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Foreword

This publication contains key data series selected from the OECD Main Science and Technology Indicators Database (MSTI) accessible at https://oe.cd/msti. This publication consists of 68 standard tables of data series regarding the resources devoted to research and experimental development (R&D) as well as some indicators of R&D output and the impact of scientific and technological activities. Also presented are the underlying economic series used to calculate these indicators. It is complemented by a description of the general methodology used as well as national specifications available at http://www.oecd.org/sti/inno/MSTI_documentation_e.pdf.

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Conventional signs and abbreviations

Signs and abbreviations

R&D terminology

BERD	Business enterprise Expenditure on R&D (intramural)
FTE	Full Time Equivalent (on R&D)
GBARD	Government Budget Allocations for R&D
GERD	Gross Domestic Expenditure on R&D (intramural)
GOVERD	Government Expenditure on R&D (intramural)
GUF	General University Funds
HERD	Higher Education Expenditure on R&D (intramural)
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, please see the OECD Frascati Manual 2015, http://oe.cd/frascati, which includes in particular a glossary of key terms (*www.oecd.org/sti/inno/Frascati-2015-Glossary.pdf*

Other

GDP	Gross Domestic Product
ISIC	International Standard Industrial Classification
PCT	Patent Co-operation Treaty
PPP	Purchasing Power Parity

Sources and methods

Detailed methodological information: http://www.oecd.org/sti/inno/MSTI_documentation_e.pdf.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. 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.

Standard footnotes

b	Time series break.
c	Confidential statistical information.
d	Definition differs.
e	Estimated value.
k	Data included in another category.
l	Overestimated or based on overestimated data.
m	Underestimated or based on underestimated data.
p	Provisional value.
s	Unrevised breakdown not adding to the revised total.
v	The sum of the breakdown does not add to the total.
w	Includes data from another category.

The latest data for European countries, as well as Iceland, Norway, the Russian Federation, Switzerland and Turkey, were collected by Eurostat. From 2017, Eurostat follows slightly different, but generally compatible, conventions with regard to footnotes:

- Countries only use flags 'b', 'c', 'd', 'e' and 'p'.
- Only one flag may be submitted per data item (cell).
- The flags follow a hierarchy: p > b > d > e. As an example, an estimated (e) and provisional (p) data will be annotated with a 'p'.
- Estimated (e), overestimated (l) and underestimated (m) data are all annotated with an 'e' flag.
- 'd', 'k', 's', 'v' and 'w' flags are grouped as 'd' (definition differs).

In this publication, flags for these countries are published as they were received by the OECD from Eurostat, except in the following cases:

- The single-flag rule is not applied when this would lead to supress 'b' flags indicating breaks in series.
- 's' flags are not replaced with 'd'.

Contact details

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International Comparisons

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	23 129.7 e	..	21 151.5 e	..	..
Austria	6 837.0 e	11 415.1 e	12 007.9	12 863.3 e	13 147.0	14 104.1 e	14 966.4 p
Belgium	6 225.2	10 715.0	11 358.6	11 935.9	12 651.2	13 619.5 e	14 582.7 p
Canada	23 090.0	26 019.5 b	26 504.1	27 793.5 b	27 005.5	27 586.7	27 162.8 p
Chile	..	1 355.5	1 532.6	1 517.6 b	1 552.2	1 507.8 b p	..
Czech Republic	2 619.5	5 441.6	6 089.3	6 699.4	6 854.8	6 254.5	7 213.2 p
Denmark	4 429.5	7 468.8	7 793.6	7 877.6	8 518.0	9 055.9	9 575.9 p
Estonia	206.7	730.6	624.1	544.2	563.5	506.9	567.8
Finland	5 588.7	7 520.0	7 382.8	7 178.2	6 689.7	6 590.8	7 038.4 p
France	39 530.1	55 097.7	58 353.3	60 585.6 b	61 645.7	63 041.5 p	64 672.1 e
Germany	63 868.1	100 490.1	102 905.5	109 562.7	114 128.2	119 921.3	131 339.5 e
Greece	1 627.0	1 953.7	2 321.7	2 436.0	2 798.2	2 921.2	3 467.3 p
Hungary	1 586.8	2 895.0	3 361.4	3 408.4	3 534.5	3 173.4	3 801.4
Iceland	296.8	..	243.3 b	291.6	341.8	358.8	404.1 p
Ireland	2 006.5	3 321.6 e	3 467.8 e	3 566.9 e	3 870.4 e	3 920.0 e	3 881.0 p
Israel[1]	6 966.3 d	10 433.4 d	11 224.5 d	11 754.6 d	12 665.4 d	14 083.9 d e	15 391.5 d e
Italy	18 241.2	27 419.6	28 459.4	29 448.3 e	30 002.9	32 460.2 b	33 542.9 p
Japan	128 694.6	152 325.6	164 655.8 b	169 554.1	168 546.1	164 758.2	170 900.7
Korea	30 618.3 d	64 862.5	68 234.1	73 099.8	76 932.4	80 465.6	90 979.6
Latvia	164.2	287.2	279.4	327.2	306.0	223.3	281.0 p
Lithuania	361	659	750	851	874	733	829
Luxembourg	498.8	619.1 b	676.6	712.3	751.7	792.2	806.3 p
Mexico	5 346.2	9 799.0	10 292.5	11 519.2 e p	11 670.4 e p	11 259.9 e p	..
Netherlands	10 892.4	15 177.7 b	15 969.2	16 404.4	16 913.4	17 458.7	18 563.6 p
New Zealand	1 189.3	..	1 856.9	..	2 123.4	..	..
Norway	3 275.8	5 316.3	5 620.4	5 805.6	6 063.5	6 180.1	6 922.6 p
Poland	2 984.9	7 990.8	8 185.8	9 149.3	10 234.8	10 153.1	11 757.8 p
Portugal	1 808.2	3 832.4	3 869.8	3 856.2	3 820.8	4 105.3	4 415.5 p
Slovak Republic	441.0	1 159.9	1 243.8	1 379.5	1 886.9	1 323.8	1 554.2
Slovenia	676.5	1 529.9	1 583.7	1 505.7	1 433.4	1 378.7	1 391.9 p
Spain	13 251.1	19 269.2	19 282.4	19 356.2	19 820.6	20 228.6	21 914.1 p
Sweden	10 388.2 b	13 970.4 e	14 496.4 e	14 191.1 e	15 493.2	15 923.3 p	17 201.4 p
Switzerland	..	14 740.0	..	..	17 854.9	..	..
Turkey	4 595.6	12 807.9	13 834.8	15 933.0	17 739.0	19 718.2	21 729.5
United Kingdom	30 639.7	38 490.2 e	41 532.1	43 811.1 e	45 678.2	47 420.7 e	49 345.3 p
United States	328 128.0 d	434 349.0 d	454 821.0 d	476 452.0 d	495 098.0 d	516 254.0 d p	543 249.0 d e
EU28 (OECD estimates)	226 753.2 e	340 908.3 e	355 277.5 e	371 193.1 e	386 022.5 e	399 788.3 e	427 655.1 e
OECD-Total	**778 502.3 e**	**1 092 840.1 e**	**1 149 660.9 e**	**1 202 201.6 e**	**1 240 361.1 e**	**1 280 791.6 e**	**1 357 745.8 e**
Argentina	2 277.9	5 265.7 p	5 337.6 p	5 042.8 p	5 467.0	4 681.8	..
China	86 836.1	292 196.3	334 116.6	370 605.5	407 466.7	451 411.9	495 980.9
Romania	844.7	1 837.3	1 534.5	1 569.5	2 091.5	2 258.8	2 625.0 p
Russian Federation	18 120.5	37 911.5	38 607.0	40 330.2	38 776.4	38 742.6	41 868.0
Singapore	5 091.3	8 242.0	8 777.1	10 102.5	..	..	..
South Africa	4 045.9	4 836.9	4 977.1	5 489.4	5 816.7	..	..
Chinese Taipei	15 308.9	29 176.4	30 910.7	32 731.4	33 847.7	35 942.4	39 344.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	2.09 e	..	1.88 e	..	..
Austria	2.37 e	2.91 e	2.95	3.08 e	3.05	3.13 e	3.16 p
Belgium	1.78	2.27	2.33	2.39	2.46	2.55 e	2.60 p
Canada	1.98	1.78 b	1.71	1.72 b	1.70	1.70	1.59 p
Chile	..	0.36	0.39	0.37 b	0.38	0.36 b p	..
Czech Republic	1.17	1.78	1.90	1.97	1.93	1.68	1.79 p
Denmark	2.39	2.98	2.97	2.91	3.05	3.12	3.06 p
Estonia	0.92	2.12	1.72	1.43	1.47	1.25	1.29
Finland	3.33	3.42	3.29	3.17	2.89	2.74	2.76 p
France	2.05	2.23	2.24	2.28 b	2.27	2.25 p	2.19 e
Germany	2.42	2.87	2.82	2.87	2.91	2.92	3.02 e
Greece	0.58	0.70	0.81	0.83	0.96	0.99	1.13 p
Hungary	0.92	1.26	1.39	1.35	1.36	1.20	1.35
Iceland	2.69	..	1.70 b	1.95	2.12	2.03	2.13 p
Ireland	1.19	1.56 e	1.56 e	1.50 e	1.19 e	1.16 e	1.05 p
Israel[1]	4.05 d	4.16 d	4.07 d	4.18 d	4.26 d	4.39 d e	4.54 d e
Italy	1.05	1.27	1.31	1.34 e	1.34	1.37 b	1.35 p
Japan	3.18	3.21	3.31 b	3.40	3.28	3.14	3.20
Korea	2.63 d	4.03	4.15	4.29	4.22	4.23	4.55
Latvia	0.53	0.66	0.61	0.69	0.63	0.44	0.51 p
Lithuania	1	1	1	1	1	1	1
Luxembourg	1.57	1.27 b	1.30	1.26	1.28	1.30	1.26 p
Mexico	0.40	0.49	0.50	0.53 e p	0.52 e p	0.49 e p	..
Netherlands	1.77	1.92 b	1.93	1.98	1.98	2.00	1.99 p
New Zealand	1.12	..	1.15	..	1.23	..	..
Norway	1.48	1.62	1.65	1.71	1.93	2.03	2.11 p
Poland	0.56	0.88	0.87	0.94	1.00	0.96	1.03 p
Portugal	0.76	1.38	1.33	1.29	1.24	1.28	1.32 p
Slovak Republic	0.49	0.80	0.82	0.88	1.17	0.79	0.88
Slovenia	1.41	2.57	2.58	2.37	2.20	2.01	1.85 p
Spain	1.10	1.29	1.27	1.24	1.22	1.19	1.20 p
Sweden	3.38 b	3.28 e	3.30 e	3.14 e	3.26	3.27 p	3.33 p
Switzerland	..	3.19	..	..	3.37	..	..
Turkey	0.57	0.83	0.82	0.86	0.88	0.94	0.96
United Kingdom	1.56	1.59 e	1.64	1.66 e	1.67	1.68 e	1.66 p
United States	2.52 d	2.68 d	2.71 d	2.72 d	2.72 d	2.76 d p	2.79 d e
EU28 (OECD estimates)	1.66 e	1.91 e	1.92 e	1.94 e	1.96 e	1.94 e	1.96 e
OECD-Total	**2.14 e**	**2.31 e**	**2.33 e**	**2.35 e**	**2.34 e**	**2.34 e**	**2.37 e**
Argentina	0.42	0.64 p	0.62 p	0.59 p	0.62	0.53	..
China	1.31	1.91	1.99	2.02	2.06	2.11	2.13
Romania	0.41	0.48	0.39	0.38	0.49	0.48	0.50 p
Russian Federation	0.99	1.03	1.03	1.07	1.10	1.10	1.11 e
Singapore	2.16	1.99	1.99	2.16	..	..	..
South Africa	0.86	0.73	0.72	0.77	0.80	..	..
Chinese Taipei	2.32	2.96	3.02	3.01	3.06	3.17	3.31

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

Table 3. Gross domestic expenditure on R&D (GERD) at 2010 prices and PPP

Million 2010 USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	21 598.3 e	..	20 362.3 e	..	..
Austria	7 813.7 e	10 610.8 e	10 759.9	11 305.2 e	11 306.5	11 822.5 e	12 249.1 p
Belgium	7 246.6	10 122.7	10 413.4	10 785.1	11 312.6	11 870.7 e	12 308.1 p
Canada	25 424.3	25 367.2 b	25 015.3	25 859.0 b	25 797.7	26 164.2	25 273.1 p
Chile	..	1 254.4	1 400.6	1 375.0 b	1 427.8	1 376.9 b p	..
Czech Republic	3 001.4	5 214.9	5 531.6	5 900.5	6 076.4	5 421.5	6 030.1 p
Denmark	5 649.6	7 223.1	7 264.2	7 241.6	7 769.6	8 122.0	8 138.4 p
Estonia	270.8	684.6	566.2	483.5	505.4	444.7	482.0
Finland	6 642.4	7 183.1	6 852.9	6 565.4	6 020.0	5 868.2	6 055.9 p
France	45 975.0	53 297.0	53 843.9	55 303.8 b	55 700.9	55 881.4 p	55 581.5 e
Germany	73 013.9	95 745.5	94 634.9	98 268.2	101 548.3	104 008.8	110 084.9 e
Greece	1 842.5	1 844.7	2 070.0	2 141.8	2 459.8	2 538.7	2 924.7 p
Hungary	2 005.7	2 721.2	3 053.5	3 102.0	3 232.4	2 922.2	3 407.9
Iceland	319.9	..	230.2 b	269.0	305.8	315.0	342.7 p
Ireland	2 300.4	3 200.8 e	3 250.3 e	3 383.4 e	3 377.9 e	3 453.1 e	3 348.2 p
Israel[1]	7 196.4 d	9 820.5 d	10 037.8 d	10 688.7 d	11 174.6 d	11 998.0 d e	12 841.1 d e
Italy	22 073.3	25 777.3	26 065.6	26 800.1 e	27 010.4	27 934.0 b	28 014.2 p
Japan	141 838.5	145 773.5	153 595.0 b	158 135.7	154 493.9	149 437.6	155 104.2
Korea	32 303.2 d	64 243.2	68 123.3	72 779.0	73 558.6	75 900.5	84 253.8
Latvia	199.9	270.8	255.6	293.1	274.1	197.1	238.6 p
Lithuania	439	613	674	757	780	646	703
Luxembourg	604.5	564.4 b	598.8	606.0	639.7	660.9	650.8 p
Mexico	6 445.0	9 107.1	9 452.4	10 337.6 e p	10 544.6 e p	10 072.1 e p	..
Netherlands	12 396.0	14 413.1 b	14 496.4	15 051.8	15 418.1	15 851.1	16 259.0 p
New Zealand	1 413.0	..	1 685.2	..	1 942.2	..	..
Norway	3 885.7	4 970.2	5 114.1	5 286.4	5 789.2	5 955.1	6 450.2 p
Poland	3 570.7	7 526.3	7 541.6	8 411.7	9 324.5	9 235.1	10 388.3 p
Portugal	2 120.0	3 748.1	3 567.6	3 499.9	3 433.5	3 607.2	3 812.3 p
Slovak Republic	527.2	1 132.3	1 175.8	1 291.0	1 790.6	1 243.3	1 435.4
Slovenia	736.6	1 432.5	1 420.0	1 341.4	1 273.1	1 201.0	1 162.0 p
Spain	15 455.6	18 403.0	17 818.0	17 590.7	17 980.4	18 047.5	18 891.8 p
Sweden	12 209.4 b	13 101.1 e	13 363.6 e	13 047.5 e	14 156.2	14 558.6 p	15 128.0 p
Switzerland	..	13 590.2	..	..	15 206.0	..	..
Turkey	6 117.7	12 212.1	13 027.0	14 412.5	15 658.0	17 313.7	18 925.3
United Kingdom	34 576.3	37 149.0 e	38 992.7	40 626.2 e	41 806.8	42 910.3 e	43 217.2 p
United States	360 744.4 d	417 455.3 d	429 592.1 d	441 667.4 d	454 096.3 d	468 378.3 d p	483 676.3 d e
EU28 (OECD estimates)	263 373.4 e	325 283.7 e	327 303.9 e	337 095.7 e	347 254.9 e	352 477.6 e	364 845.0 e
OECD-Total	**872 658.8 e**	**1 049 268.7 e**	**1 077 063.5 e**	**1 111 773.0 e**	**1 133 572.7 e**	**1 153 815.9 e**	**1 197 855.6 e**
Argentina	2 504.3	5 065.9 p	5 053.4 p	4 690.2 p	5 030.1	4 253.4	..
China	95 556.3	281 115.7	316 339.6	344 691.9	374 910.0	410 188.1	442 721.0 e
Romania	1 224.5	1 730.6	1 436.1	1 463.6	1 940.6	2 002.0	2 247.1 p
Russian Federation	26 265.9	34 984.3	35 556.6	37 387.1	37 308.0	37 155.4	38 134.7 e
Singapore	5 594.5	7 916.2	8 285.7	9 361.5	..	..	..
South Africa	4 452.1	4 653.3	4 712.1	5 105.5	5 351.9	..	..
Chinese Taipei	16 830.8	28 040.8	29 197.3	30 342.2	31 044.7	32 610.1	35 030.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	1 000.1 e	..	888.1 e	..	..
Austria	831.2 e	1 354.7 e	1 416.5	1 505.5 e	1 523.5	1 613.8 e	1 701.7 p
Belgium	594.1	968.1	1 021.0	1 067.6	1 125.7	1 205.8 e	1 284.9 p
Canada	716.1	748.7 b	754.0	782.1 b	753.7	760.7	740.0 p
Chile	..	77.7	86.9	85.1 b	86.0	82.5 b p	..
Czech Republic	256.0	517.8	579.3	636.5	650.2	592.0	681.2 p
Denmark	817.4	1 335.9	1 388.5	1 396.0	1 499.1	1 580.7	1 660.5 p
Estonia	152.1	551.3	472.7	413.6	429.0	385.2	431.6
Finland	1 065.3	1 389.0	1 357.4	1 314.1	1 220.6	1 199.4	1 277.8 p
France	625.8	839.3	884.3	913.6 b	926.3	944.9 p	967.2 e
Germany	785.2	1 249.5	1 276.0	1 352.9	1 397.1	1 456.3	1 589.0 e
Greece	148.1	176.9	211.7	223.6	258.6	271.1	322.4 p
Hungary	157.3	291.8	339.8	345.4	359.1	323.4	388.4
Iceland	1 003.0	..	751.5 b	890.5	1 033.1	1 069.7	1 176.8 p
Ireland	482.3	722.5 e	750.6 e	766.7 e	824.2 e	825.4 e	808.2 p
Israel[1]	1 000.7 d	1 319.5 d	1 393.3 d	1 431.4 d	1 511.9 d	1 648.5 d e	1 767.3 d e
Italy	313.5	454.4	469.3	484.4 e	494.0	535.4 b	554.1 p
Japan	1 007.4	1 194.2	1 293.1 b	1 332.3	1 326.0	1 297.7	1 348.6
Korea	635.4 d	1 292.1	1 353.1	1 440.5	1 508.0	1 570.2	1 768.4
Latvia	73.3	141.2	138.8	164.1	154.7	113.9	144.8 p
Lithuania	109	221	254	290	301	256	293
Luxembourg	1 071.0	1 164.8 b	1 240.7	1 275.8	1 320.2	1 356.1	1 350.6 p
Mexico	49.9	83.7	86.9	96.2 e p	96.4 e p	92.1 e p	..
Netherlands	667.5	906.0 b	950.5	972.8	999.0	1 025.4	1 083.9 p
New Zealand	286.7	..	416.3	..	459.3	..	..
Norway	708.6	1 059.2	1 106.4	1 130.2	1 168.1	1 180.3	1 311.8 p
Poland	78.2	207.4	212.6	237.7	266.1	264.2	306.0 p
Portugal	172.2	364.5	370.1	370.8	368.9	397.6	428.7 p
Slovak Republic	81.9	214.6	229.8	254.6	348.0	243.8	285.8
Slovenia	338.1	743.8	768.9	730.3	694.7	667.8	673.8 p
Spain	303.5	412.0	413.8	416.7	427.1	435.5	470.9 p
Sweden	1 150.5 b	1 467.6 e	1 510.0 e	1 463.6 e	1 581.1	1 604.7 p	1 710.3 p
Switzerland	..	1 843.2	..	..	2 155.8	..	..
Turkey	67.0	171.0	182.6	208.0	229.1	252.0	274.9
United Kingdom	507.2	604.2 e	647.9	678.2 e	701.6	722.3 e	747.2 p
United States	1 108.6 d	1 381.6 d	1 436.6 d	1 493.8 d	1 540.8 d	1 595.0 d p	1 666.5 d e
EU28 (OECD estimates)	458.2 e	673.7 e	700.6 e	730.3 e	757.3 e	782.1 e	834.8 e
OECD-Total	**657.5 e**	**868.9 e**	**909.0 e**	**945.0 e**	**969.3 e**	**995.0 e**	**1 049.1 e**
Argentina	59.0	126.2 p	126.5 p	118.2 p	126.8	107.4	..
China	66.4	215.8	245.5	270.9	296.4	326.5	356.8
Romania	39.6	91.6	76.8	78.8	105.5	114.6	133.6 p
Russian Federation	126.3	264.7	269.0	276.1	264.9	264.1	285.1
Singapore	1 193.5	1 551.6	1 625.7	1 846.9	..	..	..
South Africa	85.0	92.4	93.7	101.8	106.2	..	..
Chinese Taipei	672.3	1 251.3	1 322.4	1 396.7	1 440.8	1 526.9	1 669.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	..	..	2.95	..	..	..	..
Belgium	1.78	..	..	..	..	..	..
Canada	..	..	..	..	..	..	..
Chile	..	0.36	0.39	0.37 b	0.38	0.36 b p	..
Czech Republic	1.16	1.78	1.89	1.97	..	..	..
Denmark	..	..	..	..	..	..	..
Estonia	0.92 e	2.12 e	1.72 e	1.42	..	..	..
Finland	3.31	3.40	3.27	3.15	..	..	..
France	1.88	2.16	2.16	2.21 b	..	..	..
Germany	2.39 e	2.84	2.80	2.84	..	..	..
Greece	..	..	..	..	..	..	..
Hungary	0.91	1.26	1.38	1.35	1.36	..	..
Iceland	2.69	..	1.70 b	1.95	2.12	2.03	2.13 p
Ireland	1.19	1.56 e	1.56 e	1.50 e	1.19 e	1.16 e	1.05 p
Israel[1]	4.05	4.16	4.07	4.18	4.26	4.39 e	4.54 e
Italy	..	..	..	..	..	..	..
Japan	3.15 e	3.19 e	3.28 b e	3.37 e	3.25 e	..	..
Korea	2.56 d	3.87	3.97	4.13	4.07	4.09	4.36
Latvia	..	..	..	..	..	..	..
Lithuania	1	1	1	1	..	..	..
Luxembourg	1.57	1.27 b	1.30	1.26	1.28	1.30	1.26 p
Mexico	..	..	..	..	..	..	..
Netherlands	..	..	..	..	..	..	..
New Zealand	..	..	1.14	..	1.22	..	..
Norway	..	..	..	..	..	..	..
Poland	..	..	..	..	..	..	..
Portugal	0.75	1.37	1.32	1.28	..	..	..
Slovak Republic	0.49	0.79	0.82	0.88	1.17	..	..
Slovenia	1.41	2.57	2.58	2.37	2.20	..	..
Spain	..	1.25	1.23	1.20	1.19	1.15	..
Sweden	3.26 b	..	3.18 e	..	..	..	..
Switzerland	..	3.15	..	..	..	..	..
Turkey	..	0.82	0.80	0.84	0.86	0.93	..
United Kingdom	1.37	1.49 e	1.53	1.56 e	..	..	..
United States	2.09 d	..	..	..	..	..	..
EU28 (OECD estimates)	1.59 e	1.87 e	1.88 e	1.91 e	1.92 e	1.91 e	..
OECD-Total	**1.96 e**	**2.17 e**	**2.21 e**	**2.24 e**	**2.23 e**	**2.22 e**	**..**
Argentina	0.42	0.63 p	0.62 p	0.59 p	..	..	..
China	..	..	..	..	..	..	..
Romania	0.40	0.48	0.38	0.38	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	0.81	0.69	0.69	0.72	0.75	..	..
Chinese Taipei	2.25	2.93	2.99	2.99	3.04	3.13	3.27

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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

Table 6. Basic research expenditure as a percentage of GDP

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	..	..	0.56 d	..	0.54 d	..	..
Belgium	..	..	0.46	..	0.38	..	..
Canada	..	..	..	..	..	..	..
Chile	..	0.09 m	0.11 m	0.11 b m	0.13 m	0.10 m p	..
Czech Republic	0.36	0.53	0.62	0.61	0.61	0.48	0.49 p
Denmark	0.45 e	0.55 e	0.57	0.59	0.58	..	..
Estonia	0.27	0.45	0.47	0.43	0.39	0.34	..
Finland	..	..	..	..	..	..	..
France	0.49	0.54	0.54	0.54	0.54	..	..
Germany	..	..	..	..	..	..	..
Greece	..	..	0.28	..	0.34	..	..
Hungary	0.25	0.25 e	0.27 e	0.25 e	0.25 e	0.22 e	..
Iceland	0.51	..	0.45 b	0.45	0.44	0.45	0.45 p
Ireland	0.28	..	0.30 e	..	0.20 e	..	..
Israel[1]	0.65 d e	0.51 d e	0.52 d e	0.51 d e	0.50 d e	0.51 d e	0.52 d e
Italy	0.29	0.32	0.33	0.32 e	0.33	0.32 b	..
Japan	0.38	0.40	0.42 b	0.42	0.39	0.39	0.42
Korea	0.40 d	0.74	0.75	0.76	0.73	0.68	0.66
Latvia	0.11	0.21	0.15	0.20	0.22	0.13	..
Lithuania	0	0	0	0	0	0	..
Luxembourg	..	..	..	..	0.49	..	..
Mexico	..	0.14	0.14	0.15	0.15	0.14 e p	..
Netherlands	..	0.53 b	0.55	0.54	0.54	0.53	..
New Zealand	0.34	..	0.29	..	0.28	..	..
Norway	0.29	..	0.29 m	..	0.33 d	..	..
Poland	0.17	0.23	0.30 b	0.32	0.32	0.29	..
Portugal	0.19	0.29	0.30	0.30	0.29	0.29	..
Slovak Republic	0.23	0.38	0.36	0.40	0.50	0.32	..
Slovenia	0.20	0.34	0.35	0.43 b	0.39	0.35	..
Spain	0.19 m	0.27 m	0.29 e	0.28 e	0.27 e	0.26 e	..
Sweden	..	..	..	..	..	..	..
Switzerland	..	0.94	..	..	1.29	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	..	0.27 e	0.28 e	0.28 e	0.28 e	0.30 e	..
United States	0.47 d	0.45 d	0.47 d	0.47 d	0.46 d	0.47 d p	0.47 d e
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	0.11	..	..	..	0.21 b	0.15	..
China	0.07	0.09	0.09	0.10	0.10	0.11	0.12
Romania	0.09 m	0.20	0.15	0.13	0.15	0.12	..
Russian Federation	0.13 m	0.16 m	0.16 m	0.16 m	0.16 m	0.15 d	..
Singapore	0.45	0.39	0.41	0.42	..	..	..
South Africa	0.16	0.19	0.17	0.19	0.20	..	..
Chinese Taipei	0.24	0.28	0.28	0.27	0.27	0.26	0.26

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 7. Total researchers in full-time equivalent

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	28 470 d e	39 701 d e	40 426 d	42 627 d e	43 562 d	44 933 d p	..
Belgium	33 146	45 597	46 355	50 820	53 178 b	54 280 e	56 484 p
Canada	136 700	161 600	163 180	161 982 b	162 952	155 128	..
Chile	..	6 798 d	5 893 d	7 585 d	8 175 d	8 993 d p	..
Czech Republic	24 169 b	33 217	34 271	36 040	38 081	37 338	39 181 p
Denmark	28 179	40 080	39 868	41 409	42 826	44 815	45 277 p
Estonia	3 331	4 582	4 407	4 324	4 187	4 338	4 674
Finland	39 582	40 468	39 196	38 281	37 516	35 908	37 047 p
France	202 507	258 913 e	265 466 e	271 772 b	277 631	..	288 579 e
Germany	272 148	352 419	354 463	351 923	387 982	399 605	413 542 e
Greece	19 593 d	24 800 d	29 228 d	29 877 d	34 708 d	29 403 d	35 185 d p
Hungary	15 878	23 837	25 038	26 213	25 316	25 804	28 426 p
Iceland	2 155	..	1 848 b	..	1 944 b	2 206	..
Ireland	11 587	22 368	23 707	24 543	22 259	19 791	19 559 p
Israel[1]	..	63 521 d e	..	..	..	..	..
Italy	82 489	110 695	116 163	118 183	125 875	133 706 b	136 204 p
Japan	680 631 d	646 347 d	660 489 b d	682 935 d	662 071 d	665 566 d	676 292 d
Korea	179 812 d	315 589	321 842	345 463	356 447	361 292	383 100
Latvia	3 282 d	3 904 d	3 625 d	3 748 d	3 613 d	3 152 d	3 482 d p
Lithuania	7 637	8 023	8 557	9 075	8 167	8 525	8 691
Luxembourg	2 227	2 310 b	2 503	2 629	2 539	2 505 p	2 732 p
Mexico	43 922	29 094	29 921	..	..	..	..
Netherlands	47 854	73 235 b	76 670	76 229	79 155	81 117	85 300 p
New Zealand	12 986	..	17 900	..	18 700	..	..
Norway	21 200	27 841	28 312	29 237	30 632	31 913	34 367 p
Poland	62 162	67 001	71 472	78 622	82 594	88 165	96 497 p
Portugal	21 126	42 498	37 813 b	38 155	38 672	41 349	44 322 p
Slovak Republic	10 921	15 271	14 727	14 742	14 406	14 149	15 226
Slovenia	5 253	8 884	8 707	8 574	7 900	8 119	9 293 p
Spain	109 720	126 778 d	123 225 d	122 235 d	122 437 d	126 633 d	133 195 d p
Sweden	55 001 b e	49 280 e	64 194 b e	66 643 e	66 734 e	70 372 p	75 247 p
Switzerland	..	35 785	..	..	43 740	..	..
Turkey	39 139	82 122	89 075	89 657	95 161	100 158	111 893
United Kingdom	248 599 b e	256 156 e	267 699	276 584 e	284 483	288 922 e	289 674 p
United States	1 104 019 e	1 253 231 e	1 294 353 e	1 339 931 e	1 369 267 e	1 371 290 e	..
EU28 (OECD estimates)	1 374 762 e	1 687 741 e	1 736 854 e	1 772 538 e	1 843 564 e	1 890 547 e	1 957 773 e
OECD-Total	**3 707 553 e**	**4 404 660 e**	**4 529 768 e**	**4 665 659 e**	**4 769 439 e**	**4 829 817 e**	**..**
Argentina	31 868	50 490	50 785	51 665	52 970	54 046	..
China	1 118 698 d	1 404 017	1 484 040	1 524 280	1 619 028	1 692 176	1 740 442
Romania	22 958	18 016	18 576	18 109	17 459	18 046	17 518 p
Russian Federation	464 577	443 269	440 581	444 865	449 180	428 884	410 617
Singapore	23 789	34 141	36 025	36 666	..	..	..
South Africa	17 303	21 382	23 346	23 572	26 159	..	..
Chinese Taipei	88 859	140 102	141 159	142 983	145 381	147 710	150 384

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

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

Per thousand

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	7.4 d e	9.4 d e	9.6 d	10.0 d e	10.2 d	10.4 d p	..
Belgium	7.8	10.0	10.2	11.1	11.6 b	11.7 e	12.0 e p
Canada	8.3	9.1	9.1	9.0 b	8.9	8.4	..
Chile	..	0.9 d	0.8 d	1.0 d	1.0 d	1.1 d p	..
Czech Republic	4.9 b	6.6	6.7	7.1	7.3	7.1	7.4 e p
Denmark	10.1	14.5	14.4	14.8	15.1	15.6	15.5 e p
Estonia	5.4	7.7	7.3	7.1	6.7	6.9	7.4 e
Finland	16.4	15.9	15.6	15.3	15.0	14.3	14.5 e p
France	7.7	9.5 e	9.7 e	9.9 b	10.1	..	10.3 e
Germany	6.9	8.4	8.4	8.2	9.0	9.2	9.3 e
Greece	4.2 d	6.0 d	7.3 d	7.4 d	8.5 d	7.2 d	8.4 d p
Hungary	3.8	6.0	6.2	6.2	5.9	5.8	6.3 e p
Iceland	13.3	..	10.6 b	..	10.6 b	11.6	..
Ireland	5.9	12.0	12.4	12.6	11.2	9.7	9.3 e p
Israel[1]	..	17.4 d e	..	..	..	..	..
Italy	3.4	4.5	4.8	4.9	5.1	5.4 b	5.4 e p
Japan	10.4 d	9.9 d	10.1 b d	10.4 d	10.0 d	10.0 d	10.0 d e
Korea	7.9 d	12.8	12.8	13.5	13.7	13.8	14.4 e
Latvia	3.4 d	4.5 d	4.1 d	4.3 d	4.1 d	3.6 d	3.9 d e p
Lithuania	5	6	7	7	6	6	6 e
Luxembourg	7.2	6.1 b	6.5	6.6	6.3	6.0 p	6.3 e p
Mexico	1.3	0.8	0.8	..	..	..	..
Netherlands	5.7	8.3 b	8.8	8.7	9.0	9.1	9.4 e p
New Zealand	6.3	..	8.0	..	7.9	..	..
Norway	9.0	10.4	10.4	10.6	11.1	11.5	12.3 p
Poland	4.4	4.3	4.6	5.0	5.2	5.5	5.9 p
Portugal	4.2	9.3	8.5 b	8.5	8.5	8.9	9.2 p
Slovak Republic	5.2	6.9	6.7	6.6	6.4	6.1	6.4 e
Slovenia	5.7	9.5	9.4	9.2	8.4	8.5	9.2 e p
Spain	5.5	6.9 d	6.9 d	6.8 d	6.6 d	6.7 d	6.8 d p
Sweden	12.6 b e	10.7 e	13.7 b e	14.1 e	13.9 e	14.4 p	15.0 e p
Switzerland	..	7.7	..	..	8.9	..	..
Turkey	2.0	3.4	3.6	3.5	3.6	3.7	4.0 e
United Kingdom	8.6 b e	8.6 e	8.9	9.0 e	9.1	9.1 e	9.0 p
United States	7.7 e	8.7 e	8.9 e	9.0 e	9.1 e	8.9 e	..
EU28 (OECD estimates)	6.2 e	7.5 e	7.7 e	7.8 e	8.0 e	8.1 e	8.3 e
OECD-Total	**7.0 e**	**7.9 e**	**8.1 e**	**8.2 e**	**8.3 e**	**8.3 e**	**..**
Argentina	2.0	2.9	2.9	2.9	2.9	3.0	..
China	1.5 d	1.8	1.9	2.0	2.1	2.2	2.2
Romania	2.5	2.1	2.2	2.1	2.0	2.1	2.0 p
Russian Federation	6.8	6.2	6.2	6.2	6.2	5.9	5.7 e
Singapore	10.3	10.2	10.3	10.1	..	..	..
South Africa	1.4	1.5	1.6	1.6	1.7	..	..
Chinese Taipei	8.9	12.9	12.9	12.9	13.0	13.1	13.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	47 625 d e	65 088 d e	66 186 d	70 138 d e	71 396 d	74 897 d e	77 880 d p
Belgium	53 517	67 005	67 899	72 794	77 520 b	79 109 e	84 046 p
Canada	218 590	231 230	232 910	236 470 b	244 879	223 146	..
Chile	..	14 631 d	13 228 d	15 887 d	15 261 d	16 633 d p	..
Czech Republic	43 370 b	60 329	61 976	64 444	66 433	65 783	69 736 p
Denmark	43 499	57 734	57 744	58 361	60 243	62 869	62 911 p
Estonia	4 362	5 855	5 858	5 790	5 636	5 772	6 048
Finland	57 471	54 047	52 972	52 130	50 367	47 429	48 999 p
France	349 681	411 780 m	416 687 m	423 903 b	428 643	..	434 670 e
Germany	475 278	591 261	588 615	605 252	640 516	657 894	681 552 e
Greece	33 603 d	37 361 d	42 188 d	43 316 d	49 658 d	41 790 d	48 226 d p
Hungary	23 239	35 732	38 163	37 329	36 847	35 757	40 432 p
Iceland	3 226	..	2 736 b	..	2 941	3 247	..
Ireland	16 690	29 284	31 870	33 494	32 085	29 849	29 405 p
Israel[1]	..	77 143 d e	..	..	..	..	..
Italy	175 248	240 179	246 764	249 467	259 167	290 040 b	291 516 p
Japan	896 855 d	851 132 d	865 523 b d	895 285 d	875 005 d	872 340 d	890 749 d
Korea	215 345 d	395 990	401 444	430 868	442 027	447 408	471 201
Latvia	5 483 d	5 593 d	5 396 d	5 739 d	5 570 d	5 120 d	5 378 d p
Lithuania	11 002	10 416	11 080	11 791	10 607	10 924	11 491
Luxembourg	4 392	4 743 b	4 975	5 243	5 227	5 312	5 322 p
Mexico	83 685	58 849	59 073	..	..	..	..
Netherlands	93 599	122 215 b	123 214	124 066	129 060	132 867	138 292 p
New Zealand	18 929	..	24 900	..	26 400	..	..
Norway	29 966	37 707	38 536	40 297	42 409	43 918	46 989 p
Poland	76 761	90 716	93 751	104 359	109 249	111 789	121 428 p
Portugal	25 728	47 554	46 711	46 878	47 999	50 406	54 091 p
Slovak Republic	14 404	18 127	17 166	17 594	17 591	17 768	19 011
Slovenia	8 994	14 974	15 229	14 866	14 225	14 403	14 713 p
Spain	174 773	208 831 d	203 302 d	200 233 d	200 866 d	205 873 d	215 713 d p
Sweden	77 557 b e	81 272 e	80 957 e	83 473 e	83 551 e	90 690 p	89 268 p
Switzerland	..	75 476	..	..	81 451	..	..
Turkey	49 251 e	105 122 e	112 969 e	115 444 e	122 288 e	136 953	153 552
United Kingdom	324 917 b e	356 484 e	377 343 e	396 281 e	413 860	417 390 e	424 510 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	2 201 520 e	2 677 518 e	2 719 151 e	2 790 416 e	2 883 457 e	2 957 034 e	3 045 348 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	45 361	72 323	74 866	76 904	78 713	79 333	..
China	1 364 799 d	3 246 840	3 532 817	3 710 580	3 758 848	3 878 057	4 033 597
Romania	33 222	31 135	32 507	31 391	31 331	32 232	32 586 p
Russian Federation	919 716	828 401	826 733	829 190	833 654	802 317	778 155
Singapore	28 586	39 459	41 582	42 543	..	..	..
South Africa	28 798	35 050	37 956	38 465	41 055	..	..
Chinese Taipei	149 154	229 167	234 248	240 528	245 941	251 042	255 943

