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BETTER POLICIES FOR BETTER LIVES

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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 OECD zone includes all Member countries of the OECD except Costa Rica, i.e. Australia, Austria, Belgium, Canada, Chile, Colombia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

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	2014	2015	2016	2017	2018	2019
Australia	..	..	21 157.1 e	..	22 376.2 e	..	..
Austria	6 837.0 e	12 863.3 e	13 143.4	14 344.9 e	14 567.3	15 590.0	16 297.4
Belgium	6 225.2	11 935.9	12 647.8	13 895.7	15 301.0	17 200.0	19 938.2
Canada	23 090.0	27 793.5 b	27 004.7	29 009.7	29 767.3	31 268.6	30 312.7 p
Chile	..	1 517.6 b	1 552.9	1 576.3 b	1 608.7	1 623.4 p	..
Colombia	582.0	1 876.0	2 280.7	1 800.0	1 787.2	2 299.8	2 514.2 e
Czech Republic	2 619.5	6 699.4	6 853.0	6 369.8	7 274.5	8 305.4	8 911.2
Denmark	4 429.5	7 877.7	8 515.7	9 208.0	9 354.5	9 873.4	10 216.2 p
Estonia	206.7	544.2	563.3	512.2	568.9	677.0	830.0
Finland	5 588.7	7 178.2	6 687.9	6 727.4	7 147.7	7 559.7	7 956.4
France	39 530.1	60 585.6 b	61 629.1	63 651.4	65 730.1 p	68 617.9 p	73 286.5 p
Germany	64 028.3	109 562.7	114 097.6	122 472.2	133 668.0	142 080.3	148 149.8
Greece	1 627.0	2 436.0	2 797.4	2 980.4	3 544.8	3 862.8	4 218.3
Hungary	1 586.8	3 408.4	3 533.6	3 235.5	3 802.3	4 695.7 b	4 902.5
Iceland	296.8	291.6 e	355.1	378.5 e	398.2	411.4 e	503.7
Ireland	2 006.5	3 622.8 e	3 839.4 e	3 997.4 e	4 626.5 e	4 818.6 e	5 420.0 e
Israel[1]	6 966.3 d	11 732.3 d	12 666.9 d	14 588.5 d	15 873.8 d e	17 366.9 d e	18 740.6 d e
Italy	18 241.2	29 448.3 e	29 994.8	33 076.6 b	34 488.8	37 044.5	39 279.4
Japan	128 694.6	169 554.1	168 514.0	160 269.3	166 621.7	172 785.9 b	173 267.1
Korea	30 618.3 d	73 099.8	76 922.0	80 816.0	90 289.9	99 025.7	102 521.4
Latvia	164.2	327.2	305.9	227.8	284.6	379.2	393.0
Lithuania	361	851	874	747	856	954	1 079
Luxembourg	498.8	712.3	769.4	835.9	849.6	831.9 e	849.5 e p
Mexico	5 346.2	9 460.1	9 577.0	9 241.7	8 079.1 e	7 851.2 e	7 407.7 e
Netherlands	10 892.4	18 045.3	18 282.0	19 152.7	20 560.0	21 339.4	22 609.4
New Zealand	1 189.3	..	2 121.8	..	2 740.8	..	3 159.4 p
Norway	3 275.8	5 805.6	6 061.8	6 308.0	7 095.1	7 583.0	7 869.4
Poland	2 984.9	9 149.3	10 232.0	10 354.7	11 807.2	14 680.8	17 164.1
Portugal	1 808.2	3 856.2	3 819.8	4 179.9	4 490.5	4 848.0	5 303.8
Slovak Republic	441.0	1 379.5	1 886.4	1 273.5	1 450.2	1 442.1	1 468.6
Slovenia	676.5	1 505.7	1 433.0	1 406.9	1 407.2	1 571.0	1 761.2
Spain	13 251.1	19 356.2	19 815.3	20 633.5	22 293.2	23 650.8	24 874.2
Sweden	10 388.2 b	14 191.1 e	15 489.1 v	16 250.6 e	17 569.8 v	18 097.0 e	19 269.0 e
Switzerland	..	..	17 850.1	..	18 565.6	..	..
Turkey	4 595.6	15 933.0	17 734.3	19 855.1	21 572.2	23 590.2	24 243.4
United Kingdom	30 639.7	43 811.1 e	45 665.9	48 111.3 e	50 845.1	54 234.3	56 935.7 p s
United States	328 128.0 d	477 003.0 d	495 893.0 d	522 652.0 d	556 343.0 d	607 474.0 d	657 459.0 d e
EU27 (from 01/02/2020)	196 273.8 e	329 078.9 e	341 613.9 e	360 092.7 e	386 684.6 e	413 663.6 e	440 336.6 e
OECD-Total	**780 062.4 e**	**1 204 305.3 e**	**1 242 567.0 e**	**1 293 417.5 e**	**1 375 606.6 e**	**1 479 380.3 e**	**1 564 092.2 e**
Argentina	2 220.4	4 976.3 p	5 363.8	4 693.4	5 782.0	5 199.3	4 811.5
China	86 177.6	346 266.3	366 080.9	393 015.5	420 815.6	465 501.0	525 693.4
Romania	844.7	1 569.5	2 090.9	2 301.4	2 675.5	2 854.3	2 995.1
Russian Federation	18 120.5	40 360.6	38 818.6	39 013.0	42 246.1	41 693.2	44 500.5
Singapore	5 384.3	9 625.0	10 503.9	10 407.4	10 227.7	10 530.5	..
South Africa	4 046.3	5 266.6	5 551.1	5 795.2	6 025.6	..	..
Chinese Taipei	15 284.0	31 773.2	33 058.8	34 340.6	36 522.7	40 337.0	44 014.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	1.88 e	..	1.79 e	..	..
Austria	2.37 e	3.08 e	3.05	3.12 e	3.06	3.09	3.13
Belgium	1.79	2.37	2.43	2.52	2.67	2.86	3.17
Canada	1.97	1.71 b	1.69	1.73	1.69	1.68	1.59 p
Chile	..	0.38 b	0.38	0.37 b	0.36	0.35 p	..
Colombia	0.17	0.30	0.37	0.27	0.26	0.31	0.32 e
Czech Republic	1.16	1.96	1.92	1.67	1.77	1.90	1.94
Denmark	2.39	2.91	3.05	3.09	2.93	2.97	2.91 p
Estonia	0.92	1.42	1.46	1.23	1.28	1.41	1.61
Finland	3.32	3.15	2.87	2.72	2.73	2.75	2.79
France	2.05	2.28 b	2.27	2.22	2.20 p	2.19 p	2.20 p
Germany	2.44	2.88	2.93	2.94	3.05	3.12	3.19
Greece	0.58	0.84	0.97	1.01	1.15	1.21	1.27
Hungary	0.92	1.35	1.34	1.18	1.32	1.51 b	1.48
Iceland	2.68	1.94 e	2.18	2.11 e	2.08	2.00 e	2.33
Ireland	1.19	1.52 e	1.18 e	1.17 e	1.22 e	1.17 e	1.23 e
Israel[1]	4.04 d	4.17 d	4.26 d	4.52 d	4.69 d e	4.85 d e	4.93 d e
Italy	1.04	1.34 e	1.34	1.37 b	1.37	1.42	1.47
Japan	3.13	3.37	3.24	3.11	3.17	3.22 b	3.20
Korea	2.52 d	4.08	3.98	3.99	4.29	4.52	4.64
Latvia	0.53	0.69	0.62	0.44	0.51	0.64	0.64
Lithuania	1	1	1	1	1	1	1
Luxembourg	1.57	1.26	1.30	1.30	1.27	1.17 e	1.13 e p
Mexico	0.40	0.44	0.43	0.39	0.33 e	0.31 e	0.28 e
Netherlands	1.77	2.17	2.15	2.15	2.18	2.14	2.18
New Zealand	1.12	..	1.23	..	1.35	..	1.41 p
Norway	1.48	1.72	1.94	2.04	2.10	2.05	2.15
Poland	0.56	0.94	1.00	0.96	1.03	1.21	1.32
Portugal	0.76	1.29	1.24	1.28	1.32	1.35	1.40
Slovak Republic	0.49	0.88	1.16	0.79	0.89	0.84	0.83
Slovenia	1.42	2.37	2.20	2.01	1.87	1.95	2.05
Spain	1.10	1.24	1.22	1.19	1.21	1.24	1.25
Sweden	3.36 b	3.10 e	3.22 v	3.25 e	3.36 v	3.32 e	3.39 e
Switzerland	..	..	3.26	..	3.18	..	..
Turkey	0.56	0.86	0.88	0.94	0.95	1.03	1.06
United Kingdom	1.56	1.64 e	1.65	1.66 e	1.68	1.73	1.76 p s
United States	2.52 d	2.72 d	2.72 d	2.79 d	2.85 d	2.95 d	3.07 d e
EU27 (from 01/02/2020)	1.68 e	2.00 e	2.01 e	1.99 e	2.03 e	2.07 e	2.12 e
OECD-Total	**2.11 e**	**2.32 e**	**2.31 e**	**2.31 e**	**2.35 e**	**2.42 e**	**2.48 e**
Argentina	0.42	0.59 p	0.62	0.53	0.56	0.50	0.46
China	1.31	2.02	2.06	2.10	2.12	2.14	2.23
Romania	0.41	0.38	0.49	0.48	0.50	0.50	0.48
Russian Federation	0.99	1.07	1.10	1.10	1.11	0.99	1.04
Singapore	2.15	2.08	2.18	2.08	1.92	1.84	..
South Africa	0.86	0.77	0.80	0.82	0.83	..	..
Chinese Taipei	2.33	2.98	3.00	3.09	3.19	3.35	3.49

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 2015 prices and PPP

Million 2010 USD

	2005	2014	2015	2016	2017	2018	2019
Australia	..	..	21 157.1 e	..	21 226.8 e	..	..
Austria	9 095.0 e	13 159.0 e	13 143.4	13 698.8 e	13 758.3	14 271.8	14 653.2
Belgium	8 122.8	12 097.9	12 647.8	13 310.2	14 294.1	15 594.7	17 616.0
Canada	26 694.8	27 159.5 b	27 004.7	27 846.7	27 980.8	28 547.7	27 563.2 p
Chile	..	1 495.2 b	1 552.9	1 532.2 b	1 494.1	1 525.3 p	..
Colombia	661.1	1 837.8	2 280.7	1 723.6	1 665.2	2 063.4	2 187.3 e
Czech Republic	3 376.1	6 643.1	6 853.0	6 121.9	6 818.1	7 557.0	7 903.7
Denmark	6 192.0	7 937.1	8 515.7	8 901.1	8 674.1	8 967.0	9 056.0 p
Estonia	306.1	539.4	563.3	491.7	536.8	619.1	743.0
Finland	7 363.1	7 289.9	6 687.9	6 522.7	6 739.4	6 895.1	7 084.7
France	50 868.1	61 189.7 b	61 629.1	61 077.2	61 945.4 p	62 812.8 p	64 052.8 p
Germany	82 366.3	110 276.3	114 097.6	116 904.2	124 577.4	128 824.0	132 511.2
Greece	2 090.0	2 437.2	2 797.4	2 896.8	3 353.2	3 588.7	3 842.1
Hungary	2 204.2	3 420.1	3 533.6	3 179.8	3 702.5	4 466.6 b	4 576.6
Iceland	360.9	301.8 e	355.1	365.0 e	375.7	378.2 e	450.2
Ireland	2 734.8	3 943.3 e	3 839.4 e	3 882.1 e	4 421.0 e	4 571.7 e	5 084.1 e
Israel[1]	8 191.8 d	12 116.5 d	12 666.9 d	13 941.1 d	14 998.6 d e	16 033.8 d e	16 888.2 d e
Italy	24 566.5	29 761.0 e	29 994.8	31 016.5 b	31 619.5	33 119.1	34 254.5
Japan	154 204.7	173 010.9	168 514.0	162 386.7	169 095.9	172 610.0 b	171 854.3
Korea	33 986.3 d	76 694.7	76 922.0	79 364.7	88 135.8	95 437.7	100 054.6
Latvia	223.8	327.2	305.9	220.0	266.9	346.8	355.3
Lithuania	491	846	874	723	803	872	967
Luxembourg	714.2	716.0	769.4	801.9	797.9	760.8 e	751.5 e p
Mexico	7 136.1	9 398.5	9 577.0	8 875.6	7 673.5 e	7 335.7 e	6 778.9 e
Netherlands	13 594.6	18 158.2	18 282.0	18 724.0	19 517.7	19 613.8	20 423.3
New Zealand	1 543.0	..	2 121.8	..	2 520.9	..	2 810.5 p
Norway	4 057.3	5 532.8	6 061.8	6 258.0	6 682.9	6 813.5	7 020.9
Poland	3 930.7	9 249.1	10 232.0	10 133.8	11 410.0	14 051.9	16 078.9
Portugal	2 356.9	3 893.2	3 819.8	4 014.3	4 280.1	4 503.0	4 782.2
Slovak Republic	555.1	1 359.3	1 886.4	1 310.4	1 513.1	1 486.9	1 500.0
Slovenia	826.2	1 510.5	1 433.0	1 352.1	1 316.6	1 434.0	1 556.2
Spain	17 016.1	19 392.1	19 815.3	19 883.4	20 817.7	21 864.3	22 468.1
Sweden	13 290.4 b	14 283.9 e	15 489.1 v	15 948.9 e	16 939.9 v	17 055.9 e	17 743.1 e
Switzerland	..	..	17 850.1	..	18 018.2	..	..
Turkey	6 932.3	16 326.4	17 734.3	19 603.8	21 401.6	23 713.3	24 827.0
United Kingdom	38 044.0	44 476.0 e	45 665.9	46 829.6 e	48 267.5	50 274.9	51 701.9 p s
United States	392 700.4 d	481 544.0 d	495 893.0 d	517 225.1 d	540 406.2 d	576 237.2 d	612 714.0 d e
EU27 (from 01/02/2020)	255 040.1 e	331 998.4 e	341 613.9 e	345 437.4 e	362 735.7 e	378 240.0 e	393 314.3 e
OECD-Total	**955 381.5 e**	**1 219 154.0 e**	**1 242 567.0 e**	**1 268 682.6 e**	**1 328 046.0 e**	**1 396 865.0 e**	**1 454 106.1 e**
Argentina	2 670.4	5 001.4 p	5 363.8	4 502.1	4 857.0	4 263.7	3 870.5
China	93 020.7	336 250.7	366 080.9	399 390.2	430 329.7	464 705.2	514 797.7
Romania	1 334.9	1 586.9	2 090.9	2 157.3	2 420.9	2 518.6	2 505.2
Russian Federation	27 032.1	38 576.7	38 818.6	38 947.8	39 921.0	36 616.4	39 201.3
Singapore	5 975.9	9 744.1	10 503.9	10 319.3	9 953.8	9 890.1	..
South Africa	4 620.0	5 298.0	5 551.1	5 715.4	5 890.6	..	..
Chinese Taipei	18 040.6	32 369.4	33 058.8	34 745.1	37 159.2	40 079.7	42 965.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	888.4 e	..	909.5 e	..	..
Austria	831.2 e	1 505.5 e	1 523.1	1 641.3 e	1 656.3	1 764.0	1 835.8
Belgium	594.1	1 064.8	1 121.9	1 226.3	1 345.1	1 505.2	1 735.4
Canada	716.1	784.3 b	756.4	803.4	814.5	843.6	806.3 p
Chile	..	85.1 b	86.1	86.2 b	86.9	86.5 p	..
Colombia	14.0	40.5	48.7	38.0	37.3	47.5	51.4 e
Czech Republic	256.0	636.5	650.0	602.9	687.0	781.6	835.2
Denmark	817.4	1 396.0	1 498.7	1 607.3	1 622.6	1 704.1	1 756.3 p
Estonia	152.1	413.6	428.9	389.2	432.4	513.2	626.5
Finland	1 065.3	1 314.1	1 220.3	1 224.2	1 297.7	1 370.5	1 441.0
France	625.8	913.6 b	925.6	952.4	980.1 p	1 020.1 p	1 086.4 p
Germany	787.2	1 352.9	1 396.8	1 487.2	1 617.1	1 713.8	1 782.9
Greece	148.1	223.6	258.5	276.6	329.6	359.9	393.4
Hungary	157.3	345.4	359.0	329.7	388.5	480.3 b	501.7
Iceland	1 003.0	890.5 e	1 073.3	1 128.5 e	1 159.6	1 166.5 e	1 396.9
Ireland	482.3	778.7 e	817.6 e	841.7 e	963.4 e	991.4 e	1 100.0 e
Israel[1]	1 000.7 d	1 428.7 d	1 512.1 d	1 707.6 d	1 822.5 d e	1 955.5 d e	2 070.7 d e
Italy	313.5	484.4 e	493.9	545.6 b	569.7	612.7	651.0
Japan	1 007.4	1 332.3	1 325.7	1 262.6	1 315.0	1 366.5 b	1 373.6
Korea	635.4 d	1 440.5	1 507.8	1 577.9	1 757.9	1 918.8	1 982.7
Latvia	73.3	164.1	154.7	116.3	146.6	196.9	205.4
Lithuania	109	290	301	261	303	341	386
Luxembourg	1 071.0	1 275.8	1 351.2	1 431.0	1 423.1	1 366.5 e	1 366.9 e p
Mexico	50.0	79.1	79.2	75.7	65.5 e	63.0 e	58.9 e
Netherlands	667.4	1 070.0	1 079.2	1 124.6	1 200.2	1 238.4	1 303.5
New Zealand	286.7	..	457.5	..	566.6	..	630.2 p
Norway	708.6	1 130.2	1 168.0	1 204.7	1 344.5	1 427.5	1 471.5
Poland	78.2	237.7	266.1	269.5	307.3	382.2	447.1
Portugal	172.2	370.8	368.8	404.8	436.0	471.4	515.6
Slovak Republic	81.9	254.6	347.9	234.5	266.7	264.8	269.3
Slovenia	338.1	730.3	694.5	681.4	681.2	758.2	843.1
Spain	303.5	416.7	427.0	444.2	479.1	506.1	528.1
Sweden	1 150.5 b	1 463.6 e	1 580.6 v	1 637.6 e	1 746.9 v	1 778.5 e	1 874.6 e
Switzerland	..	..	2 155.2	..	2 196.6	..	..
Turkey	67.2	206.4	226.7	250.4	268.6	289.8	293.6
United Kingdom	507.2	678.2 e	701.4	732.9 e	769.9	816.3	852.4 p s
United States	1 108.6 d	1 497.0 d	1 545.2 d	1 617.2 d	1 710.7 d	1 858.0 d	2 001.2 d e
EU27 (from 01/02/2020)	451.7 e	741.6 e	768.2 e	807.9 e	866.2 e	925.1 e	982.7 e
OECD-Total	**628.2 e**	**913.4 e**	**936.7 e**	**968.9 e**	**1 024.7 e**	**1 096.0 e**	**1 152.6 e**
Argentina	57.5	116.6 p	124.4	107.7	131.3	116.9	107.1
China	65.9	253.2	266.3	284.2	302.7	333.6 e	375.5 e
Romania	39.6	78.8	105.5	116.8	136.6	146.5	154.6
Russian Federation	126.3	276.3	265.1	266.0	287.7	284.0	303.2
Singapore	1 262.1	1 759.6	1 897.7	1 856.1	1 822.5	1 867.4	..
South Africa	85.0	97.7	101.4	104.2	106.6	..	..
Chinese Taipei	671.2	1 355.9	1 407.2	1 458.8	1 549.5	1 710.0	1 864.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..
Belgium	1.79	..	..	..	..	..	..
Canada	..	..	..	..	..	..	..
Chile	..	0.37 b	0.38	0.37 b	0.35	0.35 p	..
Colombia	0.17	0.30	0.36	0.27	0.25	0.31	0.32 e
Czech Republic	1.15	1.95	..	..	..	..	..
Denmark	..	..	..	..	..	..	..
Estonia	0.91 e	1.41	..	..	1.27	..	..
Finland	3.30	3.13	..	..	..	..	..
France	1.88	2.21 b	..	..	..	..	..
Germany	2.41 e	2.86	..	..	..	..	..
Greece	..	..	..	..	..	..	..
Hungary	0.92	1.34	1.34	1.18	1.31	..	..
Iceland	2.68	1.94 e	2.18	2.11 e	2.08	2.00 e	2.33
Ireland	1.19	1.52 e	1.18 e	1.17 e	1.22 e	1.17 e	1.23 e
Israel[1]	4.04	4.17	4.26	4.52	4.69 e	4.85 e	4.93 e
Italy	..	..	..	..	..	..	..
Japan	3.10 e	3.34 e	3.21 e	..	..	..	..
Korea	2.46 d	3.92	3.84	3.86	4.11	4.36	4.47
Latvia	..	..	..	.. c	.. c	.. c	.. c
Lithuania	1	1	1	1	1	1	1
Luxembourg	1.57	1.26	1.30	1.30	1.27	1.17 e	1.13 e p
Mexico	..	..	..	..	..	..	..
Netherlands	..	..	..	..	..	..	..
New Zealand	..	..	1.22	..	1.33	..	1.41 p
Norway	..	..	..	..	..	..	..
Poland	..	..	..	..	..	..	..
Portugal	0.75	1.28	1.23	1.27	1.31	..	..
Slovak Republic	0.49	0.87	1.16	0.79	0.88	..	..
Slovenia	1.42	2.37	2.20	..	..	..	..
Spain	..	1.21	1.19	1.16	1.17	..	..
Sweden	3.24 b	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..
Turkey	..	0.84	0.86	0.92	..	..	..
United Kingdom	1.37	1.55 e	..	..	..	..	..
United States	2.09 d	..	..	..	..	..	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	0.42	0.59 p	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	0.41	0.38	..	..	..	..	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	0.81	0.72	0.75	0.78	0.79	..	..
Chinese Taipei	2.26	2.96	2.98	3.05	3.15	3.31	3.43

