



Main Science and Technology Indicators

Main Science and Technology Indicators

Volume 2014/2

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Foreword

This publication is prepared by the Economic Analysis and Statistics (EAS) Division of the OECD Secretariat in collaboration with the Working Party of National Experts on Science and Technology Indicators (NESTI). It contains the main data series selected from the OECD Scientific and Technological Indicators Database.

The first part of this publication presents key figures in the field of science and technology. These are found in one summary table and several graphs showing the most used indicators.

The second part consists of 72 standard tables showing data series on resources devoted to research and experimental development (R&D) and some measures of output and the impact of scientific and technological activities. It is complemented by a description of the general methodology used. National specifications and background economic indicators are shown in annex.

R&D data

The OECD has been collecting R&D data for member countries on a regular basis since the early 1960s. During the 1990s, it has also embarked on the collection of R&D data for selected non-member economies, some of which are presented in the tables below. This publication presents various indicators of the level and trends in total national R&D efforts. The standard expenditure measure is the Gross Domestic Expenditure on Research and Experimental Development (GERD), which covers all R&D carried out on national territory in the year concerned. The pattern of financing and of performance of GERD is also presented.

Further information is given on R&D performed in the business enterprise sector. This includes tables showing data on total business enterprise R&D carried out by the major industries concerned. Sets of data are provided for R&D carried out in the higher education and government sectors. All the above tables are essentially based on retrospective surveys of the units carrying out the R&D though national forecasts have been included when available.

More up-to-date information on R&D financed by government can be derived from budget data. These data show government R&D appropriations distinguishing firstly between defence and civil programmes and secondly between the main objectives of civil R&D. Readers are warned that these budget R&D data vary in coverage from those in previous tables and that these two types of data should not be combined.

Two tables show data on R&D expenditure of foreign affiliates. These data come from the OECD Database on Foreign Affiliates and in some cases are not directly comparable with standard business enterprise R&D.

Measures of the output and impact of science and technology

The publication contains no direct measures of the output of scientific and technological activities, such as indicators based on innovation. However, three types of proxy indicators based on data originally collected for other purposes are presented: patents, the technology balance of payments and trade in R&D-intensive industries. While each of these indicators has its shortcomings, taken together they may throw light on countries' technological performances.

Patent data can be considered as proxy measures of the output of R&D in the form of inventions. The data presented show the total number and national percentages of triadic patent families, as well as the number of patent applications to the EPO in two specific sectors of interest: the ICT and biotechnology sectors.

The technology balance of payments (TBP) series are data extracted from national sources (balance of payments or survey results) with the aim of measuring the flow of technological know-how and services into and out of the country concerned. The OECD manual “Proposed Standard Method of Compiling and Interpreting Technology Balance of Payments Data”, TBP Manual 1990, gives the methodology for the international standards for compiling such data. The series quoted comprise money paid or received for the acquisition or use of patents, licences, trademarks, designs, inventions, know-how and closely related technical services.

Indicators of trade performance in R&D intensive industries can be used as proxy measures of the industrial and economic impact of scientific and technological activity. The tables concerned give trade balances and export market shares for three selected groups of R&D intensive industries: “pharmaceuticals”, “computer, electronic and optical industry”, and “aerospace”.

Abbreviations

R&D terminology

BERD	Expenditure on R&D in the business enterprise sector.
FTE	Full-time equivalent (on R&D).
GBAORD	Government budget appropriations or outlays for R&D.
GERD	Gross domestic expenditure on R&D.
GOVERD	Government intramural expenditure on R&D.
GUF	General university funds.
HERD	Expenditure on R&D in the higher education sector.
NSE	Natural sciences and engineering.
PNP	Private non-profit institutions.
R&D	Research and experimental development.
SSH	Social sciences and humanities.

For further explanations of the above terms, see the standard OECD methodology for the collection of R&D statistics entitled *The Measurement of Scientific and Technological Activities: Proposed Standard Practice for Surveys of Research and Experimental Development – Frascati Manual 2002*, known simply as the *Frascati Manual*.

Other

GDP	Gross domestic product.
ISIC	International standard industrial classification.
PCT	Patent Co-operation Treaty.
PPP	Purchasing power parities.
TBP	Technology balance of payments.

Table of contents

Foreword	3
Abbreviations	5
Standard footnotes	11
Key figures	13
International comparisons	19
Tables	
R&D expenditure and personnel	
1. Gross domestic expenditure on R&D (GERD) at current prices and PPPs	20
2. Gross domestic expenditure on R&D (GERD) as a percentage of GDP	21
3. Gross domestic expenditure on R&D (GERD) at 2005 prices and PPPs	22
4. Gross domestic expenditure on R&D (GERD) per capita at current prices and PPPs	23
5. Estimated civil GERD (Gross domestic expenditure on R&D) as a percentage of GDP	24
6. Basic research expenditure as a percentage of GDP	25
7. Total researchers in full-time equivalent	26
8. Total researchers in full-time equivalent per thousand total employment	27
9. Total R&D personnel in full-time equivalent	28
10. Total R&D personnel in full-time equivalent per thousand total employment	29
11. Industry-financed GERD (Gross domestic expenditure on R&D) as a percentage of GDP	30
12. Government-financed GERD (Gross domestic expenditure on R&D) as a percentage of GDP	31
13. Percentage of Gross domestic expenditure on R&D (GERD) financed by industry	32
14. Percentage of Gross domestic expenditure on R&D (GERD) financed by government	33
15. Percentage of Gross domestic expenditure on R&D (GERD) financed by other national sources	34
16. Percentage of Gross domestic expenditure on R&D (GERD) financed by abroad	35
17. Percentage of Gross domestic expenditure on R&D (GERD) performed by the business enterprise sector	36
18. Percentage of Gross domestic expenditure on R&D (GERD) performed by the higher education sector	37
19. Percentage of Gross domestic expenditure on R&D (GERD) performed by the government sector	38
20. Percentage of Gross domestic expenditure on R&D (GERD) performed by the private non-profit sector	39
21. Total researchers in headcount	40
22. Women researchers as a percentage of total researchers	41
23. Business enterprise expenditure on R&D (BERD) at current prices and PPPs	42
24. Business enterprise expenditure on R&D (BERD) as a percentage of GDP	43
25. Business enterprise expenditure on R&D (BERD) at 2005 prices and PPPs	44
26. Business enterprise expenditure on R&D (BERD) as a percentage of value added in industry	45
27. Business enterprise researchers in full-time equivalent	46
28. Business enterprise researchers as a percentage of national total	47

29. Business enterprise researchers in full-time equivalent per thousand employment in industry . . .	48
30. Total business enterprise R&D personnel in full-time equivalent	49
31. Total business enterprise R&D personnel as a percentage of national total	50
32. Total business enterprise R&D personnel in full-time equivalent per thousand employment in industry	51
33. Industry-financed BERD (Business enterprise expenditure on R&D) at 2005 prices and PPPs	52
34. Industry-financed BERD (Business enterprise expenditure on R&D) as a percentage of value added in industry	53
35. Percentage of Business enterprise expenditure on R&D (BERD) financed by industry	54
36. Percentage of Business enterprise expenditure on R&D (BERD) financed by government	55
37. Percentage of Business enterprise expenditure on R&D (BERD) financed by other national sources . . .	56
38. Percentage of Business enterprise expenditure on R&D (BERD) financed by abroad	57
39. Business enterprise expenditure on R&D (BERD) performed in the pharmaceutical industry at current prices and PPPs.	58
40. Business enterprise expenditure on R&D (BERD) performed in the computer, electronic and optical industry at current prices and PPPs	59
41. Business enterprise expenditure on R&D (BERD) performed in the aerospace industry at current prices and PPPs.	60
42. Business enterprise expenditure on R&D (BERD) performed in service industries at current prices and PPPs.	61
43. Higher education expenditure on R&D (HERD) at current prices and PPPs	62
44. Higher education expenditure on R&D (HERD) as a percentage of GDP.	63
45. Higher education expenditure on R&D (HERD) at 2005 prices and PPPs	64
46. Percentage of Higher education expenditure on R&D (HERD) financed by industry	65
47. Higher education researchers in full-time equivalent	66
48. Higher education researchers as a percentage of national total.	67
49. Higher education Total R&D personnel in full-time equivalent	68
50. Government intramural expenditure on R&D (GOVERD) at current prices and PPPs.	69
51. Government intramural expenditure on R&D (GOVERD) as a percentage of GDP	70
52. Government intramural expenditure on R&D (GOVERD) at 2005 prices and PPPs	71
53. Percentage of Government intramural expenditure on R&D (GOVERD) financed by industry	72
54. Government researchers in full-time equivalent	73
55. Government researchers as a percentage of national total	74
56. Government Total R&D personnel in full-time equivalent.	75
Government budget appropriations or outlays for R&D (GBAORD)	
57. Total GBAORD (Government budget appropriations or outlays for R&D) at current prices and PPPs. . . .	76
58. Defence Budget R&D	77
59. Civil Budget R&D	78
60. Civil GBAORD by socio-economic objectives (million current PPP\$)	79
R&D expenditures of foreign affiliates	
61. R&D expenditure of foreign affiliates at current prices and PPPs	80
62. R&D expenditure of foreign affiliates as a percentage of R&D expenditures of enterprises.	81
Patents	
63. Number of triadic patent families	82
64. Share of countries in triadic patent families	83
65. Number of patents in the ICT sector - applications filed under the PCT.	84
66. Number of patents in the biotechnology sector - applications filed under the PCT	85

Technology balance of payments (TBP)

67. Technology balance of payments: receipts	86
68. Technology balance of payments: payments	87
69. Technology balance of payments: payments as a percentage of GERD (Gross domestic expenditure on R&D)	88

International trade in highly R&D-intensive industries

70. Trade balance and export market share: Pharmaceutical industry	89
71. Trade balance and export market share: Computer, electronic and optical industry	90
72. Trade balance and export market share: Aerospace industry	91

General methodology	93
R&D data (Tables 1 to 60)	94
R&D expenditures of foreign affiliates (Tables 61 and 62)	98
Patents (Tables 63 to 66)	98
Technology balance of payments (TBP) (Tables 67 to 69)	99
International trade in highly R&D-intensive industries (Tables 70 to 72)	100

Annex 1. National specifications	101
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Annex 2. Background economic indicators	115
A. Gross domestic product at current prices and PPPs	116
B. Implicit GDP price indices	117
C. Purchasing power parities	118
D. Value added in industry at current prices and PPPs	119
E. Total population	120
F. Total employment	121
G. Industrial employment	122
H. Exchange rates	123

Annex 3. List of indicators for the electronic publication	125
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Standard footnotes

- a) Break in series with previous year for which data is available.
- b) Secretariat estimate or projection based on national sources.
- c) National estimate or projection.
- d) Defence excluded (all or mostly).
- e) National results adjusted by the Secretariat to meet *Frascati Manual* recommendations.
- f) (Not currently used).
- g) Excluding R&D in the social sciences and humanities.
- h) Federal or central government only.
- i) Excludes data for the R&D content of general payment to the higher education sector for combined education and research (public GUF).
- j) Excludes most or all capital expenditure.
- k) Total intramural R&D expenditure instead of current intramural R&D expenditure.
- l) Overestimated or based on overestimated data.
- m) Underestimated or based on underestimated data.
- n) Included elsewhere.
- o) Includes other classes.
- p) Provisional.
- q) (Not currently used).
- r) (Not currently used).
- s) Unrevised breakdown not adding to the revised total.
- t) Do not correspond exactly to *Frascati Manual* recommendations.
- u) University graduates instead of researchers.
- v) The sum of the breakdown does not add to the total (see General methodology).
- w) Including extramural R&D expenditure.
- x) Confidential.
- y) Compiled according to the System of National Accounts 1993.
- z) (Not currently used).

Key figures

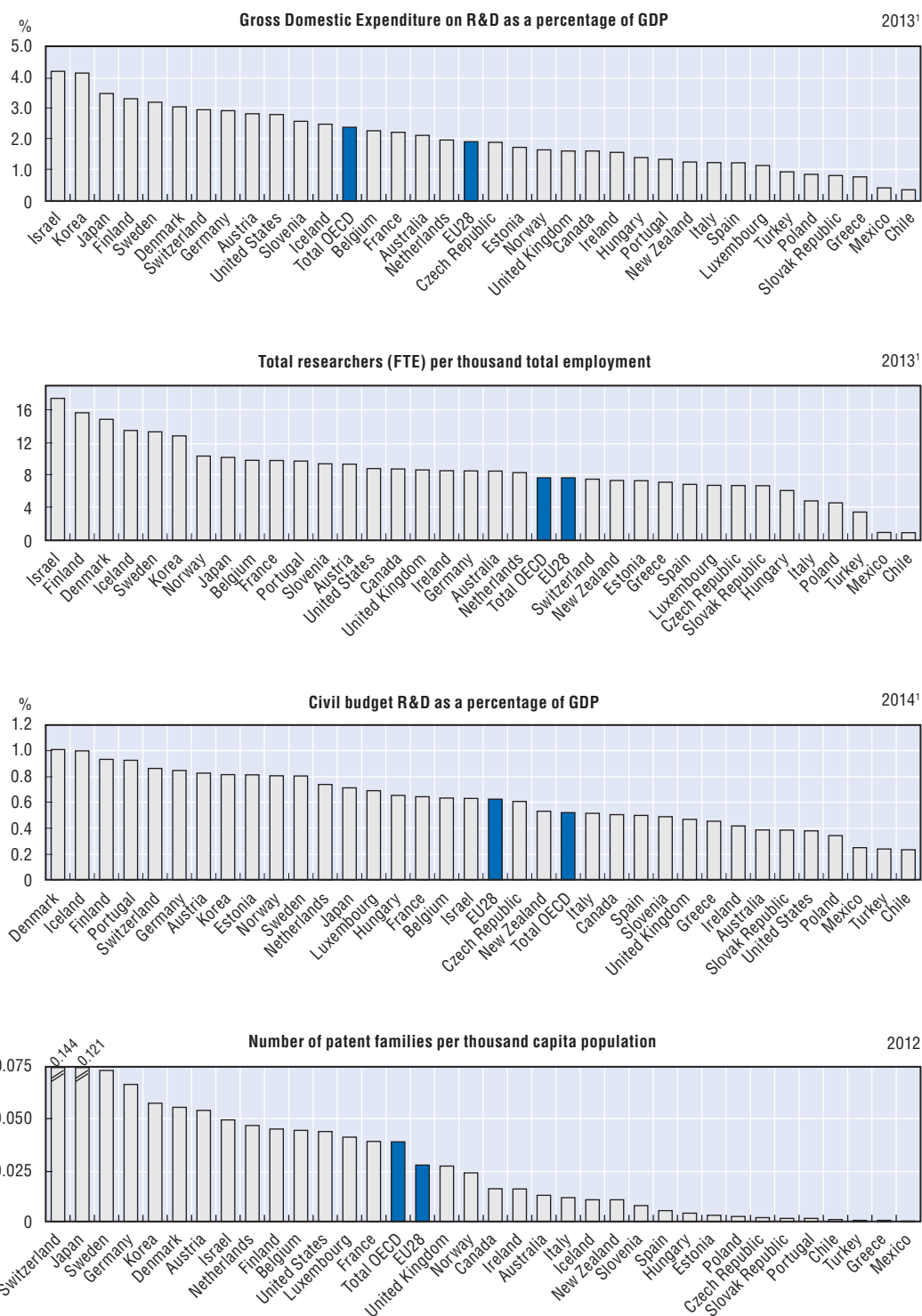
Key figures

2013 or latest available year

	Million current PPP	Gross domestic expenditure on R&D					Total researchers
		% financed by		% performed by			Full-time equivalent
		Industry	Government	Industry	Higher education	Government	
Australia	20 955.6 ^c	61.9	34.6	57.9 ^c	28.1 ^c	11.2 ^c	92 649
Austria	11 030.1 ^{b, p}	44.5 ^{c, p}	38.7 ^{c, o, p}	68.8 ^{c, p}	25.6 ^{c, p}	5.1 ^{c, p}	39 923 ^{c, p}
Belgium	10 603.4 ^p	60.2	23.4	69.1 ^p	21.7 ^p	8.8 ^p	44 649 ^p
Canada	24 565.4 ^p	46.4 ^p	34.9 ^{c, p}	50.5 ^{g, p}	39.8 ^p	9.2 ^p	156 550
Chile	1 343.7	34.9	36.0	34.4	34.3	4.1	6 798 ^m
Czech Republic	5 812.9 ^p	37.6 ^p	34.7 ^p	54.1 ^p	27.2 ^p	18.3 ^p	34 271 ^p
Denmark	7 513.4 ^{c, p}	59.8 ^{c, p}	29.3 ^{c, p}	65.4 ^{c, p}	31.8 ^{c, p}	2.4 ^{c, p}	40 858 ^{c, p}
Estonia	592.0 ^p	41.3 ^p	48.0 ^p	47.7 ^p	42.3 ^p	8.9 ^p	4 407 ^p
Finland	7 175.6	60.8	26.0	68.9	21.5	8.9	39 196
France	55 218.2 ^p	55.4	35.0	64.8 ^p	20.7 ^p	13.1 ^p	265 177 ^p
Germany	103 909.0 ^{c, p}	66.1	29.2	67.8 ^{c, p}	17.5 ^{c, p}	14.7 ^{c, o, p}	360 900 ^{c, p}
Greece	2 213.4 ^p	32.1 ^p	51.5 ^p	34.8	37.4 ^p	26.9 ^p	27 668 ^p
Hungary	3 249.6	46.8	35.9	69.4 ^v	14.4 ^v	14.9 ^v	25 038
Iceland	314.8	49.8	40.0	53.1	26.4	17.7	2 258
Ireland	3 271.5 ^c	50.3 ^c	27.3 ^c	72.0 ^c	23.1 ^c	4.8 ^c	15 732 ^c
Israel	11 032.9 ^d	36.6 ^d	12.1 ^d	82.7 ^d	14.1 ^d	2.1 ^d	63 728 ^{c, d}
Italy	26 520.4 ^p	44.3	42.5	54.4 ^p	28.2 ^p	14.9 ^p	117 973 ^p
Japan	160 246.8	75.5	17.3 ^e	76.1	13.5	9.2	660 489
Korea	68 937.0	74.7	23.8	77.9	9.5	11.3	321 842
Luxembourg	571.5 ^p	47.8	30.5	61.4 ^p	15.3 ^{c, p}	23.3 ^{c, p}	2 615 ^p
Mexico	8 058.5	36.8	59.6	39.0	28.9	30.5	46 125
Netherlands	15 376.7 ^p	47.1 ^p	34.3 ^p	57.5 ^p	31.8 ^p	10.7 ^{o, p}	72 325 ^p
New Zealand	1 766.6	40.0	41.4	45.4	31.8	22.7	16 300
Norway	5 538.6 ^p	44.2	46.5	52.4 ^p	31.7 ^p	16.0 ^p	27 841
Poland	7 918.1	37.3	47.2	43.6	29.3	26.8	71 472
Portugal	3 942.7 ^p	46.0	43.1	47.6 ^p	37.8 ^p	5.8 ^p	43 321 ^p
Slovak Republic	1 190.6	40.2	38.9 ^m	46.3	33.1	20.5 ^d	14 727
Slovenia	1 537.8 ^p	63.8 ^p	26.9	76.5 ^p	10.4 ^p	13.0 ^p	8 707 ^p
Spain	19 192.7 ^p	45.6	43.1	53.2	27.9 ^p	18.7 ^p	123 583 ^p
Sweden	13 747.1 ^{m, p}	57.3	27.7	68.2 ^{l, p}	27.8 ^{l, p}	3.8 ^p	62 294 ^m
Switzerland	13 251.4	60.8	25.4	69.3	28.1	0.8 ^h	35 950
Turkey	13 315.1	48.9	26.6	47.5	42.1	10.4	89 075
United Kingdom	39 858.8 ^{c, p}	46.5 ^{c, p}	27.0 ^{c, p}	64.5 ^{c, p}	26.3 ^{c, p}	7.3 ^{c, p}	259 347 ^{c, p}
United States	453 544.0 ^{i, p}	59.1 ^{i, p}	30.8 ^{i, p}	69.8 ^{i, p}	13.8 ^{i, p}	12.3 ^{h, i, p}	1 252 948 ^b
EU28 (OECD estimates)	344 410.1 ^b	54.2 ^b	33.5 ^b	63.0 ^b	23.3 ^b	12.7 ^b	1 725 599 ^b
OECD	1 144 641.1^b	60.0^b	29.5^b	68.4^b	17.7^b	11.2^b	4 304 005^b
Non-member economies							
Argentina	5 185.8	21.3	74.0	21.5	31.2	45.6	51 598
China	336 495.4	74.6	21.1	76.6	7.2	16.2	1 484 040
Romania	1 452.9	31.0	52.3	30.7	19.7	49.2	18 704
Russian Federation	40 694.5	28.2	67.6	60.6	9.0	30.3	440 581
Singapore	8 149.3	53.4	38.5	60.9	29.0	10.0	34 141
South Africa	4 870.7	38.3	45.4	44.3	30.7	22.9	21 383
Chinese Taipei	30 332.1	75.5	23.5	75.5	10.8	13.4	140 124

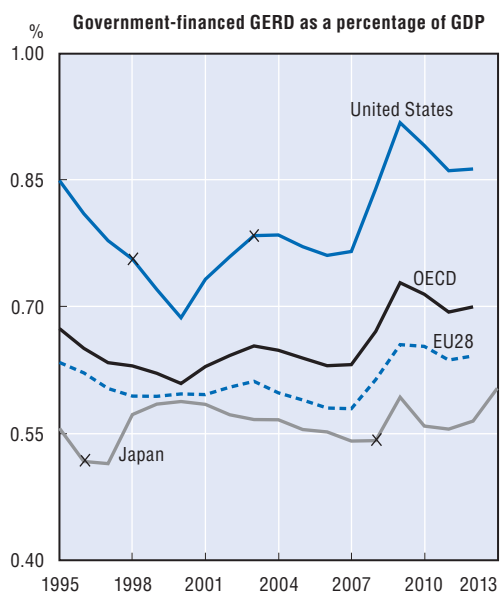
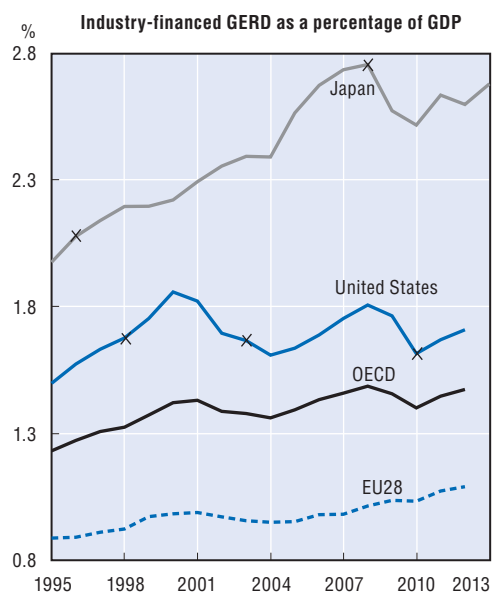
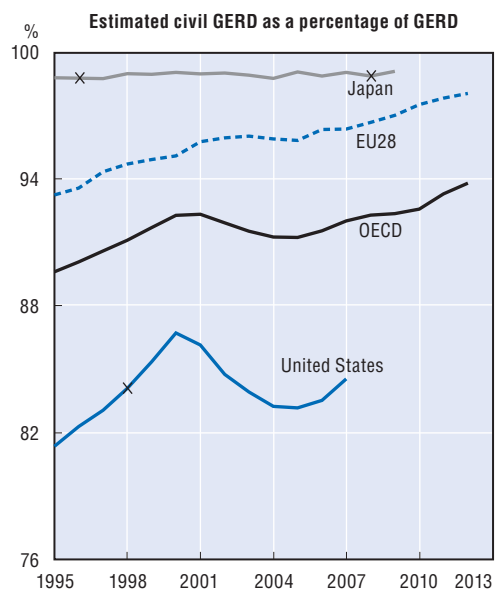
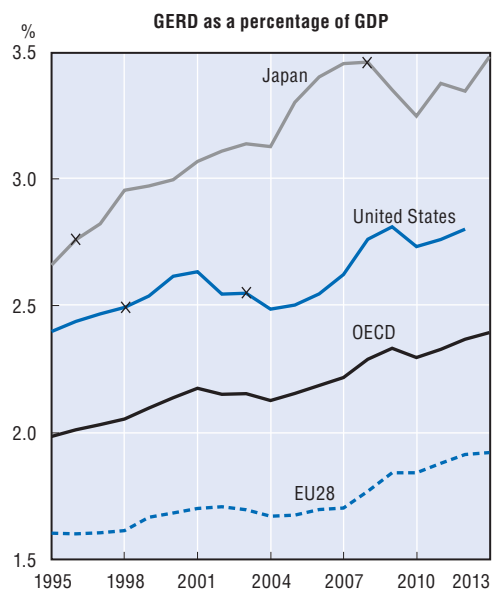
Note: See Tables 1, 7, 13, 14, 17, 18 and 19 for details on reference years.

Source: OECD, Main Science and Technology Indicators Database, February 2015.



1. Or latest year.

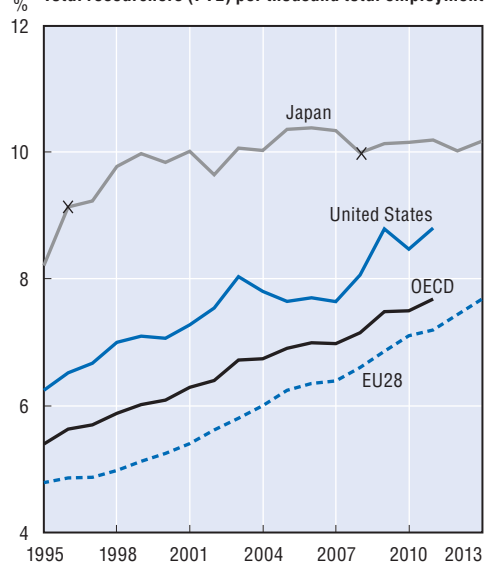
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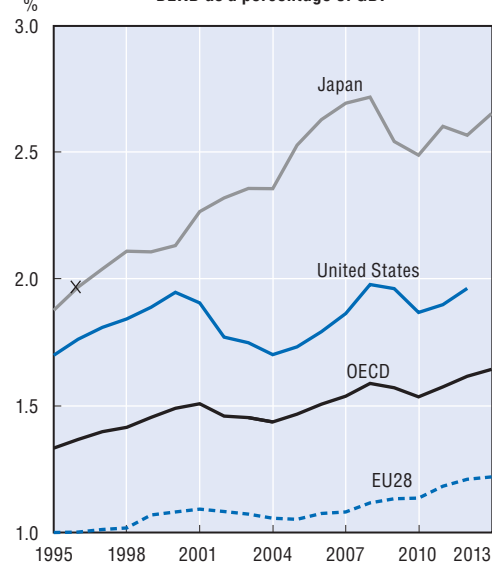
× Break in series.

Source: OECD, Main Science and Technology Indicators Database, February 2015.

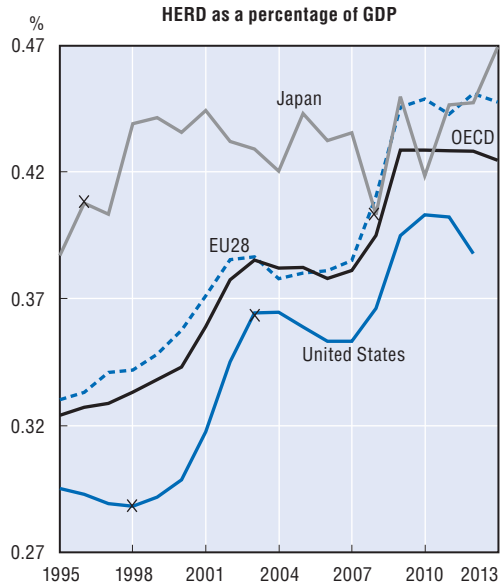
Total researchers (FTE) per thousand total employment



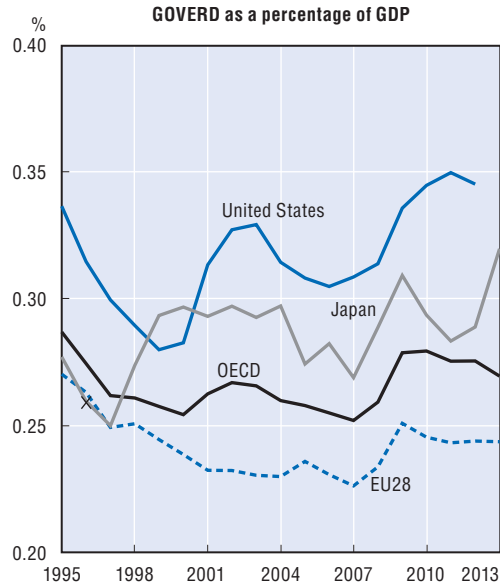
BERD as a percentage of GDP



HERD as a percentage of GDP



GOVERD as a percentage of GDP



X Break in series.

Source: OECD, Main Science and Technology Indicators Database, February 2015.

International comparisons

Table 1. Gross domestic expenditure on R&D (GERD) at current prices and PPPs

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	7 951.3	19 133.0	..	20 546.1 ^c	20 955.6 ^c	..	..
Austria	4 477.3 ^c	8 854.1 ^c	8 860.5	9 585.9 ^c	9 906.5	10 628.7 ^c	10 752.6 ^{c,p}
Belgium	5 574.2	7 799.3	8 044.8	8 766.0	9 729.1	10 334.0 ^c	10 603.4 ^p
Canada	16 746.6	24 911.9	25 027.7	25 029.1	25 393.1	25 121.0	24 565.4 ^p
Chile	..	1 026.3	964.0 ^a	1 028.1	1 232.1	1 343.7	..
Czech Republic	1 864.6	3 496.9	3 660.3	3 796.4	4 683.8	5 388.0	5 812.9 ^p
Denmark	..	6 235.8	6 717.2	6 811.8	7 157.1	7 362.8	7 513.4 ^{c,p}
Estonia	81.4	379.1	376.4	444.3	733.4	706.2	592.0 ^p
Finland	4 447.5	7 487.9	7 514.8	7 653.1	7 892.0	7 443.9	7 175.6
France	32 978.2 ^a	46 547.8	49 757.0	50 730.0 ^a	53 428.4	54 541.0	55 218.2 ^p
Germany	52 375.4	81 970.7	82 822.2	87 822.0	96 282.4	100 699.1	103 909.0 ^{c,p}
Greece	..	2 284.7 ^{a,c}	2 130.5 ^c	1 927.3 ^c	1 986.9	1 945.4	2 213.4 ^p
Hungary	977.3 ^d	2 058.2	2 382.7	2 472.6	2 696.2	2 842.7	3 249.6
Iceland	216.6 ^c	333.6	337.9	..	314.8 ^a	..	..
Ireland	1 223.1 ^c	2 738.3	3 066.7 ^c	3 166.4 ^c	3 151.2 ^c	3 271.5 ^c	..
Israel ¹	6 154.4 ^{a,d}	8 706.4 ^d	8 506.8 ^d	8 672.9 ^d	9 615.1 ^d	10 625.7 ^d	11 032.9 ^d
Italy	15 256.4	24 076.1	24 648.8	25 151.5	25 769.3	26 849.6	26 520.4 ^p
Japan	98 758.0	148 719.2 ^a	136 954.0	140 607.4	148 389.2	151 810.0	160 246.8
Korea	18 541.7 ^g	43 906.4	45 987.2	52 172.8	58 379.7	64 458.2	68 937.0
Luxembourg	387.4	682.8	683.9	641.4	669.0	563.8 ^a	571.5 ^p
Mexico	3 362.8	6 626.6	7 008.0	7 863.7	8 058.5	..	..
Netherlands	9 068.1	12 467.8	12 370.2	12 822.2	14 623.0 ^a	15 183.5	15 376.7 ^p
New Zealand	..	..	1 655.4	..	1 766.6	..	..
Norway	..	4 630.5	4 676.9	4 743.8	5 057.4	5 396.2	5 538.6 ^p
Poland	2 606.3	4 150.9	4 864.7	5 722.6	6 394.7	7 827.4	7 918.1
Portugal	1 324.9 ^c	3 981.9 ^a	4 376.9	4 362.8	4 142.4	3 911.6	3 942.7 ^p
Slovak Republic	384.5	594.1	592.8	816.1	903.5	1 127.5	1 190.6
Slovenia	482.4	972.6 ^a	1 019.3	1 162.9	1 418.6 ^a	1 508.9	1 537.8 ^p
Spain	7 794.4	20 414.9 ^a	20 554.8	20 336.2	20 149.1	19 452.9	19 192.7 ^p
Sweden	..	13 496.1 ^c	12 599.7	12 585.4 ^c	13 315.8	13 703.2 ^c	14 151.3 ^m
Switzerland	5 768.8	10 525.2	..	..	..	13 251.4	..
Turkey	2 824.8	7 744.5	8 867.1	9 852.5	11 245.5	12 430.8	13 315.1
United Kingdom	27 872.8	39 396.9 ^c	39 432.9 ^c	38 139.3 ^c	39 132.6	38 851.8 ^c	39 858.8 ^{c,p}
United States	269 513.0 ⁱ	407 238.0 ⁱ	406 000.0 ⁱ	409 599.0 ⁱ	429 143.0 ⁱ	453 544.0 ^{i,p}	..
EU28 (OECD estimates)	184 244.5 ^b	294 196.5 ^b	300 079.6 ^b	308 607.3 ^b	328 328.0 ^b	338 441.2 ^b	344 814.3 ^b
OECD-Total	616 356.2^b	975 119.5^b	973 187.2^b	998 369.9^b	1 056 090.7^b	1 104 245.4^b	1 145 045.3^b
Argentina	1 592.8	2 951.2	3 410.0	3 837.9	4 471.7	5 185.8	..
China	32 646.6 ^a	144 684.9	184 379.2 ^a	213 009.9	247 808.3	293 064.5	336 495.4
Romania	468.8	1 866.7	1 493.2	1 516.6	1 726.2 ^a	1 738.4	1 452.9
Russian Federation	10 504.5	30 058.4	34 654.6	33 093.5	35 192.1	38 787.9	40 694.5
Singapore	2 994.5	8 018.1	6 611.4	7 194.0	8 359.7	8 149.3	..
South Africa	..	5 235.1	4 847.9	4 405.3	4 652.2	4 870.7	..
Chinese Taipei	9 164.8 ^d	21 414.1	22 383.2	24 860.6	27 348.6	28 711.0	30 332.1

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 2. Gross domestic expenditure on R&D (GERD) as a percentage of GDP

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	1.48	2.25	..	2.20 ^c	2.13 ^c	..	..
Austria	1.89 ^c	2.59 ^c	2.61	2.74 ^c	2.68	2.81 ^c	2.81 ^{c,p}
Belgium	1.93	1.92	1.97	2.05	2.15	2.24 ^c	2.28 ^p
Canada	1.87	1.87	1.92	1.84	1.78	1.71	1.62 ^p
Chile	..	0.37 ^y	0.35 ^{a,y}	0.33 ^y	0.35 ^y	0.36 ^y	..
Czech Republic	1.12	1.24	1.30	1.34	1.56	1.79	1.91 ^p
Denmark	..	2.78	3.07	2.94	2.97	3.02	3.06 ^{c,p}
Estonia	0.60	1.26	1.40	1.58	2.34	2.16	1.74 ^p
Finland	3.25	3.55	3.75	3.73	3.64	3.43	3.32
France	2.08 ^a	2.06	2.21	2.18 ^a	2.19	2.23	2.23 ^p
Germany	2.40	2.60	2.73	2.72	2.80	2.88	2.94 ^{c,p}
Greece	..	0.66 ^{a,c}	0.63 ^c	0.60 ^c	0.67	0.69	0.78 ^p
Hungary	0.79 ^d	0.99	1.14	1.15	1.20	1.27	1.41
Iceland	2.59 ^c	2.53	2.66	..	2.49 ^a	..	..
Ireland	1.09 ^c	1.39	1.63 ^c	1.62 ^c	1.53 ^c	1.58 ^c	..
Israel ¹	3.96 ^{a,d}	4.39 ^d	4.15 ^d	3.96 ^d	4.10 ^d	4.25 ^d	4.21 ^d
Italy	1.01	1.16	1.22	1.22	1.21	1.26	1.25 ^p
Japan	3.00 ^y	3.47 ^{a,y}	3.36 ^y	3.25 ^y	3.38 ^y	3.35 ^y	3.49 ^y
Korea	2.18 ^y	3.12	3.29	3.47	3.74	4.03	4.15
Luxembourg	1.57	1.65	1.72	1.50	1.41	1.16 ^a	1.16 ^p
Mexico	0.33	0.40	0.43	0.45	0.43	..	..
Netherlands	1.80	1.65	1.69	1.72	1.89 ^a	1.97	1.98 ^p
New Zealand	..	..	1.28 ^y	..	1.27 ^y	..	..
Norway	..	1.56	1.72	1.65	1.63	1.62	1.66 ^p
Poland	0.64	0.60	0.67	0.72	0.75	0.89	0.87
Portugal	0.72 ^c	1.45 ^a	1.58	1.53	1.46	1.37	1.36 ^p
Slovak Republic	0.64	0.46	0.47	0.62	0.67	0.81	0.83
Slovenia	1.36	1.63 ^a	1.82	2.06	2.43 ^a	2.58	2.59 ^p
Spain	0.88	1.32 ^a	1.35	1.35	1.32	1.27	1.24 ^p
Sweden	..	3.50 ^c	3.42	3.22 ^c	3.22	3.28 ^c	3.30 ^m
Switzerland	2.33	2.73	..	..	..	2.96	..
Turkey	0.48 ^y	0.73 ^y	0.85 ^y	0.84 ^y	0.86 ^y	0.92 ^y	0.95 ^y
United Kingdom	1.73	1.69 ^c	1.75 ^c	1.69 ^c	1.69	1.63 ^c	1.63 ^{c,p}
United States	2.62 ⁱ	2.77 ⁱ	2.82 ⁱ	2.74 ⁱ	2.77 ⁱ	2.81 ^{i,p}	..
EU28 (OECD estimates)	1.68 ^b	1.77 ^b	1.84 ^b	1.84 ^b	1.88 ^b	1.92 ^b	1.92 ^b
OECD-Total	2.14^b	2.29^b	2.34^b	2.30^b	2.33^b	2.37^b	2.40^b
Argentina	0.37	0.42	0.48	0.49	0.52	0.58	..
China	0.91 ^{a,y}	1.46 ^y	1.66 ^{a,y}	1.75 ^y	1.84 ^y	1.95 ^y	2.02 ^y
Romania	0.36	0.57	0.46	0.45	0.49 ^a	0.48	0.39
Russian Federation	1.05 ^y	1.04 ^y	1.25 ^y	1.13 ^y	1.09 ^y	1.12 ^y	1.12 ^y
Singapore	1.82	2.62	2.16	2.01	2.16	2.02	..
South Africa	..	0.93 ^y	0.87 ^y	0.76 ^y	0.76 ^y	0.76 ^y	..
Chinese Taipei	1.94 ^{d,y}	2.78 ^y	2.94 ^y	2.91 ^y	3.01 ^y	3.06 ^y	3.12 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 3. Gross domestic expenditure on R&D (GERD) at 2005 prices and PPPs

Million 2005 USD

	2000	2008	2009	2010	2011	2012	2013
Australia	8 956.5	17 699.4	..	18 026.3 ^c	18 120.2 ^c	..	..
Austria	4 952.9 ^c	8 025.9 ^c	7 804.6	8 341.3 ^c	8 407.8	8 888.7 ^c	8 918.8 ^{c,p}
Belgium	6 115.3	7 082.2	7 096.6	7 542.6	8 052.3	8 406.3 ^c	8 572.1 ^p
Canada	19 191.8	23 000.3	23 028.1	22 751.5	22 709.2	22 209.4	21 530.3 ^p
Chile	..	888.7	827.7 ^a	821.0	927.3	1 004.8	..
Czech Republic	2 095.7	3 274.3	3 254.2	3 438.4	4 082.1	4 639.9	4 910.3 ^p
Denmark	..	5 333.9	5 590.2	5 436.2	5 553.7	5 622.6	5 657.1 ^{c,p}
Estonia	95.4	318.8	301.2	349.8	560.9	540.6	442.7 ^p
Finland	4 804.7	6 577.7	6 377.0	6 527.8	6 539.0	6 077.2	5 807.8
France	36 842.7 ^a	41 460.6	43 204.4	43 375.4 ^a	44 593.8	45 462.8	45 700.2 ^p
Germany	61 703.3	74 614.3	73 845.2	76 506.7	81 650.3	84 289.7	86 109.4 ^{c,p}
Greece	..	2 012.5 ^{a,c}	1 820.2 ^c	1 644.2 ^c	1 678.2	1 612.7	1 770.4 ^p
Hungary	1 120.2 ^d	1 809.5	1 955.1	1 984.9	2 107.1	2 203.0	2 471.3
Iceland	225.6 ^c	312.6	312.2	..	289.8 ^a	..	..
Ireland	1 440.7 ^c	2 516.4	2 749.6 ^c	2 727.4 ^c	2 654.9 ^c	2 721.6 ^c	..
Israel ¹	6 091.3 ^{a,d}	8 702.0 ^d	8 394.9 ^d	8 455.5 ^d	9 137.0 ^d	9 742.9 ^d	9 979.7 ^d
Italy	16 494.8	20 487.2	20 322.4	20 696.2	20 589.4	20 964.2	20 374.4 ^p
Japan	110 017.2	138 683.6 ^a	126 872.3	128 685.1	133 188.7	133 894.4	141 460.9
Korea	20 172.5 ^g	41 536.2	44 104.2	49 432.7	55 358.7	60 892.4	64 669.2
Luxembourg	422.2	578.1	570.3	524.3	505.2	413.2 ^a	421.1 ^p
Mexico	4 027.7	5 866.7	5 970.1	6 618.1	6 442.4	..	..
Netherlands	10 253.2	11 004.8	10 856.4	11 230.8	12 500.9 ^a	12 819.5	12 820.4 ^p
New Zealand	..	..	1 423.1	..	1 452.1	..	..
Norway	..	4 022.7	4 044.3	3 973.8	4 103.9	4 233.2	4 348.1 ^p
Poland	2 925.8	3 761.0	4 261.2	4 808.1	5 228.6	6 282.6	6 240.7
Portugal	1 601.6 ^c	3 494.3 ^a	3 705.8	3 663.4	3 418.8	3 102.6	3 034.9 ^p
Slovak Republic	445.2	522.4	506.1	692.1	766.0	945.0	981.3
Slovenia	543.2	906.7 ^a	934.1	1 072.1	1 270.3 ^a	1 314.7	1 305.9 ^p
Spain	9 112.7	17 514.5 ^a	17 328.1	17 308.4	16 814.6	15 837.8	15 333.5 ^p
Sweden	..	11 664.4 ^c	10 808.0	10 785.8 ^c	11 100.5	11 265.5 ^c	11 480.3 ^m
Switzerland	6 290.5	8 802.2	..	..	..	9 915.5	..
Turkey	2 995.8	6 380.4	7 109.6	7 709.5	8 545.8	9 361.6	10 002.4
United Kingdom	31 241.3	37 084.1 ^c	36 675.5 ^c	36 233.5 ^c	36 848.9	35 752.1 ^c	36 230.2 ^{c,p}
United States	302 755.0 ⁱ	377 452.7 ⁱ	373 469.2 ⁱ	372 233.4 ⁱ	382 105.6 ⁱ	396 710.5 ^{i,p}	..
EU28 (OECD estimates)	208 767.3 ^b	263 555.9 ^b	262 891.5 ^b	267 796.9 ^b	278 023.9 ^b	282 459.5 ^b	284 384.8 ^b
OECD-Total	691 436.9^b	894 125.0^b	881 806.0^b	894 140.7^b	926 255.2^b	953 813.4^b	978 413.0^b
Argentina	1 789.0	2 735.5	3 136.8	3 488.2	3 981.7	4 535.1	..
China	37 341.3 ^a	135 093.8	168 011.6 ^a	195 572.9	224 094.5	260 419.5 ^b	294 621.0 ^b
Romania	562.6	1 453.6	1 096.9	1 065.3	1 174.8 ^a	1 154.2	956.4
Russian Federation	13 242.4	21 891.8	24 190.5	22 822.0	22 963.4	24 496.5	24 783.0
Singapore	3 362.8	7 425.2	6 080.6	6 532.6	7 437.0	7 128.7	..
South Africa	..	4 852.8	4 459.6	4 004.0	4 146.9	4 267.1	..
Chinese Taipei	10 295.3 ^d	19 848.4	20 590.4	22 593.2	24 350.5	25 113.0	26 141.9

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 4. Gross domestic expenditure on R&D (GERD) per capita at current prices and PPPs

USD

	2000	2008	2009	2010	2011	2012	2013
Australia	412.6	880.6	..	916.1 ^c	920.7 ^c	..	..
Austria	558.8 ^c	1 064.0 ^c	1 062.2	1 146.5 ^c	1 181.0	1 261.4 ^c	1 268.4 ^{c,p}
Belgium	544.0	728.4	745.6	805.5	886.2	934.9 ^c	954.8 ^p
Canada	545.7	747.7	742.1	733.4	736.4	720.2	698.7 ^p
Chile	..	61.2	56.9 ^a	60.1	71.4	77.2	..
Czech Republic	181.5	335.3	348.9	361.0	446.2	512.7	553.0 ^p
Denmark	..	1 135.2	1 216.2	1 228.0	1 284.9	1 316.9	1 338.6 ^{c,p}
Estonia	58.1	283.2	281.8	333.2	551.6	532.9	448.4 ^p
Finland	859.2	1 409.2	1 407.5	1 426.9	1 464.7	1 374.9	1 319.3
France	541.8 ^a	723.6	769.6	780.8 ^a	818.2	831.3	837.9 ^p
Germany	637.3	998.2	1 011.6	1 074.2	1 177.3	1 229.3	1 265.6 ^{c,p}
Greece	..	204.2 ^{a,c}	190.4 ^c	172.8 ^c	178.6	175.4	200.1 ^p
Hungary	95.7 ^d	205.0	237.7	247.3	270.4	286.6	328.5
Iceland	770.3 ^c	1 044.6	1 058.5	..	986.9 ^a	..	..
Ireland	321.5 ^c	609.1	675.6 ^c	694.4 ^c	688.5 ^c	712.7 ^c	..
Israel ¹	976.3 ^{a,d}	1 184.4 ^d	1 137.0 ^d	1 138.1 ^d	1 238.6 ^d	1 344.1 ^d	1 369.5 ^d
Italy	267.9	406.4	413.7	420.4	429.1	445.0	437.3 ^p
Japan	778.7	1 161.5 ^a	1 069.7	1 098.1	1 160.8	1 190.2	1 258.5
Korea	394.4 ^g	897.0	935.0	1 055.9	1 172.8	1 289.0	1 372.7
Luxembourg	886.5	1 395.8	1 372.7	1 263.9	1 287.9	1 060.7 ^a	1 048.0 ^p
Mexico	33.3	59.5	62.1	68.8	69.7	..	..
Netherlands	569.5	758.4	748.5	771.9	876.0 ^a	906.4	915.3 ^p
New Zealand	..	..	382.1	..	400.2	..	..
Norway	..	971.0	968.9	970.3	1 021.1	1 075.2	1 090.3 ^p
Poland	68.1	108.9	126.4	148.6	166.0	203.1	205.7
Portugal	128.8 ^c	377.1 ^a	414.2	412.6	392.4	372.0	377.0 ^p
Slovak Republic	71.2	109.9	109.4	150.3	167.4	208.6	220.0
Slovenia	242.5	481.0 ^a	499.3	567.6	691.0 ^a	733.6	746.7 ^p
Spain	193.6	444.0 ^a	443.3	436.8	431.1	416.0	411.9 ^p
Sweden	..	1 463.8 ^c	1 355.0	1 342.0 ^c	1 409.2	1 439.5 ^c	1 474.0 ^m
Switzerland	800.2	1 365.0	..	..	..	1 671.1	..
Turkey	44.0	108.9	123.1	135.0	152.1	166.0	175.7
United Kingdom	473.3	637.2 ^c	633.4 ^c	607.7 ^c	618.4	609.9 ^c	621.8 ^{c,p}
United States	954.4 ⁱ	1 337.2 ⁱ	1 321.4 ⁱ	1 322.2 ⁱ	1 375.3 ⁱ	1 443.3 ^{i,p}	..
EU28 (OECD estimates)	381.6 ^b	584.4 ^b	593.8 ^b	609.0 ^b	646.3 ^b	664.6 ^b	675.8 ^b
OECD-Total	541.0^b	797.2^b	789.9^b	805.3^b	846.7^b	880.3^b	907.9^b
Argentina	43.2	74.4	85.2	95.1	109.8	126.2	..
China	25.8 ^a	108.9	138.2 ^a	158.9	183.9	216.4	247.3
Romania	20.9	85.0	68.1	69.4	79.2 ^a	79.9	67.0
Russian Federation	71.7	210.6	242.7	231.7	246.2	270.9	284.9
Singapore	764.3	1 653.7	1 331.8	1 416.4	1 610.1	1 536.7	..
South Africa	..	107.0	98.0	88.0	92.0	95.5	..
Chinese Taipei	411.4 ^d	929.6	968.1	1 073.3	1 177.6	1 231.4	1 297.7

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 5. Estimated civil GERD (Gross domestic expenditure on R&D)
as a percentage of GDP**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	1.42	2.19	..	..	..	..	..
Austria	..	..	2.60	..	2.67	..	..
Belgium	1.93	1.92 ^p	..	..	..	..	..
Canada	..	..	..	..	..	..	..
Chile	..	0.37 ^y	0.35 ^{a,y}	0.33 ^y	0.35 ^y	0.36 ^y	..
Czech Republic	1.06	1.24	1.29	1.33	1.55	1.78 ^p	..
Denmark	..	..	..	..	..	..	..
Estonia	0.60	1.25	1.39	1.58	.. ^x	2.16	1.74 ^p
Finland	3.22	3.53	3.73	3.71	3.62	3.41	..
France	1.91 ^a	1.90	2.07	2.08 ^a	2.12	2.16	..
Germany	2.35 ^c	2.56	2.69	2.68	2.77	2.85	..
Greece	..	..	..	..	0.67 ^b	0.69 ^b	0.78 ^{b,p}
Hungary	0.79	..	..	..	..	..	..
Iceland	2.59 ^c	2.53	2.66	..	2.49 ^a	..	..
Ireland	1.09 ^c	1.39	1.63 ^c	1.62 ^c	1.53 ^c	1.58 ^c	..
Israel ¹	3.96 ^a	4.39	4.15	3.96	4.10	4.25	4.21
Italy	1.00	1.16 ^b	1.22 ^b	1.22 ^b	1.21 ^b	1.26 ^b	1.25 ^{b,p}
Japan	2.98 ^y	3.43 ^{a,y}	3.33 ^y	..	..	..	..
Korea	2.06 ^g	2.97 ^b	3.15 ^b	3.32 ^b	3.58 ^b	3.85 ^b	3.98 ^b
Luxembourg	1.57	1.65	1.72	1.50	1.41	1.16 ^a	..
Mexico	..	..	..	..	..	..	..
Netherlands	..	..	..	..	..	..	..
New Zealand	..	..	1.28 ^b	..	1.27 ^b	..	..
Norway	..	..	..	..	..	..	..
Poland	..	..	..	..	..	..	..
Portugal	0.72 ^c	1.44 ^{a,c}	1.58	1.53	1.45	1.36	..
Slovak Republic	0.61	0.45	0.46	0.61	0.66	0.80	0.82
Slovenia	..	1.60 ^a	1.80	2.05	..	..	..
Spain	..	1.28 ^a	1.31	1.30	1.28	1.24	..
Sweden	..	..	3.29	..	3.12	..	..
Switzerland	2.31	2.71	..	..	..	2.92	..
Turkey	..	..	..	..	..	..	..
United Kingdom	1.47	1.53 ^c	1.60 ^c	1.57 ^c	1.57	1.52 ^c	..
United States	2.27 ⁱ	..	..	..	..	..	..
EU28 (OECD estimates)	1.60 ^b	1.71 ^b	1.79 ^b	1.80 ^b	1.84 ^b	1.88 ^b	..
OECD-Total	1.98^b	2.12^b	2.16^b	2.13^b	2.18^b	2.23^b	..
Argentina	0.36	0.42	0.48	0.49	0.51	0.58	..
China	..	..	..	..	..	..	..
Romania	0.36	0.56	0.45	0.45	0.49 ^a	0.48	..
Russian Federation	0.80 ^y	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	0.88 ^y	0.82 ^y	0.71 ^y	0.72 ^y	0.72 ^y	..
Chinese Taipei	1.94 ^y	2.74 ^y	2.88 ^y	2.85 ^y	2.96 ^y	3.03 ^y	3.09 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 6. Basic research expenditure as a percentage of GDP