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Per thousand

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	12.3 d e	15.5 d e	15.7 d	16.5 d e	16.7 d	17.3 d e	17.7 d e p
Belgium	12.6	14.7	15.0	16.0	16.9 b	17.0 e	17.8 e p
Canada	13.3	13.0	12.9	13.1 b	13.4	12.1	..
Chile	..	1.9 d	1.7 d	2.0 d	1.9 d	2.0 d p	..
Czech Republic	8.8 b	11.9	12.2	12.6	12.8	12.5	13.1 e p
Denmark	15.6	20.9	20.9	20.9	21.3	21.9	21.5 e p
Estonia	7.1	9.9	9.7	9.6	9.0	9.2	9.6 e
Finland	23.8	21.3	21.0	20.8	20.1	18.8	19.2 e p
France	13.3	15.1 m	15.3 m	15.5 b	15.6	..	15.6 e
Germany	12.1	14.1	13.9	14.2	14.9	15.1	15.4 e
Greece	7.2 d	9.1 d	10.6 d	10.7 d	12.2 d	10.2 d	11.6 d p
Hungary	5.6	9.0	9.5	8.9	8.6	8.1	9.0 e p
Iceland	20.0	..	15.6 b	..	16.0	17.0	..
Ireland	8.5	15.7	16.7	17.3	16.1	14.6	14.0 e p
Israel[1]	..	21.2 d e	..	..	..	..	..
Italy	7.2	9.7	10.1	10.2	10.6	11.7 b	11.6 e p
Japan	13.7 d	13.1 d	13.2 b d	13.6 d	13.2 d	13.0 d	13.2 d e
Korea	9.4 d	16.0	16.0	16.8	17.0	17.1	17.7 e
Latvia	5.7 d	6.4 d	6.1 d	6.5 d	6.3 d	5.8 d	6.1 d e p
Lithuania	8	8	9	9	8	8	8 e
Luxembourg	14.3	12.5 b	12.9	13.2	12.9	12.7	12.3 e p
Mexico	2.6	1.6	1.6	..	..	..	..
Netherlands	11.2	13.8 b	14.1	14.2	14.7	14.9	15.2 e p
New Zealand	9.2	..	11.1	..	11.2	..	..
Norway	12.7	14.0	14.2	14.7	15.4	15.9	16.8 p
Poland	5.5	5.9	6.1	6.6	6.8	7.0	7.5 p
Portugal	5.1	10.4	10.5	10.4	10.5	10.8	11.3 p
Slovak Republic	6.9	8.2	7.8	7.9	7.8	7.7	8.0 e
Slovenia	9.7	16.0	16.4	16.0	15.1	15.0	14.6 e p
Spain	8.8	11.4 d	11.4 d	11.1 d	10.8 d	10.8 d	11.1 d p
Sweden	17.8 b e	17.6 e	17.3 e	17.6 e	17.4 e	18.5 p	17.8 e p
Switzerland	..	16.1	..	..	16.6	..	..
Turkey	2.5 e	4.4 e	4.6 e	4.5 e	4.6 e	5.1	5.5 e
United Kingdom	11.3 b e	12.0 e	12.6 e	12.9 e	13.2	13.2 e	13.2 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	10.0 e	11.9 e	12.1 e	12.3 e	12.6 e	12.7 e	12.9 e
OECD-Total	..	..	..	..	..	..	..
Argentina	2.9	4.1	4.2	4.3	4.4	4.4	..
China	1.8 d	4.2	4.6	4.8	4.9	5.0	5.2
Romania	3.6	3.6	3.8	3.6	3.7	3.8	3.8 p
Russian Federation	13.5	11.6	11.6	11.6	11.5	11.1	10.8 e
Singapore	12.3	11.8	11.9	11.7	..	..	..
South Africa	2.3	2.4	2.6	2.5	2.6	..	..
Chinese Taipei	15.0	21.1	21.4	21.7	22.0	22.3	22.5

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

As a percentage of GDP

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	1.08 e	1.33 e	1.44	1.47 e	1.52	1.66 b e	1.70 p
Belgium	1.06	1.38	1.41	..	1.44	..	..
Canada	0.98	0.84 b	0.80	0.79 b	0.75	0.72	0.65 p
Chile	..	0.13	0.13	0.12 b	0.12	0.13 b p	..
Czech Republic	0.56	0.65	0.71	0.71	0.67	0.66	0.70 p
Denmark	1.42	1.79 e	1.75	..	1.81	..	1.78 p
Estonia	0.36	1.09	0.72	0.53	0.60	0.60	..
Finland	2.23	2.16	2.00	1.70	1.58	1.56	..
France	1.07	1.23	1.23	1.24	1.23	..	..
Germany	1.64	1.90	1.85	1.89	1.91	1.90	..
Greece	0.18	0.22	0.25	0.25	0.30	0.40	0.51 p
Hungary	0.36 d	0.59	0.65	0.65	0.68	0.68	..
Iceland	1.29	..	0.63 b	0.70	0.70	0.71	0.86 p
Ireland	0.69	0.78 e	0.82 e	0.79 e	0.58 e	0.57 e	..
Israel[1]	2.28 d	1.64 d	1.44 d	1.46 d	1.32 d	1.53 d e	..
Italy	0.42	0.56	0.59	0.63 e	0.67	0.71 b	..
Japan	2.42	2.44	2.50 b	2.63	2.56	2.45	2.51
Korea	1.97 d	3.01	3.14	3.23	3.14	3.19	3.47
Latvia	0.18	0.16	0.13	0.19	0.13	0.10	..
Lithuania	0	0	0	0	0	0	..
Luxembourg	1.25	0.23 b	0.22	..	0.60	..	..
Mexico	0.17	0.12	0.10	0.10 e p	0.10 e p	0.10 e p	..
Netherlands	0.82	0.99 b	0.99	1.01	0.97	1.04	..
New Zealand	0.46	..	0.46	..	0.54	..	..
Norway	0.69	..	0.71	..	0.85	0.88	..
Poland	0.19	0.28	0.32	0.37	0.39	0.51	..
Portugal	0.27	0.63	0.56	0.54	0.53	0.57	..
Slovak Republic	0.18	0.30	0.33	0.28	0.29	0.36	..
Slovenia	0.77	1.60	1.65	1.62	1.52	1.39	..
Spain	0.51	0.59	0.59	0.57	0.56	0.55	..
Sweden	2.16 b	..	2.01 e	..	1.87	..	..
Switzerland	..	2.03	..	..	2.14	..	..
Turkey	0.25 d	0.34	0.35	0.39	0.39	0.44	0.48
United Kingdom	0.66	0.73 e	0.76	0.80 e	0.82	0.87 e	..
United States	1.59 d	1.60 d	1.66 d	1.69 d	1.70 d	1.74 d	1.77 d e
EU28 (OECD estimates)	0.89 e	1.04 e	1.05 e	1.06 e	1.07 e	..	..
OECD-Total	**1.33 e**	**1.39 e**	**1.41 e**	**1.44 e**	**1.44 e**	**1.45 e**	**..**
Argentina	0.13	..	..	..	0.11	0.10	..
China	0.88	1.41	1.48	1.52	1.54	1.60	1.63
Romania	0.15	0.17	0.12	0.13	0.18	0.24	..
Russian Federation	0.30	0.28	0.29	0.29	0.29	0.31	0.33 e
Singapore	1.27	1.06	1.05	1.17	..	..	..
South Africa	0.38	0.28	0.30	0.31	0.31	..	..
Chinese Taipei	1.55	2.19	2.27	2.32	2.37	2.45	2.61

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	0.85 e	1.10 d e	0.99	1.10 d e	0.99	0.95 b d e	0.93 p
Belgium	0.44	0.56	0.57	..	0.55	..	..
Canada	0.63 e	0.61 b e	0.58 e	0.55 b e	0.54 e	0.53 e	0.51 p
Chile	..	0.13	0.15	0.17 b	0.16	0.17 b p	..
Czech Republic	0.53	0.66	0.66	0.65	0.62	0.60	0.62 p
Denmark	0.66	0.87 d e	0.89 d	..	0.92 d	..	0.87 d p
Estonia	0.40	0.81	0.81	0.71	0.68	0.47	..
Finland	0.85	0.91	0.86	0.87	0.84	0.79	..
France	0.79	0.79	0.79	0.78	0.79	..	..
Germany	0.69	0.84 d	0.82 d	0.82 d	0.81 d	0.83 d	..
Greece	0.27	0.35	0.42	0.44	0.51	0.42	0.43 p
Hungary	0.46 d	0.47	0.50	0.45	0.47	0.32	..
Iceland	1.09	..	0.63 b	0.66	0.68	0.69	0.72 p
Ireland	0.38	0.43 e	0.43 e	0.41 e	0.31 e	0.30 e	..
Israel[1]	0.59 d	0.53 d	0.51 d	0.57 d	0.64 d	0.60 d e	..
Italy	0.53	0.54	0.54	0.53 e	0.51	0.48 b	..
Japan	0.53 e	0.54 e	0.57 b e	0.54 e	0.51 e	0.47 e	0.48 e
Korea	0.60 d	0.96	0.95	0.98	1.00	0.96	0.98
Latvia	0.24	0.16	0.15	0.18	0.20	0.21	..
Lithuania	0	0	0	0	0	0	..
Luxembourg	0.26	0.57 b	0.63	..	0.61	..	..
Mexico	0.20	0.33	0.35	0.38 e p	0.37 e p	0.33 e p	..
Netherlands	0.69	0.62 b	0.64	0.66	0.66	0.63	..
New Zealand	0.48	..	0.46	..	0.46	..	..
Norway	0.65	..	0.76	..	0.87	0.93	..
Poland	0.32	0.45	0.41	0.42	0.42	0.37	..
Portugal	0.42	0.59	0.62	0.61	0.55	0.55	..
Slovak Republic	0.28 e	0.33 e	0.32 e	0.36 e	0.37	0.32	..
Slovenia	0.53	0.74	0.69	0.52	0.44	0.41	..
Spain	0.47	0.56	0.53	0.51	0.50	0.47	..
Sweden	0.83 b	..	0.93 e	..	.. c	..	..
Switzerland	..	0.75	..	..	0.82	..	..
Turkey	0.29 d	0.34	0.32	0.32	0.34	0.33	0.32
United Kingdom	0.51	0.46 e	0.48	0.47 e	0.46	0.44 e	..
United States	0.78 d	0.79 d	0.75 d	0.71 d	0.69 d	0.65 d p	0.63 d p
EU28 (OECD estimates)	0.59 e	0.64 e	0.63 e	0.63 e	0.62 e	..	..
OECD-Total	**0.63 e**	**0.68 e**	**0.66 e**	**0.64 e**	**0.63 e**	**0.60 e**	**..**
Argentina	0.27	..	..	..	0.47	0.39	..
China	0.34	0.41	0.42	0.41	0.44	0.42	0.42
Romania	0.22	0.24	0.20	0.19	0.20	0.19	..
Russian Federation	0.61	0.70	0.69	0.74	0.76	0.75	0.73 e
Singapore	0.79	0.77	0.78	0.80	..	..	..
South Africa	0.33	0.33	0.31	0.34	0.36	..	..
Chinese Taipei	0.73	0.74	0.71	0.66	0.66	0.68	0.66

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 13. Percentage of Gross domestic expenditure on R&D (GERD) financed by the business enterprise sector

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	45.6 e	45.7 e	48.7	47.7 e	49.7	53.1 b e	54.0 p
Belgium	59.7	60.6	60.6	..	58.6	..	..
Canada	49.3	47.4 b	46.7	45.8 b	44.0	42.2	40.9 p
Chile	..	34.9	34.2	31.9 b	32.8	35.8 b p	..
Czech Republic	48.2	36.4	37.6	35.9	34.5	39.5	39.3 p
Denmark	59.5	59.9 e	59.0	..	59.1	..	58.3 p
Estonia	38.5	51.3	42.1	37.1	41.0	48.2	..
Finland	66.9	63.1	60.8	53.5	54.8	57.0	..
France	51.9	55.3	55.1	54.5 b	54.0	..	..
Germany	67.6	66.1	65.4	66.0	65.6	65.2	..
Greece	31.1	31.0	30.3	29.8	31.4	40.2	44.8 p
Hungary	39.4 d	46.9	46.8	48.3	49.7	56.4	..
Iceland	48.0	..	36.9 b	35.7	33.3	35.0	40.3 p
Ireland	57.4	50.2 e	52.6 e	52.8 e	48.4 e	49.0 e	..
Israel[1]	56.2 d	39.4 d	35.4 d	35.0 d	31.1 d	34.7 d e	..
Italy	39.7	44.3	45.2	47.3 e	50.0	52.1 b	..
Japan	76.1	76.1	75.5 b	77.3	78.0	78.1	78.3
Korea	75.0 d	74.7	75.7	75.3	74.5	75.4	76.2
Latvia	34.3	23.7	21.8	27.8	20.0	21.6	..
Lithuania	21	26	27	33	29	39	..
Luxembourg	79.7	18.1 b	16.5	..	47.1	..	..
Mexico	41.5	24.5	21.0	19.5 e p	19.7 e p	20.7 e p	..
Netherlands	46.3	51.6 b	51.1	51.1	48.6	52.0	..
New Zealand	41.1	..	39.8	..	43.8	..	..
Norway	46.8	..	43.1	..	44.2	43.2	..
Poland	33.4	32.3	37.3	39.0	39.0	53.1	..
Portugal	36.3	46.0	42.3	41.8	42.7	44.4	..
Slovak Republic	36.6	37.7	40.2	32.2	25.1	46.2	..
Slovenia	54.8	62.2	63.8	68.4	69.2	69.2	..
Spain	46.3	45.6	46.3	46.4	45.8	46.7	..
Sweden	63.9 b	..	61.0 e	..	57.3	..	..
Switzerland	..	63.7	..	..	63.5	..	..
Turkey	43.3 d	41.1	43.4	45.3	44.6	46.7	49.4
United Kingdom	42.1	45.6 e	46.2	48.0 e	49.0	51.8 e	..
United States	63.3 d	59.5 d	61.1 d	62.0 d	62.5 d	63.2 d p	63.6 d e
EU28 (OECD estimates)	53.7 e	54.4 e	54.5 e	54.6 e	54.6 e	..	..
OECD-Total	**62.2 e**	**60.1 e**	**60.7 e**	**61.3 e**	**61.3 e**	**62.1 e**	**..**
Argentina	31.0	..	..	..	17.2	18.2	..
China	67.0	74.0	74.6	75.4	74.7	76.1	76.5
Romania	37.2	34.4	31.0	32.9	37.3	49.4	..
Russian Federation	30.0	27.2	28.2	27.1	26.5	28.1	30.2
Singapore	58.8	53.4	52.7	54.1	..	..	..
South Africa	43.9	38.3	41.4	40.8	38.9	..	..
Chinese Taipei	66.9	73.9	75.2	76.9	77.5	77.4	79.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	35.9 e	37.8 d e	33.6	35.6 d e	32.6	30.4 b d e	29.5 p
Belgium	24.7	24.5	24.3	..	22.5	..	..
Canada	31.8 e	34.1 b e	33.8 e	32.1 b e	31.6 e	31.3 e	31.9 p
Chile	..	36.0	38.4	44.2 b	42.6	46.4 b p	..
Czech Republic	45.2	36.8	34.7	32.9	32.2	35.6	34.6 p
Denmark	27.6	29.2 d e	29.9 d	..	30.2 d	..	28.6 d p
Estonia	43.5	38.3	47.2	49.5	46.4	37.6	..
Finland	25.7	26.7	26.0	27.5	28.9	28.9	..
France	38.6	35.4	35.3	34.3 b	34.8	..	..
Germany	28.4	29.2 d	29.1 d	28.7 d	27.9 d	28.5 d	..
Greece	46.8	50.4	52.3	53.3	53.1	42.6	38.0 p
Hungary	49.4 d	36.9	35.9	33.5	34.6	26.2	..
Iceland	40.5	..	37.2 b	34.1	32.0	34.2	34.0 p
Ireland	32.0	27.5 e	27.5 e	27.3 e	25.9 e	25.8 e	..
Israel[1]	14.5 d	12.7 d	12.4 d	13.5 d	15.0 d	13.5 d e	..
Italy	50.7	42.5	41.4	39.7 e	38.0	35.2 b	..
Japan	16.8 e	16.8 e	17.3 b e	16.0 e	15.4 e	15.0 e	15.0 e
Korea	23.0 d	23.8	22.8	23.0	23.7	22.7	21.6
Latvia	46.0	23.9	23.9	25.6	32.7	47.7	..
Lithuania	63	40	35	33	35	39	..
Luxembourg	16.6	45.1 b	48.4	..	47.7	..	..
Mexico	49.2	67.8	70.7	71.8 e p	70.3 e p	67.4 e p	..
Netherlands	38.8	32.4 b	33.4	33.2	33.1	31.3	..
New Zealand	43.2	..	39.8	..	37.1	..	..
Norway	43.6	..	45.8	..	44.9	45.7	..
Poland	57.7	51.3	47.2	45.2	41.8	38.9	..
Portugal	55.2	43.1	46.4	47.1	44.3	42.6	..
Slovak Republic	57.0 e	41.6 e	38.9 e	41.4 e	31.9	41.0	..
Slovenia	37.2	28.7	26.9	21.8	19.9	20.2	..
Spain	43.0	43.1	41.6	41.4	40.9	40.0	..
Sweden	24.4 b	..	28.3 e	..	.. c	..	..
Switzerland	..	23.6	..	..	24.4	..	..
Turkey	50.1 d	40.7	39.3	37.4	38.5	35.1	33.6
United Kingdom	32.7	28.7 e	29.1	28.4 e	27.7	26.3 e	..
United States	30.8 d	29.6 d	27.5 d	25.9 d	25.3 d	23.6 d p	22.8 d e p
EU28 (OECD estimates)	35.2 e	33.4 e	33.0 e	32.5 e	31.8 e	..	..
OECD-Total	**29.6 e**	**29.3 e**	**28.3 e**	**27.3 e**	**26.9 e**	**25.8 e**	**..**
Argentina	65.3	..	..	..	76.4	73.1	..
China	26.3	21.6	21.1	20.3	21.3	20.0	19.8
Romania	53.5	49.9	52.3	48.5	41.7	39.6	..
Russian Federation	61.9	67.8	67.6	69.2	69.5	68.2	66.2
Singapore	36.4	38.5	39.3	37.1	..	..	..
South Africa	38.2	45.4	42.9	43.9	44.6	..	..
Chinese Taipei	31.5	24.8	23.6	22.0	21.4	21.6	20.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	0.4 e	0.5 d e	1.1	0.5 d e	1.1	0.5 d e	0.6 d p
Belgium	3.3	1.4	1.5	..	2.4	..	..
Canada	10.1 e	12.8 b e	13.7 e	13.6 b e m	14.0 e m	15.9 e m	16.3 p
Chile	..	11.6	12.5	10.2 b	11.8	15.9 b p	..
Czech Republic	1.2	0.9	0.5	0.7	0.8	0.9	1.1 p
Denmark	2.8 d	3.8 d e	4.4 d	..	4.4 d	..	4.8 d p
Estonia	1.0	0.4	0.4	1.0	0.5	0.6	..
Finland	1.2	1.4	1.6	1.7	1.8	2.0	..
France	1.9	1.7	1.7	3.5 b	3.5	..	..
Germany	0.3	0.4 d	0.3 d	0.3 d	0.4 d	0.3 d	..
Greece	3.1	2.9	3.5	3.7	2.9	2.7	2.6 p
Hungary	0.3 d	0.9	0.8	0.7	0.7	0.7	..
Iceland	0.3	..	5.9 b	6.9	8.4	8.4	1.3 p
Ireland	1.9	1.3 e	1.3 e	1.3 e	1.9 e	1.5 e	..
Israel[1]	4.6 d	2.2 d	1.7 d	1.2 d	1.3 d	1.9 d e	..
Italy	1.7	3.7	3.7	3.6 e	3.7	2.9 b	..
Japan	6.8 e	6.6 e	6.7 b e	6.3 e	6.1 e	6.2 e	6.1 e
Korea	1.3 d	1.1	1.2	1.0	1.0	1.0	0.9
Latvia	1.2	2.0	2.7	2.3	2.2	2.9	..
Lithuania	6	1	1	0	2	3	..
Luxembourg	0.1	2.3 b	2.8	..	1.9	..	..
Mexico	8.2	7.3	8.0	8.4 e p	9.6 e p	11.4 e p	..
Netherlands	2.8	3.5 b	3.4	3.1	2.7	2.7	..
New Zealand	10.6	..	13.2	..	11.4	..	..
Norway	1.6	..	1.6	..	1.6	1.7	..
Poland	3.2	3.0	2.3	2.4	2.4	2.6	..
Portugal	3.8	5.7	5.2	5.4	5.7	4.9	..
Slovak Republic	0.3	2.1	2.9	2.7	3.6	2.1	..
Slovenia	0.7	0.5	0.4	0.6	0.3	0.4	..
Spain	5.0	4.6	4.7	4.8	5.2	5.2	..
Sweden	3.6 b	..	4.1 e	..	4.3	..	..
Switzerland	..	1.6	..	..	1.9	..	..
Turkey	5.8 d	16.7	15.6	15.3	15.0	14.5	13.5
United Kingdom	5.9	5.9 e	6.0	6.1 e	6.3	6.4 e	..
United States	5.9 d	6.8 d	6.9 d	7.0 d	7.2 d	7.4 d p	7.5 d e p
EU28 (OECD estimates)	2.3 e	2.4 e	2.4 e	2.7 e	2.7 e	..	..
OECD-Total	**4.9 e**	**5.1 e**	**5.2 e**	**5.3 e**	**5.3 e**	**5.5 e**	**5.4 e**
Argentina	2.9	..	..	..	3.1	2.4	..
China	..	..	..	..	..	..	..
Romania	4.0	1.2	1.2	1.5	1.8	1.2	..
Russian Federation	0.5	1.0	1.2	1.2	1.4	1.0	1.0
Singapore	0.5	2.2	2.2	2.0	..	..	..
South Africa	4.4	3.2	2.8	3.1	3.5	..	..
Chinese Taipei	1.5	1.1	1.1	1.0	1.0	0.9	0.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	18.0 e	16.1 e	16.6	16.2 e	16.6	16.0 e	16.0 p
Belgium	12.4	13.4	13.7	..	16.5	..	..
Canada	8.8	5.7 b	5.8	8.1 b	9.8	10.6	10.9 p
Chile	..	17.5	15.0	13.8 b	12.9	1.9 b p	..
Czech Republic	5.4	25.9	27.2	30.5	32.5	24.0	25.0 p
Denmark	10.1	7.2 e	6.7	..	6.3	..	8.3 p
Estonia	17.1	10.0	10.3	12.5	12.2	13.6	..
Finland	6.3 b	8.8	11.5	17.3	14.5	12.1	..
France	7.5	7.6	7.9	7.6 b	7.6	..	..
Germany	3.7	4.3	5.2	5.0	6.2	5.9	..
Greece	19.0	15.8	14.0	13.2	12.7	14.6	14.6 p
Hungary	10.7 d	15.4	16.6	17.5	15.0	16.6	..
Iceland	11.2	..	20.0 b	23.3	26.4	22.4	24.3 p
Ireland	8.6	21.0 e	18.6 e	18.6 e	23.8 e	23.6 e	..
Israel[1]	24.7 d	45.6 d	50.5 d	50.2 d	52.7 d	49.8 d e	..
Italy	8.0	9.5	9.7	9.4 e	8.3	9.8 b	..
Japan	0.3	0.4	0.5 b	0.4	0.5	0.7	0.6
Korea	0.7 d	0.3	0.3	0.7	0.8	0.9	1.3
Latvia	18.5	50.4	51.6	44.2	45.0	27.8	..
Lithuania	10.5	33.2	37.1	33.8	34.3	19.2	..
Luxembourg	3.6	34.4 b	32.3	..	3.4	..	..
Mexico	1.1	0.4	0.4	0.4 e p	0.5 e p	0.6 e p	..
Netherlands	12.0	12.5 b	12.2	12.7	15.5	13.9	..
New Zealand	5.2	..	7.2	..	7.8	..	..
Norway	8.1	..	9.5	..	9.2	9.5	..
Poland	5.7	13.3	13.1	13.4	16.7	5.5	..
Portugal	4.7	5.2	6.1	5.6	7.4	8.0	..
Slovak Republic	6.0	18.7	18.0	23.7	39.4	10.7	..
Slovenia	7.3	8.6	8.9	9.3	10.6	10.2	..
Spain	5.7	6.6	7.4	7.4	8.0	8.1	..
Sweden	8.1 b	..	6.7 e	..	.. c	..	..
Switzerland	..	11.2	..	..	10.2	..	..
Turkey	0.8	1.5	1.7	2.0	1.9	3.7	3.5
United Kingdom	19.3	19.8 e	18.7	17.5 e	17.1	15.6 e	..
United States	.. k	4.1 d	4.5 d	5.0 d	5.0 d	5.8 d p	6.2 d e
EU28 (OECD estimates)	8.7 e	9.8 e	10.1 e	10.2 e	10.9 e	9.9 e	..
OECD-Total	**..**	**5.6 e**	**5.9 e**	**6.2 e**	**6.5 e**	**6.6 e**	**..**
Argentina	0.8	..	..	..	3.3	6.3	..
China	0.9	1.0	0.9	0.8	0.7	0.7	0.6
Romania	5.3	14.4	15.5	17.0	19.2	9.9	..
Russian Federation	7.6	4.0	3.0	2.5	2.6	2.7	2.6
Singapore	4.4	5.9	5.8	6.8	..	..	..
South Africa	13.6	13.1	12.9	12.2	13.0	..	..
Chinese Taipei	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	56.3 e	..	53.4 e	..	..
Austria	69.8 e	70.4 e	70.8	71.3 e	71.4	70.2 b e	70.2 p
Belgium	68.0	69.8	69.4	69.9	69.9	70.1 e	67.7 p
Canada	55.8 d	51.6 b d	51.2 d	53.2 b	53.3	52.6	51.8 p
Chile	..	34.4	35.0	33.4 b	34.3	38.5 b p	..
Czech Republic	58.2 b	52.8	53.3	55.2	54.3	61.1	62.9 p
Denmark	68.3	65.6	63.3	63.8	63.5	64.8	64.4 p
Estonia	45.1	57.5	47.7	43.5	46.1	51.5	47.2
Finland	70.8	68.7	68.9	67.7	66.7	65.8	65.3 p
France	62.1	64.6	64.6	63.6 b	63.7	63.6 p	65.0 e
Germany	69.3	68.0	67.2	67.7	68.7	68.2	69.3 e
Greece	31.0	34.3	33.3	33.9	33.0	42.2	48.7 p
Hungary	43.2 d	65.6 d	69.4 d	71.5 d	73.4 d	74.1 d	73.1 d
Iceland	51.5	..	55.8 b d	61.1 d	64.7 d	63.0 d	64.7 p
Ireland	65.5	71.8 e	71.9 e	72.1 e	71.3 e	72.2 e	70.7 p
Israel[1]	81.5 d	84.2 d	84.1 d	84.7 d	85.2 d	85.6 d e	86.1 d e
Italy	50.4	54.2	54.7	56.7 e	58.2	60.8 b	61.4 p
Japan	76.4	76.6	76.1 b	77.8	78.5	78.8	78.8
Korea	76.9 d	77.9	78.5	78.2	77.5	77.7	79.4
Latvia	40.7	22.6	28.2	35.5	24.7	24.5	27.2 p
Lithuania	20.4	26.9	25.5	30.9	27.4	35.0	35.6
Luxembourg	86.4	55.3 b	52.5	53.7	51.6	54.1	54.0 p
Mexico	46.9	29.7	31.2	29.9 e p	30.0 e p	30.6 e p	..
Netherlands	52.9	56.6 b	55.7	56.0	56.0	58.3	58.8 p
New Zealand	41.6	..	46.4	..	51.1	..	..
Norway	53.5	52.3	52.5	53.7	53.9	53.3	53.1 p
Poland	31.8	37.2	43.6	46.6	46.6	65.7 b	64.5 p
Portugal	38.5	49.7	47.5	46.4	46.4	48.4	50.5 p
Slovak Republic	49.8	41.3	46.3	36.8	28.0	50.4	54.1
Slovenia	58.8	75.7	76.5	77.3	76.3	75.7	74.7 p
Spain	53.8	53.0	53.1	52.9	52.5	53.7	54.9 p
Sweden	72.8 b	67.8 e	68.9 e	67.0 e	69.7	69.6 p	70.6 p
Switzerland	..	71.5	..	..	71.0	..	..
Turkey	33.8	45.1	47.5	49.8	50.0	54.2	56.9
United Kingdom	61.4	63.3 e	63.9	65.1 e	66.0	67.1 e	67.6 p
United States	68.9 d	69.6 d	70.9 d	71.5 d	71.9 d	72.6 d p	73.1 d e
EU28 (OECD estimates)	62.2 e	62.7 e	62.7 e	63.1 e	63.6 e	64.9 e	65.7 e
OECD-Total	**67.7 e**	**67.7 e**	**68.2 e**	**68.8 e**	**69.1 e**	**69.9 e**	**70.5 e**
Argentina	32.2	25.3 p	24.2 p	20.1 p	21.2 b	23.9	..
China	68.3	76.2	76.6	77.3	76.8	77.5	77.6
Romania	49.7	39.0	30.7	41.5	44.0	55.2	56.7 p
Russian Federation	68.0	58.3	60.6	59.6	59.2	58.7	60.1
Singapore	66.2	60.9	59.4	61.2	..	..	..
South Africa	58.3	44.3	45.9	45.3	42.7	..	..
Chinese Taipei	67.0	74.1	75.3	76.8	77.4	77.3	78.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	29.6 e	..	30.6 e	..	..
Austria	24.7 e	24.6 e	24.3	23.7 e	23.5	22.2 b e	22.2 p
Belgium	22.3	21.3	21.7	20.6	20.3	20.5 e	20.8 p
Canada	34.0	39.4 b	39.5	37.7 b	39.3	40.2	41.1 p
Chile	..	34.3	39.3	39.0 b	38.5	41.8 b p	..
Czech Republic	18.6	27.5	27.2	25.4	24.9	20.4	19.6 p
Denmark	24.6	31.6	33.9	33.5	33.9	32.7	33.0 p
Estonia	41.4	32.1	42.3	44.3	41.4	35.5	39.6
Finland	19.0	21.6	21.5	22.9	24.4	25.1	25.4 p
France	18.8	20.8	20.9	22.1 b	22.0	22.0 p	20.7 e
Germany	16.5	17.7	17.9	17.7	17.3	18.0 b	17.3 e
Greece	47.5	39.9	37.4	37.2	37.8	31.9	28.4 p
Hungary	25.1 d	18.4 d	14.4 d	13.5 d	12.1 d	11.1 d	13.3 d
Iceland	22.0	..	37.4 b	32.8	30.5	32.1	31.2 p
Ireland	27.1	23.4 e	23.5 e	23.4 e	24.4 e	23.6 e	24.7 p
Israel[1]	14.9 d	12.8 d	12.9 d	12.5 d	12.2 d	11.8 d e	11.4 d e
Italy	30.2 b	28.0	28.3	26.7 e	25.5 e	24.2 b e	24.2 p
Japan	13.4	13.4	13.5 b	12.6	12.3	12.3	12.0
Korea	9.9 d	9.5	9.2	9.0	9.1	9.1	8.5
Latvia	40.6	50.3	42.9	40.5	49.7	43.8	46.7 p
Lithuania	54.6	53.5	54.7	52.1	55.5	38.9	36.0
Luxembourg	1.5	16.9 b	18.6	16.4	18.6	19.7 e	19.7 e p
Mexico	28.7	27.5	26.1	26.6 e p	26.8 e p	26.8 e p	..
Netherlands	34.7	31.6 b	32.1	32.1	32.1	30.4	29.8 p
New Zealand	32.5	..	30.4	..	28.0	..	..
Norway	30.8	31.3	31.5	31.0	31.1	32.6	33.3 p
Poland	31.6	34.4	29.3	29.2	28.9	31.4	32.9 p
Portugal	35.4	36.5	44.6 b	45.6	45.5	44.7	42.6 p
Slovak Republic	20.4	34.0	33.1	34.4	43.8	27.7	24.7
Slovenia	16.7	11.1	10.4	10.5	10.2	10.8	11.2 p
Spain	29.0	27.7	28.0	28.1	28.1	27.5	27.1 p
Sweden	22.0 b	27.1 e	27.1 e	29.0 e	26.7	26.8 p	25.7 p
Switzerland	..	26.1	..	..	26.7	..	..
Turkey	54.6	43.9	42.1	40.5	39.7	36.3	33.5
United Kingdom	25.7	26.7 e	26.4	25.8 e	25.3	24.3 e	23.7 p
United States	14.3 d	14.0 d	13.5 d	13.1 d	13.1 d	13.1 d p	13.0 d e p
EU28 (OECD estimates)	22.6 e	23.5 e	23.6 e	23.5 e	23.2 e	22.8 e	22.2 e
OECD-Total	**17.7 e**	**18.3 e**	**18.1 e**	**17.7 e**	**17.5 e**	**17.5 e**	**17.2 e**
Argentina	25.8	29.6 p	29.1 p	30.5 p	26.0	25.8	..
China	9.9	7.6	7.2	6.9	7.0	6.8	7.2
Romania	13.7	19.7	19.7	15.2	17.4	11.3	10.6 p
Russian Federation	5.8	9.3	9.0	9.8	9.6	9.1	9.0
Singapore	24.2	29.0	29.2	27.4	..	..	..
South Africa	19.3	30.7	28.4	28.5	30.5	..	..
Chinese Taipei	11.4	11.6	11.1	10.4	9.9	9.4	8.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	11.2 e	..	12.7 e	..	..
Austria	5.2 e	4.6 e	4.4	4.6 e	4.6	7.1 b e	7.1 p
Belgium	8.4	8.5 b	8.5	9.0	9.2	8.9 e	11.0 p
Canada	9.7	8.6 b	8.9	8.6 b	7.0	6.8	6.8 p
Chile	..	4.1	8.4 b	8.1 b	7.8	13.2 b p	..
Czech Republic	22.8 b	19.2	19.1	19.0	20.4	18.2	17.2 p
Denmark	6.5	2.4	2.4	2.3	2.2	2.2	2.2 p
Estonia	11.3	9.3	8.9	11.0	10.8	11.4	11.8
Finland	9.6	9.0	8.9	8.6	8.2	8.2	8.5 p
France	17.8	13.2	13.1	12.7 b	12.8	12.9 p	12.7 e
Germany	14.1 d	14.3 d	14.9 d	14.6 d	14.1 d	13.8 d	13.4 d e
Greece	20.3	24.8	28.0	27.7	28.1	25.0	22.0 p
Hungary	28.0 d	14.4 d	14.9 d	13.7 d	13.3 d	13.4 d	12.6 d
Iceland	23.5	..	6.8 b	6.1	4.8	4.9	4.1 p
Ireland	7.4	4.8 e	4.6 e	4.5 e	4.3 e	4.2 e	4.6 p
Israel[1]	2.7 d	1.9 d	1.9 d	1.8 d	1.6 d	1.6 d e	1.6 d e
Italy	17.3	14.8	14.0	13.6 e	13.1	12.6 b	12.7 p
Japan	8.3	8.6	9.2 b	8.3	7.9	7.5	7.8
Korea	11.9 d	11.3	10.9	11.2	11.7	11.5	10.7
Latvia	18.7	27.1	28.9	24.0	25.6	31.8	26.1 p
Lithuania	25.0	19.6	19.8	17.0	17.1	26.1	28.5
Luxembourg	12.1 d	27.8 b d	29.0 d	29.9 d	29.8 d	26.3 d e	26.3 e p
Mexico	23.2	38.0	38.0	38.5 e p	37.9 e p	36.5 e p	..
Netherlands	12.4 d	11.8 b d	12.2 d	11.9 d	11.9 d	11.3 d	11.4 d p
New Zealand	25.9	..	23.2	..	20.9	..	..
Norway	15.7	16.4	16.0	15.2	15.0	14.2	13.6 p
Poland	36.4	28.0	26.8	24.0	24.4	2.5 b	2.3 p
Portugal	14.6	5.4	6.5	6.3	6.5	5.3	5.3 p
Slovak Republic	29.7 d	24.5 d	20.5 d	28.3 d	27.9	21.4	20.8
Slovenia	24.2	13.1	13.0	12.2	13.5	13.4	13.8 p
Spain	17.0	19.1	18.7	18.8	19.1	18.5	17.8 p
Sweden	4.9 b	4.8 e	3.7 e	3.7 e	3.4	3.4 p	3.7 p
Switzerland	..	0.7 d	..	..	0.9 d	..	..
Turkey	11.6	11.0	10.4	9.7	10.3	9.5 d	9.6 d
United Kingdom	10.6	8.0 e	7.9	7.3 e	6.6	6.6 e	6.5 p
United States	12.3 d	12.3 d	11.5 d	11.4 d	11.0 d	10.2 d p	9.7 d e
EU28 (OECD estimates)	14.1 e	12.7 e	12.7 e	12.4 e	12.2 e	11.4 e	11.3 e
OECD-Total	**12.0 e**	**11.7 e**	**11.4 e**	**11.1 e**	**10.9 e**	**10.2 e**	**10.0 e**
Argentina	39.7	43.4 p	45.0 p	47.7 p	51.2	49.5	..
China	21.8	16.3	16.2	15.8	16.2	15.7	15.2
Romania	34.2	40.9	49.2	43.0	38.3	33.3	32.4 p
Russian Federation	26.1	32.2	30.3	30.5	31.1	32.0	30.4
Singapore	9.7	10.0	11.3	11.4	..	..	..
South Africa	20.8	22.9	23.4	23.5	24.0	..	..
Chinese Taipei	21.0	14.1	13.3	12.5	12.4	13.1	12.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	2.84 e	..	3.24 e	..	..
Austria	0.30 e	0.44 e	0.42	0.47 e	0.49	0.49 e	0.49 p
Belgium	1.31	0.40 b	0.37	0.46	0.55	0.56 e	0.51 p
Canada	0.53	0.47 b	0.49	0.45 b	0.47	0.45	0.40 p
Chile	..	27.23	17.28 b	19.52 b	19.35	6.49 b p	..
Czech Republic	0.51	0.51	0.34	0.41	0.39	0.25	0.28 p
Denmark	0.67	0.41	0.42	0.41	0.35	0.35	0.35 p
Estonia	2.20	1.05	1.06	1.19	1.80	1.54	1.41
Finland	0.58	0.68	0.71	0.77	0.77	0.86	0.82 p
France	1.29	1.44	1.47	1.51 b	1.54	1.56 p	1.65 e
Germany	..	..	..	..	..	..	..
Greece	1.26	0.96	1.25	1.24	1.12	0.89	0.81 p
Hungary	..	..	..	..	..	..	..
Iceland	2.99	..	..	..	..	..	..
Ireland	..	..	..	..	..	..	..
Israel[1]	0.97 d	1.06 d	1.14 d	0.99 d	1.02 d	0.99 d e	0.95 d e
Italy	2.12	2.96	2.99	3.04 e	3.19	2.48 b	1.69 p
Japan	1.86	1.40	1.28 b	1.34	1.33	1.38	1.38
Korea	1.36 d	1.28	1.33	1.52	1.64	1.59	1.41
Latvia	0.00	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	1.13	4.80	4.68	4.87 e p	5.41 e p	6.23 e p	..
Netherlands	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..
Norway	..	..	..	..	..	..	..
Poland	0.31	0.40	0.29	0.30	0.16	0.44	0.35 p
Portugal	11.52	8.47	1.33 b	1.72	1.58	1.60	1.57 p
Slovak Republic	0.08	0.10	0.15	0.41	0.40	0.49	0.41
Slovenia	0.22	0.05	0.04	0.04	0.04	0.02	0.27 p
Spain	0.14	0.19	0.17	0.17	0.20	0.24	0.21 p
Sweden	0.31 b	0.29 e	0.22 e	0.24 e	0.19	0.19 p	..
Switzerland	..	1.70	..	..	1.45	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	2.32	1.91 e	1.79	1.81 e	2.01	2.11 e	2.19 p
United States	4.44 d e	4.11 d e	4.04 d e	4.04 d e	4.03 d e	4.12 d e p	4.14 d e
EU28 (OECD estimates)	1.08 e	1.04 e	0.96 e	0.98 e	1.00 e	0.98 e	0.92 e
OECD-Total	**2.65 e**	**2.41 e**	**2.32 e**	**2.36 e**	**2.38 e**	**2.40 e**	**2.37 e**
Argentina	2.23	1.68 p	1.67 p	1.75 p	1.61	0.77 b	..
China	..	..	..	..	..	..	..
Romania	2.44	0.40	0.40	0.37	0.30	0.23	0.29 p
Russian Federation	0.18	0.18	0.13	0.13	0.14	0.21	0.41
Singapore	..	..	..	..	..	..	..
South Africa	1.60	2.11	2.27	2.65	2.76	..	..
Chinese Taipei	0.48	0.30	0.32	0.33	0.31	0.30	0.24

