482	11103965	0.34	1680916	1594526	-1.05	15.4	14.4	-1.38
Spain	40263216	43398143	1.51	6605056	6620017	0.05	16.4	15.3	-1.44
France	60750876	62818185	0.67	8128936	7992216	-0.34	13.4	12.7	-1.00
Italy	56942108	58607043	0.58	7989188	7053382	-2.46	14.0	12.0	-3.02
Cyprus	694023	757795	1.77	99463	122567	4.27	14.3	16.2	2.45
Latvia	2372985	2300512	-0.62	325555	335829	0.62	13.7	14.6	1.25
Lithuania	3499536	3414304	-0.49	481659	481264	-0.02	13.8	14.1	0.48
Luxembourg	436300	465158	1.29	56639	58558	0.67	13.0	12.6	-0.61
Hungary	10210971	10087065	-0.24	1596268	1513395	-1.06	15.6	15.0	-0.82
Malta	385808	403837	0.92	55747	59796	1.41	14.4	14.8	0.49
Netherlands	15925513	16319868	0.49	2106835	1959449	-1.44	13.2	12.0	-1.92
Austria	8011566	8236225	0.55	1027063	1040204	0.25	12.8	12.6	-0.30
Poland	38453757	38165445	-0.15	5914014	6396584	1.58	15.4	16.8	1.73
Portugal	10225836	10549424	0.63	1590960	1533881	-0.73	15.6	14.5	-1.34
Romania	22442971	21634371	-0.73	3766568	3403340	-2.01	16.8	15.7	-1.29
Slovenia	1988925	2000474	0.12	296493	293668	-0.19	14.9	14.7	-0.31
Slovakia	5388720	5387001	-0.01	897867	920842	0.51	16.7	17.1	0.51
Finland	5176209	5246096	0.27	632973	664664	0.98	12.2	12.7	0.71
Sweden	8872109	9029572	0.35	1112206	1069680	-0.78	12.5	11.8	-1.13
UK	58892514	60226500	0.45	7560081	7692900	0.35	12.8	12.8	-0.10
<b>EU-27</b>	<b>483271172</b>	<b>491999371</b>	<b>0.36</b>	<b>67226599</b>	<b>66009738</b>	<b>-0.36</b>	<b>13.9</b>	<b>13.4</b>	<b>-0.72</b>
Croatia	4441700	4443393	0.01	611600	617114	0.18	13.8	13.9	0.17
Former Yugoslav Republic of Macedonia	2026345	2036855	0.10	319862	322613	0.17	15.8	15.8	0.07
Turkey	67392503	72064992	1.35	13064286	13374847	0.47	19.4	18.6	-0.87
Iceland	281205	296734	1.08	42373	43071	0.33	15.1	14.5	-0.75
Liechtenstein	32645	34753	1.26	4572	4411	-0.71	14.0	12.7	-1.95
Norway	4490967	4623291	0.58	606409	563489	-1.46	13.5	12.2	-2.03
Switzerland	7184250	7437115	0.69	890692	907655	0.38	12.4	12.2	-0.31

Source: DG Research  
Data: Eurostat

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TABLE I.2.4 Doctoral graduates by field of education, 2005 <sup>(1)</sup>, and average annual growth, 2000-2005 <sup>(2)</sup>

	All fields		Science		Engineering		Science and Engineering	
	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %	Total 2005	Average annual growth 2000-2005 %
Belgium	1601	6.9	574	3.7	250	10.3	824	5.4
Bulgaria	528	5.8	89	0.7	85	14.6	174	6.2
Czech Republic	1908	16.3	482	8.1	502	22.2	984	14.0
Denmark	955	3.7	210	2.0	199	-0.8	409	0.6
Germany	25952	0.1	6691	-1.9	2345	-0.8	9036	-1.7
Estonia	131	2.3	38	1.1	25	33.0	63	8.4
Ireland	810	10.1	359	9.0	103	16.0	462	10.4
Greece	1248	0.0	519	0.0	251	0.0	770	0.0
Spain	6902	2.8	1962	2.2	628	9.0	2590	3.6
France	9578	-1.6	4433	-2.3	941	-0.3	5374	-2.0
Italy	8466	20.3	2337	23.3	1539	13.8	3876	18.9
Cyprus	5	-17.4	3	0.0	0	0.0	3	0.0
Latvia	114	23.3	20	14.9	39	19.5	59	17.8
Lithuania	321	-6.2	50	-4.8	56	-10.4	106	-8
Hungary	1069	8.3	157	-4.1	46	-14.9	203	-7.3
Malta	5	-3.6	0	0.0	0	0.0	0	0
Netherlands	2879	3.0	508	2.6	557	7.1	1065	4.8
Austria	2228	4.5	492	3.6	405	3.6	897	3.6
Poland	5722	6.8	907	6.4	927	8.1	1834	7.2
Portugal	415	10.6	1117	22.5	610	7.9	1727	16.0
Romania	3871	22.5	214	88.9	330	-28.6	544	-12.3
Slovenia	369	4.5	92	10.8	87	6.3	179	8.5
Slovakia	1022	18.0	210	22.2	206	17.2	416	19.6
Finland	1957	1.7	410	3.5	386	3.8	796	3.6
Sweden	2778	-1.8	582	-3.3	626	-5.7	1208	-4.6
UK	15778	6.4	4994	3.1	2252	3.9	7246	3.3
<b>EU-27</b>	<b>100347</b>	<b>4.8</b>	<b>27450</b>	<b>2.8</b>	<b>13395</b>	<b>5.2</b>	<b>40845</b>	<b>3.5</b>
Croatia	385	9.5	95	16.5	72	3.4	167	12.9
Former Yugoslav Republic of Macedonia	92	22.0	11	6.6	13	7.6	24	7.1
Turkey	2838	6.0	453	8.3	432	5.4	885	6.8
Iceland	14	47.6	1	0.0	1	0.0	2	0.0
Norway	838	5.0	247	103.9	124	10.6	371	35.2
Switzerland	2952	2.7	979	5.9	340	1.8	1319	4.8
<b>US</b>	<b>52631</b>	<b>3.3</b>	<b>11987</b>	<b>2.2</b>	<b>6780</b>	<b>4.2</b>	<b>18767</b>	<b>2.9</b>
Japan	15286	4.6	2404	6.5	3341	2.2	5745	3.9

Source: DG Research

STC key figures report 2008

Data: Eurostat

Notes: (1) IT, CH (All fields) : 2004

(2) IT : 2000-2004; PL : 2001-2005; CH (All fields) : 2002-2004; CH (Science and Engineering) : 2002-2005; RO, HR : 2003-2005

(3) Values in italics are estimates

**TABLE I.2.5 Science and Engineering doctoral graduates - % shares, 2005<sup>(1)</sup>**

	Science	Engineering	Science and Engineering
Belgium	35.9	15.6	51.5
Bulgaria	16.9	16.1	33.0
Czech Republic	25.3	26.3	51.6
Denmark	22.0	20.8	42.8
Germany	25.8	9.0	34.8
Estonia	29.0	19.1	48.1
Ireland	44.3	12.7	57.0
Greece	41.6	20.1	61.7
Spain	28.4	9.1	37.5
France	46.3	9.8	56.1
Italy	27.6	18.2	45.8
Cyprus	60.0	0.0	60.0
Latvia	17.5	34.2	51.8
Lithuania	15.6	17.4	33.0
Hungary	14.7	4.3	19.0
Malta	0.0	0.0	0.0
Netherlands	17.6	19.3	37.0
Austria	22.1	18.2	40.3
Poland	15.9	16.2	32.1
Portugal	26.9	14.7	41.6
Romania	5.5	8.5	14.1
Slovenia	24.9	23.6	48.5
Slovakia	20.5	20.2	40.7
Finland	21.0	19.7	40.7
Sweden	21.0	22.5	43.5
UK	31.7	14.3	45.9
<b>EU-27</b>	<i>27.4</i>	<i>13.3</i>	<i>40.7</i>
Croatia	24.7	18.7	43.4
Former Yugoslav Republic of Macedonia	12.0	14.1	26.1
Turkey	16.0	15.2	31.2
Iceland	7.1	7.1	14.3
Norway	29.5	14.8	44.3
Switzerland	33.2	11.5	44.7
<b>US</b>	22.8	12.9	35.7
<b>Japan</b>	15.7	21.9	37.6

Source: DG Research

STC key figures report 2008

Data: Eurostat

Notes: (1) IT : 2004

(2) Values in italics are estimates

## Human resources for S&T (HRST) and researchers

TABLE I.2.6 Human Resources for Science and Technology and sub-groups, 2006  
Totals (thousands), and as % of labour force

	HRST <sup>(1)</sup>		HRSTE <sup>(2)</sup>		HRSTO <sup>(3)</sup>		HRSTC <sup>(4)</sup>		S&E <sup>(5)</sup>	
	Total	as % of labour force	Total	as % of labour force	Total	as % of labour force	Total	as % of labour force	Total	as % of labour force
Belgium	2183	46.6	1799	37.4	1303	31.2	919	22.0	335	8.0
Bulgaria	1069	30.5	922	25.8	635	20.6	488	15.9	96	3.1
Czech Republic	1736	34.8	806	15.0	1467	31.3	537	11.5	164	3.5
Denmark	1333	50.4	1026	37.8	983	40.2	676	27.6	163	6.6
Germany	16708	43.2	10649	26.4	12474	34.5	6416	17.7	2156	6.0
Estonia	281	44.1	235	36.3	152	26.0	106	18.2	26	4.4
Ireland	772	40.1	677	34.6	419	24.2	324	18.7	138	7.9
Greece	1496	30.8	1279	25.8	970	22.0	754	17.1	194	4.4
Spain	8442	39.8	7526	35.0	4435	23.4	3519	18.6	911	4.8
France	11122	41.1	8390	29.9	7299	29.9	4567	18.7	1342	5.5
Italy	8359	34.6	4206	16.0	6785	30.4	2633	11.8	713	3.2
Cyprus	143	40.2	124	34.2	85	26.0	65	20.0	16	4.8
Latvia	365	34.8	257	23.8	250	25.6	142	14.5	37	3.8
Lithuania	588	38.3	479	30.6	353	24.8	245	17.2	65	4.5
Luxembourg	89	43.0	61	28.1	74	38.7	45	23.9	10	5.3
Hungary	1402	31.9	984	21.2	987	25.4	569	14.6	161	4.1
Malta	44	30.8	26	17.0	35	26.6	17	12.8	5	3.9
Netherlands	3716	48.1	2638	32.9	2719	38.3	1.64	23.1	453	6.4
Austria	1432	38.3	800	20.2	1075	30.8	443	12.7	118	3.4
Poland	5051	31.4	3669	22.0	3577	24.3	2194	14.9	782	5.3
Portugal	1105	22.0	787	15.3	842	17.9	524	11.1	146	3.1
Romania	2095	22.8	1378	14.5	1652	19.3	935	10.9	367	4.3
Slovenia	368	38.8	245	25.0	286	32.0	162	18.2	50	5.6
Slovakia	797	31.6	437	16.2	634	27.0	274	11.7	67	2.8
Finland	1234	48.7	995	38.3	789	34.4	550	24.0	166	7.2
Sweden	2098	48.0	1461	32.4	1641	40.0	1005	24.5	292	7.1
UK	11395	42.4	9164	33.4	6935	28.0	4704	19.0	1369	5.5
<b>EU-27</b>	<b>85422</b>	<b>38.6</b>	<b>61021</b>	<b>26.6</b>	<b>58856</b>	<b>29.0</b>	<b>34455</b>	<b>17.0</b>	<b>10338</b>	<b>5.1</b>
Turkey	4216	18.4	3282	13.6	2422	12.5	1488	7.7	317	1.6
Iceland	61	42.8	33	22.5	50	36.4	22	16.1	12	8.5
Norway	1079	48.9	836	37.1	809	39.3	565	27.4	111	5.4
Switzerland	1883	50.8	1250	32.8	1396	39.7	763	21.7	286	8.1

Source: DG Research

STC key figures report 2008

Data: Eurostat

Notes: (1) HRST : Human Resources in Science and Technology

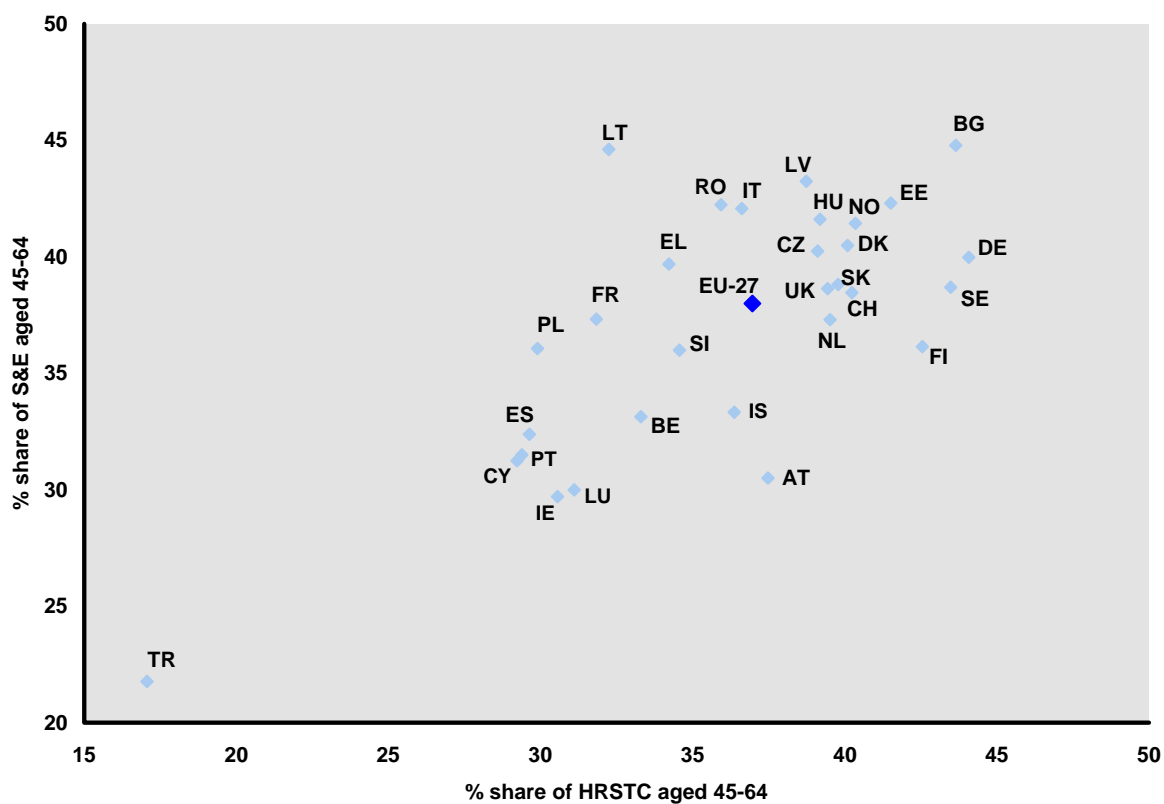
(2) HRSTE : Human Resources in Science and Technology - Education