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.38 ^k	0.45 ^k	..	..	..	..	..
Austria	..	..	0.49 ^{k,m}	..	0.51 ^{k,m}	..	..
Belgium	..	..	..	..	..	..	..
Canada	..	..	..	..	..	..	..
Chile	..	0.07 ^y	0.06 ^{m,y}	0.06 ^{m,y}	0.08 ^y	0.09 ^y	..
Czech Republic	0.26 ^{c,k}	0.36	0.38	0.40 ^k	0.45 ^k	0.54 ^k	..
Denmark	..	..	0.48	0.53 ^c	0.53	0.52 ^c	..
Estonia	0.22	0.29	0.34	0.37	0.35	0.35	..
Finland	..	..	..	..	..	..	..
France	0.49 ^{a,k}	0.52 ^k	0.58 ^k	0.55 ^{a,k}	0.53 ^k	0.64 ^k	..
Germany	..	..	..	..	..	..	..
Greece	..	..	..	..	0.19	..	..
Hungary	0.19	0.20	0.24	0.22	0.23	0.21	..
Iceland	..	0.42	0.40	..	0.62 ^a	..	..
Ireland	..	0.35 ^k	0.34 ^{c,k}	0.31 ^{c,k}	0.26 ^{c,k}	..	..
Israel ¹	0.59 ^{a,d}	0.57 ^{c,d}	0.42 ^{a,c,d}	0.41 ^{c,d}	0.42 ^{c,d}	0.46 ^{c,d}	0.46 ^{c,d}
Italy	..	0.31 ^k	0.33 ^k	0.31 ^k	0.29 ^k	0.32 ^k	..
Japan	0.37 ^{k,y}	0.39 ^{a,k,y}	0.42 ^{k,y}	0.39 ^{k,y}	0.41 ^{k,y}	0.42 ^{k,y}	0.44 ^{k,y}
Korea	0.27 ^{g,k}	0.50 ^k	0.59 ^k	0.63 ^k	0.68 ^k	0.74 ^k	..
Luxembourg	..	..	..	..	..	..	..
Mexico	0.10	..	0.11 ^k	..	..	..	..
Netherlands	..	..	..	..	0.60 ^{a,k}	0.55 ^k	..
New Zealand	..	..	0.35 ^{k,y}	..	0.33 ^{k,y}	..	..
Norway	..	..	0.31	..	0.29	..	..
Poland	0.21	0.18	0.20	0.21	0.20	0.23	..
Portugal	0.16 ^c	0.27	0.30	0.29	0.27	0.27	..
Slovak Republic	0.15	0.18	0.19	0.23	0.25	0.30	0.31
Slovenia	0.30	0.18 ^a	0.23	0.24	0.28 ^a	0.30	..
Spain	0.15 ^c	0.22 ^a	0.26	0.26	0.26	0.26	..
Sweden	..	..	..	..	..	..	..
Switzerland	0.65 ^k	0.73 ^k	..	..	..	0.90 ^k	..
Turkey	..	..	..	..	..	..	..
United Kingdom	..	0.18 ^c	0.19 ^c	0.18 ^c	0.16 ^c	0.18 ^c	..
United States	0.42	0.49	0.53	0.52	0.48	0.46	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	0.10 ^k	0.12 ^k	0.14 ^k	0.16 ^k	0.16 ^k	0.20 ^k	..
China	0.05 ^{a,k,y}	0.05 ^y	0.08 ^{a,k,y}	0.08 ^{k,y}	0.09 ^{k,y}	0.09 ^{k,y}	0.09 ^{k,y}
Romania	0.06	0.24	0.17	0.17	0.17 ^a	0.16	..
Russian Federation	0.14 ^y	0.19 ^y	0.25 ^y	0.21 ^y	0.19 ^y	0.17 ^y	0.17 ^y
Singapore	0.21 ^k	0.45 ^k	0.44 ^k	0.42 ^k	0.41 ^k	0.40 ^k	..
South Africa	..	0.19 ^{k,y}	0.20 ^{k,y}	0.18 ^{k,y}	0.19 ^{k,y}	0.19 ^{k,y}	..
Chinese Taipei	0.20 ^{d,k,y}	0.28 ^{k,y}	0.31 ^{k,y}	0.29 ^{k,y}	0.29 ^{k,y}	0.29 ^{k,y}	0.29 ^{k,y}

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 7. Total researchers in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	66 001	92 649	..	..	..	..	..
Austria	..	34 508 ^c	34 664	36 581 ^c	37 114	39 362 ^c	39 923 ^{c,p}
Belgium	30 540	36 774	38 225	40 832	42 686	43 813 ^c	44 649 ^p
Canada	107 900	157 200	150 220	158 660	163 090	156 550	..
Chile	..	5 959	4 859 ^m	5 440 ^m	6 078 ^m	6 798 ^m	..
Czech Republic	13 852	29 785	28 759	29 228	30 682	33 217	34 271 ^p
Denmark	..	35 702 ^c	36 789	37 435	39 180	40 946	40 858 ^{c,p}
Estonia	2 666	3 979	4 314	4 077	4 511	4 582	4 407 ^p
Finland	34 847 ^u	40 879	40 849	41 425	40 003 ^a	40 468	39 196
France	172 070 ^a	227 679 ^d	234 366 ^d	243 533 ^a	249 247	259 066	265 177 ^p
Germany	257 874 ^c	302 641 ^c	317 307	327 996 ^c	338 689	352 419 ^c	360 900 ^{c,p}
Greece	..	..	..	..	24 674 ^a	24 122	27 668 ^p
Hungary	14 406 ^d	18 504	20 064	21 342	23 019	23 837	25 038
Iceland	..	2 308	2 505	..	2 258 ^a	..	..
Ireland	8 516 ^c	14 502	14 189 ^c	14 176 ^c	15 172 ^c	15 732 ^c	..
Israel ¹	..	..	..	..	55 184 ^d	63 728 ^{c,d}	..
Italy	66 110	95 766	101 840	103 424	106 151	110 695	117 973 ^p
Japan	647 572	656 676 ^a	655 530	656 032	656 651	646 347	660 489
Korea	108 370 ^u	236 137	244 077	264 118	288 901	315 589	321 842
Luxembourg	1 646	2 288	2 396	2 636	3 031	2 491 ^a	2 615 ^p
Mexico	..	37 639	42 973	45 045	46 125	..	..
Netherlands	42 194	50 727	46 958	53 703	58 447 ^a	71 133	72 325 ^p
New Zealand	..	..	16 100	..	16 300	..	..
Norway	..	25 578	26 273	26 451	27 228	27 841	..
Poland	55 174	61 805	61 105	64 511	64 133	67 001	71 472
Portugal	16 738 ^c	40 408 ^a	39 834	41 523	44 061	42 498	43 321 ^p
Slovak Republic	9 955	12 587	13 290	15 183	15 326	15 271	14 727
Slovenia	4 336	7 032 ^a	7 446	7 703	8 774 ^a	8 884	8 707 ^p
Spain	76 670	130 986 ^a	133 803	134 653	130 235	126 778	123 583 ^p
Sweden	..	50 220 ^c	47 160 ^m	49 312 ^{c,m}	48 589 ^{a,m}	49 280 ^{c,m}	62 294 ^{a,m}
Switzerland	26 105	25 142	..	..	..	35 950	..
Turkey	23 083	52 811	57 759	64 341	72 109	82 122	89 075
United Kingdom	170 554 ^b	251 932 ^c	256 124 ^c	256 585 ^c	251 358	256 156 ^c	259 347 ^{c,p}
United States	983 208 ^b	1 191 024 ^b	1 250 984 ^b	1 198 280 ^b	1 252 948 ^b	..	..
EU28 (OECD estimates)	1 117 809 ^b	1 521 940 ^b	1 553 543 ^b	1 601 149 ^b	1 623 921 ^b	1 677 436 ^b	1 725 599 ^b
OECD-Total	3 132 459^b	4 020 931^b	4 129 469^b	4 167 527^b	4 304 005^b	..	..
Argentina	26 420	41 523	43 717	47 580	50 340	51 598	..
China	695 062 ^{a,t}	1 592 420 ^t	1 152 311 ^a	1 210 841	1 318 086	1 404 017	1 484 040
Romania	20 476	19 394	19 271	19 780	16 080 ^a	18 016	18 704
Russian Federation	506 420	451 213	442 263	442 071	447 579	443 269	440 581
Singapore	16 633	27 841	30 530	32 031	33 719	34 141	..
South Africa	..	19 384	19 793	18 720	20 115	21 383	..
Chinese Taipei	55 460 ^{d,m}	110 089	119 185	127 768	134 048	139 215	140 124

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 8. Total researchers in full-time equivalent
per thousand total employment**

Per thousand

	2000	2008	2009	2010	2011	2012	2013
Australia	7.3	8.5	..	..	..	..	..
Austria	..	8.4 ^c	8.5	8.9 ^c	8.9	9.3 ^c	9.4 ^{c,p}
Belgium	7.4	8.2	8.6	9.1	9.4	9.6 ^c	9.8 ^p
Canada	7.1 ^b	9.0	8.8	9.1	9.2	8.8	..
Chile	..	0.9	0.7 ^m	0.8 ^m	0.9 ^m	1.0 ^{b,m}	..
Czech Republic	2.9	5.7	5.6	5.8	6.1	6.6	6.7 ^p
Denmark	..	12.3 ^c	13.0	13.6	14.2	14.9	14.9 ^{c,p}
Estonia	4.6	6.2	7.5	7.4	7.7	7.7	7.3 ^p
Finland	15.2 ^u	16.0	16.3	16.7	15.9 ^a	15.9	15.7
France	6.7 ^a	8.4 ^d	8.7 ^d	9.1 ^a	9.2	9.6	9.8 ^p
Germany	6.5 ^c	7.4 ^c	7.8	8.0 ^c	8.1	8.4 ^c	8.5 ^{c,p}
Greece	..	..	..	..	5.6 ^a	6.0	7.1 ^p
Hungary	3.4 ^d	4.5	5.0	5.3	5.7	5.9	6.1
Iceland	..	12.9	14.9	..	13.5 ^a	..	..
Ireland	5.0 ^c	6.8	7.2 ^c	7.5 ^c	8.2 ^c	8.6 ^c	..
Israel ¹	..	..	..	..	15.7 ^d	17.4 ^{c,d}	..
Italy	2.9	3.8	4.1	4.2	4.3	4.5	4.9 ^p
Japan	9.9	10.0 ^a	10.1	10.2	10.2	10.0	10.2 ^b
Korea	5.1 ^g	10.0	10.4	11.1	11.9	12.8	12.8
Luxembourg	6.2	6.5	6.8	7.3	8.2	6.6 ^a	6.8 ^p
Mexico	..	0.9	1.0	1.0	1.0	..	..
Netherlands	5.1	5.7	5.3	6.1	6.6 ^a	8.1	8.3 ^p
New Zealand	..	..	7.5	..	7.4	..	..
Norway	..	9.8	10.1	10.2	10.3	10.4	..
Poland	3.8	3.9	3.9	4.2	4.1	4.3	4.6
Portugal	3.3 ^c	8.0 ^a	8.1	8.5	9.2	9.3	9.7 ^p
Slovak Republic	4.9	5.6	6.0	7.0	6.9	6.9	6.7
Slovenia	4.7	7.0 ^a	7.6	8.0	9.3 ^a	9.5	9.4 ^p
Spain	4.6	6.1 ^a	6.7	6.9	6.8	6.9	6.9 ^p
Sweden	..	11.0 ^c	10.6 ^m	11.0 ^{c,m}	10.6 ^{a,m}	10.6 ^{c,m}	13.3 ^{a,m}
Switzerland	6.3	5.5	..	..	..	7.5	..
Turkey	1.2	2.5	2.7	2.8	3.0	3.3	3.5
United Kingdom	6.2 ^b	8.5 ^c	8.8 ^c	8.8 ^c	8.6	8.7 ^c	8.7 ^{c,p}
United States	7.1 ^b	8.1 ^b	8.8 ^b	8.5 ^b	8.8 ^b	..	..
EU28 (OECD estimates)	5.2 ^b	6.6 ^b	6.9 ^b	7.1 ^b	7.2 ^b	7.4 ^b	7.7 ^b
OECD-Total	6.1^b	7.2^b	7.5^b	7.5^b	7.7^b	..	..
Argentina	2.0	2.5	2.6	2.8	2.9	2.9	..
China	1.0 ^{a,t}	2.1 ^t	1.5 ^a	1.6	1.7	1.8	1.9
Romania	1.9	2.1	2.1	2.2	1.8 ^a	1.9	2.0
Russian Federation	7.8	6.4	6.4	6.3	6.3	6.2 ^b	6.2 ^b
Singapore	7.7	9.4	10.2	10.3	10.4	10.2	..
South Africa	..	1.3	1.4	1.4	1.4	1.5	..
Chinese Taipei	5.8 ^{d,m}	10.6	11.6	12.2	12.5	12.8	12.8

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 9. Total R&D personnel in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	95 621	137 489	..	..	..	..	..
Austria	..	58 014 ^c	56 438	59 923 ^c	61 171	64 876 ^c	65 800 ^{c,p}
Belgium	53 391	58 476	59 756	60 075	62 895	64 732 ^c	66 406 ^p
Canada	167 940	256 650	236 760	233 060	236 590	223 930	..
Chile	..	12 571	10 430 ^m	11 491 ^m	13 052 ^m	14 631 ^m	..
Czech Republic	24 198	50 808	50 961	52 290	55 697	60 329	61 976 ^p
Denmark	37 693	58 589 ^c	55 918	56 623	57 585	58 657	58 530 ^{c,p}
Estonia	3 710	5 086	5 430	5 277	5 724	5 855	5 854 ^p
Finland	52 604	56 698	56 069	55 897	54 526 ^a	54 047	52 972
France	327 466 ^a	382 653 ^d	390 214 ^d	397 756 ^a	402 492	412 003	420 588 ^p
Germany	484 734 ^c	523 505	534 975	548 723	575 099	591 261	604 600 ^{c,p}
Greece	..	..	..	..	36 913 ^a	37 361	42 084 ^p
Hungary	23 534 ^d	27 403	29 795	31 480	33 960	35 732	38 163
Iceland	..	3 117	3 397	..	3 244 ^a	..	..
Ireland	12 762 ^c	20 018	19 705 ^c	19 722 ^c	21 560 ^c	22 501 ^c	..
Israel ¹	..	..	..	..	70 401 ^d	77 281 ^{c,d}	..
Italy	150 066	221 115	226 527	225 632	228 094	240 179	252 648 ^p
Japan	896 847	882 739 ^a	878 418	877 928	869 825	851 132	865 523
Korea	138 077 ^y	294 440	309 063	335 228	361 374	395 990	..
Luxembourg	3 663	4 652	4 711	4 988	5 351	4 880 ^a	5 003 ^p
Mexico	..	..	..	..	..	..	..
Netherlands	91 313	93 432	87 874	100 544	116 326 ^a	122 588	121 496 ^p
New Zealand	..	..	23 200	..	23 600	..	..
Norway	..	35 485	36 091	36 121	36 950	37 707	38 999 ^p
Poland	78 925	74 596	73 581	81 843	85 219	90 716	93 751
Portugal	21 888 ^c	47 882 ^a	47 097	47 616	49 604	47 554	47 931 ^p
Slovak Republic	15 221	15 576	15 952	18 188	18 112	18 127	17 166
Slovenia	8 568	11 594 ^a	12 410	12 940	15 269 ^a	14 974	15 229 ^p
Spain	120 618	215 676 ^a	220 777	222 022	215 079	208 831	203 612 ^p
Sweden	..	79 549 ^c	76 711 ^m	77 418 ^{c,m}	77 950 ^{a,m}	81 272 ^{c,m}	81 254 ^m
Switzerland	52 285	62 066	..	..	..	75 476	..
Turkey	27 003 ^m	67 244 ^m	73 521 ^m	81 792 ^m	92 801 ^m	105 122 ^m	112 969 ^m
United Kingdom	288 599 ^b	342 086 ^{c,m}	347 486 ^{c,m}	350 766 ^{c,m}	356 258 ^m	356 484 ^{c,m}	362 061 ^{c,m,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	2 000 349 ^b	2 462 005 ^b	2 484 976 ^b	2 539 534 ^b	2 611 527 ^b	2 669 968 ^b	2 720 017 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	37 515	56 987	59 683	65 761	69 693	71 872	..
China	922 131 ^{a,t}	1 965 357 ^t	2 291 252 ^a	2 553 829	2 882 903	3 246 840	3 532 817
Romania	33 892	30 390	28 398	26 171	29 749 ^a	31 135	33 185
Russian Federation	1 007 257	869 772	845 942	839 992	839 183	828 401	826 733
Singapore	19 365	33 165	35 896	37 013	38 996	39 459	..
South Africa	..	30 802	30 891	29 486	30 978	35 050	..
Chinese Taipei	104 568 ^{d,m}	184 633	196 893	210 678	221 371	227 976	232 879

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 10. Total R&D personnel in full-time equivalent per thousand total employment

Per thousand

	2000	2008	2009	2010	2011	2012	2013
Australia	10.6	12.6	..	..	..	..	..
Austria	..	14.2 ^c	13.9	14.6 ^c	14.6	15.3 ^c	15.4 ^{c,p}
Belgium	13.0	13.1	13.4	13.4	13.8	14.2 ^c	14.6 ^p
Canada	11.1 ^b	14.8	13.9	13.4	13.4	12.5	..
Chile	..	1.9	1.6 ^m	1.7 ^m	1.9 ^m	2.0 ^{b,m}	..
Czech Republic	5.0	9.8	10.0	10.3	11.0	11.9	12.2 ^p
Denmark	13.8	20.1 ^c	19.8	20.5	20.9	21.3	21.3 ^{c,p}
Estonia	6.3	7.9	9.4	9.6	9.8	9.9	9.7 ^p
Finland	22.9	22.1	22.4	22.5	21.7 ^a	21.3	21.2
France	12.8 ^a	14.1 ^d	14.5 ^d	14.8 ^a	14.9	15.2	15.6 ^p
Germany	12.1 ^c	12.8	13.1	13.4	13.8	14.1	14.3 ^{c,p}
Greece	..	..	..	..	8.4 ^a	9.3	10.9 ^p
Hungary	5.6 ^d	6.6	7.4	7.8	8.4	8.8	9.3
Iceland	..	17.4	20.2	..	19.4 ^a	..	..
Ireland	7.5 ^c	9.4	10.0 ^c	10.5 ^c	11.7 ^c	12.2 ^c	..
Israel ¹	..	..	..	..	20.0 ^d	21.1 ^{c,d}	..
Italy	6.5	8.7	9.1	9.1	9.2	9.7	10.4 ^p
Japan	13.6	13.4 ^a	13.6	13.6	13.5	13.2	13.4 ^b
Korea	6.5 ^g	12.5	13.1	14.1	14.9	16.0	..
Luxembourg	13.9	13.3	13.3	13.9	14.5	12.9 ^a	12.9 ^p
Mexico	..	..	..	..	..	..	..
Netherlands	11.1	10.5	9.9	11.5	13.1 ^a	13.9	14.0 ^p
New Zealand	..	..	10.8	..	10.7	..	..
Norway	..	13.6	13.9	13.9	14.0	14.0	14.3 ^p
Poland	5.4	4.7	4.7	5.3	5.5	5.9	6.1
Portugal	4.3 ^c	9.4 ^a	9.5	9.8	10.4	10.4	10.8 ^p
Slovak Republic	7.5	6.9	7.2	8.4	8.2	8.2	7.8
Slovenia	9.4	11.6 ^a	12.6	13.5	16.1 ^a	16.0	16.5 ^p
Spain	7.2	10.1 ^a	11.0	11.3	11.2	11.3	11.3 ^p
Sweden	..	17.4 ^c	17.2 ^m	17.2 ^{c,m}	17.0 ^{a,m}	17.6 ^{c,m}	17.4 ^m
Switzerland	12.7	13.6	..	..	..	15.8	..
Turkey	1.4 ^m	3.2 ^m	3.5 ^m	3.6 ^m	3.8 ^m	4.2 ^m	4.4 ^m
United Kingdom	10.5 ^b	11.6 ^{c,m}	12.0 ^{c,m}	12.1 ^{c,m}	12.2 ^m	12.1 ^{c,m}	12.1 ^{c,m,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	9.4 ^b	10.7 ^b	11.0 ^b	11.3 ^b	11.6 ^b	11.8 ^b	12.1 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	2.9	3.4	3.6	3.9	4.0	4.1	..
China	1.3 ^{a,t}	2.6 ^t	3.0 ^a	3.4	3.8	4.2	4.6
Romania	3.1	3.2	3.1	2.9	3.3 ^a	3.3	3.6
Russian Federation	15.5	12.3	12.2	12.0	11.9	11.6 ^b	11.6 ^b
Singapore	8.9	11.2	12.0	11.9	12.1	11.8	..
South Africa	..	2.1	2.2	2.1	2.2	2.4	..
Chinese Taipei	11.0 ^{d,m}	17.7	19.2	20.1	20.7	21.0	21.2

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 11. Industry-financed GERD (Gross domestic expenditure on R&D) as a percentage of GDP*As a percentage of GDP*

	2000	2008	2009	2010	2011	2012	2013
Australia	0.71	1.39	..	..	..	..	..
Austria	0.79 ^c	1.19 ^c	1.23	1.24 ^c	1.24	1.24 ^c	1.24 ^{c,p}
Belgium	1.20	1.17	1.16	1.18	1.29	..	..
Canada	0.84	0.92	0.93	0.86	0.86	0.81	0.75 ^p
Chile	..	0.16 ^y	0.10 ^{a,y}	0.08 ^y	0.12 ^y	0.13 ^y	..
Czech Republic	0.57	0.56	0.52	0.55	0.59	0.65	0.72 ^p
Denmark	..	..	1.91	1.79	1.81	1.81 ^c	1.83 ^{c,p}
Estonia	0.15	0.50	0.54	0.69	1.29	1.11	0.72 ^p
Finland	2.28	2.49	2.55	2.46	2.44	2.16	2.02
France	1.09 ^a	1.05	1.15	1.16 ^a	1.21	1.23	..
Germany	1.58 ^c	1.75	1.80	1.78	1.84	1.90	..
Greece	..	0.19 ^{a,c}	0.21 ^c	0.22 ^c	0.22	0.21	0.25 ^p
Hungary	0.30 ^y	0.48	0.53	0.55	0.57	0.60	0.66
Iceland	..	1.27	1.27	..	1.24 ^a	..	..
Ireland	0.72 ^c	0.68	0.85 ^c	0.85 ^c	0.76 ^c	0.79 ^c	..
Israel ¹	2.09 ^{a,d}	2.32 ^d	1.56 ^{a,d}	1.49 ^d	1.61 ^d	1.51 ^d	..
Italy	..	0.53	0.54	0.55	0.55	0.56	..
Japan	2.17 ^y	2.71 ^{a,y}	2.53 ^y	2.47 ^y	2.59 ^y	2.55 ^y	2.63 ^y
Korea	1.58 ^y	2.28	2.34	2.49	2.76	3.01	3.14
Luxembourg	1.43	..	1.21	0.67	0.67	..	0.24 ^p
Mexico	0.10	0.15	0.17	0.16	0.16	..	..
Netherlands	..	..	0.76	..	0.94 ^a	0.95	0.93 ^p
New Zealand	..	..	0.50 ^y	..	0.51 ^y	..	..
Norway	..	..	0.75	..	0.72	..	..
Poland	0.19	0.18	0.18	0.18	0.21	0.29	0.32
Portugal	0.20 ^c	0.69 ^a	0.69	0.67	0.65	0.63	..
Slovak Republic	0.35	0.16	0.17	0.22	0.23	0.31	0.33
Slovenia	0.72	1.02 ^a	1.05	1.20	1.49 ^a	1.60	1.65 ^p
Spain	0.44	0.59 ^a	0.59	0.58	0.58	0.58	..
Sweden	..	..	2.02	..	1.85	..	2.01 ^m
Switzerland	1.61	1.86	..	..	..	1.80	..
Turkey	0.21 ^y	0.34 ^{a,y}	0.35 ^y	0.38 ^y	0.39 ^y	0.43 ^y	0.46 ^y
United Kingdom	0.84	0.77 ^c	0.78 ^c	0.75 ^c	0.78	0.74 ^c	0.76 ^{c,p}
United States	1.81 ^j	1.76 ^j	1.71 ^j	1.57 ^{a,j}	1.62 ^j	1.66 ^{j,p}	..
EU28 (OECD estimates)	0.93 ^b	0.96 ^b	0.98 ^b	0.98 ^b	1.02 ^b	1.04 ^b	..
OECD-Total	1.37^b	1.44^b	1.41^b	1.35^b	1.40^b	1.42^b	..
Argentina	0.09 ^c	0.11	0.10	0.11	0.12	0.12	..
China	0.52 ^y	1.05 ^y	1.19 ^{a,y}	1.26 ^y	1.36 ^y	1.44 ^y	1.51 ^y
Romania	0.18	0.13	0.16	0.15	0.18 ^a	0.17	0.12
Russian Federation	0.35 ^y	0.30 ^y	0.33 ^y	0.29 ^y	0.30 ^y	0.31 ^y	0.32 ^y
Singapore	1.00	1.66	1.13	1.07	1.20	1.08	..
South Africa	..	0.40 ^y	0.37 ^y	0.30 ^y	0.30 ^y	0.29 ^y	..
Chinese Taipei	1.26 ^y	1.96 ^y	2.05 ^y	2.08 ^y	2.19 ^y	2.27 ^y	2.36 ^y

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Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 12. Government-financed GERD (Gross domestic expenditure on R&D)
as a percentage of GDP**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.67	0.78	..	..	..	..	..
Austria	0.72 ^c	0.96 ^{c,o}	0.91	1.05 ^{c,o}	0.96	1.11 ^{c,o}	1.10 ^{c,o,p}
Belgium	0.44	0.45	0.50	0.52	0.50	..	..
Canada	0.55 ^c	0.64 ^c	0.66 ^c	0.65 ^c	0.61 ^c	0.59 ^c	0.57 ^{c,p}
Chile	..	0.13 ^{m,y}	0.14 ^{a,y}	0.13 ^y	0.12 ^y	0.13 ^y	..
Czech Republic	0.50	0.56	0.62	0.60	0.65	0.66	0.66 ^p
Denmark	..	..	0.80	0.83	0.84	0.88 ^c	0.89 ^{c,p}
Estonia	0.36	0.63	0.68	0.70	0.77	0.83	0.83 ^p
Finland	0.85	0.77	0.90	0.96	0.91 ^a	0.92	0.86
France	0.81 ^a	0.80	0.86	0.81 ^a	0.77	0.78	..
Germany	0.75 ^c	0.74	0.81	0.82	0.83	0.84	..
Greece	..	0.41 ^{a,c}	0.34 ^c	0.29 ^c	0.33	0.35	0.40 ^p
Hungary	0.39 ^{d,v}	0.41	0.48	0.45	0.46	0.47	0.51
Iceland	..	0.98	1.07	..	1.00 ^a	..	..
Ireland	0.26 ^c	0.47	0.48 ^c	0.48 ^c	0.43 ^c	0.43 ^c	..
Israel ¹	0.87 ^{a,d}	0.54 ^d	0.53 ^d	0.49 ^d	0.47 ^d	0.52 ^d	..
Italy	..	0.49	0.51	0.51	0.51	0.54	..
Japan	0.59 ^{e,y}	0.54 ^{a,e,y}	0.59 ^{e,y}	0.56 ^{e,y}	0.56 ^{e,y}	0.56 ^{e,y}	0.60 ^{e,y}
Korea	0.52 ^y	0.79	0.90	0.93	0.93	0.96	..
Luxembourg	0.12	..	0.42	0.52	0.43	..	..
Mexico	0.21	0.22	0.23	0.28	0.25	..	..
Netherlands	..	..	0.69	..	0.67 ^a	0.69	0.68 ^p
New Zealand	..	..	0.57 ^y	..	0.52 ^y	..	..
Norway	..	..	0.81	..	0.76	..	..
Poland	0.43	0.36	0.40	0.44	0.42	0.46	0.41
Portugal	0.47 ^c	0.63 ^a	0.72	0.69	0.61	0.59	..
Slovak Republic	0.27 ^m	0.24 ^m	0.24 ^m	0.31 ^m	0.33 ^m	0.34 ^m	0.32 ^m
Slovenia	0.54	0.51 ^a	0.65	0.73	0.76 ^a	0.74	0.70 ^p
Spain	0.34	0.60 ^a	0.64	0.63	0.59	0.55	..
Sweden	..	..	0.93	..	0.89	..	0.93 ^m
Switzerland	0.54	0.62	..	..	..	0.75	..
Turkey	0.24 ^y	0.23 ^{a,y}	0.29 ^y	0.26 ^y	0.25 ^y	0.26 ^y	0.25 ^y
United Kingdom	0.52	0.52	0.57	0.55	0.52	0.47 ^c	0.44 ^{c,p}
United States	0.69 ⁱ	0.84 ⁱ	0.92 ⁱ	0.89 ⁱ	0.86 ⁱ	0.86 ^{i,p}	..
EU28 (OECD estimates)	0.60 ^b	0.61 ^b	0.66 ^b	0.65 ^b	0.64 ^b	0.64 ^b	..
OECD-Total	0.61^b	0.67^b	0.73^b	0.72^b	0.69^b	0.70^b	..
Argentina	0.26 ^c	0.30	0.36	0.37	0.37	0.43	..
China	0.30 ^y	0.34 ^y	0.39 ^{a,y}	0.42 ^y	0.40 ^y	0.42 ^y	0.43 ^y
Romania	0.15	0.40	0.25	0.25	0.24 ^a	0.24	0.20
Russian Federation	0.58 ^y	0.68 ^y	0.83 ^y	0.80 ^y	0.73 ^y	0.76 ^y	0.76 ^y
Singapore	0.73	0.78	0.87	0.81	0.82	0.78	..
South Africa	..	0.42 ^y	0.39 ^y	0.34 ^y	0.33 ^y	0.35 ^y	..
Chinese Taipei	0.65 ^{d,y}	0.79 ^y	0.85 ^y	0.80 ^y	0.79 ^y	0.76 ^y	0.73 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 13. Percentage of Gross domestic expenditure on R&D (GERD) financed by industry

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	47.9	61.9	..	..	..	..	..
Austria	41.8 ^c	46.1 ^c	47.1	45.1 ^c	46.2	44.0 ^c	44.1 ^{c,p}
Belgium	62.4	61.0	58.6	57.6	60.2	..	..
Canada	44.9	49.5	48.5	47.0	48.4	47.4	46.4 ^p
Chile	..	43.7	27.0 ^a	25.4	33.9	34.9	..
Czech Republic	51.2	45.0	39.8	40.8	37.7	36.4	37.6 ^p
Denmark	..	..	62.1	61.1	61.2	60.0 ^c	59.8 ^{c,p}
Estonia	24.2	39.8	38.5	43.6	55.0	51.3	41.3 ^p
Finland	70.2	70.3	68.1	66.1	67.0	63.1	60.8
France	52.5 ^a	50.8	52.3	53.5 ^a	55.0	55.4	..
Germany	66.0 ^c	67.3	66.1	65.6	65.6	66.1	..
Greece	..	29.2 ^{a,c}	33.5 ^c	36.5 ^c	32.7	31.0	32.1 ^p
Hungary	37.8 ^{d,v}	48.3	46.4	47.4	47.5	46.9	46.8
Iceland	..	50.3	47.8	..	49.8 ^a	..	..
Ireland	65.8 ^c	48.8	52.1 ^c	52.2 ^c	49.7 ^c	50.3 ^c	..
Israel ¹	52.8 ^{a,d}	53.0 ^d	37.5 ^{a,d}	37.5 ^d	39.2 ^d	35.6 ^d	..
Italy	..	45.9	44.2	44.7	45.1	44.3	..
Japan	72.4	78.2 ^a	75.3	75.9	76.5	76.1	75.5
Korea	72.4 ^g	72.9	71.1	71.8	73.7	74.7	75.7
Luxembourg	90.7	..	70.3	44.3	47.8	..	20.5 ^p
Mexico	29.5	38.3	39.1	36.2	36.8	..	..
Netherlands	..	..	45.1	..	49.9 ^a	48.2	47.1 ^p
New Zealand	..	..	39.0	..	40.0	..	..
Norway	..	..	43.6	..	44.2	..	..
Poland	29.5	30.5	27.1	24.4	28.1	32.3	37.3
Portugal	27.0 ^c	48.1 ^a	43.9	43.9	44.7	46.0	..
Slovak Republic	54.4	34.7	35.1	35.1	33.9	37.7	40.2
Slovenia	53.3	62.8 ^a	58.0	58.4	61.2 ^a	62.2	63.8 ^p
Spain	49.7	45.0 ^a	43.4	43.0	44.3	45.6	..
Sweden	..	..	59.1	..	57.3	..	61.0
Switzerland	69.1	68.2	..	..	..	60.8	..
Turkey	42.9	47.3 ^a	41.0	45.1	45.8	46.8	48.9
United Kingdom	48.3	45.4 ^c	44.5 ^c	44.0 ^c	45.9	45.6 ^c	46.5 ^{c,p}
United States	69.0 ⁱ	63.5 ⁱ	60.9 ⁱ	57.2 ^{a,i}	58.6 ⁱ	59.1 ^{i,p}	..
EU28 (OECD estimates)	55.3 ^b	54.3 ^b	53.4 ^b	53.2 ^b	54.3 ^b	54.3 ^b	..
OECD-Total	64.1^b	62.7^b	60.2^b	58.7^b	59.9^b	60.0^b	..
Argentina	23.3 ^c	26.5	21.4	22.3	23.9	21.3	..
China	57.6	71.7	71.7 ^a	71.7	73.9	74.0	74.6
Romania	49.0	23.3	34.8	32.3	37.4 ^a	34.4	31.0
Russian Federation	32.9	28.7	26.6	25.5	27.7	27.2	28.2
Singapore	55.0	63.5	52.1	53.1	55.3	53.4	..
South Africa	..	42.6	42.5	40.1	39.0	38.3	..
Chinese Taipei	65.0 ^d	70.4	69.7	71.2	72.5	74.1	75.5

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 14. Percentage of Gross domestic expenditure on R&D (GERD)
financed by government**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	45.5	34.6	..	..	..	..	..
Austria	38.0 ^c	37.0 ^{c,o}	34.9	38.3 ^{c,o}	35.8	39.4 ^{c,o}	39.1 ^{c,o,p}
Belgium	22.9	23.2	25.3	25.4	23.4	..	..
Canada	29.3 ^c	34.0 ^c	34.6 ^c	35.2 ^c	34.4 ^c	34.3 ^c	34.9 ^{c,p}
Chile	..	33.8 ^m	38.3 ^a	40.4	33.7	36.0	..
Czech Republic	44.5	44.8	47.8	44.4	41.7	36.8	34.7 ^p
Denmark	..	..	26.1	28.2	28.2	29.1 ^c	29.3 ^{c,p}
Estonia	59.2	50.0	48.8	44.1	32.8	38.3	48.0 ^p
Finland	26.2	21.8	24.0	25.7	25.0 ^a	26.7	26.0
France	38.7 ^a	38.9	38.7	37.1 ^a	35.1	35.0	..
Germany	31.4 ^c	28.4	29.8	30.3	29.8	29.2	..
Greece	..	62.2 ^{a,c}	54.7 ^c	48.3 ^c	49.2	50.4	51.5 ^p
Hungary	49.5 ^{d,v}	41.8	42.0	39.3	38.1	36.9	35.9
Iceland	..	38.8	40.2	..	40.0 ^a	..	..
Ireland	23.4 ^c	33.7	29.8 ^c	29.4 ^c	28.3 ^c	27.3 ^c	..
Israel ¹	21.8 ^{a,d}	12.2 ^d	12.8 ^d	12.4 ^d	11.4 ^d	12.1 ^d	..
Italy	..	42.0	42.1	41.6	41.9	42.5	..
Japan	19.6 ^e	15.6 ^{a,e}	17.7 ^e	17.2 ^e	16.4 ^e	16.8 ^e	17.3 ^e
Korea	23.9 ^g	25.4	27.4	26.7	24.9	23.8	..
Luxembourg	7.7	..	24.3	34.8	30.5	..	..
Mexico	63.0	54.3	53.2	60.5	59.6	..	..
Netherlands	..	..	40.9	..	35.5 ^a	35.0	34.3 ^p
New Zealand	..	..	44.7	..	41.4	..	..
Norway	..	..	46.8	..	46.5	..	..
Poland	66.5	59.8	60.4	60.9	55.8	51.3	47.2
Portugal	64.8 ^c	43.7 ^a	45.5	45.1	41.8	43.1	..
Slovak Republic	42.6 ^m	52.3 ^m	50.6 ^m	49.6 ^m	49.8 ^m	41.6 ^m	38.9 ^m
Slovenia	40.0	31.3 ^a	35.7	35.3	31.5 ^a	28.7	26.9 ^p
Spain	38.6	45.6 ^a	47.1	46.6	44.5	43.1	..
Sweden	..	..	27.3	..	27.7	..	28.2
Switzerland	23.2	22.8	..	..	..	25.4	..
Turkey	50.6	31.6 ^a	34.0	30.8	29.2	28.2	26.6
United Kingdom	30.2	30.7 ^c	32.6 ^c	32.3 ^c	30.5	28.7 ^c	27.0 ^{c,p}
United States	26.2 ⁱ	30.4 ⁱ	32.6 ⁱ	32.6 ⁱ	31.2 ⁱ	30.8 ^{i,p}	..
EU28 (OECD estimates)	35.5 ^b	34.7 ^b	35.6 ^b	35.5 ^b	33.9 ^b	33.5 ^b	..
OECD-Total	28.5^b	29.3^b	31.2^b	31.1^b	29.8^b	29.5^b	..
Argentina	70.7 ^c	70.6	75.4	74.7	71.6	74.0	..
China	33.4	23.6	23.4 ^a	24.0	21.7	21.6	21.1
Romania	40.8	70.1	54.9	54.4	49.1 ^a	49.9	52.3
Russian Federation	54.8	64.7	66.5	70.3	67.1	67.8	67.6
Singapore	40.3	29.9	40.4	40.2	38.1	38.5	..
South Africa	..	45.1	44.4	44.5	43.1	45.4	..
Chinese Taipei	33.4 ^d	28.2	28.9	27.5	26.2	24.8	23.5

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 15. Percentage of Gross domestic expenditure on R&D (GERD)
financed by other national sources**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	3.1	1.9	..	..	..	..	..
Austria	0.3 ^c	0.4 ^c	1.2	0.5 ^c	1.1	0.5 ^c	0.5 ^{c,p}
Belgium	2.4	3.5	4.0	3.7	3.5	..	..
Canada	8.4 ^c	9.3 ^c	9.9 ^c	11.3 ^c	11.2 ^c	12.4 ^c	12.7 ^{c,p}
Chile	..	19.2	15.7 ^a	14.4	11.2	11.6	..
Czech Republic	1.1	1.3	1.2	0.9	0.9	0.9	0.5 ^p
Denmark	..	..	3.1	3.5	3.6	3.8 ^c	3.8 ^{c,p}
Estonia	3.9	0.8	1.4	0.8	0.4	0.4	0.4 ^p
Finland	0.9	1.2	1.3	1.3	1.4	1.4	1.6
France	1.6 ^a	2.3	2.0	1.8 ^a	2.1	2.0	..
Germany	0.4 ^c	0.3	0.3	0.2	0.3	0.4	..
Greece	..	2.8 ^{a,c}	3.1 ^c	3.4 ^c	3.3	2.9	3.1 ^p
Hungary	0.3 ^{d,v}	0.6	0.7	0.9	1.0	0.9	0.8
Iceland	..	0.8	0.6	..	1.9 ^a	..	..
Ireland	1.9 ^c	2.0	1.6 ^c	1.4 ^c	1.2 ^c	1.0 ^c	..
Israel ¹	3.1 ^{a,d}	3.8 ^d	2.9 ^d	3.6 ^d	3.9 ^d	3.5 ^d	..
Italy	..	4.1	4.3	4.0	3.9	3.7	..
Japan	7.6 ^e	5.8 ^{a,e}	6.6 ^e	6.4 ^e	6.6 ^e	6.6 ^e	6.7 ^e
Korea	3.6 ^g	1.4	1.3	1.2	1.2	1.1	..
Luxembourg	..	..	0.1	0.2	1.3	..	1.6 ^p
Mexico	6.5	5.7	6.0	2.7	2.9	..	..
Netherlands	..	..	3.1	..	3.6 ^a	4.5	4.3 ^p
New Zealand	..	..	11.1	..	12.2	..	..
Norway	..	..	1.4	..	1.5	..	..
Poland	2.1	4.3	7.0	2.8	2.7	3.0	2.3
Portugal	3.0 ^c	5.2 ^a	6.6	7.8	7.5	5.7	..
Slovak Republic	0.7	0.7	1.6	0.7	2.2	2.1	2.9
Slovenia	0.4	0.3 ^a	0.3	0.3	0.2 ^a	0.5	0.4 ^p
Spain	6.8	3.8 ^a	4.1	4.6	4.5	4.6	..
Sweden	..	..	3.2	..	3.9	..	4.0
Switzerland	3.4	3.0	..	..	..	1.7	..
Turkey	5.2	19.8 ^a	24.0	23.2	24.2	24.4	23.7
United Kingdom	5.5	6.2 ^c	6.3 ^c	6.0 ^c	5.9	5.9 ^c	5.8 ^{c,p}
United States	4.7 ⁱ	6.1 ⁱ	6.4 ⁱ	6.5 ⁱ	6.5 ⁱ	6.3 ^{i,p}	..
EU28 (OECD estimates)	2.1 ^b	2.6 ^b	2.7 ^b	2.5 ^b	2.5 ^b	2.5 ^b	..
OECD-Total	4.4^b	4.9^b	5.2^b	5.1^b	5.1^b	5.0^b	..
Argentina	4.4 ^c	2.3	2.5	2.4	4.0	4.1	..
China	..	..	..	..	..	..	..
Romania	5.3	2.7	2.0	2.2	1.4 ^a	1.2	1.2
Russian Federation	0.4	0.6	0.5	0.6	1.0	1.0	1.2
Singapore	0.7	1.3	1.5	1.8	1.6	2.2	..
South Africa	..	0.8	0.9	3.3	2.9	3.2	..
Chinese Taipei	1.6 ^d	1.3	1.3	1.2	1.2	1.1	1.0

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 16. Percentage of Gross domestic expenditure on R&D (GERD) financed by abroad

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	3.5	1.6	..	..	..	..	..
Austria	19.9 ^c	16.4 ^c	16.8	16.1 ^c	16.9	16.2 ^c	16.4 ^{c,p}
Belgium	12.2	12.3	12.1	13.3	13.0	..	..
Canada	17.4	7.2	7.1	6.6	6.0	5.9	6.0 ^p
Chile	..	3.3	19.0 ^a	19.8	21.3	17.5	..
Czech Republic	3.1	8.9	11.3	13.9	19.7	25.9	27.2 ^p
Denmark	..	..	8.6	7.2	7.1	7.2 ^c	7.2 ^{c,p}
Estonia	12.7	9.4	11.3	11.4	11.9	10.0	10.3 ^p
Finland	2.7	6.6	6.6	6.9	6.5	8.8	11.5
France	7.2 ^a	8.0	7.0	7.5 ^a	7.7	7.6	..
Germany	2.1 ^c	4.0	3.8	3.9	4.2	4.3	..
Greece	..	5.7 ^{a,c}	8.7 ^c	11.9 ^c	14.8	15.8	13.3 ^p
Hungary	10.6 ^{d,v}	9.3	10.9	12.4	13.5	15.4	16.6
Iceland	..	10.0	11.4	..	8.2 ^a	..	..
Ireland	8.9 ^c	15.6	16.5 ^c	17.0 ^c	20.8 ^c	21.4 ^c	..
Israel ¹	22.3 ^{a,d}	31.0 ^d	46.7 ^{a,d}	46.4 ^d	45.5 ^d	48.8 ^d	..
Italy	..	7.9	9.4	9.8	9.1	9.5	..
Japan	0.4	0.4 ^a	0.4	0.4	0.5	0.4	0.5
Korea	0.1 ^q	0.3	0.2	0.2	0.2	0.3	0.3
Luxembourg	1.6	..	5.4	20.7	20.4	..	..
Mexico	0.9	1.8	1.8	0.5	0.7	..	..
Netherlands	..	..	10.8	..	10.9 ^a	12.3	14.3 ^p
New Zealand	..	..	5.2	..	6.3	..	..
Norway	..	..	8.2	..	7.8	..	..
Poland	1.8	5.4	5.5	11.8	13.4	13.3	13.1
Portugal	5.2 ^c	3.0 ^a	4.1	3.2	6.0	5.2	..
Slovak Republic	2.3	12.3	12.8	14.7	14.2	18.7	18.0
Slovenia	6.2	5.6 ^a	6.0	6.0	7.0 ^a	8.6	8.9 ^p
Spain	4.9	5.7 ^a	5.5	5.7	6.7	6.6	..
Sweden	..	..	10.4	..	11.1	..	6.8
Switzerland	4.3	6.0	..	..	..	12.1	..
Turkey	1.2	1.3	1.1	0.8	0.7	0.6	0.8
United Kingdom	16.0	17.7 ^c	16.6 ^c	17.6 ^c	17.8	19.8 ^c	20.6 ^{c,p}
United States	.. ⁿ	.. ⁿ	.. ⁿ	3.7 ⁱ	3.8 ⁱ	3.8 ^{i,p}	..
EU28 (OECD estimates)	7.1 ^b	8.6 ^b	8.4 ^b	8.9 ^b	9.3 ^b	9.8 ^b	..
OECD-Total	..	..	..	5.1^b	5.2^b	5.4^b	..
Argentina	1.6 ^c	0.6	0.7	0.6	0.5	0.6	..
China	2.7	1.2	1.3 ^a	1.3	1.3	1.0	0.9
Romania	4.9	4.0	8.3	11.1	12.1 ^a	14.4	15.5
Russian Federation	12.0	5.9	6.5	3.5	4.3	4.0	3.0
Singapore	4.0	5.3	5.9	4.9	5.0	5.9	..
South Africa	..	11.4	12.1	12.1	15.0	13.1	..
Chinese Taipei	0.0 ^d	0.0	0.0	0.0	0.0	0.1	0.1

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 17. Percentage of Gross domestic expenditure on R&D (GERD) performed by the business enterprise sector

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	47.8	61.1	..	58.2 ^c	57.9 ^c	..	..
Austria	..	69.3 ^c	68.1	68.4 ^c	68.8	68.8 ^c	68.8 ^{c,p}
Belgium	72.3	68.3	66.3	67.1	68.7	69.0 ^c	69.1 ^p
Canada	60.3 ^g	54.1 ^g	53.2 ^g	51.7 ^g	52.5 ^g	51.6 ^g	50.5 ^{g,p}
Chile	..	40.4	29.3 ^a	29.6	34.0	34.4	..
Czech Republic	60.0	58.6	56.5	57.7	55.3	53.6	54.1 ^p
Denmark	..	69.9	69.8	67.0	66.7	65.7	65.4 ^{c,p}
Estonia	22.5	43.2	44.7	50.2	63.2	57.5	47.7 ^p
Finland	70.9	74.3	71.4	69.6	70.5	68.7	68.9
France	62.5 ^a	62.7	61.7	63.2 ^a	64.0	64.6	64.8 ^p
Germany	70.3	69.2	67.6	67.1	67.7	68.0	67.8 ^{c,p}
Greece	..	..	..	..	34.9 ^a	34.3	34.8 ^p
Hungary	44.3 ^{d,v}	52.6 ^v	57.2 ^v	59.8 ^v	62.4 ^v	65.6 ^v	69.4 ^v
Iceland	56.4 ^c	54.6	50.3	..	53.1 ^a	..	..
Ireland	71.6 ^c	64.7	68.3 ^c	68.7 ^c	70.9 ^c	72.0 ^c	..
Israel ¹	80.5 ^{a,d}	83.0 ^d	83.5 ^d	83.0 ^d	83.0 ^d	82.4 ^d	82.7 ^d
Italy	50.1	53.6	53.3	53.9	54.6	54.2	54.0 ^p
Japan	71.0	78.5 ^a	75.8	76.5	77.0	76.6	76.1
Korea	74.0 ^g	75.4	74.3	74.8	76.5	77.9	78.5
Luxembourg	92.6	77.9	75.9	67.6	69.6	61.3 ^a	61.4 ^p
Mexico	29.8	38.4	41.1	38.4	39.0	..	..
Netherlands	55.1	50.1	47.1	47.9	56.2 ^a	57.8	57.5 ^p
New Zealand	..	..	41.8	..	45.4	..	..
Norway	..	53.2	51.6	51.2	52.2	52.3	52.4 ^p
Poland	36.1	30.9	28.5	26.6	30.1	37.2	43.6
Portugal	27.8 ^c	50.1 ^a	47.3	45.9	47.4	49.7	47.6 ^p
Slovak Republic	65.8	42.9	41.0	42.1	37.2	41.3	46.3
Slovenia	56.3	64.6 ^a	64.6	67.8	73.9 ^a	75.7	76.5 ^p
Spain	53.7	54.9 ^a	51.9	51.5	52.1	53.0	53.2 ^p
Sweden	..	74.1 ^c	70.6	68.7 ^c	68.8	67.8 ^c	68.9 ^l
Switzerland	73.9	73.5	..	..	..	69.3	..
Turkey	33.4	44.2	40.0	42.5	43.2	45.1	47.5
United Kingdom	65.0	62.0 ^c	60.4 ^c	60.9 ^c	63.6	63.3 ^c	64.5 ^{c,p}
United States	74.2 ⁱ	71.4 ⁱ	69.6 ⁱ	68.1 ⁱ	68.5 ⁱ	69.8 ^{i,p}	..
EU28 (OECD estimates)	63.6 ^b	62.6 ^b	61.0 ^b	61.2 ^b	62.4 ^b	62.7 ^b	63.0 ^b
OECD-Total	69.3^b	69.0^b	67.0^b	66.5^b	67.3^b	67.9^b	68.4^b
Argentina	25.9	27.4	22.3	23.2	24.6	21.5	..
China	60.0 ^a	73.3	73.2 ^a	73.4	75.7	76.2	76.6
Romania	69.4	30.0	40.2	38.3	36.0 ^a	39.0	30.7
Russian Federation	70.8	62.9	62.4	60.5	61.0	58.3	60.6
Singapore	62.0	71.8	61.6	60.8	62.1	60.9	..
South Africa	..	58.6	53.2	49.7	47.1	44.3	..
Chinese Taipei	63.6 ^d	70.7	70.1	71.5	72.7	74.2	75.5

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Source: OECD, Main Science and Technology Indicators database, February 2015

Table 18. Percentage of Gross domestic expenditure on R&D (GERD) performed by the higher education sector