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 21. Total researchers in headcount

Headcount

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	..	..	71 448 d	..	78 051 d	..	..
Belgium	48 757	..	66 724	..	73 709 b	..	..
Canada	..	..	..	..	..	..	..
Chile	..	10 447 d	9 795 d	12 303 d	13 015 d	14 200 d p	..
Czech Republic	37 542	47 651	51 455	54 493	56 605	56 178	59 789 p
Denmark	43 460	57 520	57 876	58 735	60 492	60 782 p	..
Estonia	5 734	7 634	7 515	7 721	7 181	6 845	..
Finland	50 773	56 704	56 720	55 515	55 728	53 752	..
France	251 599	356 445	365 737	379 048 b	383 843	..	..
Germany	406 253	..	549 283	..	586 030	..	..
Greece	33 396 d	..	53 744 d	..	60 736 d	..	..
Hungary	31 407	37 019	37 803	39 190	38 418	38 915	..
Iceland	3 821	..	3 356 b	..	3 722 b	3 935	..
Ireland	17 653	17 895	32 084	..	30 612	..	..
Israel[1]	..	..	..	..	..	..	..
Italy	125 534	157 960	163 925	168 074	174 327	185 916 b	..
Japan	861 901 d	887 067 d	892 406 d	926 671 d	907 455 d	917 725 d	930 720 d
Korea	234 702 d	401 724	410 333	437 447	453 262	460 769	482 796
Latvia	5 748 d	7 995 d	7 448 d	7 939 d	7 827 d	7 400 d	..
Lithuania	11 918.00	17 677.00	18 083.00	19 371.00	17 293.00	17 746.00	..
Luxembourg	2 443	..	2 713	..	3 134	..	..
Mexico	..	41 419	42 222	..	..	..	..
Netherlands	57 782	107 184 b	110 536	111 795	112 946	114 589	..
New Zealand	22 186	..	29 300	..	31 000	..	..
Norway	36 555	46 747	47 795	50 025	52 181	54 601	..
Poland	97 875	103 627	109 611	115 375	118 494	132 547	..
Portugal	37 769	81 750	78 290 b	78 736	81 005	85 780	..
Slovak Republic	17 526	25 069	24 441	25 080	24 396	26 720	..
Slovenia	7 644	12 362	12 111	12 155	11 308	11 282	..
Spain	181 023	215 544 d	208 767 d	210 104 d	214 227 d	218 680 d	..
Sweden	82 459 d	..	101 820 b e	..	108 761 e	..	..
Switzerland	..	60 279	..	..	70 834	..	..
Turkey	83 856	155 133	166 097	181 544	190 784	191 769	210 769
United Kingdom	364 807 e	442 385 e	466 689	489 181 e	496 953 e	510 980 e	..
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	49 050	80 245 p	81 964 p	83 837 p	82 407	83 947	..
China	..	2 069 650	..	..	..	..	..
Romania	29 608	27 838	27 600	27 535	27 253	27 801	..
Russian Federation	391 121 e	372 620 e	369 015 e	373 905 e	379 411 e	370 379 e	359 793
Singapore	27 969	38 432	40 385	40 730	..	..	..
South Africa	39 266	42 828	45 935	48 479	51 877	..	..
Chinese Taipei	115 954	179 830	180 353	182 119	183 571	185 472	188 474

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

Table 22. Women researchers as a percentage of total researchers

Based on headcount

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	..	..	29.6 d	..	29.5 d	..	..
Belgium	29.6	..	33.4	..	34.1 b	..	..
Canada	..	..	..	..	..	..	..
Chile	..	31.0 d	34.3 d	31.5 d	33.0 d	33.1 d p	..
Czech Republic	28.8	27.5	28.3	27.2	26.9	26.7	26.8 p
Denmark	29.7	35.4 e	35.2	..	33.8	..	..
Estonia	40.8	44.0	44.4	44.0	43.9	43.6	..
Finland	30.2	32.2	31.5	32.1	32.3	32.5	..
France	28.0	25.5 e	25.5 e	26.7 b e	27.0 e	..	..
Germany	21.3	..	27.9	..	28.0	..	..
Greece	36.4 d	..	39.4 d	..	38.0 d	..	..
Hungary	34.2	30.9	30.3	30.4	30.8	30.8	..
Iceland	39.3	..	43.8 b	..	45.6 b	47.2	..
Ireland	30.3	..	35.3	..	35.3	..	..
Israel[1]	..	..	..	..	..	..	..
Italy	32.3	35.5	35.7	36.0	36.0	35.2 b	..
Japan	11.9 d	14.4 d	14.6 d	14.7 d	15.3 d	15.7 d	16.2 d
Korea	12.9 d	17.7	18.2	18.5	18.9	19.7	20.1
Latvia	51.5 d	52.8 d	52.0 d	52.1 d	51.0 d	52.2 d	..
Lithuania	48.65	52.36	51.22	50.25	50.74	51.57	..
Luxembourg	18.2	..	27.3	..	28.9	..	..
Mexico	..	32.8	33.0	..	..	..	..
Netherlands	21.0	24.0 b	23.6	23.4	25.4	25.8	..
New Zealand	..	..	..	..	..	..	..
Norway	31.6	36.2	36.9	37.4	37.4	37.6	..
Poland	39.3	38.3	37.8	37.2	37.0	36.4	..
Portugal	44.4	45.0	45.4 b	44.3	44.1	43.5	..
Slovak Republic	41.5	42.3	42.7	42.5	42.2	41.4	..
Slovenia	34.8	35.8	36.0	36.1	36.5	34.5	..
Spain	36.7	38.8 d	39.3 d	39.6 d	40.0 d	40.2 d	..
Sweden	35.7 d	..	33.3 b e	..	33.7 e	..	..
Switzerland	..	32.4	..	..	33.5	..	..
Turkey	36.1	36.2	36.2	36.9	37.3	36.7	37.0
United Kingdom	35.7 e	37.8 e	38.1	37.4 e	38.6 e	38.7 e	..
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	50.5	52.6 p	52.4 p	52.9 p	52.6	53.0	..
China	..	..	..	..	..	..	..
Romania	45.3	45.1	45.7	46.0	46.2	45.8	..
Russian Federation	42.4 e	41.2 e	40.9 e	40.5 e	40.3 e	40.0 e	39.5
Singapore	26.3	29.6	29.6	30.1	..	..	..
South Africa	39.7	43.7	44.0	44.3	45.0	..	..
Chinese Taipei	19.6	21.8	22.0	22.1	22.2	22.4	22.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	7 515.5	..	13 025.4	..	11 301.5	..	..
Austria	4 770.9 e	8 038.4 e	8 504.0	9 169.6 e	9 389.6	9 901.9 b e	10 507.4 p
Belgium	4 233.8	7 479.2	7 885.3	8 342.7	8 847.8	9 540.7 e	9 868.6 p
Canada	12 886.0 d	13 417.9 d	13 560.5 d	14 798.1 b	14 386.2	14 502.5	14 059.8 p
Chile	..	466.7	536.4	506.5	532.4	580.6 p	..
Czech Republic	1 523.5 b	2 874.8	3 246.9	3 698.3	3 722.4	3 824.1	4 533.7 p
Denmark	3 023.3	4 897.4	4 936.6	5 023.4	5 406.7	5 864.7	6 171.0 p
Estonia	93.2	420.3	297.8	236.9	259.5	261.0	268.0
Finland	3 958.3	5 167.9	5 083.5	4 860.5	4 459.8	4 339.3	4 592.9 p
France	24 554.5	35 581.4	37 688.6	38 551.3	39 279.2	40 097.7 p	42 006.3 e
Germany	44 288.0	68 327.0	69 136.9	74 123.8	78 353.2	81 739.0	91 019.4 e
Greece	504.0	669.8	774.1	825.3	922.3	1 233.0	1 689.9 p
Hungary	685.1 d	1 899.9 d	2 333.8 d	2 437.9 d	2 595.8 d	2 352.7 d	2 779.3 d
Iceland	152.9	..	135.9 b d	178.1 d	221.0 d	226.2 d	261.5 p
Ireland	1 314.6	2 383.4 e	2 492.4	2 572.3 e	2 758.6	2 830.2 e	2 742.6 p
Israel[1]	5 677.4 d	8 788.5 d	9 442.8 d	9 953.2 d	10 792.7 d	12 061.8 d	13 250.7 d e
Italy	9 186.6	14 854.5	15 570.9	16 688.8	17 449.5	19 735.6 b	20 605.3 p
Japan	98 384.0	116 716.3	125 287.5	131 839.8	132 293.7	129 751.5	134 662.3
Korea	23 531.2 d	50 559.8	53 573.7	57 180.5	59 643.5	62 550.0	72 243.4
Latvia	66.9	64.9	78.9	116.2	75.6	54.6	76.4 p
Lithuania	73.54	177.49	190.88	262.83	239.47	256.27	294.91
Luxembourg	431.1	342.3 b	355.1	382.7	388.0	428.3	435.2 p
Mexico	2 510.0	2 909.8	3 214.3	3 449.3 e p	3 497.1 e p	3 440.4 e p	..
Netherlands	5 761.6	8 585.1 b	8 888.9	9 190.7	9 470.7	10 176.0	10 911.5 p
New Zealand	495.1	..	861.7	..	1 085.8	..	..
Norway	1 752.6	2 779.1	2 949.9	3 118.9	3 267.4	3 292.1	3 673.5 p
Poland	947.8	2 973.6	3 570.4	4 262.3	4 766.6	6 667.1 b	7 583.1 p
Portugal	695.5	1 905.1	1 838.4	1 789.6	1 772.5	1 987.7	2 231.7 p
Slovak Republic	219.8	479.6	575.4	508.2	527.4	666.6	841.1
Slovenia	398.0	1 158.7	1 211.9	1 164.5	1 093.2	1 043.7	1 039.7 p
Spain	7 128.0	10 208.0	10 234.7	10 242.7	10 412.9	10 871.0	12 034.7 p
Sweden	7 564.0 b	9 470.3 e	9 995.0	9 514.1 e	10 797.1	11 079.7 p	12 141.2 p
Switzerland	..	10 542.8	..	..	12 675.6	..	..
Turkey	1 554.8	5 776.5	6 569.7	7 931.2	8 870.5	10 690.0	12 359.0
United Kingdom	18 809.0	24 381.2	26 534.1	28 541.9	30 165.0	31 811.5	33 345.9 p
United States	226 159.0 d	302 251.0 d	322 528.0 d	340 728.0 d	355 821.0 d	374 685.0 d	397 064.0 d e
EU28 (OECD estimates)	141 009.5 e	213 891.5 e	222 834.6 e	234 273.3 e	245 527.7 e	259 339.8 e	280 830.8 e
OECD-Total	**526 863.4 e**	**739 582.9 e**	**784 335.9 e**	**827 220.0 e**	**857 569.5 e**	**895 051.3 e**	**957 417.7 e**
Argentina	734.3	1 333.8 p	1 292.9 p	1 011.4 p	1 161.5 b	1 118.8	..
China	59 326.1	222 507.6	255 971.4	286 465.3	312 902.2	349 685.3	384 821.3
Romania	420.0	715.9	470.5	650.6	920.3	1 246.6	1 488.9 p
Russian Federation	12 317.7	22 116.5	23 397.5	24 040.8	22 957.7	22 744.9	25 181.2
Singapore	3 368.2	5 023.0	5 215.9	6 179.7	..	..	..
South Africa	2 357.3	2 141.9	2 285.4	2 486.2	2 485.0	..	..
Chinese Taipei	10 264.3	21 606.6	23 286.9	25 139.5	26 199.8	27 771.6	30 980.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	1.05	..	1.18	..	1.00	..	..
Austria	1.66 e	2.05 e	2.09	2.20 e	2.18	2.19 b e	2.22 p
Belgium	1.21	1.59	1.62	1.67	1.72	1.78 e	1.76 p
Canada	1.10 d	0.92 d	0.87 d	0.91 b	0.90	0.89	0.82 p
Chile	..	0.12	0.14	0.13	0.13	0.14 p	..
Czech Republic	0.68 b	0.94	1.01	1.09	1.05	1.03	1.13 p
Denmark	1.63	1.95	1.88	1.86	1.94	2.02	1.97 p
Estonia	0.42	1.22	0.82	0.62	0.68	0.64	0.61
Finland	2.36	2.35	2.26	2.15	1.93	1.81	1.80 p
France	1.27	1.44	1.44	1.45	1.44	1.43 p	1.42 e
Germany	1.68	1.95	1.90	1.94	2.00	1.99	2.09 e
Greece	0.18	0.24	0.27	0.28	0.32	0.42	0.55 p
Hungary	0.40 d	0.83 d	0.96 d	0.97 d	1.00 d	0.89 d	0.99 d
Iceland	1.38	..	0.95 b d	1.19 d	1.37 d	1.28 d	1.38 p
Ireland	0.78	1.12 e	1.12	1.08 e	0.85	0.84 e	0.74 p
Israel[1]	3.30 d	3.50 d	3.43 d	3.54 d	3.63 d	3.76 d	3.91 d e
Italy	0.53	0.69	0.72	0.76	0.78	0.83 b	0.83 p
Japan	2.43	2.46	2.52	2.64	2.57	2.47	2.52
Korea	2.02 d	3.14	3.26	3.35	3.27	3.29	3.62
Latvia	0.22	0.15	0.17	0.24	0.15	0.11	0.14 p
Lithuania	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Luxembourg	1.36	0.70 b	0.68	0.68	0.66	0.70	0.68 p
Mexico	0.19	0.14	0.16	0.16 e p	0.16 e p	0.15 e p	..
Netherlands	0.94	1.08 b	1.07	1.11	1.11	1.16	1.17 p
New Zealand	0.47	..	0.54	..	0.63	..	..
Norway	0.79	0.85	0.87	0.92	1.04	1.08	1.12 p
Poland	0.18	0.33	0.38	0.44	0.47	0.63 b	0.67 p
Portugal	0.29	0.68	0.63	0.60	0.58	0.62	0.67 p
Slovak Republic	0.25	0.33	0.38	0.32	0.33	0.40	0.48
Slovenia	0.83	1.95	1.97	1.83	1.68	1.52	1.38 p
Spain	0.59	0.68	0.67	0.65	0.64	0.64	0.66 p
Sweden	2.46 b	2.22 e	2.28	2.11 e	2.27	2.27 p	2.35 p
Switzerland	..	2.28	..	..	2.39	..	..
Turkey	0.19	0.38	0.39	0.43	0.44	0.51	0.55
United Kingdom	0.96	1.01	1.05	1.08	1.10	1.13	1.12 p
United States	1.73 d	1.87 d	1.92 d	1.94 d	1.95 d	2.00 d	2.04 d e
EU28 (OECD estimates)	1.03 e	1.20 e	1.20 e	1.23 e	1.24 e	1.26 e	1.29 e
OECD-Total	**1.45 e**	**1.56 e**	**1.59 e**	**1.62 e**	**1.62 e**	**1.64 e**	**1.67 e**
Argentina	0.14	0.16 p	0.15 p	0.12 p	0.13 b	0.13	..
China	0.89	1.45	1.52	1.56	1.58	1.63	1.65
Romania	0.20	0.19	0.12	0.16	0.21	0.27	0.29 p
Russian Federation	0.67	0.60	0.62	0.64	0.65	0.64	0.67 e
Singapore	1.43	1.22	1.18	1.32	..	..	..
South Africa	0.50	0.32	0.33	0.35	0.34	..	..
Chinese Taipei	1.56	2.19	2.27	2.32	2.37	2.45	2.61

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

Table 25. Business enterprise expenditure on R&D (BERD) at 2010 prices and PPP

Million 2010 USD

	2005	2012	2013	2014	2015	2016	2017
Australia	8 607.1	..	12 163.0	..	10 879.8	..	..
Austria	5 452.5 e	7 472.1 e	7 620.2	8 059.0 e	8 075.1	8 300.2 b e	8 599.6 p
Belgium	4 928.4	7 065.8	7 229.1	7 538.4	7 911.7	8 315.7 e	8 329.3 p
Canada	14 188.7 d	13 081.5 d	12 798.8 d	13 768.1 b	13 742.8	13 754.7	13 081.7 p
Chile	..	431.9	490.2	458.9	489.8	530.2 p	..
Czech Republic	1 745.6 b	2 755.0	2 949.5	3 257.3	3 299.7	3 314.8	3 790.1 p
Denmark	3 856.0	4 736.3	4 601.2	4 617.9	4 931.7	5 259.9	5 244.6 p
Estonia	122.1	393.8	270.2	210.5	232.7	229.0	227.5
Finland	4 704.7	4 936.4	4 718.6	4 445.6	4 013.4	3 863.6	3 951.8 p
France	28 557.8	34 418.5	34 776.1	35 190.4	35 491.4	35 543.5 p	36 101.7 e
Germany	50 629.9	65 100.9	63 580.4	66 482.6	69 716.7	70 893.0	76 289.8 e
Greece	570.8	632.5	690.2	725.6	810.8	1 071.5	1 425.4 p
Hungary	866.0 d	1 785.8 d	2 120.0 d	2 218.8 d	2 373.8 d	2 166.4 d	2 491.5 d
Iceland	164.8	..	128.6 b d	164.3 d	197.7 d	198.6 d	221.7 p
Ireland	1 507.1	2 296.7 e	2 336.1	2 440.0 e	2 407.6	2 493.1 e	2 366.1 p
Israel[1]	5 865.0 d	8 272.3 d	8 444.5 d	9 050.6 d	9 522.3 d	10 275.4 d	11 055.1 d e
Italy	11 116.5	13 964.8	14 261.2	15 188.0	15 709.1	16 983.7 b	17 209.1 p
Japan	108 432.3	111 695.9	116 871.3	122 961.2	121 264.0	117 686.1	122 215.3
Korea	24 826.1 d	50 077.0	53 486.8	56 929.6	57 027.9	59 001.4	66 902.7
Latvia	81.4	61.2	72.2	104.1	67.7	48.2	64.9 p
Lithuania	89.4	165.1	171.7	233.6	213.6	226.1	250.3
Luxembourg	522.6	312.1 b	314.3	325.6	330.1	357.3	351.2 p
Mexico	3 025.9	2 704.3	2 951.9	3 095.5 e p	3 159.8 e p	3 077.5 e p	..
Netherlands	6 557.0	8 152.6 b	8 069.1	8 432.9	8 633.4	9 239.0	9 556.9 p
New Zealand	588.2	..	782.0	..	993.1	..	..
Norway	2 078.9	2 598.2	2 684.2	2 840.0	3 119.7	3 172.3	3 422.8 p
Poland	1 133.8	2 800.8	3 289.4	3 918.7	4 342.7	6 064.4 b	6 699.8 p
Portugal	815.5	1 863.2	1 694.8	1 624.3	1 592.8	1 746.6	1 926.8 p
Slovak Republic	262.8	468.2	544.0	475.6	500.5	626.1	776.8
Slovenia	433.4	1 084.9	1 086.7	1 037.5	970.9	909.2	868.0 p
Spain	8 313.7	9 749.1	9 457.4	9 308.4	9 446.1	9 698.8	10 374.9 p
Sweden	8 890.1 b	8 880.9 e	9 214.0	8 747.4 e	9 865.3	10 130.1 p	10 677.7 p
Switzerland	..	9 720.4	..	..	10 795.0	..	..
Turkey	2 069.7	5 507.8	6 186.1	7 174.3	7 829.8	9 386.5	10 764.1
United Kingdom	21 225.6	23 531.7	24 911.7	26 467.0	27 608.4	28 785.7	29 204.7 p
United States	248 639.6 d	290 495.2 d	304 637.4 d	315 852.3 d	326 353.5 d	339 938.0 d	353 522.0 d e
EU28 (OECD estimates)	163 570.4 e	204 115.6 e	205 315.5 e	212 700.2 e	220 740.2 e	228 531.1 e	239 454.3 e
OECD-Total	**588 635.3 e**	**710 262.5 e**	**735 524.8 e**	**765 961.7 e**	**783 970.9 e**	**806 758.3 e**	**845 665.8 e**
Argentina	807.3	1 283.2 p	1 224.1 p	940.7 p	1 068.7 b	1 016.4	..
China	65 283.7	214 069.7	242 352.2	266 435.0	287 901.2	317 751.3	343 498.0 e
Romania	608.8	674.4	440.3	606.7	853.9	1 104.9	1 274.5 p
Russian Federation	17 854.7	20 408.9	21 548.8	22 286.4	22 088.3	21 813.1	22 935.8 e
Singapore	3 701.0	4 824.4	4 923.9	5 726.4	..	..	..
South Africa	2 593.9	2 060.6	2 163.7	2 312.4	2 286.5	..	..
Chinese Taipei	11 284.6	20 765.7	21 996.1	23 304.5	24 030.2	25 196.8	27 584.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	1.55	..	1.78	..	1.56	..	..
Austria	2.52 e	3.15 e	3.22	3.38 e	3.35	3.43 b e	3.46 e p
Belgium	1.92	2.57	2.64	2.72	2.79	2.91 e	2.86 e p
Canada	1.67 d	1.43 d	1.36 d	1.42 b	1.44 e	1.42 e	1.31 e p
Chile	..	0.18	0.19	0.18	0.19 e	0.21 e p	..
Czech Republic	0.98 b	1.38	1.49	1.58	1.52	1.49	1.64 e p
Denmark	2.83	3.41	3.26	3.20	3.34	3.52	3.41 e p
Estonia	0.61	1.84	1.24	0.97	1.08	1.05	1.00 e
Finland	3.85	4.12	4.00	3.80	3.42	3.20	3.13 e p
France	2.15	2.50	2.52	2.53	2.52	2.49 p	2.49 e
Germany	2.61	3.07	3.00	3.06	3.14	3.14	3.30 e
Greece	0.29	0.46	0.51	0.53	0.59	0.80	1.04 e p
Hungary	0.63 d	1.33 d	1.54 d	1.54 d	1.60 d	1.43 d	1.57 d e
Iceland	2.38	..	1.58 b d	2.02 d	2.30 d	2.11 d e	2.27 e p
Ireland	1.14	1.63 e	1.61	1.54 e	1.12	1.09 e	0.96 e p
Israel[1]	5.46 d e	5.91 d	5.76 d	6.07 d e	6.20 d e	6.44 d e	6.70 d e
Italy	0.83	1.13	1.18	1.25	1.28	1.37 b	1.37 e p
Japan	3.21	3.43	3.51	3.68	3.56	3.42 e	3.49 e
Korea	2.95 d	4.56	4.73	4.89	4.77	4.83 e	5.31 e
Latvia	0.32	0.23	0.27	0.39	0.25	0.17	0.22 e p
Lithuania	0.2	0.3	0.3	0.4	0.4	0.4	0.4 e
Luxembourg	2.04	1.05 b	1.02	1.00	0.94	1.01	0.99 e p
Mexico	0.25	0.19	0.21	0.22 e p	0.22 e p	0.20 e p	..
Netherlands	1.45	1.66 b	1.66	1.73	1.72	1.80	1.81 e p
New Zealand	0.69	..	0.83	..	0.97	..	..
Norway	1.19	1.29	1.33	1.43	1.68	1.79 e	1.85 e p
Poland	0.26	0.46	0.54	0.62	0.66	0.89 b	0.94 p
Portugal	0.49	1.16	1.08	1.03	0.98	1.06	1.15 e p
Slovak Republic	0.35	0.46	0.54	0.45	0.45	0.56	0.67 e
Slovenia	1.25	3.02	3.07	2.80	2.56	2.33	2.12 e p
Spain	0.88	1.08	1.09	1.05	1.02	1.01	1.05 e p
Sweden	3.98 b	3.59 e	3.70	3.42 e	3.65	3.67 p	3.79 e p
Switzerland	..	3.19	..	..	3.38	..	..
Turkey	0.28	0.55	0.57	0.62	0.63	0.74	0.78 e
United Kingdom	1.57	1.70	1.74	1.79	1.84	1.87	1.87 e p
United States	2.67 d	2.97 d	3.05 d	3.07 d	3.08 d	3.17 d	3.23 d e
EU28 (OECD estimates)	1.63 e	1.93 e	1.94 e	1.98 e	1.99 e	2.02 e	2.06 e
OECD-Total	**2.19 e**	**2.42 e**	**2.46 e**	**2.50 e**	**2.50 e**	**2.54 e**	**2.58 e**
Argentina	0.20	0.26 p	0.24 e p	0.19 e p	0.21 b e	0.21 e	..
China	1.12 e	1.85 e	1.96 e	2.03 e	2.08 e	2.19 e	2.22 e
Romania	0.29	0.27	0.17	0.23	0.31 e	0.38 e	0.41 e p
Russian Federation	0.95 e	0.88 e	0.93 e	0.93 e	0.91 e	0.91 e	0.94 e
Singapore	1.70 e	1.50 e	1.46 e	1.63 e	..	..	..
South Africa	0.71 e	0.47 e	0.48 e	0.51 e	0.50 e	..	..
Chinese Taipei	2.09 e	3.02	3.08	3.09	3.15	3.25	3.45

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 27. Business enterprise researchers in full-time equivalent

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	23 794	..	39 065	..	33 016	..	..
Austria	18 155 d e	25 180 d e	25 752 d	27 361 d e	27 872 d	28 426 d e	29 558 d p
Belgium	16 769	23 464	23 759	27 384	28 474 b	29 532 e	30 326 p
Canada	84 410	94 010	93 150	93 647 b	95 577	87 883	..
Chile	..	2 027 d	1 430 d	2 248 d	2 237 d	2 655 d p	..
Czech Republic	9 716 b	15 057	16 367	17 892	19 161	19 185	20 206 p
Denmark	17 624	24 369	23 364	23 975	25 011	26 976	27 495 p
Estonia	883	1 421	1 383	1 268	1 152	1 318	1 585
Finland	21 967	23 269	22 253	21 369	21 296	20 257	20 544 p
France	106 837	156 392	161 460	161 744	165 845	..	173 879 e
Germany	166 874	199 623	198 585	198 076	230 823	235 758	246 842 e
Greece	6 033 d	4 351 d	4 197 d	4 938 d	5 035 d	5 608 d	10 664 d p
Hungary	5 008	13 231	14 317	15 577	15 026	15 247	17 527 p
Iceland	1 012	..	656 b	..	813 b	813	..
Ireland	6 768	9 756 e	10 793	11 246 e	11 296	11 185	10 877 p
Israel[1]	..	53 157 d	52 067 d	56 499 d	59 746 d	64 559 d	..
Italy	27 939	41 067	43 116	44 322	50 500	56 197 b	57 996 p
Japan	481 496 d	481 425 d	485 318 d	506 134 d	486 198 d	488 828 d	498 732 d
Korea	137 706 d	247 041	253 447	274 638	284 136	287 869	311 566
Latvia	468 d	594 d	570 d	776 d	604 d	582	647 d p
Lithuania	716.0	1 317.0	1 763.0	2 434.0	1 888.0	1 956.0	2 504.0
Luxembourg	1 696	927 b	1 001	1 015	977	1 131	1 146 p
Mexico	19 888	7 194	7 323	..	..	..	..
Netherlands	22 898	43 665 b	46 838	45 684	47 860	50 160	53 515 p
New Zealand	3 700	..	6 000	..	6 900	..	..
Norway	10 239 d	13 332 d	13 553 d	14 314 d	14 921 d	15 330	16 582 p
Poland	9 412	15 088	20 606	24 960	28 746	40 838 b	50 170 p
Portugal	4 014	11 931	10 025 b	11 203	11 785	13 426	14 948 p
Slovak Republic	1 947	2 482	2 436	2 645	2 789	2 846	3 333
Slovenia	1 936	4 618	4 664	4 637	4 191	4 489	5 743 p
Spain	35 034	44 920 d	44 714 d	44 689 d	45 151 d	47 222 d	49 552 d p
Sweden	36 697 b d	30 497 e	43 141 b	44 433 e	45 067	47 127 p	50 361 p
Switzerland	..	16 595	..	..	21 893	..	..
Turkey	9 456	35 034	40 207	41 847	45 313	52 463	62 305
United Kingdom	93 717	90 422	98 469	102 221	105 774	110 149	109 856 p
United States	..	869 000	914 000	960 000	981 000	973 000	..
EU28 (OECD estimates)	625 655 e	792 590 e	829 400 e	850 197 e	907 777 e	952 948 e	1 002 724 e
OECD-Total	**2 197 144 e**	**2 644 420 e**	**2 743 991 e**	**2 859 442 e**	**2 935 686 e**	**2 982 893 e**	**..**
Argentina	3 763	3 336	3 569	3 204	4 554 b	4 362	..
China	696 413 d	872 384	922 682	946 077	1 014 614	1 048 147	1 055 746
Romania	10 319	4 956	5 333	5 244	4 234	4 857	4 467 p
Russian Federation	237 959	204 731	205 455	207 593	208 604	198 561	193 425
Singapore	14 238	17 289	18 329	18 521	..	..	..
South Africa	5 896	4 556	4 530	4 636	4 627	..	..
Chinese Taipei	51 202	92 279	94 236	97 019	100 106	102 721	105 558