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	..	..	0.54 d	..	0.54 d	..	0.55 d
Belgium	..	..	0.38	..	0.29	..	0.41
Canada	..	..	..	..	..	..	..
Chile	..	0.11 b m	0.13 m	0.11 b m	0.11 m	0.12 m p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	0.36	0.61	0.61	0.48	0.48	0.49	0.51
Denmark	0.45 e	0.59	0.58	..	0.53	..	0.53 p
Estonia	0.27	0.43	0.39	0.34	0.35	0.38	0.39
Finland	..	..	..	..	..	..	..
France	0.49	0.54	0.54	0.50 e	0.50 p	0.50 e p	..
Germany	..	..	..	..	..	..	..
Greece	..	..	0.35	..	0.36	..	0.41
Hungary	0.25	0.25 e	0.25 e	0.22 e	0.25 e	0.28 b e	0.30 e
Iceland	0.50	0.45	0.45	0.45	0.44	0.42 e	0.43
Ireland	0.28	..	0.22 e	..	0.20 e	..	..
Israel[1]	0.65 d e	0.52 d e	0.52 d e	0.52 d e	0.50 d e	0.50 d e	0.49 d e
Italy	0.29	0.32 e	0.33	0.32 b	0.30	0.31	0.31
Japan	0.38	0.41	0.39	0.39	0.42	0.41 b	0.40
Korea	0.39 d	0.72	0.69	0.64	0.62	0.64	0.68
Latvia	0.11	0.20	0.21	0.13	0.16	0.23	0.22
Lithuania	0	0	0	0	0	0	0
Luxembourg	..	..	0.49	..	0.46	..	0.44 e p
Mexico	..	0.14	0.14	0.12	0.10 e	0.09 e	0.09 e
Netherlands	..	0.56	0.55	0.55	0.54	0.55	0.55
New Zealand	0.34	..	0.28	..	0.34	..	0.32
Norway	0.29	..	0.36	..	0.38	..	0.40
Poland	0.17	0.32	0.32	0.29	0.30	0.39	..
Portugal	0.19	0.30	0.29	0.29	0.29	0.29	0.30
Slovak Republic	0.23	0.40	0.50	0.32	0.33	0.34	0.33
Slovenia	0.20	0.43 b	0.39	0.35	0.33	0.37	0.40
Spain	0.19 m	0.28 e	0.27 e	0.26 e	0.26	0.26	0.29
Sweden	..	..	..	..	..	..	..
Switzerland	..	..	1.25	..	1.36	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	..	0.28 e	0.27 e	0.30 e	0.29 e	0.32 e	..
United States	0.47 d	0.47 d	0.46 d	0.48 d	0.48 d	0.49 d	0.50 d e
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	0.11	..	0.21 b	0.15	0.14	0.13	0.10
China	0.07	0.10	0.10	0.11	0.12	0.12	0.13
Romania	0.09 m	0.13	0.15	0.12	0.10	0.10	0.09
Russian Federation	0.13 m	0.17 m	0.16 m	0.15 d	..	..	..
Singapore	0.44	0.42	0.48	0.49	0.46	0.44	..
South Africa	0.16	0.19	0.20	0.22	0.22	..	..
Chinese Taipei	0.24	0.28	0.28	0.27	0.26	0.24	0.24

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	28 470 d e	42 627 d e	43 562 d	46 993 d e	47 521 d	50 484 d p	52 794 d
Belgium	33 146	50 820	53 178 b	54 280 e	54 010	57 456	60 619
Canada	136 700	161 982 b	162 960	158 980	162 450	167 440	..
Chile	..	7 585 d	8 175 d	8 985 d	9 099 d	9 205 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	24 169 b	36 040	38 081	37 338	39 181	41 198	42 500
Denmark	28 179	41 409	42 826	44 815	43 966	43 924	44 671 p
Estonia	3 331	4 324	4 187	4 338	4 674	4 968	4 995
Finland	39 582	38 281	37 516	35 908	37 047	37 891	39 984
France	202 507	271 772 b	277 631	285 488	295 754 p	305 243 p	314 101 e
Germany	272 148	351 923	387 982	399 605	419 617	433 685	450 697
Greece	19 593 d	29 877 d	34 708 d	29 403 d	35 000 d	36 688 d	39 077 d
Hungary	15 878	26 213	25 316	25 804	28 426	37 606 d	39 295 d
Iceland	2 155	..	1 944 b	..	2 050	..	..
Ireland	11 587	24 543 e	24 521 e	24 316 e	25 673 e	25 265 e	25 892
Israel[1]	..	..	..	..	..	..	..
Italy	82 489 d	118 183 d	125 875 d	133 706 b d	140 378 d	152 523 d	160 824 d
Japan	680 631 d	682 935 d	662 071 d	665 566 d	676 292 d	678 134 b d	681 821 d
Korea	179 812 d	345 463	356 447	361 292	383 100	408 370	430 690
Latvia	3 282 d	3 748 d	3 613 d	3 152 d	3 482 d	3 456 d	3 632 d
Lithuania	7 637	9 075	8 167	8 525	8 741	8 938	9 630
Luxembourg	2 227	2 629	2 610	2 767	2 936	2 863	2 942 e p
Mexico	43 922	31 315	34 282	38 883	39 125 e	39 189 e	41 745 e
Netherlands	47 854	83 710	83 488	87 612	91 023	95 475	97 713
New Zealand	12 986	..	25 000	..	24 000	..	28 000
Norway	21 200	29 237	30 632	31 913	33 632	34 337	35 898
Poland	62 162	78 622	82 594	88 165	114 585 d	117 789 d	120 780 d
Portugal	21 126	38 155	38 672	41 349	44 938	47 652	50 166
Slovak Republic	10 921 d	14 742 d	14 406 d	14 149 d	15 226 d	16 337 d	16 977 d
Slovenia	5 253	8 574	7 900	8 119	9 301 d	10 068 d	10 507 d
Spain	109 720	122 235 d	122 437 d	126 633 d	133 213 d	140 120 d	143 974 d
Sweden	55 001 b e	66 643 e	66 734 e	70 372 e	73 132	75 151 e	77 629
Switzerland	..	..	43 740	..	46 088	..	..
Turkey	39 139	89 657	95 161	100 158	111 893	126 249	135 515
United Kingdom	248 599 b e	276 584 e	284 483	288 922 e	295 934 e	305 795 e	317 472 p s
United States	1 104 019 e	1 340 689 e	1 370 627 e	1 373 551 e	1 435 905 e	1 554 900 e	..
EU27 (from 01/02/2020)	1 126 163 e	1 503 435 e	1 565 747 e	1 616 029 e	1 710 326 e	1 788 623 e	1 854 755 e
OECD-Total	**3 712 874 e**	**4 678 127 e**	**4 786 149 e**	**4 862 288 e**	**5 085 172 e**	**5 346 699 e**	**..**
Argentina	31 868	51 665	52 970	54 805	53 184	54 307	55 114
China	1 118 698 d	1 524 280	1 619 028	1 692 176	1 740 442	1 866 109	2 109 460
Romania	22 958	18 109	17 459	18 046	17 518	17 213	17 350
Russian Federation	464 577	444 865	449 180	428 884	410 617	405 772	400 663
Singapore	23 789	36 647	39 182	39 207	38 898	39 272	..
South Africa	17 303	23 572	26 159	27 656	29 515	..	..
Chinese Taipei	88 859	142 458	144 836	147 141	149 886	153 998	159 160

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	7.4 d e	10.0 d e	10.2 d	10.8 d e	10.8 d	11.2 d p	11.6 d e
Belgium	7.8	11.1	11.5 b	11.6 e	11.4	11.9	12.4 e
Canada	8.3	9.0 b	8.9	8.6	8.6	8.8	..
Chile	..	1.0 d	1.0 d	1.1 d	1.1 d	1.1 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	4.9 b	7.1	7.3	7.1	7.3	7.6	7.8 e
Denmark	10.1	14.8	15.1	15.6	15.0	14.8	14.9 e p
Estonia	5.4	7.1	6.7	6.9	7.3	7.6	7.7 e
Finland	16.4	15.2	14.9	14.2	14.5	14.4	15.0 e
France	7.7	9.9 b	10.1	10.4	10.6 p	10.9 p	11.0 e
Germany	6.9	8.2	9.0	9.2	9.5	9.7	10.0 e
Greece	4.2 d	6.7 d	8.0 d	6.6 d	7.9 d	8.1 d	8.6 d
Hungary	3.9	6.2	5.9	5.8	6.2	8.1 d	8.3 d e
Iceland	13.3	..	10.8 b	..	10.4	..	..
Ireland	5.9	12.6 e	12.2 e	11.7 e	12.0 e	11.4 e	11.4
Israel[1]	..	..	..	..	..	..	..
Italy	3.4 d	4.9 d	5.1 d	5.4 b d	5.6 d	6.0 d	6.3 d e
Japan	10.4 d	10.4 d	10.0 d	10.0 d	10.0 d	9.9 b d	9.8 d e
Korea	7.9 d	13.3	13.6	13.7	14.3	15.2	15.9 e
Latvia	3.4 d	4.3 d	4.1 d	3.6 d	3.9 d	3.8 d	4.0 d e
Lithuania	5	7	6	6	6	6	7 e
Luxembourg	7.2	6.6	6.4	6.6	6.8	6.4	6.3 e p
Mexico	1.3	0.8	0.9	1.0	1.0 e	1.0 e	1.1 e
Netherlands	5.7	9.6	9.5	9.8	9.9	10.2	10.2 e
New Zealand	6.3	..	10.6	..	9.5	..	10.8 e
Norway	9.1	10.9	11.3	11.8	12.2	12.3	12.6 e
Poland	4.4	5.0	5.2	5.5	7.0 d	7.2 d	7.4 d e
Portugal	4.2	8.5	8.5	8.9	9.4	9.7	10.1 e
Slovak Republic	5.2 d	6.6 d	6.4 d	6.1 d	6.4 d	6.8 d	6.9 d e
Slovenia	5.6	9.2	8.4	8.4	9.4 d	9.9 d	10.0 d e
Spain	5.6	6.8 d	6.6 d	6.7 d	6.9 d	7.1 d	7.1 d e
Sweden	12.7 b e	14.1 e	13.9 e	14.4 e	14.6	14.7 e	15.1
Switzerland	..	..	8.9	..	9.2	..	..
Turkey	2.0	3.5	3.6	3.7	4.0	4.4	4.9
United Kingdom	8.6 b e	9.0 e	9.1	9.1 e	9.2 e	9.4 e	9.7 e p s
United States	7.7 e	9.0 e	9.1 e	8.9 e	9.2 e	9.8 e	..
EU27 (from 01/02/2020)	5.9 e	7.7 e	7.9 e	8.0 e	8.4 e	8.6 e	8.9 e
OECD-Total	**6.9 e**	**8.2 e**	**8.3 e**	**8.3 e**	**8.6 e**	**8.9 e**	**..**
Argentina	2.1	2.9	3.0	3.0	2.9	2.9	2.9
China	1.5 d	2.0	2.1	2.2	2.2	2.4	2.7
Romania	2.5	2.1	2.0	2.1	2.0	2.0	2.0
Russian Federation	6.8	6.2	6.2	5.9	5.7	5.6	5.6
Singapore	10.3	10.1	10.7	10.7	10.6	10.6	..
South Africa	1.4	1.6	1.7	1.8	1.8	..	..
Chinese Taipei	8.9	12.9	12.9	13.1	13.2	13.5	13.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	47 625 d e	70 138 d e	71 396 d	75 165 d e	76 010 d	80 750 d p	83 660 d
Belgium	53 517	72 795	77 520 b	79 109 e	82 686	88 594	93 524
Canada	218 590	236 470 b	244 880	228 590	232 030	238 050	..
Chile	..	15 887 d	15 261 d	16 626 d	16 608 d	15 594 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	43 370 b	64 444	66 433	65 783	69 736	74 969	79 245
Denmark	43 499	58 361	60 243	62 859	60 240	59 778	62 229 p
Estonia	4 362	5 790	5 636	5 772	6 048	6 183	6 394
Finland	57 471	52 130	50 367	47 429	48 999	50 011	51 494
France	349 681	423 903 b	428 643	432 245	441 509 p	452 970 p	463 738 e
Germany	475 278	605 252	640 516	657 894	686 349	707 704	735 584
Greece	33 603 d	43 316 d	49 658 d	41 790 d	47 585 d	51 279 d	53 932 d
Hungary	23 239	37 329	36 847	35 757	40 432	54 654 d	56 943 d
Iceland	3 226	..	2 941	..	3 172	..	..
Ireland	16 690	33 494 e	34 346 e	34 374 e	35 992 e	35 817 e	36 906
Israel[1]	..	..	..	..	..	..	..
Italy	175 248 d	249 467 d	259 167 d	290 040 b d	317 628 d	345 669 d	355 854 d
Japan	896 855 d	895 285 d	875 005 d	872 340 d	890 749 d	896 901 b d	903 367 d
Korea	215 345 d	430 868	442 027	447 408	471 201	501 175	525 675
Latvia	5 483 d	5 739 d	5 570 d	5 120 d	5 378 d	5 806 d	5 924 d
Lithuania	11 002	11 791	10 607	10 924	11 577	11 956	12 998
Luxembourg	4 392	5 243	5 260	5 403	5 545	5 468	5 533 e p
Mexico	83 685	52 237	57 016	65 828	65 412 e	64 602 e	66 889 e
Netherlands	93 599	136 174	139 382	144 482	150 399	156 875	160 422
New Zealand	18 929	..	33 000	..	34 000	..	39 000
Norway	29 966	40 297	42 409	43 918	46 234	46 601	48 723
Poland	76 761	104 359	109 249	111 789	144 103 d	161 993 d	164 006 d
Portugal	25 728	46 878	47 999	50 406	54 995	58 154	61 455
Slovak Republic	14 404 d	17 594 d	17 591 d	17 768 d	19 011 d	20 268 d	21 196 d
Slovenia	8 994	14 866	14 225	14 403	14 713	15 686	16 983 d
Spain	174 773	200 233 d	200 866 d	205 873 d	215 744 d	225 696 d	231 413 d
Sweden	77 557 b e	83 473 e	83 551 e	90 690 e	88 928 v	92 011 e	91 172 e
Switzerland	..	..	81 451	..	81 751	..	..
Turkey	49 251 e	115 444 e	122 288 e	136 953	153 552	172 119	182 847
United Kingdom	324 917 b e	396 281 e	413 860	417 390 e	443 597 e	463 476 e	486 088 p s
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	1 876 603 e	2 406 244 e	2 482 214 e	2 556 322 e	2 694 335 e	2 836 418 e	2 926 610 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	45 361	76 904	78 713	81 030	80 009	83 856	84 953
China	1 364 799 d	3 710 580	3 758 848	3 878 057	4 033 597	4 381 444	4 800 768
Romania	33 222	31 391	31 331	32 232	32 586	31 933	31 665
Russian Federation	919 716	829 190	833 654	802 317	778 155	758 462	753 796
Singapore	28 586	42 521	45 454	45 096	44 515	44 816	..
South Africa	28 798	38 465	41 055	42 533	44 259	..	..
Chinese Taipei	149 154	239 974	245 401	250 495	255 229	262 307	271 579