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	26.8	24.2	..	26.4 ^c	28.1 ^c	..	..
Austria	..	25.0 ^c	26.1	25.8 ^c	25.6	25.6 ^c	25.6 ^{c,p}
Belgium	20.2	21.8	23.8	23.5	22.3	21.8 ^c	21.7 ^p
Canada	28.2	35.5	35.9	36.8	37.6	38.6	39.8 ^p
Chile	..	40.8	39.8 ^a	38.5	32.4	34.3	..
Czech Republic	14.2	18.2	19.7	20.0	24.4	27.5	27.2 ^p
Denmark	..	27.2	27.7	30.3	30.9	31.6	31.8 ^{c,p}
Estonia	52.4	42.9	42.2	38.0	27.8	32.1	42.3 ^p
Finland	17.8	17.2	18.9	20.4	20.0	21.6	21.5
France	18.8 ^a	20.0	20.8	21.6 ^a	20.9	20.9	20.7 ^p
Germany	16.1	16.7	17.6	18.1	17.8	17.7	17.5 ^{c,p}
Greece	..	..	..	..	40.2 ^a	39.9	37.4 ^p
Hungary	24.0 ^{d,v}	22.0 ^v	20.9 ^v	19.9 ^v	20.2 ^v	18.4 ^v	14.4 ^v
Iceland	16.2 ^c	25.1	25.1	..	26.4 ^a	..	..
Ireland	20.2 ^c	28.8	26.6 ^c	26.5 ^c	24.0 ^c	23.1 ^c	..
Israel ¹	15.6 ^{a,d,g}	13.8 ^d	13.3 ^d	13.8 ^d	13.5 ^d	14.4 ^d	14.1 ^d
Italy	31.0	30.5	30.3	28.8	28.6	28.0	28.2 ^p
Japan	14.5	11.6 ^a	13.4	12.9	13.2	13.4	13.5
Korea	11.3 ^g	11.1	11.1	10.8	10.1	9.5	9.2
Luxembourg	0.2	6.1	8.0	12.7	11.3	15.4 ^a	15.3 ^{c,p}
Mexico	28.3	29.8	29.2	27.8	28.9	..	..
Netherlands	31.9	37.9	40.2	40.4	32.9 ^a	31.4	31.8 ^p
New Zealand	..	..	33.0	..	31.8	..	..
Norway	..	32.0	32.0	32.3	31.4	31.3	31.7 ^p
Poland	31.5	33.6	37.1	37.2	35.1	34.4	29.3
Portugal	37.5 ^c	34.5 ^a	36.6	36.9	36.4	36.5	37.8 ^p
Slovak Republic	9.5	24.3	25.0	27.6	34.9	34.0	33.1
Slovenia	16.6	13.4 ^a	14.6	13.9	11.8 ^a	11.1	10.4 ^p
Spain	29.6	26.7 ^a	27.8	28.3	28.2	27.7	27.9 ^p
Sweden	..	21.3 ^c	24.9	26.3 ^c	26.5	27.1 ^c	27.1 ^l
Switzerland	22.9	24.2	..	..	..	28.1	..
Turkey	60.4	43.8	47.4	46.0	45.5	43.9	42.1
United Kingdom	20.6	26.5 ^c	27.9 ^c	27.0 ^c	26.0	26.7 ^c	26.3 ^{c,p}
United States	11.4 ⁱ	13.2 ⁱ	14.0 ⁱ	14.7 ⁱ	14.6 ⁱ	13.8 ^{i,p}	..
EU28 (OECD estimates)	21.2 ^b	23.2 ^b	24.2 ^b	24.4 ^b	23.6 ^b	23.6 ^b	23.3 ^b
OECD-Total	16.0^b	17.2^b	18.4^b	18.7^b	18.4^b	18.1^b	17.7^b
Argentina	33.5	29.0	31.3	30.9	31.4	31.2	..
China	8.6 ^a	8.5	8.1 ^a	8.5	7.9	7.6	7.2
Romania	11.8	28.9	24.7	24.5	22.9 ^a	19.7	19.7
Russian Federation	4.5	6.7	7.1	8.4	9.0	9.3	9.0
Singapore	23.9	20.5	27.1	28.8	27.7	29.0	..
South Africa	..	19.9	24.3	26.8	29.8	30.7	..
Chinese Taipei	12.2 ^d	12.2	12.8	12.1	11.9	11.3	10.8

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 19. Percentage of Gross domestic expenditure on R&D (GERD)
performed by the government sector**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	22.6	12.1	..	12.4 ^c	11.2 ^c	..	..
Austria	..	5.3 ^c	5.3	5.2 ^c	5.1	5.1 ^c	5.1 ^{c,p}
Belgium	6.3	8.9	8.9	8.4	8.1	8.8 ^c	8.8 ^p
Canada	11.2	9.8	10.4	11.0	9.5	9.3	9.2 ^p
Chile	..	9.7	3.3 ^a	3.7	4.0	4.1	..
Czech Republic	25.3	22.7	23.3	21.7	19.8	18.4	18.3 ^p
Denmark	..	2.6	2.1	2.2	2.0	2.4	2.4 ^{c,p}
Estonia	23.1	11.8	11.0	10.6	8.1	9.3	8.9 ^p
Finland	10.6	8.0	9.1	9.2	8.8	9.0	8.9
France	17.3 ^a	16.0	16.3	14.0 ^a	13.9	13.1	13.1 ^p
Germany	13.6 ^o	14.0 ^o	14.8 ^o	14.8 ^o	14.5 ^o	14.3 ^o	14.7 ^{c,o,p}
Greece	..	..	..	..	23.8 ^a	24.8	26.9 ^p
Hungary	26.1 ^{d,v}	23.4 ^v	20.1 ^v	18.5 ^v	15.8 ^v	14.4 ^v	14.9 ^v
Iceland	25.5 ^c	17.8	22.1	..	17.7 ^a	..	..
Ireland	8.1 ^c	6.5	5.0 ^c	4.8 ^c	5.0 ^c	4.8 ^c	..
Israel ¹	3.2 ^{a,d}	1.8 ^d	1.9 ^d	2.0 ^d	2.3 ^d	2.1 ^d	2.1 ^d
Italy	18.9	12.7	13.1	13.7	13.4	14.8	14.9 ^p
Japan	9.9	8.3 ^a	9.2	9.0	8.4	8.6	9.2
Korea	13.3 ^g	12.1	13.0	12.7	11.7	11.3	..
Luxembourg	7.1	16.0	16.1 ^a	19.7	19.2	23.4 ^a	23.3 ^{c,p}
Mexico	41.7	29.0	26.8	32.4	30.5	..	..
Netherlands	12.0 ^a	12.0 ^o	12.7 ^o	11.7 ^o	10.9 ^{a,o}	10.8 ^o	10.7 ^{o,p}
New Zealand	..	..	25.3	..	22.7	..	..
Norway	..	14.8	16.4	16.4	16.4	16.4	16.0 ^p
Poland	32.2	35.3	34.3	35.9	34.5	28.0	26.8
Portugal	23.9 ^c	7.3 ^a	7.3	7.1	7.4	5.4	5.8 ^p
Slovak Republic	24.7 ^d	32.8 ^d	33.9 ^d	30.0 ^d	27.7 ^d	24.5 ^d	20.5 ^d
Slovenia	25.9	21.9 ^a	20.8	18.2	14.3 ^a	13.1	13.0 ^p
Spain	15.8	18.2 ^a	20.1	20.1	19.5	19.1	18.7 ^p
Sweden	..	4.4 ^c	4.4	4.9 ^c	4.3	4.8 ^c	3.7
Switzerland	1.3 ^{a,h}	0.7 ^h	..	..	..	0.8 ^h	..
Turkey	6.2	11.9	12.6	11.4	11.3	11.0	10.4
United Kingdom	12.6	9.2 ^c	9.2 ^c	9.5 ^c	8.6	8.0 ^c	7.3 ^{c,p}
United States	10.8 ^{h,j}	11.3 ^{h,j}	11.9 ^{h,j}	12.6 ^{h,j}	12.7 ^{h,j}	12.3 ^{h,j,p}	..
EU28 (OECD estimates)	14.2 ^b	13.2 ^b	13.6 ^b	13.3 ^b	12.9 ^b	12.7 ^b	12.7 ^b
OECD-Total	11.9^b	11.3^b	11.9^b	12.2^b	11.8^b	11.6^b	11.2^b
Argentina	38.3	41.8	44.7	44.3	42.3	45.6	..
China	31.5 ^a	18.3	18.7 ^a	18.1	16.3	16.3	16.2
Romania	18.8	41.0	34.9	36.8	40.7 ^a	40.9	49.2
Russian Federation	24.4	30.1	30.3	31.0	29.8	32.2	30.3
Singapore	14.1	7.6	11.3	10.4	10.2	10.0	..
South Africa	..	20.3	21.6	22.7	22.4	22.9	..
Chinese Taipei	23.5 ^d	16.8	16.8	16.0	15.1	14.2	13.4

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 20. Percentage of Gross domestic expenditure on R&D (GERD) performed by the private non-profit sector

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	2.77	2.63	..	2.96 ^c	2.98 ^c	..	..
Austria	..	0.37 ^c	0.48 ^a	0.49 ^c	0.49	0.49 ^c	0.49 ^{c,p}
Belgium	1.18	0.98	1.00	0.91	0.90	0.44 ^c	0.43 ^p
Canada	0.28	0.58	0.41	0.44	0.40	0.48	0.52 ^p
Chile	..	9.09	27.53 ^a	28.16	29.57	27.23	..
Czech Republic	0.51	0.42	0.54	0.61	0.55	0.51	0.34 ^p
Denmark	..	0.32	0.42	0.44	0.37	0.40	0.40 ^{c,p}
Estonia	1.95	2.08	2.17	1.25	0.91	1.05	1.06 ^p
Finland	0.67	0.53	0.58	0.68	0.71	0.68	0.71
France	1.42 ^a	1.25	1.20	1.25 ^a	1.25	1.35	1.35 ^p
Germany	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ
Greece	..	..	..	..	1.01	0.96	0.89 ^p
Hungary	..	..	..	..	..	..	..
Iceland	1.87 ^c	2.47	2.46	..	2.75 ^a	..	..
Ireland	..	..	..	..	..	..	..
Israel ¹	0.75 ^{a,d}	1.36 ^d	1.30 ^d	1.22 ^d	1.20 ^d	1.10 ^d	1.05 ^d
Italy	..	3.24	3.30	3.62	3.34	2.96	2.88 ^p
Japan	4.62	1.57 ^a	1.61	1.59	1.45	1.40	1.28
Korea	1.36 ^g	1.43	1.64	1.71	1.65	1.28	..
Luxembourg	..	..	..	..	..	..	..
Mexico	0.26	2.79	2.91	1.41	1.61	..	..
Netherlands	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ
New Zealand	..	..	..	..	..	..	..
Norway	..	..	..	..	..	..	..
Poland	0.13	0.09	0.13	0.28	0.23	0.40	0.29
Portugal	10.79 ^c	8.14 ^a	8.81	10.09	8.84	8.47	8.80 ^p
Slovak Republic	0.00	0.06	0.05	0.31	0.21	0.10	0.15
Slovenia	1.17	0.10 ^a	0.07	0.06	0.05 ^a	0.05	0.04 ^p
Spain	0.90	0.16 ^a	0.20	0.19	0.17	0.19	0.16 ^p
Sweden	..	0.20 ^c	0.07 ^{a,m}	0.03 ^{c,m}	0.32 ^a	0.29 ^c	0.22 ^l
Switzerland	1.92	1.60	..	..	..	1.84	..
Turkey	..	..	..	..	..	..	..
United Kingdom	1.82	2.36 ^c	2.48 ^c	2.48 ^c	1.81	1.91 ^c	1.88 ^{c,p}
United States	3.63 ^{c,j}	4.03 ^{c,j}	4.48 ^{c,j}	4.55 ^{c,j}	4.26 ^{c,j}	4.03 ^{c,j,p}	..
EU28 (OECD estimates)	0.90 ^b	1.13 ^b	1.18 ^b	1.21 ^b	1.06 ^b	1.03 ^b	1.01 ^b
OECD-Total	2.71^b	2.46^b	2.68^b	2.70^b	2.50^b	2.39^b	2.40^b
Argentina	2.37	1.73	1.69	1.63	1.66	1.76	..
China	..	..	..	..	..	..	..
Romania	..	0.23	0.17	0.41	0.38 ^a	0.40	0.40
Russian Federation	0.22	0.26	0.23	0.19	0.17	0.18	0.13
Singapore	..	..	..	..	..	..	..
South Africa	..	1.14	0.90	0.80	0.77	2.11	..
Chinese Taipei	0.70 ^d	0.34	0.37	0.36	0.34	0.31	0.32

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 21. Total researchers in headcount

Headcount

	2000	2008	2009	2010	2011	2012	2013
Australia	..	..	..	..	..	..	..
Austria	..	..	59 341	..	65 609	..	..
Belgium	..	54 624	55 858	59 403	63 207	..	..
Canada	..	..	..	..	..	..	..
Chile	..	10 582	8 770 ^m	9 453 ^m	9 388 ^m	10 447 ^m	..
Czech Republic	30 165	44 240	43 092	43 418	45 902	47 651	..
Denmark	..	48 442	54 049	54 813	56 845	58 568	..
Estonia	4 570	7 226	7 453	7 491	7 646	7 634	..
Finland	45 241 ^u	55 195	55 797	57 163	57 549	56 704	..
France	211 365 ^m	289 041	296 093	324 551 ^a	338 470	356 469	..
Germany	..	..	487 242	..	522 010	..	..
Greece	..	..	..	..	45 239 ^a	..	..
Hungary	27 876 ^d	33 739	35 267	35 700	36 945	37 019	..
Iceland	..	4 158	3 754	..	3 270 ^a	..	..
Ireland	..	21 040	20 901 ^c	20 801 ^c	22 131	..	..
Israel ¹	..	..	..	..	..	..	..
Italy	100 171	145 594	149 314	149 807	151 597	157 960	..
Japan	..	890 669	889 341	894 138	892 684	887 067	892 406
Korea	159 973 ^y	300 050	323 175	345 912	375 176	401 724	410 333
Luxembourg	..	..	2 951	..	3 267	..	..
Mexico	..	37 639	42 973	45 045	46 125	..	..
Netherlands	52 718	60 969	54 505	64 829	82 991 ^a	104 265	..
New Zealand	..	..	27 000	..	28 100	..	..
Norway	..	43 699	44 762	44 774	45 578	46 747	..
Poland	88 189	97 474	98 165	100 934	100 723	103 627	..
Portugal	29 761 ^c	75 073 ^a	75 206	80 259	82 354	81 750	..
Slovak Republic	15 747	19 814	21 832	24 049	24 711	25 069	24 441
Slovenia	6 562	10 124 ^a	10 444	11 056	12 514 ^a	12 362	..
Spain	..	217 716 ^a	221 314	224 000	220 254	215 544	..
Sweden	..	..	72 864	..	80 039	..	..
Switzerland	44 230	45 874	..	..	..	60 278	..
Turkey	67 512	106 423	114 436	124 796	137 452	155 133	166 097
United Kingdom	..	..	385 489 ^c	394 755 ^c	429 009 ^c	442 385 ^c	..
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	41 741	63 927	67 245	74 020	79 092	81 748	..
China	..	..	1 556 518 ^u	1 747 589	1 905 899	2 069 650	..
Romania	23 179	30 864	30 645	30 707	25 489 ^a	27 838	..
Russian Federation	425 954 ^m	375 804 ^m	369 237 ^m	368 915 ^m	374 791 ^m	372 620 ^m	369 015 ^m
Singapore	20 800	33 365	34 387	36 561	38 013	38 432	..
South Africa	..	39 955	40 797	37 901	40 653	42 828	..
Chinese Taipei	69 526 ^{d,m}	143 862	154 818	164 874	173 654	178 632	178 920

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 22. Women researchers as a percentage of total researchers
Based on headcount

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	..	..	..	..	..	..	..
Austria	..	..	28.4	..	29.0	..	..
Belgium	..	32.2	32.7	33.2	33.5	..	..
Canada	..	..	..	..	..	..	..
Chile	..	27.5	32.3	32.4	30.8	31.0	..
Czech Republic	27.8	28.5	28.9	28.1	28.2	27.5 ^p	..
Denmark	..	..	31.7	32.6 ^c	33.1	34.8 ^c	..
Estonia	43.1	41.7	42.5	43.4	43.7	44.0	..
Finland	28.5 ^u	30.7	31.4	31.9	32.1	32.2	..
France	27.5	27.4 ^d	26.9 ^d	25.3 ^{a,m}	25.6 ^m	25.6 ^m	..
Germany	..	..	25.0	..	26.8	..	..
Greece	..	..	..	..	36.7 ^a	..	..
Hungary	34.2 ^d	33.0	32.1	32.0	31.7	30.9	..
Iceland	..	37.8	42.6	..	37.3 ^a	..	..
Ireland	..	32.3	34.2 ^c	34.4 ^c	32.4	..	..
Israel ¹	..	..	..	..	..	..	..
Italy	27.9	33.2	33.8	34.5	34.9	35.5	..
Japan	..	13.0	13.6	13.8	14.0	14.4	14.6
Korea	10.2 ^g	15.6	15.8	16.7	17.3	17.7	18.2
Luxembourg	..	..	21.2	..	24.0	..	..
Mexico	..	..	..	..	..	..	..
Netherlands	..	..	25.9	..	24.1 ^a	..	..
New Zealand	..	..	..	..	..	..	..
Norway	..	34.1	35.2	35.7	36.2	36.2	..
Poland	38.1	39.5	39.5	39.0	38.6	38.3	..
Portugal	43.4 ^c	43.0 ^a	44.3	43.9	44.0	45.0	..
Slovak Republic	..	42.3	42.5	42.4	42.6	42.3	42.7
Slovenia	35.9	35.1 ^a	35.7	36.3	36.4 ^a	35.8	..
Spain	..	37.5 ^a	38.1	38.4	38.7	38.8	..
Sweden	..	..	35.7	..	37.2	..	..
Switzerland	20.3	30.2	..	..	..	32.4	..
Turkey	34.3	36.5	36.3	35.8	35.6	36.2	36.2
United Kingdom	..	..	37.9 ^c	38.3 ^c	37.7 ^c	37.8 ^c	..
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	48.5	51.3	51.9	52.2	52.7	52.7	..
China	..	..	..	..	..	..	..
Romania	42.5	44.8	44.7	44.0	46.1 ^a	45.1	..
Russian Federation	44.1	41.8	41.9	41.7	41.4	41.2	40.9
Singapore	..	28.0	28.5	29.3	29.2	29.6	..
South Africa	..	39.7	40.8	41.7	42.3	43.7	..
Chinese Taipei	18.3 ^d	20.1	20.5	20.9	21.6	21.8	22.0

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 23. Business enterprise expenditure on R&D (BERD)
at current prices and PPPs**

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	3 803.2	11 690.6	11 614.4	11 967.4	12 124.9	..	..
Austria	..	6 138.0 ^c	6 033.0	6 560.3 ^c	6 814.1	7 310.9 ^c	7 396.1 ^{c,p}
Belgium	4 029.8	5 323.4	5 330.5	5 886.1	6 683.8	7 128.5 ^c	7 326.6 ^p
Canada	10 098.0 ^g	13 483.6 ^g	13 322.9 ^g	12 945.4 ^g	13 343.8 ^g	12 961.7 ^g	12 411.3 ^g
Chile	..	414.8	282.7 ^a	304.5	419.5	462.6	..
Czech Republic	1 118.0	2 050.9	2 068.0	2 190.4	2 591.2	2 888.3	3 145.7 ^p
Denmark	..	4 358.6	4 687.3	4 566.4	4 775.5	4 834.5	4 916.2 ^{c,p}
Estonia	18.3	163.8	168.2	222.9	463.3	406.3	282.4 ^p
Finland	3 153.6	5 560.0	5 367.3	5 329.2	5 560.6	5 115.6	4 940.8
France	20 614.0	29 199.8	30 696.4	32 040.6	34 169.6	35 236.6	35 756.4 ^p
Germany	36 835.3	56 764.6	55 954.3	58 921.1	65 136.3	68 469.1	70 487.1 ^{c,p}
Greece	294.6	..	..	..	693.9 ^a	667.0	771.2 ^p
Hungary	433.1 ^v	1 082.0 ^v	1 363.8 ^v	1 478.9 ^v	1 683.0 ^v	1 865.5 ^v	2 256.2 ^v
Iceland	122.1 ^c	182.0	170.1	162.0 ^{a,c}	167.3	..	..
Ireland	876.0 ^c	1 772.6	2 094.6	2 174.9 ^c	2 234.8	2 356.5 ^c	..
Israel ¹	4 952.8 ^{a,d}	7 228.9 ^d	7 106.1 ^d	7 196.8 ^d	7 979.5 ^d	8 758.8 ^d	9 128.9 ^d
Italy	7 639.0	12 896.1	13 137.4	13 558.4	14 081.4	14 545.8	14 316.5 ^p
Japan	70 079.9	116 687.8	103 759.2	107 584.6	114 204.6	116 321.3	121 932.7
Korea	13 729.9 ^g	33 090.8	34 150.3	39 025.0	44 680.5	50 244.6	54 125.6
Luxembourg	358.8	531.9	519.0	433.7	465.3	345.5 ^a	350.8 ^p
Mexico	1 000.6	2 547.4	2 878.0	3 021.5	3 143.7	..	..
Netherlands	4 997.0	6 248.2	5 823.8	6 142.7	8 221.0 ^a	8 775.7	8 847.2 ^p
New Zealand	..	..	691.3	..	802.9	..	..
Norway	..	2 462.1	2 412.1	2 430.8	2 638.8	2 820.9	2 899.5 ^p
Poland	940.5	1 284.0	1 386.3	1 523.7	1 926.9	2 912.8	3 453.6
Portugal	368.3 ^c	1 994.9	2 070.5	2 003.5	1 963.2	1 944.4	1 875.5 ^p
Slovak Republic	253.0	254.8	243.3	343.5	335.9	466.2	550.8
Slovenia	271.7	627.8 ^a	658.6	788.6	1 047.8 ^a	1 142.9	1 176.9 ^p
Spain	4 182.7	11 211.2 ^a	10 667.5	10 463.9	10 506.7	10 305.3	10 215.2 ^p
Sweden	..	9 994.1 ^c	8 900.2	8 652.0 ^c	9 165.5	9 289.1 ^c	9 757.1
Switzerland	4 263.7	7 735.7	..	..	..	9 177.9	..
Turkey	944.6	3 425.1	3 547.2	4 191.8	4 856.7	5 606.4	6 322.9
United Kingdom	18 106.2	24 423.8	23 821.1	23 245.5	24 880.8	24 610.3	25 713.6 ^{c,p}
United States	199 961.0 ⁱ	290 681.0 ⁱ	282 393.0 ⁱ	278 977.0 ⁱ	294 093.0 ⁱ	316 700.0 ^{i,p}	..
EU28 (OECD estimates)	117 249.7 ^b	184 034.8 ^b	183 014.9 ^b	188 757.6 ^b	204 997.1 ^b	212 328.8 ^b	217 347.7 ^b
OECD-Total	427 440.7^b	672 991.9^b	652 010.7^b	663 960.3^b	710 602.8^b	750 205.6^b	782 744.0^b
Argentina	412.1	809.9	759.2	890.7	1 101.3	1 113.3	..
China	19 575.1 ^a	105 995.8	135 012.0 ^a	156 395.5	187 684.1	223 168.7	257 793.9
Romania	325.4	559.2	600.0	581.1	622.2 ^a	677.4	445.5
Russian Federation	7 435.4	18 911.0	21 616.7	20 025.3	21 451.5	22 627.8	24 662.6
Singapore	1 856.8	5 759.3	4 074.9	4 376.5	5 194.4	4 966.5	..
South Africa	..	3 068.2	2 577.1	2 187.9	2 191.9	2 156.9	..
Chinese Taipei	5 829.1 ^d	15 134.8	15 691.6	17 784.7	19 875.4	21 295.8	22 901.6

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Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 24. Business enterprise expenditure on R&D (BERD)
as a percentage of GDP**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.71	1.37	1.29	1.28	1.23	..	..
Austria	..	1.79 ^c	1.78	1.88 ^c	1.84	1.93 ^c	1.93 ^{c,p}
Belgium	1.39	1.31	1.31	1.37	1.48	1.55 ^c	1.58 ^p
Canada	1.13 ^y	1.01 ^y	1.02 ^y	0.95 ^y	0.93 ^y	0.88 ^y	0.82 ^y
Chile	..	0.15 ^y	0.10 ^{a,y}	0.10 ^y	0.12 ^y	0.13 ^y	..
Czech Republic	0.67	0.73	0.73	0.77	0.86	0.96	1.03 ^p
Denmark	..	1.94	2.14	1.97	1.98	1.98	2.00 ^{c,p}
Estonia	0.14	0.54	0.62	0.79	1.48	1.24	0.83 ^p
Finland	2.30	2.63	2.68	2.59	2.56	2.36	2.29
France	1.30	1.29	1.36	1.37	1.40	1.44	1.44 ^p
Germany	1.68	1.80	1.84	1.82	1.89	1.96	1.99 ^{c,p}
Greece	0.14	..	..	..	0.23 ^a	0.24	0.27 ^p
Hungary	0.35 ^y	0.52 ^y	0.65 ^y	0.69 ^y	0.75 ^y	0.84 ^y	0.98 ^y
Iceland	1.46 ^c	1.38	1.34	1.32 ^{a,c}	1.33	..	..
Ireland	0.78 ^c	0.90	1.11	1.11 ^c	1.09	1.14 ^c	..
Israel ¹	3.19 ^{a,d}	3.64 ^d	3.47 ^d	3.28 ^d	3.40 ^d	3.50 ^d	3.49 ^d
Italy	0.50	0.62	0.65	0.66	0.66	0.68	0.67 ^p
Japan	2.13 ^y	2.72 ^y	2.54 ^y	2.49 ^y	2.60 ^y	2.57 ^y	2.65 ^y
Korea	1.61 ^y	2.35	2.45	2.59	2.87	3.14	3.26
Luxembourg	1.46	1.28	1.30	1.02	0.98	0.71 ^a	0.71 ^p
Mexico	0.10	0.16	0.18	0.17	0.17	..	..
Netherlands	0.99	0.83	0.79	0.83	1.06 ^a	1.14	1.14 ^p
New Zealand	..	..	0.53 ^y	..	0.58 ^y	..	..
Norway	..	0.83	0.89	0.85	0.85	0.85	0.87 ^p
Poland	0.23	0.19	0.19	0.19	0.23	0.33	0.38
Portugal	0.20 ^c	0.72	0.75	0.70	0.69	0.68	0.65 ^p
Slovak Republic	0.42	0.20	0.19	0.26	0.25	0.34	0.38
Slovenia	0.76	1.05 ^a	1.17	1.40	1.79 ^a	1.95	1.98 ^p
Spain	0.47	0.72 ^a	0.70	0.69	0.69	0.67	0.66 ^p
Sweden	..	2.59 ^c	2.41	2.21 ^c	2.22	2.22 ^c	2.28
Switzerland	1.72	2.01	..	..	..	2.05	..
Turkey	0.16 ^y	0.32 ^y	0.34 ^y	0.36 ^y	0.37 ^y	0.42 ^y	0.45 ^y
United Kingdom	1.12	1.05	1.05	1.03	1.08	1.03	1.05 ^{c,p}
United States	1.94 ⁱ	1.97 ⁱ	1.96 ⁱ	1.86 ⁱ	1.90 ⁱ	1.96 ^{i,p}	..
EU28 (OECD estimates)	1.07 ^b	1.11 ^b	1.12 ^b	1.13 ^b	1.17 ^b	1.20 ^b	1.21 ^b
OECD-Total	1.48^b	1.58^b	1.56^b	1.53^b	1.57^b	1.61^b	1.64^b
Argentina	0.09	0.12	0.11	0.11	0.13	0.13	..
China	0.54 ^{a,y}	1.07 ^y	1.22 ^{a,y}	1.29 ^y	1.39 ^y	1.48 ^y	1.55 ^y
Romania	0.25	0.17	0.19	0.17	0.18 ^a	0.19	0.12
Russian Federation	0.74 ^y	0.66 ^y	0.78 ^y	0.68 ^y	0.66 ^y	0.66 ^y	0.68 ^y
Singapore	1.13	1.88	1.33	1.22	1.34	1.23	..
South Africa	..	0.55 ^y	0.46 ^y	0.38 ^y	0.36 ^y	0.34 ^y	..
Chinese Taipei	1.23 ^{d,y}	1.97 ^y	2.06 ^y	2.08 ^y	2.19 ^y	2.27 ^y	2.36 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 25. Business enterprise expenditure on R&D (BERD)
at 2005 prices and PPPs**

Million 2005 USD

	2000	2008	2009	2010	2011	2012	2013
Australia	4 284.0	10 814.6	10 377.2	10 499.7	10 484.3	..	..
Austria	..	5 563.9 ^c	5 314.1	5 708.5 ^c	5 783.2	6 114.0 ^c	6 134.8 ^{c,p}
Belgium	4 420.9	4 833.9	4 702.2	5 064.6	5 531.8	5 798.8 ^c	5 923.0 ^p
Canada	11 572.4 ^g	12 448.9 ^g	12 258.5 ^g	11 767.4 ^g	11 933.4 ^g	11 459.4 ^g	10 877.9 ^g
Chile	..	359.2	242.7 ^a	243.2	315.7	345.9	..
Czech Republic	1 256.6	1 920.4	1 838.6	1 983.8	2 258.4	2 487.3	2 657.2 ^p
Denmark	..	3 728.1	3 900.9	3 644.2	3 705.6	3 691.8	3 701.6 ^{c,p}
Estonia	21.5	137.7	134.6	175.5	354.3	311.0	211.2 ^p
Finland	3 406.9	4 884.2	4 554.7	4 545.6	4 607.3	4 176.4	3 999.0
France	23 029.6	26 008.5	26 653.9	27 395.6	28 519.5	29 371.6	29 593.0 ^p
Germany	43 395.5	51 670.3	49 889.5	51 329.4	55 237.5	57 311.7	58 412.6 ^{c,p}
Greece	325.0	..	..	..	586.1 ^a	552.9	616.9 ^p
Hungary	496.4 ^v	951.3 ^v	1 119.0 ^v	1 187.2 ^v	1 315.3 ^v	1 445.8 ^v	1 715.8 ^v
Iceland	127.1 ^c	170.6	157.1	149.8 ^{a,c}	154.0	..	..
Ireland	1 031.9 ^c	1 629.0	1 878.0	1 873.4 ^c	1 882.9	1 960.4 ^c	..
Israel ¹	4 902.0 ^{a,d}	7 225.3 ^d	7 012.5 ^d	7 016.4 ^d	7 582.8 ^d	8 031.1 ^d	8 257.5 ^d
Italy	8 259.1	10 973.8	10 831.5	11 156.7	11 250.9	11 357.3	10 998.7 ^p
Japan	78 069.6	108 813.6	96 121.2	98 462.4	102 505.9	102 593.8	107 638.4
Korea	14 937.5 ^g	31 304.5	32 752.0	36 975.5	42 368.4	47 465.1	50 774.8
Luxembourg	391.0	450.3	432.8	354.5	351.4	253.3 ^a	258.5 ^p
Mexico	1 198.4	2 255.3	2 451.7	2 542.9	2 513.3	..	..
Netherlands	5 650.0	5 515.0	5 111.1	5 380.3	7 028.0 ^a	7 409.4	7 376.3 ^p
New Zealand	..	..	594.3	..	660.0	..	..
Norway	..	2 139.0	2 085.8	2 036.2	2 141.3	2 212.9	2 276.2 ^p
Poland	1 055.8	1 163.4	1 214.3	1 280.2	1 575.6	2 337.9	2 722.0
Portugal	445.2 ^c	1 750.6	1 753.0	1 682.3	1 620.3	1 542.3	1 443.7 ^p
Slovak Republic	293.0	224.0	207.7	291.3	284.8	390.7	454.0
Slovenia	305.9	585.3 ^a	603.5	727.0	938.3 ^a	995.7	999.4 ^p
Spain	4 890.2	9 618.4 ^a	8 992.9	8 906.0	8 768.0	8 390.2	8 161.2 ^p
Sweden	..	8 637.7 ^c	7 634.6	7 414.9 ^c	7 640.6	7 636.6 ^c	7 915.5
Switzerland	4 649.4	6 469.3	..	..	..	6 867.5	..
Turkey	1 001.8	2 821.8	2 844.1	3 280.0	3 690.8	4 222.2	4 749.8
United Kingdom	20 294.3	22 990.0	22 155.4	22 084.0	23 428.8	22 646.8	23 372.7 ^{c,p}
United States	224 624.4 ⁱ	269 420.7 ⁱ	259 766.2 ⁱ	253 527.3 ⁱ	261 858.1 ⁱ	277 014.4 ^{i,p}	..
EU28 (OECD estimates)	132 830.5 ^b	165 133.0 ^b	160 627.1 ^b	164 022.1 ^b	173 815.1 ^b	177 502.6 ^b	179 624.3 ^b
OECD-Total	479 199.1^b	618 592.9^b	592 652.8^b	596 462.5^b	625 344.8^b	650 123.0^b	671 177.2^b
Argentina	462.9	750.7	698.4	809.5	980.6	973.6	..
China	22 390.1 ^a	98 969.4	123 026.8 ^a	143 593.0	169 723.8	198 309.5 ^b	225 713.3 ^b
Romania	390.5	435.5	440.7	408.2	423.5 ^a	449.8	293.2
Russian Federation	9 373.4	13 773.0	15 089.4	13 809.9	13 997.5	14 290.6	15 019.5
Singapore	2 085.1	5 333.5	3 747.8	3 974.1	4 621.1	4 344.5	..
South Africa	..	2 844.2	2 370.7	1 988.6	1 953.9	1 889.6	..
Chinese Taipei	6 548.1 ^d	14 028.2	14 434.7	16 162.7	17 696.5	18 627.1	19 737.9

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 26. Business enterprise expenditure on R&D (BERD)
as a percentage of value added in industry**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	1.03	1.96	1.88	1.84	1.76	..	..
Austria	..	2.70 ^c	2.74	2.89 ^c	2.82	2.97 ^c	2.99 ^{c,p}
Belgium	2.20	2.09	2.12	2.21	2.38	2.51 ^c	2.57 ^p
Canada	1.63 ^{b,g}	1.44 ^g	1.52 ^g	1.40 ^g	1.37 ^g	1.29 ^{b,g}	1.20 ^{b,g}
Chile	..	0.21 ^y	0.14 ^{a,y}	0.14 ^y	0.17 ^y	0.18 ^y	..
Czech Republic	0.94	1.04	1.07	1.13	1.25	1.40	1.51 ^p
Denmark	..	3.30	3.80	3.49	3.49	3.49	3.52 ^{c,p}
Estonia	0.20	0.81	1.00	1.23	2.24	1.88	1.27 ^p
Finland	3.64	4.25	4.56	4.41	4.41	4.14	4.06
France	2.15	2.20	2.35	2.37	2.42	2.49	2.51 ^p
Germany	2.61	2.81	2.96	2.88	2.99	3.08	3.15 ^{c,p}
Greece	0.22	..	..	..	0.46 ^a	0.46	0.52 ^p
Hungary	0.56 ^y	0.82 ^y	1.06 ^y	1.11 ^y	1.19 ^y	1.35 ^y	1.57 ^y
Iceland	2.30 ^c	2.18	2.10	2.05 ^{a,c}	2.03	..	..
Ireland	1.10 ^c	1.36	1.65	1.60 ^c	1.56	1.62 ^c	..
Israel ¹	5.26 ^{a,d}	6.05 ^d	5.79 ^d	5.59 ^d	5.83 ^d	5.91 ^d	5.92 ^d
Italy	0.77	0.99	1.06	1.08	1.08	1.12	1.11 ^p
Japan	3.13 ^y	4.10 ^y	3.94 ^y	3.82 ^y	4.03 ^y	3.99 ^y	4.12 ^{b,y}
Korea	2.32 ^g	3.48	3.61	3.77	4.14	4.56	4.72
Luxembourg	2.08	1.86	1.94	1.49	1.43	1.04 ^a	1.05 ^p
Mexico	0.14 ^b	0.20	0.24	0.24	0.22	..	..
Netherlands	1.47 ^b	1.28	1.22	1.27	1.62 ^a	1.73	1.75 ^p
New Zealand	..	..	0.83 ^y	..	0.89 ^{b,y}	..	..
Norway	..	1.23 ^y	1.41 ^y	1.33 ^y	1.32 ^y	1.32 ^y	1.36 ^{p,y}
Poland	0.33	0.27	0.27	0.28	0.33	0.47	0.53
Portugal	0.32 ^c	1.21	1.25	1.19	1.17	1.15 ^b	1.09 ^{b,p}
Slovak Republic	0.61	0.27	0.27	0.36	0.35	0.46	0.54
Slovenia	1.15	1.55 ^a	1.81	2.16	2.76 ^a	3.02	3.07 ^p
Spain	0.68	1.08 ^a	1.05	1.08	1.08	1.06	1.06 ^p
Sweden	..	4.15 ^c	3.97	3.55 ^c	3.56	3.59 ^c	3.70
Switzerland	2.41	2.77	..	..	..	2.91	..
Turkey	0.21 ^y	0.47 ^y	0.51 ^y	0.53 ^y	0.54 ^y	0.61 ^y	0.66 ^y
United Kingdom	1.70	1.64	1.65	1.65	1.74	1.68	1.70 ^{c,p}
United States	2.77 ⁱ	2.94 ⁱ	2.99 ⁱ	2.84 ⁱ	2.86 ⁱ	2.92 ^{i,p}	..
EU28 (OECD estimates)	1.65 ^b	1.74 ^b	1.79 ^b	1.80 ^b	1.88 ^b	1.92 ^b	1.95 ^b
OECD-Total	2.18^b	2.38^b	2.41^b	2.35^b	2.40^b	2.46^b	2.50^b
Argentina	0.15	0.17	0.17	0.18	0.20	0.20	..
China	0.65 ^{a,y}	1.33 ^y	1.57 ^{a,y}	1.62 ^y	1.74 ^y	1.91 ^y	2.03 ^y
Romania	0.35 ^y	0.24 ^y	0.26 ^y	0.25 ^y	0.26 ^{a,y}	0.28 ^y	0.18 ^y
Russian Federation	1.03 ^y	0.92 ^y	1.11 ^y	0.96 ^y	0.94 ^y	0.94 ^y	0.97 ^y
Singapore	1.34 ^b	2.27	1.61	1.49	1.65	1.52	..
South Africa	..	0.79 ^y	0.67 ^y	0.55 ^y	0.52 ^y	0.50 ^y	..
Chinese Taipei	1.68 ^{d,y}	2.69 ^y	2.87 ^y	2.81 ^y	2.95 ^y	3.12 ^y	3.24 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 27. Business enterprise researchers in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	16 221	27 721	29 509	27 990	32 439	..	..
Austria	..	21 852 ^c	21 599	22 799 ^c	23 138	24 539 ^c	24 889 ^{c,p}
Belgium	16 684	17 370	17 872	20 008	21 382	21 999 ^c	22 387 ^p
Canada	66 870 ^g	98 390 ^g	93 360 ^g	94 530 ^g	97 030 ^g	88 960 ^g	..
Chile	..	1 758	1 013 ^a	1 298	1 752	2 027	..
Czech Republic	5 533	13 253	12 657	12 661	13 958	15 444	16 766 ^p
Denmark	..	23 400	23 479	22 774	23 927	25 235	25 164 ^{c,p}
Estonia	274	1 233	1 313	1 282	1 504	1 421	1 383 ^p
Finland	19 035 ^u	24 132	23 633	22 904	22 949	23 269	22 253
France	81 012	128 373	133 701	143 828	148 439	156 584	159 883 ^p
Germany	153 120 ^c	180 295 ^c	183 214	185 815 ^c	190 693	199 623 ^c	203 700 ^{c,p}
Greece	3 234	..	..	..	4 021 ^a	4 351	4 342 ^p
Hungary	3 901	7 912	8 972	10 274	11 773	13 231	14 317
Iceland	..	1 117	901	..	1 060 ^a	..	..
Ireland	5 631 ^c	7 791	7 732	7 884 ^c	8 996	9 756 ^c	..
Israel ¹	..	..	..	42 088 ^d	46 452 ^d	53 364 ^d	..
Italy	26 099	36 509	38 143	38 297	39 808	41 067	47 821 ^p
Japan	421 363	492 805	490 494	490 538	490 920	481 425	485 318
Korea	71 894 ^g	182 901	184 830	202 079	223 513	247 041	..
Luxembourg	1 399	1 453	1 371	1 460	1 518	927 ^a	1 004 ^p
Mexico	..	11 849	16 181	18 696	18 954	..	..
Netherlands	20 022	24 910	20 477	26 588	30 711 ^a	42 352	43 214 ^p
New Zealand	..	..	4 900	..	5 100	..	..
Norway	..	12 877 ^u	12 661 ^u	12 504 ^u	12 867 ^u	13 332 ^u	..
Poland	9 821	8 909	9 818	11 730	10 567	15 088	20 606
Portugal	2 358 ^c	10 312	10 160	10 572	12 198	11 931	12 539 ^p
Slovak Republic	2 420	1 649	1 646	1 928	2 058	2 482	2 436
Slovenia	1 380	3 058 ^a	3 278	3 389	4 510 ^a	4 618	4 664 ^p
Spain	20 869	46 375 ^a	46 153	45 377	44 915	44 920	45 074 ^p
Sweden	..	33 378 ^c	29 278	30 440 ^c	29 197	30 497 ^c	43 141 ^a
Switzerland	16 275	10 332	..	..	..	16 760	..
Turkey	3 702	18 025	21 019	25 342	30 404	35 034	40 207
United Kingdom	85 737	86 106	84 554	84 074	89 043	90 422	93 586 ^{c,p}
United States	..	832 000	874 000	804 000	853 000	869 000	..
EU28 (OECD estimates)	522 000 ^b	694 908 ^b	695 102 ^b	719 666 ^b	744 204 ^b	790 611 ^b	831 305 ^b
OECD-Total	1 879 566^b	2 422 358^b	2 467 125^b	2 446 779^b	2 563 647^b	2 645 294^b	..
Argentina	3 234	4 352	4 204	4 251	4 429	4 444	..
China	353 843 ^{a,t}	1 092 213 ^t	707 771 ^a	739 891	818 811	872 384	922 682
Romania	12 690	6 309	6 127	5 853	3 518 ^a	4 956	5 333
Russian Federation	289 868	226 534	216 400	211 214	214 744	204 731	205 455
Singapore	8 632	16 607	16 268	16 508	17 432	17 289	..
South Africa	..	6 172	6 059	4 804	4 452	4 556	..
Chinese Taipei	31 975 ^d	67 851	73 505	80 532	86 705	91 392	93 202

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 28. Business enterprise researchers as a percentage of national total

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	24.6	29.9	..	..	..	..	..
Austria	..	63.3 ^c	62.3	62.3 ^c	62.3	62.3 ^c	62.3 ^{c,p}
Belgium	54.6	47.2	46.8	49.0	50.1	50.2 ^c	50.1 ^p
Canada	62.0 ^g	62.6 ^g	62.1 ^g	59.6 ^g	59.5 ^g	56.8 ^g	..
Chile	..	29.5	20.8 ^{a,l}	23.9 ^l	28.8 ^l	29.8 ^l	..
Czech Republic	39.9	44.5	44.0	43.3	45.5	46.5	48.9 ^p
Denmark	..	65.5 ^c	63.8	60.8	61.1	61.6	61.6 ^{c,p}
Estonia	10.3	31.0	30.4	31.4	33.3	31.0	31.4 ^p
Finland	54.6 ^u	59.0	57.9	55.3	57.4 ^a	57.5	56.8
France	47.1 ^a	56.4 ^d	57.0 ^d	59.1 ^a	59.6	60.4	60.3 ^p
Germany	59.4 ^c	59.6 ^c	57.7	56.7 ^c	56.3	56.6 ^c	56.4 ^{c,p}
Greece	..	..	..	..	16.3 ^a	18.0	15.7 ^p
Hungary	27.1 ^d	42.8	44.7	48.1	51.1	55.5	57.2
Iceland	..	48.4	36.0	..	46.9 ^a	..	..
Ireland	66.1 ^c	53.7	54.5 ^c	55.6 ^c	59.3 ^c	62.0 ^c	..
Israel ¹	..	..	..	..	84.2 ^d	83.7 ^{c,d}	..
Italy	39.5	38.1	37.5	37.0	37.5	37.1	40.5 ^p
Japan	65.1	75.0 ^a	74.8	74.8	74.8	74.5	73.5
Korea	66.3 ^g	77.5	75.7	76.5	77.4	78.3	..
Luxembourg	85.0	63.5	57.2	55.4	50.1	37.2 ^a	38.4 ^p
Mexico	..	31.5	37.7	41.5	41.1	..	..
Netherlands	47.5	49.1	43.6	49.5	52.5 ^a	59.5	59.7 ^p
New Zealand	..	..	30.4	..	31.3	..	..
Norway	..	50.3 ^u	48.2 ^u	47.3 ^u	47.3 ^u	47.9 ^u	..
Poland	17.8	14.4	16.1	18.2	16.5	22.5	28.8
Portugal	14.1 ^c	25.5 ^a	25.5	25.5	27.7	28.1	28.9 ^p
Slovak Republic	24.3	13.1	12.4	12.7	13.4	16.3	16.5
Slovenia	31.8	43.5 ^a	44.0	44.0	51.4 ^a	52.0	53.6 ^p
Spain	27.2	35.4 ^a	34.5	33.7	34.5	35.4	36.5 ^p
Sweden	..	66.5 ^c	62.1 ^l	61.7 ^{c,l}	60.1 ^{a,l}	61.9 ^{c,l}	69.3 ^{a,l}
Switzerland	62.3	41.1	..	..	..	46.6	..
Turkey	16.0	34.1	36.4	39.4	42.2	42.7	45.1
United Kingdom	50.3 ^b	34.2 ^c	33.0 ^c	32.8 ^c	35.4	35.3 ^c	36.1 ^{c,p}
United States	..	69.9 ^b	69.9 ^b	67.1 ^b	68.1 ^b	..	..
EU28 (OECD estimates)	46.7 ^b	45.7 ^b	44.7 ^b	44.9 ^b	45.8 ^b	47.1 ^b	48.2 ^b
OECD-Total	60.0^b	60.2^b	59.7^b	58.7^b	59.6^b	..	..
Argentina	12.2	10.5	9.6	8.9	8.8	8.6	..
China	50.9 ^{a,t}	68.6 ^t	61.4 ^a	61.1	62.1	62.1	62.2
Romania	62.0	32.5	31.8	29.6	21.9 ^a	27.5	28.5
Russian Federation	57.2	50.2	48.9	47.8	48.0	46.2	46.6
Singapore	51.9	59.7	53.3	51.5	51.7	50.6	..
South Africa	..	31.8	30.6	25.7	22.1	21.3	..
Chinese Taipei	57.7 ^{d,l}	61.6	61.7	63.0	64.7	65.6	66.5

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 29. Business enterprise researchers in full-time equivalent per thousand employment in industry

Per thousand

	2000	2008	2009	2010	2011	2012	2013
Australia	2.4	3.4	3.6	3.4	3.9	..	..
Austria	..	7.0 ^c	7.0	7.3 ^c	7.3	7.6 ^c	7.6 ^{c,p}
Belgium	5.7	5.6	5.8	6.5	6.9	7.1 ^c	7.2 ^p
Canada	5.8 ^{b,g}	7.4 ^g	7.3 ^g	7.2 ^g	7.3 ^g	6.6 ^g	..
Chile	..	0.4	0.2 ^a	0.3	0.3	0.4 ^b	..
Czech Republic	1.4	3.2	3.1	3.1	3.4	3.8	4.1 ^p
Denmark	..	11.7	12.5	12.6	13.2	13.9	13.8 ^{c,p}
Estonia	0.6	2.5	3.0	3.2	3.4	3.2	3.1 ^p
Finland	11.5 ^u	13.1	13.4	13.1	13.0	13.0	12.7
France	4.6	6.8	7.2	7.8	8.0	8.4	8.6 ^{b,p}
Germany	5.2 ^c	6.0 ^c	6.1	6.2 ^c	6.3	6.5 ^c	6.6 ^{c,p}
Greece	0.9	..	..	..	1.2 ^a	1.4	1.5 ^p
Hungary	1.2	2.4	2.9	3.3	3.8	4.2	4.6
Iceland	..	8.7	7.6	..	8.7 ^a	..	..
Ireland	4.1 ^c	4.8	5.3	5.8 ^c	6.7	7.3 ^c	..
Israel ¹	..	..	..	18.3 ^d	19.8 ^d	21.9 ^d	..
Italy	1.5	1.9	2.0	2.1	2.1	2.2	2.7 ^p
Japan	7.7	9.1	9.3	9.3	9.4	9.2	9.2 ^b
Korea	3.9 ^{b,g}	9.4	9.7	10.5	11.4	12.4	..
Luxembourg	6.5	5.2	4.9	5.2	5.2	3.1 ^a	3.4 ^p
Mexico	..	0.3	0.5	0.5	0.5	..	..
Netherlands	3.2	3.8	3.2	4.3	4.9 ^a	6.8	7.0 ^p
New Zealand	..	..	3.1	..	3.1	..	..
Norway	..	7.5 ^u	7.5 ^u	7.5 ^u	7.7 ^u	7.8 ^u	..
Poland	0.9	0.7	0.8	1.0	0.9	1.2	1.7
Portugal	0.6 ^c	2.6	2.6	2.8	3.3	3.4	3.7 ^p
Slovak Republic	1.6	0.9	0.9	1.1	1.2	1.4	1.4
Slovenia	1.8	3.7 ^a	4.1	4.3	5.9 ^a	6.1	6.3 ^p
Spain	1.6	2.8 ^a	3.0	3.1	3.1	3.3	3.4 ^p
Sweden	..	11.2 ^c	10.1	10.4 ^c	9.7	10.1 ^c	14.2 ^a
Switzerland	5.1	3.0	..	..	..	4.7	..
Turkey	0.2	1.0	1.1	1.3	1.5	1.7	1.8
United Kingdom	4.1	4.0	4.1	4.1	4.3	4.2	4.4 ^{c,p}
United States	..	8.0	8.9	8.3	8.7	8.7	..
EU28 (OECD estimates)	3.2 ^b	4.0 ^b	4.1 ^b	4.3 ^b	4.5 ^b	4.7 ^b	5.0 ^b
OECD-Total	4.7^b	5.7^b	6.0^b	5.9^b	6.1^b	6.2^b	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.3	0.8	0.8	0.7	0.4 ^a	0.6	0.7
Russian Federation	5.8	4.2	4.1 ^b	4.0 ^b	4.0 ^b	3.8 ^b	3.8 ^b
Singapore	4.5 ^b	6.4	6.2	6.1	6.2	5.9	..
South Africa	..	0.6	0.6	0.5	0.5	0.5	..
Chinese Taipei	3.8 ^{b,d}	7.5	8.2	8.9	9.3	9.7	9.8

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 30. Total business enterprise R&D personnel in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	28 391	53 886	57 936	56 511	64 906	..	..
Austria	..	40 296 ^c	38 303	40 954 ^c	42 098	44 648 ^c	45 284 ^{c,p}
Belgium	33 493	32 905	32 969	32 692	35 011	36 243 ^c	37 357 ^p
Canada	104 710 ^g	172 740 ^g	155 180 ^g	144 270 ^g	145 600 ^g	132 160 ^g	..
Chile	..	5 217	2 945 ^a	3 465	4 141	4 737	..
Czech Republic	11 527	26 069	25 884	26 998	29 509	32 224	33 713 ^p
Denmark	23 725	41 041	37 366	36 324	36 886	36 822	36 718 ^{c,p}
Estonia	417	1 845	1 924	1 955	2 121	1 988	2 065 ^p
Finland	29 384	33 111	32 237	30 559	31 180	30 995	30 381
France	177 688	220 016	225 891	235 588	239 111	246 731	249 985 ^p
Germany	312 490 ^c	332 909	332 491	337 211	357 129	367 478	375 000 ^{c,p}
Greece	9 764	..	..	..	6 324 ^a	6 532	7 038 ^p
Hungary	6 471	11 373	13 189	14 999	17 220	19 997	22 244
Iceland	..	1 481	1 352	..	1 491 ^a	..	..
Ireland	8 724 ^c	11 755	11 959	12 194 ^c	14 120	15 313 ^c	..
Israel ¹	41 144 ^d	51 620 ^d	50 674 ^d	53 511 ^d	59 790 ^d	64 734 ^d	..
Italy	63 998	106 643	109 768	112 212	112 478	120 162	133 443 ^p
Japan	581 721	625 264	616 965	614 772	602 252	581 042	583 855
Korea	87 113 ^g	208 428	212 349	230 221	254 280	281 523	..
Luxembourg	3 337	3 516	3 318	3 388	3 387	2 843 ^a	2 904 ^p
Mexico	..	..	..	..	..	..	..
Netherlands	47 509	48 019	42 336	54 139	72 888 ^a	78 562	77 098 ^p
New Zealand	..	..	8 300	..	8 800	..	..
Norway	..	18 491	18 166	17 821	18 111	18 624	19 353 ^p
Poland	18 586	12 809	13 693	18 424	19 530	25 750	30 250
Portugal	3 567 ^c	14 510	13 922	14 036	16 030	15 668	15 842 ^p
Slovak Republic	5 172	2 743	2 625	3 230	3 251	3 790	3 618
Slovenia	4 110	6 205 ^a	6 785	7 056	9 622 ^a	9 451	9 811 ^p
Spain	47 055	95 207 ^a	93 699	92 221	89 841	89 364	88 949 ^p
Sweden	..	58 782 ^c	55 147	54 797 ^c	54 292	55 839 ^c	56 413
Switzerland	36 190	39 832	..	..	..	47 750	..
Turkey	6 032	27 462	31 476	37 522	45 408	52 233	58 391
United Kingdom	145 499	152 173	151 494	154 870	158 385	160 116	165 720 ^{c,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	1 049 343 ^b	1 282 877 ^b	1 273 937 ^b	1 309 242 ^b	1 369 615 ^b	1 420 789 ^b	1 460 877 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	5 736	8 641	8 347	8 441	8 794	8 824	..
China	480 791 ^{a,t}	1 395 943 ^t	1 647 454 ^a	1 873 913	2 169 291	2 486 400	2 740 563
Romania	22 541	11 525	10 758	8 271	10 002 ^a	10 887	10 514
Russian Federation	628 858	477 284	454 972	444 111	439 683	413 796	424 063
Singapore	10 246	19 703	19 309	19 169	20 406	20 204	..
South Africa	..	12 492	12 025	10 205	9 895	11 322	..
Chinese Taipei	69 903 ^d	128 036	135 777	148 047	158 833	165 492	171 960