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	63.8 d e	63.4 d e	63.7 d	64.2 d e	64.0 d	63.3 d e p	..
Belgium	50.6	51.5	51.3	53.9	53.5 b	54.4 e	53.7 p
Canada	61.7	58.2	57.1	57.8 b	58.7	56.7	..
Chile	..	29.8 d	24.3 d	29.6 d	27.4 d	29.5 d p	..
Czech Republic	40.2 b	45.3	47.8	49.6	50.3	51.4	51.6 p
Denmark	62.5	60.8	58.6	57.9	58.4	60.2	60.7 p
Estonia	26.5	31.0	31.4	29.3	27.5	30.4	33.9
Finland	55.5	57.5	56.8	55.8	56.8	56.4	55.5 p
France	52.8	60.4 e	60.8 e	59.5 b	59.7	..	60.3 e
Germany	61.3	56.6	56.0	56.3	59.5	59.0	59.7 e
Greece	30.8 d	17.5 d	14.4 d	16.5 d	14.5 d	19.1 d	30.3 d p
Hungary	31.5	55.5	57.2	59.4	59.4	59.1	61.7 p
Iceland	46.9	..	35.5 b	..	41.8 b	36.9	..
Ireland	58.4	43.6 e	45.5	45.8 e	50.7	56.5	55.6 p
Israel[1]	..	83.7 d e	..	..	..	..	..
Italy	33.9	37.1	37.1	37.5	40.1	42.0 b	42.6 p
Japan	70.7 d	74.5 d	73.5 b d	74.1 d	73.4 d	73.4 d	73.7 d
Korea	76.6 d	78.3	78.7	79.5	79.7	79.7	81.3
Latvia	14.3 d	15.2 d	15.7 d	20.7 d	16.7 d	18.5 d	18.6 d p
Lithuania	9.4	16.4	20.6	26.8	23.1	22.9	28.8
Luxembourg	76.1	40.1 b	40.0	38.6	38.5	45.1 p	41.9 p
Mexico	45.3	24.7	24.5	..	..	..	..
Netherlands	47.8	59.6 b	61.1	59.9	60.5	61.8	62.7 p
New Zealand	28.5	..	33.5	..	36.9	..	..
Norway	48.3 d	47.9 d	47.9 d	49.0 d	48.7 d	48.0	48.2 p
Poland	15.1	22.5	28.8	31.7	34.8	46.3 b	52.0 p
Portugal	19.0	28.1	26.5 b	29.4	30.5	32.5	33.7 p
Slovak Republic	17.8	16.3	16.5	17.9	19.4	20.1	21.9
Slovenia	36.9	52.0	53.6	54.1	53.1	55.3	61.8 p
Spain	31.9	35.4 d	36.3 d	36.6 d	36.9 d	37.3 d	37.2 d p
Sweden	66.7 b d e	61.9 e	67.2 b e	66.7 e	67.5 e	67.0 p	66.9 p
Switzerland	..	46.4	..	..	50.1	..	..
Turkey	24.2	42.7	45.1	46.7	47.6	52.4	55.7
United Kingdom	37.7 b e	35.3 e	36.8	37.0 e	37.2	38.1 e	37.9 p
United States	..	69.3 e	70.6 e	71.6 e	71.6 e	71.0 e	..
EU28 (OECD estimates)	45.5 e	47.0 e	47.8 e	48.0 e	49.2 e	50.4 e	51.2 e
OECD-Total	**59.3 e**	**60.0 e**	**60.6 e**	**61.3 e**	**61.6 e**	**61.8 e**	**..**
Argentina	11.8	6.6	7.0	6.2	8.6 b	8.1	..
China	62.3 d	62.1	62.2	62.1	62.7	61.9	60.7
Romania	44.9	27.5	28.7	29.0	24.3	26.9	25.5 p
Russian Federation	51.2	46.2	46.6	46.7	46.4	46.3	47.1
Singapore	59.8	50.6	50.9	50.5	..	..	..
South Africa	34.1	21.3	19.4	19.7	17.7	..	..
Chinese Taipei	57.6	65.9	66.8	67.9	68.9	69.5	70.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Per thousand

	2005	2012	2013	2014	2015	2016	2017
Australia	3.2	..	4.7	..	3.9	..	..
Austria	6.2 d e	7.9 d e	8.1 d	8.5 d e	8.7 d	8.8 d e	8.9 d e p
Belgium	5.7	7.5	7.7	8.8	9.1 b	9.3 e	9.4 e p
Canada	6.8	7.2	7.0	7.0 b	7.1	6.5	..
Chile	..	0.3 d e	0.2 d	0.4 d	0.4 d	0.4 d p	..
Czech Republic	2.5 b	3.7	4.0	4.4	4.6	4.5	4.7 e p
Denmark	9.5	13.4	12.9	13.0	13.4	14.1	14.0 e p
Estonia	1.9	3.2	3.1	2.8	2.5	2.8 e	3.3 e
Finland	12.9	13.0	12.6	12.2	12.2	11.5	11.5 e p
France	5.9	8.4	8.7	8.7	8.9	..	9.2 e
Germany	5.8	6.5	6.4	6.4	7.4	7.5	7.7 e
Greece	1.7 d	1.4 d	1.4 d	1.6 d	1.6 d	1.8 d	3.3 d e p
Hungary	1.5	4.3	4.7	4.9	4.6	4.6 e	5.1 e p
Iceland	8.7	..	5.3 b	..	6.2 b	5.9	..
Ireland	4.4	7.2 e	7.7	7.9 e	7.7	7.4	7.0 e p
Israel[1]	..	22.8 d	21.7 d	23.1 d	24.0 d	25.1 d	..
Italy	1.5	2.2	2.4	2.5	2.8	3.1 b	3.1 e p
Japan	8.9 d e	9.3 d e	9.3 d e	9.7 d e	9.4 d e	9.4 d e	9.4 d e
Korea	7.2 d	12.4	12.6	13.4	13.7	13.8	14.8 e
Latvia	0.6 d	0.9 d	0.8 d	1.2 d	0.9 d	0.9	1.0 d e p
Lithuania	0.7	1.4	1.8	2.4	1.9	1.9	2.4 e
Luxembourg	6.9	3.1 b	3.4	3.3	3.1	3.5	3.4 e p
Mexico	0.8	0.3	0.3	..	..	..	..
Netherlands	3.8	7.0 b	7.6	7.3	7.6	7.8	8.1 e p
New Zealand	2.4 e	..	3.6 e	..	4.0 e	..	..
Norway	6.7 d	7.7 d	7.8 d	8.1 d	8.5 d	8.8 e	9.4 e p
Poland	0.8	1.2	1.7	2.0	2.3	3.2 b	3.9 e p
Portugal	1.0	3.4	3.0 b	3.3	3.4	3.8	4.1 e p
Slovak Republic	1.2	1.4	1.4	1.5	1.6	1.6	1.8 e
Slovenia	2.5	6.1	6.3	6.2	5.5	5.8	7.1 e p
Spain	2.3	3.3 d	3.4 d	3.4 d	3.3 d	3.4 d	3.4 d e p
Sweden	12.9 b d	9.9 e	13.9 b	14.1 e	14.2	14.7 p	15.4 e p
Switzerland	..	4.7	..	..	6.0	..	..
Turkey	0.6	1.7	1.9	1.9	2.1	2.4	2.7 e
United Kingdom	4.4	4.2	4.5	4.6	4.6	4.7	4.7 p
United States	..	8.7	9.0	9.3	9.4	9.1	..
EU28 (OECD estimates)	3.8 e	4.8 e	5.0 e	5.1 e	5.4 e	5.6 e	5.8 e
OECD-Total	**5.5 e**	**6.4 e**	**6.6 e**	**6.8 e**	**6.9 e**	**7.0 e**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.2	0.7	0.7	0.7	0.6	0.7	0.6 p
Russian Federation	4.5	3.8	3.8	3.8	3.8	3.6	3.6 e
Singapore	7.0	5.9	6.0	5.9	..	..	..
South Africa	0.6 e	0.4 e	0.4 e	0.4 e	0.4	..	..
Chinese Taipei	5.9	9.8	9.9	10.1	10.3	10.5	10.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	43 687	..	78 839	..	70 467	..	..
Austria	32 780 d e	45 468 d e	46 412 d	49 539 d e	50 534 d	51 953 d e	54 022 d p
Belgium	31 613	38 108	38 497	42 391	44 508 b	47 404 e	48 615 p
Canada	142 030	139 460	138 620	144 462 b	155 357	134 687	..
Chile	..	4 737 d	3 905 d	5 087 d	4 398 d	4 950 d p	..
Czech Republic	21 116 b	31 705	33 188	35 256	36 365	37 263	39 968 p
Denmark	28 359	35 899	34 985	35 431	36 898	38 856	38 975 p
Estonia	1 398	1 988	2 069	1 798	1 694	1 855	2 086
Finland	32 109	30 995	30 381	29 634	29 770	27 634	28 148 p
France	194 991	246 438	249 991	248 145	251 444	..	258 670 e
Germany	304 502	367 478	360 375	371 706	404 767	413 027	432 352 e
Greece	11 665 d	6 532 d	6 832 d	7 750 d	8 131 d	9 102 d	14 750 d p
Hungary	7 393	19 997	22 244	22 177	21 030	20 825	24 719 p
Iceland	1 530	..	1 260 b d	..	1 604 d	1 604	..
Ireland	10 338	15 313 e	17 103	17 821 e	18 383	18 203	17 701 p
Israel[1]	43 049 d	64 596 d	65 099 d	69 854 d	72 914 d	79 731 d	..
Italy	70 725	120 162	124 736	129 271	136 725	164 471 b	166 116 p
Japan	609 808 d	581 042 d	583 855 d	611 027 d	592 175 d	586 593 d	603 407 d
Korea	153 400 d	281 523	288 758	314 019	323 652	328 948	355 601
Latvia	1 370 d	885 d	981 d	1 382 d	1 145 d	896 d	956 d p
Lithuania	1 190.0	1 771.0	2 401.0	3 307.0	2 714.0	2 630.0	3 697.0
Luxembourg	3 662	2 843 b	2 913	3 066	3 033	3 143	3 135 p
Mexico	42 331	20 244	19 197	..	..	..	..
Netherlands	48 588	76 767 b	77 399	76 708	81 108	85 585	90 037 p
New Zealand	6 100	..	10 100	..	11 000	..	..
Norway	15 399	18 624	19 041	20 597	21 637	22 171	23 887 p
Poland	13 966	25 750	30 250	37 253	42 054	55 758 b	67 072 p
Portugal	6 133	15 668	16 220	17 348	18 283	19 367	21 202 p
Slovak Republic	3 524	3 790	3 618	4 133	4 405	4 643	5 654
Slovenia	4 347	9 451	9 811	9 696	9 222	9 569	9 946 p
Spain	75 345	89 364 d	88 635 d	87 642 d	87 432 d	90 129 d	95 636 d p
Sweden	56 106 b	55 839 e	56 413	57 307 e	57 691	64 276 p	61 177 p
Switzerland	..	47 750	..	..	50 825	..	..
Turkey	14 992	52 233	58 391	61 945	66 667	72 579	87 918
United Kingdom	145 401	160 116	177 948	192 221	206 153	209 584	215 713 p
United States	..	1 251 000	1 318 000	1 366 000	1 399 000	1 393 000	..
EU28 (OECD estimates)	1 127 705 e	1 419 949 e	1 451 412 e	1 500 557 e	1 576 984 e	1 657 763 e	1 727 333 e
OECD-Total	**..**	**3 945 866 e**	**4 067 220 e**	**4 229 194 e**	**4 343 140 e**	**4 408 940 e**	**..**
Argentina	7 155	9 275	9 923	9 979	12 214 b	11 860	..
China	883 130 d	2 486 400	2 740 563	2 896 352	2 910 799	3 012 081	3 119 809
Romania	16 157	10 887	10 514	10 437	10 128	10 785	11 525 p
Russian Federation	524 049	413 796	424 063	423 134	426 372	402 097	389 191
Singapore	17 076	20 204	21 349	21 641	..	..	..
South Africa	12 236	11 322	11 877	12 928	12 458	..	..
Chinese Taipei	96 714	166 683	173 329	180 435	186 804	192 127	196 992

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	68.8 d e	69.9 d e	70.1 d	70.6 d e	70.8 d	69.4 d e	69.4 d p
Belgium	59.1	56.9	56.7	58.2	57.4 b	59.9 e	57.8 p
Canada	65.0	60.3	59.5	61.1 b	63.4	60.4	..
Chile	..	32.4 d	29.5 d	32.0 d	28.8 d	29.8 d p	..
Czech Republic	48.7 b	52.6	53.5	54.7	54.7	56.6	57.3 p
Denmark	65.2	62.2	60.6	60.7	61.2	61.8	62.0 p
Estonia	32.0	34.0	35.3	31.1	30.1	32.1	34.5
Finland	55.9	57.3	57.4	56.8	59.1	58.3	57.4 p
France	55.8	59.8 l	60.0 l	58.5 b	58.7	..	59.5 e
Germany	64.1	62.2	61.2	61.4	63.2	62.8	63.4 e
Greece	34.7 d	17.5 d	16.2 d	17.9 d	16.4 d	21.8 d	30.6 d p
Hungary	31.8	56.0	58.3	59.4	57.1	58.2	61.1 p
Iceland	47.4	..	46.0 b d	..	54.5 d	49.4	..
Ireland	61.9	52.3 e	53.7	53.2 e	57.3	61.0	60.2 p
Israel[1]	..	83.7 d e	..	..	..	..	..
Italy	40.4	50.0	50.5	51.8	52.8	56.7 b	57.0 p
Japan	68.0 d	68.3 d	67.5 b d	68.2 d	67.7 d	67.2 d	67.7 d
Korea	71.2 d	71.1	71.9	72.9	73.2	73.5	75.5
Latvia	25.0 d	15.8 d	18.2 d	24.1 d	20.6 d	17.5 d	17.8 d p
Lithuania	10.8	17.0	21.7	28.0	25.6	24.1	32.2
Luxembourg	83.4	59.9 b	58.6	58.5	58.0	59.2	58.9 p
Mexico	50.6	34.4	32.5	..	..	..	..
Netherlands	51.9	62.8 b	62.8	61.8	62.8	64.4	65.1 p
New Zealand	32.2	..	40.6	..	41.7	..	..
Norway	51.4	49.4	49.4	51.1	51.0	50.5	50.8 p
Poland	18.2	28.4	32.3	35.7	38.5	49.9 b	55.2 p
Portugal	23.8	32.9	34.7	37.0	38.1	38.4	39.2 p
Slovak Republic	24.5	20.9	21.1	23.5	25.0	26.1	29.7
Slovenia	48.3	63.1	64.4	65.2	64.8	66.4	67.6 p
Spain	43.1	42.8 d	43.6 d	43.8 d	43.5 d	43.8 d	44.3 d p
Sweden	72.3 b e	68.7 e	69.7 e	68.7 e	69.0 e	70.9 p	68.5 p
Switzerland	..	63.3	..	..	62.4	..	..
Turkey	30.4 e	49.7 e	51.7 e	53.7 e	54.5 e	53.0	57.3
United Kingdom	44.8 b e	44.9 e	47.2 e	48.5 e	49.8	50.2 e	50.8 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	51.2 e	53.0 e	53.4 e	53.8 e	54.7 e	56.1 e	56.7 e
OECD-Total	..	..	..	..	..	..	..
Argentina	15.8	12.8	13.3	13.0	15.5 b	14.9	..
China	64.7 d	76.6	77.6	78.1	77.4	77.7	77.3
Romania	48.6	35.0	32.3	33.2	32.3	33.5	35.4 p
Russian Federation	57.0	50.0	51.3	51.0	51.1	50.1	50.0
Singapore	59.7	51.2	51.3	50.9	..	..	..
South Africa	42.5	32.3	31.3	33.6	30.3	..	..
Chinese Taipei	64.8	72.7	74.0	75.0	76.0	76.5	77.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Per thousand

	2005	2012	2013	2014	2015	2016	2017
Australia	5.9	..	9.6	..	8.3	..	..
Austria	11.1 d e	14.3 d e	14.6 d	15.5 d e	15.7 d	16.0 d e	16.3 d e p
Belgium	10.7	12.2	12.4	13.7	14.2 b	15.0 e	15.1 e p
Canada	11.5	10.6	10.4	10.8 b	11.5	9.9	..
Chile	..	0.8 d e	0.7 d	0.8 d	0.7 d	0.8 d p	..
Czech Republic	5.3 b	7.8	8.1	8.6	8.7	8.8	9.4 e p
Denmark	15.3	19.8	19.3	19.3	19.7	20.2	19.8 e p
Estonia	3.0	4.5	4.6	4.0	3.6	3.9 e	4.3 e
Finland	18.8	17.3	17.2	16.9	17.0	15.7	15.8 e p
France	10.8	13.3	13.5	13.3	13.5	..	13.6 e
Germany	10.6	11.9	11.6	11.9	12.9	13.1	13.5 e
Greece	3.2 d	2.1 d	2.2 d	2.5 d	2.6 d	2.9 d	4.6 d e p
Hungary	2.3	6.5	7.3	6.9	6.5	6.2 e	7.2 e p
Iceland	13.2	..	10.2 b d	..	12.3 d	11.7	..
Ireland	6.7	11.3 e	12.2	12.5 e	12.5	12.0	11.3 e p
Israel[1]	22.9 d	27.7 d	27.1 d	28.5 d	29.2 d	31.0 d	..
Italy	3.9	6.5	6.9	7.2	7.6	9.0 b	9.0 e p
Japan	11.3 d e	11.2 d e	11.2 d e	11.7 d e	11.4 d e	11.2 d e	11.4 d e
Korea	8.0 d	14.1	14.3	15.3	15.6	15.7	16.9 e
Latvia	1.8 d	1.3 d	1.4 d	2.1 d	1.7 d	1.3 d	1.4 d e p
Lithuania	1.1	1.8	2.4	3.3	2.7	2.5	3.6 e
Luxembourg	15.0	9.6 b	9.8	10.0	9.7	9.7	9.4 e p
Mexico	1.7	0.7	0.7	..	..	..	..
Netherlands	8.0	12.2 b	12.5	12.3	12.8	13.3	13.7 e p
New Zealand	3.9 e	..	6.1 e	..	6.4 e	..	..
Norway	10.1	10.8	11.0	11.7	12.3	12.7 e	13.5 e p
Poland	1.3	2.1	2.5	3.0	3.4	4.4 b	5.2 e p
Portugal	1.6	4.5	4.8	5.1	5.3	5.5	5.8 e p
Slovak Republic	2.2	2.2	2.1	2.4	2.5	2.5	3.0 e
Slovenia	5.7	12.5	13.2	13.0	12.2	12.4	12.3 e p
Spain	4.9	6.6 d	6.8 d	6.6 d	6.4 d	6.4 d	6.6 d e p
Sweden	19.7 b	18.1 e	18.2	18.2 e	18.2	20.1 p	18.7 e p
Switzerland	..	13.6	..	..	14.0	..	..
Turkey	0.9	2.6	2.8	2.9	3.0	3.3	3.8 e
United Kingdom	6.8	7.5	8.2	8.6	9.0	9.0	9.1 p
United States	..	12.5	13.0	13.2	13.3	13.0	..
EU28 (OECD estimates)	6.8 e	8.5 e	8.8 e	9.0 e	9.3 e	9.7 e	9.9 e
OECD-Total	**..**	**9.6 e**	**9.9 e**	**10.1 e**	**10.3 e**	**10.3 e**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.9	1.5	1.4	1.4	1.4	1.5	1.5 p
Russian Federation	10.0	7.7	7.9	7.8	7.8	7.4	7.2 e
Singapore	8.4	6.9	7.0	6.8	..	..	..
South Africa	1.3 e	1.1 e	1.1 e	1.2 e	1.1	..	..
Chinese Taipei	11.1	17.7	18.2	18.7	19.2	19.6	19.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 33. Business-financed BERD (Business enterprise expenditure on R&D) at 2010 prices and PPP

Million 2010 USD

	2005	2012	2013	2014	2015	2016	2017
Australia	8 092.4	..	11 701.3	..	10 466.3	..	..
Austria	..	..	5 085.4	..	5 440.9	..	..
Belgium	4 078.3	5 842.8	5 981.5	..	6 266.8	..	..
Canada	11 702.8 d w	11 233.7 d w	10 922.7 d w	11 019.3 b	10 521.8	10 166.3	9 502.7 p
Chile	..	395.3	441.7	406.3	432.8	465.3 p	..
Czech Republic	1 375.9 b	1 832.2	2 005.4	2 033.1	1 995.5	2 049.8	2 270.2 p
Denmark	3 316.5	4 257.5 e	4 217.9	..	4 521.6	..	4 668.2 p
Estonia	98.1	342.5	226.8	168.7	194.4	200.8	..
Finland	4 277.7	4 384.3	4 032.6	3 406.0	3 197.5	3 245.6	..
France	23 038.1	28 531.3	28 642.6	29 151.9	29 096.5	..	..
Germany	46 613.0 e	59 469.8 e	58 110.7	60 763.4 e	62 557.7	63 626.4 e	68 578.2 e
Greece	489.0	488.3	563.1	572.4	667.5	938.5	1 200.3 p
Hungary	674.0 d	1 189.6	1 347.0	1 426.6	1 537.7	1 594.1	..
Iceland	140.0	..	78.6 b	90.7	97.5	106.5	125.7 p
Ireland	1 297.5	1 588.6 e	1 692.1	1 767.2 e	1 607.6	1 664.7 e	..
Israel[1]	3 942.1 d	3 761.4 d	3 437.2 d	3 591.6 d	3 326.3 d	3 990.9 d	..
Italy	8 535.0	11 109.0	11 497.5	12 393.8	13 224.7	14 287.8 b	..
Japan	106 603.6	109 718.7	114 643.0	120 927.9	119 182.2	115 422.2	120 010.7
Korea	23 446.1 d	46 911.0	50 367.9	53 651.0	53 636.8	55 923.2	62 769.2
Latvia	50.3	46.6	38.5	62.1	32.4	31.6	..
Lithuania	75.0	101.7	107.8	176.9	154.7	198.3	..
Luxembourg	479.0	94.5 b	94.4	..	297.5	..	..
Mexico	2 627.1	2 175.8	1 922.9	1 951.9 e p	2 012.9 e p	2 020.8 e p	..
Netherlands	5 183.2	6 739.9 b	6 762.8	7 032.1	6 862.6	7 581.8	..
New Zealand	473.7	..	581.8	..	757.5	..	..
Norway	1 697.0	2 055.8	2 067.2	2 211.6	2 440.3	2 445.4	..
Poland	941.3	2 270.0	2 657.3	3 110.0	3 464.2	4 799.8	..
Portugal	745.0	1 690.7	1 475.8	1 432.0	1 428.1	1 559.3	..
Slovak Republic	178.4	377.3	442.4	354.8	390.2	530.9	..
Slovenia	369.8	857.3	875.6	886.6	852.1	806.8	..
Spain	6 646.6	7 835.1	7 712.6	7 664.3	7 738.4	7 977.2	..
Sweden	7 656.9 b	..	7 989.9	..	7 934.6	..	..
Switzerland	..	8 249.0	..	..	9 220.6	..	..
Turkey	1 879.2	4 936.6	5 580.2	6 425.8	6 860.3	7 972.3	9 241.6
United Kingdom	13 692.6	16 047.8	17 217.3	18 697.0	19 920.2	21 685.0	..
United States	224 552.8 d w	244 407.3 d	258 194.8 d	269 290.4 d	279 270.8 d	291 095.4 d	302 480.6 d e
EU28 (OECD estimates)	134 074.1 e	168 134.7 e	169 570.4 e	175 124.8 e	180 782.5 e	..	..
OECD-Total	**525 600.7 e**	**613 380.1 e**	**636 994.7 e**	**664 157.0 e**	**677 545.7 e**	**698 508.3 e**	**731 828.9 e**
Argentina	763.1	..	..	..	848.0 b	760.3	..
China	59 565.4	199 136.7	225 934.3	249 711.8	269 815.0	300 838.0	326 454.6 e
Romania	350.2	447.1	318.5	359.3	593.6	853.6	..
Russian Federation	6 653.5	7 157.2	7 639.7	7 813.1	7 547.4	8 393.7	9 387.3 e
Singapore	3 251.3	4 096.3	4 159.5	4 830.9	..	..	..
South Africa	1 771.8	1 637.9	1 754.2	1 880.8	1 884.2	..	..
Chinese Taipei	11 029.7	20 344.2	21 586.3	22 934.8	23 666.9	24 823.2	27 196.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	1.46	..	1.71	..	1.50	..	..
Austria	..	..	2.15	..	2.26	..	..
Belgium	1.59	2.13	2.18	..	2.21	..	..
Canada	1.38 d w	1.23 d w	1.16 d w	1.14 b	1.10 e	1.05 e	0.95 e p
Chile	..	0.16	0.18	0.16	0.17 e	0.18 e p	..
Czech Republic	0.77 b	0.92	1.01	0.98	0.92	0.92	0.98 e p
Denmark	2.43	3.06 e	2.98	..	3.06	..	3.03 e p
Estonia	0.49	1.60	1.04	0.77	0.90	0.92	..
Finland	3.50	3.66	3.42	2.91	2.73	2.69	..
France	1.73	2.07	2.07	2.09	2.07	..	..
Germany	2.40 e	2.81 e	2.74	2.79 e	2.82	2.82 e	2.97 e
Greece	0.25	0.35	0.41	0.42	0.49	0.70	0.87 e p
Hungary	0.49 d	0.89	0.98	0.99	1.03	1.05	..
Iceland	2.02	..	0.97 b	1.12	1.13	1.13 e	1.29 e p
Ireland	0.98	1.13 e	1.17	1.12 e	0.75	0.73 e	..
Israel[1]	3.67 d e	2.69 d	2.34 d	2.41 d e	2.17 d e	2.50 d e	..
Italy	0.64	0.90	0.95	1.02	1.08	1.16 b	..
Japan	3.16	3.37	3.45	3.62	3.49	3.36 e	3.43 e
Korea	2.78 d	4.27	4.45	4.61	4.49	4.57 e	4.98 e
Latvia	0.20	0.18	0.15	0.23	0.12	0.11	..
Lithuania	0.2	0.2	0.2	0.3	0.3	0.4	..
Luxembourg	1.87	0.32 b	0.31	..	0.85	..	..
Mexico	0.22	0.15	0.14	0.14 e p	0.14 e p	0.13 e p	..
Netherlands	1.15	1.37 b	1.39	1.44	1.36	1.48	..
New Zealand	0.56	..	0.61	..	0.74	..	..
Norway	0.97	1.02	1.02	1.12	1.31	1.38 e	..
Poland	0.22	0.38	0.43	0.49	0.52	0.71	..
Portugal	0.45	1.05	0.94	0.90	0.88	0.95	..
Slovak Republic	0.24	0.37	0.44	0.33	0.35	0.47	..
Slovenia	1.07	2.39	2.48	2.39	2.25	2.07	..
Spain	0.70	0.87	0.89	0.87	0.84	0.83	..
Sweden	3.43 b	..	3.21	..	2.94	..	..
Switzerland	..	2.70	..	..	2.89	..	..
Turkey	0.26	0.49	0.51	0.55	0.56	0.63	0.67 e
United Kingdom	1.01	1.16	1.20	1.27	1.33	1.41	..
United States	2.41 d w	2.50 d	2.59 d	2.62 d	2.64 d	2.72 d	2.76 d e
EU28 (OECD estimates)	1.33 e	1.59 e	1.60 e	1.63 e	1.63 e	..	..
OECD-Total	**1.95 e**	**2.09 e**	**2.13 e**	**2.17 e**	**2.16 e**	**2.19 e**	**2.23 e**
Argentina	0.19	..	..	..	0.17 b e	0.15 e	..
China	1.02 e	1.72 e	1.83 e	1.90 e	1.95 e	2.08 e	2.11 e
Romania	0.17	0.18	0.12	0.14	0.21 e	0.29 e	..
Russian Federation	0.35 e	0.31 e	0.33 e	0.33 e	0.31 e	0.35 e	0.38 e
Singapore	1.50 e	1.27 e	1.24 e	1.38 e	..	..	..
South Africa	0.49 e	0.37 e	0.39 e	0.41 e	0.41 e	..	..
Chinese Taipei	2.05 e	2.96	3.02	3.04	3.10	3.20	3.40

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 35. Percentage of Business enterprise expenditure on R&D (BERD) financed by the business enterprise sector

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	94.0	..	96.2	..	96.2	..	..
Austria	..	..	66.7	..	67.4	..	..
Belgium	82.8	82.7	82.7	..	79.2	..	..
Canada	82.5 d w	85.9 d w	85.3 d w	80.0 b	76.6	73.9	72.6 p
Chile	..	91.5	90.1	88.5	88.4	87.8 p	..
Czech Republic	78.8 b	66.5	68.0	62.4	60.5	61.8	59.9 p
Denmark	86.0	89.9 e	91.7	..	91.7	..	89.0 p
Estonia	80.3	87.0	83.9	80.2	83.5	87.7	..
Finland	90.9	88.8	85.5	76.6	79.7	84.0	..
France	80.7	82.9	82.4	82.8	82.0	..	..
Germany	92.1 e	91.4 e	91.4	91.4 e	89.7	89.7 e	89.9 e
Greece	85.7	77.2	81.6	78.9	82.3	87.6	84.2 p
Hungary	77.8 d	66.6 d	63.5 d	64.3 d	64.8 d	73.6 d	..
Iceland	84.9	..	61.1 b d	55.2 d	49.3 d	53.6 d	56.7 p
Ireland	86.1	69.2 e	72.4	72.4 e	66.8	66.8 e	..
Israel[1]	67.2 d	45.5 d	40.7 d	39.7 d	34.9 d	38.8 d	..
Italy	76.8	79.6	80.6	81.6	84.2	84.1 b	..
Japan	98.3	98.2	98.1	98.3	98.3	98.1	98.2
Korea	94.4 d	93.7	94.2	94.2	94.1	94.8	93.8
Latvia	61.7	76.3	53.3	59.7	47.9	65.6	..
Lithuania	83.9	61.6	62.8	75.7	72.4	87.7	..
Luxembourg	91.7	30.3 b	30.0	..	90.1	..	..
Mexico	86.8	80.5	65.1	63.1 e p	63.7 e p	65.7 e p	..
Netherlands	79.0	82.7 b	83.8	83.4	79.5	82.1	..
New Zealand	80.5	..	74.4	..	76.3	..	..
Norway	81.6	79.1	77.0	77.9	78.2	77.1	..
Poland	83.0	81.0	80.8	79.4	79.8	79.1 b	..
Portugal	91.4	90.7	87.1	88.2	89.7	89.3	..
Slovak Republic	67.9	80.6	81.3	74.6	78.0	84.8	..
Slovenia	85.3	79.0	80.6	85.5	87.8	88.7	..
Spain	79.9	80.4	81.6	82.3	81.9	82.2	..
Sweden	86.1 b	..	86.7	..	80.4	..	..
Switzerland	..	84.9	..	..	85.4	..	..
Turkey	90.8	89.6	90.2	89.6	87.6	84.9	85.9
United Kingdom	64.5	68.2	69.1	70.6	72.2	75.3	..
United States	90.3 d w	84.1 d	84.8 d	85.3 d	85.6 d	85.6 d	85.6 d e
EU28 (OECD estimates)	82.0 e	82.4 e	82.6 e	82.4 e	81.9 e	..	..
OECD-Total	**89.3 e**	**86.3 e**	**86.5 e**	**86.6 e**	**86.4 e**	**86.5 e**	**86.4 e**
Argentina	94.5	..	..	..	79.3 b	74.8	..
China	91.2	93.0	93.2	93.7	93.7	94.7	95.0
Romania	57.5	66.3	72.3	59.2	69.5	77.3	..
Russian Federation	37.3	35.1	35.5	35.1	34.2	38.5	40.9
Singapore	87.8	84.9	84.5	84.4	..	..	..
South Africa	68.3	79.5	81.1	81.3	82.4	..	..
Chinese Taipei	97.7	98.0	98.1	98.4	98.5	98.5	98.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	4.0	..	2.1	..	2.2	..	..
Austria	..	..	12.5	..	12.0	..	..
Belgium	6.2	5.4	5.2	..	5.5	..	..
Canada	2.6 d	3.8 d	4.1 d	4.5 b	4.6	5.3	5.6 p
Chile	..	6.9	8.3 b	9.3	9.7	11.7 p	..
Czech Republic	15.6 b	13.0	10.7	9.2	7.6	6.1	7.0 p
Denmark	2.4 d	2.8 d	1.8 d	..	2.7 d	..	2.0 d p
Estonia	6.9	9.2	10.2	10.3	8.4	4.7	..
Finland	3.8	3.0	2.8	3.0	3.6	3.6	..
France	10.1	7.9	8.1	7.8	8.8	..	..
Germany	4.5 e	4.3 e	3.4	3.4 e	3.3	3.4 e	3.2 e
Greece	5.6	8.2	7.0	10.5	8.8	3.3	4.1 p
Hungary	3.9 d	15.7 d	19.0 d	16.5 d	19.4 d	8.3 d	..
Iceland	2.8	..	9.7 b d	9.0 d	8.3 d	9.0 d	9.0 p
Ireland	4.1	5.9 e	6.0	6.0 e	5.0	5.0 e	..
Israel[1]	4.8 d	3.3 d	2.4 d	3.9 d	5.9 d	5.5 d	..
Italy	11.0	7.1	6.4	5.7	5.5	3.5 b	..
Japan	1.2	1.1	1.1	1.0	1.0	0.9	0.9
Korea	4.6 d	6.0	5.5	5.1	5.1	4.2	4.7
Latvia	12.7	4.6	1.5	1.4	1.6	2.6	..
Lithuania	1.8	4.1	2.8	1.8	2.2	1.5	..
Luxembourg	5.2	.. c	.. c	..	7.2	..	..
Mexico	11.0	19.1	34.1	36.1 e p	35.3 e p	33.2 e p	..
Netherlands	3.4	2.2 b	2.0	1.8	1.9	1.7	..
New Zealand	11.4	..	11.2	..	11.0	..	..
Norway	7.9	10.1	9.3	8.5	8.6	9.4	..
Poland	13.7	11.2	10.0	11.5	10.0	16.3 b	..
Portugal	4.2	6.9	9.1	9.1	5.5	3.8	..
Slovak Republic	26.7	6.8	5.1	3.9	6.5	3.7	..
Slovenia	7.0	13.8	12.6	7.7	4.3	3.1	..
Spain	13.6	12.6	10.7	9.7	9.4	8.9	..
Sweden	4.5 b	..	6.1	..	.. c	..	..
Switzerland	..	0.7	..	..	1.4	..	..
Turkey	6.9	9.4	8.6	8.9	10.6	9.9	9.0
United Kingdom	8.3	7.9	8.9	9.3	8.7	7.8	..
United States	9.7 d	10.2 d	9.2 d	7.8 d	7.6 d	6.4 d	6.0 d e
EU28 (OECD estimates)	7.4 e	6.8 e	6.4 e	6.4 e	6.4 e	..	..
OECD-Total	**6.8 e**	**7.1 e**	**6.5 e**	**6.0 e**	**6.0 e**	**5.3 e**	**..**
Argentina	4.5	..	..	..	7.1 b	2.0	..
China	4.6	4.6	4.5	4.2	4.3	3.7	3.4
Romania	36.8	19.6	14.0	19.0	13.7	12.2	..
Russian Federation	53.6	60.4	61.5	62.7	63.4	59.0	56.6
Singapore	6.2	6.2	6.6	5.3	..	..	..
South Africa	16.2	6.5	5.8	5.2	3.8	..	..
Chinese Taipei	2.2	1.9	1.7	1.5	1.4	1.4	1.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	0.33	..	0.07	..	0.05	..	..
Austria	..	..	0.06	..	0.06	..	..
Belgium	0.04	0.01	0.01	..	0.02	..	..
Canada	.. k	.. k	.. k	.. c	.. c	1.32	1.43 p
Chile	..	1.39	0.05	0.23	0.08	0.08 p	..
Czech Republic	0.10 b	0.04	0.08	0.04	0.05	0.07	0.08 p
Denmark	0.16 d	0.26 d e	0.50 d	..	0.31 d	..	0.75 d p
Estonia	0.01	0.03	0.11	0.06	0.03	0.07	..
Finland	0.01	0.06	0.06	0.06	0.02	0.02	..
France	0.05	0.06	0.09	0.09	0.08	..	..
Germany	0.17 d	0.26 d	0.20 d	0.20 d	0.27 d	0.19 d	0.15 e
Greece	0.37	0.15	0.06	0.04	0.01	0.02	0.05 p
Hungary	0.06 d	0.05 d	0.06 d	0.05 d	0.04 d	0.05 d	..
Iceland	0.00	..	0.62 b d	3.58 d	6.55 d	7.13 d	2.08 p
Ireland	0.00	0.07 e	0.09	0.09 e	0.00	0.03 e	..
Israel[1]	0.61 d	0.60 d	0.61 d	0.59 d	0.57 d	0.55 d	..
Italy	0.11	0.40	0.38	0.36	0.34	0.14 b	..
Japan	0.10	0.14	0.24	0.17	0.12	0.09	0.10
Korea	0.06 d	0.06	0.06	0.05	0.06	0.04	0.05
Latvia	..	..	..	..	..	..	..
Lithuania	0.2	0.1	2.5	0.4	0.5	0.1	..
Luxembourg	0.02	..	..	..	..	..	..
Mexico	0.02	0.06	0.30	0.32 e p	0.37 e p	0.43 e p	..
Netherlands	0.33	0.57 b	0.69	0.49	0.22	0.23	..
New Zealand	1.05	..	.. c	..	.. c	..	..
Norway	0.01	0.01	0.02	0.04	0.05	0.04	..
Poland	0.08	0.13	0.06	0.11	0.14	0.10 b	..
Portugal	0.00	0.01	0.01	0.02	0.02	0.03	..
Slovak Republic	0.03	0.00	0.00	0.00	0.01	0.00	..
Slovenia	0.48	0.13	0.01	0.05	0.00	0.00	..
Spain	0.68	0.22	0.25	0.18	0.85	0.24	..
Sweden	0.20 b	..	0.27	..	0.38	..	..
Switzerland	..	0.57	..	..	0.52	..	..
Turkey	2.02 d	0.21	0.20	0.09	0.14	0.12	0.27
United Kingdom	0.02 d	0.22 d	0.40 d	0.68 d	0.62 d	0.84 d	..
United States	.. k	0.11 d	0.08 d	0.15 d	0.14 d	0.26 d	0.28 d e
EU28 (OECD estimates)	0.14 e	0.21 e	0.22 e	0.25 e	0.28 e	..	..
OECD-Total	**0.10 e**	**0.17 e**	**0.18 e**	**0.20 e**	**0.20 e**	**0.24 e**	**..**
Argentina	0.00	..	..	..	0.00 b	0.03	..
China	..	..	..	..	..	..	..
Romania	0.16	0.16	0.27	0.20	0.28	0.32	..
Russian Federation	0.04	0.10	0.13	0.16	0.18	0.05	0.05
Singapore	0.08	0.01	0.01	0.01	..	..	..
South Africa	1.02	2.79	2.69	2.79	2.71	..	..
Chinese Taipei	0.04	0.01	0.01	0.01	0.01	0.01	0.02