(3) HRSTO : Human Resources in Science and Technology - Occupation

(4) HRSTC : Human Resources in Science and Technology - Core

(5) S&E : Scientists and Engineers

**FIGURE I.2.3 Shares (%) of Human Resources in Science and Technology Core (HRSTC) and Scientists and Engineers (S&E) aged 45-64, 2006**



Source: DG Research  
Data: Eurostat

STC key figures report 2008

**TABLE I.2.7 Human Resources in Science and Technology Core (HRSTC) and Scientists and Engineers (S&E) - total aged 45-64, and as % of age group 25-64, 2006**

	HRSTC aged 45-64		S&E aged 45-64	
	Total	as % of HRSTC aged 25-64	Total	as % of S&E aged 25-64
Belgium	306	33.3	111	33.1
Bulgaria	213	43.6	43	44.8
Czech Republic	210	39.1	66	40.2
Denmark	271	40.1	66	40.5
Germany	2828	44.1	862	40.0
Estonia	44	41.5	11	42.3
Ireland	99	30.6	41	29.7
Greece	258	34.2	77	39.7
Spain	1043	29.6	295	32.4
France	1454	31.8	501	37.3
Italy	964	36.6	300	42.1
Cyprus	19	29.2	5	31.3
Latvia	55	38.7	16	43.2
Lithuania	79	32.2	29	44.6
Luxembourg	14	31.1	3	30.0
Hungary	223	39.2	67	41.6
Malta	4	23.5	:	:
Netherlands	648	39.5	169	37.3
Austria	166	37.5	36	30.5
Poland	656	29.9	282	36.1
Portugal	154	29.4	46	31.5
Romania	336	35.9	155	42.2
Slovenia	56	34.6	18	36.0
Slovakia	109	39.8	26	38.8
Finland	234	42.5	60	36.1
Sweden	437	43.5	113	38.7
UK	1855	39.4	529	38.6
<b>EU-27</b>	<b>12736</b>	<b>37.0</b>	<b>3928</b>	<b>38.0</b>

Source: DG Research  
Data: Eurostat

STC key figures report 2008

TABLE I.2.8 Researchers (FTE) - total and % distribution by main institutional sector, 2006 <sup>(1)</sup>

	Total All Sectors	Business Enterprise		Higher Education		Government	
		Total	%	Total	%	Total	%
Belgium	33924	17140	50.5	14032	41.4	2499	7.4
Bulgaria	10336	1304	12.6	2756	26.7	6148	59.5
Czech Republic	26267	11290	43.0	8352	31.8	6564	25.0
Denmark	28653	17377	60.6	8893	31.0	2190	7.6
Germany	282063	171063	60.6	71000	25.2	40000	14.2
Estonia	3513	876	24.9	2042	58.1	513	14.6
Ireland	12167	7000	57.5	4670	38.4	497	4.1
Greece	19907	5397	27.1	12110	60.8	2259	11.3
Spain	115798	39936	34.5	55443	47.9	20063	17.3
France	204484	108814	53.2	66290	32.4	25889	12.7
Italy	82489	27939	33.9	37073	44.9	14454	17.5
Cyprus	755	175	23.2	430	57.0	115	15.2
Latvia	4024	777	19.3	2648	65.8	598	14.9
Lithuania	8036	877	10.9	5452	67.8	1707	21.2
Luxembourg	2346	1734	73.9	225	9.6	387	16.5
Hungary	17547	6248	35.6	6073	34.6	5226	29.8
Malta	475	220	46.3	238	50.1	17	3.6
Netherlands	45852	27790	60.6	:	:	7131	15.6
Austria	30452	19368	63.6	9716	31.9	1208	4.0
Poland	59573	9344	15.7	37653	63.2	12438	20.9
Portugal	21126	4014	19.0	10956	51.9	3338	15.8
Romania	20506	7708	37.6	7137	34.8	5585	27.2
Slovenia	5834	2262	38.8	1740	29.8	1804	30.9
Slovakia	11776	1901	16.1	7370	62.6	2494	21.2
Finland	40411	22721	56.2	12849	31.8	4470	11.1
Sweden	55729	37700	67.6	14740	26.4	3041	5.5
UK	183534	95052	51.8	:	:	9311	5.1
<b>EU-27</b>	1300990	641278	49.3	462905	35.6	180386	13.9
Croatia	5232	721	13.8	2874	54.9	1634	31.2
Turkey	39139	9456	24.2	25434	65.0	4249	10.9
Iceland	2155	1012	47.0	585	27.1	501	23.2
Norway	21653	10692	49.4	7512	34.7	3449	15.9
Switzerland	25400	12640	49.8	12335	48.6	425	1.7
Russian Federation	464357	236792	51.0	72310	15.6	153629	33.1
<b>US</b>	1387882	1097700	79.1	:	:	:	:
Japan	709691	483339	68.1	184319	26.0	33593	4.7

Source: DG Research

STC key figures report 2008

Data: Eurostat, OECD

Note: (1) CH : 2004; FR, IT, PT, TR, IS, NO, US : 2005

## Part II: Integration of the European Research Area

### 1. Supplementary data on higher education

TABLE II.1.1 Key data on the higher education sector, 2000 and 2006

	HERD as % of GERD <sup>(1)</sup>		Higher Education researchers (FTE) <sup>(5)</sup>			
	2000 <sup>(2)</sup>	2006 <sup>(3)</sup>	Total		as % of total for all sectors	
			2000 <sup>(6)</sup>	2006 <sup>(7)</sup>	2000 <sup>(6)</sup>	2006 <sup>(7)</sup>
Belgium	20.2	22.3	11778	14417	38.6	41.3
Bulgaria	9.9	9.6	1886	2756	19.9	26.7
Czech Republic	14.2	15.9	3768	8352	27.2	31.8
Denmark	23.0	26.1	7379	8763	28.9	30.4
Germany	16.1	16.3	67087	66903	26.0	23.9
Estonia	52.4	40.6	1806	2042	67.7	58.1
Ireland	20.2	26.4	2473	4672	27.6	38.4
Greece	44.9	47.8	8544	12110	59.5	60.8
Spain	29.6	27.6	42064	55443	54.9	47.9
France	18.6	18.2	61583	67935	35.8	32.2
Italy	31.0	30.2	25696	37073	38.9	44.9
Cyprus	24.8	41.7	128	435	42.2	58.2
Latvia	37.6	34.5	2156	2648	56.5	65.8
Lithuania	36.5	49.2	4932	5452	63.4	67.8
Luxembourg	0.2	2.4	22	159	1.3	7.7
Hungary	24.0	24.4	5852	6073	40.6	34.6
Malta	31.3	33.4	203	238	74.6	45.8
Netherlands	27.8	28.2	15480	10931	36.8	23.1
Austria	27.0	26.7	6977	9261	28.9	31.7
Poland	31.5	31.0	34246	37653	62.1	63.2
Portugal	37.5	35.4	8592	12026	51.3	49.0
Romania	11.8	17.7	2542	7137	12.4	34.8
Slovenia	16.6	15.1	1340	1763	30.9	30.1
Slovakia	9.5	24.1	5009	7370	50.3	62.6
Finland	17.8	18.7	13037	12849	31.8	31.8
Sweden	19.8	20.4	15851	14740	34.5	26.4
UK	20.6	26.1	49023	:	31.1	:
<b>EU-27</b>	<b>20.6</b>	<b>21.9</b>	<b>394864</b>	<b>460647</b>	<b>35.8</b>	<b>35.1</b>
Croatia	35.1	36.6	5297	3128	61.8	54.1
Turkey	60.4	51.3	16902	26713	73.2	62.6
Iceland	16.2	22.0	515	585	27.7	27.1
Norway	25.7	30.2	5670	7870	28.3	34.1
Switzerland	22.9	22.9	9425	12335	36.1	48.6
Russian Federation	4.5	6.1	72264	72310	14.3	15.6
<b>US <sup>(4)</sup></b>	<b>11.5</b>	<b>14.3</b>	<b>186049</b>	<b>:</b>	<b>14.8</b>	<b>:</b>
Japan	14.5	12.7	170512	184319	26.4	26.0
China	8.6	9.2	147866	236578	21.3	19.3

Source: DG Research

STC key figures report 2008

Data: Eurostat, OECD

Notes: (1) FR, IT, SE : There is a break in series between the two years

(2) EL, SE, NO : 2001; DK, AT, HR : 2002; FR, MT : 2004

(3) CH : 2004; IT, PT, IS : 2005; IE; FI : 2007

(4) US : HERD as % of GERD does not include most or all capital expenditure

(5) CZ, DE, IT, SE : There is a break in series between the two years

(6) UK : 1998; US : 1999; IE, EL, SE, IS, NO : 2001; DK, MT, AT, HR; JP : 2002; FI : 2004

(7) CH : 2004; IT, IS : 2005

(8) Values in italics are estimated or provisional

**TABLE II.1.2 Scientific production and visibility of the top 171 European Research Universities measured as the number of scientific publications (1997-2006) and the field-normalized average impact**

Country	University	Scientific Production Rank	Scientific Production	Citation Index Rank	Scientific visibility CPP / FCSm <sup>(1)</sup>
Belgium	KATHOLIEKE UNIV LEUVEN	10	29728	39	1.25
Belgium	UNIV ANTWERPEN	112	9985	92	1.10
Belgium	UNIV CATHOLIQUE LOUVAIN	89	12120	34	1.27
Belgium	UNIV GENT	40	18950	68	1.15
Belgium	UNIV LIBRE BRUXELLES	92	12032	77	1.14
Belgium	UNIV LIEGE	113	9748	118	1.03
Belgium	VRIJE UNIV BRUSSEL	162	7219	134	0.98
Czech Republic	CHARLES UNIV PRAGUE	82	13050	169	0.65
Denmark	AARHUS UNIV	34	19510	44	1.22
Denmark	KOBENHAVNS UNIV	5	31716	49	1.20
Denmark	TECH UNIV DENMARK	85	12505	5	1.55
Denmark	UNIV SOUTHERN DENMARK	153	7558	24	1.35
Germany	BJM UNIV WURZBURG	60	15738	90	1.10
Germany	CHRISTIAN ALBRECHTS UNIV KIEL	77	13779	95	1.08
Germany	EK UNIV TUBINGEN	36	19439	105	1.06
Germany	FREIE UNIV BERLIN	57	16423	127	1.00
Germany	FRIEDRICH ALEXANDER UNIV ERLANGEN	53	17130	84	1.12
Germany	FRIEDRICH SCHILLER UNIV JENA	97	11285	157	0.85
Germany	GA UNIV GOTTINGEN	58	16271	128	1.00
Germany	HEINRICH HEINE UNIV DUSSELDORF	86	12297	70	1.15
Germany	HUMBOLDT UNIV BERLIN	23	23086	79	1.13
Germany	JG UNIV MAINZ	64	15329	48	1.21
Germany	JOHANN WOLFGANG GOETHE UNIV FRANKFORT	69	14504	42	1.23
Germany	JUSTUS LIEBIG UNIV GIESSEN	105	10552	151	0.92
Germany	LMU UNIV MUNCHEN	8	30094	74	1.14
Germany	MED HOCHSCHULE HANNOVER	124	9280	102	1.07
Germany	RFW UNIV BONN	50	17638	114	1.03
Germany	RUHR UNIV BOCHUM	74	13834	148	0.93
Germany	TECH UNIV BERLIN	132	8606	63	1.18
Germany	TECH UNIV DARMSTADT	147	7845	139	0.96
Germany	TECH UNIV DRESDEN	100	10892	149	0.93
Germany	TECH UNIV MUNCHEN	33	20102	22	1.38
Germany	UNIV AACHEN (RWTH)	62	15457	100	1.07
Germany	UNIV DUISBURG ESSEN	87	12225	122	1.02
Germany	UNIV FREIBURG	54	16964	59	1.19
Germany	UNIV HALLE WITTENBERG	129	8995	160	0.83
Germany	UNIV HAMBURG	45	18282	75	1.14
Germany	UNIV HEIDELBERG	18	24907	56	1.19
Germany	UNIV KARLSRUHE (TH)	110	10066	18	1.39
Germany	UNIV KOLN	72	14046	129	1.00
Germany	UNIV LEIPZIG	84	12510	159	0.84
Germany	UNIV MARBURG	93	11937	117	1.03
Germany	UNIV MUNSTER	56	16625	107	1.05
Germany	UNIV REGENSBURG	117	9548	97	1.08
Germany	UNIV SAARLANDES	137	8436	150	0.93
Germany	UNIV STUTTGART	128	9026	60	1.19
Germany	UNIV ULM	94	11739	96	1.08
Ireland	UNIV COLL DUBLIN, NATL UNIV IRELAND	155	7539	123	1.02
Greece	ARISTOTLE UNIV THESSALONIKI	106	10473	165	0.73
Greece	NATL & KAPODISTRIAN UNIV ATHENS	70	14214	167	0.72
Spain	UNIV AUTONOMA BARCELONA	71	14175	132	0.99
Spain	UNIV AUTONOMA MADRID	67	14792	115	1.03
Spain	UNIV BARCELONA	26	21879	104	1.06
Spain	UNIV COMPLUTENSE MADRID	41	18670	156	0.85
Spain	UNIV GRANADA	127	9089	163	0.80
Spain	UNIV PAIS VASCO	149	7717	158	0.85
Spain	UNIV SANTIAGO COMPOSTELA	122	9330	161	0.82
Spain	UNIV SEVILLA	120	9359	166	0.73
Spain	UNIV VALENCIA	79	13408	116	1.03
Spain	UNIV ZARAGOZA	148	7744	152	0.90

TABLE II.1.2 (contd.) Scientific production and visibility of the top 171 European Research Universities measured as the number of scientific publications (1997-2006) and the field-normalized average impact