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 31. Total business enterprise R&D personnel as a percentage of national total

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	29.7	39.2	..	..	..	..	..
Austria	..	69.5 ^c	67.9	68.3 ^c	68.8	68.8 ^c	68.8 ^{c,p}
Belgium	62.7	56.3	55.2	54.4	55.7	56.0 ^c	56.3 ^p
Canada	62.3 ^g	67.3 ^g	65.5 ^g	61.9 ^g	61.5 ^g	59.0 ^g	..
Chile	..	41.5	28.2 ^{a,l}	30.2 ^l	31.7 ^l	32.4 ^l	..
Czech Republic	47.6	51.3	50.8	51.6	53.0	53.4	54.4 ^p
Denmark	62.9	70.1 ^c	66.8	64.1	64.1	62.8	62.7 ^{c,p}
Estonia	11.2	36.3	35.4	37.0	37.1	34.0	35.3 ^p
Finland	55.9	58.4	57.5	54.7	57.2 ^a	57.3	57.4
France	54.3 ^a	57.5 ^d	57.9 ^d	59.2 ^a	59.4	59.9	59.4 ^p
Germany	64.5 ^c	63.6	62.2	61.5	62.1	62.2	62.0 ^{c,p}
Greece	..	..	..	..	17.1 ^a	17.5	16.7 ^p
Hungary	27.5 ^d	41.5	44.3	47.6	50.7	56.0	58.3
Iceland	..	47.5	39.8	..	46.0 ^a	..	..
Ireland	68.4 ^c	58.7	60.7 ^c	61.8 ^c	65.5 ^c	68.1 ^c	..
Israel ¹	..	..	..	..	84.9 ^d	83.8 ^{c,d}	..
Italy	42.6	48.2	48.5	49.7	49.3	50.0	52.8 ^p
Japan	64.9	70.8 ^a	70.2	70.0	69.2	68.3	67.5
Korea	63.1 ^g	70.8	68.7	68.7	70.4	71.1	..
Luxembourg	91.1	75.6	70.4	67.9	63.3	58.3 ^a	58.0 ^p
Mexico	..	..	..	..	..	..	..
Netherlands	52.0	51.4	48.2	53.8	62.7 ^a	64.1	63.5 ^p
New Zealand	..	..	35.8	..	37.3	..	..
Norway	..	52.1	50.3	49.3	49.0	49.4	49.6 ^p
Poland	23.5	17.2	18.6	22.5	22.9	28.4	32.3
Portugal	16.3 ^c	30.3 ^a	29.6	29.5	32.3	32.9	33.1 ^p
Slovak Republic	34.0	17.6	16.5	17.8	18.0	20.9	21.1
Slovenia	48.0	53.5 ^a	54.7	54.5	63.0 ^a	63.1	64.4 ^p
Spain	39.0	44.1 ^a	42.4	41.5	41.8	42.8	43.7 ^p
Sweden	..	73.9 ^c	71.9 ^l	70.8 ^{c,l}	69.6 ^{a,l}	68.7 ^{c,l}	69.4 ^l
Switzerland	69.2	64.2	..	..	..	63.3	..
Turkey	22.3 ^l	40.8 ^l	42.8 ^l	45.9 ^l	48.9 ^l	49.7 ^l	51.7 ^l
United Kingdom	50.4 ^b	44.5 ^{c,l}	43.6 ^{c,l}	44.2 ^{c,l}	44.5 ^l	44.9 ^{c,l}	45.8 ^{c,l,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	52.5 ^b	52.1 ^b	51.3 ^b	51.6 ^b	52.4 ^b	53.2 ^b	53.7 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	15.3	15.2	14.0	12.8	12.6	12.3	..
China	52.1 ^{a,t}	71.0 ^t	71.9 ^a	73.4	75.2	76.6	77.6
Romania	66.5	37.9	37.9	31.6	33.6 ^a	35.0	31.7
Russian Federation	62.4	54.9	53.8	52.9	52.4	50.0	51.3
Singapore	52.9	59.4	53.8	51.8	52.3	51.2	..
South Africa	..	40.6	38.9	34.6	31.9	32.3	..
Chinese Taipei	66.8 ^{d,l}	69.3	69.0	70.3	71.7	72.6	73.8

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 32. Total business enterprise R&D personnel in full-time equivalent per thousand employment in industry

Per thousand

	2000	2008	2009	2010	2011	2012	2013
Australia	4.1	6.7	7.2	6.9	7.9	..	..
Austria	..	12.8 ^c	12.3	13.1 ^c	13.2	13.8 ^c	13.9 ^{c,p}
Belgium	11.4	10.6	10.7	10.6	11.2	11.6 ^c	12.1 ^p
Canada	9.1 ^{b,g}	13.0 ^g	12.1 ^g	11.0 ^g	10.9 ^g	9.8 ^g	..
Chile	..	1.1	0.6 ^a	0.7	0.8	0.9 ^b	..
Czech Republic	2.9	6.2	6.3	6.7	7.3	7.9	8.2 ^p
Denmark	12.8	20.6	19.9	20.1	20.3	20.3	20.2 ^{c,p}
Estonia	0.9	3.7	4.4	4.8	4.8	4.5	4.6 ^p
Finland	17.8	18.0	18.3	17.5	17.6	17.4	17.4
France	10.0	11.7	12.2	12.8	12.8	13.2	13.4 ^{b,p}
Germany	10.6 ^c	11.1	11.2	11.3	11.8	11.9	12.1 ^{c,p}
Greece	2.8	..	..	..	1.9 ^a	2.1	2.4 ^p
Hungary	1.9	3.5	4.2	4.8	5.5	6.4	7.1
Iceland	..	11.6	11.4	..	12.3 ^a	..	..
Ireland	6.4 ^c	7.2	8.3	8.9 ^c	10.6	11.5 ^c	..
Israel ¹	22.1 ^d	23.5 ^d	22.7 ^d	23.2 ^d	25.4 ^d	26.5 ^d	..
Italy	3.7	5.6	5.9	6.1	6.1	6.5	7.4 ^p
Japan	10.6	11.6	11.7	11.7	11.5	11.1	11.1 ^b
Korea	4.8 ^{b,g}	10.7	11.2	12.0	12.9	14.1	..
Luxembourg	15.6	12.6	11.9	12.0	11.7	9.6 ^a	9.7 ^p
Mexico	..	..	..	..	..	..	..
Netherlands	7.6	7.4	6.7	8.7	11.6 ^a	12.5	12.5 ^p
New Zealand	..	..	5.2	..	5.4	..	..
Norway	..	10.8	10.8	10.7	10.8	10.8	11.1 ^p
Poland	1.7	1.0	1.1	1.5	1.6	2.1	2.5
Portugal	0.9 ^c	3.6	3.6	3.7	4.3	4.4	4.6 ^p
Slovak Republic	3.3	1.5	1.5	1.9	1.9	2.2	2.1
Slovenia	5.4	7.5 ^a	8.4	9.0	12.6 ^a	12.5	13.2 ^p
Spain	3.6	5.7 ^a	6.1	6.2	6.3	6.5	6.7 ^p
Sweden	..	19.7 ^c	19.1	18.7 ^c	18.1	18.4 ^c	18.5
Switzerland	11.4	11.6	..	..	..	13.5	..
Turkey	0.4	1.5	1.7	1.9	2.2	2.5	2.7
United Kingdom	7.0	7.1	7.3	7.5	7.6	7.5	7.7 ^{c,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	6.5 ^b	7.4 ^b	7.6 ^b	7.9 ^b	8.2 ^b	8.5 ^b	8.8 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	2.3	1.4	1.3	1.0	1.3 ^a	1.3	1.3
Russian Federation	12.6	8.9	8.7 ^b	8.4 ^b	8.2 ^b	7.6 ^b	7.8 ^b
Singapore	5.4 ^b	7.5	7.3	7.0	7.2	6.9	..
South Africa	..	1.2	1.2	1.1	1.0	1.1	..
Chinese Taipei	8.3 ^{b,d}	14.1	15.2	16.3	17.1	17.6	18.1

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 33. Industry-financed BERD (Business enterprise expenditure on R&D)
at 2005 prices and PPPs**

Million 2005 USD

	2000	2008	2009	2010	2011	2012	2013
Australia	3 898.2	10 477.0	10 059.8	10 207.7	10 154.6	..	..
Austria	..	..	3 538.5	..	3 746.2	..	..
Belgium	3 630.1	4 082.2	3 924.7	4 119.3	4 611.8	..	..
Canada	8 017.1 ⁹	10 600.7 ⁹	10 382.0 ⁹	9 949.0 ⁹	10 233.4 ⁹	9 778.8 ⁹	9 256.2 ⁹
Chile	..	350.7	197.3 ^a	182.6	291.0	316.6	..
Czech Republic	1 013.3	1 426.4	1 254.0	1 355.4	1 494.3	1 636.0	1 785.3 ^p
Denmark	..	3 219.0 ^c	3 415.0	3 265.3 ^c	3 331.0	3 318.6 ^c	3 327.4 ^{c,p}
Estonia	16.2	119.1	109.0	145.7	302.1	270.4	174.0 ^p
Finland	3 250.2	4 464.7	4 185.9	4 179.3	4 245.0	3 709.4	3 417.6
France	18 652.1	20 380.7	21 831.6	22 463.2	23 746.7	24 363.1	..
Germany	39 413.3 ^{c,m}	47 339.1 ^m	45 907.7 ^m	47 232.2 ^c	50 459.6	52 354.3 ^c	53 360.0 ^{c,p}
Greece	..	..	..	..	461.8 ^a	426.9	500.8 ^p
Hungary	376.4 ^v	759.5	794.7	840.1	913.8	963.1	1 090.1
Iceland	..	142.0	137.3	..	134.1 ^a	..	..
Ireland	919.8 ^c	1 203.2	1 409.2	1 405.7 ^c	1 302.4	1 356.0 ^c	..
Israel ¹	3 167.5 ^{a,d}	4 473.8 ^d	3 012.6 ^{a,d}	3 035.1 ^d	3 437.6 ^d	3 288.4 ^d	..
Italy	6 648.7	9 149.3	8 727.7	9 008.1	9 030.8	9 034.8	..
Japan	76 241.0	107 231.4	94 404.9	96 696.6	100 737.4	100 777.7	105 586.1
Korea	13 861.1 ⁹	29 356.2	30 429.6	34 406.7	39 724.3	44 464.3	..
Luxembourg	381.1	..	397.7	229.5	234.9	..	79.8 ^p
Mexico	1 080.1	1 949.1	2 016.4	2 345.8	2 294.2	..	..
Netherlands	..	..	4 094.1	..	5 750.5 ^a	5 622.2	5 492.4 ^p
New Zealand	..	..	477.9	..	504.0	..	..
Norway	..	1 694.5	1 646.3	1 590.1	1 697.9	1 751.0	..
Poland	699.8	.. ^x	1 010.0	1 014.2	1 289.2	1 894.9	2 198.9
Portugal	404.2 ^c	1 646.3	1 598.0	1 581.4	1 485.9	1 399.5	..
Slovak Republic	228.1	150.9	150.2	210.5	223.3	314.9	369.2
Slovenia	261.6	531.3 ^a	506.0	582.1	746.0 ^a	786.8	805.2 ^p
Spain	4 241.3	7 266.4 ^a	6 860.1	6 795.3	6 835.4	6 742.9	..
Sweden	..	..	6 246.3	..	6 214.9	..	6 863.8
Switzerland	4 248.7	5 856.4	..	..	..	5 710.4	..
Turkey	925.7	2 477.2	2 343.5	2 887.7	3 330.6	3 784.3	4 284.6
United Kingdom	14 146.5	16 035.1	15 592.7	15 222.7	16 092.5	15 444.4	15 939.5 ^{c,p}
United States	205 396.2 ^{i,o}	235 720.0 ^{i,o}	223 364.0 ^{i,o}	209 140.0 ^{a,i,o}	220 141.5 ^{i,o}	230 830.8 ^{i,o,p}	..
EU28 (OECD estimates)	110 706.9 ^b	135 939.4 ^b	132 905.3 ^b	135 016.2 ^b	143 250.0 ^b	145 623.9 ^b	..
OECD-Total	428 492.3^b	545 725.6^b	516 407.2^b	511 283.1^b	540 900.8^b	558 766.7^b	..
Argentina	407.5 ^c	710.5	661.0	766.2	928.2	921.5	..
China	19 343.4	91 814.6	114 232.2 ^a	133 167.2	157 824.2	184 475.9 ^b	210 422.5 ^b
Romania	246.3	239.5	318.7	255.3	314.9 ^a	298.2	212.1
Russian Federation	3 832.9	5 033.9	5 225.9	4 437.3	5 042.5	5 011.6	5 324.9
Singapore	1 794.7	4 677.2	3 101.8	3 399.5	4 015.4	3 688.8	..
South Africa	..	1 923.4	1 733.0	1 488.3	1 504.3	1 502.0	..
Chinese Taipei	6 408.1	13 746.4	14 106.5	15 797.1	17 341.0	18 266.5	19 388.2

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 34. Industry-financed BERD (Business enterprise expenditure on R&D)
as a percentage of value added in industry**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.94	1.89	1.82	1.79	1.71	..	..
Austria	..	..	1.82	..	1.83	..	..
Belgium	1.81	1.77	1.77	1.80	1.98	..	..
Canada	1.13 ^{b,g}	1.23 ^g	1.29 ^g	1.18 ^g	1.17 ^g	1.10 ^{b,g}	1.02 ^{b,g}
Chile	..	0.20 ^y	0.12 ^{a,y}	0.10 ^y	0.15 ^y	0.16 ^y	..
Czech Republic	0.76	0.77	0.73	0.77	0.83	0.92	1.02 ^p
Denmark	..	2.85 ^c	3.33	3.12 ^c	3.14	3.14 ^c	3.16 ^{c,p}
Estonia	0.15	0.70	0.81	1.02	1.91	1.64	1.04 ^p
Finland	3.48	3.88	4.19	4.05	4.07	3.68	3.47
France	1.74	1.73	1.93	1.94	2.01	2.06	..
Germany	2.37 ^{c,m}	2.58 ^m	2.72 ^m	2.65 ^c	2.73	2.82 ^c	2.87 ^{c,p}
Greece	..	..	..	..	0.36 ^a	0.35	0.42 ^p
Hungary	0.42 ^y	0.66	0.75	0.79	0.83	0.90	1.00
Iceland	..	1.81	1.84	..	1.77 ^a	..	..
Ireland	0.98 ^c	1.00	1.24	1.20 ^c	1.08	1.12 ^c	..
Israel ¹	3.40 ^{a,d}	3.74 ^d	2.49 ^{a,d}	2.42 ^d	2.64 ^d	2.42 ^d	..
Italy	0.62	0.83	0.85	0.87	0.87	0.89	..
Japan	3.05 ^y	4.04 ^y	3.87 ^y	3.75 ^y	3.96 ^y	3.92 ^y	4.04 ^{b,y}
Korea	2.16 ^g	3.26	3.36	3.51	3.88	4.27	..
Luxembourg	2.03	..	1.79	0.96	0.96	..	0.32 ^p
Mexico	0.12 ^b	0.18	0.20	0.22	0.20	..	..
Netherlands	..	..	0.98	..	1.33 ^a	1.31	1.31 ^p
New Zealand	..	..	0.66 ^y	..	0.68 ^{b,y}	..	..
Norway	..	0.98 ^y	1.11 ^y	1.04 ^y	1.05 ^y	1.04 ^y	..
Poland	0.22	.. ^x	0.22	0.22	0.27	0.38	0.43
Portugal	0.29 ^c	1.13	1.14	1.12	1.07	1.04 ^b	..
Slovak Republic	0.47	0.18	0.20	0.26	0.27	0.37	0.44
Slovenia	0.99	1.41 ^a	1.51	1.73	2.19 ^a	2.39	2.47 ^p
Spain	0.59	0.81 ^a	0.80	0.82	0.84	0.85	..
Sweden	..	..	3.25	..	2.90	..	3.21
Switzerland	2.21	2.51	..	..	..	2.42	..
Turkey	0.19 ^y	0.41 ^y	0.42 ^y	0.47 ^y	0.49 ^y	0.55 ^y	0.60 ^y
United Kingdom	1.19	1.15	1.16	1.14	1.20	1.14	1.16 ^{c,p}
United States	2.53 ^{i,o}	2.57 ^{i,o}	2.57 ^{i,o}	2.34 ^{a,i,o}	2.40 ^{i,o}	2.44 ^{i,o,p}	..
EU28 (OECD estimates)	1.37 ^b	1.43 ^b	1.48 ^b	1.48 ^b	1.55 ^b	1.58 ^b	..
OECD-Total	1.95^b	2.10^b	2.10^b	2.01^b	2.08^b	2.11^b	..
Argentina	0.13 ^c	0.16	0.16	0.17	0.19	0.19	..
China	0.56 ^y	1.24 ^y	1.46 ^{a,y}	1.50 ^y	1.62 ^y	1.77 ^y	1.89 ^y
Romania	0.22 ^y	0.13 ^y	0.19 ^y	0.16 ^y	0.19 ^{a,y}	0.18 ^y	0.13 ^y
Russian Federation	0.42 ^y	0.34 ^y	0.38 ^y	0.31 ^y	0.34 ^y	0.33 ^y	0.34 ^y
Singapore	1.15 ^b	1.99	1.33	1.27	1.43	1.29	..
South Africa	..	0.53 ^y	0.49 ^y	0.41 ^y	0.40 ^y	0.40 ^y	..
Chinese Taipei	1.64 ^y	2.64 ^y	2.80 ^y	2.75 ^y	2.89 ^y	3.06 ^y	3.19 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 35. Percentage of Business enterprise expenditure on R&D (BERD)
financed by industry**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	91.0	96.9	96.9	97.2	96.9	..	..
Austria	..	..	66.6	..	64.8	..	..
Belgium	82.1	84.4	83.5	81.3	83.4	..	..
Canada	69.3 ^g	85.2 ^g	84.7 ^g	84.5 ^g	85.8 ^g	85.3 ^g	85.1 ^g
Chile	..	97.6	81.3 ^a	75.1	92.2	91.5	..
Czech Republic	80.6	74.3	68.2	68.3	66.2	65.8	67.2 ^p
Denmark	..	86.3 ^c	87.5	89.6 ^c	89.9	89.9 ^c	89.9 ^{c,p}
Estonia	75.4	86.5	81.0	83.0	85.3	87.0	82.4 ^p
Finland	95.4	91.4	91.9	91.9	92.1	88.8	85.5
France	81.0	78.4	81.9	82.0	83.3	82.9	..
Germany	90.8 ^{c,m}	91.6 ^m	92.0 ^m	92.0 ^c	91.4	91.4 ^c	91.4 ^{c,p}
Greece	..	..	..	..	78.8 ^a	77.2	81.2 ^p
Hungary	75.8 ^v	79.8 ^v	71.0 ^v	70.8 ^v	69.5 ^v	66.6 ^v	63.5 ^v
Iceland	..	83.2	87.4	..	87.1 ^a	..	..
Ireland	89.1 ^c	73.9	75.0	75.0 ^c	69.2	69.2 ^c	..
Israel ¹	64.6 ^{a,d}	61.9 ^d	43.0 ^{a,d}	43.3 ^d	45.3 ^d	40.9 ^d	..
Italy	80.5	83.4	80.6	80.7	80.3	79.6	..
Japan	97.7	98.5	98.2	98.2	98.3	98.2	98.1
Korea	92.8 ^g	93.8	92.9	93.1	93.8	93.7	..
Luxembourg	97.5	..	91.9	64.8	66.8	..	30.9 ^p
Mexico	90.1	86.4	82.2	92.2	91.3	..	..
Netherlands	..	..	80.1	..	81.8 ^a	75.9	74.5 ^p
New Zealand	..	..	80.4	..	76.4	..	..
Norway	..	79.2	78.9	78.1	79.3	79.1	..
Poland	66.3	.. ^x	83.2	79.2	81.8	81.0	80.8
Portugal	90.8 ^c	94.0	91.2	94.0	91.7	90.7	..
Slovak Republic	77.9	67.4	72.3	72.3	78.4	80.6	81.3
Slovenia	85.5	90.8 ^a	83.9	80.1	79.5 ^a	79.0	80.6 ^p
Spain	86.7	75.5 ^a	76.3	76.3	78.0	80.4	..
Sweden	..	..	81.8	..	81.3	..	86.7
Switzerland	91.4	90.5	..	..	..	83.2	..
Turkey	92.4	87.8	82.4	88.0	90.2	89.6	90.2
United Kingdom	69.7	69.7	70.4	68.9	68.7	68.2	68.2 ^{c,p}
United States	91.4 ^{i,o}	87.5 ^{i,o}	86.0 ^{i,o}	82.5 ^{a,i,o}	84.1 ^{i,o}	83.3 ^{i,o,p}	..
EU28 (OECD estimates)	83.2 ^b	82.4 ^b	82.8 ^b	82.5 ^b	82.6 ^b	82.2 ^b	..
OECD-Total	89.4^b	88.2^b	87.1^b	85.7^b	86.5^b	85.9^b	..
Argentina	88.0 ^c	94.7	94.6	94.6	94.7	94.7	..
China	86.4	92.8	92.9 ^a	92.7	93.0	93.0	93.2
Romania	63.1	55.0	72.3	62.5	74.4 ^a	66.3	72.3
Russian Federation	40.9	36.5	34.6	32.1	36.0	35.1	35.5
Singapore	86.1	87.7	82.8	85.5	86.9	84.9	..
South Africa	..	67.6	73.1	74.8	77.0	79.5	..
Chinese Taipei	97.9 ^d	98.0	97.7	97.7	98.0	98.1	98.2

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 36. Percentage of Business enterprise expenditure on R&D (BERD)
financed by government**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	3.8	2.0	2.0	1.7	1.9	..	..
Austria	..	..	11.0	..	13.3	..	..
Belgium	5.8	5.8	6.6	7.8	6.2	..	..
Canada	2.3 ^g	2.3 ^g	2.8 ^g	3.7 ^g	3.7 ^g	4.0 ^g	4.0 ^g
Chile	..	2.3	18.3 ^a	24.7	6.0	6.9	..
Czech Republic	14.7	15.1	17.1	15.4	15.7	13.7	11.6 ^p
Denmark	..	2.4 ^{c,o}	2.6 ^o	2.8 ^{c,o}	2.8 ^o	2.8 ^{c,o}	2.8 ^{c,o,p}
Estonia	9.0	7.1	11.0	11.1	6.8	9.2	11.8 ^p
Finland	3.5	2.5	2.5	2.6	2.8	3.0	2.8
France	9.9	11.3	9.0	8.7	7.5	7.8	..
Germany	6.9 ^{c,l}	4.5 ^l	4.5 ^l	4.5 ^c	4.3	4.3 ^c	4.3 ^{c,p}
Greece	..	..	..	..	8.0 ^a	8.2	8.8 ^p
Hungary	6.1 ^v	8.6 ^v	15.5 ^v	14.0 ^v	14.5 ^v	15.7 ^v	19.0 ^v
Iceland	..	5.4	0.5	..	7.5 ^a	..	..
Ireland	3.3 ^c	5.5	4.2	4.2 ^c	5.9	5.9 ^c	..
Israel ¹	9.8 ^{a,d}	4.4 ^d	4.5 ^d	4.3 ^d	3.3 ^d	4.1 ^d	..
Italy	11.0	5.9	6.5	5.9	6.9	7.1	..
Japan	1.7	0.9	1.2	1.2	1.0	1.1	1.1
Korea	7.0 ^g	5.9	6.8	6.7	6.1	6.0	..
Luxembourg	1.6	..	3.3	.. ^x	.. ^x	..	.. ^x
Mexico	9.3	10.0	14.5	7.5	7.8	..	..
Netherlands	..	..	3.7	7.4	3.9 ^a	7.6	6.1 ^p
New Zealand	..	..	8.4	..	12.2	..	..
Norway	..	8.9	9.6	9.9	9.7	10.1	..
Poland	32.0	.. ^x	12.3	13.8	12.7	11.2	10.0
Portugal	4.2 ^c	3.3	5.5	4.3	4.0	6.9	..
Slovak Republic	20.6	13.0	7.1	10.7	10.4	6.8	5.1
Slovenia	7.0	5.7 ^a	11.8	15.6	15.1 ^a	13.8	12.6 ^p
Spain	7.2	17.9 ^a	17.1	16.6	14.4	12.6	..
Sweden	..	..	5.8	..	5.0	..	6.1
Switzerland	2.3	1.7	..	..	..	0.8	..
Turkey	4.3	9.5	15.2	10.4	8.9	9.4	8.6
United Kingdom	8.8	6.6	7.9	8.7	9.3	7.9	7.9 ^{c,p}
United States	8.6 ⁱ	12.5 ^{h,j}	14.0 ^{h,j}	12.3 ^{h,j}	10.6 ^{h,j}	11.5 ^{h,j,p}	..
EU28 (OECD estimates)	8.0 ^b	7.3 ^b	7.2 ^b	7.3 ^b	6.9 ^b	7.0 ^b	..
OECD-Total	7.0^b	8.1^b	9.0^b	8.1^b	7.2^b	7.7^b	..
Argentina	8.7 ^c	4.6	4.6	4.6	4.6	4.6	..
China	6.8	4.3	4.3 ^a	4.6	4.4	4.6	4.5
Romania	34.0	39.1	20.7	30.1	18.1 ^a	19.6	14.0
Russian Federation	45.5	56.0	57.4	64.2	58.7	60.4	61.5
Singapore	7.8	5.4	8.3	7.1	5.8	6.2	..
South Africa	..	20.8	12.8	8.3	4.8	6.5	..
Chinese Taipei	2.1 ^d	2.0	2.2	2.2	2.0	1.9	1.7

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 37. Percentage of Business enterprise expenditure on R&D (BERD)
financed by other national sources**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.56	0.10	.. ^x	.. ^x	.. ^x	..	..
Austria	..	..	0.09	..	0.10	..	..
Belgium	0.05	0.07	0.15	0.01	0.01	..	..
Canada	0.00 ^g	0.00 ^g	0.00 ^g	0.00 ^g	0.00 ^g	0.00 ^g	0.00 ^g
Chile	..	0.00	0.22 ^a	0.13	1.58	1.39	..
Czech Republic	1.01	0.15	0.16	0.10	0.05	0.04	0.08 ^p
Denmark	..	0.32 ^c	0.43	0.27 ^c	0.26	0.26 ^c	0.26 ^{c,p}
Estonia	0.38	0.55	0.59	0.11	0.01	0.03	0.11 ^p
Finland	0.14	0.03	0.05	0.02	0.05	0.06	0.06
France	0.05	0.11	0.08	0.10	0.06	0.06	..
Germany	0.20 ^c	0.17	0.09	0.09 ^c	0.26	0.26 ^c	0.26 ^{c,p}
Greece	..	..	..	..	0.20 ^a	0.15	0.06 ^p
Hungary	0.03 ^v	0.16 ^v	0.14 ^v	0.26 ^v	0.12 ^v	0.05 ^v	0.06 ^v
Iceland	..	0.00	0.00	..	0.01 ^a	..	..
Ireland	0.00 ^c	0.04	0.04	0.04 ^c	0.07	0.07 ^c	..
Israel ¹	0.66 ^{a,d}	0.55 ^d	0.59 ^d	0.65 ^d	0.65 ^d	0.63 ^d	..
Italy	0.33	0.24	0.33	0.21	0.30	0.40	..
Japan	0.07	0.09	0.10	0.08	0.11	0.14	0.24
Korea	0.17 ^g	0.08	0.09	0.07	0.06	0.06	..
Luxembourg	..	..	..	..	..	..	..
Mexico	0.07	0.01	0.07	0.10	0.25	..	..
Netherlands	..	..	0.20	..	0.78 ^a	2.33	2.03 ^p
New Zealand	..	..	.. ^x	..	.. ^x	..	..
Norway	..	0.03	0.02	0.01	0.02	0.01	..
Poland	0.13	0.09	0.07	0.09	0.20	0.13	0.06
Portugal	0.00 ^c	0.01	0.01	0.00	0.01	0.01	..
Slovak Republic	0.00	0.07	0.05	0.03	0.15	0.00	0.00
Slovenia	0.00	0.00 ^a	0.00	0.06	0.01 ^a	0.13	0.01 ^p
Spain	2.33	0.22 ^a	0.28	0.30	0.22	0.22	..
Sweden	..	..	0.22	..	0.34	..	0.27
Switzerland	0.51	0.77	..	..	..	0.62	..
Turkey	1.40	0.07	0.18	0.19	0.08	0.21	0.20
United Kingdom	0.02	0.15	0.08	0.03	0.60 ^a	0.22	0.21 ^{c,p}
United States	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	.. ⁿ	..
EU28 (OECD estimates)	0.24 ^b	..	0.14 ^b	..	0.26 ^b	0.28 ^b	..
OECD-Total	0.10^b	0.08^b	0.08^b	..	0.12^b	0.13^b	..
Argentina	0.00 ^c	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	0.58	0.28	0.70	0.37	0.08 ^a	0.16	0.27
Russian Federation	0.08	0.19	0.10	0.16	0.32	0.10	0.13
Singapore	0.10	0.03	0.04	0.05	0.03	0.01	..
South Africa	..	0.24	0.25	2.54	3.31	2.79	..
Chinese Taipei	0.07 ^d	0.04	0.03	0.03	0.02	0.01	0.01

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 38. Percentage of Business enterprise expenditure on R&D (BERD)
financed by abroad**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	4.7	1.0	1.0	0.9	1.2	..	..
Austria	..	..	22.3	..	21.9	..	..
Belgium	12.0	9.7	9.8	10.9	10.4	..	..
Canada	28.4 ^g	12.5 ^g	12.5 ^g	11.7 ^g	10.6 ^g	10.7 ^g	10.9 ^g
Chile	..	0.1	0.2 ^a	0.1	0.2	0.1	..
Czech Republic	3.6	10.5	14.5	16.2	18.1	20.5	21.2 ^p
Denmark	..	10.9 ^c	9.4	7.3 ^c	7.1	7.1 ^c	7.1 ^{c,p}
Estonia	15.2	5.8	7.4	5.7	7.9	3.8	5.7 ^p
Finland	1.0	6.0	5.6	5.5	5.0	8.1	11.7
France	9.0	10.2	9.1	9.2	9.1	9.2	..
Germany	2.1 ^c	3.7	3.4	3.4 ^c	4.0	4.0 ^c	4.0 ^{c,p}
Greece	..	..	..	..	13.0 ^a	14.4	10.0 ^p
Hungary	17.2 ^v	11.4 ^v	13.4 ^v	15.0 ^v	15.9 ^v	17.7 ^v	17.4 ^v
Iceland	..	11.4	12.1	..	5.4 ^a	..	..
Ireland	7.6 ^c	20.6	20.8	20.8 ^c	24.8	24.8 ^c	..
Israel ¹	24.9 ^{a,d}	33.2 ^d	51.9 ^{a,d}	51.8 ^d	50.7 ^d	54.3 ^d	..
Italy	8.2	10.5	12.6	13.2	12.5	13.0	..
Japan	0.6	0.4	0.5	0.5	0.6	0.5	0.6
Korea	0.0 ^g	0.2	0.2	0.2	0.1	0.3	..
Luxembourg	0.9	..	4.9	.. ^x	.. ^x	..	.. ^x
Mexico	0.5	3.6	3.2	0.2	0.7	..	..
Netherlands	15.4	..	15.9	..	13.5 ^a	14.2	17.4 ^p
New Zealand	..	..	8.5	..	8.9	..	..
Norway	..	11.8	11.5	12.0	10.9	10.7	..
Poland	1.6	.. ^x	4.5	6.9	5.3	7.6	9.2
Portugal	5.0 ^c	2.7	3.3	1.7	4.3	2.4	..
Slovak Republic	1.6	19.6	20.6	17.0	11.1	12.7	13.6
Slovenia	7.5	3.6 ^a	4.4	4.2	5.4 ^a	7.0	6.8 ^p
Spain	3.7	6.3 ^a	6.3	6.8	7.4	6.8	..
Sweden	..	..	12.1	..	13.3	..	6.9
Switzerland	5.8	7.1	..	..	..	15.4	..
Turkey	1.9	2.6	2.3	1.3	0.8	0.8	1.0
United Kingdom	21.5	23.5	21.6	22.4	21.4	23.7	23.7 ^{c,p}
United States	.. ⁿ	.. ⁿ	.. ⁿ	5.2 ⁱ	5.3 ⁱ	5.2 ^{i,p}	..
EU28 (OECD estimates)	8.6 ^b	10.2 ^b	9.9 ^b	10.2 ^b	10.3 ^b	10.5 ^b	..
OECD-Total	..	..	..	6.1^b	6.2^b	6.3^b	..
Argentina	3.3 ^c	0.8	0.8	0.8	0.8	0.8	..
China	4.0	1.4	1.6 ^a	1.6	1.6	1.1	1.0
Romania	2.4	5.6	6.3	7.0	7.4 ^a	14.0	13.4
Russian Federation	13.6	7.2	7.9	3.5	5.0	4.4	2.9
Singapore	6.0	6.9	8.9	7.3	7.3	8.8	..
South Africa	..	11.3	13.8	14.3	14.9	11.3	..
Chinese Taipei	0.0 ^d	0.0	0.0	0.0	0.0	0.0	0.0

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 39. Business enterprise expenditure on R&D (BERD)
performed in the pharmaceutical industry at current prices and PPPs**

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	149.5 ^b	277.3 ^b	266.0 ^b	251.7 ^b	267.2 ^b	..	..
Austria	156.6 ^b	294.1 ^b	228.1 ^b	211.4 ^b	203.8 ^b	..	..
Belgium	660.9 ^b	1 467.8 ^b	1 524.1 ^b	1 700.8 ^b	2 048.7 ^b	..	..
Canada	622.4 ^{b,g}	546.8 ^{b,g}	557.4 ^{b,g}	547.2 ^{b,g}	408.9 ^{b,g}	402.8 ^{b,g}	406.7 ^{b,g}
Chile	..	..	..	..	..	..	..
Czech Republic	26.7 ^b	76.0 ^b	85.6 ^b	75.5 ^b	80.3 ^b	83.1 ^b	..
Denmark	..	..	836.0 ^b	910.8 ^b	876.7 ^b	1 008.6 ^b	..
Estonia	..	..	..	0.4 ^b	6.1 ^b	1.7 ^b	..
Finland	..	121.3 ^b	121.0 ^b	115.6 ^b	128.7 ^b	148.6 ^b	..
France	2 510.0 ^b	3 956.4 ^b	3 939.0 ^b	3 760.1 ^b	3 720.0 ^b	3 680.7 ^b	..
Germany	2 319.2 ^b	4 206.6 ^b	4 815.0 ^b	4 691.7 ^b	5 189.9 ^b	5 208.7 ^b	..
Greece	..	..	..	..	86.1 ^b	..	..
Hungary	159.8 ^b	384.9 ^b	421.0 ^b	445.1 ^b	432.2 ^b	484.5 ^b	..
Iceland	4.3 ^b	53.6 ^b	42.5 ^b	..	36.0 ^{a,b}	..	..
Ireland	..	..	269.0 ^b	279.3 ^b	152.9 ^b	..	..
Israel ¹	..	..	..	314.0 ^{b,d}	283.2 ^{b,d}	285.8 ^{b,d}	..
Italy	630.3 ^b	608.6 ^b	684.6 ^b	714.1 ^b	752.4 ^b	755.5 ^b	..
Japan	4 815.2 ^b	11 088.0 ^b	10 335.0 ^b	11 430.3 ^b	11 446.1 ^b	12 483.6 ^b	13 805.9 ^b
Korea	184.9 ^b	807.5 ^b	836.3 ^b	877.9 ^b	1 010.1 ^b	1 214.3 ^b	..
Luxembourg	..	..	..	..	..	..	..
Mexico	29.5 ^b	181.8 ^b	196.9 ^b	462.4 ^b	538.5 ^b	..	..
Netherlands	..	530.7 ^b	484.9 ^b	449.7 ^b	421.2 ^b	310.1 ^b	..
New Zealand	..	..	..	..	..	..	..
Norway	59.1 ^b	58.1 ^b	52.7 ^b	56.1 ^b	81.8 ^b	46.0 ^b	..
Poland	..	100.4 ^b	85.4 ^b	85.3 ^b	91.5 ^b	141.2 ^b	..
Portugal	..	132.5 ^b	107.3 ^b	123.3 ^b	141.2 ^b	150.9 ^b	..
Slovak Republic	..	..	..	21.9 ^b	24.7 ^b	18.1 ^b	4.0 ^b
Slovenia	70.0 ^b	217.9 ^b	209.9 ^b	250.2 ^b	260.7 ^b	268.1 ^b	..
Spain	358.0 ^b	1 061.9 ^b	1 084.6 ^b	1 007.6 ^b	1 039.0 ^b	976.4 ^b	..
Sweden	..	..	708.8 ^b	..	875.6 ^b	..	..
Switzerland	991.1 ^b	2 988.4 ^b	..	..	..	2 719.7 ^b	..
Turkey	..	..	100.6 ^b	97.9 ^b	195.8 ^b	182.2 ^b	189.1 ^b
United Kingdom	4 477.3 ^b	6 639.3 ^b	6 758.0 ^b	6 704.4 ^b	6 931.8 ^b	6 050.8 ^b	..
United States	12 793.0 ^{b,j}	48 131.0 ^{b,j}	44 936.0 ^{b,j}	49 415.0 ^{b,j}	45 949.0 ^{b,j}	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	855.1 ^b	3 223.7 ^b	4 275.4 ^b	5 024.1 ^b	6 026.1 ^b	8 062.1 ^b	9 874.9 ^b
Romania	..	5.7 ^b	6.0 ^b	7.8 ^b	23.9 ^b	25.4 ^b	..
Russian Federation	12.7 ^{b,j}	15.4 ^{b,j}	20.6 ^{b,j}	18.9 ^{b,j}	18.6 ^{b,j}	..	28.6 ^{b,j}
Singapore	22.4 ^b	35.6 ^b	85.6 ^b	120.5 ^b	131.8 ^b	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	72.9 ^b	203.8 ^b	220.7 ^b	259.3 ^b	327.3 ^b	347.5 ^b	391.7 ^b

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, ANBERD database: Research and Development Expenditure in Industry, February 2015

**Table 40. Business enterprise expenditure on R&D (BERD)
performed in the computer, electronic and optical industry at current prices and PPPs**

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	198.0 ^b	272.3 ^b	254.6 ^b	248.5 ^b	237.9 ^b	..	..
Austria	750.6 ^b	527.5 ^b	624.4 ^b	686.5 ^b	627.0 ^b	..	..
Belgium	864.6 ^b	662.0 ^b	639.9 ^b	508.9 ^b	536.3 ^b	..	..
Canada	3 719.4 ^{b,g}	2 008.3 ^{b,g}	2 116.7 ^{b,g}	1 739.9 ^{b,g}	1 971.9 ^{b,g}	1 990.0 ^{b,g}	1 889.5 ^{b,g}
Chile	..	..	..	..	..	..	..
Czech Republic	25.8 ^b	112.5 ^b	94.9 ^b	85.4 ^b	85.8 ^b	91.8 ^b	..
Denmark	..	..	333.6 ^b	327.2 ^b	320.0 ^b	369.0 ^b	..
Estonia	..	4.3 ^b	5.8 ^b	5.5 ^b	5.6 ^b	4.3 ^b	..
Finland	1 611.8 ^b	2 970.7 ^b	2 918.2 ^b	2 837.5 ^b	2 764.9 ^b	2 076.3 ^b	..
France	4 250.3 ^b	4 333.4 ^b	4 588.0 ^b	4 538.1 ^b	4 570.1 ^b	4 787.8 ^b	..
Germany	5 528.1 ^b	7 977.2 ^b	7 187.1 ^b	7 526.7 ^b	8 370.0 ^b	9 409.0 ^b	..
Greece	..	..	..	..	32.9 ^b	..	..
Hungary	48.0 ^b	79.0 ^b	125.7 ^b	116.8 ^b	148.6 ^b	127.0 ^b	..
Iceland	5.4 ^b	11.3 ^b	20.5 ^b	..	1.6 ^{a,b}	..	..
Ireland	..	..	173.6 ^b	180.3 ^b	183.6 ^b	..	..
Israel ¹	1 485.7 ^{b,d}	1 404.0 ^{b,d}	1 239.3 ^{b,d}	1 263.7 ^{b,d}	1 351.4 ^{b,d}	1 274.0 ^{b,d}	..
Italy	1 631.2 ^b	1 518.5 ^b	1 632.6 ^b	1 767.3 ^b	1 877.8 ^b	1 790.8 ^b	..
Japan	..	32 229.4 ^b	27 326.9 ^b	26 266.8 ^b	29 244.8 ^b	28 291.0 ^b	27 981.0 ^b
Korea	6 096.2 ^b	16 114.4 ^b	16 252.0 ^b	19 631.5 ^b	21 873.9 ^b	25 080.5 ^b	..
Luxembourg	..	..	..	..	..	..	..
Mexico	4.3 ^b	54.6 ^b	61.7 ^b	24.1 ^b	27.6 ^b	..	..
Netherlands	..	509.3 ^b	473.0 ^b	660.4 ^b	694.0 ^b	764.1 ^b	..
New Zealand	..	..	..	..	..	..	..
Norway	189.1 ^b	216.7 ^b	213.7 ^b	173.7 ^b	190.6 ^b	190.9 ^b	..
Poland	..	41.3 ^b	48.4 ^b	83.6 ^b	72.9 ^b	87.2 ^b	..
Portugal	28.6 ^b	45.9 ^b	33.1 ^b	30.7 ^b	42.7 ^b	43.9 ^b	..
Slovak Republic	..	3.5 ^b	2.2 ^b	4.5 ^b	5.4 ^b	7.0 ^b	7.4 ^b
Slovenia	55.9 ^b	76.3 ^b	68.8 ^b	68.8 ^b	76.5 ^b	79.2 ^b	..
Spain	441.3 ^b	396.6 ^b	347.4 ^b	340.6 ^b	307.7 ^b	269.5 ^b	..
Sweden	..	..	2 085.9 ^b	..	2 146.9 ^b	..	..
Switzerland	491.7 ^b	1 115.2 ^b	..	..	..	1 479.1 ^b	..
Turkey	187.3 ^b	475.3 ^b	491.9 ^b	130.2 ^b	149.7 ^b	190.7 ^b	254.0 ^b
United Kingdom	2 543.2 ^b	2 056.6 ^b	1 908.0 ^b	1 756.8 ^b	1 836.6 ^b	2 125.2 ^b	..
United States	51 761.5 ^{b,j}	60 464.0 ^{b,j}	56 435.0 ^{b,j}	59 875.0 ^{b,j}	62 704.0 ^{b,j}	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	4 375.2 ^b	18 062.9 ^b	21 471.7 ^b	25 133.2 ^b	30 292.6 ^b	33 819.1 ^b	39 817.0 ^b
Romania	..	19.6 ^b	14.1 ^b	13.4 ^b	13.2 ^b	57.5 ^b	..
Russian Federation	211.2 ^{b,j}	883.4 ^{b,j}	697.5 ^{b,j}	613.6 ^{b,j}	771.7 ^{b,j}	..	1 011.9 ^{b,j}
Singapore	994.6 ^b	3 523.7 ^b	1 791.4 ^b	1 800.8 ^b	1 644.2 ^b	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	3 506.7 ^b	10 735.8 ^b	11 265.4 ^b	12 752.5 ^b	14 473.2 ^b	15 488.5 ^b	16 709.7 ^b

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, ANBERD database: Research and Development Expenditure in Industry, February 2015

**Table 41. Business enterprise expenditure on R&D (BERD)
performed in the aerospace industry at current prices and PPPs**

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	2.4 ^b	50.7 ^b	45.5 ^b	36.8 ^b	23.6 ^b	..	..
Austria	7.6 ^b	36.4 ^b	48.6 ^b	49.8 ^b	44.5 ^b	..	..
Belgium	46.2 ^b	97.8 ^b	105.4 ^b	113.0 ^b	141.5 ^b	..	..
Canada	719.4 ^{b,g}	810.1 ^{b,g}	919.6 ^{b,g}	1 005.9 ^{b,g}	1 054.9 ^{b,g}	1 167.5 ^{b,g}	1 112.9 ^{b,g}
Chile	..	..	..	..	..	..	..
Czech Republic	21.1 ^b	20.1 ^b	23.3 ^b	31.4 ^b	37.6 ^b	45.3 ^b	..
Denmark	..	..	..	..	..	..	..
Estonia	..	0.0 ^b	0.0 ^b	0.0 ^b	0.0 ^b	0.0 ^b	..
Finland	..	..	..	..	..	..	..
France	1 996.7 ^b	3 088.1 ^b	2 957.4 ^b	3 062.6 ^b	3 398.1 ^b	3 729.1 ^b	..
Germany	2 167.5 ^b	2 523.0 ^b	2 356.8 ^b	2 920.5 ^b	2 937.8 ^b	3 025.8 ^b	..
Greece	..	..	..	..	..	..	..
Hungary	..	..	..	..	..	..	..
Iceland	0.0 ^b	..	..	..	0.0 ^b	..	..
Ireland	..	..	..	..	..	..	..
Israel ¹	..	..	..	..	..	..	..
Italy	762.5 ^b	1 194.8 ^b	1 169.0 ^b	1 206.9 ^b	1 226.5 ^b	1 190.4 ^b	..
Japan	..	25.8 ^b	173.5 ^b	192.1 ^b	238.0 ^b	309.2 ^b	468.5 ^b
Korea	402.9 ^b	36.3 ^b	83.7 ^b	83.6 ^b	91.2 ^b	184.5 ^b	..
Luxembourg	..	..	..	..	..	..	..
Mexico	0.3 ^b	12.2 ^b	20.5 ^b	16.9 ^b	20.3 ^b	..	..
Netherlands	..	16.6 ^b	15.5 ^b	44.7 ^b	37.8 ^b	48.7 ^b	..
New Zealand	..	..	..	..	..	..	..
Norway	..	..	3.0 ^b	2.7 ^b	..	..	..
Poland	..	16.5 ^b	30.3 ^b	51.4 ^b	73.4 ^b	73.8 ^b	..
Portugal	..	..	..	..	..	..	..
Slovak Republic	..	..	..	..	..	..	..
Slovenia	0.0 ^b	0.1 ^b	1.7 ^b	2.3 ^b	2.3 ^b	1.0 ^b	..
Spain	252.3 ^b	472.5 ^b	489.7 ^b	624.6 ^b	791.1 ^b	718.9 ^b	..
Sweden	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	1 716.7 ^b	2 633.4 ^b	2 238.3 ^b	2 035.0 ^b	2 025.5 ^b	2 183.3 ^b	..
United States	10 319.0 ^{b,j}	36 941.0 ^{b,j}	34 554.0 ^{b,j}	29 854.0 ^{b,j}	26 054.0 ^{b,j}	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	455.1 ^b	..	..	..	..	..	..
Romania	..	..	..	1.4 ^b	4.1 ^b	5.8 ^b	..
Russian Federation	1 216.3 ^{b,j}	770.9 ^{b,j}	562.0 ^{b,j}	393.3 ^{b,j}	394.0 ^{b,j}	..	1 373.7 ^{b,j}
Singapore	14.2 ^b	52.1 ^b	47.8 ^b	104.7 ^b	63.3 ^b	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, ANBERD database: Research and Development Expenditure in Industry, February 2015

**Table 42. Business enterprise expenditure on R&D (BERD)
performed in service industries at current prices and PPPs**

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	1 667.6 ^b	4 803.2 ^b	5 067.5 ^b	5 137.8 ^b	5 512.0 ^b	..	..
Austria	759.4 ^b	1 866.0 ^b	1 906.6 ^b	2 181.0 ^b	2 383.6 ^b	..	..
Belgium	637.7 ^b	1 281.2 ^b	1 267.3 ^b	1 282.6 ^b	1 406.6 ^b	..	..
Canada	2 772.4 ^{b,g}	6 015.5 ^{b,g}	5 695.4 ^{b,g}	5 753.1 ^{b,g}	5 999.7 ^{b,g}	5 632.3 ^{b,g}	5 531.8 ^{b,g}
Chile	..	..	193.1 ^b	196.6 ^b	181.2 ^b	194.8 ^b	..
Czech Republic	349.1 ^b	840.9 ^b	860.7 ^b	915.1 ^b	1 086.7 ^b	1 247.5 ^b	..
Denmark	..	..	2 268.2 ^b	2 126.5 ^b	2 240.7 ^b	2 069.7 ^b	..
Estonia	..	120.3 ^b	127.6 ^b	134.4 ^b	143.5 ^b	192.0 ^b	..
Finland	538.8 ^b	1 045.9 ^b	961.9 ^b	962.4 ^b	1 162.1 ^b	1 294.5 ^b	..
France	2 197.3 ^b	4 087.3 ^b	4 910.1 ^b	6 028.3 ^b	6 447.6 ^b	7 118.9 ^b	..
Germany	3 064.3 ^b	6 140.9 ^b	7 580.3 ^b	7 860.7 ^b	8 856.0 ^b	8 975.3 ^b	..
Greece	..	..	..	..	402.5 ^b	..	..
Hungary	80.7 ^b	260.8 ^b	390.0 ^b	474.6 ^b	591.2 ^b	637.5 ^b	..
Iceland	95.7 ^b	87.7 ^b	106.1 ^b	..	76.3 ^{a,b}	..	..
Ireland	..	..	..	..	..	..	..
Israel ¹	2 934.7 ^{b,d}	4 791.6 ^{b,d}	4 853.1 ^{b,d}	4 987.0 ^{b,d}	5 506.0 ^{b,d}	6 261.8 ^{b,d}	..
Italy	1 614.4 ^b	3 339.6 ^b	3 686.1 ^b	3 669.8 ^b	3 562.3 ^b	3 569.6 ^b	..
Japan	4 698.4 ^b	13 207.1 ^b	11 664.3 ^b	12 084.1 ^b	12 264.2 ^b	12 403.4 ^b	12 148.5 ^b
Korea	1 463.2 ^b	2 607.3 ^b	3 217.6 ^b	3 522.9 ^b	3 955.3 ^b	4 390.8 ^b	..
Luxembourg	..	..	..	..	..	..	..
Mexico	463.5 ^b	478.1 ^b	613.5 ^b	1 275.4 ^b	1 251.5 ^b	..	..
Netherlands	..	..	..	..	3 050.6 ^b	3 411.7 ^b	..
New Zealand	..	..	329.3 ^b	..	358.0 ^b	..	..
Norway	509.6 ^b	1 028.7 ^b	1 026.2 ^b	1 112.2 ^b	1 232.4 ^b	1 286.5 ^b	..
Poland	..	655.4 ^b	542.6 ^b	720.6 ^b	911.8 ^b	1 305.6 ^b	..
Portugal	167.8 ^b	1 141.2 ^b	1 253.3 ^b	1 239.7 ^b	1 214.4 ^b	1 091.1 ^b	..
Slovak Republic	147.6 ^b	90.7 ^b	76.6 ^b	102.4 ^b	126.9 ^b	211.6 ^b	230.7 ^b
Slovenia	54.3 ^b	85.7 ^b	106.1 ^b	139.6 ^b	274.0 ^b	320.8 ^b	..
Spain	1 026.2 ^b	4 573.3 ^b	4 195.3 ^b	3 964.2 ^b	3 839.2 ^b	3 856.9 ^b	..
Sweden	..	..	..	..	..	..	..
Switzerland	906.0 ^b	1 959.1 ^b	..	..	..	2 882.9 ^b	..
Turkey	120.9 ^b	1 066.8 ^b	1 285.1 ^b	1 970.8 ^b	2 187.4 ^b	2 535.2 ^b	2 973.0 ^b
United Kingdom	2 996.1 ^b	6 035.6 ^b	5 730.4 ^b	5 981.9 ^b	6 345.0 ^b	6 254.8 ^b	..
United States	73 729.6 ^{b,j}	83 850.3 ^{b,j}	84 181.3 ^{b,j}	78 220.0 ^{b,j}	88 945.5 ^{b,j}	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	1 285.0 ^b	6 685.0 ^b	10 365.8 ^b	9 807.3 ^b	12 049.6 ^b	14 156.4 ^b	..
Romania	8.6 ^b	153.4 ^b	203.3 ^b	185.6 ^b	288.9 ^b	384.1 ^b	..
Russian Federation	4 065.5 ^{b,j}	14 513.8 ^{b,j}	17 612.5 ^{b,j}	16 414.3 ^{b,j}	17 592.6 ^{b,j}	..	..
Singapore	351.2 ^b	1 536.6 ^b	1 553.1 ^b	1 691.5 ^b	2 710.4 ^b	..	..
South Africa	..	1 074.0 ^b	1 148.5 ^b	..	..	..	..
Chinese Taipei	437.2 ^b	1 044.4 ^b	1 145.1 ^b	1 287.6 ^b	1 359.0 ^b	1 609.3 ^b	1 761.1 ^b