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	12.3 d e	16.5 d e	16.7 d	17.3 d e	17.2 d	18.0 d p	18.4 d e
Belgium	12.5	15.9	16.8 b	16.9 e	17.4	18.4	19.1 e
Canada	13.3	13.1 b	13.4	12.4	12.3	12.5	..
Chile	..	2.0 d	1.9 d	2.0 d	2.0 d	1.9 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	8.8 b	12.6	12.8	12.5	13.0	13.8	14.6 e
Denmark	15.6	20.9	21.3	21.9	20.6	20.2	20.7 e p
Estonia	7.1	9.5	9.0	9.2	9.4	9.5	9.8 e
Finland	23.8	20.6	20.0	18.7	19.1	19.0	19.3 e
France	13.3	15.5 b	15.6	15.7	15.9 p	16.1 p	16.3 e
Germany	12.1	14.2	14.9	15.1	15.5	15.8	16.3 e
Greece	7.2 d	9.7 d	11.5 d	9.4 d	10.7 d	11.4 d	11.8 d
Hungary	5.6	8.8	8.5	8.0	8.9	11.7 d	12.1 d e
Iceland	19.9	..	16.3	..	16.1	..	..
Ireland	8.5	17.2 e	17.1 e	16.5 e	16.8 e	16.2 e	16.2
Israel[1]	..	..	..	..	..	..	..
Italy	7.1 d	10.2 d	10.6 d	11.7 b d	12.6 d	13.6 d	14.0 d e
Japan	13.7 d	13.6 d	13.2 d	13.0 d	13.2 d	13.1 b d	13.0 d e
Korea	9.4 d	16.6	16.9	16.9	17.6	18.7	19.4 e
Latvia	5.7 d	6.5 d	6.3 d	5.8 d	6.1 d	6.4 d	6.6 d e
Lithuania	8	9	8	8	9	9	9 e
Luxembourg	14.3	13.2	13.0	12.9	12.8	12.2	11.9 e p
Mexico	2.6	1.4	1.5	1.7	1.7 e	1.6 e	1.7 e
Netherlands	11.2	15.6	15.8	16.2	16.4	16.7	16.7 e
New Zealand	9.2	..	14.1	..	13.4	..	15.0 e
Norway	12.9	15.0	15.7	16.2	16.8	16.7	17.2 e
Poland	5.5	6.6	6.8	6.9	8.8 d	9.9 d	10.0 d e
Portugal	5.1	10.4	10.5	10.8	11.5	11.8	12.4 e
Slovak Republic	6.9 d	7.9 d	7.8 d	7.7 d	8.0 d	8.4 d	8.7 d e
Slovenia	9.7	16.0	15.1	15.0	14.9	15.4	16.2 d e
Spain	8.9	11.1 d	10.9 d	10.9 d	11.1 d	11.4 d	11.4 d e
Sweden	17.9 b e	17.6 e	17.4 e	18.5 e	17.7 v	18.0 e	17.8 e
Switzerland	..	..	16.6	..	16.3	..	..
Turkey	2.5 e	4.5 e	4.6 e	5.1	5.5	6.0	6.6
United Kingdom	11.3 b e	12.9 e	13.2	13.1 e	13.8 e	14.3 e	14.8 e p s
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	9.8 e	12.2 e	12.5 e	12.7 e	13.2 e	13.7 e	14.0 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	2.9	4.4	4.4	4.5	4.4	4.5	4.5
China	1.8 d	4.8	4.9	5.0	5.2	5.6	6.2
Romania	3.6	3.6	3.7	3.8	3.8	3.7	3.7
Russian Federation	13.5	11.6	11.5	11.1	10.8	10.5	10.5
Singapore	12.3	11.7	12.4	12.3	12.1	12.1	..
South Africa	2.3	2.5	2.6	2.7	2.7	..	..
Chinese Taipei	15.0	21.7	21.9	22.2	22.5	22.9	23.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	1.08 e	1.47 e	1.52	1.65 e	1.67	1.69 e s	1.72
Belgium	1.07	..	1.42	..	1.69	..	2.04
Canada	0.97	0.78 b	0.74	0.74	0.73	0.72	0.66 p
Chile	..	0.12 b	0.12	0.13 b	0.11	0.10 p	..
Colombia	0.04	0.14	0.18	0.11	0.10	0.14	0.16 e
Czech Republic	0.56	0.70	0.66	0.66	0.70	0.76	0.74
Denmark	1.42	..	1.81	..	1.67	..	1.73 p
Estonia	0.35	0.53	0.60	0.59	0.56	0.58	0.79
Finland	2.22	1.68	1.57	1.55	1.58	1.54	1.52
France	1.07	1.24	1.23	1.24	1.24 p	1.24 p	1.24 p
Germany	1.65 d	1.90 d	1.93 d	1.92 d	2.02 d	2.06 d	2.06 d
Greece	0.18	0.25	0.30	0.40	0.52	0.52	0.53
Hungary	0.36 d	0.65	0.67	0.67	0.69	0.79 b	0.78
Iceland	1.29	0.69 e	0.78	0.79 e	0.76	0.81 e	0.90
Ireland	0.69	0.79 e	0.58 e	0.57 e	0.64 e	0.59 e	..
Israel[1]	2.27 d	1.46 d	1.41 d	1.73 d	1.66 d e	1.77 d e	..
Italy	0.41	0.63 e	0.67	0.71 b	0.74	0.78	0.82
Japan	2.38	2.60	2.53	2.43	2.48	2.55 b	2.52
Korea	1.89 d	3.07	2.97	3.01	3.27	3.46	3.57
Latvia	0.18	0.19	0.12	0.09	0.12	0.14	0.16
Lithuania	0	0	0	0	0	0	0
Luxembourg	1.25	..	0.63	..	0.63	..	0.59 e p
Mexico	0.17	0.07	0.07	0.07	0.06 e	0.05 e	0.05 e
Netherlands	0.82	1.20	1.17	1.20	1.23	1.21	1.26
New Zealand	0.46	..	0.54	..	0.62	..	0.71 p
Norway	0.69	..	0.86	0.88	0.90	0.86	0.93
Poland	0.19	0.37	0.39	0.51	0.54	0.64	..
Portugal	0.27	0.54	0.53	0.57	0.61	0.64	0.67
Slovak Republic	0.18	0.28	0.29	0.37	0.43	0.41	0.39
Slovenia	0.78	1.62	1.52	1.39	1.18	1.22	1.26
Spain	0.51	0.58	0.56	0.56	0.58	0.61	0.61
Sweden	2.15 b	..	1.84	..	2.04	..	..
Switzerland	..	..	2.07	..	2.18	..	..
Turkey	0.24 d	0.39	0.39	0.44	0.47	0.55	0.60
United Kingdom	0.65	0.79 e	0.81	0.86 e	0.90	0.95	..
United States	1.59 d	1.69 d	1.70 d	1.76 d	1.78 d	1.86 d	1.94 d e
EU27 (from 01/02/2020)	0.93 e	1.11 e	1.12 e	1.15 e	1.19 e	1.22 e	1.23 e
OECD-Total	**1.31 e**	**1.42 e**	**1.42 e**	**1.44 e**	**1.47 e**	**1.52 e**	**1.56 e**
Argentina	0.13	..	0.11	0.10	0.10	0.11	0.12
China	0.88	1.53	1.54	1.60	1.62	1.64	1.70
Romania	0.15	0.13	0.18	0.24	0.27	0.29	0.26
Russian Federation	0.30	0.29	0.29	0.31	0.33	0.29	0.31
Singapore	1.26	1.10	1.15	1.07	1.00	0.98	..
South Africa	0.38	0.31	0.31	0.32	0.35	..	..
Chinese Taipei	1.56	2.30	2.33	2.40	2.53	2.69	2.83

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	0.85 e	1.10 d e	0.99	0.95 d e	0.84	0.94 d e s	0.84
Belgium	0.44	..	0.55	..	0.53	..	0.57
Canada	0.63 e	0.55 b e	0.54 e	0.53 e	0.55 e	0.54 e	0.53 e p
Chile	..	0.17 b	0.16	0.17 b	0.17	0.17 p	..
Colombia	0.07	0.10	0.12	0.09	0.10	0.09	0.09 e
Czech Republic	0.52	0.65	0.62	0.59	0.61	0.65	0.65
Denmark	0.66	..	0.92 d	..	0.83 d	..	0.84 d p
Estonia	0.40	0.70	0.68	0.46	0.51	0.60	0.60
Finland	0.85	0.87	0.83	0.79	0.79	0.78	0.78
France	0.79	0.78	0.79	0.72	0.71 p	0.69 p	0.71 p
Germany	0.69 d	0.83 d	0.82 d	0.84 d	0.85 d	0.87 d	0.89 d
Greece	0.27	0.45	0.51	0.43	0.43	0.49	0.52
Hungary	0.46 d	0.45	0.46	0.31	0.42	0.49 b	0.49
Iceland	1.09	0.66 e	0.67	0.69 e	0.72	0.72 e	0.69
Ireland	0.38	0.42 e	0.31 e	0.30 e	0.28 e	0.29 e	..
Israel[1]	0.58 d	0.54 d	0.55 d	0.50 d	0.52 d e	0.51 d e	..
Italy	0.53	0.53 e	0.51	0.48 b	0.44	0.47	0.47
Japan	0.52 e	0.54 e	0.50 e	0.47 e	0.47 e	0.47 b e	0.47 e
Korea	0.58 d	0.94	0.94	0.90	0.93	0.93	0.96
Latvia	0.24	0.18	0.20	0.21	0.22	0.22	0.23
Lithuania	0	0	0	0	0	0	0
Luxembourg	0.26	..	0.61	..	0.55	..	0.48 e p
Mexico	0.20	0.35	0.34	0.30	0.25 e	0.24 e	0.22 e
Netherlands	0.69	0.68	0.68	0.65	0.64	0.63	0.64
New Zealand	0.48	..	0.46	..	0.49	..	0.44 p
Norway	0.65	..	0.87	0.93	0.98	0.98	1.01
Poland	0.32	0.43	0.42	0.37	0.40	0.43	..
Portugal	0.42	0.61	0.55	0.55	0.54	0.55	0.56
Slovak Republic	0.28 e	0.36 e	0.37	0.32	0.31	0.32	0.33
Slovenia	0.53	0.52	0.44	0.41	0.43	0.46	0.51
Spain	0.47	0.51	0.50	0.48	0.47	0.47	0.47
Sweden	0.82 b	..	.. c	..	0.84	..	..
Switzerland	..	..	0.80	..	0.84	..	..
Turkey	0.28 d	0.32	0.34	0.33	0.32	0.33	0.31
United Kingdom	0.51	0.47 e	0.46	0.44 e	0.44	0.45	..
United States	0.78 d	0.71 d	0.69 d	0.65 d	0.65 d	0.66 d	0.68 d p
EU27 (from 01/02/2020)	0.60 e	0.66 e	0.65 e	0.62 e	0.61 e	0.62 e	0.63 e
OECD-Total	**0.62 e**	**0.63 e**	**0.62 e**	**0.59 e**	**0.59 e**	**0.60 e**	**0.61 e**
Argentina	0.27	..	0.47	0.39	0.39	0.33	0.28
China	0.34	0.41	0.44	0.42	0.42	0.43	0.46
Romania	0.22	0.19	0.20	0.19	0.18	0.17	0.16
Russian Federation	0.62	0.74	0.77	0.75	0.73	0.66	0.69
Singapore	0.77	0.79	0.83	0.81	0.72	0.68	..
South Africa	0.33	0.34	0.36	0.38	0.39	..	..
Chinese Taipei	0.74	0.65	0.64	0.66	0.63	0.63	0.63