Country	University	Scientific Production Rank	Scientific Production	Citation Index Rank	Scientific visibility CPP / FCSm <sup>(1)</sup>
France	UNIV AIX MARSEILLE II MEDITERRANEE	88	12122	147	0.94
France	UNIV BORDEAUX I SCI TECHNOL	150	7641	94	1.09
France	UNIV GRENOBLE I JOSEPH FOURIER	81	13099	85	1.12
France	UNIV LYON I CLAUDE BERNARD	65	15234	121	1.02
France	UNIV MONTPELLIER II	116	9627	108	1.05
France	UNIV NANCY I HENRI POINCARÉ	142	8255	164	0.80
France	UNIV NANTES	167	6888	125	1.01
France	UNIV PARIS V RENE DESCARTES	80	13397	69	1.15
France	UNIV PARIS VI P&M CURIE	6	30703	82	1.12
France	UNIV PARIS VII DENIS DIDEROT	76	13808	91	1.10
France	UNIV PARIS XI SUD	19	24410	78	1.13
France	UNIV RENNES I	140	8394	130	1.00
France	UNIV STRASBOURG I L PASTEUR	138	8417	64	1.18
France	UNIV TOULOUSE III	43	18441	131	0.99
Italy	UNIV BARI	135	8563	138	0.96
Italy	UNIV BOLOGNA	27	21531	126	1.00
Italy	UNIV CATANIA	161	7230	162	0.81
Italy	UNIV CATTOLICA SACRO CUORE	158	7413	145	0.95
Italy	UNIV FERRARA	168	6845	135	0.98
Italy	UNIV FIRENZE	68	14588	124	1.01
Italy	UNIV GENOVA	91	12046	142	0.95
Italy	UNIV MILANO	9	30063	86	1.11
Italy	UNIV NAPOLI FEDERICO II	51	17493	140	0.95
Italy	UNIV PADOVA	32	20110	120	1.02
Italy	UNIV PARMA	165	6959	119	1.03
Italy	UNIV PAVIA	111	10035	112	1.04
Italy	UNIV PERUGIA	152	7579	89	1.11
Italy	UNIV PISA	66	15122	141	0.95
Italy	UNIV ROMA SAPIENZA	14	28380	146	0.94
Italy	UNIV ROMA TOR VERGATA	107	10367	137	0.96
Italy	UNIV TORINO	73	14023	111	1.04
Italy	UNIV TRIESTE	164	6981	103	1.07
Netherlands	DELFT UNIV TECHNOL	90	12095	14	1.45
Netherlands	EINDHOVEN UNIV TECHNOL	143	8225	9	1.48
Netherlands	ERASMUS UNIV ROTTERDAM	48	18138	10	1.47
Netherlands	LEIDEN UNIV	28	21462	38	1.26
Netherlands	RADBOUD UNIV NIJMEGEN	46	18217	58	1.19
Netherlands	UNIV AMSTERDAM	17	25303	25	1.34
Netherlands	UNIV GRONINGEN	37	19074	32	1.27
Netherlands	UNIV MAASTRICHT	95	11571	41	1.24
Netherlands	UNIV UTRECHT	12	29551	20	1.38
Netherlands	VRIJE UNIV AMSTERDAM	38	18963	23	1.38
Netherlands	WAGENINGEN UNIV	61	15735	33	1.27
Austria	KARL FRANZENS UNIV GRAZ	146	7858	143	0.95
Austria	LEOPOLD FRANZENS UNIV INNSBRUCK	104	10571	88	1.11
Austria	TECH UNIV WIEN	145	8022	98	1.08
Austria	UNIV WIEN	16	25623	113	1.03
Poland	JAGIELLONIAN UNIV KRAKOW	133	8579	168	0.70
Poland	WARSAW UNIV	134	8568	109	1.05
Portugal	UNIV PORTO	159	7388	154	0.89
Portugal	UNIV TECNICA LISBOA	151	7604	144	0.95
Slovenia	UNIV LJUBLJANA	121	9343	170	0.65
Finland	HELSINKI UNIV TECHNOL	166	6919	81	1.13
Finland	UNIV HELSINKI	15	27025	21	1.38
Finland	UNIV KUOPIO	169	6814	26	1.34
Finland	UNIV OULU	144	8189	110	1.05
Finland	UNIV TURKU	101	10887	101	1.07

**TABLE II.1.2 (contd.) Scientific production and visibility of the top 171 European Research Universities measured as the number of scientific publications (1997-2006) and the field-normalized average impact**

Country	University	Scientific Production Rank	Scientific Production	Citation Index Rank	Scientific visibility CPP / FCSm <sup>(1)</sup>
Sweden	CHALMERS UNIV TECHNOL GOTEBOG	125	9130	72	1.15
Sweden	GOTEBOG UNIV	39	18963	47	1.21
Sweden	KAROLINSKA INST STOCKHOLM	7	30588	37	1.26
Sweden	KUNGLIGA TEKNISKA HOGSKOLAN	99	11003	87	1.11
Sweden	LINKOPING UNIV	115	9629	66	1.17
Sweden	LUNDS UNIV	13	28475	50	1.20
Sweden	STOCKHOLM UNIV	102	10855	43	1.23
Sweden	SWED UNIV AGR SCI UPPSALA	141	8345	73	1.15
Sweden	UMEA UNIV	109	10071	55	1.20
Sweden	UPPSALA UNIV	21	23983	51	1.20
UK	IMPERIAL COLL LONDON	4	36099	12	1.45
UK	KINGS COLL UNIV LONDON	22	23866	27	1.32
UK	LOUGHBOROUGH UNIV	170	6616	155	0.89
UK	QUEEN MARY COLL UNIV LONDON	118	9459	35	1.27
UK	QUEENS UNIV BELFAST	103	10640	71	1.15
UK	UNIV ABERDEEN	108	10139	54	1.20
UK	UNIV BIRMINGHAM	30	20436	52	1.20
UK	UNIV BRISTOL	29	20893	29	1.32
UK	UNIV CAMBRIDGE	1	46063	2	1.63
UK	UNIV COLL LONDON	2	44816	11	1.45
UK	UNIV DUNDEE	139	8417	8	1.49
UK	UNIV DURHAM	119	9364	4	1.59
UK	UNIV EDINBURGH	24	22393	13	1.45
UK	UNIV EXETER	171	6581	99	1.08
UK	UNIV GLASGOW	35	19464	31	1.28
UK	UNIV LEEDS	31	20249	57	1.19
UK	UNIV LEICESTER	98	11190	62	1.18
UK	UNIV LIVERPOOL	52	17303	83	1.12
UK	UNIV MANCHESTER	11	29602	61	1.18
UK	UNIV NEWCASTLE UPON TYNE	78	13740	53	1.20
UK	UNIV NOTTINGHAM	49	18083	40	1.24
UK	UNIV OXFORD	3	43179	1	1.66
UK	UNIV READING	136	8528	93	1.10
UK	UNIV SHEFFIELD	42	18473	30	1.30
UK	UNIV SOUTHAMPTON	44	18344	45	1.22
UK	UNIV ST ANDREWS	163	7017	36	1.27
UK	UNIV STRATHCLYDE GLASGOW	160	7253	136	0.97
UK	UNIV SURREY	156	7475	133	0.98
UK	UNIV SUSSEX	157	7430	19	1.39
UK	UNIV WALES CARDIFF	55	16786	80	1.13
UK	UNIV WARWICK	130	8762	67	1.17
UK	UNIV YORK	126	9127	17	1.43
Croatia	UNIV ZAGREB	154	7551	172	0.51
Turkey	HACETTEPE UNIV ANKARA	123	9298	171	0.61
Norway	NORWEGIAN UNIV SCI & TECHNOL TRONDHEIM	131	8707	106	1.06
Norway	UNIV BERGEN	114	9671	65	1.17
Norway	UNIV OSLO	47	18189	76	1.14
Switzerland	ECOLE POLYTECN FEDERALE LAUSANNE	96	11430	3	1.59
Switzerland	ETH ZURICH	20	24252	6	1.51
Switzerland	UNIV BASEL	75	13820	16	1.43
Switzerland	UNIV BERN	63	15374	46	1.22
Switzerland	UNIV GENEVE	59	16258	15	1.43
Switzerland	UNIV LAUSANNE	83	12990	7	1.50
Switzerland	UNIV ZURICH	25	22099	28	1.32

Source: DG Research

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Data: Thomson Scientific / CWTS

Note: (1) This indicator compares the average number of citations to the oeuvre (**CPP**) to an international reference value, namely the corresponding Average Field Citation Score (**FCSm**), by calculating the ratio of the two. Self-citations are excluded in the calculation of this ratio, to prevent that ratios are affected by divergent self-citation behaviour

TABLE II.1.3 Key recent reforms concerning universities

Country	Laws/Acts	Description
Belgium	Higher Education Act of 4 April 2003  Decree of 31 March 2004	“Structural Decree of April 2003” The Act on the Structure of Higher Education in the Flemish Community, which was passed in April 2003, was the first piece of legislation to introduce Bologna-related reforms. Central to the new act is the implementation of a two-tiered structure starting in 2004/05, with the gradual phasing out of the old structure by 2011.  The Decree mostly addresses Bologna reforms facilitating inclusion within the European HE Area and providing fresh funding for universities.
Bulgaria	Law on Higher Education 1995 (amended 2004)	In June 2004, the Parliament adopted the last amendments to the 1995 Higher Education Act. This states that HEIs are independent legal entities with academic autonomy. Public Higher Education institutions are the property of the state. The Academy Law, last amended in 1997 is a fully independent legal entity with a central budget.
Czech Republic	Amendment to Higher Education Act 2005 (Act no: 552/2005 Coll.)	The last amendment represented another step towards more autonomy of institutions, mainly financial, introducing in addition to the state subsidy a weighted grant for all aspects of teaching and research
Denmark	University Act 2003	The Danish higher education system has undergone a reform in 2002 towards more autonomy and self-regulation. Danish universities are now regarded as "independent institutions under the public sector administration and supervised by the Ministry of Science, Technology and Innovation". The Act also aimed to promote R&D quality and links with industry. There is further major reform being undertaken in 2007 to restructure the universities and to give them more flexibility over the recruitment of researchers.
Germany	Framework Act for Higher Education (HRG) of 1998 last amended in 2005 Regional Higher Education laws in the competence of each federal State Law on limited time contracts for researchers, Wissenschaftszeitvertragsgesetz (WissZeitVertrG), April 12, 2007 Draft Law on the abrogation of the Framework Act for Higher Education, May 9, 2007	The Higher Education Framework Law (Hochschulrahmengesetz) defines the basic mission of higher education organisations, their status as self-organised institutions (Selbstverwaltungskörperschaft), the admission to university studies and certain aspects concerning the employment status of civil servants. Following the German Reform of Federalism decided in 2006, as well as the Bologna process, this framework law will be abrogated in 2008, resulting in an increase in universities' autonomy.  The WissZeitVertrG takes up the issue of limited time contracts in research, allowing for a maximum of 12 years (15 years in medicine) of limited time contracts for employees in universities and research organisations, an now including a clause for prolongation due to childcare.
Estonia	National Audit Office Act 2002 Organisation of R&D Act	Key governance structures are defined by the Universities Acts and consist of the right to determine internal organisation, manner of R&D etc. Organisation of Research and Development Act states the principles of targeted financing and research and education grants (applies also to Universities).
Greece	1982 Law. New Law in 2007	Autonomy is determined by article 16 of the Constitution, in accordance with which Universities are legal entities under public law, with full self-administration under the supervision of the Ministry of National Education and Religious Affairs.  Universities are responsible for managing the revenues derived from state grants and from their own assets. By Presidential Decree, with the assent of the Senate, it is possible to establish a special legal entity under public law to utilise and manage University property. In accordance with the Greek Constitution, Technological Education Institutes (TEIs) are legal persons under public law, which are fully self-governing under the supervision of the State, and they are financed by the State. TEIs belong to Higher Education, under law 1404/83.  They are also legal entities under public law, fully self-governed, under the supervision of the Ministry of Education, too, and their operation and organisation is governed by law, while more specific issues are regulated by the internal rules of each TEI.

TABLE II.1.3 (contd.) Key recent reforms concerning universities

Country	Laws/Acts	Description
Spain	Organic Law for Universities 6/2001, modified in April 4/2007	The new law slightly changed the university governance system so that Rectors will now be elected through a direct voting system including students, academics, and staff. The Law also increases the autonomy of universities and gives greater responsibilities to the regional governments. The Laws redefine the positions of non statutory teachers and researchers and strengthens the powers of the National Agency for Quality Evaluation and Certification.  2007 modification dictated that funding is now apportioned on the basis of results, not cost.
France	Law on University responsibilities and freedom, n° 2007-1199 10 <sup>th</sup> of August 2007	The Law sets a new framework for universities allowing them greater powers and greater responsibilities with regard to hiring staff. The Law modifies the responsibilities of university presidents and the size of the board.
Cyprus	Law adopted in 1996 (and last amended in December 2003) - Law 67(I)/1996 stipulating the legal basis for the establishment and operation of higher education institutions (including private institutions) - Law 234(I)/2002 regulating the establishment and operation of the Open University of Cyprus - Law 198(I)/2003 regulating the establishment and operation of the Cyprus University of Technology - Law 109 (I) /2005 regulating the establishment, operation and control of Private Universities	The University of Cyprus (panepistimio) was established by law in 1989 and admitted its first students in 1992.  The Cyprus University of Technology was established in 2003/2004 and admitted its first students in autumn 2007. The Open University was established in 2002 and admitted its first students in 2006.  Cyprus has a number of private higher education institutions (colleges). Following an amendment of the national legislation that broadens the confines of university education to include private universities, some of them have recently applied for recognition as private universities.
Lithuania	Law on Higher Education 2000, last amended 2006	The higher education system is currently undergoing a reform that should end in 2010. This is a move towards more autonomy, but there is still a high level of regulation.
Luxembourg	Law of Oct 2003	The 2003 act set the ground for the creation of the first Luxembourg university, which is conceived as a small international multilingual institution with a strong research commitment. There is a high level of autonomy, as block grants are guaranteed in a three year performance contract signed at the end 2006 with the Luxembourg government.
Hungary	Law on Research and Technological Innovation 2004 The Academy Law In 2005 a new Act on HE was created and implemented in 2006	Since September, 2004, some of the former weaknesses of the national STI governance system have been addressed by new legislation. Most notably, the importance of devising and implementing a coherent RTDI strategy has been recognised in the Law on Research and Technological Innovation.
Austria	The Universities Act 2002	The 2002 university act introduced important changes in the Austrian HE sector. The universities were transformed into independent legal entities under public law. The Law provides more autonomy to Austrian universities, allowing them to define their own profile, create their organisational structures and allocate funds based on mission statements and strategic plans. The Law also requires more accountability and since 2007, all universities have signed performance agreements with the government and have the obligation to present annual intellectual capital reports.
Poland	Act on Higher Education 2005	The Act brings into effect a number of Bologna reforms, a much higher level of institutional autonomy, links with research institutes, training of staff and also increases levels of international cooperation. HEIs can also be involved in business activities but with a high level of ministerial control.
Portugal	The Basic Law on the Education System dated 14 October 1986 and amended in September 1997. Decreto-Lei n.º 214/2006, de 27 de Outubro, Lei organica do Ministerio da ciencia tecnologia e ensino superior	In July 2007 the Parliament approved a new law concerning university governance. The implementation of this law is expected to bring significant changes into the Portuguese Higher Education System over the next few years. Universities are allowed to move to a new semi private-semi public status, through the creation of foundations. The process of selecting the university leadership will also undergo a significant change. There will be a possibility of representatives from the civil society having a say in selecting the university president (or "rector").