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, ANBERD database: Research and Development Expenditure in Industry, February 2015

Table 43. Higher education expenditure on R&D (HERD) at current prices and PPPs

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	2 129.4	4 626.9	..	5 423.7	5 880.0 ^c	6 313.2	..
Austria	..	2 210.6 ^c	2 312.1	2 477.0 ^c	2 534.6	2 719.4 ^c	2 751.1 ^{c,p}
Belgium	1 128.2	1 702.6	1 914.2	2 061.1	2 173.6	2 251.8 ^c	2 298.8 ^p
Canada	4 719.5	8 852.1	8 986.6	9 214.9	9 542.7	9 708.7	9 776.5 ^p
Chile	..	418.9	383.8	396.1	399.3	460.4	..
Czech Republic	265.0	637.4	721.1	760.8	1 141.1	1 480.2	1 582.7 ^p
Denmark	686.1	1 695.1	1 862.3	2 065.0	2 210.1	2 323.5	2 387.2 ^{c,p}
Estonia	42.7	162.8	158.7	169.0	204.1	226.9	250.5
Finland	793.8	1 286.6	1 420.5	1 564.2	1 577.4	1 606.8	1 543.8
France	6 184.0 ^a	9 326.3	10 350.8	10 947.0	11 191.5	11 401.5	11 457.3 ^p
Germany	8 428.8	13 690.8	14 593.4	15 901.5	17 151.1	17 794.7	18 178.6 ^{c,p}
Greece	..	..	..	..	799.1 ^a	777.1	828.2 ^p
Hungary	234.7 ^v	453.6 ^v	498.9 ^v	492.7 ^v	544.2 ^v	523.4 ^v	467.7 ^v
Iceland	35.2 ^c	83.9	84.9	82.2 ^a	83.0	..	..
Ireland	247.7	788.0	817.2 ^c	840.4	757.8 ^c	756.4 ^c	764.2 ^p
Israel ¹	957.5 ^{d,g}	1 204.1 ^d	1 133.0 ^d	1 194.1 ^d	1 299.5 ^d	1 525.6 ^d	1 552.8 ^d
Italy	4 732.4	7 335.0	7 457.9	7 237.9	7 374.4	7 527.2	7 481.9 ^p
Japan	14 348.1	17 306.1 ^a	18 366.0	18 099.5	19 603.5	20 276.0	21 578.5
Korea	2 091.2 ^g	4 893.3	5 097.5	5 645.5	5 890.4	6 134.2	6 370.8
Luxembourg	1.0	41.7	54.8	81.4	75.4	86.6	87.5 ^{c,p}
Mexico	950.7	1 974.8	2 047.3	2 185.4	2 330.0	..	..
Netherlands	2 895.3	4 725.0	4 969.2	5 173.8	4 810.7	4 761.7	4 887.1 ^p
New Zealand	..	..	545.7	..	562.6	..	..
Norway	..	1 483.5	1 498.5	1 534.3	1 587.0	1 689.2	1 755.3 ^p
Poland	821.9	1 396.5	1 803.1	2 128.4	2 244.7	2 695.3	2 316.8
Portugal	496.9 ^c	1 372.8 ^a	1 600.9	1 608.4	1 507.2	1 426.3	1 492.0 ^p
Slovak Republic	36.6	144.1	148.2	225.6	315.8	383.7	394.1
Slovenia	80.1	130.6	148.5	161.8	167.3 ^a	167.9	160.3 ^p
Spain	2 308.6	5 460.7	5 720.8	5 747.6	5 685.0	5 397.3	5 363.3 ^p
Sweden	..	2 876.2 ^c	3 133.5	3 315.9 ^c	3 529.4	3 715.8 ^c	3 841.2
Switzerland	1 318.6	2 544.1	..	2 935.0	..	3 729.9	..
Turkey	1 705.3	3 394.0	4 205.4	4 533.1	5 114.9	5 456.9	5 604.2
United Kingdom	5 738.5	10 439.1	11 020.1	10 314.9	10 185.7	10 374.7	10 483.2 ^{c,p}
United States	30 693.0 ⁱ	53 917.0 ⁱ	56 972.0 ⁱ	60 369.0 ⁱ	62 457.0 ⁱ	62 723.0 ^{i,p}	..
EU28 (OECD estimates)	39 134.8 ^b	68 262.8 ^b	72 628.6 ^b	75 259.1 ^b	77 406.5 ^b	79 772.1 ^b	80 297.5 ^b
OECD-Total	98 838.3^b	168 153.2^b	178 798.7^b	186 360.0^b	194 279.1^b	199 618.7^b	202 982.6^b
Argentina	533.3	856.7	1 067.9	1 184.2	1 405.7	1 616.7	..
China	2 797.0	12 229.4	14 877.6	18 014.7	19 650.4	22 212.5	24 334.4
Romania	55.2	538.6	369.4	371.6	394.7 ^a	342.9	286.5
Russian Federation	477.9	2 013.0	2 471.0	2 764.1	3 178.6	3 605.1	3 664.9
Singapore	716.1	1 646.3	1 789.1	2 072.2	2 314.3	2 367.4	..
South Africa	..	1 042.8	1 180.2	1 179.9	1 384.4	1 496.3	..
Chinese Taipei	1 115.2	2 614.6	2 854.4	3 019.5	3 241.0	3 255.1	3 266.5

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 44. Higher education expenditure on R&D (HERD)
as a percentage of GDP**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.40	0.54	..	0.58	0.60 ^c	0.63	..
Austria	..	0.65 ^c	0.68	0.71 ^c	0.69	0.72 ^c	0.72 ^{c,p}
Belgium	0.39	0.42	0.47	0.48	0.48	0.49 ^c	0.49 ^p
Canada	0.53	0.66	0.69	0.68	0.67	0.66	0.65 ^p
Chile	..	0.15 ^y	0.14 ^y	0.13 ^y	0.11 ^y	0.12 ^y	..
Czech Republic	0.16	0.23	0.26	0.27	0.38	0.49	0.52 ^p
Denmark	0.43	0.76	0.85	0.89	0.92	0.95	0.97 ^{c,p}
Estonia	0.31	0.54	0.59	0.60	0.65	0.69	0.74
Finland	0.58	0.61	0.71	0.76	0.73	0.74	0.71
France	0.39 ^a	0.41	0.46	0.47	0.46	0.47	0.46 ^p
Germany	0.39	0.43	0.48	0.49	0.50	0.51	0.51 ^{c,p}
Greece	..	..	..	..	0.27 ^a	0.28	0.29 ^p
Hungary	0.19 ^y	0.22 ^y	0.24 ^y	0.23 ^y	0.24 ^y	0.23 ^y	0.20 ^y
Iceland	0.42 ^c	0.64	0.67	0.67 ^a	0.66	..	..
Ireland	0.22	0.40	0.43 ^c	0.43	0.37 ^c	0.36 ^c	0.36 ^p
Israel ¹	0.62 ^{d,g}	0.61 ^d	0.55 ^d	0.54 ^d	0.55 ^d	0.61 ^d	0.59 ^d
Italy	0.31	0.35	0.37	0.35	0.35	0.35	0.35 ^p
Japan	0.44 ^y	0.40 ^{a,y}	0.45 ^y	0.42 ^y	0.45 ^y	0.45 ^y	0.47 ^y
Korea	0.25 ^g	0.35	0.37	0.38	0.38	0.38	0.38
Luxembourg	0.00	0.10	0.14	0.19	0.16	0.18	0.18 ^{c,p}
Mexico	0.09	0.12	0.13	0.13	0.12	..	..
Netherlands	0.58	0.63	0.68	0.70	0.62	0.62	0.63 ^p
New Zealand	..	..	0.42 ^y	..	0.40 ^y	..	..
Norway	..	0.50	0.55	0.53	0.51	0.51	0.53 ^p
Poland	0.20	0.20	0.25	0.27	0.26	0.31	0.25
Portugal	0.27 ^c	0.50 ^a	0.58	0.57	0.53	0.50	0.51 ^p
Slovak Republic	0.06	0.11	0.12	0.17	0.23	0.28	0.27
Slovenia	0.23	0.22	0.26	0.29	0.29 ^a	0.29	0.27 ^p
Spain	0.26	0.35	0.38	0.38	0.37	0.35	0.35 ^p
Sweden	..	0.74 ^c	0.85	0.85 ^c	0.85	0.89 ^c	0.90
Switzerland	0.53	0.66	..	0.73	..	0.83	..
Turkey	0.29 ^y	0.32 ^y	0.40 ^y	0.39 ^y	0.39 ^y	0.40 ^y	0.40 ^y
United Kingdom	0.36	0.45	0.49	0.46	0.44	0.44	0.43 ^{c,p}
United States	0.30 ⁱ	0.37 ⁱ	0.40 ⁱ	0.40 ⁱ	0.40 ⁱ	0.39 ^{i,p}	..
EU28 (OECD estimates)	0.36 ^b	0.41 ^b	0.45 ^b	0.45 ^b	0.44 ^b	0.45 ^b	0.45 ^b
OECD-Total	0.34^b	0.40^b	0.43^b	0.43^b	0.43^b	0.43^b	0.43^b
Argentina	0.12	0.12	0.15	0.15	0.16	0.18	..
China	0.08 ^y	0.12 ^y	0.13 ^y	0.15 ^y	0.15 ^y	0.15 ^y	0.15 ^y
Romania	0.04	0.16	0.11	0.11	0.11 ^a	0.09	0.08
Russian Federation	0.05 ^y	0.07 ^y	0.09 ^y	0.09 ^y	0.10 ^y	0.10 ^y	0.10 ^y
Singapore	0.44	0.54	0.58	0.58	0.60	0.59	..
South Africa	..	0.19 ^y	0.21 ^y	0.20 ^y	0.23 ^y	0.23 ^y	..
Chinese Taipei	0.24 ^y	0.34 ^y	0.38 ^y	0.35 ^y	0.36 ^y	0.35 ^y	0.34 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 45. Higher education expenditure on R&D (HERD) at 2005 prices and PPPs

Million 2005 USD

	2000	2008	2009	2010	2011	2012	2013
Australia	2 398.6	4 280.2	..	4 758.6	5 084.4 ^c	5 515.2	..
Austria	..	2 003.9 ^c	2 036.6	2 155.4 ^c	2 151.2	2 274.2 ^c	2 281.9 ^{c,p}
Belgium	1 237.8	1 546.1	1 688.6	1 773.4	1 798.9	1 831.8 ^c	1 858.4 ^p
Canada	5 408.6	8 172.9	8 268.6	8 376.4	8 534.1	8 583.4	8 568.5 ^p
Chile	..	362.7	329.5	316.3	300.5	344.3	..
Czech Republic	297.8	596.8	641.1	689.1	994.5	1 274.7	1 337.0 ^p
Denmark	750.8	1 449.9	1 549.9	1 648.0	1 715.0	1 774.4	1 797.4 ^{c,p}
Estonia	50.0	136.9	127.0	133.1	156.1	173.7	187.4
Finland	857.5	1 130.2	1 205.4	1 334.2	1 307.0	1 311.8	1 249.6
France	6 908.7 ^a	8 307.0	8 987.7	9 360.0	9 340.9	9 503.8	9 482.4 ^p
Germany	9 929.9	12 462.2	13 011.7	13 852.7	14 544.7	14 895.0	15 064.6 ^{c,p}
Greece	..	..	..	..	675.0 ^a	644.2	662.4 ^p
Hungary	269.0 ^v	398.8 ^v	409.3 ^v	395.6 ^v	425.3 ^v	405.6 ^v	355.7 ^v
Iceland	36.6 ^c	78.6	78.5	76.0 ^a	76.4	..	..
Ireland	291.7	724.1	732.7 ^c	723.9	638.5 ^c	629.3 ^c	629.2 ^p
Israel ¹	947.7 ^{d,g}	1 203.5 ^d	1 118.1 ^d	1 164.1 ^d	1 234.9 ^d	1 398.9 ^d	1 404.6 ^d
Italy	5 116.6	6 241.6	6 148.9	5 955.8	5 892.1	5 877.2	5 748.0 ^p
Japan	15 983.9	16 138.3 ^a	17 014.0	16 564.8	17 595.4	17 883.2	19 048.9
Korea	2 275.1 ^g	4 629.1	4 888.8	5 349.0	5 585.6	5 794.8	5 976.4
Luxembourg	1.0	35.3	45.7	66.6	56.9	63.5	64.5 ^{c,p}
Mexico	1 138.7	1 748.4	1 744.1	1 839.3	1 862.8	..	..
Netherlands	3 273.7	4 170.5	4 361.1	4 531.7	4 112.6	4 020.3	4 074.7 ^p
New Zealand	..	..	469.1	..	462.5	..	..
Norway	..	1 288.8	1 295.8	1 285.3	1 287.8	1 325.1	1 378.0 ^p
Poland	922.6	1 265.3	1 579.4	1 788.3	1 835.4	2 163.3	1 826.0
Portugal	600.7 ^c	1 204.7 ^a	1 355.4	1 350.6	1 243.9	1 131.3	1 148.5 ^p
Slovak Republic	42.4	126.7	126.6	191.3	267.7	321.6	324.9
Slovenia	90.2	121.7	136.0	149.1	149.8 ^a	146.3	136.1 ^p
Spain	2 699.0	4 684.9	4 822.7	4 891.9	4 744.2	4 394.3	4 284.9 ^p
Sweden	..	2 485.9 ^c	2 687.9	2 841.8 ^c	2 942.2	3 054.8 ^c	3 116.2
Switzerland	1 437.8	2 127.6	..	2 375.6	..	2 790.9	..
Turkey	1 808.5	2 796.2	3 371.9	3 547.1	3 887.0	4 109.6	4 209.9
United Kingdom	6 432.0	9 826.3	10 249.6	9 799.4	9 591.3	9 547.0	9 528.9 ^{c,p}
United States	34 478.7 ⁱ	49 973.5 ⁱ	52 407.1 ⁱ	54 861.8 ⁱ	55 611.2 ⁱ	54 863.2 ^{i,p}	..
EU28 (OECD estimates)	44 258.6 ^b	60 999.9 ^b	63 492.0 ^b	65 258.8 ^b	65 530.3 ^b	66 503.3 ^b	66 103.2 ^b
OECD-Total	110 943.5^b	152 876.7^b	160 267.3^b	165 193.0^b	168 472.3^b	170 523.4^b	171 478.7^b
Argentina	599.0	794.0	982.4	1 076.3	1 251.7	1 413.8	..
China	3 199.2	11 418.7	13 556.9	16 540.0	17 770.0	19 738.2 ^b	21 306.2 ^b
Romania	66.2	419.4	271.3	261.0	268.6 ^a	227.7	188.6
Russian Federation	602.5	1 466.1	1 724.9	1 906.2	2 074.1	2 276.8	2 231.9
Singapore	804.1	1 524.6	1 645.4	1 881.7	2 058.8	2 070.9	..
South Africa	..	966.7	1 085.6	1 072.4	1 234.1	1 310.8	..
Chinese Taipei	1 252.7	2 423.4	2 625.7	2 744.1	2 885.7	2 847.2	2 815.2

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 46. Percentage of Higher education expenditure on R&D (HERD)
financed by industry**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	5.3	5.8	..	4.9	..	4.7	..
Austria	..	..	5.2	..	5.2	..	..
Belgium	11.8	10.6	11.0	10.1	10.7	..	..
Canada	9.5	8.2	8.3	7.5	8.2	8.1	8.1 ^P
Chile	..	7.3	5.9	6.4	5.5	5.4	..
Czech Republic	1.1	0.6	1.1	1.1	1.0	0.8	2.0 ^P
Denmark	2.0	..	3.6	3.1	3.4	2.7	2.7 ^{C,P}
Estonia	7.4	4.4	4.3	4.2	3.5	3.5	4.4
Finland	5.6	7.2	6.4	5.7	5.5	5.1	5.0
France	2.7 ^a	2.2	1.8	2.0	2.6	2.7	..
Germany	11.6	15.1	14.2	13.9	14.0	14.0	..
Greece	..	..	..	..	9.0 ^a	7.9	7.4 ^P
Hungary	5.5 ^V	14.7 ^V	15.5 ^V	13.6 ^V	11.3 ^V	9.5 ^V	8.6 ^V
Iceland	..	13.7	8.9	..	2.0 ^a	..	..
Ireland	5.3	3.0	2.7 ^c	2.3	2.2 ^c	1.9 ^c	1.6 ^P
Israel ¹	3.7 ^{d,g}	9.7 ^d	10.4 ^d	10.1 ^d	10.2 ^d	11.5 ^d	..
Italy	..	1.2	1.1	1.1	1.3	1.1	..
Japan	2.5	3.0 ^a	2.5	2.6	2.7	2.7	2.6
Korea	15.9 ^g	12.0	11.3	11.3	11.0	11.0	..
Luxembourg	..	..	0.2	0.1	0.7	0.9	0.9 ^{C,P}
Mexico	2.0	12.7	14.0	0.4	1.6	..	..
Netherlands	..	..	8.2	..	8.2	8.3	7.4 ^P
New Zealand	..	..	5.2	..	4.1	..	..
Norway	..	..	3.8	..	4.0	..	..
Poland	7.8	3.8	3.3	2.9	2.6	2.1	3.2
Portugal	1.0 ^c	0.9 ^a	0.9	0.6	1.9	1.3	..
Slovak Republic	0.3 ^a	2.5	2.1	2.3	3.5	3.3	2.6
Slovenia	7.6	10.1	9.2	12.0	12.5 ^a	11.2	11.4 ^P
Spain	6.9	8.8	8.0	7.9	8.0	7.3	..
Sweden	..	..	4.5	..	4.0	..	3.7
Switzerland	5.1	6.9	..	9.1	..	10.9	..
Turkey	19.4	17.4 ^a	16.0	16.2	14.6	13.9	13.9
United Kingdom	7.1	4.6	3.9	4.1	4.0	4.1	4.1 ^{C,P}
United States	7.1 ⁱ	5.7 ^j	5.6 ⁱ	4.6 ⁱ	4.5 ⁱ	4.6 ^{i,P}	..
EU28 (OECD estimates)	6.3 ^b	6.8 ^b	6.4 ^b	6.4 ^b	6.6 ^b	6.4 ^b	..
OECD-Total	6.4^b	6.5^b	6.3^b	5.8^b	5.9^b	5.9^b	..
Argentina	0.2 ^c	0.5	0.5	0.3	0.2	0.2	..
China	32.4	34.6	36.7	33.2	35.3	33.4	33.8
Romania	6.5	2.5	3.8	4.3	5.7 ^a	7.5	4.8
Russian Federation	27.3	28.6	22.4	24.5	24.0	27.2	27.6
Singapore	6.0	1.3	3.1	2.5	3.7	4.3	..
South Africa	..	10.8	11.9	6.8	7.6	7.9	..
Chinese Taipei	4.1	6.0	6.3	6.7	7.5	8.0	7.8

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 47. Higher education researchers in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	39 507	53 592	..	60 631	..	..	..
Austria	..	11 016 ^c	11 262	11 954 ^c	12 199	12 938 ^c	13 122 ^{c,p}
Belgium	11 778	16 462	17 252	17 878	18 228	18 278 ^c	18 682 ^p
Canada	33 300	49 450	47 350	53 970	56 090	57 510	..
Chile	..	3 238	3 007	3 274	3 295	3 561	..
Czech Republic	3 768	9 358	9 664	10 115	10 289	11 498	10 995 ^p
Denmark	5 866 ^u	10 954	12 010	13 250	13 881	14 305	14 290 ^{c,p}
Estonia	1 806	2 126	2 397	2 179	2 398	2 534	2 398
Finland	10 999 ^u	11 849	12 304	13 548	11 964 ^a	12 368	12 056
France	61 583 ^a	68 897	68 696	70 295	71 170	72 163	74 053 ^p
Germany	67 087	77 004	84 852	90 398	93 811	97 199	100 500 ^{c,p}
Greece	..	..	..	..	16 068 ^a	15 166	17 330 ^p
Hungary	5 852	5 872	6 164	6 041	5 975	5 932	5 939
Iceland	..	648	994	..	733 ^a	..	..
Ireland	2 148	6 174	5 937 ^c	5 730	5 629 ^c	5 481 ^c	5 337 ^p
Israel ¹	..	..	..	..	7 837	9 433 ^c	9 627 ^c
Italy	25 696	39 809	43 067	43 470	43 828	45 223	45 809
Japan	179 116	123 549 ^a	124 224	125 263	126 133	125 890	136 593
Korea	23 674 ^q	34 773	38 163	39 265	40 844	43 826	..
Luxembourg	22	282	428	518	776	864	890 ^{c,p}
Mexico	..	16 678	17 381	16 365	16 691	..	..
Netherlands	15 586	18 817	19 661	20 156	20 965	20 990	21 200 ^p
New Zealand	..	..	9 100	..	9 300	..	..
Norway	..	8 771	9 162	9 468	9 760	9 855	10 175 ^p
Poland	34 246	39 947	38 080	39 170	39 677	38 152	37 167
Portugal	8 592 ^c	23 138 ^a	23 242	23 858	23 759	23 825	23 849 ^p
Slovak Republic	5 009	8 075	8 873	10 203	10 339	9 782	9 625
Slovenia	1 340	1 795	1 978	2 262	2 431 ^a	2 398	2 201 ^p
Spain	42 064	61 736	63 175	64 590	62 185	59 775	57 641 ^p
Sweden	..	14 896 ^c	16 308	16 959 ^c	17 101	16 561 ^c	16 501
Switzerland	9 425	14 322	..	16 810	..	18 760	..
Turkey	16 902	29 912	31 037	32 913	35 644	40 801	42 574
United Kingdom	..	152 551 ^c	158 004	159 941	150 650	153 755	153 786 ^{c,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	617 640 ^b	641 707 ^b	662 409 ^b	657 083 ^b	661 811 ^b	666 232 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	13 199	17 747	18 728	21 190	22 766	23 332	..
China	147 866 ^t	261 237 ^t	225 057 ^a	239 251	249 025	262 052	272 683
Romania	2 542	6 839	7 310	8 245	6 563 ^a	6 591	6 706
Russian Federation	72 264	76 797	77 955	84 359	89 938	87 259	89 085
Singapore	6 754	9 547	12 421	13 766	14 460	15 096	..
South Africa	..	9 953	10 614	11 068	12 828	13 744	..
Chinese Taipei	11 129 ^m	27 772	30 712	31 567	32 045	32 588	31 712

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 48. Higher education researchers as a percentage of national total

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	59.9	57.8	..	..	..	..	..
Austria	..	31.9 ^c	32.5	32.7 ^c	32.9	32.9 ^c	32.9 ^{c,p}
Belgium	38.6	44.8	45.1	43.8	42.7	41.7 ^c	41.8 ^p
Canada	30.9	31.5	31.5	34.0	34.4	36.7	..
Chile	..	54.3	61.9 ^l	60.2 ^l	54.2 ^l	52.4 ^l	..
Czech Republic	27.2	31.4	33.6	34.6	33.5	34.6	32.1 ^p
Denmark	..	30.7 ^c	32.6	35.4	35.4	34.9	35.0 ^{c,p}
Estonia	67.7	53.4	55.6	53.4	53.2	55.3	54.4 ^p
Finland	31.6 ^u	29.0	30.1	32.7	29.9 ^a	30.6	30.8
France	35.8 ^a	30.3 ^d	29.3 ^d	28.9 ^a	28.6	27.9	27.9 ^p
Germany	26.0 ^c	25.4 ^c	26.7	27.6 ^c	27.7	27.6 ^c	27.8 ^{c,p}
Greece	..	..	..	..	65.1 ^a	62.9	62.6 ^p
Hungary	40.6 ^d	31.7	30.7	28.3	26.0	24.9	23.7
Iceland	..	28.1	39.7	..	32.5 ^a	..	..
Ireland	25.2 ^c	42.6	41.8 ^c	40.4 ^c	37.1 ^c	34.8 ^c	..
Israel ¹	..	..	..	..	14.2 ^d	14.8 ^{c,d}	..
Italy	38.9	41.6	42.3	42.0	41.3	40.9	38.8 ^p
Japan	27.7	18.8 ^a	19.0	19.1	19.2	19.5	20.7
Korea	21.8 ^u	14.7	15.6	14.9	14.1	13.9	..
Luxembourg	1.3	12.3	17.9	19.7	25.6	34.7 ^a	34.0 ^{c,p}
Mexico	..	44.3	40.4	36.3	36.2	..	..
Netherlands	36.9	37.1	41.9	37.5	35.9 ^a	29.5	29.3 ^p
New Zealand	..	..	56.5	..	57.1	..	..
Norway	..	34.3	34.9	35.8	35.8	35.4	..
Poland	62.1	64.6	62.3	60.7	61.9	56.9	52.0
Portugal	51.3 ^c	57.3 ^a	58.3	57.5	53.9	56.1	55.1 ^p
Slovak Republic	50.3	64.2	66.8	67.2	67.5	64.1	65.4
Slovenia	30.9	25.5 ^a	26.6	29.4	27.7 ^a	27.0	25.3 ^p
Spain	54.9	47.1 ^a	47.2	48.0	47.7	47.1	46.6 ^p
Sweden	..	29.7 ^c	34.6 ^l	34.4 ^{c,l}	35.2 ^{a,l}	33.6 ^{c,l}	26.5 ^{a,l}
Switzerland	36.1	57.0	..	..	..	52.2	..
Turkey	73.2	56.6	53.7	51.2	49.4	49.7	47.8
United Kingdom	..	60.6 ^c	61.7 ^c	62.3 ^c	59.9	60.0 ^c	59.3 ^{c,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	40.6 ^b	41.3 ^b	41.4 ^b	40.5 ^b	39.5 ^b	38.6 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	50.0	42.7	42.8	44.5	45.2	45.2	..
China	21.3 ^{a,t}	16.4 ^t	19.5 ^a	19.8	18.9	18.7	18.4
Romania	12.4	35.3	37.9	41.7	40.8 ^a	36.6	35.9
Russian Federation	14.3	17.0	17.6	19.1	20.1	19.7	20.2
Singapore	40.6	34.3	40.7	43.0	42.9	44.2	..
South Africa	..	51.3	53.6	59.1	63.8	64.3	..
Chinese Taipei	20.1 ^d	25.2	25.8	24.7	23.9	23.4	22.6

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 49. Higher education Total R&D personnel in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	46 287	61 773	..	69 199	..	..	..
Austria	..	14 831 ^c	15 059	15 878 ^c	16 096	17 071 ^c	17 314 ^{c,p}
Belgium	15 884	20 670	21 617	22 371	22 709	22 875 ^c	23 345 ^p
Canada	45 150	62 480	60 180	67 590	70 010	71 320	..
Chile	..	5 220	5 637	6 133	6 223	6 819	..
Czech Republic	5 331	13 147	13 648	14 056	14 724	16 441	16 240 ^p
Denmark	8 015	15 723	16 819	18 444	18 916	19 992	19 970 ^{c,p}
Estonia	2 305	2 389	2 688	2 465	2 735	3 000	2 850
Finland	15 459	15 968	16 490	17 924	15 847 ^a	16 146	15 726
France	90 051 ^a	104 961	105 048	106 585	107 891	109 246	112 420 ^p
Germany	100 790	107 529	115 851	120 981	124 308	127 900	131 800 ^{c,p}
Greece	..	..	..	..	20 640 ^a	20 508	22 756 ^p
Hungary	8 859	7 980	8 372	8 256	8 260	8 130	8 154
Iceland	..	808	1 119	..	1 057 ^a	..	..
Ireland	2 602	7 141	6 698 ^c	6 501	6 406 ^c	6 267 ^c	6 132 ^p
Israel ¹	9 405	9 181	8 987	9 120	9 220	11 097 ^c	11 325 ^c
Italy	54 837	72 474	74 949	72 299	73 723	76 207	75 268 ^p
Japan	227 882	181 946 ^a	184 951	188 324	192 265	195 043	207 766
Korea	36 209 ^g	60 372	66 779	73 511	73 468	77 099	..
Luxembourg	23	327	485	594	855	948	977 ^{c,p}
Mexico	..	..	..	..	..	..	..
Netherlands	30 078	33 231	34 122	34 981	32 198	31 953	32 300 ^p
New Zealand	..	..	11 300	..	11 500	..	..
Norway	..	11 341	11 655	11 968	12 283	12 413	12 871 ^p
Poland	41 499	43 479	41 440	43 111	44 154	42 917	41 441
Portugal	9 680 ^c	24 412 ^a	24 965	25 092	24 496	24 513	24 549 ^p
Slovak Republic	5 860	8 609	9 360	10 535	10 712	10 124	9 969
Slovenia	1 746	2 106	2 354	2 727	3 003 ^a	2 926	2 805 ^p
Spain	49 470	78 846	81 203	83 300	80 900	77 238	74 923 ^p
Sweden	..	17 601 ^c	18 857	19 471 ^c	20 010	21 781 ^c	21 301
Switzerland	15 200	21 425	..	24 719	..	26 945	..
Turkey	..	29 912 ^m	31 037 ^m	32 913 ^m	35 644 ^m	40 801 ^m	42 574 ^m
United Kingdom	..	163 529 ^{c,m}	168 936 ^m	170 446 ^m	175 185 ^m	173 499 ^m	173 482 ^{c,m,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	610 046 ^b	804 263 ^b	829 096 ^b	846 179 ^b	853 528 ^b	858 172 ^b	863 653 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	14 313	19 254	20 861	24 602	26 270	27 178	..
China	159 246 ^t	266 813 ^t	275 191 ^a	289 670	299 296	313 520	324 942
Romania	3 780	8 433	8 824	9 054	8 879 ^a	8 710	10 201
Russian Federation	99 552	106 816	106 443	113 353	121 151	119 360	118 971
Singapore	7 413	10 823	13 775	14 877	15 551	16 252	..
South Africa	..	11 169	11 870	12 477	14 563	15 614	..
Chinese Taipei	12 873 ^m	31 118	34 752	35 219	35 818	36 115	35 088

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 50. Government intramural expenditure on R&D (GOVERD) at current prices and PPPs

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	1 798.2	2 312.6	..	2 547.4 ^c	2 348.7 ^c	2 447.5	..
Austria	..	473.0 ^c	472.8	502.0 ^c	509.0	546.1 ^c	552.4 ^{c,p}
Belgium	350.5	696.7	719.6	738.6	784.2	908.2 ^c	932.7 ^p
Canada	1 881.9	2 431.2	2 614.2	2 758.2	2 404.2	2 329.5	2 248.2 ^p
Chile	..	99.3	32.2	37.9	49.0	54.8	..
Czech Republic	472.1	794.1	851.6	821.9	925.7	992.0	1 064.5 ^p
Denmark	432.4	162.4	139.1	150.4	145.2	175.0	179.8 ^{c,p}
Estonia	18.8	44.6	41.4	46.9	59.3	65.6	52.9
Finland	470.5	601.6	683.5	707.7	698.1	671.0	640.3
France	5 712.1 ^a	7 440.5	8 114.8	7 110.6 ^a	7 401.1	7 167.2	7 259.5 ^p
Germany	7 111.4 ^o	11 515.3 ^o	12 274.4 ^o	12 999.5 ^o	13 995.0 ^o	14 435.3 ^o	15 243.3 ^{c,o,p}
Greece	..	..	..	..	473.8 ^a	482.7	594.4 ^p
Hungary	255.0 ^{d,v}	481.5 ^v	477.9 ^v	457.9 ^v	424.9 ^v	410.6 ^v	484.0 ^v
Iceland	55.3 ^c	59.5	74.6	..	55.9 ^a	..	..
Ireland	99.4	177.7	154.8	151.1	158.5	158.6	155.0
Israel ¹	198.1 ^{a,d}	155.1 ^d	157.6 ^d	176.0 ^d	220.8 ^d	224.8 ^d	235.4 ^d
Italy	2 884.9	3 064.0	3 239.5	3 444.5	3 451.8	3 981.6	3 957.3 ^p
Japan	9 767.3	12 387.0	12 619.7	12 689.0	12 428.3	13 086.3	14 692.1
Korea	2 468.8 ^u	5 293.9	5 986.9	6 612.3	6 847.1	7 253.9	..
Luxembourg	27.7	109.2	110.1 ^a	126.3	128.3	131.7	133.2 ^{c,p}
Mexico	1 402.8	1 919.6	1 878.9	2 545.9	2 455.3	..	..
Netherlands	1 091.8 ^a	1 494.7 ^o	1 577.2 ^o	1 505.7 ^o	1 591.2 ^o	1 646.1 ^o	1 642.4 ^{o,p}
New Zealand	..	..	418.5	..	401.1	..	..
Norway	..	684.9	766.3	778.7	831.6	886.1	883.9 ^p
Poland	840.5	1 466.8	1 669.1	2 054.1	2 208.3	2 188.5	2 124.4
Portugal	316.9 ^c	290.1	319.8	310.6	305.6	209.4	228.4 ^p
Slovak Republic	94.9 ^d	194.9 ^d	200.9 ^d	244.5 ^d	249.9 ^d	276.5 ^d	243.9 ^d
Slovenia	125.0	213.2	211.6	211.9	202.8 ^a	197.5	200.1 ^p
Spain	1 233.1	3 710.8	4 125.6	4 085.2	3 924.0	3 713.8	3 582.7 ^p
Sweden	..	599.3 ^c	556.4	613.1 ^c	578.1	658.1 ^c	521.2 ^m
Switzerland	75.7 ^{a,h}	77.5 ^h	..	82.8 ^h	..	100.2 ^h	..
Turkey	174.9	925.4	1 114.5	1 127.6	1 273.9	1 367.5	1 387.9
United Kingdom	3 521.0	3 606.0	3 613.4	3 633.5	3 357.0	3 126.2	2 913.8 ^{c,p}
United States	29 076.0 ^h	46 220.0 ^h	48 455.0 ^h	51 632.0 ^h	54 328.0 ^h	55 853.0 ^{h,p}	..
EU28 (OECD estimates)	26 089.8 ^b	38 820.4 ^b	40 830.2 ^b	41 099.0 ^b	42 436.0 ^b	43 073.2 ^b	43 629.6 ^b
OECD-Total	73 252.4^b	110 270.4^b	116 169.7^b	121 376.5^b	124 790.8^b	128 293.6^b	128 709.6^b
Argentina	609.6	1 233.5	1 525.2	1 700.5	1 890.2	2 364.4	..
China	10 274.5	26 459.7	34 489.5 ^a	38 599.7	40 473.8	47 683.3	54 367.1
Romania	88.2	764.5	521.2	557.6	702.8 ^a	711.2	715.2
Russian Federation	2 567.8	9 055.8	10 487.2	10 242.6	10 500.4	12 484.7	12 316.1
Singapore	421.7	612.5	747.4	745.3	851.1	815.5	..
South Africa	..	1 064.1	1 046.9	1 002.1	1 040.1	1 114.8	..
Chinese Taipei	2 156.1 ^d	3 591.0	3 754.4	3 966.8	4 138.9	4 072.2	4 067.0

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 51. Government intramural expenditure on R&D (GOVERD) as a percentage of GDP

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	0.33	0.27	..	0.27 ^c	0.24 ^c	0.24	..
Austria	..	0.14 ^c	0.14	0.14 ^c	0.14	0.14 ^c	0.14 ^{c,p}
Belgium	0.12	0.17	0.18	0.17	0.17	0.20 ^c	0.20 ^p
Canada	0.21	0.18	0.20	0.20	0.17	0.16	0.15 ^p
Chile	..	0.04 ^y	0.01 ^y	0.01 ^y	0.01 ^y	0.01 ^y	..
Czech Republic	0.28	0.28	0.30	0.29	0.31	0.33	0.35 ^p
Denmark	0.27	0.07	0.06	0.06	0.06	0.07	0.07 ^{c,p}
Estonia	0.14	0.15	0.15	0.17	0.19	0.20	0.16
Finland	0.34	0.28	0.34	0.34	0.32	0.31	0.30
France	0.36 ^a	0.33	0.36	0.30 ^a	0.30	0.29	0.29 ^p
Germany	0.33 ^o	0.37 ^o	0.40 ^o	0.40 ^o	0.41 ^o	0.41 ^o	0.43 ^{c,o,p}
Greece	..	..	..	..	0.16 ^a	0.17	0.21 ^p
Hungary	0.21 ^{d,v}	0.23 ^y	0.23 ^y	0.21 ^y	0.19 ^y	0.18 ^y	0.21 ^y
Iceland	0.66 ^c	0.45	0.59	..	0.44 ^a	..	..
Ireland	0.09	0.09	0.08	0.08	0.08	0.08	0.07
Israel ¹	0.13 ^{a,d}	0.08 ^d	0.08 ^d	0.08 ^d	0.09 ^d	0.09 ^d	0.09 ^d
Italy	0.19	0.15	0.16	0.17	0.16	0.19	0.19 ^p
Japan	0.30 ^y	0.29 ^y	0.31 ^y	0.29 ^y	0.28 ^y	0.29 ^y	0.32 ^y
Korea	0.29 ^g	0.38	0.43	0.44	0.44	0.45	..
Luxembourg	0.11	0.26	0.28 ^a	0.30	0.27	0.27	0.27 ^{c,p}
Mexico	0.14	0.12	0.12	0.15	0.13	..	..
Netherlands	0.22 ^a	0.20 ^o	0.21 ^o	0.20 ^o	0.21 ^o	0.21 ^o	0.21 ^{o,p}
New Zealand	..	..	0.32 ^y	..	0.29 ^y	..	..
Norway	..	0.23	0.28	0.27	0.27	0.27	0.27 ^p
Poland	0.21	0.21	0.23	0.26	0.26	0.25	0.23
Portugal	0.17 ^c	0.11	0.12	0.11	0.11	0.07	0.08 ^p
Slovak Republic	0.16 ^d	0.15 ^d	0.16 ^d	0.19 ^d	0.18 ^d	0.20 ^d	0.17 ^d
Slovenia	0.35	0.36	0.38	0.38	0.35 ^a	0.34	0.34 ^p
Spain	0.14	0.24	0.27	0.27	0.26	0.24	0.23 ^p
Sweden	..	0.16 ^c	0.15	0.16 ^c	0.14	0.16 ^c	0.12 ^m
Switzerland	0.03 ^{a,h}	0.02 ^h	..	0.02 ^h	..	0.02 ^h	..
Turkey	0.03 ^y	0.09 ^y	0.11 ^y	0.10 ^y	0.10 ^y	0.10 ^y	0.10 ^y
United Kingdom	0.22	0.15	0.16	0.16	0.15	0.13	0.12 ^{c,p}
United States	0.28 ^h	0.31 ^h	0.34 ^h	0.35 ^h	0.35 ^h	0.35 ^{h,p}	..
EU28 (OECD estimates)	0.24 ^b	0.23 ^b	0.25 ^b	0.25 ^b	0.24 ^b	0.24 ^b	0.24 ^b
OECD-Total	0.25^b	0.26^b	0.28^b	0.28^b	0.28^b	0.28^b	0.27^b
Argentina	0.14	0.18	0.22	0.22	0.22	0.27	..
China	0.29 ^y	0.27 ^y	0.31 ^{a,y}	0.32 ^y	0.30 ^y	0.32 ^y	0.33 ^y
Romania	0.07	0.23	0.16	0.17	0.20 ^a	0.20	0.19
Russian Federation	0.26 ^y	0.31 ^y	0.38 ^y	0.35 ^y	0.33 ^y	0.36 ^y	0.34 ^y
Singapore	0.26	0.20	0.24	0.21	0.22	0.20	..
South Africa	..	0.19 ^y	0.19 ^y	0.17 ^y	0.17 ^y	0.17 ^y	..
Chinese Taipei	0.46 ^{d,y}	0.47 ^y	0.49 ^y	0.47 ^y	0.46 ^y	0.43 ^y	0.42 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 52. Government intramural expenditure on R&D (GOVERD)
at 2005 prices and PPPs**

Million 2005 USD

	2000	2008	2009	2010	2011	2012	2013
Australia	2 025.5	2 139.3	..	2 235.0 ^c	2 030.9 ^c	2 138.2	..
Austria	..	428.7 ^c	416.4	436.8 ^c	432.0	456.7 ^c	458.2 ^{c,p}
Belgium	384.5	632.7	634.8	635.5	649.0	738.8 ^c	754.0 ^p
Canada	2 156.7	2 244.6	2 405.4	2 507.2	2 150.1	2 059.5	1 970.4 ^p
Chile	..	86.0	27.6	30.3	36.9	41.0	..
Czech Republic	530.7	743.5	757.1	744.4	806.8	854.2	899.2 ^p
Denmark	473.1	138.9	115.7	120.0	112.6	133.6	135.4 ^{c,p}
Estonia	22.1	37.5	33.1	36.9	45.4	50.2	39.6
Finland	508.3	528.5	580.1	603.6	578.4	547.8	518.2
France	6 381.5 ^a	6 627.3	7 046.1	6 079.7 ^a	6 177.3	5 974.2	6 008.1 ^p
Germany	8 377.9 ^o	10 481.9 ^o	10 944.0 ^o	11 324.6 ^o	11 868.2 ^o	12 083.0 ^o	12 632.1 ^{c,o,p}
Greece	..	..	..	..	400.2 ^a	400.2	475.4 ^p
Hungary	292.2 ^{d,v}	423.3 ^v	392.1 ^v	367.6 ^v	332.1 ^v	318.2 ^v	368.1 ^v
Iceland	57.6 ^c	55.7	68.9	..	51.4 ^a	..	..
Ireland	117.1	163.3	138.8	130.2	133.6	131.9	127.6
Israel ¹	196.0 ^{a,d}	155.0 ^d	155.5 ^d	171.6 ^d	209.9 ^d	206.1 ^d	212.9 ^d
Italy	3 119.1	2 607.3	2 670.9	2 834.3	2 757.9	3 108.9	3 040.2 ^p
Japan	10 880.9	11 551.1	11 690.8	11 613.1	11 155.2	11 541.9	12 969.7
Korea	2 685.9 ^g	5 008.1	5 741.8	6 265.0	6 492.7	6 852.6	..
Luxembourg	30.2	92.5	91.8 ^a	103.3	96.9	96.5	98.1 ^{c,p}
Mexico	1 680.2	1 699.4	1 600.6	2 142.7	1 962.9	..	..
Netherlands	1 234.4 ^a	1 319.3 ^o	1 384.2 ^o	1 318.8 ^o	1 360.3 ^o	1 389.8 ^o	1 369.4 ^{o,p}
New Zealand	..	..	359.7	..	329.7	..	..
Norway	..	595.0	662.6	652.3	674.8	695.1	693.9 ^p
Poland	943.5	1 329.0	1 462.1	1 725.9	1 805.6	1 756.5	1 674.3
Portugal	383.0 ^c	254.6	270.8	260.8	252.2	166.1	175.8 ^p
Slovak Republic	109.9 ^d	171.4 ^d	171.5 ^d	207.4 ^d	211.9 ^d	231.7 ^d	201.0 ^d
Slovenia	140.7	198.7	193.9	195.3	181.6 ^a	172.0	169.9 ^p
Spain	1 441.7	3 183.6	3 478.0	3 477.0	3 274.6	3 023.7	2 862.3 ^p
Sweden	..	518.0 ^c	477.2	525.4 ^c	482.0	541.0 ^c	422.8 ^m
Switzerland	82.5 ^{a,h}	64.8 ^h	..	67.0 ^h	..	75.0 ^h	..
Turkey	185.4	762.4	893.6	882.4	968.0	1 029.8	1 042.6
United Kingdom	3 946.5	3 394.3	3 360.7	3 451.9	3 161.1	2 876.7	2 648.5 ^{c,p}
United States	32 662.3 ^h	42 839.5 ^h	44 572.5 ^h	46 921.9 ^h	48 373.2 ^h	48 854.1 ^{h,p}	..
EU28 (OECD estimates)	29 697.5 ^b	34 671.5 ^b	35 608.4 ^b	35 459.1 ^b	35 703.5 ^b	35 719.6 ^b	35 739.6 ^b
OECD-Total	82 411.5^b	100 892.5^b	104 931.3^b	108 333.2^b	109 050.1^b	110 464.5^b	109 575.3^b
Argentina	684.6	1 143.3	1 403.0	1 545.6	1 683.1	2 067.7	..
China	11 752.0	24 705.7	31 427.9 ^a	35 439.9	36 600.7	42 371.8 ^b	47 601.5 ^b
Romania	105.9	595.4	382.9	391.7	478.3 ^a	472.2	470.8
Russian Federation	3 237.1	6 595.4	7 320.5	7 063.6	6 851.7	7 884.7	7 500.5
Singapore	473.6	567.2	687.4	676.8	757.1	713.4	..
South Africa	..	986.4	963.1	910.8	927.1	976.6	..
Chinese Taipei	2 422.0 ^d	3 328.4	3 453.7	3 605.0	3 685.1	3 561.8	3 505.2

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 53. Percentage of Government intramural expenditure on R&D (GOVERD) financed by industry

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	12.3	9.9	..	..	7.1 ^c	7.7	..
Austria	..	..	6.0	..	4.2	..	..
Belgium	7.2	11.4	7.7	6.7	5.7	..	..
Canada	3.1	4.3	4.3	4.0	2.8	2.1	2.3 ^p
Chile	..	4.4	0.9	0.7	2.0	2.4	..
Czech Republic	9.6	5.9	4.2	4.7	3.4	4.0	3.3 ^p
Denmark	6.7	..	0.4	0.9	3.6	1.6	1.6 ^{c,p}
Estonia	13.1	1.3	1.9	2.4	1.5	1.2	1.3
Finland	14.5	14.2	13.6	9.7	11.0	9.9	9.9
France	6.7 ^a	6.7	7.2	8.0 ^a	7.8	7.8	..
Germany	2.2 ^o	9.3 ^o	9.8 ^o	9.0 ^o	9.3 ^o	10.3 ^o	..
Greece	..	..	..	..	6.6 ^a	5.5	3.5 ^p
Hungary	10.9 ^{d,v}	13.3 ^v	12.6 ^v	12.7 ^v	11.5 ^v	9.8 ^v	9.7 ^v
Iceland	..	8.3	7.2	..	16.3 ^a	..	..
Ireland	10.7	1.1	2.0	1.6	1.7	1.8	1.9
Israel ¹	2.3 ^{a,d}	1.0 ^d	1.2 ^d	2.9 ^d	1.8 ^d	1.5 ^d	..
Italy	1.7	5.3	5.1	4.8	5.3	5.3	..
Japan	1.0	0.7	0.7	0.7	2.0	1.7	1.9
Korea	9.5 ^g	3.5	3.1	3.5	3.2	3.5	..
Luxembourg	5.8	..	3.2 ^a	2.6	6.5	6.0	6.0 ^{c,p}
Mexico	4.9	3.3	3.1	1.4	1.6	..	..
Netherlands	..	..	32.4 ^o	..	11.3 ^o	16.1 ^o	17.8 ^{o,p}
New Zealand	..	..	14.5	..	17.6	..	..
Norway	..	10.9	10.3	10.1	9.5	9.1	..
Poland	9.5	6.0	6.3 ^o	6.2 ^o	7.4	4.9	4.3
Portugal	3.6 ^c	4.2	1.6	3.6	1.0	1.5	..
Slovak Republic	12.8 ^d	15.7 ^d	14.4 ^d	13.0 ^d	12.5 ^d	13.2 ^d	8.2 ^d
Slovenia	13.0	12.7	11.7	13.0	7.0 ^a	8.4	7.6 ^p
Spain	6.1	5.9	7.4	7.2	6.9	5.0	..
Sweden	..	..	5.1	..	5.2	..	3.7
Switzerland	..	..	..	..	..	..	..
Turkey	5.4	6.6	3.4	1.8	2.0	2.1	2.0
United Kingdom	10.4	7.9	8.0	7.4	9.7	12.5	15.8 ^{c,p}
United States	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^{h,p}	..
EU28 (OECD estimates)	6.2 ^b	8.2 ^b	8.8 ^b	8.1 ^b	8.2 ^b	8.5 ^b	..
OECD-Total	3.2^b	3.6^b	3.7^b	3.3^b	3.4^b	3.5^b	..
Argentina	0.6 ^c	0.6	0.2	0.5	1.1	1.9	..
China	9.6	4.7	4.3 ^a	4.4	4.2	4.1	4.6
Romania	23.4	14.4	13.5	19.0	22.7 ^a	17.3	16.0
Russian Federation	10.8	12.4	11.1	12.9	11.8	13.1	13.8
Singapore	1.3	2.9	2.6	3.5	2.9	3.8	..
South Africa	..	3.6	2.7	4.4	1.4	2.7	..
Chinese Taipei	9.3 ^d	2.3	2.3	2.9	2.6	3.0	3.1

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 54. Government researchers in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	8 724	8 285	..	..	8 704	..	..
Austria	..	1 513 ^c	1 559	1 568 ^c	1 511	1 603 ^c	1 626 ^{c,p}
Belgium	1 809	2 661	2 820	2 650	2 781	3 274 ^c	3 322 ^p
Canada	7 440	8 870	9 170	9 610	9 450	9 490	..
Chile	..	563	269	292	337	404	..
Czech Republic	4 424	7 084	6 270	6 244	6 235	6 066	6 326 ^p
Denmark	3 569 ^u	1 159	1 115	1 216	1 180	1 208	1 207 ^{c,p}
Estonia	559	531	513	548	536	546	553
Finland	4 487 ^u	4 541	4 505	4 551	4 630	4 432	4 482
France	26 132 ^{a,d}	27 372 ^d	28 702 ^d	26 611 ^a	26 808	27 381	28 120 ^p
Germany	37 667	45 342	49 241	51 783	54 185	55 597	56 700 ^{c,p}
Greece	..	..	..	..	4 370 ^a	4 389	5 762 ^p
Hungary	4 653 ^d	4 720	4 928	5 027	5 271	4 674	4 782
Iceland	..	480	547	..	411 ^a	..	..
Ireland	737 ^a	537	520	562	547	495	437
Israel ¹	..	..	..	..	477 ^d	503 ^{c,d}	..
Italy	14 315	15 555	16 678	17 496	18 780	20 499	20 547 ^p
Japan	31 228	32 050	32 715	32 422	32 164	31 567	30 904
Korea	11 564 ^q	15 552	18 217	19 753	21 203	22 204	..
Luxembourg	225	553	597	658	737	700	721 ^{c,p}
Mexico	..	8 019	8 283	8 756	9 154	..	..
Netherlands	5 952 ^a	7 000 ^o	6 820 ^o	6 959 ^o	6 772 ^o	7 791 ^o	7 911 ^{o,p}
New Zealand	..	..	2 200	..	1 900	..	..
Norway	..	3 930 ^u	4 450 ^u	4 479	4 601	4 654	4 675 ^p
Poland	11 100	12 917	13 193	13 553	13 824	13 583	13 571
Portugal	3 546 ^c	3 203	2 765	2 440	2 531	1 682	1 615 ^p
Slovak Republic	2 526 ^d	2 851 ^d	2 763 ^d	2 999 ^d	2 892 ^d	2 967 ^d	2 635 ^d
Slovenia	1 495	2 156	2 171	2 036	1 817 ^a	1 850	1 825 ^p
Spain	12 708	22 578	24 165	24 377	22 893	21 850	20 673 ^p
Sweden	..	1 770 ^c	1 483 ^m	1 892 ^{c,m}	2 097 ^{a,m}	2 002 ^{c,m}	2 386 ^{a,m}
Switzerland	405 ^{a,h}	488 ^h	..	471 ^h	..	430 ^h	..
Turkey	2 479	4 874	5 703	6 087	6 060	6 288	6 294
United Kingdom	15 004	8 695	8 701	8 620	7 571	7 729	7 731 ^{c,p}
United States	47 522 ^{d,h}	..	..	..	..	..	..
EU28 (OECD estimates)	169 291 ^b	189 326 ^b	195 829 ^b	198 085 ^b	200 657 ^b	202 913 ^b	205 606 ^b
OECD-Total	276 327^b	310 455^b	324 810^b	332 965^b	338 762^b	343 082^b	..
Argentina	9 548	18 722	20 079	21 452	22 566	23 237	..
China	193 353 ^t	238 970 ^t	219 483 ^a	231 699	250 250	269 581	288 675
Romania	5 244	6 169	5 744	5 590	5 846 ^a	6 372	6 583
Russian Federation	142 191	145 988	146 211	145 056	141 572	149 593	144 776
Singapore	1 247	1 687	1 841	1 757	1 827	1 756	..
South Africa	..	3 052	2 932	2 651	2 645	2 789	..
Chinese Taipei	11 658 ^d	13 912	14 390	15 131	14 706	14 630	14 599