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	45.6 e	47.7 e	49.7	53.0 e	54.7	54.8 e s	54.8
Belgium	59.7	..	58.6	..	63.5	..	64.3
Canada	49.3	45.8 b	44.0	42.7	43.1	42.7	41.7 p
Chile	..	31.9 b	32.8	35.1 b	31.4	29.9 p	..
Colombia	23.8	46.4	48.4	41.0	38.8	45.5	49.9 e
Czech Republic	48.2	35.9	34.5	39.5	39.3	39.9	38.2
Denmark	59.5	..	59.1	..	57.1	..	59.6 p
Estonia	38.5	37.1	41.0	48.2	43.6	40.8	49.1
Finland	66.9	53.5	54.8	57.0	58.0	55.8	54.3
France	51.9	54.5 b	54.0	56.0	56.1 p	56.7 p	56.7 p
Germany	67.5 d	66.0 d	65.7 d	65.2 d	66.2 d	66.0 d	64.5 d
Greece	31.1	29.8	31.4	40.2	44.8	42.5	41.4
Hungary	39.4 d	48.3	49.7	56.4	52.7	52.4 b	52.9
Iceland	48.0	35.7 e	35.8	37.7 e	36.4	40.2 e	38.9
Ireland	57.4	52.2 e	48.7 e	49.0 e	52.1 e	50.5 e	..
Israel[1]	56.2 d	35.1 d	33.2 d	38.3 d	35.3 d e	36.6 d e	..
Italy	39.7	47.3 e	50.0	52.1 b	53.7	54.6	55.9
Japan	76.1	77.3	78.0	78.1	78.3	79.1 b	78.9
Korea	75.0 d	75.3	74.5	75.4	76.2	76.6	76.9
Latvia	34.3	27.8	20.0	21.6	24.1	22.3	24.3
Lithuania	21	33	29	39	35	38	34
Luxembourg	79.7	..	48.3	..	49.6	..	52.1 e p
Mexico	41.5	15.7	17.4	18.8	19.1 e	17.5 e	18.2 e
Netherlands	46.3	55.4	54.4	55.8	56.4	56.7	57.6
New Zealand	41.1	..	43.8	..	46.0	..	49.9 p
Norway	46.8	..	44.2	43.2	42.8	42.0	43.2
Poland	33.4	39.0	39.0	53.1	52.5	53.2	..
Portugal	36.3	41.8	42.7	44.4	46.5	47.3	48.3
Slovak Republic	36.6	32.2	25.1	46.2	49.0	48.8	46.8
Slovenia	54.8	68.4	69.2	69.2	63.1	62.6	61.5
Spain	46.3	46.4	45.8	46.7	47.8	49.5	49.1
Sweden	63.9 b	..	57.3 v	..	60.8 v	..	..
Switzerland	..	..	63.5	..	68.6	..	..
Turkey	43.3 d	45.3	44.6	46.7	49.4	53.6	56.3
United Kingdom	42.1	48.0 e	49.0	51.8 e	53.7	54.8	..
United States	63.3 d	61.9 d	62.5 d	63.2 d	62.5 d	63.1 d	63.3 d e
EU27 (from 01/02/2020)	55.5 e	55.7 e	55.7 e	57.6 e	58.5 e	58.6 e	58.3 e
OECD-Total	**62.2 e**	**61.3 e**	**61.4 e**	**62.2 e**	**62.4 e**	**62.9 e**	**62.8 e**
Argentina	31.0	..	17.2	18.2	17.8	21.3	26.5
China	67.0	75.4	74.7	76.1	76.5	76.6	76.3
Romania	37.2	32.9	37.3	49.4	54.4	57.1	54.6
Russian Federation	30.0	27.1	26.5	28.1	30.2	29.5	30.2
Singapore	58.6	53.0	52.8	51.8	52.1	53.1	..
South Africa	43.9	40.8	38.9	39.4	41.5	..	..
Chinese Taipei	66.9	77.0	77.7	77.6	79.2	80.3	81.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	35.9 e	35.6 d e	32.6	30.3 d e	27.6	30.3 d e s	27.0
Belgium	24.7	..	22.5	..	20.0	..	17.8
Canada	31.8 e	32.1 b e	31.6 e	30.9 e	32.4 e	32.2 e	33.0 e p
Chile	..	44.2 b	42.6	45.5 b	47.1	48.1 p	..
Colombia	43.0	32.7	32.1	35.0	37.2	29.7	27.0 e
Czech Republic	45.2	32.9	32.2	35.6	34.6	34.1	33.7
Denmark	27.6	..	30.2 d	..	28.3 d	..	28.7 d p
Estonia	43.5	49.5	46.4	37.6	40.2	42.8	37.2
Finland	25.7	27.5	28.9	28.9	29.0	28.3	27.8
France	38.6	34.3 b	34.8	32.4	32.4 p	31.6 p	32.5 p
Germany	28.5 d	28.7 d	27.9 d	28.5 d	27.7 d	27.8 d	27.8 d
Greece	46.8	53.3	53.1	42.6	37.6	40.6	41.1
Hungary	49.4 d	33.5	34.6	26.2	31.9	32.3 b	33.3
Iceland	40.5	34.1 e	30.8	32.9 e	34.5	36.0 e	29.8
Ireland	32.0	27.4 e	26.1 e	25.8 e	22.9 e	24.7 e	..
Israel[1]	14.5 d	13.0 d	12.8 d	11.1 d	11.0 d e	10.4 d e	..
Italy	50.7	39.7 e	38.0	35.2 b	32.3	32.7	32.3
Japan	16.8 e	16.0 e	15.4 e	15.0 e	15.0 e	14.6 b e	14.7 e
Korea	23.0 d	23.0	23.7	22.7	21.6	20.6	20.7
Latvia	46.0	25.6	32.7	47.7	43.6	34.3	35.4
Lithuania	63	33	35	39	36	32	32
Luxembourg	16.6	..	46.6	..	43.1	..	42.7 e p
Mexico	49.2	81.3	79.7	77.6	76.8 e	78.2 e	76.7 e
Netherlands	38.8	31.3	31.6	30.2	29.4	29.6	29.4
New Zealand	43.2	..	37.1	..	36.3	..	31.1 p
Norway	43.6	..	44.9	45.7	46.7	48.0	47.0
Poland	57.7	45.2	41.8	38.9	38.3	35.4	..
Portugal	55.2	47.1	44.3	42.6	41.0	40.6	40.2
Slovak Republic	57.0 e	41.4 e	31.9	41.0	35.5	38.0	40.5
Slovenia	37.2	21.8	19.9	20.2	22.9	23.7	24.7
Spain	43.0	41.4	40.9	40.0	38.9	37.6	37.9
Sweden	24.4 b	..	.. c	..	25.0 v	..	..
Switzerland	..	..	24.4	..	26.5	..	..
Turkey	50.1 d	37.4	38.5	35.1	33.6	32.3	29.4
United Kingdom	32.7	28.4 e	27.7	26.3 e	26.0	25.9	..
United States	30.8 d	25.9 d	25.2 d	23.4 d	22.9 d	22.3 d	22.1 d e p
EU27 (from 01/02/2020)	35.6 e	32.9 e	32.2 e	31.2 e	30.1 e	30.0 e	30.0 e
OECD-Total	**29.7 e**	**27.3 e**	**26.8 e**	**25.7 e**	**25.1 e**	**24.6 e**	**24.5 e**
Argentina	65.3	..	76.4	73.1	70.7	65.1	60.8
China	26.3	20.3	21.3	20.0	19.8	20.2	20.5
Romania	53.5	48.5	41.7	39.6	35.9	33.3	34.4
Russian Federation	61.9	69.2	69.5	68.2	66.2	67.0	66.3
Singapore	35.7	38.0	38.2	38.9	37.5	37.0	..
South Africa	38.2	43.9	44.6	46.0	46.7	..	..
Chinese Taipei	31.5	21.9	21.2	21.4	19.8	18.8	18.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 the Higher Education and PNP sectors

Percentage

	2005	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	0.4 e	0.5 d e	1.1	0.5 d e	1.1	0.3 d e s	1.2
Belgium	3.3	..	2.4	..	3.5	..	3.2
Canada	10.1 e	14.0 b e	14.6 e	15.6 e	15.6 e	15.9 e	16.3 e p
Chile	..	10.2 b	11.8	15.5 b	17.1	17.1 p	..
Colombia	29.0	18.8	15.1	18.2	18.8	20.5	17.2 e
Czech Republic	1.2	0.7	0.8	0.9	1.1	1.1	1.1
Denmark	2.8 d	..	4.4 d	..	5.4 d	..	6.3 d p
Estonia	1.0	1.0	0.5	0.6	1.3	1.7	0.4
Finland	1.2	1.7	1.8	2.0	2.2	2.0	2.4
France	1.9	3.5 b	3.5	3.8	3.7 p	4.0 p	2.8 p
Germany	0.3 d	0.3 d	0.3 d	0.3 d	0.3 d	0.3 d	0.4 d
Greece	3.1	3.7	2.9	2.7	2.6	2.5	2.8
Hungary	0.3 d	0.7	0.7	0.7	0.5	0.5 b	0.7
Iceland	0.3	6.9 e	8.1	8.1 e	4.6	5.2 e	0.7
Ireland	1.9	1.7 e	1.6 e	1.5 e	1.6 e	1.6 e	..
Israel[1]	4.6 d	1.5 d	1.5 d	1.4 d	1.1 d e	1.0 d e	..
Italy	1.7	3.6 e	3.7	2.9 b	2.3	2.1	2.1
Japan	6.8 e	6.3 e	6.1 e	6.2 e	6.1 e	5.8 b e	5.8 e
Korea	1.3 d	1.0	1.0	1.0	0.9	0.9	0.8
Latvia	1.2	2.3	2.2	2.9	2.5	1.8	1.7
Lithuania	6	0	2	3	4	3	3
Luxembourg	0.1	..	1.8	..	1.6	..	1.6 e p
Mexico	8.2	2.5	2.3	2.9	3.3 e	3.5 e	4.0 e
Netherlands	2.8	2.6	2.5	2.5	2.3	2.5	2.6
New Zealand	10.6	..	11.4	..	10.0	..	9.8 p
Norway	1.6	..	1.6	1.7	1.7	1.7	1.6
Poland	3.2	2.4	2.4	2.6	3.2	4.4	..
Portugal	3.8	5.4	5.7	4.9	5.1	4.9	4.7
Slovak Republic	0.3	2.7	3.6	2.1	1.7	1.9	2.1
Slovenia	0.7	0.6	0.3	0.4	0.9	0.6	0.5
Spain	5.0	4.8	5.2	5.2	5.1	5.0	4.8
Sweden	3.6 b	..	4.3 v	..	4.0 v	..	..
Switzerland	..	..	1.9	..	1.9	..	..
Turkey	5.8 d	15.3	15.0	14.5	13.5	12.1	12.8
United Kingdom	5.9	6.1 e	6.3	6.4 e	5.9 b	5.6	..
United States	5.9 d	7.1 d	7.3 d	7.6 d	7.5 d	7.3 d	7.2 d e p
EU27 (from 01/02/2020)	1.7 e	..	2.2 e	..	2.2 e	..	2.1 e
OECD-Total	**4.9 e**	**5.3 e**	**5.3 e**	**5.5 e**	**5.4 e**	**5.3 e**	**5.2 e**
Argentina	2.9	..	3.1	2.4	2.3	2.5	2.5
China	..	..	..	..	..	..	..
Romania	4.0	1.5	1.8	1.2	1.7	0.6	0.5
Russian Federation	0.5	1.2	1.4	1.0	1.0	1.1	1.1
Singapore	1.3	2.0	2.2	3.0	3.3	3.0	..
South Africa	4.4	3.1	3.5	2.9	1.6	..	..
Chinese Taipei	1.4	0.9	0.9	0.8	0.8	0.7	0.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	18.0 e	16.2 e	16.6	16.2 e	16.6	16.3 e s	17.0
Belgium	12.4	..	16.5	..	13.0	..	14.7
Canada	8.8	8.1 b	9.8	10.8	8.8	9.3	9.0 p
Chile	..	13.8 b	12.9	3.9 b	4.5	4.9 p	..
Colombia	4.2	2.1	4.5	5.8	5.2	4.3	5.8 e
Czech Republic	5.4	30.5	32.5	24.0	25.0	24.9	27.0
Denmark	10.1	..	6.3	..	9.2	..	5.5 p
Estonia	17.1	12.5	12.2	13.6	15.0	14.7	13.3
Finland	6.3 b	17.3	14.5	12.1	10.8	13.9	15.5
France	7.5	7.6 b	7.6	7.8	7.8 p	7.7 p	8.0 p
Germany	3.7 d	5.0 d	6.2 d	5.9 d	5.8 d	5.8 d	7.4 d
Greece	19.0	13.2	12.7	14.6	15.0	14.3	14.6
Hungary	10.7 d	17.5	15.0	16.6	14.9	14.8 b	13.1
Iceland	11.2	23.3 e	25.4	21.4 e	24.5	18.6 e	30.5
Ireland	8.6	18.7 e	23.6 e	23.6 e	23.4 e	23.2 e	..
Israel[1]	24.7 d	50.4 d	52.5 d	49.2 d	52.6 d e	52.0 d e	..
Italy	8.0	9.4 e	8.3	9.8 b	11.7	10.5	9.6
Japan	0.3	0.4	0.5	0.7	0.6	0.6 b	0.6
Korea	0.7 d	0.7	0.8	0.9	1.3	1.9	1.6
Latvia	18.5	44.2	45.0	27.8	29.8	41.5	38.6
Lithuania	10.5	33.8	34.3	19.2	24.4	26.2	30.6
Luxembourg	3.6	..	3.3	..	5.7	..	3.6 e p
Mexico	1.1	0.5	0.6	0.7	0.9 e	0.9 e	1.1 e
Netherlands	12.0	10.7	11.5	11.5	11.9	11.2	10.4
New Zealand	5.2	..	7.7	..	7.0	..	9.1 p
Norway	8.1	..	9.2	9.5	8.8	8.2	8.2
Poland	5.7	13.4	16.7	5.5	6.0	7.0	..
Portugal	4.7	5.6	7.4	8.0	7.3	7.2	6.8
Slovak Republic	6.0	23.7	39.4	10.7	13.7	11.2	10.7
Slovenia	7.3	9.3	10.6	10.2	13.1	13.1	13.3
Spain	5.7	7.4	8.0	8.1	8.2	7.9	8.2
Sweden	8.1 b	..	.. c	..	10.1 v	..	..
Switzerland	..	..	10.2	..	5.3	..	..
Turkey	0.8	2.0	1.9	3.7	3.5	2.0	1.5
United Kingdom	19.3	17.5 e	17.1	15.6 e	14.4	13.7	..
United States	.. k	5.0 d	5.0 d	5.8 d	7.1 d	7.2 d	7.4 d e
EU27 (from 01/02/2020)	7.1 e	9.1 e	9.8 e	9.0 e	9.2 e	9.1 e	9.6 e
OECD-Total	**..**	**6.1 e**	**6.4 e**	**6.6 e**	**7.1 e**	**7.2 e**	**7.5 e**
Argentina	0.8	..	3.3	6.3	9.2	11.1	10.2
China	0.9	0.8	0.7	0.7	0.6	0.4	0.1
Romania	5.3	17.0	19.2	9.9	7.9	9.0	10.6
Russian Federation	7.6	2.5	2.6	2.7	2.6	2.3	2.4
Singapore	4.4	7.0	6.8	6.3	7.1	6.9	..
South Africa	13.6	12.2	13.0	11.7	10.2	..	..
Chinese Taipei	0.2	0.2	0.2	0.2	0.2	0.1	0.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	53.4 e	..	52.7 e	..	..
Austria	69.8 e	71.3 e	71.4	70.2 b e	69.9	69.9	70.3
Belgium	68.0	69.9	69.9	68.6	70.2	71.7	73.7
Canada	55.8 d	53.2 b	53.3	53.5	52.7	52.1	50.6 p
Chile	..	33.4 b	34.3	37.7 b	34.2	33.6 p	..
Colombia	18.8	43.3	47.8	39.8	35.5	42.2	47.8 e
Czech Republic	58.2 b	55.2	54.3	61.1	62.9	61.9	61.6
Denmark	68.3	63.8	63.5	65.1	63.4	63.1	62.6 p
Estonia	45.1	43.5	46.1	51.5	47.2	42.3	53.3
Finland	70.8	67.7	66.7	65.8	65.3	65.7	65.6
France	62.1	63.6 b	63.7	65.1	65.3 p	65.5 p	65.8 p
Germany	69.2	67.7	68.7	68.2	69.1	68.9 e	68.9
Greece	31.0	33.9	33.0	42.2	48.8	48.2	46.1
Hungary	43.2 d	71.5 d	73.4 d	74.1 d	73.1 d	75.6 b d	75.1 d
Iceland	51.5	61.1 d e	66.0 d	64.4 d e	64.3 d	64.3 d e	68.7 d
Ireland	65.5	71.0 e	71.8 e	72.2 e	75.4 e	72.9 e	74.5 e
Israel[1]	81.5 d	84.8 d	85.2 d	86.6 d	87.9 d e	88.3 d e	88.9 d e
Italy	50.4	56.7 e	58.2	60.8 b	62.4	63.3	63.2
Japan	76.4	77.8	78.5	78.8	78.8	79.4 b	79.2
Korea	76.9 d	78.2	77.5	77.7	79.4	80.3	80.3
Latvia	40.7	35.5	24.7	24.5	27.2	24.9	26.3
Lithuania	20.4	30.9	27.4	35.0	36.8	41.8	43.2
Luxembourg	86.4	53.7	52.7	55.5	55.8	53.2 e	55.7 e p
Mexico	46.9	17.9	18.6	22.2	22.5 e	21.1 e	21.8 e
Netherlands	52.9	64.7	64.3	65.7	66.3	66.4	66.7
New Zealand	41.6	..	51.1	..	54.4	..	59.6 p
Norway	53.5	53.7	53.9	53.3	52.6	51.5	53.0
Poland	31.8	46.6	46.6	65.7 b	64.5	66.1	62.8
Portugal	38.5	46.4	46.4	48.4	50.4	51.4	52.5
Slovak Republic	49.8	36.8	28.0	50.4	54.1	54.1	54.8
Slovenia	58.8	77.3	76.3	75.7	74.8	74.2	73.8
Spain	53.8	52.9	52.5	53.7	55.0	56.5	56.1
Sweden	72.8 b	67.0 e	69.7 v	69.6 e	71.3 v	71.0 e	71.7 e
Switzerland	..	..	71.0	..	71.0	..	..
Turkey	33.8	49.8	50.0	54.2	56.9	60.4	64.2
United Kingdom	61.4	65.1 e	66.0	67.1 e	68.0	67.6	66.6 p s
United States	68.9 d	71.4 d	71.8 d	72.6 d	72.9 d	73.4 d	73.9 d e
EU27 (from 01/02/2020)	62.3 e	63.3 e	63.7 e	65.2 e	66.0 e	66.2 e	66.2 e
OECD-Total	**67.6 e**	**68.8 e**	**69.1 e**	**70.0 e**	**70.6 e**	**71.0 e**	**71.2 e**
Argentina	32.2	20.1 p	21.2 b	23.9	27.1	31.3	36.1
China	68.3	77.3	76.8	77.5	77.6	77.4	76.4
Romania	49.7	41.5	44.0	55.2	56.7	59.3	57.8
Russian Federation	68.0	59.6	59.2	58.7	60.1	55.6	60.7
Singapore	66.1	60.2	59.7	58.4	59.4	60.7	..
South Africa	58.3	45.3	42.7	41.4	41.0	..	..
Chinese Taipei	67.0	77.0	77.6	77.5	79.0	80.3	80.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	30.6 e	..	34.0 e	..	..
Austria	24.7 e	23.7 e	23.5	22.2 b e	22.4	22.4	21.8
Belgium	22.3	20.6	20.3	21.2	19.8	18.4	16.7
Canada	34.0	37.7 b	39.3	39.4	39.7	40.3	41.5 p
Chile	..	39.0 b	38.5	43.1 b p	45.9	47.4 p	..
Colombia	48.3	34.0	27.9	29.0	29.6	28.8	23.9 e
Czech Republic	18.6	25.4	24.9	20.4	19.6	21.5	21.8
Denmark	24.6	33.5	33.9	32.4	33.2	33.6	34.1 p
Estonia	41.4	44.3	41.4	35.5	39.6	44.5	35.3
Finland	19.0	22.9	24.4	25.1	25.4	25.2	25.4
France	18.8	22.1 b	22.0	20.5	20.7 p	20.5 p	20.1 p
Germany	16.8	17.7	17.3	18.0 b	17.4	17.6	17.4
Greece	47.5	37.2	37.8	31.9	28.3	28.4	30.6
Hungary	25.1 d	13.5 d	12.1 d	11.1 d	13.3 d	12.7 b d	14.2 d
Iceland	22.0	32.8 e	29.4	30.8 e	31.5	31.5 e	28.1
Ireland	27.1	24.6 e	23.8 e	23.6 e	20.8 e	23.0 e	21.8 e
Israel[1]	14.9 d	12.4 d	12.1 d	10.9 d	9.6 d e	9.2 d e	8.7 d e
Italy	30.2 b	26.7 e	25.5 e	24.2 b e	23.6 e	22.8 e	22.5 e
Japan	13.4	12.6	12.3	12.3	12.0	11.6 b	11.7
Korea	9.9 d	9.0	9.1	9.1	8.5	8.2	8.3
Latvia	40.6	40.5	49.7	43.8	46.7	52.4	54.8
Lithuania	54.6	52.1	55.5	38.9	35.3	35.9	36.4
Luxembourg	1.5	16.4	18.2	19.1	20.4	20.7 e	20.4 e p
Mexico	28.7	48.8	50.3	50.4	50.2 e	51.2 e	50.8 e
Netherlands	34.7	29.2	29.7	28.3	28.0	27.7	27.6
New Zealand	32.5	..	28.0	..	24.5	..	23.8 p
Norway	30.8	31.0	31.1	32.6	33.7	34.6	34.3
Poland	31.6	29.2	28.9	31.4	32.9	31.7	35.6
Portugal	35.4	45.6	45.5	44.7	42.5	41.6	40.5
Slovak Republic	20.4	34.4	43.8	27.7	24.7	24.3	25.2
Slovenia	16.7	10.5	10.2	10.8	11.2	11.9	11.8
Spain	29.0	28.1	28.1	27.5	27.1	26.4	26.6
Sweden	22.0 b	29.0 e	26.7 v	26.8 e	24.9 v	25.3 e	23.7 b e
Switzerland	..	..	26.7	..	28.2	..	..
Turkey	54.6	40.5	39.7	36.3	33.5	30.3	29.2
United Kingdom	25.7	25.8 e	25.3	24.3 e	23.5	23.6	23.1 p s
United States	14.3 d	13.1 d	13.0 d	13.0 d	12.8 d	12.3 d	12.0 d e p
EU27 (from 01/02/2020)	22.2 e	23.1 e	22.8 e	22.2 e	21.8 e	21.7 e	21.6 e
OECD-Total	**17.8 e**	**17.9 e**	**17.7 e**	**17.6 e**	**17.2 e**	**16.8 e**	**16.5 e**
Argentina	25.8	30.5 p	26.0	25.8	25.2	26.4	23.7
China	9.9	6.9	7.0	6.8	7.2	7.4	8.1
Romania	13.7	15.2	17.4	11.3	10.6	9.8	10.2
Russian Federation	5.8	9.8	9.6	9.1	9.0	9.7	10.6
Singapore	24.2	28.1	29.2	30.3	29.4	27.7	..
South Africa	19.3	28.5	30.5	32.7	33.6	..	..
Chinese Taipei	11.4	10.4	9.9	9.4	9.0	8.9	8.4