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 38. Percentage of Business enterprise expenditure on R&D (BERD) financed by the rest of the world

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	1.6	..	1.6	..	1.6	..	..
Austria	..	..	20.7	..	20.6	..	..
Belgium	11.0	11.9	12.0	..	15.3	..	..
Canada	14.9 d	10.3 d	10.5 d	14.7 b	17.6	19.5	20.4 p
Chile	..	0.1	1.5 b	1.9	1.9	0.5 p	..
Czech Republic	5.4 b	20.5	21.2	28.3	31.9	32.0	33.0 p
Denmark	11.4	7.1 e	6.1	..	5.3	..	8.2 p
Estonia	12.7	3.8	5.7	9.4	8.1	7.5	..
Finland	5.3 b	8.1	11.7	20.4	16.7	12.4	..
France	9.2	9.1	9.4	9.3	9.1	..	..
Germany	3.3	4.0 e	5.0	5.0 e	6.7	6.7 e	6.7 e
Greece	8.3	14.4	11.4	10.6	8.9	9.1	11.7 p
Hungary	18.1 d	17.7 d	17.4 d	19.2 d	15.8 d	18.0 d	..
Iceland	12.2	..	28.5 b d	32.2 d	35.9 d	30.2 d	32.2 p
Ireland	9.8	24.8 e	21.5	21.5 e	28.3	28.2 e	..
Israel[1]	27.4 d	50.6 d	56.3 d	55.8 d	58.6 d	55.1 d	..
Italy	12.1	13.0	12.6	12.3	10.0	12.2 b	..
Japan	0.4	0.5	0.6	0.5	0.6	0.9	0.8
Korea	0.9 d	0.3	0.2	0.6	0.8	1.0	1.4
Latvia	25.6	19.2	45.2	38.9	50.5	31.9	..
Lithuania	14.1	34.2	31.9	22.1	24.9	10.7	..
Luxembourg	3.1	.. c	.. c	..	2.7	..	..
Mexico	2.1	0.4	0.5	0.5 e p	0.6 e p	0.7 e p	..
Netherlands	17.2	14.5 b	13.5	14.4	18.4	16.0	..
New Zealand	7.0	..	11.6	..	10.5	..	..
Norway	10.5	10.7	13.7	13.6	13.1	13.5	..
Poland	3.2	7.6	9.2	9.0	10.1	4.4 b	..
Portugal	4.5	2.4	3.8	2.7	4.9	6.9	..
Slovak Republic	5.3	12.7	13.6	21.5	15.5	11.5	..
Slovenia	7.2	7.0	6.8	6.8	8.0	8.2	..
Spain	5.8	6.8	7.5	7.8	7.9	8.6	..
Sweden	9.1 b	..	6.9	..	.. c	..	..
Switzerland	..	13.8	..	..	12.6	..	..
Turkey	0.3	0.8	1.0	1.4	1.6	5.0	4.9
United Kingdom	27.1	23.7	21.5	19.4	18.5	16.0	..
United States	.. k	5.6 d	6.0 d	6.8 d	6.7 d	7.7 d	8.1 d e
EU28 (OECD estimates)	10.5 e	10.6 e	10.8 e	10.9 e	11.5 e	..	..
OECD-Total	**..**	**6.4 e**	**6.7 e**	**7.2 e**	**7.4 e**	**7.9 e**	**..**
Argentina	1.0	..	..	..	13.6 b	23.2	..
China	1.0	1.1	1.0	0.9	0.9	0.8	0.8
Romania	5.5	14.0	13.4	21.6	16.5	10.3	..
Russian Federation	9.1	4.4	2.9	2.1	2.2	2.5	2.4
Singapore	5.8	8.8	8.9	10.3	..	..	..
South Africa	14.5	11.3	10.4	10.7	11.1	..	..
Chinese Taipei	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	178.0 e	301.6 e	366.2	..	..	..	..
Austria	269.7 e	291.6 e	357.1	384.4 e	368.1	..	..
Belgium	814.5 e	1 856.0	1 929.4	1 948.5	1 989.8	..	..
Canada	878.1 d e	364.0 d	340.7 d	375.5 d	400.6 d	390.3 d	..
Chile	..	18.5	33.7	28.0	28.8	..	..
Czech Republic	55.1	83.9	76.9	84.6	86.9	88.8	88.8
Denmark	..	1 065.8	1 127.2	1 162.6	1 239.0	1 339.1 e	..
Estonia	..	1.7	1.9	2.1	1.6	0.8	..
Finland	..	150.1	132.4	148.5	143.3	159.6	..
France	..	956.6	991.8	..	..	..	..
Germany	3 891.4 e	5 197.9	5 259.4	5 247.0	5 085.4	5 878.0	..
Greece	..	85.0 e	93.2	82.6 e	69.3	..	..
Hungary	279.2 e	436.0 e	420.3 e	433.2	406.9	406.5	..
Iceland	..	..	0.4	0.2	1.0	1.4	0.7
Ireland	..	179.2 e	203.0	186.9 e	179.1	..	..
Israel[1]	..	286.2 d	383.2 d	279.0 d	349.6 d	338.3 d	..
Italy	452.2 e	771.5	738.2	691.7	729.6	826.0	..
Japan	8 087.5	12 526.0	14 185.8	14 510.5	14 091.1	13 167.5	..
Korea	444.0	1 221.9	1 245.9	1 287.1	1 576.4	..	..
Latvia	..	9.7	11.2	5.4	5.4	5.6	..
Lithuania	..	6.0	5.6	17.1	5.0	1.2 e	..
Luxembourg	..	..	..	..	..	..	..
Mexico	216.8	167.9	246.1	264.1	267.7	263.4	..
Netherlands	..	318.0	305.2	316.7	318.6	290.8	..
New Zealand	..	..	..	..	..	..	..
Norway	52.1 e	43.4	42.5	36.8	33.3	34.7	..
Poland	71.0	144.1	122.8	150.7	216.0	176.4	..
Portugal	63.8 e	147.8	144.9	129.7	127.5	151.3	..
Slovak Republic	..	18.6	4.2	8.7	6.3	11.1	..
Slovenia	124.1 e	271.0	272.9	275.4	308.0	305.4	..
Spain	711.1 e	844.5	841.8	873.0	892.8	963.1	..
Sweden	..	829.4 e	809.6	764.4 e	861.1 e	..	..
Switzerland	2 294.2 e	3 692.0	3 937.4 e	4 189.4 e	4 481.9	..	..
Turkey	..	187.8	196.5	198.4	201.6	175.6	..
United Kingdom	..	718.6	658.5	572.6	560.4	548.1	..
United States	34 839.0 d	48 146.0 d	52 426.0 d	56 612.0 d	58 675.0 d	64 628.0 d	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	8 038.2	9 805.1	11 113.8	12 694.5	14 065.5	..
Romania	19.2 e	26.8	25.1	38.8	27.9	36.3	..
Russian Federation	..	..	..	..	..	..	..
Singapore	72.5 e	153.4	142.5	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	118.3	350.2	395.1	489.7	457.1	558.5	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

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

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	182.7 e	..	..	..	..	..	..
Austria	1 234.0 e	713.6 e	772.3	855.6 e	909.9	..	..
Belgium	556.1 e	555.7	593.4	550.1	578.7	..	..
Canada	2 398.6 d e	2 012.7 d	1 820.3 d	838.8 d	877.4 d	867.4 d	..
Chile	..	0.5	1.2	1.7	1.0	..	..
Czech Republic	105.2	92.7	119.1	147.5	152.7	182.3	205.0
Denmark	..	373.3	406.2	412.4	438.4	468.7 e	..
Estonia	..	4.5	5.0	8.0	12.4	16.9	..
Finland	2 111.4 e	2 097.5	1 966.8	1 916.4	1 507.0	1 291.3	..
France	..	4 007.9	4 520.0	..	..	..	..
Germany	6 607.9 e	9 389.4	9 476.1	9 762.4	9 693.9	9 936.2	..
Greece	..	25.5 e	23.2	20.3 e	19.6	..	..
Hungary	57.2 e	97.0 e	95.4 e	35.7	37.8	44.9	..
Iceland	..	..	2.7	2.8	2.4	2.8	3.6
Ireland	..	219.1 e	251.6 e	289.2 e	339.7	..	..
Israel[1]	1 486.5 d e	1 497.9 d	1 594.5 d	1 518.8 d	1 461.3 d	1 565.7 d	..
Italy	1 518.7 e	1 828.9	1 757.4	1 771.2	1 857.0	1 366.0	..
Japan	..	28 387.1	28 750.8	28 017.8	27 883.9	25 599.2	..
Korea	11 753.5	25 237.8	27 676.6	30 402.1	29 892.6	..	..
Latvia	..	3.8	6.4	5.8	6.6	7.3	..
Lithuania	..	12.3	12.8	17.8	18.2	18.6	..
Luxembourg	..	..	..	..	..	..	..
Mexico	73.0 e	80.8	94.4	101.3	102.7	101.0	..
Netherlands	..	742.5	818.2	848.5	761.0	799.5	..
New Zealand	..	..	..	..	..	..	..
Norway	178.9 e	182.5	180.9	195.6	196.7	184.8	..
Poland	29.3	89.0	84.5	94.7	115.3	123.2	..
Portugal	121.8 e	43.0	41.0	49.8	53.1	63.0	..
Slovak Republic	12.4	7.2	7.8	7.2	9.0	12.7	..
Slovenia	66.7 e	62.8	67.8	69.1	66.5	55.9	..
Spain	319.2 e	258.5	260.4	257.0	246.2	258.6	..
Sweden	..	2 059.7 e	2 039.0	1 949.4 e	2 220.9	..	..
Switzerland	797.7 e	1 526.1	1 619.5 e	1 695.8 e	1 777.1	..	..
Turkey	279.2 e	196.5	263.9	237.1	292.8	1 398.6	..
United Kingdom	..	1 391.9	1 468.3	1 440.9	1 422.7	1 560.0	..
United States	49 725.0 d e	65 068.0 d	67 205.0 d	73 891.0 d	72 110.0 d	77 385.0 d	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	33 719.0	39 535.5	44 463.3	51 547.8	57 494.4	..
Romania	8.3 e	60.8	40.2	16.2	37.8	44.1	..
Russian Federation	..	..	..	..	..	..	..
Singapore	1 369.0 e	2 059.1	1 801.4	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	7 242.2	15 607.0	16 855.8	18 272.2	19 253.5	20 276.8	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

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

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	39.3 e	..	..	..	..	..	..
Austria	5.7 e	44.2 e	45.9	57.8 e	73.2	..	..
Belgium	77.9 e	138.6	156.3	..	..	..	..
Canada	708.6 d e	1 168.2 d e	1 285.1 d e	1 317.5 d	1 320.0 d e	1 203.6 d e	..
Chile	..	..	..	..	..	..	..
Czech Republic	37.6	45.7	54.0	69.4	47.6	60.3	92.0
Denmark	..	..	..	..	..	..	..
Estonia	0.0	0.0	0.0	0.0	0.0	0.0	..
Finland	..	6.4 e	5.9 e	5.2 e	8.4	6.7	..
France	..	3 441.3	3 842.2	..	..	..	..
Germany	2 285.8 e	3 019.5	2 268.4	2 342.5	2 194.3	..	..
Greece	..	..	..	..	..	..	..
Hungary	..	..	..	..	..	..	..
Iceland	..	..	0.2	0.2	0.1	0.0	0.0
Ireland	..	..	..	..	..	..	..
Israel[1]	..	..	..	..	..	..	..
Italy	924.0 e	1 215.7	1 121.4	1 049.6	991.3	1 695.0	..
Japan	12.4	310.3	481.4	477.7	657.3	753.9	..
Korea	165.5	185.7	142.6	86.6	275.1	..	..
Latvia	..	..	..	..	..	..	..
Lithuania	..	..	..	0.0	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	..	19.3	27.3	29.3	29.7	29.2	..
Netherlands	..	53.9	59.1	..	..	..	..
New Zealand	..	..	..	..	..	..	..
Norway	..	1.8 e	1.2 e	1.1 e	1.1	1.0 e	..
Poland	30.4	75.3	92.1	92.4	104.7	98.5	..
Portugal	..	..	..	..	..	..	..
Slovak Republic	..	..	..	..	..	..	..
Slovenia	0.0 e	1.0	3.9	2.0	1.8	1.6	..
Spain	386.8 e	631.0	614.6	525.8	598.1	619.2	..
Sweden	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	..	1 920.4	2 011.5	2 137.3	2 110.4	2 368.5	..
United States	15 005.0 d	24 817.0 d	27 114.0 d	26 181.0 d	27 464.0 d	26 645.0 d	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	6.1	5.6	7.8	0.7	2.1	..
Russian Federation	..	..	..	..	..	..	..
Singapore	20.7 e	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

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

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	3 085.1 e	5 823.1 e	6 713.6	6 695.7 e	6 670.3	..	..
Austria	1 306.3 e	2 917.9 e	3 146.5	3 382.5 e	3 464.5	..	..
Belgium	1 253.5 e	2 839.0	3 023.3	3 572.5	3 819.5	..	..
Canada	5 189.8 d e	6 005.9 d	6 167.5 d	8 135.0 d	7 869.8 d e	8 231.5 d e	8 293.4 d e
Chile	..	219.1	218.1	220.9	202.4	238.8	..
Czech Republic	556.0	1 352.7	1 452.4	1 708.1	1 685.7	1 707.1	2 019.1
Denmark	..	2 116.1	2 033.2	2 073.6	2 307.6	2 724.3 e	..
Estonia	50.4	198.7	181.1	155.0	173.3	173.6	..
Finland	737.2 e	1 307.7	1 340.9	1 277.3	1 302.1	1 353.6	..
France	..	16 690.9	17 499.0	..	..	..	..
Germany	4 682.3 e	8 956.7	9 124.9	9 219.6	11 096.4	11 778.7	..
Greece	..	397.9 e	479.5	544.9 e	649.7	..	..
Hungary	162.6 e	784.1 e	1 088.5 e	1 277.2	1 477.7	1 177.9	..
Iceland	..	..	95.0	132.5	174.3	175.5	189.2
Ireland	..	1 399.9 e	1 431.2	1 515.6 e	1 664.1	..	..
Israel[1]	3 497.4 d e	6 354.1 d	6 980.2 d	7 578.2 d	8 391.3 d	9 597.6 d	..
Italy	2 584.7 e	3 645.4	4 155.2	4 533.3	4 867.2	5 632.0	..
Japan	9 828.6	12 445.6	12 482.7	16 299.8	16 044.8	15 309.9	..
Korea	1 611.2	4 418.3	4 531.4	4 722.2	4 802.3	..	..
Latvia	..	..	..	..	39.6	..	..
Lithuania	..	109.2	114.6	145.8	152.9	170.0 e	..
Luxembourg	239.9	..	..	..	..	..	..
Mexico	457.5 e	1 564.4	1 419.8	1 523.6	1 544.7	1 519.7	..
Netherlands	..	3 232.9	3 283.5	3 277.1	3 627.0	3 971.7	..
New Zealand	202.2	375.0 e	437.1	510.6 e	565.9	..	..
Norway	886.3 e	1 637.9	1 720.1	1 818.2	1 943.7	1 987.6	..
Poland	461.3	1 332.8	1 647.7	2 130.2	2 473.1	4 286.8 e	..
Portugal	314.5 e	1 069.1	1 062.8	1 003.2	1 010.7	1 097.9	..
Slovak Republic	117.1 e	217.6	240.2	162.7	169.8	195.3	..
Slovenia	71.0 e	429.0	408.1	380.9	310.5	250.2	..
Spain	2 975.2 e	5 006.6	5 107.1	5 039.8	5 180.6	5 321.7	..
Sweden	..	2 681.6 e	2 841.5	2 755.2 e	3 178.3	..	..
Switzerland	1 233.9 e	3 164.1	3 476.7 e	3 761.9 e	4 066.2	..	..
Turkey	343.3 e	2 612.1	3 089.0	3 717.1	4 277.8	4 443.1	..
United Kingdom	..	14 167.4	15 453.3	16 810.5	17 739.9	18 014.6	..
United States	65 828.5 d e	89 912.0 d e	96 513.0 d e	102 696.0 d e	114 677.0 d e	120 230.0 d	..
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	321.5	322.8	..
China	..	14 114.5	..	..	..	..	..
Romania	47.1 e	406.0	213.7	286.0	506.8	760.3	..
Russian Federation	..	..	..	..	..	..	..
Singapore	1 171.2 e	1 986.0	2 195.8	..	..	..	..
South Africa	858.3	..	..	..	..	..	..
Chinese Taipei	734.9	1 769.5	1 961.5	2 081.7	2 132.0	2 264.8	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

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

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	6 239.6	6 854.0 e	6 984.6	6 477.9 e	7 495.5	..
Austria	1 689.8 e	2 804.2 e	2 920.3	3 047.5 e	3 090.7	3 133.9 b e	3 325.5 p
Belgium	1 389.2	2 284.2	2 469.4	2 464.7	2 571.8	2 794.7 e	3 033.5 p
Canada	7 841.7	10 249.8 b	10 460.0	10 478.3	10 612.9	11 090.9	11 155.7 p
Chile	..	464.5	602.7	591.3 b	598.1	630.9 p	..
Czech Republic	486.2	1 494.9	1 658.0	1 702.5	1 707.3	1 279.0	1 415.8 p
Denmark	1 090.8	2 363.3	2 641.0	2 641.3	2 891.1	2 959.9	3 158.1 p
Estonia	85.6	234.8	264.0	241.0	233.0	180.1	225.0
Finland	1 064.0	1 623.2	1 588.4	1 641.9	1 631.4	1 656.9	1 786.8 p
France	7 442.5	11 476.0	12 184.1	13 402.3 b	13 553.5	13 840.6 p	13 409.4 e
Germany	10 565.9	17 757.8	18 459.0	19 416.8	19 724.8	21 632.0 b	22 684.8 e
Greece	772.6	780.4	869.0	905.2	1 057.3	931.5	985.3 p
Hungary	399.0 d	533.0 d	483.8 d	460.0 d	428.2 d	353.7 d	505.2 d
Iceland	65.2	..	90.9 b	95.8	104.3	115.2	125.9 p
Ireland	543.6	777.8	816.3 e	835.5	943.8 e	925.1 e	959.7 p
Israel[1]	1 035.2 d	1 335.5 d	1 444.8 d	1 468.4 d	1 540.1 d	1 660.5 d	1 753.1 d e
Italy	5 509.9 b	7 687.0	8 054.0	7 863.1 e	7 654.8 e	7 840.5 e	8 112.3 p
Japan	17 250.4	20 344.9	22 172.2 b	21 326.7	20 694.2	20 294.3	20 529.6
Korea	3 040.0 d	6 172.7	6 305.9	6 614.4	6 996.8	7 350.2	7 716.5
Latvia	66.6	144.5	119.8	132.6	152.0	97.7	131.2 p
Lithuania	197.1	352.6	410.2	443.8	485.5	285.3	297.9
Luxembourg	7.5	104.5	125.5	116.9	139.8	155.7 e	158.8 e p
Mexico	1 536.9	2 696.2	2 689.4	3 069.7 e p	3 124.5 e p	3 013.0 e p	..
Netherlands	3 775.3	4 795.4	5 127.2	5 269.8	5 425.4	5 312.5	5 534.1 p
New Zealand	386.3	..	565.0	..	594.4	..	..
Norway	1 010.1	1 664.1	1 772.1	1 802.0	1 884.1	2 013.3	2 307.8 p
Poland	942.5	2 751.5	2 395.1	2 668.0	2 955.4	3 186.0	3 865.2 p
Portugal	640.1	1 397.4	1 727.6 b	1 758.6	1 740.1	1 835.9	1 881.4 p
Slovak Republic	90.1	394.7	411.7	474.8	826.3	366.9	383.4
Slovenia	113.3	170.2	165.0	157.4	146.1	149.3	156.2 p
Spain	3 846.5	5 346.3	5 405.2	5 444.4	5 573.6	5 566.7	5 940.2 p
Sweden	2 284.9	3 788.3 e	3 934.9	4 111.2 e	4 137.9	4 270.6 p	4 424.2 p
Switzerland	..	3 843.2	..	4 415.2	4 763.1	..	..
Turkey	2 509.8	5 622.5	5 823.0	6 457.8	7 035.1	7 157.0	7 290.0
United Kingdom	7 885.7	10 278.2	10 972.1	11 294.4	11 567.9	11 501.3	11 698.9 p
United States	47 006.0 d	60 896.0 d	61 546.0 d	62 346.0 d	64 642.0 d	67 813.0 d	70 826.0 d p
EU28 (OECD estimates)	51 292.3 e	80 050.2 e	83 867.7 e	87 115.5 e	89 370.8 e	90 955.2 e	94 824.9 e
OECD-Total	**137 886.1 e**	**199 512.2 e**	**207 666.2 e**	**212 737.4 e**	**217 680.3 e**	**224 336.8 e**	**233 194.8 e**
Argentina	588.4	1 560.8	1 555.1	1 536.5	1 420.2	1 208.2	..
China	8 588.2	22 146.7	24 162.4	25 573.7	28 715.2	30 875.1	35 663.3
Romania	115.5	362.4	302.5	238.9	364.8	255.6	279.2 p
Russian Federation	1 047.3	3 523.7	3 476.9	3 944.4	3 719.2	3 527.5	3 776.8
Singapore	1 231.2	2 394.3	2 566.3	2 771.0	..	..	..
South Africa	781.3	1 485.9	1 414.5	1 567.1	1 776.6	..	..
Chinese Taipei	1 748.5	3 377.9	3 423.3	3 390.5	3 348.6	3 366.0	3 517.5

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	0.63	0.62 e	0.62	0.57 e	0.62	..
Austria	0.59 e	0.72 e	0.72	0.73 e	0.72	0.69 b e	0.70 p
Belgium	0.40	0.48	0.51	0.49	0.50	0.52 e	0.54 p
Canada	0.67	0.70 b	0.67	0.65	0.67	0.68	0.65 p
Chile	..	0.12	0.15	0.15 b	0.15	0.15 p	..
Czech Republic	0.22	0.49	0.52	0.50	0.48	0.34	0.35 p
Denmark	0.59	0.94	1.01	0.98	1.04	1.02	1.01 p
Estonia	0.38	0.68	0.73	0.63	0.61	0.44	0.51
Finland	0.63	0.74	0.71	0.72	0.71	0.69	0.70 p
France	0.39	0.46	0.47	0.50 b	0.50	0.49 p	0.45 e
Germany	0.40	0.51	0.51	0.51	0.50	0.53 b	0.52 e
Greece	0.27	0.28	0.30	0.31	0.36	0.32	0.32 p
Hungary	0.23 d	0.23 d	0.20 d	0.18 d	0.17 d	0.13 d	0.18 d
Iceland	0.59	..	0.64 b	0.64	0.65	0.65	0.66 p
Ireland	0.32	0.37	0.37 e	0.35	0.29 e	0.27 e	0.26 p
Israel[1]	0.60 d	0.53 d	0.52 d	0.52 d	0.52 d	0.52 d	0.52 d e
Italy	0.32 b	0.36	0.37	0.36 e	0.34 e	0.33 e	0.33 p
Japan	0.43	0.43	0.45 b	0.43	0.40	0.39	0.38
Korea	0.26 d	0.38	0.38	0.39	0.38	0.39	0.39
Latvia	0.21	0.33	0.26	0.28	0.31	0.19	0.24 p
Lithuania	0.4	0.5	0.5	0.5	0.6	0.3	0.3
Luxembourg	0.02	0.21	0.24	0.21	0.24	0.25 e	0.25 e p
Mexico	0.11	0.13	0.13	0.14 e p	0.14 e p	0.13 e p	..
Netherlands	0.61	0.61	0.62	0.63	0.64	0.61	0.59 p
New Zealand	0.36	..	0.35	..	0.34	..	..
Norway	0.46	0.51	0.52	0.53	0.60	0.66	0.70 p
Poland	0.18	0.30	0.25	0.27	0.29	0.30	0.34 p
Portugal	0.27	0.50	0.59 b	0.59	0.57	0.57	0.56 p
Slovak Republic	0.10	0.27	0.27	0.30	0.51	0.22	0.22
Slovenia	0.24	0.29	0.27	0.25	0.22	0.22	0.21 p
Spain	0.32	0.36	0.36	0.35	0.34	0.33	0.33 p
Sweden	0.74	0.89 e	0.90	0.91 e	0.87	0.88 p	0.86 p
Switzerland	..	0.83	..	0.87	0.90	..	..
Turkey	0.31	0.37	0.34	0.35	0.35	0.34	0.32
United Kingdom	0.40	0.43	0.43	0.43	0.42	0.41	0.39 p
United States	0.36 d	0.38 d	0.37 d	0.36 d	0.35 d	0.36 d	0.36 d p
EU28 (OECD estimates)	0.38 e	0.45 e	0.45 e	0.46 e	0.45 e	0.44 e	0.44 e
OECD-Total	**0.38 e**	**0.42 e**	**0.42 e**	**0.42 e**	**0.41 e**	**0.41 e**	**0.41 e**
Argentina	0.11	0.19	0.18	0.18	0.16	0.14	..
China	0.13	0.14	0.14	0.14	0.14	0.14	0.15
Romania	0.06	0.10	0.08	0.06	0.09	0.05	0.05 p
Russian Federation	0.06	0.10	0.09	0.10	0.11	0.10	0.10 e
Singapore	0.52	0.58	0.58	0.59	..	..	..
South Africa	0.17	0.23	0.21	0.22	0.24	..	..
Chinese Taipei	0.27	0.34	0.33	0.31	0.30	0.30	0.30

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

Table 45. Higher education expenditure on R&D (HERD) at 2010 prices and PPP

Million 2010 USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	6 290.5	6 400.2 e	6 592.6	6 236.2 e	6 849.3	..
Austria	1 931.3 e	2 606.6 e	2 616.8	2 678.3 e	2 658.0	2 626.9 b e	2 721.7 p
Belgium	1 617.1	2 158.0	2 263.9	2 227.1	2 299.7	2 435.9 e	2 560.3 p
Canada	8 634.4	9 992.9 b	9 872.4	9 748.9	10 138.3	10 519.0	10 379.6 p
Chile	..	429.8	550.8	535.7 b	550.2	576.1 p	..
Czech Republic	557.1	1 432.6	1 506.1	1 499.5	1 513.4	1 108.7	1 183.6 p
Denmark	1 391.3	2 285.6	2 461.6	2 428.0	2 637.1	2 654.6	2 684.1 p
Estonia	112.2	220.0	239.5	214.1	209.0	158.0	191.0
Finland	1 264.6	1 550.5	1 474.4	1 501.7	1 468.1	1 475.3	1 537.4 p
France	8 655.9	11 100.9	11 242.5	12 233.9 b	12 246.5	12 268.6 p	11 524.5 e
Germany	12 078.9	16 919.4	16 975.4	17 415.2	17 550.7	18 761.6 b	19 013.7 e
Greece	874.9	736.9	774.8	795.9	929.4	809.5	831.1 p
Hungary	504.4 d	501.0 d	439.5 d	418.7 d	391.6 d	325.7 d	452.9 d
Iceland	70.3	..	86.0 b	88.4	93.3	101.2	106.8 p
Ireland	623.2	749.5	765.1 e	792.5	823.7 e	814.9 e	827.9 p
Israel[1]	1 069.4 d	1 257.1 d	1 292.1 d	1 335.3 d	1 358.8 d	1 414.5 d	1 462.6 d e
Italy	6 667.4 b	7 226.6	7 376.5	7 156.0 e	6 891.3 e	6 747.2 e	6 775.2 p
Japan	19 012.2	19 469.8	20 682.8 b	19 890.5	18 968.9	18 407.1	18 632.0
Korea	3 207.2 d	6 113.7	6 295.6	6 585.4	6 690.0	6 933.2	7 146.0
Latvia	81.1	136.3	109.6	118.8	136.1	86.2	111.4 p
Lithuania	239.7	327.9	368.9	394.4	433.0	251.7	252.9
Luxembourg	9.1	95.3	111.1	99.5	119.0	129.9 e	128.2 e p
Mexico	1 852.8	2 505.8	2 469.9	2 754.8 e p	2 823.2 e p	2 695.2 e p	..
Netherlands	4 296.5	4 553.8	4 654.3	4 835.2	4 945.8	4 823.4	4 847.1 p
New Zealand	458.9	..	512.8	..	543.7	..	..
Norway	1 198.2	1 555.8	1 612.5	1 640.9	1 798.9	1 940.0	2 150.3 p
Poland	1 127.5	2 591.6	2 206.6	2 452.9	2 692.5	2 897.9	3 415.0 p
Portugal	750.5	1 366.7	1 592.7 b	1 596.1	1 563.7	1 613.2	1 624.4 p
Slovak Republic	107.7	385.3	389.2	444.3	784.1	344.6	354.1
Slovenia	123.4	159.4	148.0	140.2	129.7	130.1	130.4 p
Spain	4 486.4	5 106.0	4 994.7	4 947.8	5 056.1	4 966.5	5 120.9 p
Sweden	2 685.5	3 552.6 e	3 627.4	3 779.9 e	3 780.8	3 904.6 p	3 890.9 p
Switzerland	..	3 543.4	..	3 876.6	4 056.5	..	..
Turkey	3 341.1	5 360.9	5 483.0	5 841.6	6 209.8	6 284.3	6 349.2
United Kingdom	8 898.9	9 920.0	10 301.2	10 473.3	10 587.5	10 407.4	10 246.1 p
United States	51 678.5 d	58 527.5 d	58 132.0 d	57 794.3 d	59 288.6 d	61 524.2 d	63 059.2 d p
EU28 (OECD estimates)	59 693.1 e	76 364.6 e	77 256.9 e	79 211.7 e	80 502.7 e	80 375.4 e	81 081.0 e
OECD-Total	**156 425.0 e**	**191 371.2 e**	**193 737.7 e**	**195 893.0 e**	**198 635.1 e**	**201 660.7 e**	**204 841.1 e**
Argentina	646.9	1 501.6	1 472.3	1 429.0	1 306.7	1 097.7	..
China	9 450.6	21 306.8	22 876.8	23 785.5	26 420.9	28 055.6	31 833.7 e
Romania	167.4	341.4	283.2	222.8	338.5	226.6	239.0 p
Russian Federation	1 518.0	3 251.6	3 202.2	3 656.6	3 578.4	3 382.9	3 440.0 e
Singapore	1 352.8	2 299.6	2 422.6	2 567.7	..	..	..
South Africa	859.7	1 429.5	1 339.2	1 457.5	1 634.6	..	..
Chinese Taipei	1 922.3	3 246.5	3 233.6	3 143.0	3 071.3	3 053.9	3 131.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 46. Percentage of Higher education expenditure on R&D (HERD) financed by the business sector

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	4.7	..	5.1	..	5.1	..
Austria	..	..	5.1	..	5.3	..	..
Belgium	10.9	11.3	12.1	11.7	12.9	..	..
Canada	8.4	7.5 b	7.1	7.7	7.9	7.9	7.9 p
Chile	..	5.4	4.3	3.3 b	3.0	2.9 p	..
Czech Republic	0.8	0.8	2.0	2.4	4.0	4.7	5.1 p
Denmark	2.4	2.7	2.5	1.9	2.5	2.6	2.6 p
Estonia	5.2	3.5	4.4	4.4	5.4	7.4	5.8
Finland	6.5	5.1	5.0	4.0	3.7	3.7	..
France	1.6	2.6	2.8	2.5 b	2.8	..	..
Germany	14.1	14.0	14.0	14.1	13.9	13.8 b	..
Greece	8.9	7.9	5.5	6.0	7.6	7.3	8.3 p
Hungary	11.8 d	9.5 d	8.6 d	9.1 d	8.0 d	9.6 d	..
Iceland	11.3	..	4.7 b	3.4	2.0	2.3	10.9 p
Ireland	2.7	2.0	2.0 e	2.0	3.1 e	3.2 e	..
Israel[1]	7.3 d	6.8 d	6.8 d	9.5 d	8.6 d	10.3 d	..
Italy	1.4 b	1.1	1.3	1.3 e	1.3 e	1.3 e	..
Japan	2.8	2.7	2.6 b	2.6	2.6	2.8	2.9
Korea	15.2 d	11.0	12.3	11.2	12.3	12.6	13.7
Latvia	15.4	5.5	6.9	7.1	7.8	5.6	..
Lithuania	3.8	14.4	16.7	13.9	11.6	12.2	..
Luxembourg	1.4	0.8	1.0	..	1.1	1.2 e	..
Mexico	1.2 e	0.5	0.8	0.7 e p	0.7 e p	0.8 e p	..
Netherlands	7.8	8.3	7.6	7.7	7.8	7.8	..
New Zealand	8.0	..	4.0	..	3.5	..	..
Norway	4.7	..	4.1	..	3.1	3.1	..
Poland	5.4	2.1	3.2	2.8	2.6	3.0	..
Portugal	1.2	1.3	1.7 b	1.6	1.9	1.8	..
Slovak Republic	0.7	3.3	2.6	2.4	1.6	1.9	..
Slovenia	9.0	11.2	11.4	12.6	11.4	10.6	..
Spain	6.9	7.3	6.6	5.9	5.7	5.1	..
Sweden	5.1	..	3.8	..	4.0	..	..
Switzerland	..	10.9	..	10.0	9.8	..	..
Turkey	22.7 d	1.0	0.8	1.1	1.2	1.2	1.3
United Kingdom	4.6	4.1	4.1	4.3	4.4	4.4	..
United States	5.0 d	4.5 d	4.8 d	5.1 d	5.2 d	5.3 d	5.3 d p
EU28 (OECD estimates)	6.5 e	6.5 e	6.4 e	6.4 e	6.4 e	6.5 e	..
OECD-Total	**6.1 e**	**5.4 e**	**5.5 e**	**5.6 e**	**5.7 e**	**5.8 e**	**..**
Argentina	0.6	0.2	0.3	0.2	0.1	0.3	..
China	36.7	33.4	33.8	33.7	30.2	29.0	28.5
Romania	7.5	7.5	4.8	6.9	5.1	6.2	..
Russian Federation	29.3	27.2	27.6	27.3	27.4	27.7	28.2
Singapore	1.7	4.3	6.1	7.3	..	..	..
South Africa	11.6	7.9	8.1	10.6	7.8	..	..
Chinese Taipei	5.8	7.8	7.5	8.3	9.3	9.7	10.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 47. Higher education researchers in full-time equivalent