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 55. Government researchers as a percentage of national total

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	13.2	8.9	..	..	..	..	..
Austria	..	4.4 ^c	4.5	4.3 ^c	4.1	4.1 ^c	4.1 ^{c,p}
Belgium	5.9	7.2	7.4	6.5	6.5	7.5 ^c	7.4 ^p
Canada	6.9	5.6	6.1	6.1	5.8	6.1	..
Chile	..	9.4	5.5 ^l	5.4 ^l	5.5 ^l	5.9 ^l	..
Czech Republic	31.9	23.8	21.8	21.4	20.3	18.3	18.5 ^p
Denmark	..	3.2 ^c	3.0	3.2	3.0	3.0	3.0 ^{c,p}
Estonia	21.0	13.3	11.9	13.4	11.9	11.9	12.5 ^p
Finland	12.9 ^u	11.1	11.0	11.0	11.6 ^a	11.0	11.4
France	15.2 ^{a,d}	12.0 ^d	12.2 ^d	10.9 ^a	10.8	10.6	10.6 ^p
Germany	14.6 ^c	15.0 ^c	15.5	15.8 ^c	16.0	15.8 ^c	15.7 ^{c,p}
Greece	..	..	..	..	17.7 ^a	18.2	20.8 ^p
Hungary	32.3 ^d	25.5	24.6	23.6	22.9	19.6	19.1
Iceland	..	20.8	21.8	..	18.2 ^a	..	..
Ireland	8.7 ^{a,c}	3.7	3.7 ^c	4.0 ^c	3.6 ^c	3.1 ^c	..
Israel ¹	..	..	..	..	0.9 ^d	0.8 ^{c,d}	..
Italy	21.7	16.2	16.4	16.9	17.7	18.5	17.4 ^p
Japan	4.8	4.9 ^a	5.0	4.9	4.9	4.9	4.7
Korea	10.7 ^y	6.6	7.5	7.5	7.3	7.0	..
Luxembourg	13.6	24.2	24.9	25.0	24.3	28.1 ^a	27.6 ^{c,p}
Mexico	..	21.3	19.3	19.4	19.8	..	..
Netherlands	14.1 ^a	13.8 ^o	14.5 ^o	13.0 ^o	11.6 ^{a,o}	11.0 ^o	10.9 ^{o,p}
New Zealand	..	..	13.7	..	11.7	..	..
Norway	..	15.4 ^u	16.9 ^u	16.9	16.9	16.7	..
Poland	20.1	20.9	21.6	21.0	21.6	20.3	19.0
Portugal	21.2 ^c	7.9 ^a	6.9	5.9	5.7	4.0	3.7 ^p
Slovak Republic	25.4 ^d	22.7 ^d	20.8 ^d	19.7 ^d	18.9 ^d	19.4 ^d	17.9 ^d
Slovenia	34.5	30.7 ^a	29.2	26.4	20.7 ^a	20.8	21.0 ^p
Spain	16.6	17.2 ^a	18.1	18.1	17.6	17.2	16.7 ^p
Sweden	..	3.5 ^c	3.1	3.8 ^c	4.3 ^a	4.1 ^c	3.8 ^a
Switzerland	1.6 ^{a,h}	1.9 ^h	..	..	..	1.2 ^h	..
Turkey	10.7	9.2	9.9	9.5	8.4	7.7	7.1
United Kingdom	8.8 ^b	3.5 ^c	3.4 ^c	3.4 ^c	3.0	3.0 ^c	3.0 ^{c,p}
United States	4.8 ^{b,d,h}	..	..	..	..	..	..
EU28 (OECD estimates)	15.1 ^b	12.4 ^b	12.6 ^b	12.4 ^b	12.4 ^b	12.1 ^b	11.9 ^b
OECD-Total	8.8^b	7.7^b	7.9^b	8.0^b	7.9^b	..	..
Argentina	36.1	45.1	45.9	45.1	44.8	45.0	..
China	27.8 ^{a,t}	15.0 ^t	19.0 ^a	19.1	19.0	19.2	19.5
Romania	25.6	31.8	29.8	28.3	36.4 ^a	35.4	35.2
Russian Federation	28.1	32.4	33.1	32.8	31.6	33.7	32.9
Singapore	7.5	6.1	6.0	5.5	5.4	5.1	..
South Africa	..	15.7	14.8	14.2	13.1	13.0	..
Chinese Taipei	21.0 ^{d,l}	12.6	12.1	11.8	11.0	10.5	10.4

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 56. Government Total R&D personnel in full-time equivalent

FTE

	2000	2008	2009	2010	2011	2012	2013
Australia	18 151	17 042	..	..	16 760	..	..
Austria	..	2 711 ^c	2 679	2 680 ^c	2 567	2 723 ^c	2 762 ^{c,p}
Belgium	3 493	4 326	4 591	4 404	4 573	5 212 ^c	5 308 ^p
Canada	17 240	19 240	20 160	19 880	19 740	19 070	..
Chile	..	1 272	375	404	504	607	..
Czech Republic	7 148	11 386	11 180	10 926	11 133	11 345	11 749 ^p
Denmark	5 658	1 544	1 456	1 563	1 511	1 543	1 541 ^{c,p}
Estonia	948	747	718	772	776	774	851
Finland	7 314	7 122	6 787	6 836	6 881	6 360	6 319
France	53 388 ^a	52 055 ^d	53 148 ^d	49 925 ^a	49 685	49 861	51 636 ^p
Germany	71 454 ^o	83 066 ^o	86 633 ^o	90 531 ^o	93 663 ^o	95 882 ^o	97 800 ^{c,o,p}
Greece	..	..	..	..	9 620 ^a	9 982	11 894 ^p
Hungary	8 204 ^d	8 050	8 234	8 225	8 480	7 605	7 765
Iceland	..	733	816	..	594 ^a	..	..
Ireland	1 436 ^a	1 122	1 048	1 027	1 034	921	818
Israel ¹	..	..	..	..	837 ^d	883 ^{c,d}	..
Italy	31 231	34 076	33 764	34 665	36 153	37 851	38 146 ^p
Japan	59 254	61 901	63 045	61 830	62 833	62 752	61 486
Korea	13 182 ^g	21 768	25 785	26 939	28 246	32 977	..
Luxembourg	303	809	909	1 006	1 109	1 089	1 122 ^{c,p}
Mexico	..	..	..	..	..	..	..
Netherlands	12 627 ^a	12 182 ^o	11 416 ^o	11 424 ^o	11 240 ^o	12 074 ^o	12 098 ^{o,p}
New Zealand	..	..	3 600	..	3 300	..	..
Norway	..	5 653	6 270	6 332	6 556	6 670	6 775 ^p
Poland	18 823	18 262	18 429	20 180	21 407	21 804	21 884
Portugal	5 936 ^c	4 582	3 875	3 328	3 265	2 204	2 112 ^p
Slovak Republic	4 189 ^d	4 207 ^d	3 957 ^d	4 359 ^d	4 103 ^d	4 168 ^d	3 545 ^d
Slovenia	2 565	3 260	3 252	3 141	2 628 ^a	2 579	2 596 ^p
Spain	22 400	41 139	45 353	46 008	43 913	41 787	39 349 ^p
Sweden	..	2 937 ^c	2 605 ^m	3 110 ^{c,m}	3 388 ^{a,m}	3 359 ^{c,m}	3 217 ^m
Switzerland	895 ^{a,h}	809 ^h	..	719 ^h	..	781 ^h	..
Turkey	4 069	9 871	11 007	11 357	11 749	12 088	12 004
United Kingdom	29 686	18 608	18 797	18 745	16 919	16 880	16 880 ^{c,p}
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	317 630 ^b	341 007 ^b	346 681 ^b	351 148 ^b	355 854 ^b	358 224 ^b	362 204 ^b
OECD-Total	..	..	..	..	..	..	..
Argentina	16 766	27 804	29 089	31 307	33 277	34 472	..
China	282 094 ¹	302 601 ¹	368 607 ^a	390 245	414 316	446 920	467 313
Romania	7 571	10 312	8 708	8 704	10 675 ^a	11 381	12 336
Russian Federation	276 373	282 929	282 207	280 506	276 341	292 894	282 051
Singapore	1 706	2 638	2 812	2 967	3 039	3 003	..
South Africa	..	6 774	6 687	6 491	6 208	7 346	..
Chinese Taipei	20 709 ^d	24 522	25 331	26 439	25 645	25 246	24 727

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

**Table 57. Total GBAORD (Government budget appropriations or outlays for R&D)
at current prices and PPPs**

Million USD

	2000	2009	2010	2011	2012	2013	2014
Australia	2 854.7 ^h	4 576.3 ^h	4 662.0 ^h	4 735.9 ^h	4 605.3 ^h	4 501.3 ^h	4 511.4 ^{b,h,p}
Austria	1 430.7 ^h	2 546.6 ^h	2 697.6 ^h	2 906.4 ^h	2 925.1 ^h	3 067.8 ^h	3 242.9 ^{b,h,p}
Belgium	1 598.2	2 667.6	2 780.6	2 852.4	2 954.6	2 967.2	..
Canada	4 589.9 ^h	8 406.8 ^h	8 483.4 ^h	7 736.9 ^h	7 736.3 ^h	..	..
Chile	..	..	..	691.5 ^v	814.7 ^v	904.2 ^v	..
Czech Republic	834.9	1 655.2	1 619.8	1 928.2	1 947.2	1 993.9	1 968.0 ^{b,p}
Denmark	1 171.5 ^c	2 091.3	2 195.6	2 411.0	2 444.8	2 538.8	2 561.3 ^{b,p}
Estonia	45.0	183.8 ^c	196.1 ^c	240.2 ^c	270.5 ^c	279.6 ^c	317.1 ^{b,p}
Finland	1 303.2	2 135.4	2 271.3	2 282.3	2 249.1	2 166.3	2 103.4 ^{b,p}
France	14 747.5	20 343.2	19 093.2	19 913.4	17 735.0	17 540.5	17 474.2 ^b
Germany	16 817.0	26 831.5	28 896.9	30 279.0	30 638.8	31 961.8	32 296.8 ^{b,p}
Greece	620.0	1 218.1	974.7	926.2	1 064.5	1 332.1	1 325.1 ^{b,p}
Hungary	..	952.4	766.9	662.9	763.0	1 521.9 ^t	..
Iceland	76.2	130.5	120.2	122.9	131.0	144.3	141.6 ^{b,p}
Ireland	314.2	1 007.1	987.8	955.2	913.4	880.3	..
Israel ¹	1 290.7 ^d	1 250.5 ^d	1 345.9 ^d	1 500.6 ^d	1 585.7 ^d	1 644.1	..
Italy	9 374.8	12 547.5	12 236.8	11 917.0	11 553.5	11 084.6	..
Japan	21 193.4 ^{g,h}	30 857.4 ^{g,h}	32 150.0 ^{g,h}	34 105.2 ^h	35 293.3 ^h	34 679.3 ^h	35 065.0 ^{b,h,p}
Korea	5 020.2	12 888.6	14 225.6	15 265.4	..	..	..
Luxembourg	25.1	217.8	244.1	282.7	314.0	338.5	359.9 ^{b,p}
Mexico	2 119.1	3 726.0	4 697.2	4 735.8	..	..	..
Netherlands	3 794.3	5 765.9	5 718.0	5 992.1	5 633.0	5 785.3	5 975.0 ^{b,p}
New Zealand	..	685.8	682.2	729.2	742.9	744.9	864.3 ^{b,p}
Norway	1 057.7	2 303.5	2 416.7	2 501.0	2 602.6	2 656.7	2 905.8 ^{b,p}
Poland	1 540.3	2 441.1	2 882.9	2 649.6	3 126.8 ^a	3 314.4	..
Portugal	1 020.1	2 767.7	2 797.2	2 830.5	2 622.2	2 681.5	2 779.6 ^{b,p}
Slovak Republic	213.0	448.0	495.6	624.1	567.8	563.7	587.8 ^{b,p}
Slovenia	174.1	380.1	339.6	348.1	308.8	287.0	304.5 ^{b,p}
Spain	5 177.3 ^c	12 263.6	11 581.5	10 302.1	8 984.7	7 808.1 ^p	..
Sweden	1 732.0	3 170.5	3 280.3	3 272.8	3 533.2	3 575.3	3 736.8 ^b
Switzerland	1 459.1	..	3 074.1	..	3 898.1	..	..
Turkey	..	3 959.9	4 025.0	4 462.2	4 304.7	5 241.0	4 687.4 ^{b,p}
United Kingdom	10 520.2	14 375.0	13 529.6	13 020.0	13 096.5	13 744.3 ^c	..
United States	83 612.5 ^{a,h,i}	164 292.0 ^{a,h,i}	148 962.0 ^{h,i}	144 379.0 ^{h,i}	143 737.0 ^{h,i}	132 477.0 ^{h,i}	135 665.0 ^{b,h,i,p}
EU28 (OECD estimates)	77 028.5	118 444.5	117 886.5	118 946.9	115 815.2	117 621.6	..
OECD-Total	200 248.6	352 595.7	341 122.6	341 070.4	340 080.8	331 970.2	..
Argentina	898.3 ^h	2 136.6 ^h	2 258.4 ^h	2 477.1 ^h	2 808.2 ^h	..	..
China	..	..	..	..	..	..	..
Romania	178.2	968.2	935.1	926.4	777.0	774.7 ^a	828.8 ^b
Russian Federation	4 685.5	15 625.1	15 026.4	18 096.8	19 725.7	23 082.8	18 608.2 ^{b,p}
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	2 961.2 ^d	6 600.4	7 003.4	7 362.6	7 300.7	7 254.8	7 376.3

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 58. Defence Budget R&D

As a percentage of total GBAORD (Government budget appropriations or outlays for R&D)

Percentage

	2000	2009	2010	2011	2012	2013	2014
Australia	7.1 ^h	6.6 ^h	6.4 ^h	6.7 ^h	6.5 ^h	6.4 ^h	6.3 ^{h,p}
Austria	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^h	0.0 ^{h,p}
Belgium	0.3	0.2	0.2	0.2	0.2	0.2	..
Canada	4.8 ^h	2.7 ^h	3.2 ^h	3.0 ^h	3.4 ^h	..	..
Chile	..	..	..	0.0 ^v	0.0 ^v	0.0 ^v	..
Czech Republic	2.2	2.4	2.2	1.7	1.6	1.5	1.6 ^p
Denmark	0.5 ^c	0.5	0.4	0.3	0.3	0.3	0.3 ^p
Estonia	..	1.0 ^c	0.3 ^c	0.3 ^c	0.3 ^c	0.5 ^c	..
Finland	1.3	1.8	2.7	2.5	2.6	1.9	2.2 ^p
France	21.4	21.8 ^v	14.7 ^v	6.8 ^v	7.1 ^v	6.3 ^v	6.6 ^v
Germany	7.8	5.4 ^s	5.0 ^s	3.9 ^s	3.9 ^s	3.7 ^s	3.8 ^{p,s}
Greece	0.4	0.4	0.3	0.9	0.7	0.4	0.3 ^p
Hungary	..	0.1	0.6	0.1	0.3	0.2 ^t	..
Iceland	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ^p
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	..
Israel ¹	..	..	..	..	..	..	..
Italy	0.8	0.7	0.7	0.7	0.7	0.8	..
Japan	4.1 ^{g,h,m}	3.7 ^{g,h,m}	4.8 ^{g,h,m}	2.6 ^{h,m}	2.9 ^{h,m}	4.6 ^{h,m}	4.4 ^{h,m,p}
Korea	20.5	16.0 ^c	15.8 ^c	16.3 ^c	..	..	..
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0 ^p
Mexico	0.0	0.0	0.0	0.0	..	..	..
Netherlands	1.8	1.7	1.6	1.5	1.7	1.2	1.3 ^p
New Zealand	..	0.0	0.0	0.0	0.0	0.0	0.0 ^p
Norway	5.0	4.4	4.3	4.3	4.4	4.3	4.0 ^p
Poland	..	..	..	..	7.2 ^a	5.2	..
Portugal	1.2	0.2	0.2	0.3	0.2	0.2	0.2 ^{c,p}
Slovak Republic	.. ⁿ	3.6	1.7	1.9	2.2	1.4	1.3 ^p
Slovenia	0.1	1.7	0.7	0.5	0.7	0.7	0.5 ^p
Spain	26.2 ^c	2.3	1.4	1.7	1.7	0.8 ^p	..
Sweden	7.1	8.4 ^v	7.6 ^v	7.8 ^v	8.1 ^v	4.0 ^v	3.8 ^v
Switzerland	0.7	..	0.5	..	0.4	..	..
Turkey	..	25.5	22.5	20.5	17.5	30.1	24.5 ^p
United Kingdom	35.6	18.7	18.2	14.5	16.2	15.9 ^c	..
United States	51.6 ^{a,h,i}	51.6 ^{a,h,i}	57.3 ^{h,i}	56.8 ^{h,i}	54.7 ^{h,i}	52.7 ^{h,i}	51.0 ^{h,i,p}
EU28 (OECD estimates)	12.9	8.1	6.4	4.5	4.8	4.4	..
OECD-Total	27.7	28.1	28.8	27.1	26.3	24.6	..
Argentina	1.0 ^h	0.8 ^h	1.3 ^h	1.6 ^h	1.4 ^h	..	..
China	..	..	..	..	..	..	..
Romania	1.6	3.4	1.8	2.0	4.9	1.4 ^a	1.8
Russian Federation	38.3	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	7.0	6.8	5.8	3.3	2.9	2.6

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Source: OECD, Main Science and Technology Indicators database, February 2015

Table 59. Civil Budget R&D

As a percentage of total GBAORD (Government budget appropriations or outlays for R&D)

Percentage

	2000	2009	2010	2011	2012	2013	2014
Australia	92.9 ^h	93.4 ^h	93.6 ^h	93.3 ^h	93.5 ^h	93.6 ^h	93.7 ^{h,p}
Austria	100.0 ^h	100.0 ^h	100.0 ^h	100.0 ^h	100.0 ^h	100.0 ^h	100.0 ^{h,p}
Belgium	99.7	99.8	99.8	99.8	99.8	99.8	..
Canada	95.2 ^h	97.3 ^h	96.8 ^h	97.0 ^h	96.6 ^h	..	..
Chile	..	..	..	100.0 ^v	100.0 ^v	100.0 ^v	..
Czech Republic	97.8	97.6	97.8	98.3	98.4	98.5	98.4 ^p
Denmark	99.5 ^c	99.5	99.6	99.7	99.7	99.7	99.7 ^p
Estonia	..	99.0 ^c	99.7 ^c	99.7 ^c	99.7 ^c	99.5 ^c	..
Finland	98.7	98.2	97.3	97.5	97.4	98.1	97.8 ^p
France	78.6	78.2 ^v	85.3 ^v	93.2 ^v	92.9 ^v	93.7 ^v	93.4 ^v
Germany	92.2	94.6 ^s	95.0 ^s	96.1 ^s	96.1 ^s	96.3 ^s	96.2 ^{p,s}
Greece	99.6	99.6	99.7	99.1	99.3	99.6	99.7 ^p
Hungary	..	99.9	99.4	99.9	99.7	99.8 ^t	..
Iceland	100.0	100.0	100.0	100.0	100.0	100.0	100.0 ^p
Ireland	100.0	100.0	100.0	100.0	100.0	100.0	..
Israel ¹	..	..	..	..	..	..	..
Italy	99.2	99.3	99.3	99.3	99.3	99.2	..
Japan	95.9 ^{g,h}	96.3 ^{g,h}	95.2 ^{g,h}	97.4 ^h	97.1 ^h	95.4 ^h	95.6 ^{h,p}
Korea	79.5	84.0 ^c	84.2 ^c	83.7 ^c	..	..	..
Luxembourg	100.0	100.0	100.0	100.0	100.0	100.0	100.0 ^p
Mexico	100.0	100.0	100.0	100.0	..	..	..
Netherlands	98.2	98.3	98.4	98.5	98.3	98.8	98.7 ^p
New Zealand	..	100.0	100.0	100.0	100.0	100.0	100.0 ^p
Norway	95.0	95.6	95.7	95.7	95.6	95.7	96.0 ^p
Poland	..	..	..	..	92.8 ^a	94.8	..
Portugal	98.8	99.8	99.8	99.7	99.8	99.8	99.8 ^{c,p}
Slovak Republic	.. ⁿ	96.4	98.3	98.1	97.8	98.6	98.7 ^p
Slovenia	99.9	98.3	99.3	99.5	99.3	99.3	99.5 ^p
Spain	73.8 ^c	97.7	98.6	98.3	98.3	99.2 ^p	..
Sweden	92.9	91.6 ^v	92.4 ^v	92.2 ^v	91.9 ^v	96.0 ^v	96.2 ^v
Switzerland	99.3	..	99.5	..	99.6	..	..
Turkey	..	74.5	77.5	79.5	82.5	69.9	75.5 ^p
United Kingdom	64.4	81.3	81.8	85.5	83.8	84.1 ^c	..
United States	48.4 ^{a,h,i}	48.4 ^{a,h,i}	42.7 ^{h,i}	43.2 ^{h,i}	45.3 ^{h,i}	47.3 ^{h,i}	49.0 ^{h,i,p}
EU28 (OECD estimates)	87.1	91.9	93.6	95.5	95.2	95.6	..
OECD-Total	72.3	71.9	71.2	72.9	73.7	75.4	..
Argentina	99.0 ^h	99.2 ^h	98.7 ^h	98.4 ^h	98.6 ^h	..	..
China	..	..	..	..	..	..	..
Romania	98.4	96.6	98.2	98.0	95.1	98.6 ^a	98.2
Russian Federation	61.7	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	93.0	93.2	94.2	96.7	97.1	97.4

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Main Science and Technology Indicators database, February 2015

Table 60. Civil GBAORD by socio-economic objectives (million current PPP\$)
2014 or latest year available

	Economic development	Health and environment	Education and society	Space programmes	Non-oriented research	General university funds
Australia	1 072.3 ^{b, h, p}	1 329.3 ^{b, h, p}	84.7 ^{b, h, p}	25.2 ^{b, h, p}	418.5 ^{b, h, p}	1 299.2 ^{b, h, p}
Austria	622.6 ^{b, h, p}	288.8 ^{b, h, p}	99.8 ^{b, h, p}	20.9 ^{b, h, p}	436.2 ^{b, h, p}	1 774.5 ^{b, h, p}
Belgium	1 139.4	141.5	165.4	264.9	743.7	507.5
Canada	2 111.2 ^h	1 827.1 ^h	458.2 ^h	205.4 ^h	679.7 ^h	2 190.6 ^c
Chile	203.3	143.9	36.5	17.0	273.1	146.7
Czech Republic	475.3 ^{b, p}	214.6 ^{b, p}	84.3 ^{b, p}	40.2 ^{b, p}	627.7 ^{b, p}	494.0 ^{b, p}
Denmark	382.1 ^{b, p}	380.1 ^p	209.9 ^{b, p}	32.9 ^{b, p}	408.9 ^{b, p}	1 138.9 ^{b, p}
Estonia	76.6 ^c	43.1 ^c	28.4 ^c	7.7 ^c	122.5 ^c	0.0 ^c
Finland	703.8 ^{b, p}	155.2 ^{b, p}	119.6 ^{b, p}	42.2 ^{b, p}	413.7 ^{b, p}	622.8 ^{b, p}
France	2 519.7 ^{b, v}	1 731.8 ^{b, v}	892.2 ^{b, v}	1 712.4 ^v	3 841.3 ^{b, v}	4 462.8 ^{b, v}
Germany	6 850.3 ^{b, p, s}	3 133.9 ^{b, p, s}	1 351.5 ^{b, p, s}	1 500.0 ^{b, p, s}	5 517.7 ^{b, p, s}	13 159.3 ^{b, p, s}
Greece	200.6 ^{b, p}	186.9 ^{b, p}	211.0 ^{b, p}	21.5 ^{b, p}	96.2 ^{b, p}	605.0 ^{b, p}
Hungary	545.0 ^t	224.0 ^t	63.1 ^t	7.9 ^t	538.1 ^t	141.1 ^t
Iceland	27.5 ^{b, p}	14.2 ^{b, p}	18.4 ^{b, p}	.. ⁿ	27.9 ^{b, p}	53.6 ^{b, p}
Ireland	323.0	64.4	34.5	20.8	280.8	156.8
Israel	628.5	35.8	56.6	4.4	72.0	846.9
Italy	2 226.6	1 982.8	1 170.8	965.5	286.8	4 365.0
Japan	8 552.6 ^{b, h, p}	2 736.6 ^{b, h, p}	233.6 ^{b, h, p}	2 068.6 ^{b, h, p}	7 484.0 ^{b, h, p}	12 438.2 ^{b, h, p}
Korea	6 380.7 ^c	1 806.8 ^c	340.0 ^c	301.4 ^c	3 950.8 ^{c, o}	.. ⁿ
Luxembourg	62.2 ^{b, p}	78.8 ^{b, p}	101.3 ^{b, p}	1.3 ^{b, p}	77.1 ^{b, p}	39.1 ^{b, p}
Mexico	1 519.1	725.5	132.9	.. ⁿ	.. ⁿ	2 358.4 ^o
Netherlands	935.8 ^{b, p}	294.4 ^{b, p}	166.8 ^{b, p}	152.3 ^{b, p}	1 065.9 ^{b, p}	3 160.0 ^{b, p}
New Zealand	259.0 ^{b, p}	182.3 ^{b, p}	14.7 ^{b, p}	0.0 ^{b, p}	189.4 ^{b, p}	219.0 ^{b, p}
Norway	619.4 ^{b, p}	591.3 ^{b, p}	224.5 ^{b, p}	58.4 ^{b, p}	357.9 ^{b, p}	937.2 ^{b, p}
Poland	819.6	799.0	193.7	78.4	1 198.7	52.2
Portugal	464.0 ^{b, p}	467.8 ^{b, p}	229.2 ^{b, p}	20.2 ^{b, p}	480.2 ^{b, p}	1 111.6 ^{b, p}
Slovak Republic	88.9 ^{b, p}	75.7 ^{b, p}	56.8 ^{b, p}	2.7 ^{b, p}	92.6 ^{b, p}	263.3 ^{b, p}
Slovenia	81.1 ^{b, p}	42.8 ^{b, p}	20.8 ^{b, p}	1.2 ^{b, p}	156.3 ^{b, p}	0.7 ^{b, p}
Spain	1 526.6 ^p	1 609.27	318.2 ^p	268.1 ^p	1 580.1 ^p	2 444.7 ^p
Sweden	498.0 ^{b, v}	147.4 ^{b, v}	108.6 ^{b, v}	64.9 ^{b, v}	832.3 ^{b, v}	1 861.0 ^{b, v}
Switzerland	105.2	20.8	27.2	0.0	1 409.6	2 318.8
Turkey	977.0 ^{b, p}	179.2 ^{b, p}	95.2 ^{b, p}	13.3 ^{b, p}	492.1 ^{b, p}	1 782.1 ^{b, p}
United Kingdom	1 824.9 ^{c, p}	3 702.0 ^{c, p}	505.9 ^{c, p}	451.8 ^{c, p}	1 824.4 ^{c, p}	3 244.7 ^{c, p}
United States	7 344.0 ^{b, h, p}	35 476.0 ^{b, h, p}	2 072.0 ^{b, h, p}	11 124.0 ^{b, h, p}	10 279.0 ^{b, h, p}	0.0 ^{b, h}
EU28 (OECD estimates)	23 305.6	15 999.0	6 221.8	5 716.3	20 835.3	39 463.0
OECD total	51 272.9	60 746.0	8 901.7	19 362.1	46 472.8	62 872.5
Argentina	1 232.3 ^h	574.1 ^h	134.7 ^h	217.9 ^h	539.6 ^h	69.7 ^h
China	..	..	..	..	..	..
Romania	218.0 ^b	115.8 ^b	61.7 ^b	13.1 ^b	405.3 ^b	..
Russian Federation	1 986.6	421.3	516.4	3 340.8	..	..
Singapore	..	..	..	..	..	..
South Africa	..	..	..	..	..	..
Chinese Taipei	2 499.3	1 779.3	342.9	181.4	1 725.6	658.5

Source: OECD, Main Science and Technology Indicators Database, February 2015.

Table 61. R&D expenditure of foreign affiliates at current prices and PPPs

Million USD

	2000	2007	2008	2009	2010	2011	2012
Australia	..	3 845.5	4 149.8	3 729.5	3 524.5	3 698.1 ^P	..
Austria	..	2 980.1 ^a	..	3 133.9	..	2 515.4 ^{a,p}	..
Belgium	..	2 959.3	..	2 866.9	..	4 411.3 ^P	..
Canada	2 951.4	4 659.7	4 973.3	4 417.7	4 544.8 ^P	4 557.6 ^P	4 793.7 ^P
Chile	..	..	..	..	..	..	..
Czech Republic	412.7	1 359.7	1 328.6 ^{a,p}	1 312.5 ^P	..	..	..
Denmark	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..
Finland	401.2	..	834.0 ^a	623.0 ^a	..	619.4 ^P	..
France	..	5 779.9	6 583.7	8 618.6	8 906.7	9 379.9	9 621.7 ^P
Germany	..	13 494.0 ^P	..	15 167.5	..	16 882.6 ^P	..
Greece	..	..	..	..	..	..	..
Hungary	..	397.9	420.9	445.2 ^P	..	..	..
Iceland	..	..	..	..	..	..	..
Ireland	..	1 210.5	..	1 463.2	..	1 589.6 ^P	..
Israel ¹	..	4 809.6	4 676.3	4 619.0 ^P	..	..	..
Italy	..	3 170.4	3 165.3	3 222.1	3 307.8	3 410.7	3 425.9 ^P
Japan	2 528.5	5 906.0	6 399.5 ^a	6 572.3	5 567.1 ^P	..	..
Korea	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	..	..	..	..	..	..	..
Netherlands	1 303.3	..	2 038.4	1 322.9 ^a	1 390.3	1 613.3	1 721.2 ^P
New Zealand	..	..	..	..	..	..	..
Norway	..	603.3	..	..	..	..	..
Poland	113.7	337.4	388.0 ^a	611.9	..	442.8 ^P	..
Portugal	..	354.1 ^P	..	..	..	..	..
Slovak Republic	51.6	76.8 ^P	..	..	..	..	..
Slovenia	..	134.1	..	178.0 ^a	..	212.6 ^P	..
Spain	..	1 834.5 ^a	..	1 383.1	..	1 890.3 ^P	..
Sweden	..	3 230.9	..	2 806.3	..	3 462.9 ^P	..
Switzerland	..	..	1 117.4	..	..	..	1 848.4 ^P
Turkey	100.1	..	..	..	..	..	..
United Kingdom	5 674.3	9 551.7	10 663.1	11 131.4	9 529.8	12 633.2 ^P	12 592.4 ^P
United States	26 180.0	40 967.0	40 727.0	40 425.0	42 360.0	45 177.0	47 994.0 ^P
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Activities of Foreign Affiliates database, December 2014

**Table 62. R&D expenditure of foreign affiliates
as a percentage of R&D expenditures of enterprises**

Percentage

	2000	2007	2008	2009	2010	2011	2012
Australia	..	36.5	35.5	32.1	29.5	30.5 ^P	..
Austria	..	53.5 ^a	..	52.3	..	56.8 ^{a,p}	..
Belgium	..	59.4	..	53.8	..	66.0 ^P	..
Canada	29.3	33.8	36.9	33.2	35.1 ^P	34.2 ^P	37.0 ^P
Chile	..	..	..	..	..	..	..
Czech Republic	36.9	54.7	60.4 ^{a,p}	58.0 ^P	..	..	..
Denmark	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..
Finland	12.7	..	16.0 ^a	14.5 ^a	..	14.8 ^P	..
France	..	20.8	22.5	28.1	27.8	27.5	27.3 ^P
Germany	..	26.2 ^P	..	27.3	..	26.1 ^P	..
Greece	..	..	..	..	..	..	..
Hungary	..	62.6	57.4	52.6 ^P	..	..	..
Iceland	..	..	..	..	..	..	..
Ireland	..	72.4	..	69.9	..	71.1 ^P	..
Israel ¹	..	60.9	60.2	62.0 ^P	..	..	..
Italy	..	27.4	24.6	24.5	24.4	24.2	23.6 ^P
Japan	3.6	5.1	5.5 ^a	6.3	5.2 ^P	..	..
Korea	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	..	..	..	..	..	..	..
Netherlands	18.7	..	32.6	30.2 ^a	32.3	32.5	33.5 ^P
New Zealand	..	..	..	..	..	..	..
Norway	..	30.5	..	..	..	..	..
Poland	12.1	30.7	40.1 ^a	50.5	..	44.8 ^P	..
Portugal	..	23.1 ^P	..	..	..	..	..
Slovak Republic	20.4	37.5 ^P	..	..	..	..	..
Slovenia	..	28.2	..	33.2 ^a	..	29.1 ^P	..
Spain	..	34.3 ^a	..	26.6	..	35.2 ^P	..
Sweden	..	34.1	..	30.9	..	37.8 ^P	..
Switzerland	..	..	14.4	..	..	..	20.1 ^P
Turkey	10.6	..	..	..	..	..	..
United Kingdom	31.3	39.3	43.9	47.0	41.1	50.6 ^P	51.2 ^P
United States	13.0	15.2	14.0	14.3	15.2	15.4	15.9 ^P
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Activities of Foreign Affiliates database, December 2014

Table 63. Number of triadic patent families
By priority year

	2000	2007	2008	2009	2010	2011	2012
Australia	519	346	316	351	302	298 ^b	294 ^b
Austria	346	377	342	367	390	420 ^b	456 ^b
Belgium	456	429	455	478	476	493 ^b	490 ^b
Canada	612	679	687	678	549	549 ^b	556 ^b
Chile	2	7	9	11	14	16 ^b	15 ^b
Czech Republic	10	23	28	17	14	18 ^b	20 ^b
Denmark	290	316	344	257	297	304 ^b	311 ^b
Estonia	1	4	3	3	3	4 ^b	4 ^b
Finland	433	259	253	224	225	233 ^b	244 ^b
France	2 926	2 781	2 887	2 716	2 465	2 599 ^b	2 555 ^b
Germany	7 652	5 807	5 472	5 560	5 350	5 409 ^b	5 468 ^b
Greece	11	14	16	15	5	6 ^b	5 ^b
Hungary	43	59	32	50	37	40 ^b	40 ^b
Iceland	13	10	5	2	3	3 ^b	3 ^b
Ireland	50	93	84	85	63	69 ^b	73 ^b
Israel ¹	383	350	367	375	351	368 ^b	391 ^b
Italy	837	728	758	736	698	687 ^b	696 ^b
Japan	17 958	17 518	15 234	14 502	15 245	15 607 ^b	15 391 ^b
Korea	909	1 982	1 828	2 104	2 453	2 660 ^b	2 878 ^b
Luxembourg	22	15	20	20	23	23 ^b	22 ^b
Mexico	9	19	17	15	12	13 ^b	14 ^b
Netherlands	1 267	1 065	1 126	1 050	818	803 ^b	783 ^b
New Zealand	72	57	72	54	43	44 ^b	47 ^b
Norway	138	105	88	129	114	115 ^b	119 ^b
Poland	9	25	37	32	60	71 ^b	92 ^b
Portugal	5	42	29	17	15	14 ^b	15 ^b
Slovak Republic	2	4	4	2	8	7 ^b	8 ^b
Slovenia	9	12	16	17	16	15 ^b	16 ^b
Spain	193	257	267	254	232	248 ^b	244 ^b
Sweden	793	962	837	797	636	669 ^b	700 ^b
Switzerland	1 004	1 008	995	967	1 057	1 092 ^b	1 145 ^b
Turkey	5	9	27	27	34	38 ^b	40 ^b
United Kingdom	2 366	1 796	1 697	1 721	1 680	1 690 ^b	1 716 ^b
United States	15 666	13 931	13 857	13 559	12 805	13 229 ^b	13 765 ^b
EU28 (OECD estimates)	17 733	15 087	14 723	14 438	13 521	13 836 ^b	13 971 ^b
OECD-Total	55 014	51 089	48 210	47 192	46 493	47 856^b	48 614^b
Argentina	8	15	13	17	8	7 ^b	7 ^b
China	87	693	823	1 296	1 408	1 658 ^b	1 851 ^b
Romania	0	5	6	7	6	7 ^b	9 ^b
Russian Federation	85	79	58	87	88	101 ^b	116 ^b
Singapore	84	109	110	99	90	95 ^b	105 ^b
South Africa	51	37	52	35	30	29 ^b	31 ^b
Chinese Taipei	50	284	312	381	457	463 ^b	452 ^b

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Patent database, December 2014

Table 64. Share of countries in triadic patent families
By priority year

Percentage

	2000	2007	2008	2009	2010	2011	2012
Australia	0.93	0.66	0.63	0.71	0.61	0.58 ^b	0.57 ^b
Austria	0.62	0.72	0.68	0.74	0.79	0.82 ^b	0.88 ^b
Belgium	0.82	0.81	0.91	0.96	0.97	0.97 ^b	0.94 ^b
Canada	1.10	1.29	1.37	1.37	1.12	1.08 ^b	1.07 ^b
Chile	0.00	0.01	0.02	0.02	0.03	0.03 ^b	0.03 ^b
Czech Republic	0.02	0.04	0.06	0.03	0.03	0.04 ^b	0.04 ^b
Denmark	0.52	0.60	0.69	0.52	0.60	0.60 ^b	0.60 ^b
Estonia	0.00	0.01	0.01	0.01	0.01	0.01 ^b	0.01 ^b
Finland	0.78	0.49	0.51	0.45	0.46	0.46 ^b	0.47 ^b
France	5.26	5.27	5.76	5.47	5.01	5.10 ^b	4.92 ^b
Germany	13.75	11.01	10.92	11.19	10.87	10.62 ^b	10.52 ^b
Greece	0.02	0.03	0.03	0.03	0.01	0.01 ^b	0.01 ^b
Hungary	0.08	0.11	0.06	0.10	0.08	0.08 ^b	0.08 ^b
Iceland	0.02	0.02	0.01	0.00	0.01	0.01 ^b	0.01 ^b
Ireland	0.09	0.18	0.17	0.17	0.13	0.14 ^b	0.14 ^b
Israel ¹	0.69	0.66	0.73	0.75	0.71	0.72 ^b	0.75 ^b
Italy	1.50	1.38	1.51	1.48	1.42	1.35 ^b	1.34 ^b
Japan	32.28	33.22	30.41	29.19	30.99	30.64 ^b	29.61 ^b
Korea	1.63	3.76	3.65	4.24	4.99	5.22 ^b	5.54 ^b
Luxembourg	0.04	0.03	0.04	0.04	0.05	0.05 ^b	0.04 ^b
Mexico	0.02	0.04	0.03	0.03	0.03	0.03 ^b	0.03 ^b
Netherlands	2.28	2.02	2.25	2.11	1.66	1.58 ^b	1.51 ^b
New Zealand	0.13	0.11	0.14	0.11	0.09	0.09 ^b	0.09 ^b
Norway	0.25	0.20	0.17	0.26	0.23	0.23 ^b	0.23 ^b
Poland	0.02	0.05	0.07	0.06	0.12	0.14 ^b	0.18 ^b
Portugal	0.01	0.08	0.06	0.03	0.03	0.03 ^b	0.03 ^b
Slovak Republic	0.00	0.01	0.01	0.00	0.02	0.01 ^b	0.02 ^b
Slovenia	0.02	0.02	0.03	0.04	0.03	0.03 ^b	0.03 ^b
Spain	0.35	0.49	0.53	0.51	0.47	0.49 ^b	0.47 ^b
Sweden	1.42	1.82	1.67	1.60	1.29	1.31 ^b	1.35 ^b
Switzerland	1.80	1.91	1.99	1.95	2.15	2.14 ^b	2.20 ^b
Turkey	0.01	0.02	0.05	0.05	0.07	0.07 ^b	0.08 ^b
United Kingdom	4.25	3.41	3.39	3.46	3.41	3.32 ^b	3.30 ^b
United States	28.16	26.42	27.66	27.29	26.03	25.97 ^b	26.48 ^b
EU28 (OECD estimates)	31.87	28.61	29.39	29.06	27.48	27.16 ^b	26.88 ^b
OECD-Total	98.88	96.88	96.22	95.00	94.50	93.94^b	93.53^b
Argentina	0.01	0.03	0.03	0.03	0.02	0.01 ^b	0.01 ^b
China	0.16	1.31	1.64	2.61	2.86	3.25 ^b	3.56 ^b
Romania	0.00	0.01	0.01	0.02	0.01	0.01 ^b	0.02 ^b
Russian Federation	0.15	0.15	0.12	0.18	0.18	0.20 ^b	0.22 ^b
Singapore	0.15	0.21	0.22	0.20	0.18	0.19 ^b	0.20 ^b
South Africa	0.09	0.07	0.10	0.07	0.06	0.06 ^b	0.06 ^b
Chinese Taipei	0.09	0.54	0.62	0.77	0.93	0.91 ^b	0.87 ^b

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Patent database, December 2014

Table 65. Number of patents in the ICT sector - applications filed under the PCT
By priority year

	2000	2007	2008	2009	2010	2011	2012
Australia	630	537	575	529	496	501	542
Austria	190	383	292	269	263	310	296
Belgium	149	234	229	258	280	331	322
Canada	935	1 368	1 142	1 118	1 295	1 296	1 307
Chile	4	2	11	9	14	14	13
Czech Republic	15	41	43	27	30	22	44
Denmark	252	288	294	265	257	263	208
Estonia	5	27	21	24	20	17	6
Finland	782	924	813	783	860	844	861
France	1 520	2 041	2 095	2 066	2 094	2 247	2 199
Germany	4 018	4 308	4 049	3 945	4 164	4 311	4 146
Greece	13	26	24	23	16	25	27
Hungary	62	68	72	69	72	86	83
Iceland	12	6	2	4	6	4	7
Ireland	104	171	176	139	140	178	163
Israel ¹	874	884	746	689	657	815	923
Italy	332	592	567	547	548	550	552
Japan	4 721	13 428	13 265	14 293	16 559	17 778	18 436
Korea	893	3 525	3 350	4 038	4 515	5 290	5 283
Luxembourg	13	8	13	9	12	13	18
Mexico	17	22	31	28	30	29	38
Netherlands	1 683	1 349	1 293	1 133	938	1 070	951
New Zealand	96	91	64	66	60	63	57
Norway	164	188	182	179	164	136	187
Poland	17	41	48	65	83	70	57
Portugal	4	24	30	32	39	43	29
Slovak Republic	4	9	15	9	14	8	8
Slovenia	12	18	22	19	19	22	21
Spain	127	345	376	406	440	485	447
Sweden	1 275	1 374	1 424	1 252	1 232	1 366	1 538
Switzerland	458	508	475	504	516	581	646
Turkey	13	49	63	77	64	62	110
United Kingdom	2 201	2 227	2 043	1 765	1 844	1 872	1 813
United States	19 014	20 062	17 281	16 188	17 736	19 889	20 767
EU28 (OECD estimates)	12 797	14 564	13 994	13 143	13 404	14 180	13 866
OECD-Total	40 608	55 170	51 122	50 825	55 477	60 590	62 106
Argentina	5	14	9	8	15	20	4
China	237	3 884	4 108	6 731	8 314	10 966	11 905
Romania	3	22	24	16	15	19	27
Russian Federation	182	204	183	204	229	326	348
Singapore	167	279	336	288	333	303	305
South Africa	101	71	102	49	71	76	92
Chinese Taipei	19	61	53	72	156	200	224

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Patent database, December 2014

Table 66. Number of patents in the biotechnology sector - applications filed under the PCT
By priority year

	2000	2007	2008	2009	2010	2011	2012
Australia	186	213	183	171	167	157	150
Austria	60	101	76	68	78	92	87
Belgium	134	146	123	129	131	137	101
Canada	309	334	313	243	240	281	219
Chile	1	8	9	14	11	15	12
Czech Republic	1	9	9	10	3	7	10
Denmark	178	213	193	124	161	169	181
Estonia	3	11	5	3	3	7	2
Finland	39	60	63	52	65	51	31
France	426	418	446	498	468	540	465
Germany	1 009	885	682	644	688	665	607
Greece	3	9	8	6	5	5	5
Hungary	11	12	14	13	9	16	10
Iceland	4	9	12	6	9	10	2
Ireland	13	31	47	31	16	33	20
Israel ¹	140	198	168	131	155	155	141
Italy	121	146	178	163	159	122	145
Japan	905	1 153	1 134	1 153	1 226	1 167	1 154
Korea	148	319	316	381	458	511	484
Luxembourg	1	2	2	1	1	2	4
Mexico	6	9	13	15	14	18	8
Netherlands	187	286	263	238	221	208	191
New Zealand	30	53	43	32	40	27	27
Norway	41	28	28	36	42	28	32
Poland	2	16	20	13	21	23	28
Portugal	5	15	15	16	9	12	12
Slovak Republic	1	0	0	1	2	3	0
Slovenia	4	4	8	8	10	7	6
Spain	59	144	185	188	182	183	178
Sweden	169	133	115	121	128	114	107
Switzerland	134	302	150	141	162	156	185
Turkey	1	2	2	2	5	4	4
United Kingdom	606	446	411	377	384	386	398
United States	6 198	4 542	4 338	4 053	4 227	4 296	4 132
EU28 (OECD estimates)	3 038	3 096	2 866	2 716	2 751	2 790	2 596
OECD-Total	11 136	10 258	9 573	9 084	9 499	9 606	9 133
Argentina	6	12	7	6	5	8	13
China	933	199	209	294	422	518	464
Romania	0	1	1	1	0	1	0
Russian Federation	32	71	47	41	66	49	54
Singapore	34	55	55	86	71	68	124
South Africa	9	18	20	17	14	11	9
Chinese Taipei	6	15	27	25	36	34	45

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Patent database, December 2014

Table 67. Technology balance of payments: receipts
At current prices and exchange rates

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	1 558.4	4 093.3	3 619.6	4 522.3	5 051.3	4 904.7 ^P	..
Austria	1 687.0	7 671.3	8 256.0	8 545.2	8 535.4	7 998.3	10 080.2 ^P
Belgium	4 088.4	9 329.5 ^a	11 854.0	11 771.5	12 979.7	14 507.4	16 607.4 ^P
Canada	3 143.2	2 754.3	2 306.9	3 000.5	2 646.7	2 644.1 ^P	..
Chile	..	..	..	..	..	..	..
Czech Republic	249.3	2 453.2	2 260.5	2 101.7	2 960.3	3 085.0 ^P	..
Denmark	..	7 676.3	7 162.8	6 271.1	7 201.5	8 078.1 ^P	..
Estonia	..	273.2	271.8	294.7	361.2	387.1	456.2 ^P
Finland	1 555.2	10 677.5	9 502.4	9 472.3	10 795.8	10 093.9	11 224.9 ^{a,p}
France	2 741.8	..	..	..	..	..	..
Germany	13 583.0	49 613.7	48 566.1	58 245.5	69 216.2	69 081.9	66 620.7 ^{a,p}
Greece	139.4	857.9	721.3	715.2	797.2	674.3	774.7 ^P
Hungary	249.3	3 598.7 ^a	3 631.6	4 185.5	4 549.9	4 396.0	4 678.0 ^P
Iceland	..	..	337.5	283.1	302.2	254.3 ^P	..
Ireland	..	37 780.8	37 087.3	40 878.4	49 683.4	52 133.3 ^P	..
Israel ¹	..	9 359.0	9 222.6	9 303.8	10 849.8	13 237.0 ^P	..
Italy	2 806.6	11 178.9 ^a	8 848.3	10 277.0	12 177.7	13 841.8	14 847.3 ^P
Japan	9 816.3	21 531.5	21 538.2	27 758.5	29 887.2	34 102.4	34 788.2 ^P
Korea	..	2 529.6	3 581.9	3 344.9	4 032.1	5 310.8 ^P	..
Luxembourg	..	1 430.8	1 545.8	2 278.5	2 814.9	4 007.6	4 082.3 ^P
Mexico	43.1	97.0	94.3	..	..	..	..
Netherlands	..	30 508.6	29 473.1	..	39 985.7	40 171.2	44 424.9 ^P
New Zealand	216.8	839.2	1 288.0	885.6	1 184.2	1 033.8 ^P	..
Norway	1 912.1	6 284.2	6 541.2	6 929.0	..	..	..
Poland	188.4	2 960.0	2 270.0	3 317.6	4 256.1	4 472.9 ^P	..
Portugal	214.5	1 323.2	1 489.6	1 276.2	1 537.1	1 568.4	1 797.6 ^P
Slovak Republic	57.1	799.4	444.8	504.5	770.0	948.1 ^P	..
Slovenia	12.1	424.2 ^a	295.2	265.5	301.1	316.7 ^P	..
Spain	2 388.4	17 921.0 ^a	15 807.7	15 064.2	17 702.9	16 125.7	16 171.1 ^P
Sweden	5 281.2	17 857.9	16 698.5	17 727.1	21 042.5	20 464.4	25 644.3 ^{a,p}
Switzerland	3 406.8	16 806.4	20 175.7	22 423.1	27 135.3	28 724.8	30 429.9 ^P
Turkey	..	..	..	..	..	..	..
United Kingdom	19 926.4	33 796.2	29 527.1	31 119.7	34 540.3	36 962.5	38 845.6 ^P
United States	43 233.0	94 453.0	93 949.0	100 569.0	119 936.0	122 586.0	126 517.0 ^P
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	14.0	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	7.2 ^m	29.3 ^m	23.0 ^m	19.9 ^m	31.2 ^m	92.3 ^{m,p}	..
Russian Federation	204.0	872.1	606.9	627.8	592.6	688.8 ^P	..
Singapore	895.8	5 970.6	5 924.1	..	..	..	..
South Africa	40.2	53.2	47.5	..	..	..	..
Chinese Taipei	126.5 ^m	626.9 ^m	755.0 ^m	822.1 ^m	..	903.9 ^{m,p}	..