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	12.7 e	..	10.1 e	..	..
Austria	5.2 e	4.6 e	4.6	7.1 b e	7.1	7.1	7.3
Belgium	8.4	9.0	9.2	9.6	9.4	9.2	8.8
Canada	9.7	8.6 b	7.0	6.6	7.0	7.2	7.5 p
Chile	..	8.1 b	7.8	12.9 b	13.1	12.6 p	..
Colombia	5.7	3.2	2.2	8.1	8.5	7.1	7.7 e
Czech Republic	22.8 b	19.0	20.4	18.2	17.2	16.4	16.3
Denmark	6.5	2.3	2.2	2.2	3.1	2.9	2.9 p
Estonia	11.3	11.0	10.8	11.4	11.8	11.4	10.2
Finland	9.6	8.6	8.2	8.2	8.5	8.3	8.1
France	17.8	12.7 b	12.8	12.7	12.5 p	12.5 p	12.4 p
Germany	14.1 d	14.6 d	14.1 d	13.8 d	13.5 d	13.5 d	13.7 d
Greece	20.3	27.7	28.1	25.0	22.1	22.4	22.4
Hungary	28.0 d	13.7 d	13.3 d	13.4 d	12.6 d	10.9 b d	10.0 d
Iceland	23.5	6.1 e	4.7	4.7 e	4.2	4.2 e	3.2
Ireland	7.4	4.4 e	4.4 e	4.2 e	3.9 e	4.2 e	3.8 e
Israel[1]	2.7 d	1.8 d	1.7 d	1.6 d	1.6 d e	1.5 d e	1.5 d e
Italy	17.3	13.6 e	13.1	12.6 b	12.4	12.4	12.6
Japan	8.3	8.3	7.9	7.5	7.8	7.8 b	7.8
Korea	11.9 d	11.2	11.7	11.5	10.7	10.1	10.0
Latvia	18.7	24.0	25.6	31.8	26.1	22.8	18.9
Lithuania	25.0	17.0	17.1	26.1	27.9	22.2	20.4
Luxembourg	12.1 d	29.9 d	29.1 d	25.5 d	23.9 d	26.0 d e	23.9 e p
Mexico	23.2	32.3	30.1	26.4	26.2 e	26.6 e	26.2 e
Netherlands	12.4 d	6.1 d	6.1 d	6.1 d	5.6 d	5.9 d	5.7 d
New Zealand	25.9	..	21.0	..	21.1	..	16.7 p
Norway	15.7	15.2	15.0	14.2	13.7	13.9	12.7
Poland	36.4	24.0	24.4	2.5 b	2.3	1.9	1.3
Portugal	14.6	6.3	6.5	5.3	5.5	5.3	5.1
Slovak Republic	29.7 d	28.3 d	27.9	21.4	20.8	21.2	20.0
Slovenia	24.2	12.2	13.5	13.4	13.8	13.5	13.8
Spain	17.0	18.8	19.1	18.5	17.7	16.8	17.0
Sweden	4.9 b	3.7 e	3.4 v	3.4 e	3.6 v	3.6 e	4.5 b e
Switzerland	..	..	0.9 d	..	0.8 d	..	..
Turkey	11.6	9.7	10.3	9.5 d	9.6 d	9.2 d	6.6 d
United Kingdom	10.6	7.3 e	6.6	6.6 e	6.3	6.6	6.6 p s
United States	12.3 d	11.3 d	11.0 d	10.0 d	9.7 d	9.9 d	9.9 d e
EU27 (from 01/02/2020)	14.7 e	12.8 e	12.7 e	11.8 e	11.6 e	11.4 e	11.4 e
OECD-Total	**12.0 e**	**10.9 e**	**10.7 e**	**10.0 e**	**9.8 e**	**9.7 e**	**9.7 e**
Argentina	39.7	47.7 p	51.2	49.5	46.8	41.1	39.1
China	21.8	15.8	16.2	15.7	15.2	15.2	15.5
Romania	34.2	43.0	38.3	33.3	32.4	30.6	31.8
Russian Federation	26.1	30.5	31.1	32.0	30.4	34.4	28.3
Singapore	9.7	11.7	11.1	11.2	11.1	11.5	..
South Africa	20.8	23.5	24.0	23.1	22.3	..	..
Chinese Taipei	21.0	12.3	12.1	12.8	11.7	10.7	10.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	3.24 e	..	3.21 e	..	..
Austria	0.30 e	0.47 e	0.49	0.49 e	0.55	0.55	0.54
Belgium	1.31	0.46	0.55	0.61	0.56	0.72	0.75
Canada	0.53	0.45 b	0.47	0.45	0.48	0.46	0.39 p
Chile	..	19.52 b	19.35	6.36 b	6.83	6.40 p	..
Colombia	27.25	19.41	22.04	23.05	26.37	21.85	20.52 e
Czech Republic	0.51	0.41	0.39	0.25	0.28	0.22	0.28
Denmark	0.67	0.41	0.35	0.35	0.31	0.35	0.40 p
Estonia	2.20	1.19	1.80	1.54	1.41	1.68	1.16
Finland	0.58	0.77	0.77	0.86	0.82	0.81	0.89
France	1.29	1.51 b	1.54	1.64	1.58 p	1.58 p	1.76 p
Germany	..	..	..	..	..	..	..
Greece	1.26	1.24	1.12	0.89	0.80	1.06	0.84
Hungary	..	..	..	..	..	..	..
Iceland	2.99	..	..	..	..	..	..
Ireland	..	..	..	..	..	..	..
Israel[1]	0.97 d	1.02 d	1.02 d	0.96 d	0.96 d e	0.97 d e	0.96 d e
Italy	2.12	3.04 e	3.19	2.48 b	1.71	1.46	1.78
Japan	1.86	1.34	1.33	1.38	1.38	1.27 b	1.34
Korea	1.36 d	1.52	1.64	1.59	1.41	1.41	1.43
Latvia	0.00	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	1.13	1.00	0.93	0.99	1.10 e	1.12 e	1.23 e
Netherlands	..	..	..	..	..	..	0.00 d
New Zealand	..	..	..	..	..	..	..
Norway	..	..	..	..	..	..	..
Poland	0.31	0.30	0.16	0.44	0.35	0.30	0.30
Portugal	11.52	1.72	1.58	1.60	1.56	1.62	1.91
Slovak Republic	0.08	0.41	0.40	0.49	0.41	0.42	0.03
Slovenia	0.22	0.04	0.04	0.02	0.22	0.33	0.61
Spain	0.14	0.17	0.20	0.24	0.21	0.26	0.27
Sweden	0.31 b	0.24 e	0.19 v	0.19 e	0.12 v	0.11 e	0.12 e
Switzerland	..	..	1.45	..	2.26	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	2.32	1.81 e	2.01	2.11 e	2.17	2.22	2.31 p s
United States	4.44 d e	4.15 d e	4.19 d e	4.37 d e	4.55 d e	4.40 d e	4.25 d e
EU27 (from 01/02/2020)	0.89 e	0.85 e	0.85 e	0.82 e	0.72 e	0.70 e	0.77 e
OECD-Total	**2.68 e**	**2.39 e**	**2.43 e**	**2.50 e**	**2.54 e**	**2.48 e**	**2.48 e**
Argentina	2.23	1.75 p	1.61	0.77 b	0.90	1.14	1.14
China	..	..	..	..	..	..	..
Romania	2.44	0.37	0.30	0.23	0.29	0.22	0.21
Russian Federation	0.18	0.13	0.14	0.21	0.41	0.30	0.43
Singapore	..	..	..	..	..	..	..
South Africa	1.60	2.65	2.76	2.85	3.14	..	..
Chinese Taipei	0.48	0.33	0.31	0.30	0.24	0.13	0.13

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	..	..	78 051 d	..	83 648 d	..	93 179 d
Belgium	48 757	..	73 709 b	..	78 867	..	91 757
Canada	..	..	..	..	..	..	..
Chile	..	12 303 d	13 015 d	14 181 d	14 392 d	14 596 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	37 542	54 493	56 605	56 178	59 789	61 966	63 690
Denmark	43 460	58 735	60 492	60 782	60 085	60 389	61 573 p
Estonia	5 734	7 721	7 181	6 845	7 344	7 281	7 734
Finland	50 773	55 515	55 728	53 752	54 139	55 415	58 291
France	251 599	379 048 b	383 843	396 594	416 217 p	429 959 p	..
Germany	406 253	..	586 030	..	623 125	..	667 394
Greece	33 396 d	..	60 736 d	..	61 616 d	..	66 451 d
Hungary	31 407	39 190	38 418	38 915	42 729	54 970 d	58 091 d
Iceland	3 821	..	3 722 b	..	3 783	..	..
Ireland	17 653	..	33 117 e	..	34 791 e	..	37 003
Israel[1]	..	..	..	..	..	..	..
Italy	125 534 d	168 074 d	174 327 d	185 916 b d	195 560 d	212 671 d	222 165 d
Japan	861 901 d	926 671 d	907 455 d	917 725 d	930 720 d	935 658 d	942 180 d
Korea	234 702 d	437 447	453 262	460 769	482 796	514 170	538 136
Latvia	5 748 d	7 939 d	7 827 d	7 400 d	7 504 d	7 439 d	..
Lithuania	11 918.00	19 371.00	17 293.00	17 746.00	18 767.00	19 198.00	..
Luxembourg	2 443	..	3 207	..	3 540	..	3 532 e p
Mexico	..	44 662	48 812	54 357	54 578 e	54 539 e	58 013 e
Netherlands	57 782	117 573	118 902	124 568	124 834	130 153	..
New Zealand	22 186	..	39 000	..	40 000	..	44 000
Norway	36 555	50 025	52 181	54 601	57 934	59 629	61 657
Poland	97 875	115 375	118 494	132 547	187 905 d	192 833 d	..
Portugal	37 769	78 736	81 005	85 780	89 659	96 123	100 823
Slovak Republic	17 526 d	25 080 d	24 396 d	26 720 d	26 861 d	28 755 d	28 851 d
Slovenia	7 644	12 155	11 308	11 282	14 079 d	15 388 d	15 925 d
Spain	181 023	210 104 d	214 227 d	218 680 d	225 995 d	234 798 d	241 372 d
Sweden	82 459 d	..	108 761 e	..	107 042 b	..	..
Switzerland	..	..	70 834	..	73 502	..	..
Turkey	83 856	181 544	190 784	191 769	210 769	230 030	243 773
United Kingdom	364 807 e	489 181 e	496 953 e	510 980 e	520 936 e	535 477 e	..
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	49 050	83 837 p	82 407	86 562	84 284	88 872	90 747
China	..	..	..	..	..	..	..
Romania	29 608	27 535	27 253	27 801	27 367	27 471	27 168
Russian Federation	391 121 e	373 905 e	379 411 e	370 379 e	359 793 e	347 854 e	348 221
Singapore	27 969	40 699	43 159	43 177	42 838	43 310	..
South Africa	39 266	48 479	51 877	56 761	61 840	..	..
Chinese Taipei	115 954	181 589	183 022	184 898	187 971	193 035	199 144

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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 22. Women researchers as a percentage of total researchers