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	65 772	..	68 528	..	69 287	..
Austria	8 962 d e	12 704 d e	12 846 d	13 462 d e	13 658 d	13 464 d e	14 000 d p
Belgium	13 853	18 361	18 750	19 157	20 362 b	20 378 e	20 605 p
Canada	43 400	57 510	60 270	58 550	58 850	59 260	..
Chile	..	3 561 d	3 259 d	3 600 d	4 004 d	4 360 d p	..
Czech Republic	7 762 b	11 498	10 995	10 965	11 357	10 511	10 875 p
Denmark	8 242	14 305	15 057	15 854	16 193	16 233	16 180 p
Estonia	1 905	2 534	2 398	2 443	2 431	2 426	2 452
Finland	12 879	12 368	12 056	12 381	12 240	11 987	12 731 p
France	66 290	71 890 e	72 750 m	78 409 b	79 622	..	81 560 e
Germany	65 363	97 199	99 123	100 992	103 148	109 877 b	113 000 e
Greece	11 356 d	15 723 d	18 957 d	18 801 d	22 149 d	17 241 d	17 861 d p
Hungary	5 911	5 932	5 939	5 860	5 610	5 592	6 032 p
Iceland	585	..	1 011 b	1 033	892 b	1 151	..
Ireland	4 400	12 117 b	12 477	12 836	10 469	8 102	8 102 p
Israel[1]	..	9 433 d e	9 615 d e	9 639 d e	9 590 d e	9 524 d e	..
Italy	37 073 b	45 223	47 526	48 198	48 841 e	50 816 e	51 932 p
Japan	156 176 d	125 890 d	136 593 b d	137 586 d	137 078 d	138 095 d	138 697 d
Korea	27 416 d	43 826	41 784	41 938	40 866	40 759	38 813
Latvia	2 224 d	2 607 d	2 348 d	2 291 d	2 318 d	1 944 d	2 264 d p
Lithuania	5 116.0	5 334.0	5 399.0	5 241.0	4 830.0	4 993.0	4 575.0
Luxembourg	157	651	769	906	945	972	980 p
Mexico	16 691 e	13 850	14 422	..	..	..	..
Netherlands	17 928	20 990	21 216	21 921	22 342	22 244	22 200 p
New Zealand	7 481	..	9 800	..	9 900	..	..
Norway	7 512	9 855	10 054	10 296	10 976	11 795	12 985 p
Poland	40 449	38 152	37 167	39 695	40 126	44 414	43 579 p
Portugal	10 956	23 825	25 760 b	24 978	25 043	26 106	27 435 p
Slovak Republic	6 458	9 782	9 625	8 959	8 508	8 154	8 745
Slovenia	1 695	2 398	2 201	2 180	2 069	1 951	2 020 p
Spain	54 028	59 775 d	57 641 d	57 156 d	57 107 d	58 413 d	62 542 d p
Sweden	15 125 b	16 561 e	18 401	19 616 e	18 215	19 726 p	21 098 p
Switzerland	..	18 760	..	..	21 375	..	..
Turkey	25 434	40 801	42 574	41 269	43 293	40 996	42 916
United Kingdom	141 762 b e	153 755	158 445	163 838	167 463	167 519	168 655 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	551 645 e	668 368 e	682 835 e	701 232 e	709 788 e	720 266 e	735 013 e
OECD-Total	**..**	**1 360 556 e**	**..**	**..**	**..**	**..**	**..**
Argentina	14 200	23 332	23 220	23 153	21 701	22 274	..
China	221 908 d	262 052	272 683	282 304	298 728	307 923	327 891
Romania	5 386	6 591	6 578	6 378	6 480	6 314	6 413 p
Russian Federation	70 494	87 259	89 085	91 501	92 503	83 024	75 977
Singapore	8 187	15 096	15 853	16 195	..	..	..
South Africa	9 235	13 744	15 772	15 804	18 367	..	..
Chinese Taipei	23 180	32 588	31 712	30 621	29 828	29 099	28 810

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	31.5 d e	32.0 d e	31.8 d	31.6 d e	31.4 d	30.0 d e p	..
Belgium	41.8	40.3	40.4	37.7	38.3 b	37.5 e	36.5 p
Canada	31.7	35.6	36.9	36.1 b	36.1	38.2	..
Chile	..	52.4 d	55.3 d	47.5 d	49.0 d	48.5 d p	..
Czech Republic	32.1 b	34.6	32.1	30.4	29.8	28.2	27.8 p
Denmark	29.2	35.7	37.8	38.3	37.8	36.2	35.7 p
Estonia	57.2	55.3	54.4	56.5	58.1	55.9	52.5
Finland	32.5	30.6	30.8	32.3	32.6	33.4	34.4 p
France	32.7	27.8 e	27.4 e m	28.9 b	28.7	..	28.3 e
Germany	24.0	27.6	28.0	28.7	26.6	27.5 b	27.3 e
Greece	58.0 d	63.4 d	64.9 d	62.9 d	63.8 d	58.6 d	50.8 d p
Hungary	37.2	24.9	23.7	22.4	22.2	21.7	21.2 p
Iceland	27.2	..	54.7 b	..	45.9 b	52.2	..
Ireland	38.0	54.2 b	52.6	52.3	47.0	40.9	41.4 p
Israel[1]	..	14.9 d e	..	..	..	..	..
Italy	44.9 b	40.9	40.9	40.8	38.8 e	38.0 b e	38.1 p
Japan	22.9 d	19.5 d	20.7 b d	20.1 d	20.7 d	20.7 d	20.5 d
Korea	15.2 d	13.9	13.0	12.1	11.5	11.3	10.1
Latvia	67.8 d	66.8 d	64.8 d	61.1 d	64.2 d	61.7 d	65.0 d p
Lithuania	67.0	66.5	63.1	57.8	59.1	58.6	52.6
Luxembourg	7.1	28.2 b	30.7	34.5	37.2	38.8 p	35.9 p
Mexico	38.0 e	47.6	48.2	..	..	..	..
Netherlands	37.5	28.7 b	27.7	28.8	28.2	27.4	26.0 p
New Zealand	57.6	..	54.7	..	52.9	..	..
Norway	35.4	35.4	35.5	35.2	35.8	37.0	37.8 p
Poland	65.1	56.9	52.0	50.5	48.6	50.4	45.2 p
Portugal	51.9	56.1	68.1 b	65.5	64.8	63.1	61.9 p
Slovak Republic	59.1	64.1	65.4	60.8	59.1	57.6	57.4
Slovenia	32.3	27.0	25.3	25.4	26.2	24.0	21.7 p
Spain	49.2	47.1 d	46.8 d	46.8 d	46.6 d	46.1 d	47.0 d p
Sweden	27.5 b e	33.6 e	28.7 b e	29.4 e	27.3 e	28.0 p	28.0 p
Switzerland	..	52.4	..	..	48.9	..	..
Turkey	65.0	49.7	47.8	46.0	45.5	40.9	38.4
United Kingdom	57.0 b e	60.0 e	59.2	59.2 e	58.9	58.0 e	58.2 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	40.1 e	39.6 e	39.3 e	39.6 e	38.5 e	38.1 e	37.5 e
OECD-Total	**..**	**30.9 e**	**..**	**..**	**..**	**..**	**..**
Argentina	44.6	46.2	45.7	44.8	41.0	41.2	..
China	19.8 d	18.7	18.4	18.5	18.5	18.2	18.8
Romania	23.5	36.6	35.4	35.2	37.1	35.0	36.6 p
Russian Federation	15.2	19.7	20.2	20.6	20.6	19.4	18.5
Singapore	34.4	44.2	44.0	44.2	..	..	..
South Africa	53.4	64.3	67.6	67.0	70.2	..	..
Chinese Taipei	26.1	23.3	22.5	21.4	20.5	19.7	19.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	74 669	..	78 038	..	79 008	..
Austria	12 353 d e	16 678 d e	16 840 d	17 479 d e	17 682 d	17 571 d e	18 271 d p
Belgium	17 767	22 770	23 156	23 733	26 156 b	25 006 e	26 465 p
Canada	56 950	71 320	74 730	72 510	72 720	73 230	..
Chile	..	6 819 d	6 672 d	7 361 d	7 190 d	8 061 d p	..
Czech Republic	10 972 b	16 441	16 240	16 525	16 868	15 201	15 803 p
Denmark	11 561	19 991	20 925	20 956	21 258	21 978	21 907 p
Estonia	2 176	3 000	2 850	3 103	3 062	2 969	3 015
Finland	17 453	16 146	15 726	16 034	15 515	15 157	16 007 p
France	98 743	108 794 e	109 883 e	119 081 b	120 480	..	119 300 e
Germany	94 522	127 900	130 079	132 542	134 032	141 661 b	145 300 e
Greece	17 401 d	20 508 d	23 390 d	23 924 d	27 383 d	20 404 d	22 051 d p
Hungary	8 194	8 130	8 154	7 937	7 706	7 476	8 442 p
Iceland	742	..	1 211 b	1 232	1 062	1 360	..
Ireland	5 220	13 050 b	13 949	14 847	12 751	10 653	10 653 p
Israel[1]	9 011 d	11 098 d e	11 311 d e	11 340 d e	11 283 d e	11 205 d e	..
Italy	66 976 b	76 207	76 986	75 235	76 858 e	80 226 e	80 715 p
Japan	209 734 d	195 043 d	207 766 b d	209 101 d	208 579 d	210 683 d	212 212 d
Korea	42 157 d	77 099	73 196	74 861	72 745	72 482	70 037
Latvia	2 856 d	3 538 d	3 237 d	3 177 d	3 241 d	3 147 d	3 448 d p
Lithuania	6 699.0	6 514.0	6 452.0	6 260.0	5 737.0	5 895.0	5 387.0
Luxembourg	169	723	866	989	1 057	1 097	1 106 p
Mexico	25 218 e	20 211	21 106	..	..	..	..
Netherlands	32 305	31 952	32 331	33 237	33 604	33 300	33 400 p
New Zealand	9 660	..	11 600	..	11 900	..	..
Norway	9 420	12 413	12 715	13 010	13 952	14 937	16 252 p
Poland	44 763	42 917	41 441	44 304	44 961	51 652	50 670 p
Portugal	11 680	24 513	27 753 b	26 870	27 001	28 265	30 023 p
Slovak Republic	7 146	10 124	9 969	9 297	8 815	8 623	9 056
Slovenia	2 099	2 926	2 805	2 667	2 555	2 321	2 395 p
Spain	66 996	77 238 d	74 923 d	73 428 d	73 327 d	75 191 d	79 286 d p
Sweden	17 686 b	21 781 e	21 004	22 410 e	21 435	21 918 p	23 196 p
Switzerland	..	26 945	..	..	29 717	..	..
Turkey	25 434 e	40 801 e	42 574 e	41 269 e	43 293 e	52 576 b	54 289
United Kingdom	152 634 b e	173 499 e	177 767 e	183 023 e	186 724	186 770	188 036 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	723 258 e	863 777 e	876 288 e	896 324 e	907 455 e	917 116 e	933 329 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	15 507	27 178	27 737	27 896	26 015	26 619	..
China	227 163 d	313 520	324 942	334 794	354 861	360 049	382 160
Romania	6 803	8 710	9 523	8 966	9 008	8 627	8 416 p
Russian Federation	97 672	119 360	118 971	121 526	121 680	110 379	101 628
Singapore	9 337	16 252	17 099	17 405	..	..	..
South Africa	10 611	15 614	17 778	17 944	20 812	..	..
Chinese Taipei	25 752	36 115	35 088	34 135	33 177	32 349	31 866

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	2 419.0	2 592.5 e	2 292.1	2 685.7 e	2 259.4	..
Austria	355.9 e	522.5 e	533.1	585.3 e	602.4	999.3 b e	1 060.4 p
Belgium	520.6	908.7 b	961.6	1 073.8	1 162.0	1 208.0 e	1 606.6 p
Canada	2 238.7	2 230.4	2 354.6	2 392.8	1 879.0	1 868.0	1 838.6 p
Chile	..	55.3	128.7 b	123.6	121.2	198.5 p	..
Czech Republic	596.5 b	1 044.1	1 163.5	1 271.0	1 398.6	1 135.9	1 243.5 p
Denmark	285.7	177.3	183.6	180.7	190.0	199.5	212.9 p
Estonia	23.3	67.9	55.7	59.7	60.9	57.9	66.8
Finland	534.0	677.9	658.7	620.7	546.8	537.6	601.0 p
France	7 024.1	7 248.2	7 620.6	7 717.1	7 863.1	8 121.1 p	8 186.2 e
Germany	9 014.2 d	14 405.3 d	15 309.6 d	16 022.1 d	16 050.1 d	16 550.3 d	17 635.3 d
Greece	329.9	484.8	649.7	675.3	787.2	730.8	764.2 p
Hungary	444.3 d	418.1 d	500.7 d	468.3 d	469.7 d	425.6 d	477.4 d
Iceland	69.8	..	16.5 b	17.7	16.5	17.4	16.7 p
Ireland	148.3	160.4	159.0	159.1	168.0	164.8	178.8 p
Israel[1]	186.4 d	198.4 d	209.1 d	217.0 d	203.2 d	221.5 d e	242.2 d e
Italy	3 158.8	4 066.2	3 984.0	4 001.6	3 941.3	4 078.4	4 257.1 p
Japan	10 669.1	13 130.7	15 096.3	14 116.7	13 313.1	12 437.1	13 353.8
Korea	3 631.6 d	7 299.4	7 446.8	8 196.6	9 033.8	9 289.4	9 734.0
Latvia	30.7	77.9	80.7	78.4	78.4	71.0	73.4 p
Lithuania	90.1	129.1	148.7	144.7	149.3	191.3	235.8
Luxembourg	60.1 d	172.3 d	196.0 d	212.7 d	224.1 d	208.1 d e	212.3 e p
Mexico	1 238.8	3 722.3	3 907.1	4 439.1 e p	4 417.3 e p	4 105.1 e p	..
Netherlands	1 355.4 d	1 797.2 b d	1 953.1 d	1 943.9 d	2 017.3 d	1 970.1 d	2 118.0 d p
New Zealand	308.1	..	430.2	..	443.2	..	..
Norway	513.1	873.0	898.4	884.7	911.9	874.7	941.4 p
Poland	1 085.2	2 234.1	2 196.2	2 191.5	2 496.7	255.2 b	268.7 p
Portugal	264.3	205.2	252.1	241.6	247.7	215.8	233.1 p
Slovak Republic	130.8 d	284.4 d	254.8 d	390.9 d	525.7	283.8	323.4
Slovenia	163.7	200.2	206.1	183.2	193.6	185.3	192.3 p
Spain	2 258.7	3 678.8	3 610.6	3 636.5	3 792.0	3 742.1	3 891.0 p
Sweden	506.9 b	671.0 e	533.7 e	531.7 e	529.5	542.1 p	636.0 p
Switzerland	..	102.9 d	..	148.7 d	157.0 d	..	..
Turkey	531.0	1 408.9	1 442.1	1 544.0	1 833.5	1 871.2 d	2 080.4 d
United Kingdom	3 234.9	3 097.1	3 280.7	3 181.6	3 028.9	3 107.8	3 218.1 p
United States	40 378.0 d	53 342.0	52 372.0	54 106.0	54 680.0	52 482.0	52 888.0
EU28 (OECD estimates)	31 990.8 e	43 407.1 e	45 174.9 e	46 164.9 e	47 240.3 e	45 581.0 e	48 384.7 e
OECD-Total	**93 112.9 e**	**127 394.3 e**	**130 938.0 e**	**133 891.5 e**	**135 602.1 e**	**130 591.1 e**	**135 282.3 e**
Argentina	904.5	2 282.8	2 400.4	2 406.9	2 797.3	2 319.0	..
China	18 921.8	47 542.1	53 982.8	58 566.5	65 849.3	70 851.5	75 496.4
Romania	288.6	751.6	755.4	674.2	800.1	751.3	849.4 p
Russian Federation	4 723.4	12 202.6	11 684.3	12 293.4	12 046.4	12 387.6	12 736.4
Singapore	492.0	824.8	994.9	1 151.8	..	..	..
South Africa	842.6	1 107.0	1 164.1	1 290.3	1 394.8	..	..
Chinese Taipei	3 222.4	4 103.3	4 102.6	4 093.1	4 195.7	4 698.2	4 750.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	0.24	0.23 e	0.20	0.24 e	0.19	..
Austria	0.12 e	0.13 e	0.13	0.14 e	0.14	0.22 b e	0.22 p
Belgium	0.15	0.19 b	0.20	0.21	0.23	0.23 e	0.29 p
Canada	0.19	0.15	0.15	0.15	0.12	0.11	0.11 p
Chile	..	0.01	0.03 b	0.03	0.03	0.05 p	..
Czech Republic	0.27 b	0.34	0.36	0.37	0.39	0.31	0.31 p
Denmark	0.15	0.07	0.07	0.07	0.07	0.07	0.07 p
Estonia	0.10	0.20	0.15	0.16	0.16	0.14	0.15
Finland	0.32	0.31	0.29	0.27	0.24	0.22	0.24 p
France	0.36	0.29	0.29	0.29	0.29	0.29 p	0.28 e
Germany	0.34 d	0.41 d	0.42 d	0.42 d	0.41 d	0.40 d	0.41 d
Greece	0.12	0.17	0.23	0.23	0.27	0.25	0.25 p
Hungary	0.26 d	0.18 d	0.21 d	0.19 d	0.18 d	0.16 d	0.17 d
Iceland	0.63	..	0.12 b	0.12	0.10	0.10	0.09 p
Ireland	0.09	0.08	0.07	0.07	0.05	0.05	0.05 p
Israel[1]	0.11 d	0.08 d	0.08 d	0.08 d	0.07 d	0.07 d e	0.07 d e
Italy	0.18	0.19	0.18	0.18	0.18	0.17	0.17 p
Japan	0.26	0.28	0.30	0.28	0.26	0.24	0.25
Korea	0.31 d	0.45	0.45	0.48	0.50	0.49	0.49
Latvia	0.10	0.18	0.18	0.17	0.16	0.14	0.13 p
Lithuania	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Luxembourg	0.19 d	0.35 d	0.38 d	0.38 d	0.38 d	0.34 d e	0.33 e p
Mexico	0.09	0.18	0.19	0.20 e p	0.20 e p	0.18 e p	..
Netherlands	0.22 d	0.23 b d	0.24 d	0.23 d	0.24 d	0.23 d	0.23 d p
New Zealand	0.29	..	0.27	..	0.26	..	..
Norway	0.23	0.27	0.26	0.26	0.29	0.29	0.29 p
Poland	0.20	0.25	0.23	0.23	0.24	0.02 b	0.02 p
Portugal	0.11	0.07	0.09	0.08	0.08	0.07	0.07 p
Slovak Republic	0.15 d	0.20 d	0.17 d	0.25 d	0.33	0.17	0.18
Slovenia	0.34	0.34	0.34	0.29	0.30	0.27	0.26 p
Spain	0.19	0.25	0.24	0.23	0.23	0.22	0.21 p
Sweden	0.17 b	0.16 e	0.12 e	0.12 e	0.11	0.11 p	0.12 p
Switzerland	..	0.02 d	..	0.03 d	0.03 d	..	..
Turkey	0.07	0.09	0.09	0.08	0.09	0.09 d	0.09 d
United Kingdom	0.16	0.13	0.13	0.12	0.11	0.11	0.11 p
United States	0.31 d	0.33	0.31	0.31	0.30	0.28	0.27
EU28 (OECD estimates)	0.23 e	0.24 e	0.24 e	0.24 e	0.24 e	0.22 e	0.22 e
OECD-Total	**0.26 e**	**0.27 e**	**0.27 e**	**0.26 e**	**0.26 e**	**0.24 e**	**0.24 e**
Argentina	0.17	0.28	0.28	0.28	0.32	0.26	..
China	0.28	0.31	0.32	0.32	0.33	0.33	0.32
Romania	0.14	0.20	0.19	0.16	0.19	0.16	0.16 p
Russian Federation	0.26	0.33	0.31	0.33	0.34	0.35	0.34 e
Singapore	0.21	0.20	0.23	0.25	..	..	..
South Africa	0.18	0.17	0.17	0.18	0.19	..	..
Chinese Taipei	0.49	0.42	0.40	0.38	0.38	0.41	0.40

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 52. Government intramural expenditure on R&D (GOVERD) at 2010 prices and PPP

Million 2010 USD

	2005	2012	2013	2014	2015	2016	2017
Australia	..	2 438.7	2 420.8 e	2 163.5	2 585.5 e	2 064.6	..
Austria	406.8 e	485.7 e	477.6	514.4 e	518.1	837.6 b e	867.8 p
Belgium	606.0	858.5 b	881.6	970.3	1 039.1	1 052.9 e	1 356.0 p
Canada	2 465.0	2 174.5	2 222.3	2 226.3	1 795.0	1 771.7	1 710.7 p
Chile	..	51.1	117.6 b	112.0	111.5	181.2 p	..
Czech Republic	683.4 b	1 000.6	1 056.9	1 119.4	1 239.8	984.7	1 039.6 p
Denmark	364.4	171.5	171.1	166.1	173.4	178.9	181.0 p
Estonia	30.6	63.6	50.6	53.1	54.6	50.8	56.7
Finland	634.7	647.5	611.5	567.7	492.0	478.7	517.1 p
France	8 169.4	7 011.4	7 031.7	7 044.3	7 104.8	7 198.7 p	7 035.5 e
Germany	10 305.0 d	13 725.2 d	14 079.2 d	14 370.4 d	14 281.0 d	14 354.2 d	14 781.4 d
Greece	373.6	457.7	579.2	593.7	692.0	635.1	644.6 p
Hungary	561.6 d	393.0 d	454.8 d	426.2 d	429.5 d	391.9 d	428.0 d
Iceland	75.3	..	15.7 b	16.4	14.8	15.3	14.2 p
Ireland	170.0	154.5	149.0	150.9	146.6	145.2	154.2 p
Israel[1]	192.6 d	186.8 d	187.0 d	197.4 d	179.3 d	188.7 d e	202.1 d e
Italy	3 822.4	3 822.6	3 648.9	3 641.8	3 548.2	3 509.7	3 555.5 p
Japan	11 758.7	12 565.9	14 082.2	13 166.1	12 203.1	11 280.6	12 119.5
Korea	3 831.4 d	7 229.7	7 434.7	8 160.6	8 637.7	8 762.3	9 014.4
Latvia	37.4	73.4	73.8	70.2	70.2	62.7	62.3 p
Lithuania	109.6	120.0	133.7	128.6	133.1	168.7	200.2
Luxembourg	72.9 d	157.1 d	173.4 d	180.9 d	190.7 d	173.6 d e	171.4 e p
Mexico	1 493.5	3 459.5	3 588.2	3 983.8 e p	3 991.2 e p	3 672.1 e p	..
Netherlands	1 542.5 d	1 706.7 b d	1 773.0 d	1 783.6 d	1 838.9 d	1 788.7 d	1 855.1 d p
New Zealand	366.1	..	390.4	..	405.4	..	..
Norway	608.6	816.1	817.4	805.5	870.7	842.8	877.1 p
Poland	1 298.2	2 104.3	2 023.4	2 014.8	2 274.7	232.1 b	237.4 p
Portugal	309.9	200.7	232.4	219.2	222.6	189.6	201.3 p
Slovak Republic	156.4 d	277.7 d	240.9 d	365.9 d	498.9	266.6	298.6
Slovenia	178.2	187.5	184.8	163.2	171.9	161.4	160.5 p
Spain	2 634.4	3 513.4	3 336.4	3 304.8	3 439.9	3 338.6	3 354.3 p
Sweden	595.8 b	629.2 e	492.0 e	488.8 e	483.8	495.6 p	559.4 p
Switzerland	..	94.8 d	..	130.6 d	133.7 d	..	..
Turkey	706.9	1 343.4	1 357.9	1 396.7	1 618.4	1 643.0 d	1 811.9 d
United Kingdom	3 650.6	2 989.1	3 080.1	2 950.3	2 772.2	2 812.2	2 818.5 p
United States	44 391.6 d	51 267.3	49 466.9	50 155.8	50 151.7	47 615.0	47 088.3
EU28 (OECD estimates)	37 256.3 e	41 394.9 e	41 585.1 e	41 856.5 e	42 498.1 e	40 105.2 e	41 201.5 e
OECD-Total	**104 634.4 e**	**122 308.6 e**	**122 655.9 e**	**123 653.9 e**	**123 941.7 e**	**117 554.5 e**	**119 133.1 e**
Argentina	994.3	2 196.1	2 272.6	2 238.6	2 573.7	2 106.8	..
China	20 822.0	45 739.2	51 110.6	54 471.4	60 587.9	64 381.2	67 389.4 e
Romania	418.4	708.0	707.0	628.7	742.4	665.9	727.1 p
Russian Federation	6 846.7	11 260.4	10 761.1	11 396.3	11 590.2	11 880.1	11 600.7 e
Singapore	540.6	792.1	939.2	1 067.3	..	..	..
South Africa	927.2	1 065.0	1 102.1	1 200.1	1 283.3	..	..
Chinese Taipei	3 542.7	3 943.6	3 875.2	3 794.4	3 848.3	4 262.6	4 229.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

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

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	7.7	..	9.9	..	10.3	..
Austria	..	..	4.2	..	6.0	..	..
Belgium	9.2	4.9 b	5.4	3.6	6.2	..	..
Canada	3.8	2.2	2.1	2.1	0.9	0.9	0.8 p
Chile	..	2.4	1.5 b	3.3	2.7	1.8 p	..
Czech Republic	9.4 b	4.5	3.7	3.8	2.8	4.0	3.6 p
Denmark	2.1	1.6	2.8	1.7	1.2	2.1	2.0 p
Estonia	0.0	1.2	1.3	1.3	1.6	2.9	1.8
Finland	12.4	9.9	9.9	8.3	8.7	9.1	..
France	7.4	7.8	8.0	8.0	7.6	..	..
Germany	9.9 d	10.3 d	10.3 d	11.2 d	11.3 d	11.2 d	..
Greece	1.3	5.5	3.6	3.1	4.5	3.2	5.6 p
Hungary	10.3 d	9.8 d	9.7 d	7.8 d	8.8 d	6.0 d	..
Iceland	7.4	..	15.0 b	15.3	15.5	9.7	5.8 p
Ireland	4.1	1.8	1.9	1.9	0.7	0.8	..
Israel[1]	7.7 d	1.8 d	2.2 d	2.5 d	2.2 d	2.1 d e	..
Italy	2.4	5.3	4.2	4.1	4.2	3.8	..
Japan	0.7	1.7	1.9	1.9	2.3	2.4	2.8
Korea	4.3 d	3.5	2.8	2.8	2.3	3.0	3.4
Latvia	15.6	13.9	13.2	15.6	16.9	9.7	..
Lithuania	6.6	11.3	11.9	12.3	13.3	13.5	..
Luxembourg	3.9 d	4.6 d	2.0 d	..	1.3 d	1.1 d e	..
Mexico	1.2 e	0.9	0.7	0.7 e p	0.7 e p	0.8 e p	..
Netherlands	14.6 d	18.3 b d	16.6 d	16.0 d	13.6 d	16.1 d	..
New Zealand	19.0	..	17.2	..	18.3	..	..
Norway	10.6	9.1	8.9	9.6	7.4	8.0	..
Poland	14.3	4.9	4.3	.. c	4.5	5.3 b	..
Portugal	2.0	1.5	1.7	1.2	1.9	5.9	..
Slovak Republic	8.5 d	13.2 d	8.2 d	13.4 d	8.6	12.0	..
Slovenia	12.1	8.4	7.6	7.8	8.0	6.8	..
Spain	7.3	5.0	5.9	5.8	6.0	5.6	..
Sweden	1.3 b	..	3.7 e	..	3.9	..	..
Switzerland	..	0.0 d	..	0.0 d	2.4 d	..	..
Turkey	1.5	2.1	2.0	2.6	2.8	2.1 d	1.9 d
United Kingdom	9.9	12.5	11.6	12.0	2.2	1.8	..
United States	0.0 d	0.3 d	0.4 d	0.4 d	0.4 d	0.4 d	0.4 d p
EU28 (OECD estimates)	8.3 e	8.6 e	8.4 e	8.6 e	7.8 e	8.1 e	..
OECD-Total	**3.5 e**	**3.7 e**	**3.7 e**	**3.8 e**	**3.5 e**	**3.7 e**	**..**
Argentina	0.2	1.9	0.5	0.2	0.3	0.5	..
China	4.9	4.1	4.6	4.1	3.9	4.7	4.6
Romania	16.1	17.3	16.0	17.0	15.2	18.0	..
Russian Federation	11.4	13.1	13.8	11.5	11.6	9.1	9.7
Singapore	2.3	3.8	6.1	4.3	..	..	..
South Africa	7.9	2.7	7.0	3.2	4.7	..	..
Chinese Taipei	3.0	3.0	3.1	3.4	2.9	2.9	3.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 54. Government researchers in full-time equivalent

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	8 311	..	7 637	..	7 483	..
Austria	1 232 d e	1 555 d e	1 567 d	1 654 d e	1 682 d	3 442 d e	3 579 d p
Belgium	2 274	3 591 b	3 657	4 062	4 041 b	4 068 e	5 136 p
Canada	8 360	9 490	9 100	9 250	7 930	7 400	..
Chile	..	404 d	710 b d	769 d	863 d	1 296 d p	..
Czech Republic	6 564 b	6 453	6 725	6 979	7 393	7 500	7 908 p
Denmark	2 105	1 208	1 254	1 384	1 426	1 392	1 388 p
Estonia	474	546	553	533	514	504	549
Finland	4 374	4 432	4 482	4 089	3 550	3 209	3 318 p
France	25 889 d	27 413	27 893	28 065	28 445	..	28 480 e
Germany	39 911	55 597	56 755	52 854 b	54 011 d	53 971 d	53 700 d
Greece	2 076 d	4 510 d	5 778 d	5 844 d	7 256 d	6 263 d	6 372 d p
Hungary	4 959	4 674	4 782	4 776	4 680	4 965	4 867 p
Iceland	501	..	181 b	..	239 b	143	..
Ireland	419	495	437	461	494	504	580 p
Israel[1]	..	503 d e	..	..	..	..	..
Italy	14 454	20 499	21 313	21 045	21 592	21 711	21 800 p
Japan	34 035 d	31 567 d	30 904 d	30 373 d	30 242 d	30 238 d	30 610 d
Korea	12 791 d	22 204	23 292	24 750	26 431	27 170	27 185
Latvia	589 d	703 d	707 d	681 d	691 d	626	571 d p
Lithuania	1 805.0	1 372.0	1 395.0	1 400.0	1 449.0	1 577.0	1 613.0
Luxembourg	374	732	733	708	617	601	606 p
Mexico	6 589 e	7 205	7 273	..	..	..	..
Netherlands	7 028 d	8 581 b d	8 616 d	8 624 d	8 953 d	8 714 d	9 586 p
New Zealand	1 800	..	2 000	..	1 900	..	..
Norway	3 449 d	4 654	4 705	4 627	4 735	4 788	4 800 p
Poland	12 175	13 583	13 571	13 847	13 618	2 369 b	2 329 p
Portugal	3 338	1 682	1 386 b	1 447	1 351	1 340	1 453 p
Slovak Republic	2 503 d	2 967 d	2 635 d	3 123 d	3 084	3 087	3 078
Slovenia	1 591	1 850	1 825	1 744	1 629	1 667	1 502 p
Spain	20 446	21 850 d	20 673 d	20 180 d	19 962 d	20 663 d	20 844 d p
Sweden	2 929 b d e	2 002 e	2 386 b e	2 304 e	3 322 b e	3 362 p	3 788 p
Switzerland	..	430 d	..	466 d	472 d	..	..
Turkey	4 249	6 288	6 294	6 541	6 555	6 700 d	6 672 d
United Kingdom	9 311	7 729	7 641	7 769	7 057	7 047	6 789 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	179 520 e	204 449 e	207 268 e	203 743 e	206 770 e	197 015 e	199 546 e
OECD-Total	**294 963 e**	**340 936 e**	**341 695 e**	**341 206 e**	**345 092 e**	**..**	**334 549 e**
Argentina	13 285	23 237	23 444	24 814	26 266	27 168	..
China	200 377 d	269 581	288 675	295 899	305 686	336 106	356 805
Romania	7 082	6 372	6 583	6 409	6 659	6 755	6 526 p
Russian Federation	154 827	149 593	144 776	144 700	146 840	145 956	139 479
Singapore	1 364	1 756	1 843	1 950	..	..	..
South Africa	1 974	2 789	2 705	2 735	2 781	..	..
Chinese Taipei	13 789	14 630	14 599	14 753	14 887	15 366	15 542

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 55. Government researchers as a percentage of national total

Percentage

	2005	2012	2013	2014	2015	2016	2017
Australia	..	..	..	..	..	..	..
Austria	4.3 d e	3.9 d e	3.9 d	3.9 d e	3.9 d	7.7 d e p	..
Belgium	6.9	7.9 b	7.9	8.0	7.6 b	7.5 e	9.1 p
Canada	6.1	5.9	5.6	5.7 b	4.9	4.8	..
Chile	..	5.9 d	12.1 b d	10.1 d	10.6 d	14.4 d p	..
Czech Republic	27.2 b	19.4	19.6	19.4	19.4	20.1	20.2 p
Denmark	7.5	3.0	3.1	3.3	3.3	3.1	3.1 p
Estonia	14.2	11.9	12.5	12.3	12.3	11.6	11.7
Finland	11.1	11.0	11.4	10.7	9.5	8.9	9.0 p
France	12.8 d	10.6 e	10.5 e	10.3 b	10.2	..	9.9 e
Germany	14.7	15.8	16.0	15.0 b	13.9 d	13.5 d	13.0 d e
Greece	10.6 d	18.2 d	19.8 d	19.6 d	20.9 d	21.3 d	18.1 d p
Hungary	31.2	19.6	19.1	18.2	18.5	19.2	17.1 p
Iceland	23.3	..	9.8 b	..	12.3 b	6.5	..
Ireland	3.6	2.2	1.8	1.9	2.2	2.5	3.0 p
Israel[1]	..	0.8 d e	..	..	..	..	..
Italy	17.5	18.5	18.3	17.8	17.2	16.2 b	16.0 p
Japan	5.0 d	4.9 d	4.7 b d	4.4 d	4.6 d	4.5 d	4.5 d
Korea	7.1 d	7.0	7.2	7.2	7.4	7.5	7.1
Latvia	17.9 d	18.0 d	19.5 d	18.2 d	19.1 d	19.9 d	16.4 d p
Lithuania	23.6	17.1	16.3	15.4	17.7	18.5	18.6
Luxembourg	16.8	31.7 b	29.3	26.9	24.3	24.0 p	22.2 p
Mexico	15.0 e	24.8	24.3	..	..	..	..
Netherlands	14.7 d	11.7 b d	11.2 d	11.3 d	11.3 d	10.7 d	11.2 p
New Zealand	13.9	..	11.2	..	10.2	..	..
Norway	16.3 d	16.7	16.6	15.8	15.5	15.0	14.0 p
Poland	19.6	20.3	19.0	17.6	16.5	2.7 b	2.4 p
Portugal	15.8	4.0	3.7 b	3.8	3.5	3.2	3.3 p
Slovak Republic	22.9 d	19.4 d	17.9 d	21.2 d	21.4	21.8	20.2
Slovenia	30.3	20.8	21.0	20.3	20.6	20.5	16.2 p
Spain	18.6	17.2 d	16.8 d	16.5 d	16.3 d	16.3 d	15.6 d p
Sweden	5.3 b d e	4.1 e	3.7 b e	3.5 e	5.0 b e	4.8 p	5.0 p
Switzerland	..	1.2 d	..	..	1.1 d	..	..
Turkey	10.9	7.7	7.1	7.3	6.9	6.7 d	6.0 d
United Kingdom	3.7 b e	3.0 e	2.9	2.8 e	2.5	2.4 e	2.3 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	13.1 e	12.1 e	11.9 e	11.5 e	11.2 e	10.4 e	10.2 e
OECD-Total	**8.0 e**	**7.7 e**	**7.5 e**	**7.3 e**	**7.2 e**	**..**	**..**
Argentina	41.7	46.0	46.2	48.0	49.6	50.3	..
China	17.9 d	19.2	19.5	19.4	18.9	19.9	20.5
Romania	30.8	35.4	35.4	35.4	38.1	37.4	37.3 p
Russian Federation	33.3	33.7	32.9	32.5	32.7	34.0	34.0
Singapore	5.7	5.1	5.1	5.3	..	..	..
South Africa	11.4	13.0	11.6	11.6	10.6	..	..
Chinese Taipei	15.5	10.4	10.3	10.3	10.2	10.4	10.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