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Technology Balance of Payments database, December 2014

Table 68. Technology balance of payments: payments
At current prices and exchange rates

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	2 243.1	6 197.1	5 513.2	7 299.8	8 581.0	8 274.0 ^P	..
Austria	1 234.6	4 705.0	4 878.8	5 239.4	5 065.6	4 517.6	5 700.0 ^P
Belgium	3 460.6	9 837.8 ^a	10 720.4	9 968.9	11 249.0	12 586.5	14 163.0 ^P
Canada	1 280.0	1 042.1	823.2	565.9	758.9	884.7 ^P	..
Chile	..	..	..	..	..	..	..
Czech Republic	435.4	2 303.0	2 521.1	2 512.6	3 137.7	3 232.2 ^P	..
Denmark	..	6 033.0	4 935.0	5 459.4	7 308.3	7 910.8 ^P	..
Estonia	..	173.5	172.8	191.4	341.9	309.1	292.0 ^P
Finland	1 704.4	9 366.2	9 061.9	7 769.1	8 146.2	8 847.6	7 695.5 ^{a,p}
France	2 644.2	..	..	..	..	..	..
Germany	18 215.4	41 529.3	40 078.2	45 207.9	53 606.4	54 727.4	54 193.1 ^{a,p}
Greece	407.6	1 432.0	1 327.2	1 383.9	1 267.1	814.0	952.9 ^P
Hungary	396.6	4 687.0 ^a	3 985.2	3 812.2	4 340.3	4 057.9	4 649.8 ^P
Iceland	..	..	140.6	179.1	215.2	239.1 ^P	..
Ireland	..	42 545.9	42 143.9	44 576.2	48 898.0	49 153.7 ^P	..
Israel ¹	..	2 529.4	1 849.7	1 884.2	2 067.2	2 451.1 ^P	..
Italy	3 505.4	15 611.4 ^a	13 328.5	13 865.5	15 201.5	12 807.2	13 516.9 ^P
Japan	4 113.5	5 805.4	5 716.6	6 038.6	5 197.0	5 622.7	5 919.8 ^P
Korea	..	5 669.9	8 438.1	10 234.3	9 900.5	11 052.0 ^P	..
Luxembourg	..	1 655.1	1 693.8	2 125.0	3 125.6	4 730.7	5 716.7 ^P
Mexico	406.7	926.7	1 822.1	..	..	..	..
Netherlands	..	23 413.0	25 969.7	..	29 427.8	30 877.8	33 375.4 ^P
New Zealand	471.2	1 220.9	1 080.7	1 312.1	1 860.5	1 899.1 ^P	..
Norway	1 190.4	3 667.9	3 185.4	3 351.7	..	..	..
Poland	1 097.1	4 790.5	3 780.4	5 459.2	6 039.1	5 933.5 ^P	..
Portugal	581.5	1 426.3	1 609.0	1 459.5	1 653.1	1 275.0	1 417.6 ^P
Slovak Republic	155.0	856.6	839.9	763.0	635.6	550.3 ^P	..
Slovenia	22.3	623.0 ^a	644.7	645.0	681.3	666.6 ^P	..
Spain	3 664.7	14 278.2 ^a	11 422.7	10 764.8	11 989.8	10 592.1	9 542.3 ^P
Sweden	5 635.1	12 382.4	10 222.7	9 802.4	11 506.7	12 431.8	12 880.8 ^{a,p}
Switzerland	5 336.9	17 227.8	19 291.2	21 172.0	26 436.0	27 383.1	28 807.3 ^P
Turkey	..	..	..	..	..	..	..
United Kingdom	9 218.8	12 495.3	11 677.5	11 958.1	11 845.1	12 534.6	12 677.0 ^P
United States	16 468.0	57 509.0	61 884.0	69 577.0	81 826.0	83 957.0	87 617.0 ^P
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	1 064.5	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	6.0 ^m	111.2 ^m	80.0 ^m	101.0 ^m	119.4 ^m	121.1 ^{m,p}	..
Russian Federation	183.6	2 217.5	1 572.5	1 410.1	1 915.4	2 053.1 ^P	..
Singapore	6 233.1	17 472.9	17 075.1	..	..	..	..
South Africa	244.8	1 662.1	1 642.5	..	..	..	..
Chinese Taipei	1 304.3 ^m	2 400.5 ^m	3 071.8 ^m	4 479.7 ^m	..	5 079.1 ^{m,p}	..

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Technology Balance of Payments database, December 2014

**Table 69. Technology balance of payments: payments as a percentage of GERD
(Gross domestic expenditure on R&D)**

Percentage

	2000	2008	2009	2010	2011	2012	2013
Australia	37.1	26.1	..	25.7 ^c	26.3 ^c	..	..
Austria	33.3 ^c	42.6 ^c	47.0	49.0 ^c	44.0	39.4 ^c	47.3 ^{c,p}
Belgium	75.7	98.6 ^a	111.8	100.5	99.0	112.5 ^c	118.3 ^p
Canada	9.2	3.6	3.1	1.9	2.4	2.8 ^p	..
Chile	..	..	..	..	..	..	..
Czech Republic	63.5	78.8	94.5	90.6	88.5	87.4 ^p	..
Denmark	..	61.6	50.3	58.1	72.1	81.2 ^p	..
Estonia	..	57.0	63.0	62.0	64.0	63.2	67.5 ^p
Finland	41.8	93.1	96.1	84.1	81.8	100.8	86.7 ^{a,p}
France	9.3 ^a	..	..	..	..	..	..
Germany	39.1	42.6	43.1	48.8	51.1	53.8	49.5 ^{a,c,p}
Greece	..	61.0 ^{a,c}	64.3 ^c	77.3 ^c	65.5	47.4	50.3 ^p
Hungary	106.2 ^d	302.8 ^a	269.5	255.5	259.3	251.2	247.6 ^p
Iceland	..	..	41.2	..	58.8 ^a	..	..
Ireland	..	1 114.7	1 109.0 ^c	1 260.8 ^c	1 341.5 ^c	1 404.7 ^{c,p}	..
Israel ¹	..	27.0 ^d	21.6 ^d	20.5 ^d	19.5 ^d	22.4 ^{d,p}	..
Italy	30.5	56.1 ^a	49.9	53.3	55.2	48.6	50.4 ^p
Japan	2.9	3.5 ^a	3.4	3.4	2.6	2.8	3.5 ^p
Korea	..	18.1	28.4	27.0	22.0	22.5 ^p	..
Luxembourg	..	182.6	196.6	271.2	375.8	726.9 ^a	823.0 ^p
Mexico	18.8	20.8	47.3	..	..	..	..
Netherlands	..	152.2	179.6	..	174.4 ^a	190.6	197.3 ^p
New Zealand	..	..	71.1	..	89.7	..	..
Norway	..	51.0	47.8	47.4	..	..	..
Poland	99.4	149.8	130.0	158.0	153.1	134.6 ^p	..
Portugal	68.1 ^c	37.7 ^a	41.8	40.0	46.3	42.8	46.0 ^p
Slovak Republic	117.3	191.9	199.5	138.4	97.6	73.2 ^p	..
Slovenia	8.1	68.9 ^a	70.7	65.3	54.8 ^a	55.9 ^p	..
Spain	69.6	66.3 ^a	56.4	55.7	60.8	61.6	55.1 ^p
Sweden	..	68.9 ^c	69.7	62.4 ^c	63.4	69.7 ^c	67.3 ^{a,l,p}
Switzerland	84.4	114.5	..	..	..	138.7	..
Turkey	..	..	..	..	..	..	..
United Kingdom	34.4	26.5 ^c	29.0 ^c	29.4 ^c	27.0	29.4 ^c	29.1 ^{c,p}
United States	6.1 ^j	14.1 ^j	15.2 ^j	17.0 ^j	19.1 ^j	18.5 ^{j,p}	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	85.3	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	4.4 ^m	9.4 ^m	10.4 ^m	13.3 ^m	13.1 ^{a,m}	14.6 ^{m,p}	..
Russian Federation	6.7	12.8	10.3	8.2	9.2	9.0 ^p	..
Singapore	357.1	346.8	411.0	..	..	..	..
South Africa	..	65.3	66.4	..	..	..	..
Chinese Taipei	20.6 ^{d,m}	21.5 ^m	27.6 ^m	35.9 ^m	..	34.9 ^{m,p}	..

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Source: OECD, Technology Balance of Payments database, December 2014

Table 70. Trade balance and export market share: Pharmaceutical industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2007	2010	2013	2007	2010	2013
Australia	-3 365.2	-5 062.0	-6 276.6	0.89	0.78	0.66
Austria	653.1	765.4	950.9	1.67	1.70	1.90
Belgium	5 783.2	8 009.8	8 679.5	12.83	10.56	10.19
Canada	-4 296.4	-6 548.4	-7 074.4	1.68	1.22	1.08
Chile	-527.8	-679.8	-1 043.7	0.02	0.03	0.04
Czech Republic	-1 824.3	-2 120.0	-1 933.6	0.29	0.33	0.38
Denmark	4 312.6	5 535.2	8 031.1	1.95	1.94	2.44
Estonia	-243.5	-260.9	-338.5	0.01	0.01	0.01
Finland	-1 121.4	-903.6	-1 198.4	0.24	0.28	0.24
France	6 380.9	5 995.4	8 049.1	7.72	7.31	7.31
Germany	14 340.5	18 077.3	27 751.1	14.93	13.99	14.66
Greece	-3 239.2	-3 355.3	-2 245.3	0.35	0.29	0.27
Hungary	-138.0	145.1	1 208.1	0.63	0.78	0.93
Iceland	-47.5	6.1	-43.2	0.03	0.03	0.02
Ireland	16 889.4	27 371.0	22 482.2	5.49	6.82	5.53
Israel	2 401.7	4 972.5	4 227.8	0.95	1.38	1.18
Italy	-2 380.0	-3 972.0	127.9	4.26	3.75	4.83
Japan	-6 029.3	-13 114.0	-18 059.3	0.86	0.90	0.70
Korea	-2 314.7	-2 698.4	-3 063.8	0.22	0.26	0.30
Luxembourg	-308.0	-357.3	-360.2	0.02	0.02	0.02
Mexico	-2 391.4	-3 238.0	-3 621.7	0.40	0.35	0.38
Netherlands	222.3	1 509.2	6 065.6	4.58	5.91	4.58
New Zealand	-572.6	-612.7	-602.9	0.05	0.05	0.06
Norway	-962.5	-1 079.1	-1 119.9	0.19	0.16	0.15
Poland	-3 509.9	-3 630.1	-2 778.2	0.29	0.47	0.59
Portugal	-2 031.3	-2 289.6	-1 763.5	0.15	0.14	0.19
Slovak Republic	-1 264.1	-1 290.8	-1 550.4	0.09	0.10	0.09
Slovenia	1 103.6	1 152.9	1 842.3	0.52	0.45	0.59
Spain	-2 300.6	-3 314.5	-1 305.3	2.66	2.50	2.65
Sweden	5 127.5	5 117.6	4 055.7	2.36	1.95	1.67
Switzerland	18 650.9	29 792.3	37 934.0	9.61	10.37	12.02
Turkey	-3 437.1	-4 165.0	-3 659.5	0.11	0.13	0.16
United Kingdom	8 513.9	9 994.0	4 085.5	7.85	7.21	6.32
United States	-20 866.5	-21 503.0	-24 146.7	8.95	9.31	8.31
OECD-Total	21 208.3	38 249.5	53 306.0	92.84	91.48	90.45
Argentina	-535.1	-966.7	-1 322.4	0.15	0.16	0.19
China	2 255.3	2 773.9	-3 619.7	1.66	2.29	2.41
Romania	-1 869.0	-2 029.9	-2 327.9	0.03	0.17	0.25
Russian Federation	-6 476.8	-10 992.1	-14 279.7	0.08	0.07	0.11
Singapore	4 548.1	3 746.1	5 348.0	1.71	1.30	1.53
South Africa	-1 375.1	-1 735.1	-1 902.7	0.04	0.09	0.09
Chinese Taipei	-1 388.5	-1 850.4	-2 257.7	0.07	0.06	0.10

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Source: OECD, STAN Bilateral Trade in Goods by Industry and End-use Category database, December 2014

Table 71. Trade balance and export market share: Computer, electronic and optical industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2007	2010	2013	2007	2010	2013
Australia	-17 237.3	-21 171.7	-21 518.0	0.16	0.17	0.16
Austria	-2 358.6	-3 013.4	-1 627.9	0.54	0.40	0.45
Belgium	-5 548.6	-5 301.3	-5 168.4	0.73	0.60	0.56
Canada	-19 893.4	-25 991.3	-28 385.6	1.00	0.72	0.62
Chile	-3 651.9	-4 866.3	-6 602.4	0.02	0.01	0.02
Czech Republic	-718.6	-2 759.0	1 716.8	0.95	1.04	1.01
Denmark	-2 255.8	-1 294.2	-2 020.7	0.42	0.33	0.28
Estonia	-447.0	-278.1	-92.3	0.04	0.06	0.10
Finland	4 307.5	-630.6	-2 184.5	0.81	0.29	0.15
France	-17 185.6	-20 773.3	-18 269.1	1.99	1.69	1.56
Germany	2 135.8	-13 442.5	-616.5	6.10	5.12	4.79
Greece	-4 549.3	-3 147.5	-2 185.7	0.04	0.03	0.03
Hungary	3 848.3	6 931.2	2 481.0	1.23	1.28	0.80
Iceland	-452.1	-205.2	-263.5	0.00	0.00	0.00
Ireland	6 491.6	5 875.6	4 587.5	1.30	0.62	0.50
Israel	-1 792.4	3 706.2	3 692.3	0.23	0.49	0.48
Italy	-17 705.7	-29 501.9	-14 086.4	0.91	0.75	0.70
Japan	37 231.5	21 626.4	-9 215.0	6.43	5.67	4.14
Korea	60 257.7	70 967.8	71 049.1	6.08	6.37	5.85
Luxembourg	-406.0	-492.4	-610.1	0.06	0.03	0.02
Mexico	4 577.8	-1 287.4	-6 719.9	2.84	3.12	2.94
Netherlands	5 429.4	277.7	-2 903.0	3.97	3.38	2.95
New Zealand	-2 477.4	-2 488.7	-3 014.4	0.03	0.02	0.02
Norway	-4 609.2	-3 835.1	-4 780.1	0.16	0.16	0.14
Poland	-6 922.2	-5 040.2	-5 137.5	0.45	0.76	0.63
Portugal	-2 822.4	-2 790.3	-2 019.2	0.23	0.11	0.10
Slovak Republic	-1 006.5	964.3	951.0	0.45	0.60	0.66
Slovenia	-714.8	-615.0	-324.4	0.04	0.04	0.04
Spain	-24 972.4	-17 977.0	-13 813.1	0.44	0.35	0.24
Sweden	-368.6	-1 059.4	-3 651.0	0.91	0.90	0.63
Switzerland	9 063.2	11 336.0	17 801.6	1.20	1.28	1.49
Turkey	-7 258.7	-8 166.8	-11 874.1	0.17	0.11	0.11
United Kingdom	-32 877.1	-26 694.3	-29 537.3	2.18	1.73	1.50
United States	-116 683.1	-139 145.6	-157 911.6	9.42	8.65	8.17
OECD-Total	-161 571.8	-220 283.4	-252 252.6	51.53	46.89	41.84
Argentina	-4 868.3	-5 875.3	-7 389.2	0.02	0.01	0.01
China	83 532.2	129 279.2	165 363.9	20.20	23.87	28.28
Romania	-4 080.9	-1 959.9	-3 034.1	0.06	0.22	0.14
Russian Federation	-19 361.7	-21 138.5	-23 652.8	0.10	0.10	0.16
Singapore	25 597.4	34 226.8	32 250.2	5.74	6.16	5.69
South Africa	-7 100.7	-7 555.6	-8 338.0	0.06	0.07	0.07
Chinese Taipei	47 469.3	59 617.5	68 172.4	5.28	5.59	5.31

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, STAN Bilateral Trade in Goods by Industry and End-use Category database, December 2014

Table 72. Trade balance and export market share: Aerospace industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2007	2010	2013	2007	2010	2013
Australia	-2 304.8	-291.4	771.6	0.28	0.27	0.38
Austria	-649.3	318.3	-59.1	0.45	0.38	0.58
Belgium	364.1	838.0	775.8	0.58	0.66	0.61
Canada	3 085.9	3 725.5	3 099.8	5.08	4.43	3.48
Chile	-610.9	-628.9	-1 380.4	0.01	0.01	0.01
Czech Republic	-3.5	-139.7	355.0	0.34	0.22	0.23
Denmark	-1 203.5	-620.4	-90.1	0.10	0.09	0.13
Estonia	-23.0	-23.1	-1.7	0.01	0.00	0.00
Finland	-572.3	-195.1	-445.2	0.07	0.18	0.09
France	16 399.5	23 851.3	29 252.8	14.69	19.92	17.67
Germany	4 632.2	4 183.4	15 483.7	12.35	13.91	13.43
Greece	-308.2	-563.5	-13.5	0.06	0.12	0.05
Hungary	-402.7	-79.6	-2.9	0.01	0.02	0.03
Iceland	238.4	-15.4	-79.5	0.27	0.02	0.00
Ireland	-3 136.0	-2 911.3	-416.4	0.30	0.37	0.39
Israel	116.7	1 060.7	1 143.5	0.60	0.66	0.57
Italy	1 931.8	3 422.3	4 354.0	1.85	2.12	1.88
Japan	-5 516.0	-3 007.5	-3 839.5	1.66	1.55	1.82
Korea	-2 121.5	-2 049.1	-1 315.5	0.35	0.59	0.59
Luxembourg	-843.4	-335.2	-1 659.7	0.04	0.11	0.06
Mexico	305.2	604.1	930.0	0.50	0.43	0.47
Netherlands	713.4	378.2	816.3	1.06	1.05	0.91
New Zealand	-477.4	-515.3	-893.2	0.08	0.05	0.02
Norway	-134.0	-900.0	-564.8	0.32	0.23	0.16
Poland	80.5	323.7	232.2	0.20	0.51	0.59
Portugal	-674.5	-256.4	-279.4	0.05	0.07	0.07
Slovak Republic	29.3	-4.6	-39.7	0.04	0.03	0.01
Slovenia	-110.2	-96.3	-51.3	0.04	0.00	0.02
Spain	-675.6	712.7	3 636.6	1.57	1.55	2.04
Sweden	123.9	379.5	319.9	0.38	0.35	0.26
Switzerland	-907.2	-1 213.3	27.9	0.82	0.52	0.58
Turkey	-371.3	-3 264.4	-1 665.7	0.33	0.16	0.25
United Kingdom	1 622.5	-2 951.0	7 744.8	9.90	9.96	9.92
United States	59 595.2	49 450.8	70 899.8	36.62	29.49	30.74
OECD-Total	68 193.5	69 186.9	127 046.0	91.00	90.03	88.04
Argentina	-468.3	-735.2	563.9	0.13	0.23	0.31
China	-9 738.3	-12 477.8	-23 000.6	0.74	0.84	0.98
Romania	-60.5	-15.1	44.6	0.04	0.07	0.07
Russian Federation	848.0	688.0	978.9	0.40	0.43	1.99
Singapore	-4 198.2	-3 246.0	-1 905.0	1.88	2.39	2.78
South Africa	-1 221.1	-1 247.4	-289.1	0.23	0.13	0.14
Chinese Taipei	-1 212.8	-546.8	-312.5	0.11	0.15	0.18

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Source: OECD, STAN Bilateral Trade in Goods by Industry and End-use Category database, December 2014

General methodology

R&D data (Tables 1 to 60)

A. Definitions and coverage

1. OECD standards

The data in this publication have been collected and presented in line with the standard OECD methodology for R&D statistics entitled *The Measurement of Scientific and Technological Activities: Proposed Standard Practice for Surveys of Research and Experimental Development – Frascati Manual 2002* (OECD).

2. The two types of data

Most R&D data are derived from retrospective surveys of the units actually carrying out or “performing” R&D projects. Thus, the indicators in Tables 1 to 56 are based on the sum of performers’ reports of their R&D expenditure and personnel on national territory (i.e. excluding payments to international organisations and other performers abroad). Personnel data are expressed in full-time equivalent (FTE) on R&D (i.e. a person working half-time on R&D is counted as 0.5 person years) and headcount. Because of the complexity of the surveys, it is difficult to obtain very up-to-date series. In the present volume, some 2011 data are still provisional and data for later years are national estimates or projections (these data are annotated).

Given the difficulty of estimating defence R&D figures which are compatible with GERD (notably in industry), a number of countries have been unable to supply data and the information is shown in Table 5 with only one decimal.

More up-to-date information on government support for R&D can be derived from budgetary sources. The indicators in Tables 57 to 60 are based on Government Budget Appropriations or Outlays for R&D as reported by the funding ministry or agency and include payments to international organisations and other performers abroad.

The specifications of these two sets of R&D data vary significantly and the two types of data should not be combined.

3. Fields of science

In general, the tables cover R&D in both natural sciences (including agricultural and medical sciences) and engineering (NSE) and social sciences and humanities (SSH). A large number of countries collect data on R&D activities in the business enterprise sector for NSE only.

4. Sectors of performance and sources of funds

Domestic R&D efforts (expenditure or personnel) are divided into four *sectors of performance* for statistical purposes, business enterprise (industry), higher education, government and private non-profit institutions (PNP).

R&D expenditure is subdivided into five *sources of funds*, from business enterprise (industry), from government (public), from higher education, from PNPs and from abroad. By convention and for international comparison purposes, public general university funds (GUF) are

allocated to the government sector as a source of funds. Since the amounts financed by the higher education and PNP sectors are small, they have been combined as “other national sources” in Tables 15 and 37.

5. R&D in the business enterprise sector

The business enterprise sector covers private and public enterprises and institutes serving such enterprises. The breakdown between industries is, in principle, made at the level of the enterprise, though some countries are able to break down the R&D data for multi-product enterprises between their main lines of business. National statistical regulations prevent publication of results where there are very few firms in the given category, hence the many gaps in the tables. In principle, R&D institutes serving enterprises are classified to the industry concerned; when this is not done, the percentage of BERD performed by the non-manufacturing industry is overestimated compared with other countries.

The classification used to present business R&D series is the International Standard Industrial Classification, Revision 4 (ISIC Rev. 4). The indicators on industrial BERD concern R&D-intensive manufacturing industries and services:

	ISIC Rev. 4
• Pharmaceutical industry (Table 39)	21
• Computer, electronic and optical industry (Table 40)	26
• Aerospace industry (Table 41)	303
• Services industry (Table 42)	45-99

The above mentioned indicators were calculated using mainly the *Analytical Business Enterprise R&D Database* (ANBERD) for OECD member countries and selected non-member economies covered by this database. For further information on this database see: www.oecd.org/sti/anberd.

6. Government budget appropriations or outlays for R&D (GBAORD)

These data are assembled by national authorities using statistics collected for budgets. This essentially involves identifying all the budget items involving R&D and measuring or estimating their R&D content. The series generally cover federal or central government only. These estimates, based on funders' reports, are less accurate than the “performer-reported” data in Tables 1 to 56 but as they are derived from the budget, they can be linked back to policy issues by means of a classification by “objectives” or “goals”. Programmes are allocated between socio-economic objectives on the basis of intentions at the time the funds are committed and not the actual content of the projects concerned. These breakdowns reflect policies at a given moment in time.

The classification used is the European Commission's Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets – NABS, specially developed for R&D analysis (see *Frascati Manual* 2002, Sections 8.7.3 and 8.7.4).

The breakdown is as follows:

Defence (Table 58)

All defence R&D financed by government, including military nuclear and space but excluding civilian R&D financed by ministries of defence (e.g. meteorology).

Civil (Table 59)

Total GBAORD less defence.

Economic development (Table 60)

R&D programmes financed for the purpose of the advancement of agriculture, fishery, forestry; industry; energy; and infrastructure and general planning of land use.

Health and environment (Table 60)

R&D programmes funded for the purpose of the protection and improvement of human health; control and care of the environment; and for the exploration and exploitation of earth.

Education and society (Table 60)

R&D programmes funded for the purpose of education; culture, recreation, religion and mass media; and political and social systems, structure and processes.

Space (Table 60)

Civil space R&D programmes.

Non-oriented research (Table 60)

Research programmes financed in view of the advancement of knowledge.

General university funds (Table 60)

The estimated R&D content of “block grants” to the higher education sector. This category is generally absent or underestimated for countries where only federal government is included.

7. International comparability

Though all OECD countries generally collect and report R&D in line with the *Frascati Manual*, some detailed national specifications may vary from OECD standards. These differences are generally too small to affect the general indicators quoted in this publication. The main exceptions are shown in Annex 1.

8. Expenditures in current dollars

National currency data have been converted to US\$ using purchasing power parities (PPPs) (Table C). The PPPs are those developed by the OECD National Accounts Division (for further details see *National Accounts of OECD Countries*, as well as *Eurostat-OECD Methodological Manual on Purchasing Power Parities* [PPPs], and the Internet PPP site: www.oecd.org/std/ppp), updated for the most recent years by comparing the growth in prices (implicit GDP deflator) in each country with that in the United States. These estimated parities are footnoted “b” in the tables as are any data converted to current dollars using them.

For most of the non-OECD economies featured in MSTI, PPP rates provided by the World Bank are used to convert data from national currency into PPPs. Only TBP data have been converted using current exchange rates as these transactions are conducted on international markets.

9. Expenditures in constant dollars

R&D expenditure series have been deflated using the implicit GDP deflator taken from the *OECD National Accounts Database* updated for the most recent years by Secretariat projections of changes in the GDP deflator, as published twice a year in the *OECD Economic Outlook* (except in the case of Norway, where a deflator excluding trends in petroleum prices has been used) (Table B). Any expenditures series calculated on the basis of these estimated rates are footnoted “b”.

10. Comparisons with economic indicators

R&D expenditures are shown as a percentage of selected indicators drawn from the *OECD National Accounts Database* updated for very recent years on the basis of the projections published in the *OECD Economic Outlook*. Any ratios where such estimated economic series are the denominator are footnoted “b” in the tables concerned. R&D personnel are shown per thousand of selected indicators from the *OECD National Accounts* and *Labour Force Databases*. The main indicators used are shown in Annex 2.

Impact of changes to GDP measurement on R&D intensity: the latest update to the System of National Accounts (SNA), the SNA2008, recognised the role of R&D as an activity leading to the creation of an intellectual asset. One implication of recognising R&D as an asset-building activity is that the level of GDP will be revised upwards by a magnitude close to the value of domestic business investment in R&D. This will then reduce the R&D intensity ratio, as the numerator stays constant and the denominator increases to incorporate an element that was previously missing from the GDP estimate. Figures and indicators for countries which have not yet implemented a revision to their National Accounts figures to take into account the role of R&D as investment – or for which revised data are not yet available in the *National Accounts of OECD Countries* published by the OECD National Accounts Division – are flagged with the note “y” (meaning “compiled according to the System of National Accounts 1993”). Users should be careful when comparing the R&D intensity of countries that have and have not capitalised R&D in their national accounts. Likewise, they should avoid comparing previously published measures of R&D intensity and more recent ones.

When possible, economic indicators for the non-member economies are also drawn from the OECD databases. Alternatively, other international databases are used, such as the *Eurostat NewCronos Database* (in the case of Romania, plus Bulgaria, Croatia, Cyprus, Latvia, Lithuania and Malta for the EU zone totals), the *International Monetary Fund*, *International Labour Organisation* and *World Bank Databases*, as well as various national data sources.

11. Zone totals

Zone totals have been calculated for the EU28 and the OECD for most tables. The OECD zone includes all member countries of the OECD, i.e. Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. Zone totals for EU15 are available in the electronic editions of this publication. In order to obtain a full set of data for the OECD countries, the Secretariat has made a number of estimates to fill gaps and to bring series up to date. These estimates were done using simple statistical routines or information from national publications and observations of trends. Data points where such estimates exceed 25% of the zone total have been suppressed. Israel, Korea and Mexico are included in the OECD total as from 1991. The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic and Slovenia are included as from 1995. Chile is included in the OECD total as from 2007. Luxembourg is included in the OECD and EU totals beginning 2000. Croatia and Malta are included in the EU28 total beginning 2002. Data for non-OECD countries used to calculate EU28 have been provided by the Statistical Office of the European Commission (Eurostat).

OECD estimates for the EU15 and the EU28 zones may slightly differ from those published by EUROSTAT. In this publication, in line with standard OECD practice, national

estimates are aggregated using USD Purchasing Power Parity indices (PPPs) instead of EUR exchange rates applied by EUROSTAT. For example, the EU28 measure of GERD to GDP intensity will be an average of EU countries' GERD intensities, weighted by the share of countries' GDP to EU GDP in USD PPPs, as opposed to EUR-based GDP shares.

B. Sources

The data are derived from national R&D surveys and budgets and are supplied to the Secretariat via the Common OECD/ESTAT Core questionnaire.

R&D expenditures of foreign affiliates (Tables 61 and 62)

A. Definitions and coverage

These data are collected as part of the OECD Secretariat effort to measure globalisation through the role of multinationals. Data on the activity of foreign affiliates are based on the concept of controlling interest and the statistical test for data collection is that of a majority interest (over 50% of shares that carry voting rights on a company's board of management). For further information on methodological and conceptual aspects of globalisation statistics, see *Handbook on Economic Globalisation Indicators* (OECD, 2005). Data, in some cases, are not directly comparable with standard business enterprise R&D. Details on national sources and definitions are published in *Measuring Globalisation, Activities of Multinationals*, 2007. Data are available online at www.oecd.org/sti/industryandglobalisation/amne.htm.

B. Sources

OECD Database on Activities of Foreign Affiliates (AFA), May 2014.

Patents (Tables 63 to 66)

A. Definitions and coverage

1. Patents and patent families

A patent family is defined as a set of patents taken in various countries for protecting a single invention. An inventor seeking protection files a first application (priority) generally in his/her country of residence. Then, the inventor has a 12-month legal delay for applying or not for protection of the original invention in other countries. Patent families, as opposed to patents, are provided with the intention of improving international comparability (the "home advantage" is suppressed; the values of the patents are more homogeneous).

The patent families presented in this publication refer to triadic families: i.e. a patent is a member of the patent families if and only if it is filed at the European Patent Office (EPO), the Japan Patent Office (JPO) and the US Patent and Trademark Office (USPTO).

In addition, the number of patent applications filed under the Patent Co-Operation Treaty (PCT) is now provided for two specific sectors of interest: the ICT and biotechnology sectors. These sectors are defined according to selected classes of the International Patent Classification – IPC. The PCT procedure offers the possibility to seek patent rights in a large number of countries by filing a single international application with a single patent office, and then enter the national stage in the desired countries at a later date.

2. Presentation and availability

For patent counts, the choice of the country and date of reference among the set of information included in patent documents is important. Patents are presented here

according to the country(ies) of residence of the inventor(s), giving thus a measure of technological innovativeness of researchers and laboratories located in a country.

The *priority date*, the date of the first international filing of a patent, is chosen as a reference date. It is the earliest available date and therefore the closest to the invention date. Although the *application date* may provide more recent series, counts by *application date* introduce a bias between residents and foreigners for a selected patent office with respect to the *priority date*. Residents usually first file a patent application at their domestic office, the extension of application to other countries takes one year following the traditional procedure, and up to two and a half years for the PCT procedure.

However, counting patent families according to the earliest priority date increases the drawback of traditional patent counts with respect to timeliness. The time lag between the priority date and the availability of information on patent applications could be up to 4 years. From priority years 2010 to 2012, patent families for individual countries are Secretariat estimates, based on the latest trends on patent filings observed at the three offices. Furthermore, because of changes in the rules and regulations at the USPTO, triadic patent families before 2001 are based on USPTO granted patents.

The PCT procedure expanded after 1990 and is increasingly used by applicants from all signatory states: since the early 2000s, most countries are well represented. For the transition period (1990-2000), cross-country comparisons or time trends should be interpreted with care.

A broader set of patent-related indicators is available on-line, along with methodological issues, at www.oecd.org/sti/ipr-statistics, covering notably patents by main technology classes, as well as indicators on international co-operation in patenting. For further details on patent data, refer to the *OECD Patent Statistics Manual*, 2009.

B. Sources

The data on patents at intellectual property offices (EPO, JPO, USPTO) are mainly derived from EPO's *Worldwide Statistical Patent Database* (PATSTAT, December 2014). The series on triadic patent families have been compiled by the Secretariat. The series on PCT applications are based on data published by the EPO.

Technology balance of payments (TBP) (Tables 67 to 69)

A. Definitions and coverage

The TBP registers the commercial transactions related to international technology transfers. It consists of money paid or received for the acquisition and use of patents, licences, trademarks, designs, know-how and closely related technical services (including technical assistance) and for industrial R&D carried out abroad, etc.

Payments as a percentage of GERD (Table 69) give an indication of the share of imported technology to domestic R&D efforts.

It has not been possible to produce zone totals for the TBP due to the lack of data and because of the problem of excluding flows within the zones.

B. Sources

OECD Database on Technological Balance of Payments (TBP), December 2014.

International trade in highly R&D-intensive industries (Tables 70 to 72)

A. Definitions and coverage

These tables present indicators concerning international trade in goods by selected R&D intensive industries. Data are presented in the International Standard Industrial Classification Revision 4 (ISIC Rev. 4). In general, prior to 1988 underlying source data are based on ISIC Revision 2.

These series are taken from the OECD's *Bilateral Trade in Goods by Industry and End-use Category Database* (BTDIxE), derived from the OECD's *International Trade Statistics* and UNSD's *COMTRADE Databases*, which have been converted from the Harmonised System (HS) to International Standard Industrial Classification (ISIC).

Industries concerned are the following:

	ISIC Rev. 4
• Pharmaceutical industry (Table 70)	21
• Computer, electronic and optical industry (Table 71)	26
• Aerospace industry (Table 72)	303

A note indicating breaks in series is assigned to the first available year of Revision 4 data. Until 1992 inclusive, the data for Belgium include Luxembourg.

The zone total for EU15 (electronic editions) excludes intra-EU trade. The OECD total has not been adjusted to exclude trade between member countries.

From 1996, calculation of the Export market shares is relative to total aggregate exports of the declaring countries available in the OECD *Bilateral Trade in Goods by Industry and End-use Category Database* (BTDIxE). Reporting countries included in BTDIxE but not presented in this publication notably include Brazil, Hong Kong, India, Indonesia, Malaysia, the Philippines, Saudi Arabia and Thailand. Prior to 1996, Export market share are based on the share of OECD total exports.

B. Sources

OECD *Bilateral Trade in Goods by Industry and End-use Category Database* (BTDIxE), December 2014 (www.oecd.org/sti/btd).

ANNEX 1

National specifications

OECD member countries

- In 2001 in **Australia**, R&D in the business enterprise sector saw a significant increase due to a change in government policy in regard to the R&D tax concession scheme (introduction of the 175% premium (incremental) tax concession for additional investment in R&D; introduction of an R&D tax offset for small companies in tax loss that undertake R&D, enabling them to “cash out” their R&D tax losses; and a new treatment of R&D plant-asset depreciation that allows a 125% deduction for effective life depreciation of assets used in R&D activities (on a pro rata basis).

From 2011, Australia has included submission from agencies that have previously not submitted R&D expenditure data. The agencies have been asked to provide retrospective time series and this results in a break in series in 2002 in GBAORD data. From 1999, Australia has prepared its Federal Budget details according to the principles of accrual accounting, leading to a break in the series for GBAORD data.

Up to 1998, TBP data come from the business enterprise R&D survey, and only refer to technical know-how. From 1999, TBP data are based on ABS’s quarterly *Survey of International Trade in Services*, and include all TBP components.

Since 2006, a definition of foreign ownership has not been provided in the national survey and R&D data on foreign affiliates have been accepted (by the Australian Bureau of Statistics) as reported.

- Since 2009 in **Austria**, a large unit previously omitted has been included as an R&D performer in the PNP sector.

From 2007 onwards, the former “post-secondary colleges for teacher training” (“Pädagogische Akademien”) have become “Universities of Education” and are, consequently, surveyed as units of the higher education sector (up to 2006, these units were covered in the government sector).

In the BE sector, the “research premium” is included in “funds from government” beginning 2006. This measure was introduced for the first time for the calendar year 2002, and for the 2002 and 2004 data, government funding for R&D via the “research premium” was subsumed under “funds from enterprises”.

In 2004, Statistics Austria’s regular annual updating procedure of the R&D expenditure data resulted in revisions showing a significant increase compared to previous estimates, mainly due to the inclusion of results from the 2002 survey of the business enterprise sector.

As from 1995, TBP data cover royalties and license fees, technology-related services and R&D performed abroad. Until 1991 inclusive, these data cover only royalties and license fees. TBP data are published according to the new Balance of Payments and International Investment Position Manual (BPM6) as from 2006.

- For **Belgium**, beginning with the 1998 data, two large non-profit organisations, formerly included in the higher education sector, were reclassified in the government sector.

As from 1993 (1992 for the business enterprise sector), data are based on full surveys and no longer on a combination of budget figures and survey findings.

The national total expenditures (Tables 1 to 4) are underestimated in 1987 and 1988, as is the contribution of government (Table 14) as R&D financed by federative authorities (about 2-4% of GERD and 7-15% of government-financed GERD) is excluded. As a breakdown of this sum by sector of

performance is not available, the impact on the other R&D expenditure tables cannot be estimated, though it probably affects R&D in the government and higher education sectors.

As from 1995, TBP data are collected according to the *OECD, IMF and Eurostat Manuals*. Up to 2001, data refer to the Belgium-Luxembourg Economic Union (BLEU). From 2002 onwards, data refer to Belgium only. TBP data are published according to the new BPM6 as from 2008.

- In **Canada**, as from 1988, included in the R&D expenditure of the higher education sector are the estimated values for R&D in hospitals not covered by university reports and not previously included.

As from 1989, non-federal sources are no longer excluded from General University Funds in GBAORD.

- For **Chile**, from reference year 2009 in the business sector, innovation and R&D surveys are separated and the survey sampling has been modified. Astronomical observatories are surveyed and included in the PNP sector from 2009.
- For the **Czech Republic**, beginning 2005, there is a change in methodology for the collect of R&D personnel data in FTE. Data are provided in FTE by the reporting units, and based on new, more precise guidelines.

Between 2004 and 2008, some public research institutions were included in the business enterprise sector because of their classification as non-financial enterprises (ISEKTOR 11) in the European System of Accounts (ESA). These institutions have been re-classified into the government sector and R&D expenditure and personnel data have been recalculated for those years.

Up to 2004, TBP data come from the balance of payments of the Czech National bank. From 2005, TBP data are prepared by the Czech Statistical office and come from the quarterly trade in services survey, except for the item “sale/purchase of patents and inventions” which continued to be collected by the central bank up to reference year 2008.

- In **Denmark**, from reference year 2007, the surveys are conducted by Statistics Denmark. Modifications in the questionnaires have increased the response rate; this is particularly noticeable in the business enterprise sector where survey response is now mandatory. Additionally, due to changes in the administrative structure, a number of institutes, previously classified in the government sector, were merged with universities.

Until 2002, the HE sector R&D expenditure was underestimated as R&D carried out in hospital departments at the university-hospitals was included in the government sector.

As of 2002, the business enterprise survey specifically requests data on researchers, technicians and other. Earlier data for R&D personnel by occupation are based on qualification.

As from 2001, a new principle concerning budgeting of commitments was introduced: from 2001, commitments of grants are carried to the debit side at the time of entering the commitment, where previously commitment of grants was carried to the debit side at maturity. As from 1999, provincial and local government funding is included in the GBAORD data (in particular funding in provincial hospitals), as well as funding from the Danish National Research Foundation and the Danish Investment Fund. In 1983, 1988 and 1993, the method of assessing GBAORD data by socio-economic objectives changed, leading to breaks in series.

- In **Finland**, a new methodology was implemented in 2011 for calculating the R&D coefficients. As a consequence, R&D personnel (measured in FTE) in the higher education sector decreased. As from 2004, R&D personnel data are available according to occupation. Previous breakdown was by formal qualification.

In 1998, due to a greater number of responses to the BE survey on the group level, the questionnaire category funds from other foreign enterprises of the group have been merged with business enterprise funds (own funds) thus reducing the share of funds coming from abroad.

As from 1997, the higher education sector covers central university hospitals.

As from 1997 and the implementation of ISCED-97, also included in researchers are holders of engineering degrees and graduates of vocational polytechnics, degrees which are now classified in first stage tertiary education (ISCED 5A).

In 1991, the method of measuring R&D expenditures in the government and the higher education sectors changed. Since 1994, PNP institutions are included in the government sector in non-survey years.

Data on GBAORD have been revised back to 1991 because of changes in R&D coefficients for certain research institutes. In 1991, there was an upward adjustment in the total due to the inclusion of pension costs. As from 1995, funds from external sources of the state research institutes are excluded from government appropriations. As from 1997, the data covers appropriations for central university hospitals.

Until 1998 inclusive, TBP data refer to royalties and licence fees. As from 1999, data also include architectural, engineering and other technical services, computer services and R&D performed abroad. TBP data are published according to the new BPM6 as from 2013.

- In **France**, the National Centre for Scientific Research (CNRS) is included in the higher education sector, whereas in other countries such as Italy for example, this type of organisation is classified in the government sector. This affects comparisons of the breakdown of R&D efforts by sector of performance.

The methodology of the public administrations survey was changed in 2010: the method for measuring the resources devoted to R&D in ministries and some public organisations has been modified, leading to a better identification of their financing activities. The impact is notably a 900 million GOVERD drop and a 3 200 FTE personnel drop.

In 2007, a new methodology was introduced to correct for some double-counting in source of funds for universities, and the higher education R&D expenditure data revised for 2004. Also in 2007, the sampling method in the BE sector was modified and the 2004 data revised according to the new methodology.

Beginning with the 2006 survey, in order to better take into account SMEs, there is no longer a cut-off point in the business enterprise sector of one full-time-equivalent on R&D for an enterprise to be included in the survey population.

In 2001, coverage of the BE sector was expanded, and the data communicated by the Ministry of Defence now cover research that was not considered R&D in earlier years.

In 2000, several methodological changes which improved the quality of the public sector data have resulted in a break in series for that year: social charges and civil pensions are better evaluated in universities' research expenses; modification of responses from some institutes to better harmonise with the corresponding multi-annual programme; and implementation of a redesigned questionnaire. National sources estimate that the previous method would have produced a 1.6% increase in GERD, where the current method results in 4%.

Due to changes in the methods used to evaluate domestic expenditure on defence, the results of the 1998 surveys revealed significant modifications requiring new estimates for 1997. This break in series relates also to the GBAORD data.

In 1997, the method used to measure R&D personnel in administrations has changed.

Between 1991 and 1992, France Télécom and GIAT Industries were transferred from the government to the business enterprise sector following a change in their legal status.

- The data in this publication for **Germany** cover unified Germany from 1991 and Western Germany only until 1990.

The method for calculating public-financed R&D in the business enterprise sector was reviewed, resulting in the revision of business enterprise R&D and the national total back to 1991.

In 1992, the methodology of the survey on resources devoted to R&D in the government sector was changed.

From 1991, the data for the private non-profit sector have been included in the government sector.

For 1997, the methodology of assessing GBAORD by socio-economic objective changed. The 1997 total budget figure of the Federal Ministry of Education, Science, Research and Technology was reduced, but the global reduction was not available by socio-economic objective. Therefore, total GBAORD reflects the adjusted budget figure, and the sum of the breakdown does not add to the total. This is also the case beginning with the 2001 GBAORD data.

Until 1985 inclusive, the TBP data for Germany cover transactions concerning patents, licence, trademarks, models and designs. As from 1986, this data also covers technical services, computer services and industrial R&D. TBP data are published according to the new BPM6 as from 2013.

- In **Greece**, in 2011, methodological improvements and a better coverage resulted in breaks in series: in the business enterprise sector, a new frame population was defined to cover exhaustively all R&D-performing firms; in the government sector, the coverage was extended to also cover public hospitals as well as all institutions administered by the Ministry of Culture; and in the higher education sector, all Technological Educational Institutes (TEI) and post-secondary establishments were included. These methodological changes were also applied to estimate the total GERD between 2008 and 2010.

The methods of assessing R&D in the higher education sector changed in 1983, 1989 and 1995.

As from 2008, GBAORD data are exclusively based on R&D funders. Part of the increase in 2008 is also explained by a better identification of GBAORD for cultural activities.

- In **Hungary**, the breakdown of R&D expenditure data by sector of performance and by source of funds is not complete. Beginning 2006, government-financed R&D, some of which was not allocated to the appropriate sector, is now allocated, in particular to the business enterprise sector. Prior to 2004, only defence R&D performed in the civil sector is covered. Until 1993, business enterprise expenditure includes purchase of licenses and know-how. As from 1994, the Central Technology Fund has been reclassified from the business enterprise sector to the government sector.

2013 GBAORD data include multi-annual R&D projects which are not allocated to the year in which they were budgeted.

Up to 2003, the source of TBP data was the balance of payment statistics compiled by the Hungarian Central Bank, and data covered royalties and licence fees and sale/purchase of patents and inventions only. Since 2004, TBP data have been collected by the Hungarian Central Statistical Office from enterprise surveys on trade in services. TBP data also include computer services, architectural, engineering and other technical services and R&D carried out abroad. TBP data are published according to the new BPM6 as from 2008.

- In **Iceland**, new sampling methods have caused a break in series in 2010 (or in 2011 for sectors with no 2010 data).

From 2006, GBOARD data is compiled making better use of R&D information from the state budget and is based on a better coverage of relevant R&D funding in major recipients organisations. As from 1993, new methods for collecting and processing budget data for GBAORD, result in a break in series.

- In **Ireland**, as of 2000, personnel data in the government sector were surveyed in FTE. Prior to 2000, data were collected for human resources devoted to S&T in FTE, and the R&D expenditure to total S&T expenditure ratio was applied.

The government data were revised back to 1992 inclusive, as some government expenditures are no longer classified as R&D.

Prior to 2004, EU funds were included in GBAORD data.

- In **Israel**, from 2000 onwards, hospitals were transferred to the business sector from the government and PNP sectors. Both the business enterprise and higher education surveys were improved introducing a break in series in 2009 for the BERD financed by abroad and by the business enterprise sector as well as a break in 2007 for the HERD financed by abroad and by the higher education sector. Since 2001, the government sector is covered by a survey. Before 2001, data on R&D expenditure in the government sector were estimated through financial reports and interviews of accountants.

Data for the higher education sector are partly based on data from financial reports of the universities. Before 2008, humanities and law are only partially covered in the higher education sector.

Hospitals and medical centres are included in the PNP sector and in the government sector, as are university hospitals.

The 2009 BERD survey has given more options to businesses to break down the data (from 1993) by sources of funds. Consequently, there are breaks in series in 1993 for BERD (as for GERD) financed by the business enterprises and by abroad.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

- For **Italy**, in 2005 and 1997, new methods for estimating R&D in universities were introduced, resulting in breaks in series in the higher education sector.

Up until 1990, the national total expenditures on R&D are overestimated by more than 10% as they include extramural R&D expenditures. As from 1991, data on extramural R&D expenditures are available separately and are excluded.

2010 GBAORD data are calculated with a new set of coefficients especially affecting the data on non-oriented research programmes.

Up to reference year 2007, the source of TBP data was the balance of payment statistics compiled by the Ufficio Italiano dei Cambi, based on the ITRS system (settlement data collection system). On 1st January 2008, UIC ceased to exist and its functions have been taken over by the Bank of Italy. The data are derived from a new data collection system, mainly based on direct reporting from enterprises. Until 1991 inclusive, R&D performed abroad is excluded.

- For **Japan** in 2008, the FTE coefficients for researchers in the higher education sector were revised, producing a decrease in both R&D expenditure and personnel for this sector and the national total.

Beginning with the 2002/03 survey (OECD data 2002), the coefficients supplied by the Ministry of Education, Culture, Sports, Science and Technology were applied to doctoral level students as well as teachers when calculating FTE for the HE sector, resulting in a break in series for that year.

GBAORD data represent the budget for S&T and cover central government only. From 2011 onwards, GBAORD for education and society data include a more accurate measure of the budget of the National Institute for Cultural Heritage. Military procurement contracts are excluded from defence GBAORD, and before 2010, GUF excludes social sciences and humanities.

- In **Korea**, social sciences and humanities are excluded from the R&D data prior to 2007. Since 2008, estimates have been done in GBAORD breakdown to fit NABS 2007.

For the TBP data, data for technology receipts and payments do not come from the same source and are therefore not comparable. Technology receipts data come from the R&D survey and are probably underestimated as all firms are not surveyed. Technology payments data come from the balance of payments statistics compiled by the Bank of Korea.

- In **Luxembourg**, a better identification of R&D in software-related activities resulted in a break in series in 2012 for BERD (and for GERD). From 2009, some budgetary items for the Ministry of Research and other ministries are no longer included in the government's own R&D funds. The impact on GOVERD is less than a 7 million drop.

In 2004, the significant increase in R&D performed in the higher education sector is due to the re-defined role of higher education in the national system of innovation and research, in particular the newly created University of Luxembourg.

Government budget appropriations for space programs and GUF are included from 2006.

- Beginning with the 2004 data, **Mexico's** business enterprise survey register was increased to include large firms previously not identified as R&D providers. The first R&D surveys based on the *Frascati Manual* covered the period 1992-93. Earlier data for R&D performed in the government sector are based on broader national estimates, and thus do not exactly correspond to the recommendations of the *Frascati Manual*.
- In the **Netherlands**, in 2011, the method for producing business enterprise data has changed: all observed enterprises are included whereas before 2011, only enterprises with substantial R&D activities (i.e. with a minimum number of R&D personnel) were incorporated. Subsequent changes affected the higher education sector: before 1999, a large number of PhD candidates were formally employed by research institutes financing their research. As from 1999, universities became the formal employer of PhD candidates and their research activities moved from the government sector to the higher education sector. Besides this, the R&D activities of the Universities of Applied Sciences (HBO) were for the first time taken into account. Finally, the R&D activities of the Academic hospitals were increasingly underestimated due to the merging of the Academic hospitals and (parts) of the Faculties of Medicine of the universities into so-called University Medical Centers (UMC's). This started in 1998 and meant for instance that staff of the Faculty of Medicine of the university became employees of the UMC. So, data on R&D in the field of medical sciences were also revised. As from 2000, newly-recruited researchers on the payroll of the Netherlands Organisation for Scientific Research (NOW), previously included in the government sector, were included with

personnel in the higher education sector. In 1982 and 1990, the methodology of the survey on R&D expenditure changed.

In 2003, Statistics Netherlands revised the panel of the R&D survey for the government and PNP sectors, resulting in breaks in series for both sectors. Also beginning 2003, R&D personnel in the PNP sector are grouped with government sector R&D personnel.

In 1994 and 1996, there were major expansions of the area covered by the business enterprise sector survey; R&D expenditure and personnel data in the latter sector and in the whole economy are thus not comparable with those for the previous years.

In 1990 and 1999, new methods of calculating GUF are used for GBAORD series.

- **New Zealand** revised the methods of collection and estimation of R&D data respectively in 1984 (for the higher education sector), 1992 (for GUF), and 2001 (BERD and national total and HE personnel).

GBAORD figures have been revised back to 2007, resulting in a break in series. From 2006 onwards, GBAORD data are collected from all government agencies, together with analysis of selected budgetary information. Prior to that year, data were derived from the budget estimate of the pool for science funding, together with figures on government department's operational research.

Up to 1997, TBP data came from the R&D survey conducted by the Ministry of Research, Science and Technology. From 1999 onwards, the data are based on the quarterly *International Trade in Services and Royalties Survey* carried out by Statistics New Zealand. All TBP components are covered.

- In **Norway** in 2007, break in series with previous years because of a change in compilation methods for health institutions. This affects both higher education sector (university hospitals) and government sector (other hospitals).

In 1995, the survey sample was revised to improve coverage of small firms (10 to 50 employees) and non-manufacturing industries.

As of 1991, personnel in central administration units of higher education are not included, however the cost of such personnel is included in other current R&D expenditure (in line with the *Frascati Manual*).

In 1987, own funds from public enterprises have been reclassified from funds from government to the funds from the business enterprise sector. As from 1989, R&D performed by PNP institutes has been included in the government sector.

The growth in resources devoted to R&D in 1984 is due to the expansion of the area covered by the business enterprise sector survey.

The method for compiling GBAORD data changed in 1996. The series have been revised retrospectively to exclude contract research, state enterprises and payments to the European Commission.

Before 1988, TBP data cover only patent licensing and are consequently underestimated.

- For **Poland**, GBAORD data exclude European Commission funds since 2012.

Up to 1999, TBP data cover trade in techniques; transactions involving trademarks, patterns and designs; services with a technical contents (including prospecting until 1995 and spatial planning, town planning and architectonic work); R&D performed abroad. From 2000, all categories are covered (acquisition/disposal of non-produced, non-financial assets, royalties and licence fees, computer services, architectural, engineering and other technical services and R&D services).

- In **Portugal**, in 2008, the R&D personnel increased because of methodological improvements in the different institutional sectors (government, higher education, as well as private non profit institutions): the results of the individual survey forms were crossed with information from other internal databases resulting notably in the inclusion of all permanent academic staff and all researchers funded by the Ministry of Science, Technology and Higher Education in 2008.

Due to methodological improvements in the 2008 R&D survey as well as complementary information collected from internal databases, there is now a more complete and accurate measure of R&D resources, both expenditure and personnel, in the higher education sector. In particular, the large increase in higher education funded R&D is due to the inclusion of more accurate data related to private higher education institutions.