Based on headcount

Percentage

	2005	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	..	..	29.5 d	..	30.1 d	..	30.4 d
Belgium	29.6	..	34.1 b	..	34.8	..	32.6
Canada	..	..	..	..	..	..	..
Chile	..	31.5 d	33.0 d	33.1 d	34.4 d	34.4 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	28.8	27.2	26.9	26.7	26.8	26.6	27.2
Denmark	29.7	..	33.8	..	35.7	..	35.3 p
Estonia	40.8	44.0	43.9	43.6	42.2	43.9	42.4
Finland	30.2	32.1	32.3	32.5	33.2	33.7	33.7
France	28.0	26.7 b e	27.0 e	28.0	28.3 p	..	..
Germany	21.3	..	28.0	..	27.9	..	28.1
Greece	36.4 d	..	38.0 d	..	37.8 d	..	39.0 d
Hungary	34.2	30.4	30.8	30.8	30.5	28.0 d	30.0 d
Iceland	39.3	..	45.6 b	..	46.4	..	..
Ireland	30.3	..	36.1 e	..	36.3 e	..	38.1
Israel[1]	..	..	..	..	..	..	..
Italy	32.3 d	36.0 d	36.0 d	35.2 b d	34.3 d	33.9 d	34.2 d
Japan	11.9 d	14.7 d	15.3 d	15.7 d	16.2 d	16.6 d	16.9 d
Korea	12.9 d	18.5	18.9	19.7	20.1	20.4	21.0
Latvia	51.5 d	52.1 d	51.0 d	52.2 d	52.2 d	50.7 d	..
Lithuania	48.65	50.25	50.74	51.57	49.51	49.00	..
Luxembourg	18.2	..	28.4	..	28.1	..	27.1 e p
Mexico	..	34.6	34.7	33.7	33.5 e	33.2 e	32.8 e
Netherlands	21.0	24.9	25.2	26.1	26.1	27.0	..
New Zealand	..	..	..	..	..	..	..
Norway	31.6	37.4	37.4	37.6	38.1	38.8	38.6
Poland	39.3	37.2	37.0	36.4	38.1 d	37.9 d	..
Portugal	44.4	44.3	44.1	43.5	43.7	43.3	42.8
Slovak Republic	41.5 d	42.5 d	42.2 d	41.4 d	41.9 d	41.2 d	41.0 d
Slovenia	34.8	36.1	36.5	34.5	32.3 d	32.5 d	33.3 d
Spain	36.7	39.6 d	40.0 d	40.2 d	40.5 d	40.8 d	41.3 d
Sweden	35.7 d	..	33.7 e	..	32.6 b	..	..
Switzerland	..	..	33.5	..	34.9	..	..
Turkey	36.1	36.9	37.3	36.7	37.0	36.8	37.0
United Kingdom	35.7 e	37.4 e	38.6 e	38.7 e	38.7 e	38.6 e	..
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	50.5	52.9 p	52.6	53.0	53.8	53.3	53.0
China	..	..	..	..	..	..	..
Romania	45.3	46.0	46.2	45.8	46.7	46.2	46.9
Russian Federation	42.4 e	40.5 e	40.3 e	40.0 e	39.5 e	39.2 e	39.1
Singapore	26.3	30.1	30.2	30.7	30.7	30.8	..
South Africa	39.7	44.3	45.0	45.1	44.9	..	..
Chinese Taipei	19.6	22.1	22.2	22.3	22.6	22.6	22.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	7 515.5	..	11 304.5	..	11 801.7	..	..
Austria	4 770.9 e	9 169.6 e	9 387.0	10 071.0 b e	10 178.5	10 893.1	11 460.9
Belgium	4 233.8	8 342.7	8 845.5	9 532.2	10 744.3	12 329.9	14 704.3
Canada	12 886.0 d	14 798.1 b	14 385.7	15 511.4	15 699.0	16 292.4	15 345.9 p
Chile	..	506.5	532.7	594.1	550.2	545.5 p	..
Colombia	109.5	812.9	1 090.4	716.7	635.0	971.1	1 202.5 e
Czech Republic	1 523.5 b	3 698.3	3 721.4	3 894.6	4 572.2	5 145.0	5 493.2
Denmark	3 023.3	5 023.4	5 405.2	5 991.4	5 931.2	6 232.3	6 392.0 p
Estonia	93.2	236.9	259.4	263.7	268.5	286.7	442.5
Finland	3 958.3	4 860.5	4 458.6	4 429.2	4 664.2	4 963.6	5 222.7
France	24 554.5	38 551.3	39 268.7	41 440.8	42 895.1 p	44 935.7 p	48 213.3 p
Germany	44 288.0	74 123.8	78 332.2	83 477.7	92 358.9	97 872.1 e	102 106.0
Greece	504.0	825.3	922.0	1 257.9	1 728.6	1 860.2	1 945.1
Hungary	685.1 d	2 437.9 d	2 595.1 d	2 398.7 d	2 779.9 d	3 550.0 b d	3 681.4 d
Iceland	152.9	178.1 d e	234.3 d	243.9 d e	256.1 d	264.7 d e	346.2 d
Ireland	1 314.6	2 572.3 e	2 758.0	2 886.6 e	3 487.2	3 510.9 e	4 035.8
Israel[1]	5 677.4 d	9 953.1 d	10 792.5 d	12 629.5 d	13 953.2 d	15 335.5 d	16 661.7 d e
Italy	9 186.6	16 688.8	17 444.9	20 110.4 b	21 510.6	23 435.6	24 814.3
Japan	98 384.0	131 839.8	132 268.5	126 216.4	131 290.7	137 229.8	137 148.3
Korea	23 531.2 d	57 180.5	59 635.5	62 822.4	71 695.7	79 511.0	82 326.9
Latvia	66.9	116.2	75.6	55.7	77.4	94.3	103.3
Lithuania	73.54	262.84	239.40	261.29	315.02	399.14	466.43
Luxembourg	431.1	382.7	405.7	463.7	473.9	442.9	473.2
Mexico	2 510.0	1 689.7	1 782.4	2 053.8	1 818.8 e	1 658.6 e	1 615.4 e
Netherlands	5 761.6	11 676.6	11 747.2	12 581.6	13 638.0	14 177.3	15 080.5
New Zealand	495.1	..	1 083.9	..	1 491.3	1 689.5	1 881.5
Norway	1 752.6	3 118.9	3 266.6	3 360.3	3 732.6	3 906.6	4 170.2
Poland	947.8	4 262.3	4 765.4	6 799.5 b	7 614.9	9 702.7	10 785.9
Portugal	695.5	1 789.6	1 772.0	2 023.9	2 264.2	2 494.1	2 784.1
Slovak Republic	219.8	508.2	527.3	641.3	784.8	779.8	805.3
Slovenia	398.0	1 164.5	1 092.9	1 065.1	1 052.3	1 165.7	1 300.0
Spain	7 128.0	10 242.7	10 410.1	11 088.6	12 252.3	13 363.5	13 962.6
Sweden	7 564.0 b	9 514.1 e	10 794.2	11 307.5 e	12 531.6	12 840.0 e	13 816.0
Switzerland	..	..	12 672.2	..	13 175.6	..	..
Turkey	1 554.8	7 931.2	8 868.1	10 764.3	12 269.6	14 257.7	15 563.4
United Kingdom	18 809.0	28 541.9	30 156.9	32 274.8	34 596.5	36 644.4	37 937.1
United States	226 159.0 d	340 728.0 d	355 821.0 d	379 528.0 d	405 791.0 d	445 637.0 d	485 826.0 d e
EU27 (from 01/02/2020)	122 200.5 e	208 217.1 e	217 590.7 e	234 665.9 e	255 037.7 e	273 765.9 e	291 642.0 e
OECD-Total	**527 241.2 e**	**828 813.1 e**	**859 141.1 e**	**904 847.0 e**	**970 872.3 e**	**1 049 852.4 e**	**1 114 385.2 e**
Argentina	715.8	998.1 p	1 139.6 b	1 121.6	1 565.2	1 627.9	1 736.7
China	58 876.3	267 652.0	281 121.2	304 448.6	326 502.0	360 368.9	401 727.1
Romania	420.0	650.6	920.0	1 270.1	1 517.5	1 693.8	1 731.1
Russian Federation	12 317.7	24 058.9	22 982.7	22 903.7	25 408.6	23 178.5	26 993.5
Singapore	3 556.9	5 794.6	6 266.3	6 081.4	6 079.3	6 397.0	..
South Africa	2 357.5	2 385.4	2 371.6	2 399.9	2 467.7	..	..
Chinese Taipei	10 247.5	24 460.3	25 663.2	26 622.0	28 869.4	32 395.2	35 608.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	1.05	..	1.00	..	0.94	..	..
Austria	1.66 e	2.20 e	2.18	2.19 b e	2.14	2.16	2.20
Belgium	1.22	1.66	1.70	1.73	1.87	2.05	2.34
Canada	1.10 d	0.91 b	0.90	0.92	0.89	0.87	0.81 p
Chile	..	0.13	0.13	0.14	0.12	0.12 p	..
Colombia	0.03	0.13	0.17	0.11	0.09	0.13	0.15 e
Czech Republic	0.68 b	1.08	1.04	1.02	1.11	1.18	1.20
Denmark	1.63	1.86	1.94	2.01	1.86	1.87	1.82 p
Estonia	0.41	0.62	0.67	0.63	0.60	0.60	0.86
Finland	2.35	2.13	1.91	1.79	1.78	1.81	1.83
France	1.27	1.45	1.44	1.45	1.44 p	1.44 p	1.44 p
Germany	1.69	1.95	2.01	2.00	2.11	2.15 e	2.20
Greece	0.18	0.28	0.32	0.42	0.56	0.58	0.59
Hungary	0.40 d	0.96 d	0.98 d	0.88 d	0.96 d	1.14 b d	1.11 d
Iceland	1.38	1.18 d e	1.44 d	1.36 d e	1.34 d	1.29 d e	1.60 d
Ireland	0.78	1.08 e	0.85	0.85 e	0.92	0.85 e	0.91
Israel[1]	3.30 d	3.54 d	3.63 d	3.91 d	4.12 d	4.28 d	4.39 d e
Italy	0.53	0.76	0.78	0.83 b	0.85	0.90	0.93
Japan	2.39	2.62	2.54	2.45	2.49	2.56	2.53
Korea	1.94 d	3.19	3.08	3.10	3.41	3.63	3.73
Latvia	0.22	0.24	0.15	0.11	0.14	0.16	0.17
Lithuania	0.2	0.3	0.3	0.3	0.3	0.4	0.4
Luxembourg	1.36	0.68	0.69	0.72	0.71	0.62	0.63
Mexico	0.19	0.08	0.08	0.09	0.07 e	0.06 e	0.06 e
Netherlands	0.94	1.41	1.38	1.41	1.45	1.42	1.46
New Zealand	0.47	..	0.63	..	0.73	0.78	0.84
Norway	0.79	0.92	1.04	1.09	1.10	1.05	1.14
Poland	0.18	0.44	0.47	0.63 b	0.67	0.80	0.83
Portugal	0.29	0.60	0.58	0.62	0.67	0.69	0.73
Slovak Republic	0.25	0.32	0.32	0.40	0.48	0.45	0.45
Slovenia	0.83	1.83	1.67	1.52	1.39	1.44	1.51
Spain	0.59	0.66	0.64	0.64	0.67	0.70	0.70
Sweden	2.45 b	2.08 e	2.24	2.26 e	2.40	2.36 e	2.43
Switzerland	..	..	2.32	..	2.26	..	..
Turkey	0.19	0.43	0.44	0.51	0.54	0.62	0.68
United Kingdom	0.96	1.07	1.09	1.11	1.14	1.17	1.17
United States	1.73 d	1.94 d	1.95 d	2.02 d	2.08 d	2.16 d	2.27 d e
EU27 (from 01/02/2020)	1.05 e	1.27 e	1.28 e	1.30 e	1.34 e	1.37 e	1.40 e
OECD-Total	**1.42 e**	**1.60 e**	**1.60 e**	**1.62 e**	**1.66 e**	**1.72 e**	**1.76 e**
Argentina	0.14	0.12 p	0.13 b	0.13	0.15	0.16	0.17
China	0.89	1.56	1.58	1.63	1.64	1.66	1.71
Romania	0.21	0.16	0.21	0.27	0.29	0.30	0.28
Russian Federation	0.68	0.64	0.65	0.65	0.67	0.55	0.63
Singapore	1.42	1.26	1.30	1.21	1.14	1.12	..
South Africa	0.50	0.35	0.34	0.34	0.34	..	..
Chinese Taipei	1.57	2.29	2.33	2.39	2.53	2.69	2.82

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	8 957.8	..	11 304.5	..	11 195.5	..	..
Austria	6 346.6 e	9 380.4 e	9 387.0	9 617.4 b e	9 613.2	9 972.1	10 304.7
Belgium	5 524.4	8 456.0	8 845.5	9 130.5	10 037.2	11 179.2	12 991.7
Canada	14 897.8 d	14 460.5 b	14 385.7	14 889.6	14 756.8	14 874.7	13 954.0 p
Chile	..	499.1	532.7	577.5	511.0	512.6 p	..
Colombia	124.5	796.4	1 090.4	686.3	591.7	871.2	1 046.1 e
Czech Republic	1 963.6 b	3 667.2	3 721.4	3 743.0	4 285.4	4 681.4	4 872.1
Denmark	4 226.3	5 061.3	5 405.2	5 791.7	5 499.7	5 660.1	5 666.1 p
Estonia	138.0	234.8	259.4	253.2	253.3	262.2	396.1
Finland	5 215.1	4 936.2	4 458.6	4 294.5	4 397.8	4 527.2	4 650.5
France	31 597.2	38 935.6	39 268.7	39 764.8	40 425.2 p	41 134.2 p	42 138.7 p
Germany	56 972.2	74 606.6	78 332.2	79 682.6	86 077.7	88 740.4 e	91 327.8
Greece	647.5	825.7	922.0	1 222.7	1 635.2	1 728.2	1 771.6
Hungary	951.7 d	2 446.3 d	2 595.1 d	2 357.4 d	2 707.0 d	3 376.8 b d	3 436.6 d
Iceland	185.9	184.3 d e	234.3 d	235.2 d e	241.7 d	243.3 d e	309.4 d
Ireland	1 791.8	2 799.8 e	2 758.0	2 803.3 e	3 332.3	3 331.0 e	3 785.6
Israel[1]	6 676.2 d	10 278.9 d	10 792.5 d	12 069.1 d	13 184.0 d	14 158.3 d	15 014.8 d e
Italy	12 372.1	16 866.0	17 444.9	18 857.9 b	19 721.0	20 952.3	21 639.8
Japan	117 885.9	134 527.6	132 268.5	127 883.9	133 240.2	137 090.1	136 030.0
Korea	26 119.6 d	59 992.6	59 635.5	61 694.3	69 985.3	76 630.1	80 345.9
Latvia	91.2	116.2	75.6	53.8	72.6	86.2	93.4
Lithuania	100.1	261.1	239.4	253.0	295.4	364.8	418.2
Luxembourg	617.4	384.7	405.7	444.8	445.0	405.1	418.6
Mexico	3 350.3	1 678.7	1 782.4	1 972.4	1 727.5 e	1 549.7 e	1 478.3 e
Netherlands	7 191.0	11 749.7	11 747.2	12 300.0	12 946.7	13 030.8	13 622.4
New Zealand	642.4	..	1 083.9	..	1 371.7	1 529.9	1 673.7
Norway	2 170.7	2 972.3	3 266.6	3 333.6	3 515.7	3 510.2	3 720.6
Poland	1 248.1	4 308.8	4 765.4	6 654.5 b	7 358.8	9 287.0	10 103.9
Portugal	906.6	1 806.8	1 772.0	1 943.7	2 158.1	2 316.6	2 510.3
Slovak Republic	276.7	500.7	527.3	659.9	818.9	804.0	822.5
Slovenia	486.1	1 168.2	1 092.9	1 023.6	984.6	1 064.1	1 148.7
Spain	9 153.2	10 261.6	10 410.1	10 685.5	11 441.4	12 354.1	12 612.0
Sweden	9 677.2 b	9 576.3 e	10 794.2	11 097.5 e	12 082.4	12 101.4 e	12 721.9
Switzerland	..	..	12 672.2	..	12 787.1	..	..
Turkey	2 345.3	8 127.0	8 868.1	10 628.0	12 172.5	14 332.1	15 938.1
United Kingdom	23 354.4	28 975.1	30 156.9	31 415.0	32 842.6	33 969.2	34 449.7
United States	270 664.9 d	343 971.7 d	355 821.0 d	375 587.2 d	394 166.9 d	422 722.0 d	452 761.9 d e
EU27 (from 01/02/2020)	158 653.4 e	210 127.7 e	217 590.7 e	225 124.0 e	239 268.2 e	250 305.7 e	260 516.1 e
OECD-Total	**643 849.4 e**	**839 933.3 e**	**859 141.1 e**	**888 749.2 e**	**938 871.5 e**	**993 174.9 e**	**1 038 367.4 e**
Argentina	860.8	1 003.1 p	1 139.6 b	1 075.8	1 314.8	1 335.0	1 397.0
China	63 551.4	259 910.3	281 121.2	309 386.7	333 883.8	359 752.9	393 400.7
Romania	663.7	657.8	920.0	1 190.6	1 373.0	1 494.6	1 447.9
Russian Federation	18 375.5	22 995.6	22 982.7	22 865.4	24 010.2	20 356.1	23 779.1
Singapore	3 947.7	5 866.3	6 266.3	6 029.9	5 916.5	6 007.9	..
South Africa	2 691.7	2 399.6	2 371.6	2 366.9	2 412.4	..	..
Chinese Taipei	12 095.8	24 919.3	25 663.2	26 935.6	29 372.6	32 188.5	34 760.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	1.55	..	1.55	..	1.43	..	..
Austria	2.52 e	3.38 e	3.36	3.38 b e	3.29	3.32	3.38 e
Belgium	1.92	2.70	2.74	2.80	3.03	3.33	3.79 e
Canada	1.65 d	1.41 b	1.43	1.49	1.42	1.39 e	1.28 e p
Chile	..	0.18	0.19	0.21	0.18	0.18 e p	..
Colombia	0.05	0.19	0.26	0.16	0.14	0.20	0.23 e
Czech Republic	0.98 b	1.58	1.52	1.49	1.64	1.76	1.79 e
Denmark	2.83	3.20	3.33	3.43	3.17	3.17	3.05 e p
Estonia	0.61	0.94	1.05	1.02	0.95	0.93	1.34 e
Finland	3.84	3.76	3.38	3.16	3.07	3.13	3.17 e
France	2.15	2.51	2.50	2.51	2.51 p	2.51 p	2.53 e p
Germany	2.62	3.06	3.16	3.14	3.31	3.38 e	3.48 e
Greece	0.29	0.53	0.59	0.79	1.03	1.07	1.07
Hungary	0.63 d	1.53 d	1.57 d	1.40 d	1.54 d	1.83 b d	1.79 d e
Iceland	2.29	1.92 d e	2.31 d	2.19 d e	2.21 d	2.11 d e	2.62 d
Ireland	1.14	1.54 e	1.11	1.11 e	1.20	1.09 e	1.17
Israel[1]	5.45 d e	6.01 d	6.10 d	6.58 d	6.95 d e	7.18 d e	7.36 d e
Italy	0.83	1.25	1.27	1.35 b	1.38	1.46	1.51 e
Japan	3.21	3.68	3.55	3.43	3.48	3.59 e	3.55 e
Korea	2.74 d e	4.54 e	4.42	4.46	4.91	5.26	5.40 e
Latvia	0.32	0.39	0.25	0.17	0.23	0.26	0.27 e
Lithuania	0.2	0.4	0.4	0.4	0.5	0.6	0.6 e
Luxembourg	2.04	1.01	1.00	1.04	1.02	0.91	0.92 e
Mexico	0.25	0.11	0.11	0.12	0.10 e	0.09 e	0.08 e
Netherlands	1.44	2.17	2.12	2.19	2.24	2.22	2.29 e
New Zealand	0.69	..	0.98	..	1.14	1.22	1.31 e
Norway	1.19	1.43	1.68	1.81	1.81	1.72	1.90 e
Poland	0.26	0.62	0.66	0.90 b	0.94	1.13	1.19 e
Portugal	0.49	1.03	0.98	1.06	1.14	1.19	1.26 e
Slovak Republic	0.36	0.46	0.46	0.58	0.71	0.67	0.68 e
Slovenia	1.26	2.80	2.56	2.33	2.11	2.17	2.26 e
Spain	0.88	1.07	1.03	1.02	1.06	1.12	1.11 e
Sweden	3.92 b	3.33 e	3.55	3.63 e	3.85	3.80 e	3.90
Switzerland	..	..	3.38	..	3.32	..	..
Turkey	0.28	0.61	0.63	0.74	0.77	0.87	0.96
United Kingdom	1.55	1.76	1.80	1.85	1.88	1.91	1.91 e
United States	2.69 d	3.09 d	3.11 d	3.24 d	3.30 d	3.43 d	3.60 d e
EU27 (from 01/02/2020)	1.64 e	2.03 e	2.04 e	2.07 e	2.13 e	2.18 e	2.23 e
OECD-Total	**2.15 e**	**2.47 e**	**2.47 e**	**2.51 e**	**2.57 e**	**2.65 e**	**2.73 e**
Argentina	0.20	0.19 e p	0.21 b e	0.20 e	0.24 e	0.25 e	0.26 e
China	1.03 e	1.85 e	1.89 e	1.97 e	2.00 e	2.03 e	2.10 e
Romania	0.29	0.23	0.31	0.38	0.41	0.43	0.40
Russian Federation	1.01 e	0.99	0.96	0.96	0.98	0.81	0.93
Singapore	1.69 e	1.55 e	1.61 e	1.51 e	1.41 e	1.37 e	..
South Africa	0.71 e	0.51 e	0.50 e	0.50 e	0.50 e	..	..
Chinese Taipei	2.11 e	3.03	3.08	3.15	3.29	3.52	3.72