TABLE II.1.3 (contd.) Key recent reforms concerning universities

Country	Laws/Acts	Description
Romania	Legea consorțiilor universitare, 2004	Main changes in legislation took place from 1999 onwards, increasing autonomy of universities (incl. lump sum budgeting), implementing formula funding based on negotiated student numbers and performance criteria, introducing the concept of lifelong learning and taking steps to enhance cooperation between universities and between universities and the research sector.
Slovakia	The Higher Education Law (Law No 131/2002)	A major reform was carried out in Slovakian higher education in 2002. Following the new Act, institutional autonomy is increased resulting in universities becoming self-governing and self-organised entities run by an externally appointed (by the Ministry) Board of Trustees. HEIs have been given the status of non-profit in order to allow more flexible budgetary management and easier access to alternative funds.
Finland	Universities Act 27 June 1997/645 2005	The 21 universities in Finland are all state-owned public institutions, governed by the Universities Act. University autonomy is stipulated in the Constitution. In 2005, the law on universities was reformed in order to increase the financial autonomy and to promote national and international collaboration and networking. The Government has developed a five-year Education and Research Development Plan, defining objectives for universities that they should then implement autonomously. However, the productivity programme launched by the Finnish Government has been criticised because it may decrease the autonomy of universities.  In 2005 the Science and Technology Policy Council decided that the number of universities will not increase in the future and that existing ones will be consolidated into larger operational entities.
Sweden	Higher Education Act 2000 (including amendments up to 2006)	The higher education institutions are part of the public, central government administration, in terms of both organisation and function. Hence, institutions of higher education are formally administrative agencies subject to the Government. As from 1993, a system of management by objectives and results was introduced for higher education, with the Government and Riksdag (Swedish Parliament) setting the objectives and the higher education institutions being assigned the task of meeting the objectives within given parameters and resources. Universities and university colleges are generally free to decide on internal affairs such as organisation and staffing. Each institution is responsible for the fulfilment of obligations stated in the budget document decided by the Government.
UK	Higher Education Act 2004	The latest Higher Education Act included changes to student funding arrangements which were first proposed in the white paper 'The future of higher education' published in January 2003. Following the publication of the White Paper, the Government published a Widening Participation document which outlined the actions the Government proposed taking to promote Higher Education: Attainment, Aspiration, Application and Admissions.

Source: DG Research  
Data: ERAWATCH

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TABLE II.1.4 Key recent reforms concerning public research centres

Country	Laws/Acts	Description
Bulgaria	<p>Law on Bulgarian Academy of Sciences from 1991, last amended in 1997</p> <p>The law on Scientific Research Promotion 2003</p>	<p>The core part of scientific and research infrastructure is concentrated in the Bulgarian Academy of Sciences. BAS is a fully independent legal entity regulated by the special Law on the Bulgarian Academy of Sciences from 1991, last amended in 1997.</p> <p>The Law on scientific research promotion governs the principles and mechanisms of implementing the State policy aimed at scientific research promotion in the Republic of Bulgaria. Scientific research is stated to be a national priority and shall be of strategic importance for the development of the country. According to Article 6, the funds earmarked for financial promotion of scientific research shall be provided by a subsidy from the state budget and from other sources, such as specialised funds, public procurement, national scientific programmes and projects of various institutions, in conformity with the goals and priorities laid down in the National Scientific Research Strategy.</p>
Denmark	Bill on National Research Institutions 2003	The Public Research Institutes are affected by the recent reforms in Higher Education, the new Bill on National Government Research Institutions and also the Globalisation Strategy 2006.
Germany		The Federal Government and the Länder provide joint research support on the basis of Articles 91 a and b of the Basic Law (Grundgesetz – GG). Pursuant to Article 91 b Basic Law, the Federal Government and the Länder may work together, on the basis of agreements, in educational planning and in support of scientific research institutions and projects of supraregional importance.
Estonia	<p>Universities Act 1995</p> <p>National Audit Office Act 2002</p> <p>Organisation of R&amp;D Act (1997, last amended, 2006)</p>	Organisation of Research and Development Act states the principles of targeted and baseline financing and research and education grants, principles of organisation, rights, governance and management of the public research institutions.
Ireland	Strategy for Science, Technology and Innovation 2006-2013	Compared to large EU Member States, Ireland has very few public research organisations. The activities of these organisations are mostly focused on natural resources (food, agriculture, forestry and marine), health, energy and the environment. The Strategy for Science, Technology and Innovation outlines the government's commitment to increasing the levels and budget for public research.
Greece	Bridging research and technological development with production (Law 2919/2001)	The most important objective of this Law is the creation of a robust framework that will enable and strengthen the collaboration in research projects between public research centres and firms. One of the main objectives of this Law is to define in detail the scope and operating principles of the research and technological bodies in Greece, including those of science parks and incubators. Moreover, this Law sets out the evaluation process of the research institutes.
Spain	Law for the Promotion and General Coordination of Scientific and Technical Research (Law 13/1986).	<p>The "Science Act" defines the "National Scientific Research and Technological Development Plan" as the basic instrument for the co-ordination and planning of research. The Interministerial Science and Technology Commission (CICYT) is responsible for its preparation and follow-up. CICYT is a public organisation related to the Ministry of Industry, Tourism and Trade.</p> <p>The Spanish National Plan for Scientific Research, Development and Technological Innovation is the General Administration's main tool for the programming of the national policy for Science and Technology. It is aimed at contributing to a greater and more harmonious development of the Spanish Science-Technology-Enterprise (S-T-E) system. Its approach stems from the commitments adopted at the Lisbon European Council of March 2000. The R&amp;D&amp;I NP is implemented on a four year basis. The R&amp;D&amp;I NP 2004-2007 is now running. The strategic objectives to be achieved at the end of the Plan's execution are listed in section "Research Policy Priorities". The R&amp;D&amp;I NP 2004-2007 marks a new step forward in planning actions financed by the National State Budgets aimed at :</p> <p>Designing the financial instruments and modes of participation needed to stimulate and foster R&amp;D&amp;I activities. The NP structures a set of Research Programmes which are summarized in section "Research Policy Priorities". It also includes the national fiscal policy for research;</p> <p>Optimizing available resources by strengthening cooperation and coordination with the Autonomous Communities (Spanish regional governments).</p>

TABLE II.1.4 (contd.) Key recent reforms concerning public research centres

Country	Laws/Acts	Description
France	1999 Law for Innovation and Research 2006 Law for Research 2003 – Innovation Plan	<p>The 1999 Law for Innovation and Research focuses on the facilitation of collaboration between scientific and technological research on the one hand and industrial activity on the other. The Act provides 4 series of measures: mobility of human resources from the research world to the enterprises environment, cooperation between public research and enterprises, fiscal framework for innovating enterprises and legal framework for innovation enterprises.</p> <p>The 2006 Law for research addresses several issues with a middle-term approach (until 2010): it provides measures to enforce strategic orientation abilities by the creation of a High Council for Science and Technology and the reinforcement of the powers of the existing National Agency for Research which becomes a public institution. It also provides new legal tools to encourage cooperation between institutions of Research and Higher Education Institutes.</p>
Latvia	Law on Research Activity 2005 Guidelines for Development of Science and Technology for 2006-2013	<p>The purpose of the Law on Research Activity is to strengthen the role of the State in fostering research as a particularly important factor in the development of society. This Law prescribes the unity of research and higher education, the rights, liabilities, independence of academic freedom of scientists, and the competence and obligations of State authorities in ensuring research activity, which is defined as activity including science, research and innovation.</p>
Lithuania	The Law on Science and Studies 1991, last amended 2005	<p>The Law states that all State schools of higher education and State scientific institutes shall have autonomy, as established by the laws of the Republic of Lithuania, and as approved in the statute of the respective institution. The State may regulate an institution's activities by way of subsidies, orders (agreements) financed by the State, and other means provided for in the laws of the Republic of Lithuania. Institutions of science and studies shall have the right to establish salaries and norms for employees of various categories in accordance with the approved wage fund (except for cases when the Government passes special regulating directives), and shall also have the right to sell scientific production and goods.</p>
Hungary	Law on Research and Technological Innovation (2005)	<p>Independent public-law institutions based on the principal of self-government and functioning as a legal entity.</p>
Austria	<p>Examples of laws concerning individual RTOs: Law on the Academy of sciences, latest version 29 April 2005 Law on the creation of the Austrian Research and Testing Centre Arsenal, Ltd (BGBl. A Nr. 15/1997</p>	<p>There is no comprehensive Law on public non-university research organisations in Austria. The legal base for non-university research in Austria is heterogeneous. The Academy of Sciences has been created by a decision of the Emperor Ferdinand I in 1847, since then, it has been under the protection of the highest governor of Austria, now the President. The Law defines its basic tasks, namely to promote research in all domains, especially fundamental research.</p> <p>Austrian Research Centres (ARC) have the status of a limited company, with a majority shareholding held by the State, represented by the Ministry. The externalisation of the research centre Arsenal research, formally directly dependent on the Ministry, and its integration into ARC has been decided by law.</p>
Poland	<p>New Act July 2007 amending the Act on Sectoral Branch Institutes Act on the principles of financing science (2004).</p>	<p>Work is ongoing on the preparation of draft Acts regulating the establishment and status of the National Centre for Scientific Research and Experimental Development in Poland as well as amendments to Acts concerning the restructuring of the branch research and development units in Poland and to many other Acts. The new Act 2007 strengthens the control of the relevant ministries in charge of these institutes. In particular the minister can dismiss the directors in case of illegality or mismanagement.</p> <p>The Act on the principles of financing science is concerned with the restructuring of the research sector. In particular the Act sets forth the principles of financing science from funds designated for that purpose in the State Budget as well as coming from other sources (e.g. Structural Funds of the European Union). It regulates the role (competences) of the minister responsible for science (and its advisory bodies) in managing the distribution of the science budget with a view to financing activities aimed at supporting the implementation of the state's scientific, science and technology and innovation policies. In particular, it relates to the financing of scientific research, experimental development and other tasks serving science by the allocation of funds for either the statutory activity of scientific entities (in the form of institutional subsidies) or competitive research grant schemes.</p>

TABLE II.1.4 (contd.) Key recent reforms concerning public research centres

Country	Laws/Acts	Description
Portugal	October 2006 – Law regulating public laboratory system	<p>In October 2006 a new Law regulating the public laboratory system was published. This Law foresees the closing down of some laboratories, the merger of others and the creation of new ones, as well as the establishment of consortia between existing public laboratories and Associated Laboratories.</p> <p>There will be reform of the public research institutes in 2007 and a complete re-evaluation and international evaluation of every research centre and unit in the country.</p>
Romania	Government Decision 1449/17 November 2005 regarding the functioning of the National Authority for Scientific Research Elaboration of the 2007-2013 National RDI Strategy based on strategic planning elements (document)	<p>The Government Decision approves the creation of the National Authority for Scientific Research (NASR), a public institution created within the Ministry of Education and Research, that implements government policy in the area of R&amp;D and innovation through the following strategic functions:</p> <p>Elaboration, launching, funding and monitoring of national RDI programmes;</p> <p>Creation and development of a stimulating framework for RDI activities, in accordance with EU principles, criteria and procedures;</p> <p>Integration of Romanian RDI into the European Union and international RDI circuits.</p> <p>The document defines the mission and structure of the National Authority for Scientific Research and its central role in the implementation of government R&amp;D and innovation policy. The main issues addressed by the document relate to NASR's strategic role in planning, policy-making, monitoring and evaluation, programme/project funding, horizontal coordination with other government agencies involved in RDI, involvement in regional and local development, as well as in international collaborations. The document also specifies the National R&amp;D institutes and the public R&amp;D institutions coordinated by NASR.</p>
Slovenia	Law on Research and Development (2002)	<p>Resolution on National Research and Development Programme (NRDP): The NRDP is the basic document, specifying the R&amp;D policy (and implicitly also innovation policy), its objectives and priorities, the stakeholders, scope and means of financing and the evaluation criteria. The current NRDP was prepared by the Government (Ministry of Higher Education, Science and Technology) and adopted by the Parliament in December 2005 for the period 2006-2010, after prolonged planning and discussion, involving various bodies, ministries and the research community. The Minister for Higher Education, Science and Technology announced the preparation of a new law on higher education and R&amp;D, linking the two areas more closely. The draft of the new law has not yet been made public.</p>
Slovakia	The Law on Slovak Academy of Science (February 2002) (Law No 133/2002) 2006 Law on Organisation of State Support to Research and Development Government Resolution No 766/2007 of 12th September 2007	<p>Long-term Objective of State S&amp;T Policy up to 2015: The Slovak Government passed the Long-term Objective of the State S&amp;T Policy up to 2015 via the Government Resolution No 766/2007 of 12th September 2007. The Objective was prepared by the Ministry of Education and based on the 172/2005 'Law on Organisation of State Support to Research and Development'. The requirement of the Law is 'to prepare the long-term Objective of science and technology development up to 2015'. The Ministry was helped by an Expert Committee comprising experts from central government ministries and regional governments, universities, the Slovak Academy of Sciences, professional associations and industry unions. The Objective became basic strategy for the development of the Slovak R&amp;D system up to 2015 and replaced the the State Science and Technology Policy Concept for 2000-2005. The Objective, which generates overlapping between the S&amp;T and R&amp;D policies in Slovakia is of major importance for the development of applied research and innovations.</p> <p>Main issues addressed: The Objective sets three broad targets: Higher involvement of S&amp;T in the development of Slovakia and more intensive participation by S&amp;T in solving economic and social problems in Slovakia; Better conditions for S&amp;T development inside Slovakia and also for Slovakia's activities within the European Research Area;</p> <p>Setting targets for S&amp;T development.</p>

TABLE II.1.4 (contd.) Key recent reforms concerning public research centres

Country	Laws/Acts	Description
Finland	Government Resolution on the Structural Development of the Public Research System (2005)	The Resolution outlines development priorities for the structural development of the public research system. The aim is to enhance research and technological development and the utilisation of their results in the Finnish research system. The adjustments presented include the following: increasing the prioritisation of research resources; strengthening high-quality knowledge clusters; enhancing the horizontal cooperation between responsible ministries and between national research funding organisations; and increasing the quality of university research.
Sweden	Government bill 2004/05:80 Research for a Better Life	The following are among the challenges identified and explicitly mentioned in the bill: More international cooperation; More industrial high-class research is a decisive factor; Multi- and cross-disciplinary research has a special value in this context and is in need of favourable conditions in order to develop further; New ways to increase public-private partnerships and cooperation between industry and the knowledge infrastructure are emphasised in order to overcome a perceived national inability to exploit the research base; The importance and role of the research institutes as intermediaries between research and industrial implementation is emphasised; Efforts to align public and private research strategies for strategically important industry sectors in order to develop these further. This especially accounts for the traditionally strong sectors.
UK	Established by Royal Charter	All the Research Councils are Non-Departmental Public Bodies (NDPBs), established by Royal Charter and are independent legal bodies outside of Government, accountable to Parliament. Each of the Research Councils is established under the Science and Technology Act 1985. There is a new Council Order in 2007 for the establishment of The Science and Technology Facilities Council.

Source: DG Research  
 Data: ERAWATCH

STC key figures report 2008

## 2. Supplementary data on Research Infrastructures

TABLE II.2.1 FP6 networks of Research Infrastructures <sup>(1)</sup>

Scientific domain	Number of networks	[Min; Max] number of partners by network	Average number of partners by network
Nuclear and Particle Physics, Astronomy, Astrophysics (NPPAA)	10	[20;48]	30
e-infrastructures projects	11	[6;91]	27
Environment, Marine, and Earth Sciences (EMES)	10	[11;47]	25
Engineering	1	20	20
Social Sciences	2	[8;20]	14
Material Sciences	10	[5;23]	14
Humanities	1	13	13
Biomedical and Life Sciences (BMLS)	6	[4;11]	13
Computer and Data Treatment	2	[9;11]	10

Source: DG Research

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Data: DG Research

Note: (1) Networks formed by Integrating Infrastructure Initiatives (I3) and Coordination Action (CA) projects under FP6; they include partners who do not provide access.