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

FTE

	2005	2012	2013	2014	2015	2016	2017
Australia	..	16 381	..	14 715	..	14 773	..
Austria	2 318 d e	2 544 d e	2 538 d	2 641 d e	2 674 d	4 842 d e	5 035 d p
Belgium	3 589	5 818 b	5 932	6 381	6 470 b	6 327 e	8 361 p
Canada	17 860	19 070	18 110	18 050	15 410	14 300	..
Chile	..	607 d	1 382 b d	1 372 d	1 495 d	2 223 d p	..
Czech Republic	11 054 b	11 864	12 275	12 380	12 953	13 099	13 689 p
Denmark	3 240	1 543	1 544	1 686	1 792	1 721	1 715 p
Estonia	696	774	851	800	782	841	847
Finland	7 422	6 360	6 319	5 880	4 519	4 039	4 240 p
France	49 645 d	49 903	49 982	49 375	49 413	..	48 800 e
Germany	76 254 d	95 882 d	98 161 d	101 005 d	101 717 d	103 206 d	103 900 d
Greece	4 345 d	9 982 d	11 436 d	11 125 d	13 628 d	11 750 d	10 926 d p
Hungary	7 652	7 605	7 765	7 215	8 111	7 456	7 271 p
Iceland	849	..	266 b	..	275	184	..
Ireland	1 132	921	818	826	951	993	1 051 p
Israel[1]	..	883 d e	..	..	..	..	..
Italy	32 684	37 851	39 023	38 506	38 669	38 490	38 389 p
Japan	62 975 d	62 752 d	61 486 d	61 585 d	60 299 d	61 615 d	62 046 d
Korea	16 847 d	32 977	34 367	35 574	38 174	38 119	37 578
Latvia	1 256 d	1 170 d	1 178 d	1 180 d	1 184 d	1 077 d	974 d p
Lithuania	3 113.0	2 131.0	2 227.0	2 224.0	2 156.0	2 399.0	2 408.0
Luxembourg	560 d	1 178 d	1 195 d	1 187 d	1 136 d	1 072	1 081 p
Mexico	14 837 e	16 638	16 944	..	..	..	..
Netherlands	12 706 d	13 496 b d	13 485 d	14 121 d	14 348 d	13 982 d	14 856 d p
New Zealand	3 100	..	3 300	..	3 500	..	..
Norway	5 147	6 670	6 780	6 690	6 820	6 810	6 850 p
Poland	17 877	21 804	21 884	22 614	22 073	3 733 b	3 206 p
Portugal	4 533	2 204	1 983	2 037	2 066	2 098	2 188 p
Slovak Republic	3 717 d	4 168 d	3 545 d	4 147 d	4 335	4 414	4 213
Slovenia	2 517	2 579	2 596	2 490	2 437	2 501	2 323 p
Spain	32 077	41 787 d	39 349 d	38 764 d	39 678 d	39 972 d	40 283 d p
Sweden	3 444 b e	3 359 e m	3 217 e	3 404 e	4 234 b e	4 269 p	4 895 p
Switzerland	..	781 d	..	897 d	909 d	..	..
Turkey	8 825	12 088	12 004	12 230	12 328	11 799 d	11 345 d
United Kingdom	20 415	16 880	16 592	16 250	14 615	14 531	13 999 p
United States	..	..	..	..	..	..	..
EU28 (OECD estimates)	321 394 e	360 563 e	363 165 e	364 447 e	367 855 e	349 838 e	352 298 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	21 688	34 472	35 850	37 757	39 271	40 248	..
China	254 506 d	446 920	467 313	479 435	493 200	505 927	531 629
Romania	10 055	11 381	12 336	11 866	12 080	12 663	12 500 p
Russian Federation	296 428	292 894	282 051	283 161	283 968	287 129	283 620
Singapore	2 173	3 003	3 134	3 497	..	..	..
South Africa	5 586	7 346	7 410	6 362	6 417	..	..
Chinese Taipei	25 673	25 246	24 727	24 876	24 948	25 578	26 173

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
1. Information on data for Israel:http://dx.doi.org/10.1787/888932315602
Source: OECD, Main Science and Technology Indicators database

Table 57. Total GBARD (Government budget allocations for R&D) at current prices and PPP

Million USD

	2005	2013	2014	2015	2016	2017	2018
Australia	3 729.1 d	4 884.2 d	4 842.9 d	4 614.5 d	4 729.7 d	5 270.5 d p	5 093.5 d p
Austria	1 836.6 d	3 246.3 d	3 314.3 d	3 437.1 d	3 643.1 d	3 703.1 d	3 755.2 d p
Belgium	2 004.6	3 129.0	3 409.3	3 172.5	3 384.8	3 751.1	..
Canada	6 777.1 d	8 192.0 d	7 937.5 d	7 947.1 d	8 189.3 d	..	..
Chile	..	801.4	843.3	821.7	914.7	965.2	..
Czech Republic	1 129.0	2 088.7	2 147.8	2 151.6	2 184.9	2 446.3	2 788.1 p
Denmark	1 329.3	2 673.5	2 707.4	2 795.2 e	2 637.5 e	2 796.9 e	2 993.2 p
Estonia	89.9 e	294.7 e	269.2 e	261.3 e	272.2 b	267.1 p	..
Finland	1 648.0	2 228.8	2 206.3	2 205.6	2 042.4	2 150.2	2 164.0 p
France	18 220.2	18 457.1	18 349.2	17 531.1	17 677.2	19 015.4	..
Germany	19 732.0	32 745.9	33 186.3	34 107.7	37 011.9	39 966.3	41 296.8 p
Greece	895.8	1 360.1	1 278.9	1 515.9	1 575.8	1 508.8	..
Hungary	696.1	1 574.2 d	702.5	725.6	1 040.0	1 001.0	..
Iceland	94.0	145.6	78.8 b	85.6	98.1	114.3	..
Ireland	710.7	889.5	887.4	909.6	887.9	928.2	..
Israel[1]	1 044.9 d	1 686.1 d	1 749.9 d	1 837.5 d	1 978.5 d	2 040.4 d	..
Italy	11 199.3	11 453.0	11 425.0	11 336.0	12 235.3	12 627.0	..
Japan	27 617.8 d	35 633.5 d	35 431.8 d	33 616.8 d	33 661.4 d	34 027.7 d	37 727.7 b d p
Korea	9 886.5 b d	19 730.2	20 391.9	22 032.6	22 200.7	22 519.2	..
Latvia	57.4	64.9	76.8	93.7	106.4	122.3	..
Lithuania	169.8	283.4	284.7	273.8	273.3	294.8	..
Luxembourg	81.5	333.9	359.1	380.0	385.6	424.1	425.7 p
Mexico	2 963.4	6 321.0	7 184.7	7 093.7 e	6 416.5	5 905.9 p	..
Netherlands	4 391.9	6 006.6	6 026.0	6 027.4	6 080.3	6 271.5	6 952.2 p
New Zealand	..	756.4	882.1	873.8	914.8	1 025.4	..
Norway	1 535.9	2 759.7	2 903.4	2 917.1	3 018.6	3 292.6	3 246.3 p
Poland	1 548.8	3 426.5	4 185.8	4 158.7	3 458.3	4 105.5	..
Portugal	1 045.6	1 155.9	1 087.4	1 174.4	1 218.0	1 227.7	..
Slovak Republic	244.6	588.9	595.9	673.0	624.4	636.1	682.7 p
Slovenia	273.3	295.6	272.9	268.6	276.4	296.3	..
Spain	6 440.7	8 420.5	8 721.4	9 092.2	9 237.5	9 351.6	..
Sweden	2 508.0	3 662.5	3 766.5	3 742.9	3 819.3	4 141.5	4 233.1 p
Switzerland	..	..	4 451.7	4 754.0	..	..	..
Turkey	..	6 403.2	6 095.5	6 915.3	7 294.7	7 795.1	..
United Kingdom	12 116.1	14 362.8	14 663.0	14 612.7	14 786.2	15 700.2 p	..
United States	111 332.0	109 608.0	112 502.0	115 220.0	126 093.0	127 306.0	130 541.0 p
EU28 (OECD estimates)	89 609.6 e	120 550.1 e	121 894.1 e	122 970.2 e	127 329.8 e	134 945.3 e	..
OECD-Total	**256 467.5 e**	**319 911.4 e**	**325 218.6 e**	**329 376.3 e**	**345 204.7 e**	**356 241.3 e**	**..**
Argentina	1 221.0 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	448.5	818.3 b	872.6	1 104.5	1 313.6	979.0	968.0 e
Russian Federation	6 038.6 b	21 898.8	20 808.0	18 627.6	16 531.3	15 523.9	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	4 889.6	7 318.2	7 391.7	7 590.4	7 977.2	8 388.7	8 056.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 58. Defence Budget R&D

As a percentage of total GBARD (Government budget allocations for R&D)

Percentage

	2005	2013	2014	2015	2016	2017	2018
Australia	6.9 d	6.3 d	6.5 d	7.7 d	6.8 d	6.8 d p	6.4 d p
Austria	0.0 d	0.0 d	0.0 d	0.0 d	0.1 d	0.1 d	0.2 d p
Belgium	0.3	0.2	0.2	0.1	0.1	0.1	..
Canada	4.1 d	3.0 d	2.9 d	2.6 d	2.2 d	..	..
Chile	..	0.0	0.0	0.0	0.0	0.0	..
Czech Republic	2.5	1.5	1.4	1.3	1.2	1.3	1.1 p
Denmark	0.7	0.3	0.3	0.3 e	0.3 e	0.3 e	0.3 e p
Estonia	1.0 e	0.5 e	1.3 e	1.5 e	2.3 b	1.9 p	..
Finland	3.3	1.9	2.1	1.9	1.9	2.2	2.5 p
France	20.8	6.3 d	6.6 d	7.2 d	6.4 d	7.5 d	..
Germany	5.8 s	3.7 s	3.8 s	3.1 s	2.7	3.8	3.3 p
Greece	0.5	0.4	0.1	0.1	0.9	1.8	..
Hungary	0.1	0.2 d	0.1	0.6	0.1	0.4	..
Iceland	0.0	0.0	0.0 b	0.0	0.0	0.0	..
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	..
Israel[1]	..	..	..	..	..	..	..
Italy	3.6	0.8	0.8	0.8	0.6	0.6	..
Japan	4.0 d m	4.6 d m	4.4 d m	4.4 d m	3.1 d m	3.5 d m	2.8 b d p
Korea	12.4 b d	14.8	13.5	13.5	14.0	15.0	..
Latvia	1.1	1.2	1.8	1.9	2.7	.. c	..
Lithuania	0.2	0.1	0.0	0.1	0.3	0.1	..
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0 p
Mexico	0.0	0.2	0.2	0.2 e	0.1	0.2 p	..
Netherlands	2.0	1.2	1.2	1.3	1.2	1.1	1.2 p
New Zealand	..	0.0	0.0	0.0	0.0	0.0	..
Norway	6.4	4.2	4.0	3.8	3.7	3.5	3.6 p
Poland	1.3	5.2	4.8	5.1	15.5	9.2	..
Portugal	0.1	0.2	0.3	0.3	0.3	0.3	..
Slovak Republic	8.3 d	1.4	1.4	1.9	1.5	1.7	1.8 p
Slovenia	4.9	0.7	0.2	0.2	0.2	0.3	..
Spain	3.9	1.4	1.3	1.4	1.0	1.1	..
Sweden	17.4	4.0 d	3.8 d	3.3 d	3.4 e	3.0 e	3.7 e p
Switzerland	..	..	0.5	0.4	..	..	..
Turkey	..	25.6	11.4	10.7	13.1	17.3	..
United Kingdom	23.5	15.3	16.7	16.4	15.8	15.2 p	..
United States	49.1	42.8	41.0	41.6	42.7	43.5	46.3 p
EU28 (OECD estimates)	10.2 e	4.4 e	4.7 e	4.5 e	4.3 e	4.7 e	..
OECD-Total	**26.1 e**	**18.5 e**	**17.7 e**	**18.0 e**	**18.8 e**	**19.2 e**	**..**
Argentina	0.4 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.7	1.4 b	1.8	1.6	1.7	4.5	7.7
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	10.6	2.9	2.6	2.5	5.2	6.4	7.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database

Table 59. Civil Budget R&D

As a percentage of total GBARD (Government budget allocations for R&D)

Percentage

	2005	2013	2014	2015	2016	2017	2018
Australia	93.1 d	93.7 d	93.5 d	92.3 d	93.2 d	93.2 d p	93.6 d p
Austria	100.0 d	100.0 d	100.0 d	100.0 d	99.9 d	99.9 d	99.8 d p
Belgium	99.7	99.8	99.8	99.9	99.9	99.9	..
Canada	95.9 d	97.0 d	97.1 d	97.4 d	97.8 d	..	..
Chile	..	100.0	100.0	100.0	100.0	100.0	..
Czech Republic	97.5	98.5	98.6	98.7	98.8	98.7	98.9 p
Denmark	99.3	99.7	99.7	99.7 e	99.7 e	99.7 e	99.7 e p
Estonia	99.0 e	99.5 e	98.7 e	98.5 e	97.7 b	98.1 p	..
Finland	96.7	98.1	97.9	98.1	98.1	97.8	97.5 p
France	79.2	93.7 d	93.4 d	92.8 d	93.6 d	92.5 d	..
Germany	94.2 s	96.3 s	96.2 s	96.9 s	97.3	96.2	96.7 p
Greece	99.5	99.6	99.9	99.9	99.1	98.2	..
Hungary	99.9	99.8 d	99.9	99.4	99.9	99.6	..
Iceland	100.0	100.0	100.0 b	100.0	100.0	100.0	..
Ireland	100.0	100.0	100.0	100.0	100.0	100.0	..
Israel[1]	..	..	..	..	..	..	..
Italy	96.4	99.2	99.2	99.2	99.4	99.4	..
Japan	96.0 d	95.4 d	95.6 d	95.6 d	96.9 d	96.5 d	97.2 b d p
Korea	87.6 b d	85.2	86.5	86.5	86.0	85.0	..
Latvia	98.9	98.8	98.2	98.1	97.3	.. c	..
Lithuania	99.8	99.9	100.0	99.9	99.7	99.9	..
Luxembourg	100.0	100.0	100.0	100.0	100.0	100.0	100.0 p
Mexico	100.0	99.8	99.8	99.8 e	99.9	99.8 p	..
Netherlands	98.0	98.8	98.8	98.7	98.8	98.9	98.8 p
New Zealand	..	100.0	100.0	100.0	100.0	100.0	..
Norway	93.6	95.8	96.0	96.2	96.3	96.5	96.4 p
Poland	98.7	94.8	95.2	94.9	84.5	90.8	..
Portugal	99.9	99.8	99.7	99.7	99.7	99.7	..
Slovak Republic	91.7 d	98.6	98.6	98.1	98.5	98.3	98.2 p
Slovenia	95.1	99.3	99.8	99.8	99.8	99.7	..
Spain	96.1	98.6	98.7	98.6	99.0	98.9	..
Sweden	82.6	96.0 d	96.2 d	96.7 d	96.6 e	97.0 e	96.3 e p
Switzerland	..	..	99.5	99.6	..	..	..
Turkey	..	74.4	88.6	89.3	86.9	82.7	..
United Kingdom	76.5	84.7	83.3	83.6	84.2	84.8 p	..
United States	50.9	57.2	59.0	58.4	57.3	56.5	53.7 p
EU28 (OECD estimates)	89.8 e	95.6 e	95.3 e	95.5 e	95.7 e	95.3 e	..
OECD-Total	**73.9 e**	**81.5 e**	**82.3 e**	**82.0 e**	**81.2 e**	**80.8 e**	**..**
Argentina	99.6 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	98.3	98.6 b	98.2	98.4	98.3	95.5	92.3
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	89.4	97.1	97.4	97.5	94.8	93.6	93.0

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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

Table 60. R&D expenditure of foreign affiliates at current prices and PPP

Million USD

	2005	2011	2012	2013	2014	2015	2016
Australia	..	3 698.1	..	3 546.7	..	..	..
Austria	..	3 426.9	..	4 307.5	..	4 637.8	..
Belgium	2 406.2	4 453.4 p	..	..	..	..	..
Canada	4 235.2	4 974.6 p	4 820.8 p	4 839.1 p	5 122.9 p	5 073.7 p	5 459.5 p
Chile	..	..	..	..	..	..	..
Czech Republic	961.8	..	..	1 219.8 b	..	1 239.3	..
Denmark	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..
Finland	638.2	626.0	..	750.0	..	1 076.2	..
France	5 767.3 b	9 413.1	9 776.0	7 967.0 b	7 636.4	8 078.2 p	..
Germany	12 159.7	16 784.5	..	15 391.7	..	16 838.4	..
Greece	..	..	..	..	..	..	..
Hungary	299.7	589.7	..	753.9	..	721.0	..
Iceland	..	..	..	..	..	..	..
Ireland	924.2	1 467.6	..	1 625.6	..	1 758.4	1 687.2 e
Israel[1]	3 130.3	5 122.3	5 745.8	6 422.1	6 875.8	7 409.6	8 117.0
Italy	2 315.4	3 456.0	3 498.6	3 620.0	3 991.1	4 379.8	5 032.6 p
Japan	5 038.4	..	6 510.4	7 578.6	8 758.0	8 927.0	6 760.3 p
Korea	..	..	..	..	..	..	..
Latvia	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	..	..	..	..	..	..	..
Netherlands	..	1 602.1	1 733.4	1 701.4	1 806.4	1 807.9	1 836.7 p
New Zealand	..	..	..	..	..	..	..
Norway	394.8	672.0	679.4	..	..	..	..
Poland	288.0	449.2	..	860.0	..	988.0 d	..
Portugal	236.7	..	..	..	..	..	..
Slovak Republic	52.6	..	..	..	..	..	..
Slovenia	..	214.8	..	.. c	..	329.5	..
Spain	1 868.8	1 863.4	..	1 870.3	..	1 974.4	..
Sweden	3 529.5	3 641.4	..	3 899.5	..	4 545.0 p	..
Switzerland	..	..	1 906.7	..	..	1 639.4 p	..
Turkey	..	..	..	..	..	..	..
United Kingdom	7 594.5	12 567.1	12 936.9	14 350.3	14 668.3	15 522.2	16 150.1
United States	31 099.0	45 177.0	50 259.0	54 070.0	56 952.0	56 731.0	60 140.0 p
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Activities of Multinational Enterprises database

Table 61. R&D expenditure of foreign affiliates as a percentage of R&D expenditures of enterprises

Percentage

	2005	2011	2012	2013	2014	2015	2016
Australia	..	30.5	..	27.2	..	..	..
Austria	..	50.0	..	50.7	..	49.4	..
Belgium	56.8	66.0 p	..	..	..	..	..
Canada	32.6	36.5 p	35.9 p	35.7 p	34.6 p	35.3 p	37.6 p
Chile	..	..	..	..	..	..	..
Czech Republic	51.5	..	..	62.8 b	..	61.4 p	..
Denmark	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..
Finland	16.1	14.8	..	20.4	..	35.6	..
France	23.5 b	27.5	27.5	21.1 b	19.8	20.6 p	..
Germany	27.8	26.1	..	22.4	..	21.5	..
Greece	..	..	..	..	..	..	..
Hungary	59.7	62.6	..	60.9	..	66.1	..
Iceland	..	..	..	..	..	..	..
Ireland	70.3	65.6	..	65.2	..	63.7	59.6 e
Israel[1]	55.7	65.6	66.8	69.2	70.6	70.1	68.6
Italy	25.2	24.2	23.6	23.3	23.9	25.1	25.5 p
Japan	5.1	..	5.6	6.0	6.6	6.7	5.2 p
Korea	..	..	..	..	..	..	..
Latvia	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	..	..	..	..	..	..	..
Netherlands	..	32.5	33.5	31.3	33.5	32.4	31.1 p
New Zealand	..	..	..	..	..	..	..
Norway	28.5	33.7	31.6	..	..	..	..
Poland	30.4	44.8	..	47.0	..	44.7 d	..
Portugal	34.0	..	..	..	..	..	..
Slovak Republic	23.9	..	..	..	..	..	..
Slovenia	..	29.1	..	.. c	..	42.1	..
Spain	26.2	35.2	..	37.0	..	38.4	..
Sweden	41.5	38.5	..	39.0	..	42.1 p	..
Switzerland	..	..	20.1	..	..	12.9 p	..
Turkey	..	..	..	..	..	..	..
United Kingdom	39.1	50.8	52.1	53.6	51.3	51.1	50.0
United States	13.8	15.4	16.6	16.8	16.7	15.9	16.1 p
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	..	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Activities of Multinational Enterprises database

Table 62. Triadic patent families

By priority year

Number

	2005	2011	2012	2013	2014	2015	2016
Australia	479	321	337	309	315	320 e	318 e
Austria	410	361	378	379	392	415 e	425 e
Belgium	543	461	429	431	414	418 e	416 e
Canada	720	580	527	620	581	553 e	536 e
Chile	6	16	10	12	8	8 e	8 e
Czech Republic	25	35	36	32	43	44 e	49 e
Denmark	389	260	283	263	296	298 e	298 e
Estonia	3	7	4	9	6	6 e	6 e
Finland	391	228	290	271	308	305 e	309 e
France	3 048	2 596	2 438	2 421	2 417	2 464 e	2 450 e
Germany	7 142	4 824	4 591	4 909	4 620	4 544 e	4 520 e
Greece	24	10	22	21	22	23 e	26 e
Hungary	58	43	31	20	35	38 e	38 e
Iceland	7	2	2	2	1	3 e	2 e
Ireland	98	71	74	94	103	114 e	115 e
Israel[1]	502	366	402	437	439	465 e	478 e
Italy	965	720	725	770	794	822 e	846 e
Japan	18 931	19 001	18 651	17 645	17 363	17 277 e	17 391 e
Korea	2 746	2 366	2 495	2 549	2 428	2 543 e	2 599 e
Latvia	10	3	2	3	1	1 e	1 e
Lithuania	1.0	0.4	6.3	4.3	5.6	2.7 e	2.2 e
Luxembourg	21	24	21	15	20	19 e	21 e
Mexico	19	18	16	19	25	28 e	33 e
Netherlands	1 762	969	1 040	1 137	1 248	1 329 e	1 364 e
New Zealand	73	51	103	70	93	103 e	103 e
Norway	141	94	101	103	109	103 e	104 e
Poland	18	65	69	59	54	62 e	60 e
Portugal	16	26	23	21	32	35 e	39 e
Slovak Republic	2	12	8	9	7	8 e	10 e
Slovenia	22	10	10	14	13	12 e	11 e
Spain	293	222	231	230	248	251 e	253 e
Sweden	969	615	662	587	659	680 e	679 e
Switzerland	1 084	1 059	1 141	1 116	1 145	1 176 e	1 211 e
Turkey	16	37	31	42	32	35 e	38 e
United Kingdom	2 165	1 727	1 702	1 822	1 674	1 686 e	1 694 e
United States	17 370	13 209	13 736	14 788	14 308	14 392 e	14 221 e
EU28 (OECD estimates)	18 406	13 307	13 103	13 545	13 438	13 606 e	13 660 e
OECD-Total	**60 468**	**50 410**	**50 629**	**51 233**	**50 258**	**50 584 e**	**50 673 e**
Argentina	16	10	8	6	9	11 e	11 e
China	523	1 505	1 951	2 189	2 794	3 254 e	3 890 e
Romania	7	9	14	13	9	11 e	10 e
Russian Federation	91	86	94	76	111	109 e	118 e
Singapore	170	121	108	130	144	146 e	147 e
South Africa	49	44	33	29	24	22 e	20 e
Chinese Taipei	145	489	384	335	384	392 e	388 e

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Patent database

Table 63. Share of countries in triadic patent families

By priority year

Percentage

	2005	2011	2012	2013	2014	2015	2016
Australia	0.77	0.60	0.62	0.56	0.58	0.58 e	0.57 e
Austria	0.66	0.68	0.70	0.69	0.72	0.75 e	0.76 e
Belgium	0.88	0.86	0.80	0.79	0.76	0.76 e	0.74 e
Canada	1.16	1.09	0.98	1.13	1.07	1.00 e	0.96 e
Chile	0.01	0.03	0.02	0.02	0.02	0.02 e	0.01 e
Czech Republic	0.04	0.07	0.07	0.06	0.08	0.08 e	0.09 e
Denmark	0.63	0.49	0.52	0.48	0.54	0.54 e	0.53 e
Estonia	0.00	0.01	0.01	0.02	0.01	0.01 e	0.01 e
Finland	0.63	0.43	0.54	0.50	0.57	0.55 e	0.55 e
France	4.92	4.86	4.52	4.43	4.44	4.46 e	4.37 e
Germany	11.52	9.03	8.51	8.97	8.49	8.22 e	8.07 e
Greece	0.04	0.02	0.04	0.04	0.04	0.04 e	0.05 e
Hungary	0.09	0.08	0.06	0.04	0.06	0.07 e	0.07 e
Iceland	0.01	0.00	0.00	0.00	0.00	0.00 e	0.00 e
Ireland	0.16	0.13	0.14	0.17	0.19	0.21 e	0.21 e
Israel[1]	0.81	0.69	0.75	0.80	0.81	0.84 e	0.85 e
Italy	1.56	1.35	1.34	1.41	1.46	1.49 e	1.51 e
Japan	30.54	35.58	34.56	32.25	31.89	31.26 e	31.04 e
Korea	4.43	4.43	4.62	4.66	4.46	4.60 e	4.64 e
Latvia	0.02	0.01	0.00	0.01	0.00	0.00 e	0.00 e
Lithuania	0.0	0.0	0.0	0.0	0.0	0.0 e	0.0 e
Luxembourg	0.03	0.04	0.04	0.03	0.04	0.03 e	0.04 e
Mexico	0.03	0.03	0.03	0.03	0.05	0.05 e	0.06 e
Netherlands	2.84	1.81	1.93	2.08	2.29	2.40 e	2.43 e
New Zealand	0.12	0.10	0.19	0.13	0.17	0.19 e	0.18 e
Norway	0.23	0.18	0.19	0.19	0.20	0.19 e	0.18 e
Poland	0.03	0.12	0.13	0.11	0.10	0.11 e	0.11 e
Portugal	0.03	0.05	0.04	0.04	0.06	0.06 e	0.07 e
Slovak Republic	0.00	0.02	0.02	0.02	0.01	0.02 e	0.02 e
Slovenia	0.04	0.02	0.02	0.03	0.02	0.02 e	0.02 e
Spain	0.47	0.42	0.43	0.42	0.46	0.45 e	0.45 e
Sweden	1.56	1.15	1.23	1.07	1.21	1.23 e	1.21 e
Switzerland	1.75	1.98	2.11	2.04	2.10	2.13 e	2.16 e
Turkey	0.03	0.07	0.06	0.08	0.06	0.06 e	0.07 e
United Kingdom	3.49	3.23	3.15	3.33	3.07	3.05 e	3.02 e
United States	28.02	24.73	25.45	27.03	26.28	26.04 e	25.38 e
EU28 (OECD estimates)	29.70	24.91	24.28	24.76	24.68	24.62 e	24.38 e
OECD-Total	**97.56**	**94.38**	**93.80**	**93.65**	**92.32**	**91.52 e**	**90.43 e**
Argentina	0.03	0.02	0.01	0.01	0.02	0.02 e	0.02 e
China	0.84	2.82	3.61	4.00	5.13	5.89 e	6.94 e
Romania	0.01	0.02	0.03	0.02	0.02	0.02 e	0.02 e
Russian Federation	0.15	0.16	0.17	0.14	0.20	0.20 e	0.21 e
Singapore	0.28	0.23	0.20	0.24	0.26	0.26 e	0.26 e
South Africa	0.08	0.08	0.06	0.05	0.04	0.04 e	0.04 e
Chinese Taipei	0.23	0.92	0.71	0.61	0.70	0.71 e	0.69 e

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Patent database

Table 64. Patents in the ICT sector - applications filed under the PCT

By priority year

Number

	2005	2011	2012	2013	2014	2015	2016
Australia	387	324	381	398	408	404	401
Austria	212	162	156	149	162	153	175
Belgium	145	205	233	239	234	218	196
Canada	820	977	1 033	935	825	924	921
Chile	2	3	5	5	16	19	10
Czech Republic	17	12	27	26	21	23	20
Denmark	161	157	110	146	152	154	137
Estonia	6	11	3	16	10	5	10
Finland	754	729	771	627	554	501	490
France	1 504	1 344	1 381	1 363	1 437	1 351	1 297
Germany	2 293	2 325	2 330	2 312	2 343	2 549	2 655
Greece	14	18	19	20	25	12	21
Hungary	27	66	71	54	67	58	75
Iceland	5	0	3	1	2	2	0
Ireland	82	137	123	109	124	137	172
Israel[1]	673	629	745	760	748	763	742
Italy	349	318	335	328	325	306	320
Japan	7 819	11 533	11 650	10 299	10 191	10 461	10 937
Korea	2 132	4 354	4 423	4 648	5 100	5 401	4 942
Latvia	4	1	6	1	3	7	1
Lithuania	2.1	7.0	7.8	7.0	6.0	4.0	4.3
Luxembourg	5	10	13	9	15	7	25
Mexico	14	22	21	22	33	50	43
Netherlands	1 267	643	577	605	593	597	560
New Zealand	43	36	35	39	33	37	31
Norway	100	75	101	85	71	75	79
Poland	13	46	37	52	71	103	77
Portugal	20	28	18	23	17	36	38
Slovak Republic	3	6	8	10	10	13	9
Slovenia	5	14	8	14	7	7	7
Spain	131	297	285	225	233	187	212
Sweden	689	1 116	1 284	1 151	1 359	1 430	1 449
Switzerland	219	310	334	310	278	260	349
Turkey	11	47	93	102	105	152	136
United Kingdom	1 354	1 210	1 201	1 401	1 443	1 372	1 415
United States	14 943	15 334	16 808	18 487	17 397	17 083	17 160
EU28 (OECD estimates)	9 078	8 884	9 055	8 940	9 268	9 290	9 402
OECD-Total	**36 226**	**42 504**	**44 638**	**44 977**	**44 416**	**44 862**	**45 117**
Argentina	7	16	3	4	5	13	3
China	1 812	9 672	10 716	12 789	14 519	18 977	22 059
Romania	6	14	26	29	32	37	21
Russian Federation	153	212	286	308	283	263	273
Singapore	192	207	191	189	214	244	225
South Africa	54	56	74	71	65	52	45
Chinese Taipei	66	172	205	242	283	224	246

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Patent database

Table 65. Patents in the biotechnology sector - applications filed under the PCT

By priority year

Number

	2005	2011	2012	2013	2014	2015	2016
Australia	219	167	161	148	163	159	154
Austria	61	95	95	67	76	77	62
Belgium	118	150	109	107	112	130	136
Canada	309	297	224	271	239	253	236
Chile	3	20	16	18	29	35	21
Czech Republic	5	8	11	9	14	14	6
Denmark	192	172	185	178	194	164	169
Estonia	2	7	4	3	1	3	5
Finland	50	53	35	61	50	48	54
France	341	562	498	520	534	541	513
Germany	700	693	662	624	641	696	616
Greece	6	6	4	3	5	5	7
Hungary	10	19	14	16	9	16	12
Iceland	5	11	2	1	2	2	0
Ireland	27	39	22	30	35	29	34
Israel[1]	170	168	155	144	173	190	183
Italy	169	136	163	136	151	146	163
Japan	1 526	1 237	1 237	1 282	1 340	1 435	1 612
Korea	218	552	528	540	620	728	856
Latvia	1	0	0	1	1	1	3
Lithuania	1.3	2.0	7.0	6.5	5.1	4.0	2.8
Luxembourg	1	3	4	1	2	7	3
Mexico	11	19	11	21	18	25	22
Netherlands	234	225	226	235	223	255	230
New Zealand	53	28	33	32	26	25	24
Norway	32	33	42	45	62	35	45
Poland	10	25	33	35	36	32	25
Portugal	10	16	13	14	12	16	16
Slovak Republic	0	3	0	3	2	2	5
Slovenia	4	8	7	8	6	6	3
Spain	123	195	196	203	172	170	130
Sweden	135	129	119	108	114	112	137
Switzerland	150	178	179	186	185	214	202
Turkey	2	5	9	14	12	16	23
United Kingdom	518	409	429	453	511	534	491
United States	4 754	4 653	4 590	5 139	4 909	5 375	5 561
EU28 (OECD estimates)	2 724	2 962	2 840	2 827	2 914	3 014	2 831
OECD-Total	**10 169**	**10 323**	**10 021**	**10 660**	**10 685**	**11 499**	**11 762**
Argentina	10	8	14	16	13	6	4
China	123	524	482	577	653	837	1 112
Romania	1	2	1	2	3	2	0
Russian Federation	60	64	73	66	55	48	34
Singapore	64	73	130	115	98	88	104
South Africa	16	11	12	17	22	16	15
Chinese Taipei	11	37	47	42	86	90	83

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Patent database

Table 66. Trade balance and export market share: Pharmaceutical industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2011	2014	2017	2011	2014	2017
Australia	-6 927.5	-6 205.7	-5 902.5	0.78	0.48	0.48
Austria	657.1	1 505.1	942.2	1.83	2.04	1.99
Belgium	12 537.5	10 509.9	9 045.9	9.95	9.59	8.07
Canada	-7 377.4	-6 066.6	-6 414.1	1.15	1.31	1.15
Chile	-864.0	-1 057.5	-1 251.9	0.03	0.04	0.03
Czech Republic	-2 366.0	-1 807.4	-1 995.1	0.37	0.50	0.47
Denmark	6 692.8	8 234.7	9 672.8	2.15	2.39	2.52
Estonia	-318.8	-369.6	-396.1	0.01	0.01	0.02
Finland	-759.6	-1 285.2	-1 263.8	0.33	0.21	0.15
France	4 090.8	3 413.3	4 493.7	6.88	6.59	5.82
Germany	16 418.4	28 684.8	29 002.9	14.09	14.82	15.35
Greece	-3 254.5	-2 174.0	-2 122.2	0.26	0.25	0.24
Hungary	362.0	855.1	831.6	0.96	0.89	0.93
Iceland	-10.2	-55.9	-131.1	0.03	0.02	0.00
Ireland	30 470.0	23 369.6	29 879.7	7.46	5.41	7.22
Israel	5 356.7	4 293.2	4 154.8	1.44	1.15	1.16
Italy	-4 598.6	1 991.2	1 065.7	4.15	4.91	4.90
Japan	-17 192.9	-17 446.4	-18 290.3	0.90	0.60	0.88
Korea	-2 978.3	-3 441.0	-2 888.9	0.26	0.33	0.57
Latvia	-219.1	-235.1	-193.1	0.09	0.08	0.09
Lithuania	-487.0	-370.6	-343.6	0.08	0.12	0.14
Luxembourg	-381.4	-348.2	-365.7	0.02	0.02	0.02
Mexico	-3 128.2	-3 477.2	-3 257.7	0.40	0.37	0.27
Netherlands	2 501.2	6 845.7	9 470.6	3.32	4.88	4.34
New Zealand	-637.5	-642.9	-622.0	0.05	0.06	0.06
Norway	-1 181.7	-1 162.0	-1 544.0	0.14	0.17	0.14
Poland	-3 867.9	-2 552.5	-2 206.3	0.46	0.66	0.78
Portugal	-2 202.1	-1 677.0	-1 522.4	0.17	0.21	0.22
Slovak Republic	-1 591.7	-1 425.7	-1 517.9	0.10	0.11	0.07
Slovenia	1 561.0	1 838.0	1 493.4	0.54	0.58	0.50
Spain	-3 314.2	-2 431.6	-2 577.0	2.49	2.44	2.16
Sweden	4 443.8	4 174.0	4 212.2	1.80	1.58	1.54
Switzerland	34 822.1	41 330.3	44 100.5	11.66	12.27	13.45
Turkey	-4 452.1	-3 860.2	-3 857.1	0.12	0.16	0.16
United Kingdom	9 496.7	-316.3	-677.7	7.31	6.30	5.99
United States	-27 323.7	-28 566.5	-50 986.5	8.58	8.76	8.75
OECD-Total	**34 462.5**	**50 440.3**	**38 382.4**	**90.28**	**90.18**	**90.50**
Argentina	-1 087.2	-1 366.6	-1 649.0	0.18	0.17	0.16
China	703.3	-5 428.8	-11 370.0	2.42	2.47	2.74
Romania	-2 217.5	-2 385.3	-2 517.9	0.21	0.21	0.16
Russian Federation	-13 040.1	-12 481.0	-10 382.9	0.07	0.11	0.13
Singapore	4 251.8	5 619.8	3 937.4	1.43	1.51	1.23
South Africa	-1 771.7	-1 696.6	-1 829.1	0.10	0.08	0.09
Chinese Taipei	-2 105.1	-2 275.1	-2 936.2	0.07	0.09	0.11