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	23 794	..	33 016	..	34 576	..	..
Austria	18 155 d e	27 361 d e	27 872 d	29 615 d e	29 948 d	31 816 d p	33 868 d
Belgium	16 769	27 384	28 474 b	29 532 e	29 358	31 288	33 885
Canada	84 410	93 647 b	95 580	91 750	93 560	97 730	..
Chile	..	2 248 d	2 237 d	2 651 d	2 627 d	2 528 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	9 716 b	17 892	19 161	19 185	20 206	21 150	21 707
Denmark	17 624	23 975	25 011	26 976	26 095	25 666	26 132 p
Estonia	883	1 268	1 152	1 318	1 585	1 652	1 950
Finland	21 967	21 369	21 296	20 257	20 544	21 328	22 865
France	106 837	161 744	165 845	170 571	180 446 p	188 817 p	197 361 e
Germany	166 874	198 076 e	230 823	235 758 e	252 759	261 634 e	276 964
Greece	6 033 d	4 938 d	5 035 d	5 608 d	9 660 d	10 041 d	10 286 d
Hungary	5 008	15 577	15 026	15 247	17 527	21 467 d	22 801 d
Iceland	1 012	..	813 b	..	876	..	..
Ireland	6 768	11 246 e	11 296	11 185 e	12 569	12 192 e	12 938
Israel[1]	..	..	..	..	..	..	..
Italy	27 939 d	44 322 d	50 500 d	56 197 b d	62 478 d	73 335 d	78 111 d
Japan	481 496 d	506 134 d	486 198 d	488 828 d	498 732 d	504 746 d	507 473 d
Korea	137 706 d	274 638	284 136	287 869	311 566	334 810	354 381
Latvia	468 d	776 d	604 d	582 d	647 d	684 d	758 d
Lithuania	716.0	2 434.0	1 888.0	1 956.0	2 554.0	2 832.0	3 147.0
Luxembourg	1 696	1 015	1 048	1 194	1 275	1 134	1 282
Mexico	19 888	8 925	10 107	14 500	15 268 e	15 971 e	18 242 e
Netherlands	22 898	56 376	55 608	59 700	62 672	66 601	67 824
New Zealand	3 700	..	7 400	..	8 000	9 000	10 000
Norway	10 239 d	14 314 d	14 921 d	15 330 d	16 342 d	16 679 d	17 540 d
Poland	9 412	24 960	28 746	40 838 b	53 947 d	56 727 d	57 913 d
Portugal	4 014	11 203	11 785	13 426	15 407	16 746	19 220
Slovak Republic	1 947 d	2 645 d	2 789 d	2 846 d	3 333 d	3 918 d	4 216 d
Slovenia	1 936	4 637	4 191	4 489	5 757 d	6 270 d	6 383 d
Spain	35 034	44 689 d	45 151 d	47 222 d	49 571 d	54 360 d	54 888 d
Sweden	36 697 b d	44 433 e	45 067	47 127 e	51 843	54 720 e	55 498
Switzerland	..	..	21 893	..	22 909	..	..
Turkey	9 456	41 847	45 313	52 463	62 305	75 308	83 706
United Kingdom	93 717	102 221	105 774	110 149	113 807	123 022	132 141
United States	..	960 000	981 000	973 000	1 023 000	1 127 000	..
EU27 (from 01/02/2020)	531 938 e	758 668 e	809 821 e	854 347 e	923 688 e	979 767 e	1 026 189 e
OECD-Total	**2 198 236 e**	**2 872 394 e**	**2 946 502 e**	**3 006 669 e**	**3 184 271 e**	**3 404 600 e**	**..**
Argentina	3 763	3 204	4 554 b	4 614	5 155	6 309	6 198
China	696 413 d	946 077	1 014 614	1 048 147	1 055 746	1 143 157	1 216 670
Romania	10 319	5 244	4 234	4 857	4 467	4 643	4 606
Russian Federation	237 959	207 593	208 604	198 561	193 425	179 312	192 210
Singapore	14 238	18 518	19 761	19 383	19 336	20 207	..
South Africa	5 896	4 636	4 627	4 777	5 482	..	..
Chinese Taipei	51 202	97 019	100 106	102 721	105 558	109 276	113 300

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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 28. Business enterprise researchers as a percentage of national total

Percentage

	2005	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	63.8 d e	64.2 d e	64.0 d	63.0 d e	63.0 d	63.0 d p	64.2 d
Belgium	50.6	53.9	53.5 b	54.4 e	54.4	54.5	55.9
Canada	61.7	57.8 b	58.7	57.7	57.6	58.4	..
Chile	..	29.6 d	27.4 d	29.5 d	28.9 d	27.5 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	40.2 b	49.6	50.3	51.4	51.6	51.3	51.1
Denmark	62.5	57.9	58.4	60.2	59.4	58.4	58.5 p
Estonia	26.5	29.3	27.5	30.4	33.9	33.3	39.0
Finland	55.5	55.8	56.8	56.4	55.5	56.3	57.2
France	52.8	59.5 b	59.7	59.7	61.0 p	61.9 p	62.8 e
Germany	61.3	56.3 e	59.5	59.0 e	60.2	60.3 e	61.5
Greece	30.8 d	16.5 d	14.5 d	19.1 d	27.6 d	27.4 d	26.3 d
Hungary	31.5	59.4	59.4	59.1	61.7	57.1 d	58.0 d
Iceland	46.9	..	41.8 b	..	42.7	..	..
Ireland	58.4	45.8 e	46.1 e	46.0 e	49.0 e	48.3 e	50.0
Israel[1]	..	..	..	..	..	..	..
Italy	33.9 d	37.5 d	40.1 d	42.0 b d	44.5 d	48.1 d	48.6 d
Japan	70.7 d	74.1 d	73.4 d	73.4 d	73.7 d	74.4 b d	74.4 d
Korea	76.6 d	79.5	79.7	79.7	81.3	82.0	82.3
Latvia	14.3 d	20.7 d	16.7 d	18.5 d	18.6 d	19.8 d	20.9 d
Lithuania	9.4	26.8	23.1	22.9	29.2	31.7	32.7
Luxembourg	76.1	38.6	40.2	43.1	43.4	39.6	43.6 e p
Mexico	45.3	28.5	29.5	37.3	39.0 e	40.8 e	43.7 e
Netherlands	47.8	67.3	66.6	68.1	68.9	69.8	69.4
New Zealand	28.5	..	29.6	..	33.3	..	35.7
Norway	48.3 d	49.0 d	48.7 d	48.0 d	48.6 d	48.6 d	48.9 d
Poland	15.1	31.7	34.8	46.3 b	47.1 d	48.2 d	47.9 d
Portugal	19.0	29.4	30.5	32.5	34.3	35.1	38.3
Slovak Republic	17.8 d	17.9 d	19.4 d	20.1 d	21.9 d	24.0 d	24.8 d
Slovenia	36.9	54.1	53.1	55.3	61.9 d	62.3 d	60.7 d
Spain	31.9	36.6 d	36.9 d	37.3 d	37.2 d	38.8 d	38.1 d
Sweden	66.7 b d e	66.7 e	67.5 e	67.0 e	70.9	72.8 e	71.5
Switzerland	..	..	50.1	..	49.7	..	..
Turkey	24.2	46.7	47.6	52.4	55.7	59.6	61.8
United Kingdom	37.7 b e	37.0 e	37.2	38.1 e	38.5 e	40.2 e	41.6 p s
United States	..	71.6 e	71.6 e	70.8 e	71.2 e	72.5 e	..
EU27 (from 01/02/2020)	47.2 e	50.5 e	51.7 e	52.9 e	54.0 e	54.8 e	55.3 e
OECD-Total	**59.2 e**	**61.4 e**	**61.6 e**	**61.8 e**	**62.6 e**	**63.7 e**	**..**
Argentina	11.8	6.2	8.6 b	8.4	9.7	11.6	11.2
China	62.3 d	62.1	62.7	61.9	60.7	61.3	57.7
Romania	44.9	29.0	24.3	26.9	25.5	27.0	26.5
Russian Federation	51.2	46.7	46.4	46.3	47.1	44.2	48.0
Singapore	59.8	50.5	50.4	49.4	49.7	51.5	..
South Africa	34.1	19.7	17.7	17.3	18.6	..	..
Chinese Taipei	57.6	68.1	69.1	69.8	70.4	71.0	71.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	3.2	..	3.9	..	3.9	..	..
Austria	6.2 d e	8.5 d e	8.7 d	9.1 d e	9.1 d	9.5 d p	10.0 d e
Belgium	5.7	8.8	9.1 b	9.3 e	9.1	9.5	10.2 e
Canada	6.9	7.1 b	7.2	6.8	6.8	7.1	..
Chile	..	0.4 d	0.4 d	0.4 d	0.4 d	0.4 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	2.5 b	4.4	4.6	4.5	4.7	4.9	5.0 e
Denmark	9.5	13.1	13.4	14.1	13.3	12.9	12.9 e p
Estonia	1.9	2.8	2.4	2.8	3.2	3.3	3.9 e
Finland	12.8	12.1	12.1	11.5	11.5	11.7	12.3 e
France	5.9	8.7	8.9	9.1	9.5 p	9.8 e p	10.1 e
Germany	5.8	6.4 e	7.4	7.5 e	7.9	8.1 e	8.5 e
Greece	1.7 d	1.4 d	1.5 d	1.6 d	2.8 d	2.9 d	2.9 d
Hungary	1.6	4.9	4.7	4.5	5.1	6.0 d	6.3 d e
Iceland	8.6	..	6.4 b	..	6.2	..	..
Ireland	4.4	7.9 e	7.6	7.2 e	7.9	7.5 e	7.7
Israel[1]	..	..	..	..	..	..	..
Italy	1.5 d	2.5 d	2.8 d	3.1 b d	3.4 d	3.9 d	4.1 d e
Japan	8.8 d	9.5 d	9.2 d	9.1 d	9.2 d	9.2 d	9.1 d e
Korea	7.2 d	13.2	13.5	13.6	14.7	15.8	16.6 e
Latvia	0.6 d	1.2 d	0.9 d	0.9 d	1.0 d	1.0 d	1.1 d e
Lithuania	0.7	2.4	1.8	1.9	2.5	2.7	3.0 e
Luxembourg	6.9	3.3	3.4	3.7	3.8	3.3	3.6 e
Mexico	0.8	0.3	0.4	0.5	0.5 e	0.5 e	0.6 e
Netherlands	3.8	9.0	8.8	9.2	9.4	9.7	9.8 e
New Zealand	2.4	..	4.2	..	4.3	4.8	5.2 e
Norway	6.9 d	8.4 d	8.7 d	9.0 d	9.5 d	9.5 d	9.8 d e
Poland	0.8	2.0	2.3	3.2 b	4.2 d	4.4 d	4.5 d e
Portugal	1.0	3.3	3.4	3.8	4.2	4.5	5.1 e
Slovak Republic	1.2 d	1.5 d	1.6 d	1.6 d	1.8 d	2.1 d	2.2 d e
Slovenia	2.5	6.2	5.5	5.8	7.2 d	7.6 d	7.6 d e
Spain	2.3	3.4 d	3.3 d	3.4 d	3.5 d	3.7 d	3.7 d e
Sweden	12.9 b d	14.2 e	14.2	14.8 e	15.7	16.3 e	16.4
Switzerland	..	..	6.0	..	6.2	..	..
Turkey	0.6	1.9	2.1	2.4	2.7	3.3	3.8
United Kingdom	4.4	4.6	4.6	4.7	4.8	5.2	5.5 e
United States	..	9.3	9.4	9.1	9.4	10.3	..
EU27 (from 01/02/2020)	3.7 e	5.2 e	5.5 e	5.8 e	6.1 e	6.4 e	6.7 e
OECD-Total	**5.4 e**	**6.8 e**	**6.9 e**	**7.0 e**	**7.3 e**	**7.7 e**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.3	0.7	0.6	0.7	0.6	0.6	0.6
Russian Federation	4.7	3.9	3.9	3.7	3.6	3.4	3.6
Singapore	7.0	5.9	6.2	6.1	6.1	6.3	..
South Africa	0.6 e	0.4 e	0.4	0.4	0.5	..	..
Chinese Taipei	5.9	10.1	10.3	10.5	10.7	11.0	11.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	43 687	..	70 467	..	74 991	..	..
Austria	32 780 d e	49 539 d e	50 534 d	51 895 d e	52 478 d	55 751 d p	58 592 d
Belgium	31 613	42 391	44 508 b	46 564	50 106	53 503	57 661
Canada	142 030	144 462 b	155 350	140 150	141 200	145 280	..
Chile	..	5 087 d	4 398 d	4 946 d	4 525 d	3 925 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	21 116 b	35 256	36 365	37 263	39 968	42 349	44 792
Denmark	28 359	35 431	36 898	38 855	36 035	35 443	37 593 p
Estonia	1 398	1 798	1 694	1 855	2 086	2 150	2 639
Finland	32 109	29 634	29 770	27 634	28 148	28 720	29 713
France	194 991	248 145	251 444	255 805	265 496 p	276 130 p	286 968 e
Germany	304 502	371 706 e	404 767	413 027 e	436 571	451 057 e	475 676
Greece	11 665 d	7 750 d	8 131 d	9 102 d	13 004 d	13 944 d	14 339 d
Hungary	7 393	22 177	21 030	20 825	24 719	31 027 d	33 124 d
Iceland	1 530	..	1 604 d	..	1 799 d	..	..
Ireland	10 338	17 821 e	18 383	18 203 e	19 542	18 956 e	19 733
Israel[1]	43 049 d	69 854 d	72 914 d	83 408 d	89 876 d	93 800 d	..
Italy	70 725 d	129 271 d	136 725 d	164 471 b d	191 960 d	218 822 d	225 056 d
Japan	609 808 d	611 027 d	592 175 d	586 593 d	603 407 d	611 500 d	617 060 d
Korea	153 400 d	314 019	323 652	328 948	355 601	383 321	405 212
Latvia	1 370 d	1 382 d	1 145 d	896 d	956 d	1 221 d	1 175 d
Lithuania	1 190.0	3 307.0	2 714.0	2 630.0	3 783.0	4 304.0	4 813.0
Luxembourg	3 662	3 066	3 066	3 234	3 252	3 086	3 241
Mexico	42 331	16 226	18 895	26 313	26 506 e	26 529 e	28 471 e
Netherlands	48 588	94 612	97 443	102 614	107 496	112 807	115 124
New Zealand	6 100	..	11 000	..	14 000	15 000	18 000
Norway	15 399	20 597	21 637	22 171	23 766	23 766	25 154
Poland	13 966	37 253	42 054	55 758 b	72 966 d	85 981 d	86 742 d
Portugal	6 133	17 348	18 283	19 367	22 022	23 662	26 793
Slovak Republic	3 524 d	4 133 d	4 405 d	4 643 d	5 654 d	6 524 d	7 113 d
Slovenia	4 347	9 696	9 222	9 569	9 954 d	10 471 d	11 326 d
Spain	75 345	87 642 d	87 432 d	90 129 d	95 667 d	104 474 d	106 435 d
Sweden	56 106 b	57 307 e	57 691	64 276 e	63 729	67 554 e	64 641
Switzerland	..	..	50 825	..	49 353	..	..
Turkey	14 992	61 945	66 667	72 579	87 918	104 376	114 931
United Kingdom	145 401	192 221	206 153	209 584	231 234	250 059	262 579
United States	..	1 366 000	1 399 000	1 393 000	1 475 000	1 619 000	..
EU27 (from 01/02/2020)	982 304 e	1 326 240 e	1 387 200 e	1 465 174 e	1 572 660 e	1 679 281 e	1 745 635 e
OECD-Total	**..**	**4 244 537 e**	**4 358 441 e**	**4 443 328 e**	**4 724 768 e**	**5 049 185 e**	**..**
Argentina	7 155	9 979	12 214 b	12 742	12 876	13 918	14 389
China	883 130 d	2 896 352	2 910 799	3 012 081	3 119 809	3 424 780	3 668 433
Romania	16 157	10 437	10 128	10 785	11 525	12 081	11 628
Russian Federation	524 049	423 134	426 372	402 097	389 191	359 385	390 817
Singapore	17 076	21 638	23 044	22 387	22 228	23 136	..
South Africa	12 236	12 928	12 458	12 549	12 953	..	..
Chinese Taipei	96 714	180 435	186 804	192 127	196 992	203 456	210 576