### 3. Supplementary data on mobility of human resources

#### Human Resources for Science and Technology – Core (HRSTC)

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##### **Box II.3.1: Human Resources for Science and Technology – Core (HRSTC): definitions**

The Canberra Manual proposes a definition of HRST as persons who either have higher education or persons who are employed in positions that normally require such education. HRST are people who fulfil one or other of the following conditions:

- a) Successfully completed education at the third level in an S&T field of study (HRSTE - Education);
- b) Not formally qualified as above, but employed in an S&T occupation where the above qualifications are normally required (HRSTO - Occupation).

HRST Core (HRSTC) are people with both tertiary level education and an S&T occupation. Scientists and engineers are defined as ISCO categories 21 (physical, mathematical and engineering science professionals) and 22 (life science and health professionals).

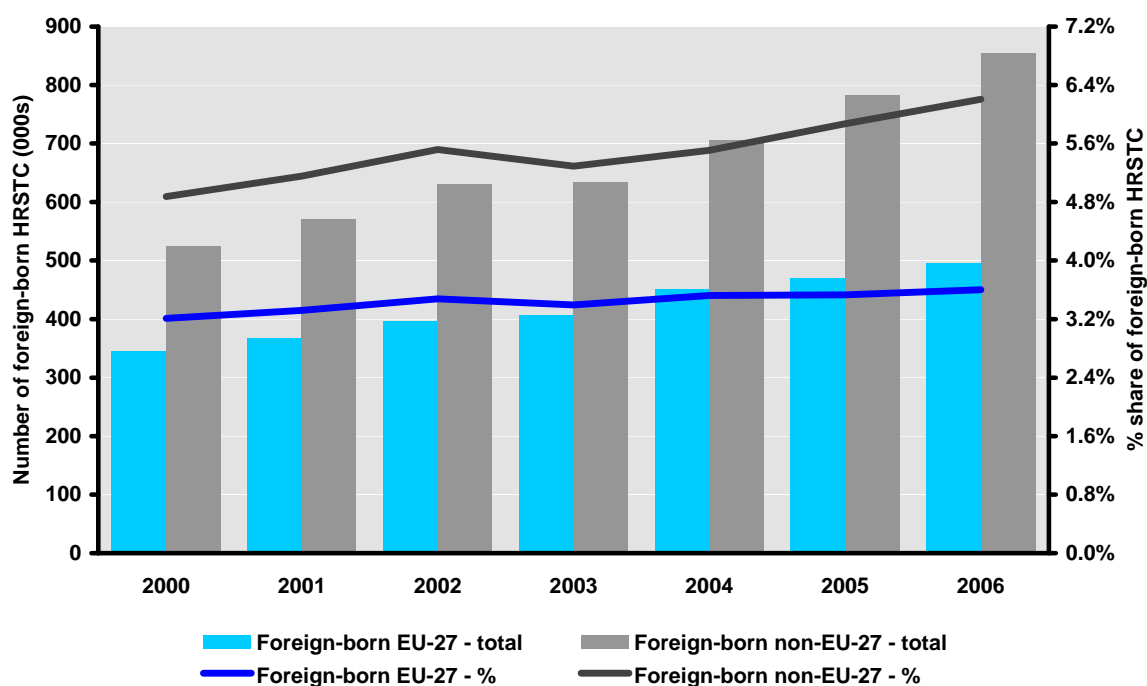
TABLE II.3.1 Number (thousands) and share (%) of foreign-born Human Resources in Science and Technology Core (HRSTC), EU-27 foreign-born and non-EU-27 foreign-born, 15 Member States, 2006

	HRSTC Total	Foreign-born - EU-27		Foreign-born - non-EU-27		Foreign-born - Total		Share of EU-27 in total (A) as % of (B)
		Total (A)	%	Total	%	Total (B)	%	
Belgium	919	47	5.1	43	4.7	90	9.8	52.2
Czech Republic	536	8	1.5	4	0.7	12	2.2	66.7
Denmark	674	17	2.5	24	3.6	41	6.1	41.5
Greece	754	9	1.2	9	1.2	18	2.4	50.0
Spain	3519	104	3.0	161	4.6	265	7.5	39.2
France	4526	123	2.7	303	6.7	426	9.4	28.9
Cyprus	65	5	7.7	4	6.2	9	13.8	55.6
Luxembourg	45	21	46.7	2	4.4	23	51.1	91.3
Hungary	569	12	2.1	5	0.9	17	3.0	70.6
Netherlands	1639	45	2.7	95	5.8	140	8.5	32.1
Austria	444	47	10.6	24	5.4	71	16.0	66.2
Portugal	525	18	3.4	39	7.4	57	10.9	31.6
Finland	550	5	0.9	6	1.1	11	2.0	45.5
Sweden	1004	52	5.2	59	5.9	111	11.1	46.8
UK	4704	149	3.2	433	9.2	582	12.4	25.6
<b>Total (15 Member States)</b>	<b>20473</b>	<b>662</b>	<b>3.2</b>	<b>1211</b>	<b>5.9</b>	<b>1873</b>	<b>9.1</b>	<b>35.3</b>
Norway	564	23	4.1	19	3.4	42	7.4	54.8
Switzerland	762	131	17.2	63	8.3	194	25.5	67.5

Source: DG Research  
Data: Eurostat

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FIGURE II.3.1 Foreign-born Human Resources in Science and Technology core (HRSTC) in ten EU Member States <sup>(1)</sup>: numbers (thousands) and shares (%), 2000-2006



Source: DG Research  
Data: Eurostat

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Note: (1) The ten Member States are : BE, DK, EL, ES, CY, LU, NL, AT, SE, UK.

**TABLE II.3.2 Number (thousands) and share (%) of non-nationals in Human Resources in Science and Technology Core (HRSTC), 2000 and 2006, with average annual growth rates and evolution of the shares (in percentage points), 2000-2006**

	2000				2006				2000-2006			
	Intra-EU-27	%	Extra-EU-27	%	Intra-EU-27	%	Extra-EU-27	%	Average annual growth %		Evolution of share in percentage points	
									Intra-EU-27	Extra-EU-27	Intra-EU-27	Extra-EU-27
Belgium	36	4.5	7	0.9	45	4.9	8	0.9	3.8	2.3	0.4	0.0
Greece	4	0.7	3	0.5	5	0.7	4	0.5	3.8	4.9	-0.1	0.0
Spain	26	1.1	16	0.7	94	2.7	75	2.1	23.9	29.4	1.5	1.4
Cyprus	3	6.4	1	2.1	3	4.6	2	3.1	0.0	12.2	-1.8	0.9
Luxembourg	12	38.7	1	3.2	22	48.9	1	2.2	10.6	0.0	10.2	-1.0
Netherlands	27	2.1	10	0.8	33	2.0	12	0.7	3.4	3.1	-0.1	-0.1
Austria	17	5.2	11	3.4	34	7.7	13	2.9	12.2	2.8	2.4	-0.5
Sweden	24	2.6	13	1.4	30	3.0	15	1.5	3.8	2.4	0.4	0.1
UK	80	2.0	105	2.6	110	2.3	188	4.0	5.5	10.2	0.3	1.4
<b>Total (9 Member States)</b>	<b>229</b>	<b>2.2</b>	<b>167</b>	<b>1.6</b>	<b>376</b>	<b>2.9</b>	<b>318</b>	<b>2.4</b>	<b>8.6</b>	<b>11.3</b>	<b>0.6</b>	<b>0.8</b>

Source: DG Research

STC key figures report 2008

Data: Eurostat

**TABLE II.3.3 Number (thousands) and share (%) of foreign-born Human Resources in Science and Technology Core (HRSTC), 2000 and 2006, with average annual growth rates and evolution of the shares (in percentage points), 2000-2006**

	2000				2006				2000-2006			
	Foreign-born EU-27	%	Foreign-born non-EU-27	%	Foreign-born EU-27	%	Foreign-born non-EU-27	%	Average annual growth %		Evolution of share in percentage points	
									Foreign-born EU-27	Foreign-born non-EU-27	Foreign-born EU-27	Foreign-born non-EU-27
Belgium	38	4.8	30	3.8	47	5.1	43	4.7	3.6	6.2	0.4	0.9
Denmark	9	1.8	11	2.2	17	2.5	24	3.6	11.2	13.9	0.7	1.4
Greece	9	1.6	10	1.8	9	1.2	9	1.2	0.0	-1.7	-0.5	-0.6
Spain	42	1.8	51	2.2	104	3.0	161	4.6	16.3	21.1	1.1	2.3
Cyprus	3	6.4	2	4.3	5	7.7	4	6.2	8.9	12.2	1.3	1.9
Luxembourg	12	38.7	2	6.5	21	46.7	2	4.4	9.8	0.0	8.0	-2.0
Netherlands	41	3.2	80	6.3	45	2.7	95	5.8	1.6	2.9	-0.5	-0.5
Austria	26	8.0	16	4.9	47	10.6	24	5.4	10.4	7.0	2.6	0.5
Sweden	44	4.8	31	3.4	52	5.2	59	5.9	2.8	11.3	0.4	2.5
UK	121	3.0	291	7.2	149	3.2	433	9.2	3.5	6.8	0.2	2.0
<b>Total (10 Member States)</b>	<b>345</b>	<b>3.2</b>	<b>524</b>	<b>4.9</b>	<b>496</b>	<b>3.6</b>	<b>854</b>	<b>6.2</b>	<b>6.2</b>	<b>8.5</b>	<b>0.4</b>	<b>1.3</b>

Source: DG Research

STC key figures report 2008

Data: Eurostat

## European doctoral students in the US

TABLE II.3.4 U.S. doctoral degree recipients: total, foreign recipients<sup>(1)</sup>, and recipients from Europe, 2000-2005

Year	Total			From Europe <sup>(2)</sup>			From the top 8 EU Member States <sup>(3)</sup>		
	Total recipients (A)	Total foreign recipients (B)	Share of foreign in total (B) as % of (A)	Total recipients (C)	Share in foreign recipients (C) as % of (B)	Share in total recipients (C) as % of (A)	Total recipients (D)	Share in foreign recipients (D) as % of (B)	Share in total recipients (D) as % of (A)
2000	41361	11614	28.1	1937	16.7	4.7	1096	9.4	2.6
2001	40651	11642	28.6	2107	18.1	5.2	1207	10.4	3.0
2002	39953	11405	28.5	2027	17.8	5.1	1174	10.3	2.9
2003	40740	12224	30.0	2082	17.0	5.1	1158	9.5	2.8
2004	42117	13160	31.2	2198	16.7	5.2	1261	9.6	3.0
2005	43354	14426	33.3	2275	15.8	5.2	1293	9.0	3.0

Source: DG Research

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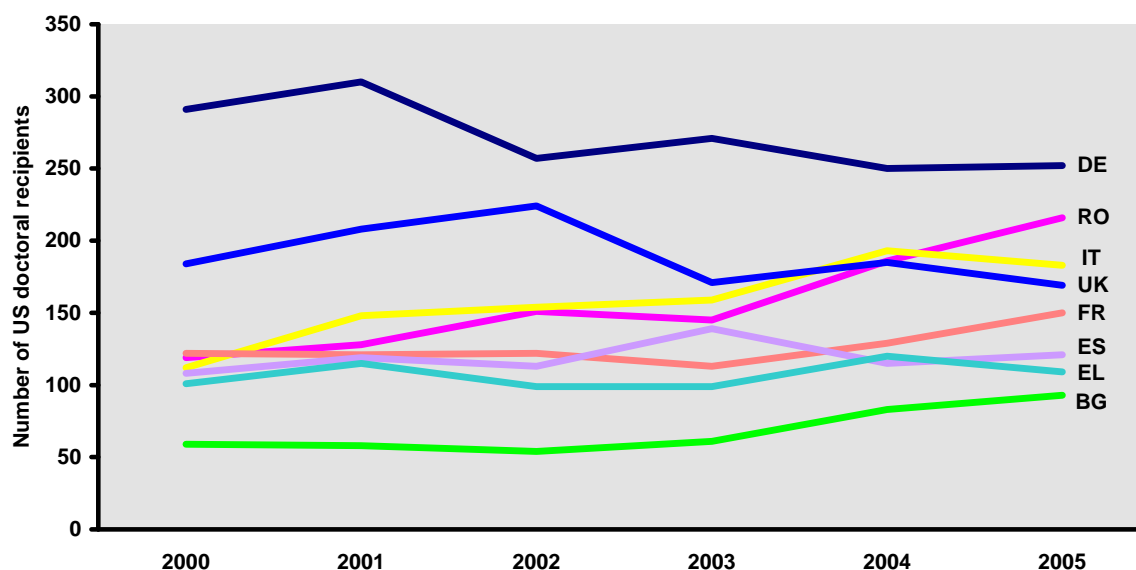
Data: NSF

Notes: (1) Foreign degree recipients include permanent and temporary residents

(2) Europe includes Western Europe (Andorra, Austria, Belgium, France, Germany, Gibraltar, Greece, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, Portugal, Spain and Switzerland), Central and Eastern Europe (Albania, Bulgaria, Czech Republic, Slovakia, Hungary, Poland, Romania, Russia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Tadjikistan, Turkmenistan, Ukraine, Uzbekistan, Yugoslavia (former), Bosnia-Herzegovia, Croatia, Macedonia (Former Yugoslav Republic of), Serbia-Montenegro) and Scandinavia (Denmark, Finland, Iceland, Norway and Sweden)

(3) Bulgaria, France, Germany, Greece, Italy, Romania, Spain and the UK

FIGURE II.3.2 Number of US doctoral recipients from the top eight EU Member States, 2000-2005



Source: DG Research

STC key figures report 2008

Data: NSF

**TABLE II.3.5 US S&E doctoral degree recipients: total, foreign recipients <sup>(1)</sup>, and recipients from Europe, 2000-2005**

Year	Total			Recipients from Europe <sup>(2)</sup>					
	Total recipients (A)	Total foreign recipients (B)	Share of foreign in total (B) as % of (A)	Western Europe	Central and Eastern Europe	Scandinavia	Total Europe (C)	Share in foreign recipients (C) as % of (B)	Share in total recipients (C) as % of (A)
2000	27557	9448	34.3	824	647	75	1546	15.4	5.6
2001	27037	9598	35.5	929	663	88	1680	17.5	6.2
2002	26235	9253	35.3	847	659	91	1597	17.3	6.1
2003	26907	9868	36.7	831	714	92	1637	16.6	6.1
2004	27991	10592	37.8	872	746	80	1698	16.0	6.1
2005	29751	11981	40.3	869	829	86	1784	14.9	6.0

Source: DG Research

STC key figures report 2008

Data: NSF

Notes: (1) Foreign degree recipients include permanent and temporary residents

(2) Western Europe includes Andorra, Austria, Belgium, France, Germany, Gibraltar, Greece, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, Portugal, Spain and Switzerland. Central and Eastern Europe includes Albania, Bulgaria, Czech Republic, Slovakia, Hungary, Poland, Romania, Russia, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Tadjikistan, Turkmenistan, Ukraine, Uzbekistan, Yugoslavia (former), Bosnia-Herzegovia, Croatia, Macedonia (Former Yugoslav Republic of), Serbia-Montenegro. Scandinavia includes Denmark, Finland, Iceland, Norway and Sweden

(3) Bulgaria, France, Germany, Greece, Italy, Romania, Spain and the UK

## Marie Curie Individual Fellowships

### Box II.3.2: Intra-European mobility: Marie Curie Intra-European Fellowships (IEF)

FP6 Marie Curie Intra-European Fellowships (IEF) were individual fellowships that aimed at providing advanced training tailored to researchers' individual needs in order to become professionally independent and to gain complementary or different scientific skills. Those eligible to apply were researchers from EU or Associated States, with at least four years of postgraduate research experience or a PhD, willing to spend a mobility period working in a host institution located in another EU or Associated State, different from his/her own and from that where they had recently been active.