Beginning with the 2007 survey, the following measures resulted in a significant increase in Business enterprise R&D: the reintroduction of the fiscal incentive, SIFIDE; an increase in the number of the firms performing R&D activities; and an updating of the Business Enterprise Register.

New methodological procedures have been adopted for the 1997 survey so that only R&D activities are covered in the survey. The classification of BERD by NACE (Rev. 1) was introduced and the data have been revised back to 1995. Some of the PNP units have been resectored in the business enterprise and higher education sectors.

In 1997, due to a new accounting method for structural funds from the European Commission, funds from abroad and direct government financing are not comparable with those of earlier years.

GBAORD data have been revised back to 2008 according to a new methodological exercise. TBP data are published according to the new BPM6 as from 1996.

- For the **Slovak Republic**, data before 1994 refer to the *Research and Development Base* (RDB) and cover the whole activity of institutions and not only R&D. Defence R&D was totally excluded until 1997 and only partially included thereafter.

Since 2002, a new budget classification compatible with COFOG enables the identification of government budget appropriations for defence R&D. The defence category includes R&D appropriations for defence, safety and security of the country. For earlier years, defence R&D was included in the GBAORD total.

- For **Slovenia**, in 2011, the increase in R&D personnel and expenditure is notably explained by both the improvement of non-response analysis and new administrative sources to better identify R&D performers. Beginning reference year 2008, survey coverage was expanded to include some innovative companies that were not previously recognised as R&D performers.

- For **Spain**, beginning 2008, the R&D questionnaire includes a specific category for on-site consultants undertaking R&D projects in the enterprise; as well as a specific category within the breakdown of current costs.

Since 2004, loans for R&D that are returnable are not included in GBAORD, in order to ensure international comparability.

From 2002, R&D expenditure and personnel data for the business enterprise sector include the occasional and the systematic R&D.

R&D personnel data prior to 1989 are underestimated because the R&D personnel data for the higher education sector only include researchers. In consequence, total R&D personnel in Spain may be underestimated for these years by between 10 and 15%.

In 1992, there was an upward reestimation of the General University Funds causing a break in series in the financing of HERD and GERD. In 1995, the sources of funds for R&D in the higher education sector were reviewed; own funds are now separated from the General University Funds where they were previously included.

In 1997, the defence objective in GBAORD almost doubled in magnitude due to an exceptional contribution by the Ministry for Industry and Energy. The incorporation in 1997 of the Spanish contribution to CERN has involved substantial changes in the “energy” category.

Up to 1992, TBP data come from the annual survey into technological transfer in companies conducted by the Ministry of Science and Technology (former Ministry of Industry and Energy). From 1996 onwards, TBP data come from the balance of payments statistics compiled by the Spanish Central Bank. All TBP items are covered. TBP data are published according to the new BPM6 as from 2008.

- In **Sweden**, part of personnel data were reallocated from the category “technicians” to the category “researchers” in 2013. In 2011 and 2009, the PNP sector decreased due to a new sampling method. In 2011, for personnel data, the institutional coverage of the Government sector was improved.

Beginning 2007, researchers in the business enterprise, government and PNP sectors are now surveyed by occupation; prior to that year, university graduates were counted in their place.

Until 2005, R&D data for Sweden were underestimated: R&D in the government sector covered central government units only and companies between 10-49 employees were excluded from the coverage. Moreover, prior to 1993 the surveys in the business enterprise, government and private non-profit sectors excluded R&D in the social sciences and humanities. Also beginning 2005, FTE on R&D in the higher education sector reflects a change in survey method. Concerning the government sector, beginning 2005, the data exclude R&D personnel from the County councils, resulting in the personnel data being underestimated.

As from 1997, funding from the Public Research Foundations, previously classified in the PNP sector, is considered as funding from the government sector.

In 1995, some institutions from the PNP sector have been reclassified to the business enterprise or the government sectors, and in the higher education sector, capital expenditures are excluded.

As from 1998, GBAORD series refer to the calendar year (January-December) instead of the period July-June which has been used until 1994. Budget appropriations for 1995 and 1996 are estimates based on the period July 1995-December 1996. Also from 1998, funding from the Public Research Foundations is excluded from the GBAORD data.

Up to 1993, TBP data came from the R&D survey and referred to the transactions linked to patents, licences, royalties and know-how. From 1998, the data are based on the quarterly trade in services survey. All TBP components are covered. TBP data are published according to the new BPM6 as from 2013.

- In **Switzerland**, the business enterprise sector comprises private enterprises only. Public enterprises are included in the government sector.

As from the reference year 2000, the government sector no longer includes the telecommunications companies that have been privatised (Swisscom).

As from 1998, the Federal Office of Agriculture and its research institutes no longer break down their R&D by socio-economic objective but group all under “Agriculture”. For GBAORD, this results in a break in series for both Agriculture and Health objectives, where half of the funds previously declared under Health are now declared under Agriculture. Also in 1998, the telecommunications field of the Federal Post office has become the private enterprise Swisscom.

which is no longer included under the Infrastructure objective in GBAORD. Before 1994, GBAORD did not include the public sector financed R&D mandates.

The TBP statistics are drawn from the Swiss balance of payments. They include sales and purchases of intangible assets, technological services (construction services, commercial and technical consulting), license and patent fees, including management fees, computer and information services.

- Total R&D personnel data for **Turkey** (Tables 9 and 10) are underestimated because personnel data for the higher education sector only include researchers.
- Beginning with the 2005 data, **United Kingdom** counts of researchers in full-time equivalent on R&D reflect a more accurate measure of post-graduate students. Estimates are based on the sum of student time allocated to different research activities (some students may be involved in several research projects). Students who spend 50% or more of their time on research activities are counted as one FTE; those for whom it is less than 50% are not counted.

In 2001, the government research agency, the Defence Evaluation and Research Agency (DERA) was disestablished and two new organisations were created. Around one quarter of DERA remained within the Ministry of Defence as a government agency, whilst the remaining three quarters became a private limited company, resulting in a break in series in both the government and business enterprise sectors as well as GBAORD.

Following work to enhance the estimates of R&D by PNP undertaken in 1996, estimates for R&D performed by PNP sector were substantially revised downwards. The data for previous years were revised accordingly.

Until 1994, in the business enterprise sector, R&D funding by business includes funds that may have been collected from other national sources such as higher education or PNPs.

A new method of estimating government-financed R&D in the higher education sector was applied as from 1993.

Reclassification of institutes explains most of the growth of the R&D personnel in the government sector between 1991 and 1992 and the decline in the following year.

As from 1991, the data for the government sector include an estimate for R&D expenditures in the public health services.

Between 1985 and 1986, the “United Kingdom Atomic Energy Authority” was transferred from the government sector to the business enterprise sector. Expenditure revisions have been made back to 1985.

Due to lack of official data for the higher education sector, the OECD Secretariat has made estimates for total researchers beginning 1999 and total R&D personnel beginning 1994.

As from 1995, the health objective in GBAORD has been broadened to include the total net costs to National Health Service trusts of their involvement in R&D.

Oil company operations have been included in the United Kingdom TBP data as from 1984. From 1996 onwards, the TBP data cover sale of patents and inventions, patent licensing, trademark patterns and designs, technology-related services and R&D. TBP data are published according to the new BPM6 as from 2003.

- For the **United States**, in the business sector, the funds from abroad previously included in the business-financed BERD, are available separately since 2010. In the higher education sector all fields of SSH are included from 2003 onwards.

Following a survey of Federally-Funded Research and Development Centers (FFRDCs) in 2005, it was concluded that FFRDC R&D belongs in the government sector – rather than

the sector of the FFRDC administrator, as had been reported in the past. R&D expenditures by FFRDCs were reclassified from the other three R&D performing sectors to the government sector; previously published data were revised accordingly. Between 2003 and 2004, the method used to classify data by industry has been revised. This particularly affects the ISIC category “wholesale trade” and consequently the BERD for total services.

US R&D data are generally comparable, but there are some areas of underestimation:

- i) government sector R&D performance covers only federal government activities; that by State and local government establishments is excluded;
- ii) except for the government sector, the R&D data exclude capital expenditures; for the business enterprise sector, depreciation is reported in place of gross capital expenditures.

Higher education (and national total) data were revised back to 1998 due to an improved methodology that corrects for double-counting of R&D funds passed between institutions.

Breakdown by type of R&D (basic research, applied research, etc.) was also revised back to 1998 in the business enterprise and higher education sectors due to improved estimation procedures.

No data is available for total R&D personnel; only data for R&D scientists and engineers are collected. The methodology for estimating researchers was changed as from 1985. In the government, higher education and PNP sectors, the data since then refer to employed doctoral scientists and engineers who report their primary work activity as research, development or the management of R&D, plus, for the higher education sector, the number of full-time equivalent graduate students with research assistantships averaging an estimated 50% of their time engaged in R&D activities. As from 1985, researchers in the government sector exclude military personnel. As from 1987, higher education R&D personnel also include those who report their primary work activity as design.

Due to lack of official data for the higher education sector, the total researchers figure is an OECD estimate.

2009 GBAORD data also includes the one time incremental R&D funding legislated in the American Recovery and Reinvestment Act of 2009. Beginning with the 2000 GBAORD data, budgets for capital expenditure – “R&D plant” in national terminology – are included. GBAORD data for earlier years relate to budgets for current costs only.

Up to 2000, the United States TBP data cover only royalties and licence fees. From 2001, data also include “research, development and testing services”. Beginning 2006, new statistics on total trade for several types of services are available for the first time. As from 2006, TBP data include royalties and license fees related to industrial processes, business format franchising fees, trademarks and other intangibles; research, development and testing services; computer and data processing services; architectural, engineering and other technical services; industrial engineering services.

Non-member economies

- In **Argentina**, *Frascati Manual* definitions are followed. Since 1997, data for human resources are strictly R&D. Before that, human resources data were expressed in terms of Science and Technology Activities (STA), involving R&D and diffusion activities of S&T (library services, training services, conferences, etc.). These have not been transferred to the *OECD Database*. Since 2002, the source of funds data for private non-profit organisations, universities and S&T public organisations are requested for R&D. Before 2002, these source of funds data were requested in terms of STA. These data were converted into R&D by means of a coefficient for each sector of performance. The main source of funds for science and technology activities in Argentina is the National Budget.

- In **China**, the national breakdown by source of funds does not fully match with the classification defined in the *Frascati Manual*. The R&D financed by the government, the business enterprises and by abroad can be retrieved, but part of the expenditure has no specific source of financing, i.e. self-raised funding (in particular for independent research institutions), the funds from the higher education sector and left-over government grants from previous years.

The government and higher education sectors cover all fields of NSE and SSH, while the business enterprise sector only covers the fields of NSE. There are only few organisations in the private non-profit sector. Hence no R&D survey has been carried out in this sector and the data are not available.

From 2009, researcher data are collected according to the *Frascati Manual* definition of researcher. Beforehand, this was only the case for independent research institutions, while for the other sectors data were collected according to the UNESCO concept of “scientist and engineer”.

In 2009, the survey coverage in the business and the government sectors has been expanded.

Before 2000, all of the personnel data and 95% of the expenditure data in the business enterprise sector are for large- and medium-sized enterprises only. Since 2000 however, the survey covers almost all industries and all enterprises above a certain threshold. In 2000 and 2004, a census of all enterprises was held, while in the intermediate years data for small enterprises are estimated.

Due to the reform of the S&T system, some government institutions have become enterprises, and their R&D data have been added to the enterprise sector since 2000.

- In **Romania**, in 2011, R&D questionnaires have been redesigned for all sectors (and merged with the *Community Innovation Survey* in the case of the business enterprise sector). This has had an impact on the number of researchers in both the higher education and business enterprise sectors. A substantial proportion of R&D expenditure and R&D personnel reported in the data for the business enterprise sector are performed/employed in public enterprises (57.4 and 62% respectively for the year 2003).

The higher education sector includes faculty hospitals. For some of these hospitals, as well as for other types of medical centres, there are problems of delimitation between R&D activities and health activities and in these cases no data is available on R&D expenditures and personnel. The higher education sector does not include experimental stations: given the specific nature of their activity, these are directly co-ordinated by the Ministry of Agriculture, and therefore included in the business enterprise sector.

In 2003, a change in methodology for the allocation of GBAORD data by socio-economic objectives has resulted in a break in series.

- In the **Russian Federation**, the business enterprise sector includes all organisations and enterprises whose main activity is connected with the production of goods and services for sale, including those owned by the state, and private non-profit institutions serving the above-mentioned organisations. In practice however, R&D performed in this sector is carried out mostly by industrial research institutes other than enterprises. This particularity reflects the traditional organisation of Russian R&D.

Headcount data include full-time personnel only, and hence are underestimated, while data in full-time equivalents (FTE) are calculated on the basis of both full-time and part-time personnel. This explains why the FTE data are greater than the headcount data.

New budgetary procedures introduced in 2005 have resulted in items previously classified as GBAORD being attributed to other headings and have affected the coverage and breakdown by socio-economic objective.

- In **Singapore**, the Public Research Centres are located within the universities and draw upon university expertise. They are closely linked with the universities and several have “spun off” from university research groups. However, they are administratively separate from the universities and funded by the Agency for Science, Technology and Research (A*STAR) and industry. The centres have been included in the “Public Research Institutes and Centres” category in the R&D survey since 1995. Until 1995, they were subsumed in the higher education sector. This leads to a discontinuity in the statistics for the government/public and higher education sectors between 1994 and 1995.

Data for TBP receipts do not include services with a technical content, unless covered under “licensing of new technologies”.

- For the 2001/02 R&D survey in **South Africa**, no comprehensive business register was available, nor was there any official register of the specific subset of those entities that actually conduct R&D. However, lists of firms surveyed in previous R&D surveys, those covered in previous technology audits, public listings of the top 200 companies in the economy, as well as lists of firms that participate in public innovation and R&D support programmes were available to the survey agency. These lists provided the basis for a purposive sample of all firms known to have R&D activities. There may however be an underestimation of R&D expenditure by 10 to 15%.
- In **Chinese Taipei**, each university has one or two research institutes, which receive government funding. These are usually included in the higher education sector. Several are directly funded by the National Science Council (NSC) and counted in the government sector. There are also Regional Centres for Instrumentation that are major national research facilities used by all sectors. The NSC monitors the budgets of the institutes and if their budget derives overwhelmingly (greater than 80%) from non-university sources, they are classified as belonging to the government research sector.

Since 2003, the business sector includes R&D data of private enterprises in the sectors of electricity, gas and water supply; construction; and services, which were not surveyed before.

Postgraduate students engaged in R&D were not included in the higher education sector until 2002.

Researchers must have a university degree or above.

TBP data do not include R&D performed abroad, services with a technical content, or transactions involving trademarks, design, patterns (sale, licensing, franchising).

ANNEX 2

Background economic indicators

Table A. Gross domestic product at current prices and PPPs

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	538 333	850 583	897 942	935 669	984 763	999 200	1 040 376
Austria	236 935	342 443	339 018	349 626	369 474	378 276	382 263
Belgium	289 272	406 484	407 470	428 198	452 450	460 777	464 923
Canada	894 658	1 333 431	1 301 730	1 362 090	1 427 542	1 469 441	1 512 972
Chile	146 961 ^y	273 691 ^y	273 157 ^y	310 656 ^y	348 842 ^y	369 977 ^y	386 614 ^y
Czech Republic	167 022	281 543	282 169	283 343	300 225	301 391	305 101
Denmark	157 872	224 350	218 852	231 932	241 284	243 569	245 834
Estonia	13 564	30 085	26 959	28 074	31 295	32 718	34 035
Finland	137 029	211 100	200 456	205 398	216 885	216 903	216 146
France	1 582 453	2 262 256	2 252 362	2 332 312	2 438 940	2 450 302	2 474 880
Germany	2 186 835	3 151 627	3 036 130	3 234 538	3 442 034	3 500 329	3 539 321
Greece	209 166	345 353	340 416	322 344	296 717	282 449	283 041
Hungary	123 281	208 216	208 477	214 776	224 601	223 149	230 867
Iceland	8 348	13 182	12 685	12 295	12 620	12 977	13 552
Ireland	112 127	196 389	188 464	195 634	205 556	207 520	210 037
Israel ¹	155 416	198 476	204 849	219 275	234 391	250 197	261 858
Italy	1 517 958	2 069 981	2 019 297	2 057 880	2 131 797	2 131 999	2 125 098
Japan	3 290 078 ^y	4 289 493 ^y	4 079 240 ^y	4 321 149 ^y	4 386 152 ^y	4 528 202 ^y	4 592 849 ^y
Korea	850 447	1 405 711	1 396 413	1 505 299	1 559 447	1 601 229	1 660 385
Luxembourg	24 615	41 405	39 796	42 686	47 413	48 767	49 472
Mexico	1 006 365	1 640 915	1 624 439	1 729 768	1 890 885	1 962 600	1 995 677
Netherlands	502 952	754 806	734 092	743 422	774 363	771 630	775 728
New Zealand	82 234 ^y	124 510 ^y	129 570 ^y	133 305 ^y	139 572 ^y	142 934 ^y	154 281 ^y
Norway	165 265	297 687	271 304	287 353	310 740	333 049	333 427
Poland	405 530	688 023	730 436	789 670	850 085	881 237	912 404
Portugal	183 697	275 524	277 070	284 675	284 341	286 046	290 756
Slovak Republic	60 136	127 954	124 817	131 724	135 316	139 075	143 437
Slovenia	35 567	59 827	56 122	56 467	58 489	58 526	59 448
Spain	880 773	1 550 009	1 521 038	1 506 786	1 527 270	1 532 739	1 542 768
Sweden	260 703	386 126	368 872	391 323	413 018	417 609	428 622
Switzerland	247 923	385 739	386 566	401 586	431 627	447 149	460 605
Turkey	589 614 ^y	1 067 944 ^y	1 044 390 ^y	1 168 150 ^y	1 308 343 ^y	1 348 311 ^y	1 407 449 ^y
United Kingdom	1 610 121	2 333 397	2 259 746	2 254 568	2 312 077	2 381 496	2 452 671
United States	10 284 780	14 718 590	14 418 740	14 964 380	15 517 930	16 163 150	16 768 050
EU28 (OECD estimates)	10 942 659	16 623 454	16 283 169	16 752 435	17 461 227	17 670 905	17 915 573
OECD-Total	28 811 068	42 546 849	41 673 083	43 436 351	45 306 483	46 574 924	47 754 948
Argentina	434 033	700 440	706 116	779 958	864 257	888 294	927 772
China	3 599 359 ^y	9 903 925 ^y	11 083 362 ^y	12 149 092 ^y	13 482 080 ^y	15 065 246 ^y	16 664 091 ^y
Romania	128 638	328 396	323 432	335 495	350 031	361 072	376 835
Russian Federation	999 542 ^y	2 878 201 ^y	2 768 121 ^y	2 928 122 ^y	3 226 600 ^y	3 448 244 ^y	3 623 076 ^y
Singapore	164 396	305 939	306 190	357 385	386 882	403 310	425 101
South Africa	332 359 ^y	561 421 ^y	557 107 ^y	581 557 ^y	614 321 ^y	640 480 ^y	662 470 ^y
Chinese Taipei	472 426 ^y	769 052 ^y	760 857 ^y	853 031 ^y	907 165 ^y	937 099 ^y	970 898 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table B. Implicit GDP price indices

Year 2005 = 1.000

	2000	2008	2009	2010	2011	2012	2013
Australia	0.838	1.152	1.163	1.235	1.259	1.255	1.274
Austria	0.918	1.061	1.081	1.091	1.111	1.131	1.148
Belgium	0.902	1.069	1.081	1.103	1.128	1.151	1.169
Canada	0.883	1.102	1.078	1.107	1.142	1.161	1.177
Chile	0.764 ^y	1.187 ^y	1.232 ^y	1.341 ^y	1.386 ^y	1.404 ^y	1.428 ^y
Czech Republic	0.883	1.064	1.092	1.076	1.074	1.089	1.107
Denmark	0.894	1.090	1.096	1.131	1.140	1.168	1.186
Estonia	0.773	1.300	1.306	1.326	1.365	1.403	1.467
Finland	0.942	1.069	1.089	1.093	1.121	1.150	1.178
France	0.910	1.073	1.074	1.085	1.096	1.109	1.118
Germany	0.946	1.029	1.047	1.055	1.067	1.083	1.105
Greece	0.860	1.115	1.143	1.152	1.161	1.162	1.129
Hungary	0.732	1.145	1.190	1.215	1.242	1.284	1.322
Iceland	0.817	1.265	1.366	1.439	1.478	1.524	1.555
Ireland	0.808	1.025	0.985	0.969	0.978	0.991	1.000
Israel ¹	0.937	1.041	1.081	1.096	1.117	1.163	1.192
Italy	0.872	1.070	1.091	1.094	1.110	1.128	1.144
Japan	1.074 ^y	0.967 ^y	0.962 ^y	0.942 ^y	0.924 ^y	0.916 ^y	0.910 ^y
Korea	0.870	1.053	1.090	1.125	1.142	1.154	1.162
Luxembourg	0.904	1.123	1.141	1.184	1.243	1.286	1.304
Mexico	0.714	1.184	1.224	1.279	1.347	1.390	1.418
Netherlands	0.880	1.065	1.070	1.082	1.084	1.097	1.109
New Zealand	0.887 ^y	1.109 ^y	1.114 ^y	1.157 ^y	1.178 ^y	1.172 ^y	1.224 ^y
Norway	0.883	1.132	1.164	1.210	1.245	1.276	1.318
Poland	0.877	1.096	1.139	1.159	1.196	1.222	1.237
Portugal	0.845	1.081	1.093	1.100	1.097	1.093	1.118
Slovak Republic	0.802	1.070	1.058	1.063	1.081	1.094	1.100
Slovenia	0.772	1.113	1.150	1.138	1.151	1.155	1.171
Spain	0.820	1.097	1.100	1.102	1.103	1.105	1.113
Sweden	0.932	1.082	1.108	1.119	1.132	1.144	1.158
Switzerland	0.974	1.063	1.067	1.070	1.072	1.071	1.069
Turkey	0.321 ^y	1.301 ^y	1.369 ^y	1.447 ^y	1.571 ^y	1.680 ^y	1.782 ^y
United Kingdom	0.891	1.087	1.109	1.144	1.168	1.187	1.208
United States	0.890	1.079	1.087	1.100	1.123	1.143	1.160
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	0.580	1.644	1.806	2.123	2.488	2.937	3.474
China	0.839 ^y	1.195 ^y	1.208 ^y	1.263 ^y	1.356 ^y	1.384 ^{b,y}	1.407 ^{b,y}
Romania	0.370	1.441	1.510	1.592	1.667	1.749	1.811
Russian Federation	0.455 ^y	1.546 ^y	1.577 ^y	1.801 ^y	2.087 ^y	2.243 ^y	2.375 ^y
Singapore	0.989	1.061	1.098	1.098	1.107	1.123	1.124
South Africa	0.708 ^y	1.244 ^y	1.348 ^y	1.451 ^y	1.536 ^y	1.604 ^y	1.698 ^y
Chinese Taipei	1.035 ^y	0.955 ^y	0.962 ^y	0.943 ^y	0.916 ^y	0.926 ^y	0.939 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table C. Purchasing power parities

National currency per USD

	2000	2009	2010	2011	2012	2013	2014
Australia	1.31	1.44	1.50	1.51	1.52	1.52	1.50 ^b
Austria	0.90	0.84	0.84	0.84	0.84	0.84	0.85 ^b
Belgium	0.89	0.86	0.85	0.84	0.84	0.85	0.84 ^b
Canada	1.23	1.20	1.22	1.24	1.25	1.25	1.25 ^b
Chile	286.44	353.07	357.33	348.02	350.29	354.91	368.04 ^b
Czech Republic	14.21	13.90	13.95	13.40	13.43	13.39	13.53 ^b
Denmark	8.40	7.83	7.76	7.60	7.66	7.67	7.62 ^b
Estonia	0.45	0.52	0.52	0.52	0.54	0.55	0.55 ^b
Finland	0.99	0.90	0.91	0.91	0.92	0.93	0.93 ^b
France	0.94	0.86	0.86	0.84	0.85	0.85	0.85 ^b
Germany	0.97	0.81	0.80	0.78	0.79	0.79	0.80 ^b
Greece	0.68	0.70	0.70	0.70	0.69	0.64	0.62 ^b
Hungary	107.83	125.55	125.46	124.82	127.94	129.28	130.08 ^b
Iceland	84.27	124.99	131.84	134.75	136.70	138.20	137.12 ^b
Ireland	0.96	0.89	0.84	0.83	0.83	0.83	0.82 ^b
Israel ¹	3.45	3.96	3.97	3.94	3.96	4.01	3.97 ^b
Italy	0.82	0.78	0.78	0.77	0.76	0.76	0.75 ^b
Japan	154.97	115.50	111.63	107.45	104.63	104.09	104.13 ^b
Korea	746.88	824.76	840.57	854.59	860.25	860.22	852.51 ^b
Luxembourg	0.94	0.91	0.92	0.89	0.90	0.92	0.91 ^b
Mexico	6.09	7.43	7.67	7.67	7.93	8.04	8.24 ^b
Netherlands	0.89	0.84	0.85	0.83	0.83	0.83	0.82 ^b
New Zealand	1.44	1.47	1.49	1.49	1.48	1.47	1.47 ^b
Norway	9.12	8.96	9.01	8.98	8.90	9.20	9.14 ^b
Poland	1.84	1.86	1.82	1.83	1.83	1.82	1.81 ^b
Portugal	0.70	0.63	0.63	0.62	0.59	0.59	0.58 ^b
Slovak Republic	0.53	0.51	0.51	0.52	0.52	0.51	0.50 ^b
Slovenia	0.53	0.64	0.64	0.63	0.62	0.61	0.60 ^b
Spain	0.73	0.71	0.72	0.70	0.69	0.68	0.67 ^b
Sweden	9.13	8.92	9.00	8.85	8.82	8.81	8.80 ^b
Switzerland	1.85	1.52	1.51	1.43	1.40	1.38	1.36 ^b
Turkey	0.28	0.91	0.94	0.99	1.05	1.11	1.18 ^b
United Kingdom	0.64	0.66	0.69	0.70	0.70	0.70	0.70 ^b
United States	1.00	1.00	1.00	1.00	1.00	1.00	1.00 ^b
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	0.78	2.00	2.32	2.67	3.09	3.60	4.76
China	2.74	3.15	3.32	3.51	3.51	3.52	3.50 ^b
Romania	0.63	1.58	1.59	1.61	1.65	1.70	1.71 ^b
Russian Federation	7.30	14.02	15.82	17.35	18.04	18.43	19.66 ^b
Singapore	1.01	0.91	0.90	0.89	0.89	0.88	0.87
South Africa	2.77	4.32	4.60	4.77	4.90	5.11	5.35 ^b
Chinese Taipei	21.56	16.40	15.89	15.11	15.02	15.00	14.87

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table D. Value added in industry at current prices and PPPs

Million USD

	2000	2008	2009	2010	2011	2012	2013
Australia	367 825	597 862	618 846	651 549	687 861	688 891	713 958
Austria	157 388	227 347	220 185	226 802	241 421	246 045	247 749
Belgium	182 975	254 565	252 024	266 392	281 341	283 781	284 948
Canada	620 300 ^b	935 119	874 234	924 617	976 640	1 005 305 ^b	1 035 087 ^b
Chile	103 079 ^y	198 240 ^y	195 666 ^y	224 240 ^y	250 458 ^y	263 036 ^y	272 782 ^y
Czech Republic	119 092	197 863	193 423	194 581	207 049	206 415	207 829
Denmark	93 730	132 216	123 209	130 978	136 812	138 571	139 638
Estonia	8 954	20 248	16 837	18 183	20 642	21 599	22 310
Finland	86 545	130 885	117 820	120 921	125 954	123 444	121 590
France	959 240	1 325 871	1 305 262	1 354 711	1 412 815	1 415 864	1 422 167
Germany	1 411 890	2 019 398	1 890 274	2 042 815	2 177 673	2 220 056	2 240 941
Greece	132 145	200 817	193 269	170 342	151 453	145 270	147 939
Hungary	77 559	131 553	128 909	133 146	141 380	138 298	143 789
Iceland	5 317	8 367	8 081	7 921	8 240	8 312	8 680 ^b
Ireland	79 423	130 709	126 632	135 680	143 282	145 324	145 189
Israel ¹	94 205	119 526	122 832	128 758	136 912	148 101	154 100
Italy	989 575	1 303 237	1 238 849	1 260 627	1 306 381	1 300 751	1 292 395
Japan	2 241 465 ^y	2 843 177 ^y	2 635 098 ^y	2 816 178 ^y	2 834 521 ^y	2 916 916 ^y	2 958 560 ^{b,y}
Korea	591 074	950 835	945 555	1 035 214	1 078 532	1 102 351	1 146 114
Luxembourg	17 251	28 629	26 689	29 181	32 535	33 117	33 308
Mexico	739 818 ^b	1 245 385	1 181 913	1 272 914	1 414 279	1 479 900	1 504 842 ^b
Netherlands	338 796 ^b	487 449	475 588	484 995	505 921	506 842	504 481
New Zealand	55 308 ^y	80 356 ^y	83 735 ^y	85 913 ^y	89 952 ^{b,y}	92 119 ^{b,y}	99 431 ^{b,y}
Norway	107 059 ^y	200 027 ^y	171 617 ^y	182 627 ^y	200 065 ^y	214 516 ^y	213 530 ^y
Poland	283 712	472 758	512 758	548 311	592 650	621 470	646 372
Portugal	115 110	165 381	165 693	167 778	167 916	168 924 ^b	171 705 ^b
Slovak Republic	41 539	94 038	89 176	94 531	97 294	100 927	102 919
Slovenia	23 555	40 378	36 466	36 465	37 979	37 864	38 384
Spain	614 017	1 042 771	1 020 678	968 672	976 229	972 957	964 347
Sweden	160 740	240 698	223 916	243 613	257 202	258 757	263 561
Switzerland	176 592	278 937	275 397	286 567	306 441	315 861	324 091
Turkey	455 082 ^y	736 271 ^y	702 166 ^y	783 937 ^y	891 272 ^y	917 993 ^y	951 395 ^y
United Kingdom	1 063 009	1 487 684	1 444 452	1 406 137	1 428 649	1 465 956	1 510 832
United States	7 222 014	9 896 242	9 439 285	9 833 503	10 287 972	10 829 409	11 234 696 ^b
EU28 (OECD estimates)	7 126 091	10 595 026	10 244 720	10 481 202	10 916 880	11 035 896	11 152 390
OECD-Total	19 632 304	28 224 841	27 056 535	28 268 797	29 605 724	30 534 940	31 269 660
Argentina	281 009	471 065	458 753	507 624	549 292	547 318	554 714
China	3 023 056 ^y	7 941 202 ^y	8 601 728 ^y	9 654 555 ^y	10 765 559 ^y	11 712 440 ^y	12 691 933 ^y
Romania	93 754 ^y	232 384 ^y	229 726 ^y	228 450 ^y	238 458 ^y	243 616 ^y	254 231 ^y
Russian Federation	724 796 ^y	2 062 847 ^y	1 954 984 ^y	2 080 673 ^y	2 286 812 ^y	2 416 016 ^y	2 546 753 ^y
Singapore	138 459 ^b	254 226	252 774	294 352	315 219	327 686	343 405
South Africa	231 446 ^y	389 940 ^y	383 141 ^y	399 232 ^y	417 717 ^y	433 097 ^y	442 266 ^y
Chinese Taipei	347 897 ^y	562 312 ^y	547 611 ^y	632 730 ^y	674 516 ^y	682 565 ^y	705 793 ^y

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table E. Total population

Thousands

	2000	2008	2009	2010	2011	2012	2013
Australia	19 270	21 728	22 129	22 427	22 761	23 152	23 567
Austria	8 012	8 322	8 341	8 361	8 389	8 426	8 477
Belgium	10 246	10 707	10 790	10 883	10 978	11 054	11 105
Canada	30 686	33 318	33 727	34 127	34 484	34 880	35 158
Chile	15 398	16 763	16 929	17 094	17 248	17 403	17 557
Czech Republic	10 273	10 430	10 491	10 517	10 497	10 509	10 511
Denmark	5 338	5 493	5 523	5 547	5 570	5 591	5 613
Estonia	1 401	1 338	1 336	1 333	1 330	1 325	1 320
Finland	5 176	5 313	5 339	5 363	5 388	5 414	5 439
France	60 872	64 324	64 655	64 974	65 299	65 609	65 899
Germany	82 188	82 120	81 875	81 757	81 779	81 917	82 103
Greece	10 917	11 186	11 187	11 153	11 123	11 093	11 063
Hungary	10 211	10 038	10 023	10 000	9 972	9 920	9 893
Iceland	281	319	319	318	319	321	324
Ireland	3 804	4 496	4 539	4 560	4 577	4 590	4 602
Israel ¹	6 304	7 351	7 482	7 621	7 763	7 906	8 056
Italy	56 942	59 242	59 578	59 830	60 060	60 339	60 646
Japan	126 831	128 045	128 034	128 043	127 831	127 552	127 335
Korea	47 008	48 949	49 182	49 410	49 779	50 004	50 220
Luxembourg	437	489	498	508	519	532	545
Mexico	100 896	111 299	112 853	114 256	115 683	117 054	118 395
Netherlands	15 922	16 440	16 526	16 612	16 693	16 752	16 800
New Zealand	3 866	4 281	4 332	4 381	4 415	4 444	4 482
Norway	4 491	4 769	4 827	4 889	4 953	5 019	5 080
Poland	38 256	38 116	38 483	38 517	38 526	38 534	38 502
Portugal	10 290	10 558	10 568	10 573	10 558	10 515	10 457
Slovak Republic	5 401	5 406	5 418	5 430	5 398	5 406	5 413
Slovenia	1 989	2 022	2 042	2 049	2 053	2 057	2 060
Spain	40 264	45 983	46 368	46 563	46 736	46 766	46 592
Sweden	8 872	9 220	9 299	9 378	9 449	9 519	9 600
Switzerland	7 209	7 711	7 801	7 786	7 869	7 930	8 018
Turkey	64 252	71 095	72 050	73 003	73 950	74 899	75 774
United Kingdom	58 886	61 824	62 260	62 759	63 285	63 705	64 106
United States	282 398	304 543	307 240	309 776	312 034	314 246	316 465
EU28 (OECD estimates)	482 847	503 437	505 363	506 725	508 013	509 249	510 264
OECD-Total	1 139 189	1 223 239	1 232 044	1 239 798	1 247 269	1 254 384	1 261 177
Argentina	36 903	39 676	40 024	40 374	40 729	41 087	41 446
China	1 267 430	1 328 020	1 334 500	1 340 910	1 347 350	1 354 040	1 360 720
Romania	22 388	21 965	21 913	21 862	21 809	21 755	21 699
Russian Federation	146 597	142 742	142 785	142 850	142 961	143 170	142 834
Singapore	3 918	4 849	4 964	5 079	5 192	5 303	5 412
South Africa	44 108	48 909	49 475	50 034	50 587	51 012	51 392
Chinese Taipei	22 277	23 037	23 120	23 162	23 225	23 316	23 374

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table F. Total employment

Thousands

	2000	2008	2009	2010	2011	2012	2013
Australia	9 018	10 899	11 003	11 290	11 419	11 554 ^b	11 674 ^b
Austria	3 756	4 090	4 073	4 111	4 180	4 229	4 261
Belgium	4 114	4 458	4 449	4 479	4 542	4 555	4 543
Canada	15 094 ^b	17 378	17 080	17 385	17 683	17 851	18 068
Chile	5 332	6 539	6 497	6 703	6 998	7 140 ^b	7 270 ^b
Czech Republic	4 859	5 204	5 110	5 057	5 043	5 065	5 084
Denmark	2 730	2 910	2 823	2 758	2 756	2 748	2 749
Estonia	585	642	577	548	584	594	601
Finland	2 298	2 563	2 501	2 484	2 516	2 538	2 500
France	25 671	27 168	26 859	26 875	27 061	27 090	27 042
Germany	39 917	40 856	40 892	41 020	41 570	42 033	42 281
Greece	4 313	4 856	4 829	4 699	4 375	4 032	3 878
Hungary	4 237	4 147	4 047	4 055	4 054	4 059	4 092
Iceland	156	179	168	167	167	169	175
Ireland	1 696	2 129	1 962	1 883	1 849	1 839	1 882
Israel ¹	2 706	3 245	3 311	3 412	3 514	3 655	3 753
Italy	23 021	25 349	24 926	24 766	24 843	24 789	24 304
Japan	65 737	65 647	64 592	64 504	64 338	64 407	64 832 ^b
Korea	21 137	23 577	23 506	23 829	24 244	24 681	25 066
Luxembourg	264	349	353	360	370	379	387
Mexico	37 594	43 538	43 063	46 598	46 892	49 003	49 296
Netherlands	8 213	8 914	8 838	8 778	8 854	8 812	8 700
New Zealand	1 760	2 178	2 155	2 183	2 214	2 210	2 273
Norway	2 320	2 615	2 604	2 590	2 631	2 689	2 722
Poland	14 517	15 732	15 789	15 370	15 457	15 475	15 464
Portugal	5 042	5 080	4 942	4 871	4 777	4 582	4 450
Slovak Republic	2 025	2 247	2 203	2 170	2 208	2 209	2 192
Slovenia	914	1 001	983	962	946	938	924
Spain	16 691	21 324	19 987	19 640	19 141	18 430	17 948
Sweden	4 301	4 565	4 455	4 498	4 594	4 627	4 673
Switzerland	4 116	4 548	4 568	4 593	4 705	4 776	4 837
Turkey	19 443	21 194	21 277	22 594	24 110	24 821	25 524
United Kingdom	27 597	29 519	29 023	29 078	29 223	29 583	29 958
United States	139 175	147 643	142 183	141 386	142 183	144 750	146 187
EU28 (OECD estimates)	213 428	230 546	226 541	225 407	225 711	225 486	224 615
OECD-Total	515 018	562 284	551 626	555 694	560 041	566 312	569 590
Argentina	13 068	16 781	16 761	16 937	17 262	17 493	17 648 ^b
China	720 850	755 640	758 280	761 050	764 200	767 040	769 770
Romania	10 772	9 366	9 181	9 156	9 082	9 306	9 190
Russian Federation	65 070	70 965	69 285	69 804	70 732	71 342 ^b	71 397 ^b
Singapore	2 171	2 952	2 990	3 106	3 229	3 358	3 494
South Africa	12 107 ^b	14 581	14 189	13 784	14 065	14 421	14 863
Chinese Taipei	9 491	10 403	10 279	10 493	10 709	10 860	10 967

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table G. Industrial employment

Thousands

	2000	2008	2009	2010	2011	2012	2013
Australia	6 862	8 057	8 090	8 227	8 264	8 362 ^b	8 449 ^b
Austria	2 916	3 143	3 106	3 124	3 186	3 228	3 259
Belgium	2 925	3 106	3 069	3 077	3 119	3 118	3 098
Canada	11 562 ^b	13 259	12 871	13 100	13 358	13 482	13 654
Chile	3 774	4 620	4 547	5 141	5 363	5 472 ^b	5 572 ^b
Czech Republic	3 919	4 178	4 103	4 048	4 055	4 080	4 086
Denmark	1 853	1 994	1 881	1 807	1 817	1 817	1 819
Estonia	458	502	434	406	441	444	452
Finland	1 649	1 836	1 766	1 745	1 769	1 786	1 747
France	17 768	18 768	18 447	18 434	18 624	18 669	18 636 ^b
Germany	29 594	29 984	29 802	29 851	30 378	30 790	30 945
Greece	3 450	3 793	3 762	3 618	3 348	3 078	2 955
Hungary	3 336	3 237	3 118	3 103	3 131	3 131	3 114
Iceland	117	128	119	117	121	121	125
Ireland	1 357	1 625	1 450	1 363	1 335	1 331	1 376
Israel ¹	1 858	2 198	2 234	2 304	2 351	2 441	2 510
Italy	17 224	19 070	18 638	18 483	18 521	18 420	17 991
Japan	55 076	53 912	52 830	52 704	52 418	52 310	52 655 ^b
Korea	18 287 ^b	19 456	18 986	19 238	19 644	19 925	20 135
Luxembourg	214	279	279	283	290	295	299
Mexico	31 279	36 433	35 714	38 915	39 157	41 309	41 697
Netherlands	6 213	6 488	6 354	6 234	6 296	6 262	6 181
New Zealand	1 376	1 655	1 606	1 619	1 640	1 645	1 694
Norway	1 522	1 718	1 687	1 661	1 681	1 720	1 740
Poland	11 246	12 555	12 489	12 068	12 185	12 181	12 091
Portugal	4 061	4 019	3 866	3 791	3 709	3 552	3 429
Slovak Republic	1 552	1 779	1 733	1 694	1 731	1 736	1 721
Slovenia	768	828	806	781	764	754	741
Spain	13 013	16 601	15 237	14 803	14 317	13 679	13 282
Sweden	2 825	2 985	2 892	2 930	3 003	3 029	3 046
Switzerland	3 187	3 436	3 423	3 438	3 520	3 547	3 579
Turkey	16 983	18 219	18 449	19 632	20 820	21 147	21 772
United Kingdom	20 780	21 503	20 805	20 670	20 898	21 385	21 481
United States	101 655	103 917	98 049	97 016	98 043	100 255	101 479
EU28 (OECD estimates)	161 702	172 960	168 217	166 482	166 929	166 884	165 769
OECD-Total	396 886	425 279	412 644	415 428	419 299	424 502	426 810
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	9 949	8 223	8 020	8 000	7 930	8 142	8 082
Russian Federation	49 918	53 823	52 549 ^b	52 942 ^b	53 646 ^b	54 109 ^b	54 150 ^b
Singapore	1 914 ^b	2 611	2 629	2 728	2 833	2 938	3 059
South Africa	8 766 ^b	10 502	10 084	9 672	9 825	9 987	10 276
Chinese Taipei	8 412 ^b	9 100	8 916	9 099	9 284	9 426	9 523

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1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

Table H. Exchange rates

National currency per USD

	2000	2008	2009	2010	2011	2012	2013
Australia	1.725	1.192	1.282	1.090	0.969	0.966	1.036
Austria	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Belgium	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Canada	1.485	1.067	1.143	1.030	0.990	0.999	1.030
Chile	539.588	522.461	560.860	510.249	483.668	486.471	495.273
Czech Republic	38.598	17.072	19.063	19.098	17.696	19.578	19.571
Denmark	8.083	5.098	5.361	5.624	5.369	5.792	5.616
Estonia	1.084	0.683	0.719	0.755	0.719	0.778	0.753
Finland	1.085	0.683	0.720	0.755	0.719	0.778	0.753
France	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Germany	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Greece	1.072	0.683	0.720	0.755	0.719	0.778	0.753
Hungary	282.179	172.113	202.342	207.944	201.055	225.104	223.695
Iceland	78.616	87.948	123.638	122.242	115.954	125.083	122.179
Ireland	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Israel ¹	4.077	3.588	3.932	3.739	3.578	3.856	3.611
Italy	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Japan	107.765	103.359	93.570	87.780	79.807	79.791	97.596
Korea	1 130.960	1 102.050	1 276.930	1 156.060	1 108.290	1 126.470	1 094.850
Luxembourg	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Mexico	9.456	11.130	13.514	12.636	12.423	13.170	12.772
Netherlands	1.085	0.683	0.720	0.755	0.719	0.778	0.753
New Zealand	2.201	1.423	1.601	1.388	1.266	1.234	1.219
Norway	8.802	5.640	6.288	6.044	5.605	5.818	5.875
Poland	4.346	2.409	3.120	3.015	2.963	3.257	3.161
Portugal	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Slovak Republic	1.528	0.709	0.720	0.755	0.719	0.778	0.753
Slovenia	0.929	0.683	0.720	0.755	0.719	0.778	0.753
Spain	1.085	0.683	0.720	0.755	0.719	0.778	0.753
Sweden	9.162	6.591	7.654	7.208	6.494	6.775	6.514
Switzerland	1.689	1.083	1.088	1.043	0.888	0.938	0.927
Turkey	0.625	1.302	1.550	1.503	1.675	1.796	1.904
United Kingdom	0.661	0.544	0.642	0.647	0.624	0.633	0.640
United States	1.000	1.000	1.000	1.000	1.000	1.000	1.000
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	1.000	3.144	3.710	3.896	4.110	4.537	5.459
China	8.279	6.949	6.831	6.770	6.461	6.312	6.196
Romania	2.171	2.519	3.049	3.178	3.049	3.468	3.328
Russian Federation	28.129	24.853	31.740	30.368	29.382	30.840	31.837
Singapore	1.724	1.415	1.455	1.364	1.258	1.250	1.251
South Africa	6.940	8.261	8.474	7.321	7.261	8.210	9.655
Chinese Taipei	31.225	31.517	33.049	31.642	29.464	29.614	29.770

Disclaimer: <http://oe.cd/disclaimer>

1. Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>

Source: OECD, Statistics Directorate, January 2015

ANNEX 3

List of indicators for the electronic publication

The electronic version of the MSTI publication contains, in addition to the indicators published in this volume, most of those which were published in the previous version of the publication before its revision. These are presented as of 1981.

1. Gross Domestic Expenditure on R&D – GERD (million national currency)
2. GERD (million current PPP \$)
3. GERD as a percentage of GDP
4. GERD – (million 2000 dollars – constant prices and PPP)
5. GERD – Compound annual growth rate (constant prices)
6. GERD per capita population (current PPP \$)
7. Estimated civil GERD as a percentage of GDP
8. Basic research expenditure as a percentage of GDP
9. Total researchers (FTE)
10. Total researchers – Compound annual growth rate
11. Total researchers per thousand total employment
12. Total researchers per thousand labour force
13. Total R&D personnel (FTE)
14. Total R&D personnel – Compound annual growth rate
15. Total R&D personnel per thousand employment
16. Total R&D personnel per thousand labour force
17. Industry-financed GERD as a percentage of GDP
18. Government-financed GERD as a percentage of GDP
19. Percentage of GERD financed by industry
20. Percentage of GERD financed by government
21. Percentage of GERD financed by other national sources
22. Percentage of GERD financed by abroad
23. Percentage of GERD performed by the business enterprise sector
24. Percentage of GERD performed by the higher education sector
25. Percentage of GERD performed by the government sector
26. Percentage of GERD performed by the private non-profit sector
27. Total researchers (headcount)
28. Women researchers (headcount)
29. Women researchers as a percentage of total researchers (headcount)
30. Business enterprise sector: Total researchers (headcount)
31. Business enterprise sector: Women researchers (headcount)

32. Business enterprise sector: Women researchers as a percentage of total researchers (headcount)
33. Government sector: Total researchers (headcount)
34. Government sector: Women researchers (headcount)
35. Government sector: Women researchers as a percentage of total researchers (headcount)
36. Higher education sector: Total researchers (headcount)
37. Higher education sector: Women researchers (headcount)
38. Higher education sector: Women researchers as a percentage of total researchers (headcount)
39. Business enterprise expenditure on R&D – BERD (million national currency)
40. BERD (million current PPP \$)
41. BERD as a percentage of GDP
42. BERD – (million 2000 dollars – constant prices and PPP)
43. BERD – Compound annual growth rate (constant prices)
44. BERD as a percentage of value added in industry
45. Business enterprise researchers (FTE)
46. Business enterprise researchers – Compound annual growth rate
47. Business enterprise researchers as a percentage of national total
48. Business enterprise researchers per thousand employment in industry
49. Total business enterprise R&D personnel (FTE)
50. Total business enterprise R&D personnel – Compound annual growth rate
51. Total business enterprise R&D personnel as a percentage of national total
52. Total business enterprise R&D personnel per thousand employment in industry
53. Industry-financed BERD – (million 2000 dollars – constant prices and PPP)
54. Industry-financed BERD – Compound annual growth rate (constant prices)
55. Industry-financed BERD as a percentage of value added in industry
56. Percentage of BERD financed by industry
57. Percentage of BERD financed by government
58. Percentage of BERD financed by other national sources
59. Percentage of BERD financed by abroad
60. BERD performed in the pharmaceutical industry (million current PPP \$)
61. BERD performed in the computer, electronic and optical industry (million current PPP \$)
62. BERD performed in the aerospace industry (million current PPP \$)
63. BERD performed in the service industry (million current PPP \$)
64. Percentage of BERD performed in the pharmaceutical industry
65. Percentage of BERD performed in the computer, electronic and optical industry
66. Percentage of BERD performed in the aerospace industry
67. Percentage of BERD performed in service industries
68. Higher education expenditure on R&D – HERD (million national currency)
69. HERD (million current PPP \$)

70. HERD as a percentage of GDP
71. HERD – (million 2000 dollars – constant prices and PPP)
72. HERD – Compound annual growth rate (constant prices)
73. Percentage of HERD financed by industry
74. Higher education researchers (FTE)
75. Higher education researchers – Compound annual growth rate
76. Higher education researchers as a percentage of national total
77. Higher education total R&D personnel (FTE)
78. Higher education total R&D personnel – Compound annual growth rate
79. Government intramural expenditure on R&D – GOVERD (million national currency)
80. GOVERD (million current PPP \$)
81. GOVERD as a percentage of GDP
82. GOVERD – (million 2000 dollars – constant prices and PPP)
83. GOVERD – Compound annual growth rate (constant prices)
84. Percentage of GOVERD financed by industry
85. Government researchers (FTE)
86. Government researchers – Compound annual growth rate
87. Government researchers as a percentage of national total
88. Government total R&D personnel (FTE)
89. Government total R&D personnel – Compound annual growth rate
90. Total government budget appropriations or outlays for R&D – GBAORD (million national currency)
91. Total GBAORD (million current PPP \$)
92. Defence budget R&D as a percentage of total GBAORD
93. Civil budget R&D as a percentage of total GBAORD
94. Civil GBAORD for economic development programmes (million current PPP \$)
95. Civil GBAORD for health and environment programmes (million current PPP \$)
96. Civil GBAORD for education and society (million current PPP \$)
97. Civil GBAORD for space programmes (million current PPP \$)
98. Civil GBAORD for non-oriented research programmes (million current PPP \$)
99. Civil GBAORD for General University Funds (GUF) (million current PPP \$)
100. Economic development programmes as a percentage of civil GBAORD
101. Health and environment programmes as a percentage of civil GBAORD
102. Education and society as a percentage of civil GBAORD
103. Space programmes as a percentage of civil GBAORD
104. Non-oriented research programmes as a percentage of civil GBAORD
105. General University Funds (GUF) as a percentage of civil GBAORD
106. R&D expenditure of foreign affiliates (million national currency)
107. R&D expenditure of foreign affiliates (million current PPP \$)
108. R&D expenditure of foreign affiliates as a percentage of R&D expenditures of enterprises
109. Number of “triadic” patent families (priority year)

110. Number of patent applications filed under the PCT (priority year)
111. Share of countries in “triadic” patent families (priority year)
112. Number of patents in the ICT sector – applications filed under the PCT (priority year)
113. Number of patents in the biotechnology sector – applications filed under the PCT (priority year)
114. Technology balance of payments: Receipts (million national currency)
115. Technology balance of payments: Payments (million national currency)
116. Technology balance of payments: Receipts (million current dollars)
117. Technology balance of payments: Payments (million current dollars)
118. Technology balance of payments: Payments as a percentage of GERD
119. Total exports: Pharmaceutical industry (million current dollars)
120. Total exports: Computer, electronic and optical industry (million current dollars)
121. Total exports: Aerospace industry (million current dollars)
122. Total imports: Pharmaceutical industry (million current dollars)
123. Total imports: Computer, electronic and optical industry (million current dollars)
124. Total imports: Aerospace industry (million current dollars)
125. Trade Balance: Pharmaceutical industry (million current dollars)
126. Trade Balance: Computer, electronic and optical industry (million current dollars)
127. Trade Balance: Aerospace industry (million current dollars)
128. Export market share: Pharmaceutical industry
129. Export market share: Computer, electronic and optical industry
130. Export market share: Aerospace industry
131. Implicit GDP Price Indices (2005 = 1.00)
132. Exchange Rates (national currency per dollar)
133. Purchasing Power Parity (national currency per dollar)
134. Gross Domestic Product (million national currency)
135. Gross Domestic Product (million current PPP\$)
136. Value Added of Industry (million national currency)
137. Value Added of Industry (million current PPP\$)
138. Population (thousands)
139. Labour Force (thousands)
140. Total Employment (thousands)
141. Industrial Employment (thousands)

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