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*
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

Table 67. Trade balance and export market share: Computer, electronic and optical industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2011	2014	2017	2011	2014	2017
Australia	-23 883.6	-21 658.1	-22 128.5	0.18	0.17	0.17
Austria	-2 384.1	-640.7	-2 300.7	0.44	0.47	0.38
Belgium	-6 458.2	-4 996.5	-3 612.3	0.63	0.54	0.53
Canada	-29 074.2	-26 639.6	-25 897.1	0.73	0.58	0.55
Chile	-5 696.8	-5 421.2	-6 113.8	0.01	0.02	0.01
Czech Republic	1 095.2	1 530.4	-1 515.4	1.23	1.05	1.05
Denmark	-1 818.9	-1 589.5	-1 735.9	0.34	0.29	0.28
Estonia	-77.1	-110.9	-182.1	0.10	0.10	0.07
Finland	-1 837.4	-2 265.1	-2 668.6	0.24	0.16	0.14
France	-20 367.0	-18 054.0	-18 666.9	1.75	1.48	1.36
Germany	-11 215.6	-4 320.3	-5 638.9	5.32	4.85	5.06
Greece	-2 891.4	-2 091.4	-1 738.4	0.04	0.05	0.05
Hungary	7 737.9	2 040.1	678.6	1.20	0.67	0.62
Iceland	-240.5	-310.1	-403.3	0.00	0.00	0.00
Ireland	4 514.8	3 999.4	8 143.8	0.53	0.49	0.63
Israel	2 876.1	3 164.2	1 212.7	0.48	0.45	0.36
Italy	-25 355.2	-14 921.8	-14 422.0	0.81	0.66	0.66
Japan	15 952.5	-14 218.6	-9 560.2	5.30	3.84	3.78
Korea	63 805.8	70 503.0	76 232.9	5.85	5.82	6.53
Latvia	-268.7	-280.3	-373.6	0.03	0.06	0.05
Lithuania	-485.4	-483.8	-533.5	0.04	0.05	0.06
Luxembourg	-489.0	-651.9	-599.0	0.04	0.02	0.02
Mexico	-4 940.8	-3 148.5	143.0	2.91	2.98	3.02
Netherlands	3 271.4	-1 964.5	-5 132.0	3.40	3.00	2.70
New Zealand	-2 902.9	-3 107.8	-3 142.8	0.03	0.02	0.02
Norway	-4 790.4	-4 799.0	-5 201.8	0.15	0.14	0.09
Poland	-5 668.9	-4 344.9	-4 883.9	0.64	0.73	0.73
Portugal	-2 175.6	-2 291.9	-2 087.1	0.12	0.10	0.13
Slovak Republic	2 179.6	1 081.8	127.1	0.58	0.63	0.58
Slovenia	-598.6	-381.3	-412.0	0.05	0.04	0.04
Spain	-17 066.9	-15 037.5	-15 002.9	0.30	0.25	0.30
Sweden	-1 491.7	-3 935.6	-4 527.7	0.94	0.59	0.49
Switzerland	16 621.6	17 897.4	14 413.0	1.52	1.44	1.23
Turkey	-9 626.0	-12 850.7	-15 664.6	0.11	0.12	0.10
United Kingdom	-27 627.5	-31 955.5	-30 208.7	1.68	1.48	1.30
United States	-146 928.5	-167 521.5	-203 068.7	8.52	7.99	7.81
OECD-Total	**-237 820.5**	**-269 292.3**	**-305 937.7**	**46.23**	**41.29**	**40.88**
Argentina	-7 380.5	-5 888.6	-6 990.3	0.01	0.01	0.01
China	150 852.1	186 830.1	163 911.1	24.87	27.08	26.41
Romania	-1 654.3	-3 276.6	-3 477.2	0.25	0.15	0.17
Russian Federation	-24 572.1	-22 633.2	-21 269.1	0.12	0.21	0.15
Singapore	32 419.0	36 203.7	32 394.4	5.69	5.45	5.28
South Africa	-8 491.7	-7 345.8	-6 742.2	0.07	0.08	0.06
Chinese Taipei	67 319.4	73 294.1	80 256.5	5.67	5.42	6.02

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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

Table 68. Trade balance and export market share: Aerospace industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2011	2014	2017	2011	2014	2017
Australia	-121.9	774.7	-988.7	0.40	0.41	0.38
Austria	120.4	385.5	498.7	0.36	0.38	0.46
Belgium	257.1	553.6	747.0	0.50	0.65	0.66
Canada	3 530.1	4 071.9	2 285.6	4.04	3.92	3.22
Chile	-1 061.3	-1 504.0	-146.8	0.00	0.01	0.00
Czech Republic	110.1	164.5	367.3	0.22	0.21	0.26
Denmark	-397.1	-462.2	-232.3	0.12	0.11	0.12
Estonia	-83.7	-8.0	-11.4	0.00	0.00	0.01
Finland	-167.4	-261.9	-565.2	0.05	0.10	0.10
France	24 342.5	31 018.3	19 700.5	19.13	17.39	14.97
Germany	10 759.0	11 803.6	20 368.8	14.33	12.52	11.21
Greece	22.9	-141.4	-207.7	0.11	0.02	0.02
Hungary	-13.9	-19.7	-810.2	0.03	0.03	0.04
Iceland	-45.8	-74.3	-85.6	0.02	0.00	0.00
Ireland	-2 265.5	-9 980.3	-10 208.1	0.47	0.94	1.74
Israel	1 268.8	651.8	1 679.2	0.67	0.50	0.70
Italy	3 030.4	4 152.8	2 995.1	2.01	1.87	1.45
Japan	-1 459.3	-2 870.8	-2 993.1	1.77	2.01	1.80
Korea	-3 168.9	-1 607.7	-81.4	0.41	0.53	0.73
Latvia	-35.8	-30.9	-76.7	0.01	0.00	0.04
Lithuania	-21.6	-46.8	-15.6	0.01	0.01	0.02
Luxembourg	-1 033.2	-1 546.0	-761.8	0.11	0.03	0.04
Mexico	570.7	1 015.9	1 045.2	0.47	0.57	0.68
Netherlands	422.5	1 103.6	-168.8	1.00	0.93	1.26
New Zealand	-1 090.3	-1 869.5	-1 328.0	0.07	0.02	0.03
Norway	-870.3	-896.9	-1 122.1	0.22	0.19	0.21
Poland	229.0	691.4	820.9	0.49	0.60	0.80
Portugal	-74.1	-433.4	-653.1	0.08	0.07	0.11
Slovak Republic	-17.5	-93.8	-169.8	0.01	0.01	0.00
Slovenia	-37.7	-83.0	-16.8	0.01	0.01	0.02
Spain	2 427.9	2 369.0	401.0	1.73	1.51	1.96
Sweden	-18.1	-45.4	75.8	0.28	0.21	0.19
Switzerland	-26.8	763.9	-1 363.8	0.62	0.67	0.55
Turkey	-3 640.0	-2 504.2	-1 831.9	0.17	0.22	0.45
United Kingdom	10 930.2	4 591.0	11 269.5	10.59	9.13	10.66
United States	53 775.5	74 344.9	81 626.6	29.09	32.10	31.81
OECD-Total	**96 168.8**	**114 022.9**	**120 057.8**	**89.59**	**87.87**	**86.66**
Argentina	-148.7	-587.6	-631.2	0.25	0.07	0.12
China	-13 343.7	-27 444.1	-23 523.3	0.98	1.30	1.73
Romania	-166.1	168.5	-229.6	0.04	0.08	0.09
Russian Federation	566.9	-5 005.4	-2 945.5	0.37	0.74	0.91
Singapore	-3 278.4	-2 741.5	-3 081.1	2.46	2.46	2.88
South Africa	-1 776.1	-372.9	-703.7	0.14	0.17	0.11
Chinese Taipei	-94.8	-1 228.1	-3 861.3	0.17	0.23	0.65

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

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Annex. Background Economic Indicators

Table A. Gross domestic product at current prices and PPP

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	717 705	997 527	1 104 626	1 118 350	1 127 713	1 215 898	1 279 147
Austria	288 087	391 635	406 370	417 060	431 078	451 297	474 006
Belgium	349 277	471 332	486 674	499 975	513 902	535 074	561 911
Canada	1 167 581	1 464 565	1 550 270	1 617 564	1 591 204	1 625 347	1 707 283
Chile	206 274	374 242	394 292	404 733	407 823	416 012	446 806
Czech Republic	224 201	305 309	320 535	339 583	355 312	372 257	402 796
Denmark	185 074	250 525	262 368	270 331	278 823	290 377	313 364
Estonia	22 376	34 420	36 239	38 075	38 427	40 655	44 064
Finland	167 840	219 916	224 594	226 490	231 351	240 309	255 270
France	1 926 880	2 474 005	2 608 524	2 662 033	2 719 225	2 804 274	2 954 841
Germany	2 636 420	3 503 684	3 647 778	3 821 628	3 919 280	4 110 953	4 345 631
Greece	281 028	279 267	286 169	292 336	291 109	293 903	307 366
Hungary	172 305	229 106	242 026	251 775	259 426	263 522	281 880
Iceland	11 048	13 446	14 297	14 966	16 120	17 639	18 998
Ireland	168 218	212 881	221 790	238 441	324 245	337 276	369 244
Israel[1]	171 942	250 963	275 461	281 491	297 615	320 589	338 666
Italy	1 742 086	2 157 547	2 176 320	2 192 714	2 237 096	2 367 104	2 477 387
Japan	4 045 734	4 746 699	4 967 052	4 986 566	5 142 457	5 245 731	5 333 444
Korea	1 165 894	1 611 273	1 644 777	1 704 458	1 824 332	1 903 411	1 998 130
Latvia	31 002	43 235	45 640	47 468	48 891	50 634	55 086
Lithuania	48 263	73 673	78 854	82 617	83 982	86 907	94 052
Luxembourg	31 733	48 646	51 940	56 354	58 544	61 159	64 190
Mexico	1 341 775	2 012 768	2 064 491	2 171 927	2 228 164	2 316 428	2 424 700
Netherlands	614 044	792 042	827 476	830 318	852 113	874 312	932 319
New Zealand	106 147	145 406	160 891	168 136	172 626	185 010	195 340
Norway	220 866	328 453	340 620	339 137	314 014	304 327	328 137
Poland	530 344	907 168	940 325	973 566	1 020 166	1 053 114	1 136 291
Portugal	238 842	278 161	291 753	298 995	307 476	320 523	335 319
Slovak Republic	89 275	144 098	151 021	156 749	161 041	167 790	176 075
Slovenia	47 902	59 454	61 380	63 621	65 257	68 630	75 191
Spain	1 209 299	1 496 188	1 519 995	1 566 855	1 626 884	1 706 685	1 818 879
Sweden	307 061	426 224	438 949	451 572	474 643	487 065	517 014
Switzerland	301 741	462 615	486 239	506 895	529 568	537 701	560 354
Turkey	807 227	1 539 111	1 690 856	1 851 026	2 012 362	2 087 370	2 261 007
United Kingdom	1 962 572	2 414 959	2 533 408	2 640 579	2 738 206	2 819 116	2 965 796
United States	13 036 637	16 197 007	16 784 851	17 521 747	18 219 297	18 707 189	19 485 394
EU28 (OECD estimates)	13 655 038	17 841 846	18 508 574	19 090 373	19 735 233	20 560 702	21 785 965
OECD-Total	**36 368 427**	**47 357 551**	**49 338 849**	**51 106 130**	**52 919 772**	**54 685 587**	**57 335 377**
Argentina	541 392	824 212	857 669	851 124	883 852	878 814	920 248
China	6 639 272	15 331 822	16 788 028	18 336 439	19 814 259	21 411 542	23 300 783
Romania	207 302	379 730	395 622	410 588	428 644	470 258	520 941
Russian Federation	1 827 554	3 692 393	3 765 661	3 768 772	3 528 553	3 531 999	3 776 394 e
Singapore	235 638	413 259	441 954	467 716	483 323	499 929	528 080
South Africa	468 740	659 312	686 610	711 841	728 768	742 238	765 567
Chinese Taipei	658 835	985 170	1 024 466	1 085 852	1 106 318	1 134 173	1 189 191

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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Source: OECD, Main Science and Technology Indicators database (underlying sources described in section 10 of the documentation, *http://www.oecd.org/sti/inno/MSTI_documentation_e.pdf*.)

Table B. Implicit GDP price indices

Year 2010 = 1.000

	2005	2012	2013	2014	2015	2016	2017
Australia	0.807	1.017	1.032	1.025	1.020	1.057	1.077
Austria	0.916	1.039	1.056	1.079	1.103	1.118	1.132
Belgium	0.916	1.040	1.051	1.059	1.069	1.088	1.107
Canada	0.902	1.045	1.062	1.083	1.069	1.075	1.102
Chile	0.743	1.043	1.063	1.126	1.182	1.238	1.296
Czech Republic	0.930	1.015	1.029	1.055	1.067	1.081	1.096
Denmark	0.885	1.030	1.039	1.050	1.055	1.062	1.077
Estonia	1	1	1	1	1	1	1
Finland	0.915	1.056	1.083	1.101	1.120	1.121	1.132
France	0.922	1.021	1.029	1.035	1.047	1.049	1.056
Germany	0.948	1.026	1.046	1.065	1.086	1.101	1.118
Greece	0.867	1.004	0.981	0.963	0.959	0.957	0.963
Hungary	0.819	1.057	1.088	1.125	1.146	1.156	1.201
Iceland	0.669	1.067	1.090	1.130	1.193	1.216	1.222
Ireland	1.039	1.005	1.019	1.016	1.092	1.083	1.087
Israel[1]	0.905	1.057	1.080	1.090	1.119	1.130	1.132
Italy	0.914	1.029	1.041	1.051	1.061	1.073	1.078
Japan	1.053	0.976	0.973	0.989	1.011	1.013	1.011
Korea	0.889	1.026	1.035	1.041	1.066	1.087	1.112
Latvia	0.7	1.1	1.1	1.1	1.1	1.2	1.2
Lithuania	1	1	1	1	1	1	1
Luxembourg	0.843	1.075	1.093	1.123	1.118	1.129	1.153
Mexico	0.770	1.101	1.118	1.168	1.200	1.265	1.350
Netherlands	0.923	1.016	1.029	1.032	1.040	1.045	1.057
New Zealand	0.864	1.016	1.065	1.071	1.078	1.112	1.143
Norway	0.830	1.056	1.084	1.113	1.136	1.162	1.181
Poland	0.865	1.057	1.060	1.065	1.073	1.076	1.097
Portugal	0.909	0.993	1.016	1.023	1.044	1.063	1.079
Slovak Republic	0.941	1.029	1.035	1.033	1.031	1.026	1.039
Slovenia	0.878	1.016	1.032	1.040	1.050	1.060	1.081
Spain	0.908	1.001	1.005	1.003	1.008	1.011	1.023
Sweden	0.894	1.023	1.033	1.052	1.073	1.091	1.116
Switzerland	0.931	1.002	1.002	0.996	0.989	0.983	0.979
Turkey	0.681	1.162	1.235	1.327	1.430	1.546	1.714
United Kingdom	0.893	1.035	1.054	1.072	1.077	1.099	1.124
United States	0.910	1.040	1.059	1.079	1.090	1.102	1.123
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	0.445	1.513	1.875	2.631	3.330	4.665	5.847
China	0.775	1.107	1.132	1.141	1.142	1.155	1.202 e
Romania	0.629	1.079	1.116	1.136	1.165	1.194	1.249
Russian Federation	0.555	1.264	1.333	1.433	1.550	1.606	1.689 e
Singapore	0.911	1.018	1.016	1.013	1.049	1.049	1.058
South Africa	0.695	1.122	1.191	1.257	1.321	1.411	1.489
Chinese Taipei	1.057	0.982	0.996	1.013	1.046	1.055	1.042

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Table C. Purchasing power parities

National currency per USD

	2005	2012	2013	2014	2015	2016	2017
Australia	1.39	1.54	1.45	1.45	1.47	1.45	1.44
Austria	0.88	0.81	0.80	0.80	0.80	0.79	0.78
Belgium	0.89	0.82	0.81	0.80	0.80	0.79	0.78
Canada	1.21	1.24	1.22	1.23	1.25	1.25	1.25
Chile	333.69	347.23	349.68	367.21	391.36	406.87	402.36
Czech Republic	14.56	13.30	12.79	12.70	12.93	12.81	12.53
Denmark	8.57	7.56	7.35	7.33	7.30	7.23	6.95
Estonia	1	1	1	1	1	1	1
Finland	0.98	0.91	0.91	0.91	0.91	0.90	0.88
France	0.92	0.84	0.81	0.81	0.81	0.79	0.78
Germany	0.87	0.79	0.77	0.77	0.78	0.77	0.75
Greece	0.71	0.68	0.63	0.61	0.61	0.60	0.59
Hungary	130.93	125.62	124.98	129.41	132.52	134.62	136.07
Iceland	95.84	136.97	137.02	138.55	141.94	141.89	137.73
Ireland	1.01	0.82	0.81	0.82	0.81	0.81	0.80
Israel[1]	3.72	3.96	3.84	3.94	3.92	3.83	3.75
Italy	0.86	0.75	0.74	0.74	0.74	0.71	0.70
Japan	129.55	104.27	101.30	103.05	103.45	102.64	102.47
Korea	788.92	854.89	869.08	871.88	857.37	862.55	866.01
Latvia	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Lithuania	0	0	0	0	0	0	0
Luxembourg	0.95	0.91	0.90	0.88	0.88	0.87	0.86
Mexico	7.13	7.86	7.88	8.05	8.33	8.68	9.04
Netherlands	0.90	0.82	0.80	0.81	0.81	0.81	0.79
New Zealand	1.54	1.50	1.45	1.44	1.48	1.47	1.47
Norway	9.01	9.04	9.03	9.28	9.93	10.25	10.07
Poland	1.87	1.80	1.76	1.77	1.76	1.77	1.75
Portugal	0.66	0.61	0.58	0.58	0.58	0.58	0.58
Slovak Republic	0.56	0.50	0.49	0.49	0.49	0.48	0.48
Slovenia	0.61	0.61	0.59	0.59	0.60	0.59	0.58
Spain	0.77	0.69	0.67	0.66	0.66	0.66	0.64
Sweden	9.48	8.65	8.60	8.73	8.85	9.00	8.86
Switzerland	1.69	1.35	1.31	1.28	1.24	1.23	1.19
Turkey	0.83	1.02	1.07	1.10	1.16	1.25	1.37
United Kingdom	0.71	0.70	0.70	0.70	0.69	0.70	0.69
United States	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EU28 (OECD estimates)	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..
Argentina	1.08	3.20	3.90	5.38	6.74	9.32	11.47
China	2.82	3.52	3.55	3.51	3.48	3.47	3.55
Romania	1.40	1.56	1.61	1.63	1.66	1.63	1.64
Russian Federation	12.74	18.46	19.42	21.01	23.59	24.36	24.34
Singapore	0.90	0.88	0.86	0.84	0.87	0.86	0.85
South Africa	3.50	4.94	5.16	5.35	5.56	5.86	6.08
Chinese Taipei	18.35	14.91	14.87	14.84	15.16	15.12	14.66

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database (underlying sources described in section 10 of the documentation, *http://www.oecd.org/sti/inno/MSTI_documentation_e.pdf*.)

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

Million USD

	2005	2012	2013	2014	2015	2016	2017
Australia	484 209	668 031	733 784	732 448	726 178	783 247	823 991 e
Austria	189 163	255 176	264 027	271 260	280 105	288 771	303 736 e
Belgium	220 030	290 627	298 685	306 360	316 841	328 411	344 497 e
Canada	772 894	938 173	993 773	1 042 316	1 001 160 e	1 022 643 e	1 074 195 e
Chile	151 417 e	263 582	275 490	281 272	277 537 e	281 858 e	302 722 e
Czech Republic	155 817	208 734	217 781	234 396	245 668	257 352	277 069 e
Denmark	107 005	143 797	151 614	156 949	162 082	166 484	181 156 e
Estonia	15 236	22 790	23 951	24 525	24 091	24 796	26 875 e
Finland	102 863	125 505	127 024	127 894	130 332	135 495	146 707 e
France	1 141 873	1 424 293	1 497 601	1 526 212	1 558 652	1 607 942	1 689 609 e
Germany	1 697 866	2 223 338	2 306 650	2 426 217	2 493 521	2 602 883	2 757 635 e
Greece	172 166	145 801	152 657	156 353	155 762	153 463	163 098 e
Hungary	109 308	142 630	151 586	158 647	162 673	164 409	176 891 e
Iceland	6 436	8 138	8 587	8 806	9 611	10 706 e	11 531 e
Ireland	114 952	145 930	154 546	167 050	246 658	258 807	286 414 e
Israel[1]	103 938 e	148 603	164 061	164 081 e	174 033 e	187 241 e	197 799 e
Italy	1 104 944	1 311 271	1 321 820	1 331 405	1 363 936	1 435 938	1 503 305 e
Japan	3 061 437	3 398 139	3 566 122	3 586 371	3 720 709	3 792 423 e	3 855 836 e
Korea	798 471	1 109 265	1 133 309	1 169 340	1 250 492	1 296 023 e	1 360 517 e
Latvia	20 748	27 826	28 884	29 707	30 725	31 349	34 461 e
Lithuania	34 584	53 102	56 897	59 362	59 606	61 008	66 467 e
Luxembourg	21 125	32 655	34 791	38 218	41 225	42 203	43 899 e
Mexico	995 958	1 516 019	1 531 083	1 591 007	1 621 086	1 690 724	1 804 549 e
Netherlands	396 829	516 385	534 272	532 594	552 032	565 013	601 958 e
New Zealand	71 276	93 046	104 319	108 916	111 557	119 560 e	126 236 e
Norway	146 981	215 324	221 757	217 684	194 726	183 930 e	198 390 e
Poland	365 586	642 529	664 790	687 412	725 235	745 766	805 691
Portugal	141 458	163 956	169 903	174 386	180 593	186 763	194 019 e
Slovak Republic	63 032	104 508	105 788	114 061	116 449	119 439	125 141 e
Slovenia	31 859	38 353	39 422	41 599	42 725	44 813	49 097 e
Spain	812 033	945 577	942 236	974 561	1 016 760	1 072 853	1 151 115 e
Sweden	189 919	263 803	269 898	277 921	295 574	302 092	320 754 e
Switzerland	216 809	330 774	346 846	360 651	374 592	378 573 e	394 522 e
Turkey	552 853	1 050 945	1 154 990	1 280 546	1 397 562	1 435 952	1 593 952 e
United Kingdom	1 198 108	1 434 659	1 524 350	1 590 867	1 642 418	1 698 826	1 787 217 e
United States	8 485 524	10 190 334	10 567 747	11 101 619	11 550 115	11 807 310	12 298 485 e
EU28 (OECD estimates)	8 661 566	11 082 729	11 474 271	11 855 772	12 314 472	12 810 405	13 600 361
OECD-Total	**24 103 288**	**30 593 614**	**31 841 043**	**33 053 010**	**34 253 021**	**35 285 068**	**37 079 537**
Argentina	368 281	518 745	539 339 e	536 804 e	547 633 e	545 708 e	567 052 e
China	5 308 893 e	12 020 105 e	13 028 579 e	14 145 601 e	15 039 716 e	15 954 120 e	17 361 827 e
Romania	144 834	261 859	275 626	282 839	298 435 e	330 220 e	366 037 e
Russian Federation	1 302 121 e	2 505 698 e	2 517 073 e	2 576 961 e	2 511 867 e	2 512 687 e	2 686 551 e
Singapore	197 861 e	334 915 e	356 641 e	378 096 e	390 090 e	400 707 e	423 625 e
South Africa	330 950 e	458 602 e	475 668 e	491 308 e	500 230 e	506 167 e	523 780 e
Chinese Taipei	489 962 e	715 925	755 594	813 566	831 431	854 686	897 619

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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Table E. Total population

Thousands

	2005	2012	2013	2014	2015	2016	2017
Australia	20 177	22 734	23 128	23 476	23 816	24 191	24 598
Austria	8 225	8 426	8 477	8 544	8 630	8 740	8 795
Belgium	10 479	11 068	11 125	11 180	11 238	11 295	11 349
Canada	32 242	34 751	35 152	35 535	35 833	36 265	36 708
Chile	16 283	17 450	17 640	17 836	18 045	18 278	18 522
Czech Republic	10 234	10 509	10 511	10 525	10 543	10 565	10 590
Denmark	5 419	5 591	5 613	5 643	5 682	5 729	5 767
Estonia	1 359	1 325	1 320	1 316	1 313	1 316	1 316
Finland	5 246	5 414	5 439	5 463	5 481	5 495	5 508
France	63 168	65 651	65 991	66 312	66 548	66 721	66 865
Germany	81 337	80 426	80 646	80 983	81 687	82 349	82 657
Greece	10 987	11 045	10 965	10 892	10 821	10 776	10 755
Hungary	10 087	9 920	9 893	9 866	9 843	9 814	9 788
Iceland	296	321	324	327	331	335	343
Ireland	4 160	4 597	4 620	4 652	4 696	4 749	4 802
Israel[1]	6 961	7 907	8 056	8 212	8 377	8 543	8 709
Italy	58 191	60 339	60 646	60 789	60 731	60 628	60 537
Japan	127 755	127 552	127 333	127 262	127 110	126 960	126 728
Korea	48 185	50 200	50 429	50 747	51 015	51 246	51 446
Latvia	2 239	2 034	2 013	1 994	1 977	1 959	1 941
Lithuania	3 323	2 988	2 958	2 932	2 905	2 868	2 828
Luxembourg	466	532	545	558	569	584	597
Mexico	107 151	117 054	118 395	119 713	121 005	122 273	123 518
Netherlands	16 317	16 752	16 800	16 863	16 931	17 026	17 127
New Zealand	4 148	4 418	4 460	4 534	4 623	4 720	4 820
Norway	4 623	5 019	5 080	5 137	5 191	5 236	5 277
Poland	38 161	38 534	38 502	38 484	38 455	38 427	38 422
Portugal	10 503	10 515	10 457	10 401	10 358	10 326	10 300
Slovak Republic	5 387	5 406	5 413	5 419	5 422	5 431	5 438
Slovenia	2 001	2 057	2 060	2 062	2 063	2 065	2 066
Spain	43 663	46 766	46 593	46 455	46 410	46 450	46 534
Sweden	9 030	9 519	9 600	9 696	9 799	9 923	10 058
Switzerland	7 482	7 997	8 089	8 189	8 282	8 373	8 452
Turkey	68 566	74 899	75 774	76 619	77 440	78 247	79 037
United Kingdom	60 413	63 705	64 106	64 597	65 110	65 648	66 040
United States	295 993	314 374	316 598	318 953	321 323	323 668	325 983
EU28 (OECD estimates)	494 908	506 038	507 093	508 294	509 704	511 196	512 254
OECD-Total	**1 183 974**	**1 257 794**	**1 264 753**	**1 272 167**	**1 279 602**	**1 287 219**	**1 294 221**
Argentina	38 592	41 733	42 203	42 670	43 132	43 590	44 045
China	1 307 560	1 354 040	1 360 720	1 367 820	1 374 620	1 382 710	1 390 080
Romania	21 320	20 060	19 989	19 916	19 820	19 707	19 644
Russian Federation	143 519	143 202	143 507	146 091	146 406	146 675	146 842
Singapore	4 266	5 312	5 399	5 470	5 535	5 607	5 612
South Africa	47 602	52 325	53 104	53 912	54 750	55 620	56 522
Chinese Taipei	22 770	23 316	23 374	23 434	23 492	23 540	23 571

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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

Source: OECD, Main Science and Technology Indicators database (underlying sources described in section 10 of the documentation, *http://www.oecd.org/sti/inno/MSTI_documentation_e.pdf*.)

Table F. Total employment

Thousands

	2005	2012	2013	2014	2015	2016	2017
Australia	9 965	11 385	11 450	11 654	11 883	12 041	12 341 e
Austria	3 873	4 205	4 220	4 260	4 285	4 337	4 411 e
Belgium	4 255	4 555	4 540	4 560	4 601	4 658	4 723 e
Canada	16 407	17 749	17 988	18 091	18 262	18 454	18 798 e
Chile	6 176	7 614	7 771	7 897	8 009	8 117	8 278 e
Czech Republic	4 923	5 065	5 081	5 109	5 182	5 249	5 330 e
Denmark	2 783	2 767	2 766	2 794	2 829	2 877	2 925 e
Estonia	612	594	601	606	623	625	632 e
Finland	2 411	2 538	2 520	2 508	2 504	2 517	2 546 e
France	26 374	27 185	27 252	27 373	27 434	27 612	27 906 e
Germany	39 326	42 061	42 319	42 672	43 069	43 638	44 265 e
Greece	4 647	4 105	3 998	4 035	4 064	4 083	4 170
Hungary	4 174	3 979	4 022	4 216	4 308	4 422	4 511 e
Iceland	162	169	175	178	184	191	198 e
Ireland	1 962	1 862	1 908	1 940	1 989	2 045	2 107 e
Israel[1]	2 924	3 645	3 742	3 847	3 934	4 026	4 126 e
Italy	24 501	24 765	24 323	24 339	24 498	24 809	25 096 e
Japan	65 531	65 177	65 549	65 934	66 220	66 852	67 531 e
Korea	22 856	24 681	25 066	25 599	25 936	26 235	26 549 e
Latvia	969	869	889	877	889	886	886 e
Lithuania	1 421	1 275	1 292	1 318	1 335	1 361	1 354 e
Luxembourg	308	379	386	396	406	418	433 e
Mexico	32 801	36 396	36 615	36 976	37 554	38 181	38 594 e
Netherlands	8 339	8 836	8 732	8 724	8 806	8 901	9 094 e
New Zealand	2 059	2 177	2 238	2 312	2 355	2 485	2 588 e
Norway	2 354	2 685	2 713	2 746	2 757	2 764	2 793
Poland	14 057	15 475	15 464	15 731	15 970	16 061	16 281
Portugal	5 041	4 581	4 450	4 513	4 576	4 651	4 802
Slovak Republic	2 089	2 209	2 192	2 223	2 267	2 321	2 372 e
Slovenia	930	937	927	930	942	960	1 006 e
Spain	19 784	18 343	17 862	18 039	18 521	18 987	19 479
Sweden	4 349	4 627	4 672	4 737	4 807	4 889	5 002 e
Switzerland	4 145	4 674	4 733	4 822	4 895	4 965	5 007
Turkey	19 489	24 108	24 778	25 633	26 330	26 907	27 871 e
United Kingdom	28 853	29 695	30 042	30 752	31 281	31 725	32 058
United States	143 980	144 754	146 185	148 513	151 000	153 586	155 510 e
EU28 (OECD estimates)	220 916	225 127	224 531	226 847	229 316	232 114	235 832
OECD-Total	**528 653**	**556 118**	**559 461**	**566 854**	**574 504**	**582 835**	**591 573**
Argentina	15 708	17 643	17 792	17 811	18 093	17 991	18 207
China	746 470	767 040	769 770	772 530	774 510	776 030	776 400
Romania	9 267	8 645	8 569	8 635	8 526	8 430	8 668
Russian Federation	68 339	71 545	71 391	71 539	72 324	72 393	72 142 e
Singapore	2 320	3 358	3 494	3 624	3 656	3 673	3 669
South Africa	12 769	14 425	14 866	15 146	15 741	15 780	16 169
Chinese Taipei	9 942	10 860	10 967	11 079	11 198	11 267	11 352

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20190326/b818*

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Table G. Industrial employment

Thousands

	2005	2012	2013	2014	2015	2016	2017
Australia	7 453	8 267	8 255	8 399	8 493	8 566	8 800 e
Austria	2 951	3 169	3 176	3 206	3 211	3 247	3 305 e
Belgium	2 948	3 124	3 103	3 105	3 131	3 170	3 218 e
Canada	12 392	13 137	13 327	13 424	13 510	13 621	13 875 e
Chile	4 774 e	5 810 e	5 967	6 003	6 053	6 175	6 245 e
Czech Republic	3 960	4 083	4 087	4 100	4 164	4 220	4 266 e
Denmark	1 858	1 816	1 814	1 839	1 872	1 919	1 965 e
Estonia	471	444	452	453	469	470 e	480 e
Finland	1 707	1 787	1 766	1 757	1 749	1 762	1 786 e
France	18 048	18 556	18 550	18 604	18 628	18 788 e	18 988 e
Germany	28 729	30 803	30 940	31 123	31 279	31 594	32 006 e
Greece	3 648	3 151	3 068	3 111	3 132	3 144	3 213 e
Hungary	3 242	3 062	3 057	3 207	3 250	3 344 e	3 440 e
Iceland	116	121	124	127	131	137	143 e
Ireland	1 538	1 357	1 404	1 431	1 468	1 520	1 562 e
Israel[1]	1 882	2 330	2 403	2 447	2 494	2 569	2 634 e
Italy	18 355	18 417	17 999	17 929	18 058	18 320	18 533 e
Japan	53 833 e	51 774 e	51 950 e	52 016 e	51 957 e	52 280 e	52 811 e
Korea	19 172	19 925	20 135	20 505	20 778	20 890	21 010 e
Latvia	747	663	683	673	685	679	678 e
Lithuania	1 084	966	983	1 008	1 015	1 033	1 028 e
Luxembourg	245	295	299	306	313	323	334 e
Mexico	25 303	27 674	27 817	28 077	28 449	29 070	29 449 e
Netherlands	6 066	6 273	6 188	6 220	6 323	6 421	6 577 e
New Zealand	1 557 e	1 601 e	1 647 e	1 698 e	1 730 e	1 826 e	1 902 e
Norway	1 527	1 721	1 738	1 758	1 756	1 749 e	1 768 e
Poland	11 097	12 181	12 091	12 302	12 516	12 634	12 819 e
Portugal	3 922	3 460	3 346	3 410	3 469	3 533	3 648 e
Slovak Republic	1 629	1 736	1 721	1 743	1 781	1 827	1 870 e
Slovenia	765	753	744	747	757	771	808 e
Spain	15 365	13 548	13 090	13 212	13 669	14 064	14 475 e
Sweden	2 842	3 082	3 108	3 141	3 169	3 199	3 274 e
Switzerland	3 202	3 514	3 537	3 595	3 629	3 658	3 680
Turkey	16 854	20 406	20 992	21 577	22 040	22 299	23 098 e
United Kingdom	21 261	21 481	21 680	22 331	22 822	23 247	23 599
United States	102 536	100 257	101 477	103 356	104 808	106 826	108 164 e
EU28 (OECD estimates)	165 443	166 280	165 289	167 010	168 806	171 074	174 043
OECD-Total	**398 302**	**410 744**	**412 718**	**417 940**	**422 757**	**428 895**	**435 450**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	8 321	7 508	7 466	7 556	7 334	7 257	7 475
Russian Federation	52 372	53 781	53 947	54 110	54 582	54 407	54 219 e
Singapore	2 040	2 938	3 059	3 165	3 190	3 194	3 183
South Africa	9 714 e	10 705 e	11 026 e	11 202 e	11 694	11 749	12 091
Chinese Taipei	8 727	9 426	9 523	9 624	9 735	9 797	9 876

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