Of the 9500 IEF proposals (with various deadlines from 2003 to 2006), 1600 applicants were finally selected and funded. FIGURE II.3.3 shows the distribution of the selected candidates by their actual country of residence (country of "origin") and the country of the host institution they applied for (country of destination). 15.8% of the selected applicants resided in France, 12% in Germany and 11.1% in the UK. Most applied to go to host institutions in the UK (35.1%), followed by France (15.6%) and Germany (9.9%). The distribution of selected applicants by country of citizenship and host institution gives slightly different results (see FIGURE II.3.4): 15.8% were French, 13.8% Spanish, 12.4% Germans and 10.9% Italians, but only 5.6% were British.

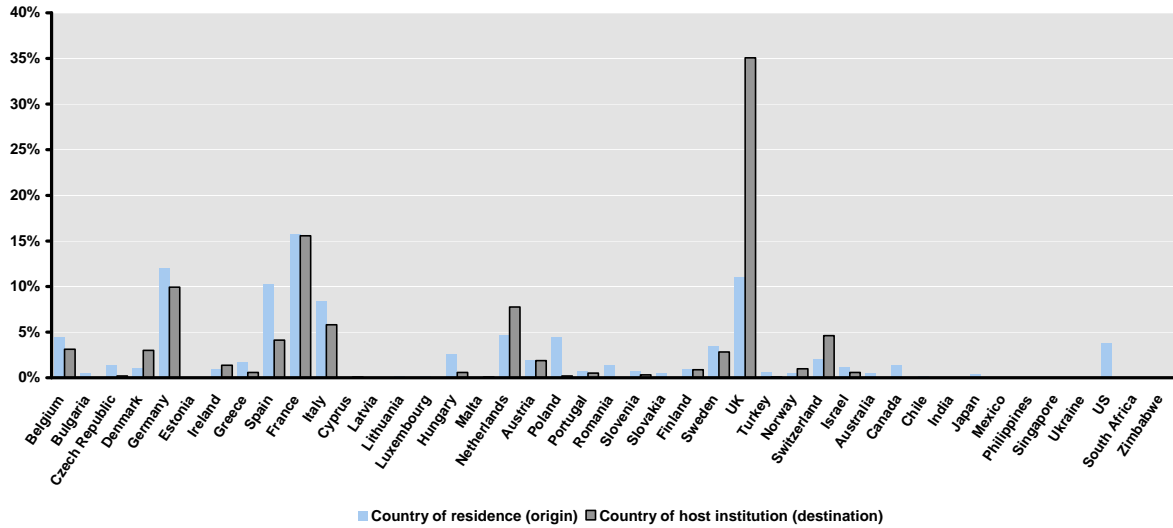
Regarding intra-European mobility flows for IEF<sup>3</sup>, we find that the UK gains significantly from the exchanges of IEF fellows, receiving 465 more fellows from EU Member States or Associated Countries than it sends to other EU Member States or Associated Countries. The UK is followed by Switzerland (net gain of 57 fellows), the Netherlands (54) and Denmark (37).

The ten highest single mobility flows were observed from France to the UK (111), Spain to the UK (85), Germany to the UK (70), Italy to the UK (51), Italy to France (46), Spain to France (45), the

<sup>3</sup> These results are calculated on the basis of the nationality of fellows, taking into account citizens of EU Member States and Associated Countries only.

Netherlands to the UK (35), Germany to France (33), Poland to the UK (28) and France to the Netherlands (28).

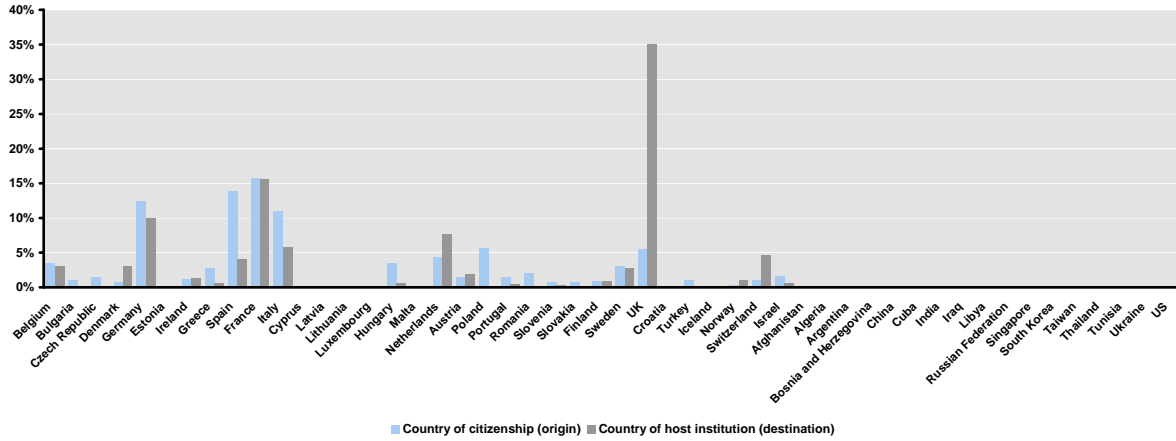
**FIGURE II.3.3 Marie Curie Intra-European Fellowships (IEF): % distribution of selected applicants by country of residence (origin) and country of host institution (destination)**



Source: DG Research  
Data: European Commission

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**FIGURE II.3.4 Marie Curie Intra-European Fellowships (IEF): % distribution of selected applicants by country of citizenship (origin) and country of host institution (destination)**



Source: DG Research  
Data: European Commission

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**TABLE II.3.6 Marie Curie Intra-European Fellowships (IEF)**  
**Intra-European inflows, outflows and net gains of selected applicants <sup>(1)</sup>**

	Inflows		Outflows		Net gains	
	Number	Share of total %	Number	Share of total %	Number	Share of total %
Croatia	0	0.0	3	0.2	-3	-0.2
Turkey	1	0.1	17	1.1	-16	-1.0
Iceland	0	0.0	1	0.1	-1	-0.1
Norway	16	1.0	6	0.4	10	0.6
Switzerland	73	4.6	16	1.0	57	3.6
Israel	9	0.6	25	1.6	-16	-1.0
Sub-total Associated countries	99	6.3	68	4.3	31	2.0
Belgium	48	3.0	57	3.6	-9	-0.6
Bulgaria	0	0.0	16	1.0	-16	-1.0
Czech Republic	3	0.2	24	1.5	-21	-1.3
Denmark	48	3.0	11	0.7	37	2.3
Germany	153	9.7	199	12.6	-46	-2.9
Estonia	0	0.0	4	0.3	-4	-0.3
Ireland	21	1.3	20	1.3	1	0.1
Greece	9	0.6	44	2.8	-35	-2.2
Spain	66	4.2	221	14.0	-155	-9.8
France	246	15.6	253	16.1	-7	-0.4
Italy	91	5.8	175	11.1	-84	-5.3
Cyprus	1	0.1	2	0.1	-1	-0.1
Latvia	0	0.0	2	0.1	-2	-0.1
Lithuania	0	0.0	2	0.1	-2	-0.1
Luxembourg	0	0.0	2	0.1	-2	-0.1
Hungary	9	0.6	57	3.6	-48	-3.0
Malta	1	0.1	2	0.1	-1	-0.1
Netherlands	123	7.8	69	4.4	54	3.4
Austria	30	1.9	24	1.5	6	0.4
Poland	2	0.1	90	5.7	-88	-5.6
Portugal	8	0.5	23	1.5	-15	-1.0
Romania	0	0.0	34	2.2	-34	-2.2
Slovenia	5	0.3	12	0.8	-7	-0.4
Slovakia	0	0.0	12	0.8	-12	-0.8
Finland	14	0.9	14	0.9	0	0.0
Sweden	44	2.8	49	3.1	-5	-0.3
UK	554	35.2	89	5.7	465	29.5
Sub-total EU-27	1476	93.7	1507	95.7	-31	-2.0
TOTAL	1575	100	1575	100	0	0.0

Source: DG Research

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Data: DG Research

Note: (1) Inflows: number of fellows having the nationality of any EU Member State or associated country who moved to the country under consideration; Outflows: number of fellows having the nationality of the country under consideration who moved to any other Member State or associated country; Net gains: difference between inflows and outflows.

### Box II.3.3: Mobility from and to Third Countries: Marie Curie International Incoming Fellowships (IIF) and Outgoing International Fellowships (OIF)

FP6 Marie Curie Incoming International Fellowships (IIF) are individual fellowships that aim to attract top-class researchers from Third Countries to work and undertake research training in Europe for a period of from one to two years (incoming phase), with a view to developing mutually beneficial research cooperation. Fellows must have at least four years' experience and must agree on a work programme with a research organisation in an EU or candidate country before applying. In the case of

Emerging and Transition Economies and Developing Countries, the scheme may assist fellows to return to their country of origin for, typically, half the duration of the first phase (re-integration phase).

The top 15 nationalities of the 380 IIF selected applicants are shown on TABLE II.3.7: 59 come from the Russian Federation, 46 from China and 40 from the US, the three top nationalities. The three most important EU host countries in terms of number of selected applicants are, the UK (113 fellows), Germany (61) and France (57). The highest single mobility flows are observed from China to the UK (24 fellows), the Russian Federation to the UK (21), India to the UK (15), Australia to the UK (11) and the Russian Federation to Germany (10).

Marie Curie Outgoing International Fellowships (OIF) allow experienced researchers from EU or Associated States to spend time at a research centre outside the EU and Associated States, including a compulsory return phase. They are individual fellowships that aim to reinforce the international dimension of the career of European researchers by giving them the opportunity to train in a world level Third Country research organisation (for a period of from one to two years), and then to apply the experience gained in a return host institution in a Member State or Associated State (for typically half the duration of the first phase). The Fellowships also aim to respond to the researchers' needs in terms of complementing their training in inter/multi-disciplinary research, research management skills and intersectoral mobility. Before applying for this fellowship, potential applicants must find suitable host organisations in a Third Country, for the so-called 'outgoing phase', and in an EU or Associated State, for the 'return phase'.

Of the 302 selected OIF applicants, most chose to go to the US (228 fellows) (see TABLE II.3.8). The two other top destinations are Australia (33 fellows) and Canada (26) with all of the other destinations accounting for 15 fellows in total. The top five nationalities are French (65 fellows), German (47), Spanish (37), Italian (36) and British (24). Most of the highest single mobility flows are in the direction of the US: France to the US (41 fellows), Germany to the US (36), Spain to the US (35), Italy to the US (31), UK to the US (13), Netherlands to the US (11), France to Australia (11), Greece to the US (10), Israel to the US (10).

**TABLE II.3.7 Marie Curie Incoming International Fellowships (IIF)  
Nationality and host country of selected applicants**

Nationality	Number	Share of total %	Host country	Number	Share of total %
Russian Federation	59	15.5	UK	113	29.7
China	46	12.1	Germany	61	16.1
US	40	10.5	France	57	15.0
India	37	9.7	Spain	22	5.8
Australia	34	8.9	Italy	22	5.8
Canada	34	8.9	Netherlands	20	5.3
Japan	22	5.8	Sweden	16	4.2
Argentina	17	4.5	Belgium	14	3.7
Ukraine	15	3.9	Austria	13	3.4
Brazil	12	3.2	Denmark	9	2.4
Mexico	11	2.9	Switzerland	8	2.1
Croatia	5	1.3	Ireland	8	2.1
Moldova	5	1.3	Greece	6	1.6
Belarus	4	1.1	Finland	3	0.8
South Korea	4	1.1	Norway	3	0.8
New Zealand	3	0.8	Czech Republic	1	0.3
Yugoslavia (former)	3	0.8	Israel	1	0.3
Other	29	7.6	Poland	1	0.3
			Portugal	1	0.3
			Slovenia	1	0.3
<b>TOTAL</b>	<b>380</b>	<b>100</b>	<b>TOTAL</b>	<b>380</b>	<b>100</b>

Source: DG Research

Data: DG Research

STC key figures report 2008

**TABLE II.3.8 Marie Curie Outgoing International Fellowships (OIF)  
Nationality and outgoing host country of selected applicants**

Outgoing host country	Number	Share of total %	Nationality	Number	Share of total %
US	228	75.5	France	65	21.5
Australia	33	10.9	Germany	47	15.6
Canada	26	8.6	Spain	37	12.3
New Zealand	4	1.3	Italy	36	11.9
Japan	3	1.0	UK	24	7.9
Switzerland	1	0.3	Greece	13	4.3
China	1	0.3	Netherlands	13	4.3
India	1	0.3	Israel	12	4.0
Sri Lanka	1	0.3	Poland	10	3.3
Panama	1	0.3	Austria	9	3.0
Singapore	1	0.3	Belgium	9	3.0
Thailand	1	0.3	Sweden	7	2.3
South Africa	1	0.3	Ireland	5	1.7
			Denmark	4	1.3
			Czech Republic	3	1.0
			Bulgaria	2	0.7
			Portugal	2	0.7
			Romania	2	0.7
			Hungary	1	0.3
			Turkey	1	0.3
<b>TOTAL</b>	<b>302</b>	<b>100</b>	<b>TOTAL</b>	<b>302</b>	<b>100</b>

Source: DG Research

STC key figures report 2008

Data: DG Research

## European Research Council (ERC)

### Box II.3.4: ERC Starting Independent Researcher Grants

The European Research Council (ERC) is the first European funding body set up to support investigator-driven frontier research. The ERC complements other funding activities in Europe such as those of the national research funding agencies, and is a flagship component of the 'Ideas Programme' of the European Union's Seventh Research Framework Programme (FP7). ERC grants are awarded through open competition to projects headed by starting and established researchers, irrespective of their origins, who are working or moving to work in Europe - the sole criterion for selection is scientific excellence.

ERC Starting Grants aim to support up-and-coming research leaders who are about to establish or consolidate an independent research team and to start conducting independent research in Europe. The scheme targets promising researchers who have the proven potential of becoming independent research leaders. ERC Starting Grants amount to as much as two millions euros for a duration of up to 5 years. Candidates of any country or origin may apply. However, they must be hosted by a legally recognised public or private research organisation situated in the EU or Associated Countries.

The ERC StG is not intended to be a mobility scheme. However, a number of Principal Investigators may apply to an organisation in a country which is different from their actual country of residence,

which would imply a move from one country to another. In actual fact, most of the PIs who applied for an ERC Starting Grant applied to a host organisation in their country of residence (on average 93% of those who applied to host organisations located in EU-27). 4.2% of those who applied to an organisation located in the EU reside in a Member State different from the one they applied for, 0.5% reside in an Associated Country, and 2.6% in another country.

**TABLE II.3.9 Applications by Principal Investigators for ERC Starting Grants**  
Total number of applicants and % distribution by country of origin

Country of destination (Host country of organisation)	Number of applicants	Country of origin (actual country of residence)			
		%			
		Same country	Other EU country	Associated country	Other country
Croatia	20	95.0	0.0	0.0	5.0
Turkey	181	98.9	0.0	0.0	1.1
Iceland	5	80.0	0.0	20.0	0.0
Norway	92	94.6	3.3	0.0	2.2
Switzerland	200	83.0	12.0	0.0	5.0
Russian Federation	21	85.7	4.8	4.8	4.8
Israel	199	98.0	0.0	0.0	2.0
<b>Sub-total Associated countries</b>	718	93.0	3.9	0.3	2.8
Belgium	295	94.6	3.4	0.7	1.4
Bulgaria	48	93.8	2.1	0.0	4.2
Czech Republic	84	95.2	3.6	1.2	0.0
Denmark	172	93.6	4.1	0.0	2.3
Germany	1038	88.9	5.0	1.0	5.1
Estonia	11	100.0	0.0	0.0	0.0
Ireland	132	87.9	6.1	0.8	5.3
Greece	339	91.7	3.5	0.0	4.7
Spain	568	93.3	4.6	0.2	1.9
France	728	89.7	5.6	1.1	3.6
Italy	1625	96.1	2.2	0.3	1.4
Cyprus	38	97.4	2.6	0.0	0.0
Latvia	5	100.0	0.0	0.0	0.0
Lithuania	17	94.1	0.0	0.0	5.9
Luxembourg	6	83.3	16.7	0.0	0.0
Hungary	183	94.0	3.8	0.0	2.2
Malta	1	100.0	0.0	0.0	0.0
Netherlands	542	91.0	6.1	0.7	2.2
Austria	153	83.7	11.8	1.3	3.3
Poland	207	97.6	1.4	0.0	1.0
Portugal	183	95.1	2.2	0.5	2.2
Romania	130	96.2	3.1	0.0	0.8
Slovenia	40	95.0	5.0	0.0	0.0
Slovakia	40	95.0	2.5	2.5	0.0
Finland	236	94.1	3.0	0.8	2.1
Sweden	477	93.3	4.0	0.2	2.5
UK	1144	91.7	5.5	0.4	2.4
<b>Sub-total EU-27</b>	8442	92.6	4.2	0.5	2.6

Source: DG Research

STC key figures report 2008

Data: European Research Council

**TABLE II.3.10 ERC Starting Grants for Principal Investigators**  
**Total number of applicants passing all thresholds of the second step of evaluation**  
**% distribution by country of origin**

Country of destination (Host country of organisation)	Number of selected applicants	Country of origin (actual country of residence)			
		%			
		Same country	Other EU country	Associated country	Other country
Norway	3	66.7	33.3	0.0	0.0
Switzerland	19	94.7	5.3	0.0	0.0
Israel	27	92.6	0.0	0.0	7.4
<b>Sub-total Associated countries</b>	49	91.8	4.1	0.0	4.1
Belgium	18	88.9	11.1	0.0	0.0
Bulgaria	1	0.0	100.0	0.0	0.0
Czech Republic	1	0.0	100.0	0.0	0.0
Denmark	6	83.3	16.7	0.0	0.0
Germany	51	90.2	5.9	2.0	2.0
Ireland	2	100.0	0.0	0.0	0.0
Greece	5	80.0	0.0	0.0	20.0
Spain	33	93.9	0.0	0.0	6.1
France	57	87.7	8.8	1.8	1.8
Italy	39	92.3	7.7	0.0	0.0
Cyprus	2	100.0	0.0	0.0	0.0
Hungary	11	100.0	0.0	0.0	0.0
Netherlands	44	90.9	9.1	0.0	0.0
Austria	6	100.0	0.0	0.0	0.0
Portugal	2	50.0	50.0	0.0	0.0
Finland	8	87.5	0.0	0.0	12.5
Sweden	17	100.0	0.0	0.0	0.0
UK	78	96.2	2.6	0.0	1.3
<b>Sub-total EU-27</b>	381	91.6	6.0	0.5	1.8

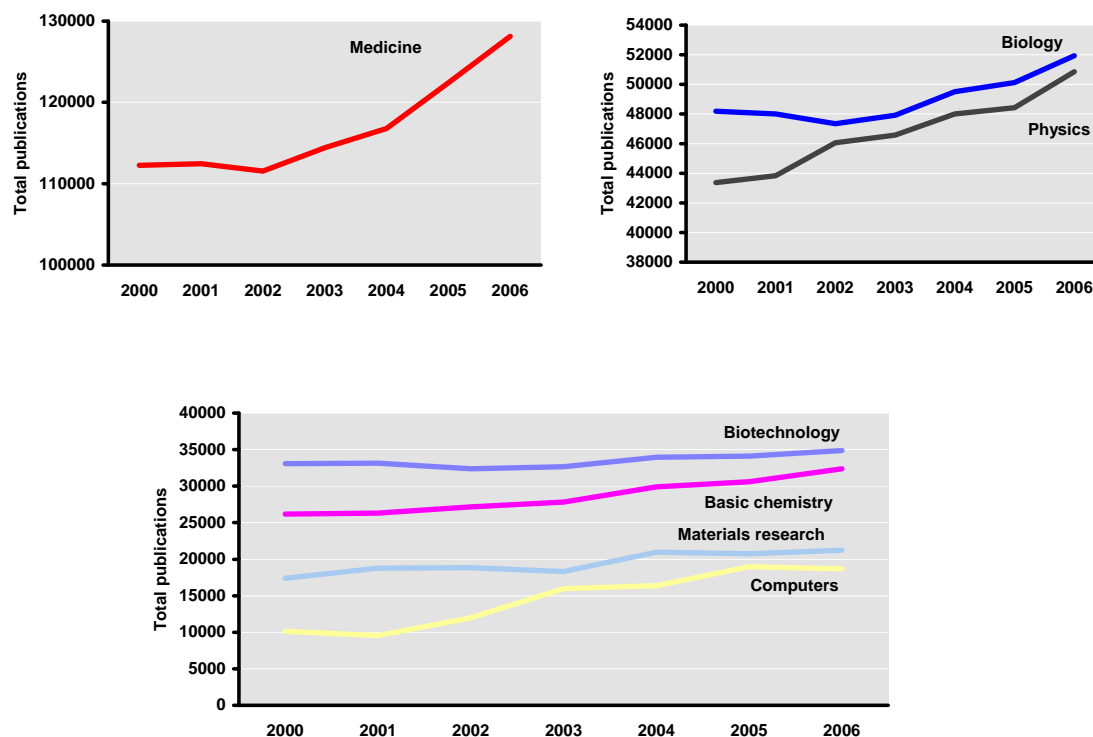
Source: DG Research

STC key figures report 2008

Data: European Research Council

## 4. Supplementary data on knowledge sharing

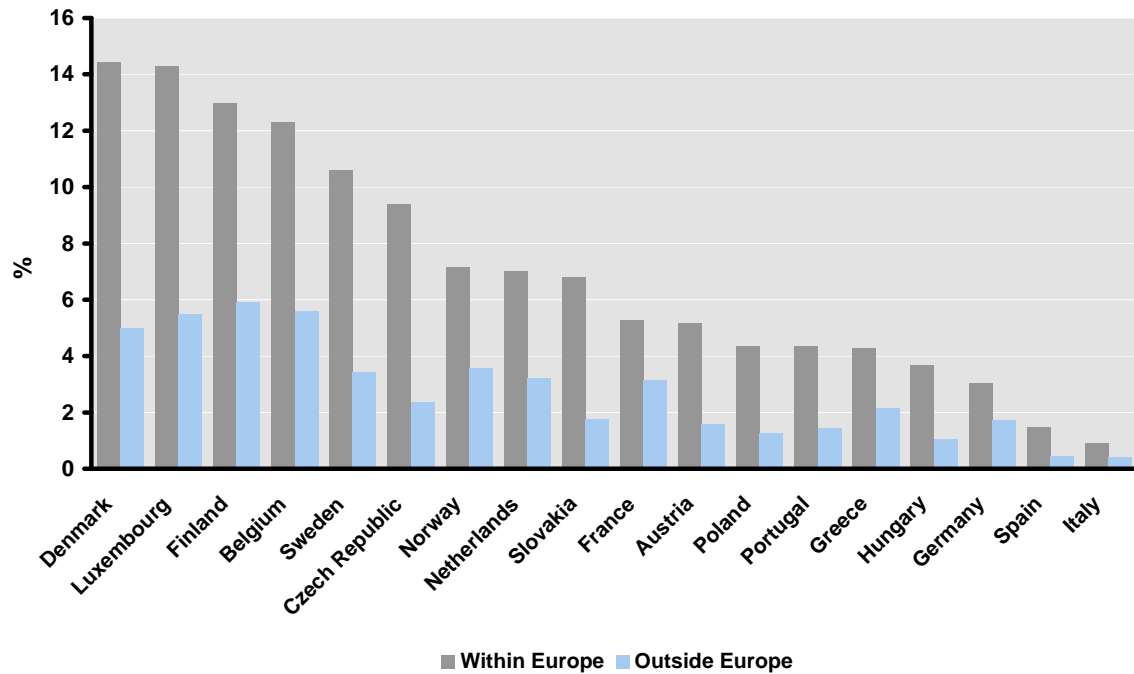
FIGURE II.4.1 EU-27 - the scientific fields with the highest numbers of publications, 2000-2006



Source: DG Research  
Data: Thomson Scientific / Rindicate Consortium

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**FIGURE II.4.2 Firms with foreign cooperation on innovation as % of all firms, 2002-2004 <sup>(1)</sup>**



Source: DG Research  
 Data: OECD, Eurostat, *Community Innovation Survey*  
 Note: (1) or nearest available year

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## 5. Supplementary data on international cooperation

### Box II.5.1: The Fifth and Sixth Research Framework Programmes (FP5 and FP6)

The EC financial contribution has substantially increased in FP6 for all groups of countries. Participants from industrialized countries could only be funded under certain circumstances, which explains the mismatch under FP6 between the rate of participation, 19 %, and rate of received contribution, 7%.

**TABLE II.5.1 FP5 and FP6 - All Third Countries**  
Evolution of participations and EC financial contribution <sup>(1)</sup>

Economic Regions (excluding EU and Associated Countries)	Participations				EC financial contribution (million euro)			
	FP5		FP6		FP5		FP6	
	Total	%	Total	%	Total	%	Total	%
Developing Countries	1283	53	1861	47	95	64	168	52
Emerging Economies	650	27	1325	34	46	31	132	41
Industrialized Countries	469	20	756	19	8	5	24	7
<b>Total Third Countries</b>	<b>2402</b>	<b>100</b>	<b>3942</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>323</b>	<b>100</b>

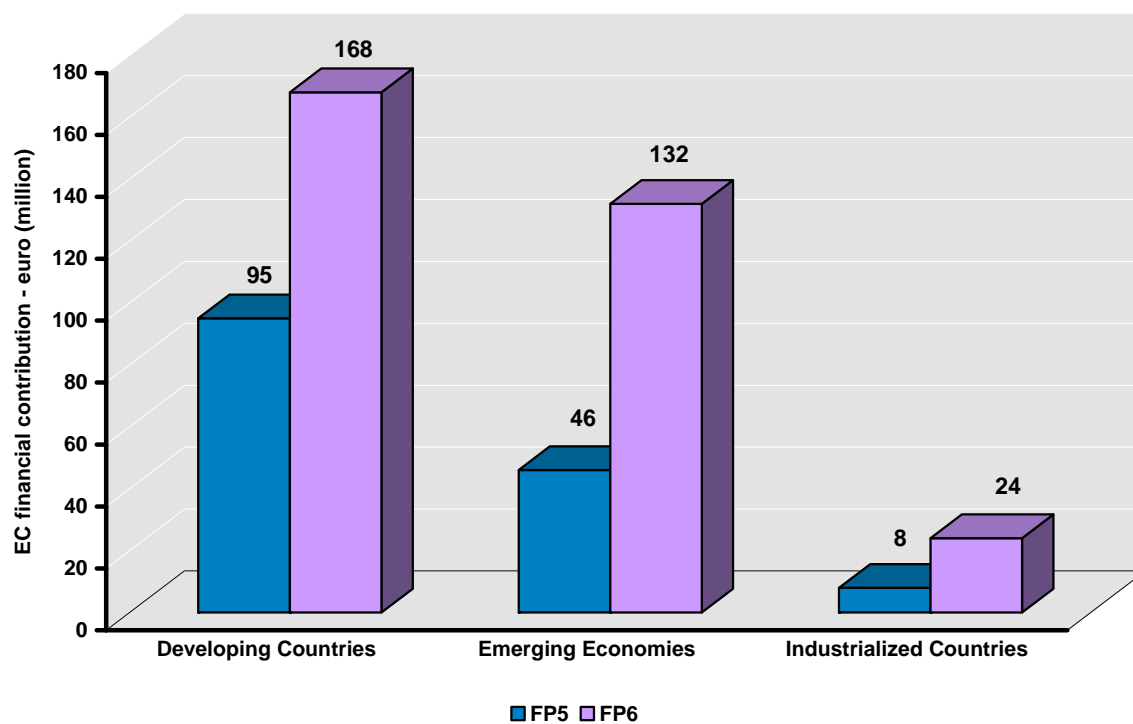
Source: DG Research

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Data: DG Research

Note: (1) The data refer to Third Country participation and the EC financial contribution to Third Countries in signed contracts.

**FIGURE II.5.1 FP5 and FP6 - All Third Countries - evolution of the EC financial contribution by world economic region**



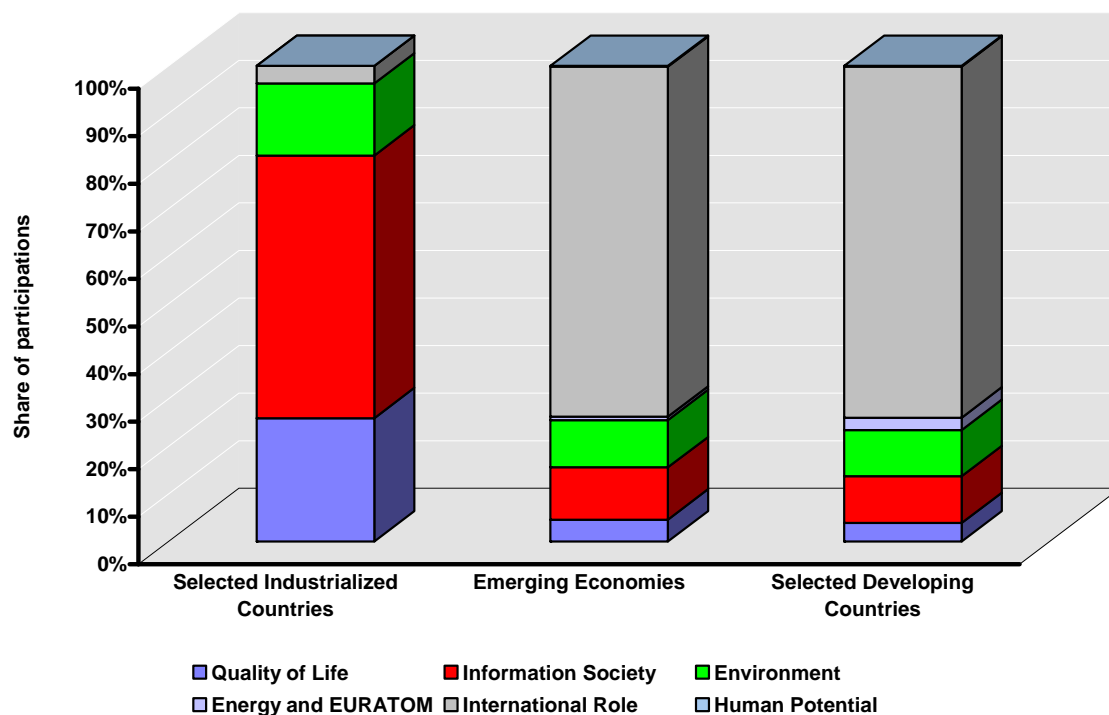
Source: DG Research

STC key figures report 2008

Data: DG Research

Note: (1) All Developing Countries, Emerging Economies and Industrialized Countries are listed in TABLE II.5.2

**FIGURE II.5.2 FP5 - Thematic participation of selected Third Countries <sup>(1)</sup> by world economic region**



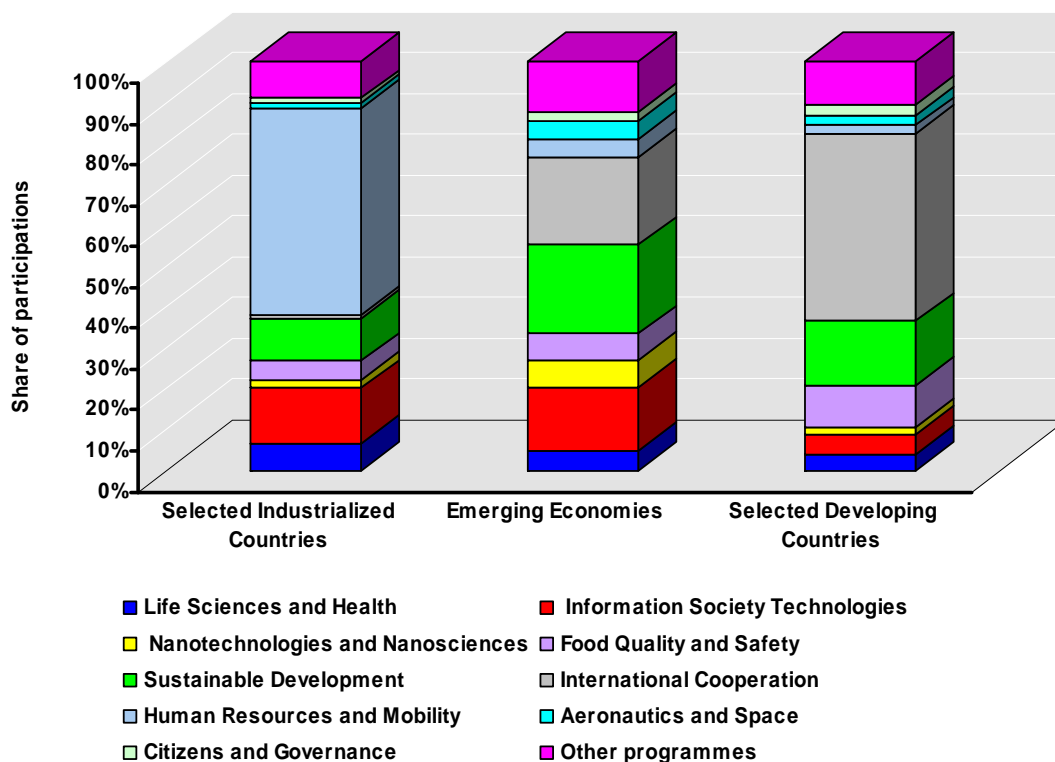
Source: DG Research

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Data: DG Research

Note: (1) The data refer to participation in FP5 contracts by a sample of countries which have signed S&T agreements with the EC before July, 2008. The countries which have signed S&T agreements with the EC before July, 2008 are indicated on TABLE II.5.2

**FIGURE II.5.3 FP6 - Thematic participation of selected Third Countries <sup>(1)</sup> by world economic region**



Source: DG Research

STC key figures report 2008

Data: DG Research

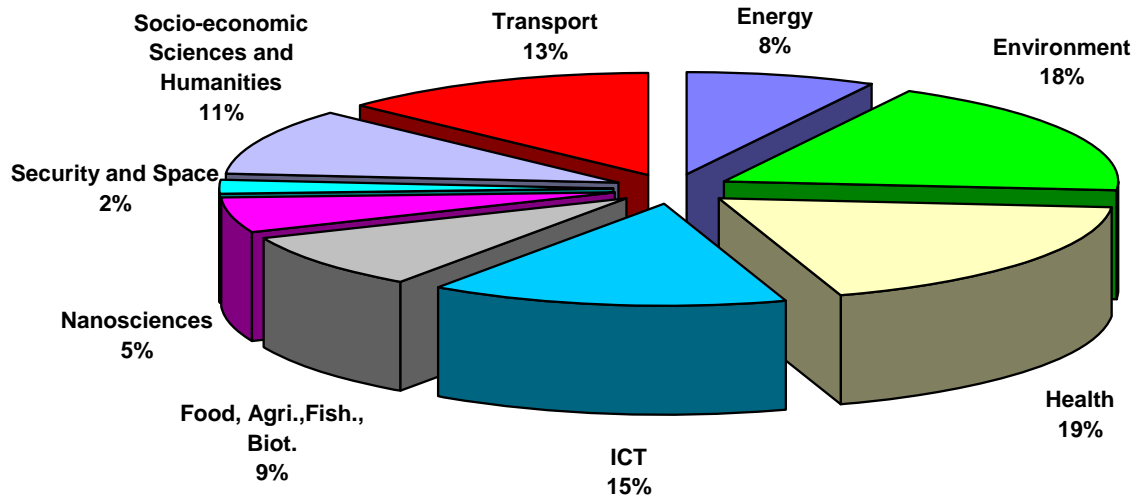
Note: (1) The data refer to participation in FP6 contracts by a sample of countries which have signed S&T agreements with the EC before July, 2008. The countries which have signed S&T agreements with the EC before July, 2008 are indicated on TABLE II.5.2

**Box II.5.2: The Seventh Research Framework Programme (FP7)**

Thematic participation in proposals selected for funding in the FP7 first calls for proposals by economic region, seems to indicate that former trends of participation under FP5 and FP6 will be maintained: *Emerging Economies* have concentrated their efforts on Health, Environment and ICT; *Industrialized Countries* on Health, closely followed by ICT; and *Developing Countries* are more active in Health, Environment and Food, Agriculture, Fisheries and Biotechnology.

**FIGURE II.5.4 FP7 - Cooperation Specific Programme<sup>(1)</sup> - participation of Third Countries in proposals selected for funding by thematic area**

**All Emerging Economies<sup>(2)</sup>**



Source: DG Research

STC key figures report 2008

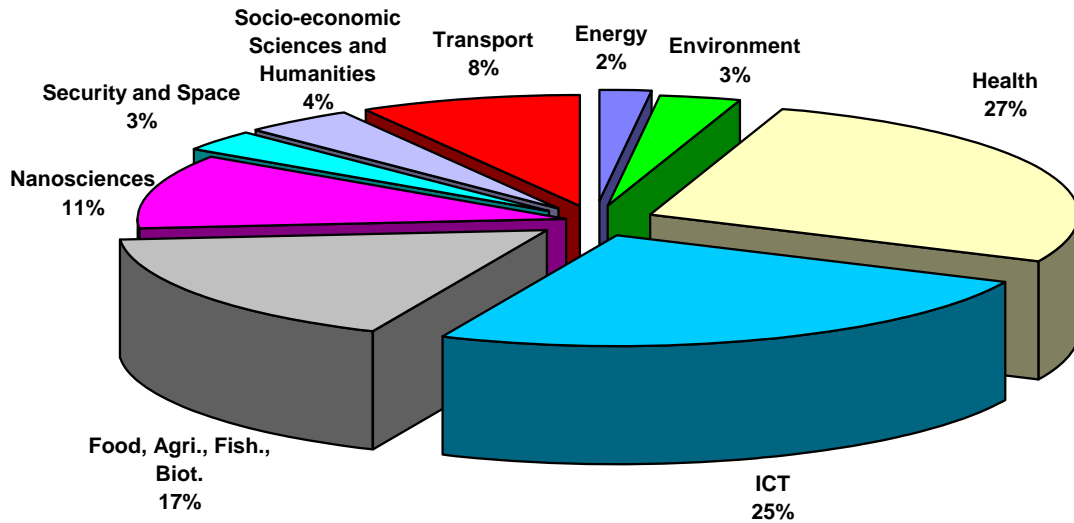
Data: DG Research

Notes: (1) Data are provisional (from June 2008) and refer to third country participation in proposals selected for funding in the first call for proposals

(2) See TABLE II.5.2 for the list of Emerging Economies

**FIGURE II.5.5 FP7 - Cooperation Specific Programme <sup>(1)</sup> - participation of Third Countries in proposals selected for funding by thematic area**

**All Industrialized Countries <sup>(2)</sup>**



Source: DG Research

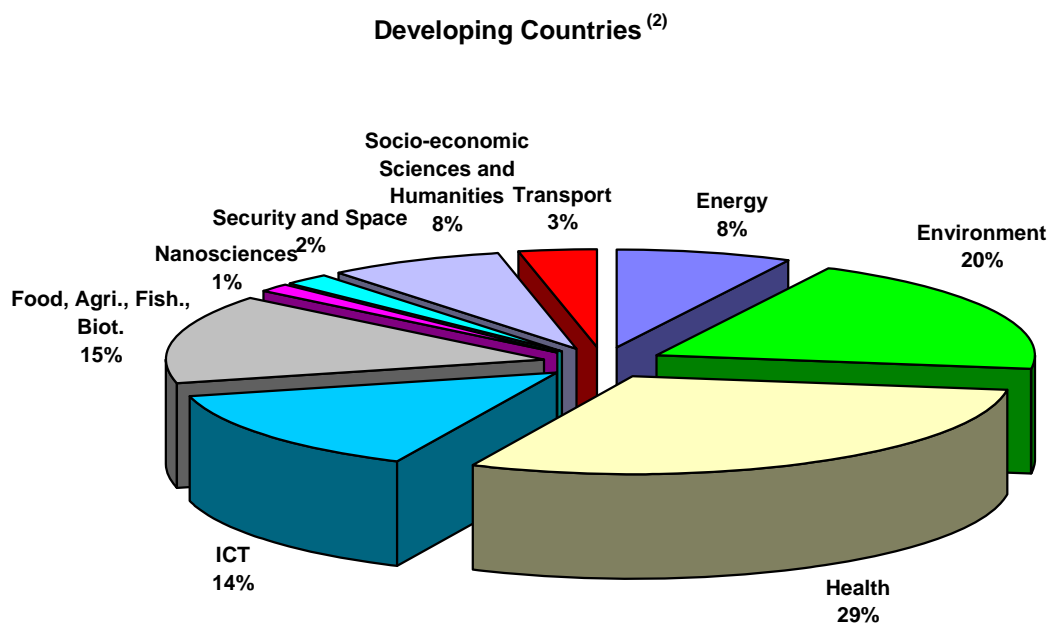
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Data: DG Research

Notes: (1) Data are provisional (from June 2008) and refer to third country participation in proposals selected for funding in the first call for proposals

(2) See TABLE II.5.2 for the list of Industrialized Countries

**FIGURE II.5.6 FP7 - Cooperation Specific Programme <sup>(1)</sup> - participation of Third Countries in proposals selected for funding by thematic area**



Source: DG Research

STC key figures report 2008

Data: DG Research

Notes: (1) Data are provisional (from June 2008) and refer to third country participation in proposals selected for funding in the first call for proposals

(2) See TABLE II.5.2 for the list of Developing Countries

**TABLE II.5.3 Third Countries classified by economic type**

<b>1. Developing countries</b>			
Afghanistan	Ecuador	Madagascar	Senegal
Albania	Egypt *	Malawi	Seychelles
Algeria	El Salvador	Malaysia	Sierra Leone
Angola	Equatorial Guinea	Maldives	Solomon Islands
Antigua and Barbuda	Eritrea	Mali	Somalia
Argentina *	Ethiopia	Marshall Islands	Sri Lanka
Armenia	Fiji	Mauritania	St. Kitts and Nevis
Azerbaijan	Gabon	Mauritius	St. Lucia
Bangladesh	Gambia	Micronesia	St. Vincent and the Grenadines
Barbados	Georgia	Moldova (Republic of)	Sudan
Belarus	Ghana	Mongolia	Suriname
Belize	Grenada	Morocco *	Swaziland
Benin	Guatemala	Mozambique	Syrian Arab Republic
Bhutan	Guinea	Myanmar	Tajikistan
Bolivia	Guiné-Bissau	Namibia	Tanzania (United Republic of)
Botswana	Guyana	Nauru	Thailand
Brunei Darussalam	Haiti	Nepal	Timor Leste
Burkina Faso	Honduras	Nicaragua	Togo
Burundi	Indonesia	Niger	Tonga
Cambodia	Iran	Nigeria	Trinidad and Tobago
Cameroon	Iraq	Niue	Tunisia *
Cape Verde	Jamaica	Oman	Turkmenistan
Central African Republic	Jordan	Pakistan	Tuvalu
Chad	Kazakhstan	Palau	Uganda
Chile *	Kenya	Palestinian Adm. Areas	Ukraine *
Colombia	Kiribati	Panama	Uruguay
Comoros	Korea (Dem. People's Republic of)	Papua New Guinea	Uzbekistan
Congo	Kyrgyzstan	Paraguay	Vanuatu
Congo (Dem. Republic of)	Laos (People's Dem. Republic)	Peru	Venezuela
Costa Rica	Lebanon	Philippines	Vietnam
Cote d'Ivoire	Lesotho	Rwanda	Yemen
Cuba	Liberia	Samoa	Zambia
Djibuti	Libyan Arab Jamahiriya	Sao Tomé and Príncipe	Zimbabwe
Dominica			
Dominican Republic			
<b>2. Emerging economies</b>			
Brazil *	Mexico *		
China (People's Republic of) *	Russian Federation *		
India *	South Africa *		
<b>3. Industrialized countries</b>			
Australia *	Korea (Republic of) *	Saudi Arabia	
Bermuda	Kuwait	Singapore	
Canada *	Macao	United Arab Emirates	
Chinese Taipei	Monaco	United States *	
Faroe Islands	New Zealand	United States Minor outlying islands	
Holy See	Qatar	Virgin Islands (US)	
Hong Kong	San Marino		
Japan			

Source: DG Research

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\* Countries which have signed S&T agreements with the EC