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	68.8 d e	70.6 d e	70.8 d	69.0 d e	69.0 d	69.0 d p	70.0 d
Belgium	59.1	58.2	57.4 b	58.9 e	60.6	60.4	61.7
Canada	65.0	61.1 b	63.4	61.3	60.9	61.0	..
Chile	..	32.0 d	28.8 d	29.8 d	27.2 d	25.2 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	48.7 b	54.7	54.7	56.6	57.3	56.5	56.5
Denmark	65.2	60.7	61.2	61.8	59.8	59.3	60.4 p
Estonia	32.0	31.1	30.1	32.1	34.5	34.8	41.3
Finland	55.9	56.8	59.1	58.3	57.4	57.4	57.7
France	55.8	58.5 b	58.7	59.2	60.1 p	61.0 p	61.9 e
Germany	64.1	61.4 e	63.2	62.8 e	63.6	63.7 e	64.7
Greece	34.7 d	17.9 d	16.4 d	21.8 d	27.3 d	27.2 d	26.6 d
Hungary	31.8	59.4	57.1	58.2	61.1	56.8 d	58.2 d
Iceland	47.4	..	54.5 d	..	56.7 d	..	..
Ireland	61.9	53.2 e	53.5 e	53.0 e	54.3 e	52.9 e	53.5
Israel[1]	..	..	..	..	..	..	..
Italy	40.4 d	51.8 d	52.8 d	56.7 b d	60.4 d	63.3 d	63.2 d
Japan	68.0 d	68.2 d	67.7 d	67.2 d	67.7 d	68.2 b d	68.3 d
Korea	71.2 d	72.9	73.2	73.5	75.5	76.5	77.1
Latvia	25.0 d	24.1 d	20.6 d	17.5 d	17.8 d	21.0 d	19.8 d
Lithuania	10.8	28.0	25.6	24.1	32.7	36.0	37.0
Luxembourg	83.4	58.5	58.3	59.9	58.6	56.4	58.6 e p
Mexico	50.6	31.1	33.1	40.0	40.5 e	41.1 e	42.6 e
Netherlands	51.9	69.5	69.9	71.0	71.5	71.9	71.8
New Zealand	32.2	..	33.3	..	41.2	..	46.2
Norway	51.4	51.1	51.0	50.5	51.4	51.0	51.6
Poland	18.2	35.7	38.5	49.9 b	50.6 d	53.1 d	52.9 d
Portugal	23.8	37.0	38.1	38.4	40.0	40.7	43.6
Slovak Republic	24.5 d	23.5 d	25.0 d	26.1 d	29.7 d	32.2 d	33.6 d
Slovenia	48.3	65.2	64.8	66.4	67.7 d	66.8 d	66.7 d
Spain	43.1	43.8 d	43.5 d	43.8 d	44.3 d	46.3 d	46.0 d
Sweden	72.3 b e	68.7 e	69.0 e	70.9 e	71.7 v	73.4 e	70.9 e
Switzerland	..	..	62.4	..	60.4	..	..
Turkey	30.4 e	53.7 e	54.5 e	53.0	57.3	60.6	62.9
United Kingdom	44.8 b e	48.5 e	49.8	50.2 e	52.1 e	54.0 e	54.0 p s
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	52.3 e	55.1 e	55.9 e	57.3 e	58.4 e	59.2 e	59.6 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	15.8	13.0	15.5 b	15.7	16.1	16.6	16.9
China	64.7 d	78.1	77.4	77.7	77.3	78.2	76.4
Romania	48.6	33.2	32.3	33.5	35.4	37.8	36.7
Russian Federation	57.0	51.0	51.1	50.1	50.0	47.4	51.8
Singapore	59.7	50.9	50.7	49.6	49.9	51.6	..
South Africa	42.5	33.6	30.3	29.5	29.3	..	..
Chinese Taipei	64.8	75.2	76.1	76.7	77.2	77.6	77.5

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	5.9	..	8.3	..	8.5	..	..
Austria	11.1 d e	15.5 d e	15.7 d	16.0 d e	15.9 d	16.6 d p	17.2 d e
Belgium	10.7	13.6	14.2 b	14.6	15.5	16.3	17.3 e
Canada	11.6	10.9 b	11.7	10.4	10.3	10.5	..
Chile	..	0.8 d	0.7 d	0.8 d	0.7 d	0.6 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	5.3 b	8.6	8.7	8.8	9.4	9.8	10.4 e
Denmark	15.3	19.3	19.7	20.3	18.4	17.7	18.6 e p
Estonia	3.0	3.9	3.6	3.9	4.2	4.3	5.3 e
Finland	18.8	16.8	17.0	15.6	15.8	15.7	16.0 e
France	10.8	13.4	13.5	13.7	14.0 p	14.3 e p	14.7 e
Germany	10.6	11.9 e	12.9	13.1 e	13.6	13.9 e	14.6 e
Greece	3.2 d	2.3 d	2.5 d	2.7 d	3.8 d	4.0 d	4.1 d
Hungary	2.3	7.0	6.5	6.2	7.1	8.7 d	9.1 d e
Iceland	13.0	..	12.7 d	..	12.7 d	..	..
Ireland	6.7	12.5 e	12.4	11.8 e	12.3	11.6 e	11.8
Israel[1]	22.9 d	28.5 d	29.2 d	32.4 d	34.1 d	35.2 d	..
Italy	3.9 d	7.2 d	7.6 d	9.0 b d	10.3 d	11.6 d	11.9 d e
Japan	11.1 d	11.5 d	11.2 d	11.0 d	11.2 d	11.1 d	11.1 d e
Korea	8.0 d	15.1	15.4	15.6	16.8	18.1	19.0 e
Latvia	1.8 d	2.1 d	1.7 d	1.3 d	1.4 d	1.8 d	1.7 d e
Lithuania	1.1	3.3	2.7	2.5	3.7	4.1	4.6 e
Luxembourg	15.0	10.0	9.8	10.0	9.7	8.9	9.0 e
Mexico	1.7	0.6	0.7	0.9	0.9 e	0.9 e	0.9 e
Netherlands	8.0	15.1	15.3	15.8	16.2	16.5	16.6 e
New Zealand	3.9	..	6.3	..	7.5	7.9	9.4 e
Norway	10.3	12.0	12.7	13.1	13.8	13.6	14.1 e
Poland	1.3	3.0	3.4	4.4 b	5.7 d	6.7 d	6.7 d e
Portugal	1.6	5.1	5.3	5.5	6.0	6.3	7.1 e
Slovak Republic	2.2 d	2.4 d	2.5 d	2.5 d	3.0 d	3.4 d	3.7 d e
Slovenia	5.7	13.0	12.2	12.4	12.5 d	12.7 d	13.4 d e
Spain	4.9	6.7 d	6.5 d	6.5 d	6.7 d	7.2 d	7.1 d e
Sweden	19.8 b	18.3 e	18.2	20.1 e	19.3	20.1 e	19.1
Switzerland	..	..	14.0	..	13.5	..	..
Turkey	0.9	2.9	3.0	3.3	3.8	4.5	5.2
United Kingdom	6.8	8.6	9.0	9.0	9.8	10.5	10.9 e
United States	..	13.2	13.3	13.0	13.6	14.8	..
EU27 (from 01/02/2020)	6.8 e	9.2 e	9.5 e	9.9 e	10.4 e	11.0 e	11.3 e
OECD-Total	**..**	**10.1 e**	**10.3 e**	**10.3 e**	**10.8 e**	**11.4 e**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	2.0	1.4	1.4	1.5	1.6	1.6	1.6
Russian Federation	10.3	8.0	8.0	7.5	7.3	6.7	7.4
Singapore	8.4	6.8	7.2	7.0	7.0	7.2	..
South Africa	1.3 e	1.2 e	1.1	1.1	1.1	..	..
Chinese Taipei	11.1	18.7	19.2	19.6	19.9	20.4	21.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 2015 prices and PPP

Million 2015 USD

	2005	2014	2015	2016	2017	2018	2019
Australia	8 422.1	..	10 874.8	..	10 750.2	..	..
Austria	..	..	6 324.8	..	7 260.3 b	..	7 761.7
Belgium	4 571.5	..	7 006.5	..	8 665.7	..	10 859.3
Canada	12 287.6 d w	11 573.5 b	11 014.1	10 990.5	11 163.8	11 243.8	10 547.7 p
Chile	..	441.8	470.8	506.8	439.8	416.7 p	..
Colombia	122.1	780.2	1 053.4	670.3	580.9	857.6	1 035.1 e
Czech Republic	1 547.7 b	2 289.0	2 250.5	2 314.6	2 567.0	2 889.8	2 901.0
Denmark	3 634.9	..	4 955.8	..	4 867.7	..	5 327.1 p
Estonia	110.9	188.2	216.7	222.0	220.0	231.3	342.0
Finland	4 741.9	3 781.9	3 552.2	3 607.5	3 811.7	3 751.7	3 749.1
France	25 490.0	32 254.5	32 193.2	33 086.6	33 621.7 p	34 478.4 p	35 331.6 p
Germany	52 452.1 e	68 188.5 e	70 386.9	71 515.1 e	77 851.8	80 251.9 e	80 518.9
Greece	554.7	651.3	759.1	1 070.9	1 375.7	1 408.1	1 465.9
Hungary	740.7 d	1 572.9	1 681.0	1 734.6	1 896.6	2 275.5 b	2 388.8
Iceland	157.9	101.7 e	122.3	132.8 e	135.3	148.0 e	172.1
Ireland	1 542.5	2 027.8 e	1 841.6	1 871.9 e	2 264.3	2 263.4 e	3 141.8
Israel[1]	4 487.3 d	4 078.9 d	4 038.6 d	5 154.0 d	5 147.6 d	5 710.3 d	..
Italy	9 499.0	13 763.1	14 685.9	15 864.4 b	16 316.6	17 436.1	18 492.2
Japan	115 897.8	132 303.1	129 997.8	125 423.7	130 836.6	134 894.4	133 952.2
Korea	24 667.8 d	56 537.6	56 089.3	58 475.7	65 661.3	71 532.3	75 286.5
Latvia	56.3	69.3	36.2	35.3	50.3	61.5	69.5
Lithuania	83.9	197.7	173.4	221.9	238.3	290.6	289.0
Luxembourg	565.9	..	367.1	..	389.5	..	385.8
Mexico	2 908.8	1 394.0	1 549.3	1 559.8	1 367.8 e	1 198.2 e	1 151.6 e
Netherlands	5 684.3	9 567.4	9 436.1	9 951.3	10 459.8	10 551.0	11 197.2
New Zealand	517.3	..	826.8	..	1 040.0	1 158.7	1 252.3
Norway	1 772.0	2 314.7	2 555.2	2 569.8	2 742.2	2 743.9	2 917.9
Poland	1 036.2	3 419.6	3 801.3	5 266.8 b	5 847.6	7 289.6	..
Portugal	828.2	1 593.0	1 588.7	1 735.3	1 942.2	2 077.4	2 255.1
Slovak Republic	187.8	373.6	411.1	559.6	701.3	707.6	687.1
Slovenia	414.8	998.3	959.1	908.3	805.2	870.9	928.2
Spain	7 317.7	8 449.1	8 528.1	8 788.7	9 419.6	10 225.6	10 369.8
Sweden	8 334.8 b	..	8 681.7	..	10 097.4	..	..
Switzerland	..	..	10 824.0	..	11 826.0	..	..
Turkey	2 129.5	7 279.1	7 770.0	9 026.8	10 450.9	12 533.6	13 821.4
United Kingdom	15 065.9	20 468.8	21 759.0	23 665.7	25 354.4	26 895.1	26 807.5
United States	244 444.4 d w	293 264.5 d	304 487.0 d	321 665.0 d	332 111.9 d	357 811.6 d	381 703.1 d e
EU27 (from 01/02/2020)	134 185.2 e	176 129.8 e	181 325.5 e	189 909.3 e	202 781.8 e	211 805.6 e	219 313.9 e
OECD-Total	**574 376.2 e**	**728 328.9 e**	**743 268.8 e**	**770 924.8 e**	**810 279.2 e**	**859 100.8 e**	**894 401.4 e**
Argentina	813.8	..	904.2 b	804.7	856.2	900.3	1 004.9
China	57 984.8	243 596.6	263 460.9	292 918.7	317 317.5	343 852.0	377 954.5
Romania	381.8	389.6	639.5	919.8	1 194.5	1 330.8	1 257.6
Russian Federation	6 847.5	8 061.8	7 853.0	8 798.6	9 827.0	8 532.6	9 423.8
Singapore	3 466.1	4 910.6	5 325.6	5 114.5	4 976.6	5 099.3	..
South Africa	1 838.6	1 951.7	1 954.4	2 015.4	2 276.1	..	..
Chinese Taipei	11 822.6	24 524.0	25 275.1	26 536.3	28 959.5	31 713.7	34 272.9

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	1.46	..	1.49	..	1.38	..	..
Austria	..	..	2.26	..	2.48 b	..	2.55 e
Belgium	1.59	..	2.17	..	2.61	..	3.17 e
Canada	1.36 d w	1.13 b	1.10	1.10	1.07	1.05 e	0.97 e p
Chile	..	0.16	0.17	0.18	0.16	0.14 e p	..
Colombia	0.05	0.19	0.25	0.16	0.13	0.19	0.23 e
Czech Republic	0.77 b	0.98	0.92	0.92	0.98	1.08	1.07 e
Denmark	2.43	..	3.05	..	2.80	..	2.87 e p
Estonia	0.49	0.76	0.88	0.89	0.82	0.82	1.15 e
Finland	3.49	2.88	2.69	2.65	2.66	2.59	2.55 e
France	1.73	2.08	2.05	2.09	2.09 p	2.11 p	2.12 e p
Germany	2.41 e	2.79 e	2.84	2.82 e	3.00	3.05 e	3.07 e
Greece	0.25	0.42	0.49	0.69	0.86	0.87	0.88
Hungary	0.49 d	0.98	1.01	1.03	1.08	1.23 b	1.24 e
Iceland	1.94	1.06 e	1.21	1.24 e	1.24	1.28 e	1.46
Ireland	0.98	1.11 e	0.74	0.74 e	0.81	0.74 e	0.98
Israel[1]	3.66 d e	2.38 d	2.28 d	2.81 d	2.71 d e	2.90 d e	..
Italy	0.64	1.02	1.07	1.14 b	1.15	1.22	1.29 e
Japan	3.16	3.62	3.49	3.36	3.42	3.53 e	3.49 e
Korea	2.59 d e	4.27 e	4.16	4.23	4.61	4.91	5.06 e
Latvia	0.20	0.23	0.12	0.11	0.16	0.18	0.20 e
Lithuania	0.2	0.3	0.3	0.4	0.4	0.4	0.4 e
Luxembourg	1.87	..	0.90	..	0.89	..	0.85 e
Mexico	0.22	0.09	0.10	0.09	0.08 e	0.07 e	0.06 e
Netherlands	1.14	1.77	1.70	1.77	1.81	1.80	1.89 e
New Zealand	0.56	..	0.75	..	0.86	0.92	0.98 e
Norway	0.97	1.12	1.31	1.39	1.41	1.34	1.49 e
Poland	0.22	0.50	0.52	0.71 b	0.75	0.89	..
Portugal	0.45	0.90	0.88	0.95	1.02	1.07	1.14 e
Slovak Republic	0.24	0.34	0.36	0.50	0.61	0.59	0.57 e
Slovenia	1.07	2.39	2.24	2.06	1.73	1.78	1.83 e
Spain	0.71	0.88	0.84	0.84	0.87	0.92	0.92 e
Sweden	3.38 b	..	2.86	..	3.22	..	..
Switzerland	..	..	2.89	..	3.07	..	..
Turkey	0.25	0.55	0.55	0.63	0.66	0.76	0.83
United Kingdom	1.00	1.25	1.30	1.39	1.45	1.51	1.49 e
United States	2.43 d w	2.64 d	2.66 d	2.77 d	2.78 d	2.91 d	3.04 d e
EU27 (from 01/02/2020)	1.39 e	1.70 e	1.70 e	1.74 e	1.80 e	1.85 e	1.88 e
OECD-Total	**1.92 e**	**2.14 e**	**2.14 e**	**2.17 e**	**2.21 e**	**2.29 e**	**2.35 e**
Argentina	0.19	..	0.17 b e	0.15 e	0.16 e	0.17 e	0.19 e
China	0.94 e	1.74 e	1.77 e	1.87 e	1.90 e	1.94 e	2.02 e
Romania	0.17	0.14	0.22	0.29	0.35	0.38	0.35
Russian Federation	0.38 e	0.35	0.33	0.37	0.40	0.34	0.37
Singapore	1.48 e	1.30 e	1.37 e	1.28 e	1.19 e	1.16 e	..
South Africa	0.49 e	0.41 e	0.41 e	0.42 e	0.47 e	..	..
Chinese Taipei	2.07 e	2.99	3.03	3.10	3.25	3.47	3.67

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	94.0	..	96.2	..	96.0	..	..
Austria	..	..	67.4	..	75.5 b	..	75.3
Belgium	82.8	..	79.2	..	86.3	..	83.6
Canada	82.5 d w	80.0 b	76.6	73.8	75.7	75.6	75.6 p
Chile	..	88.5	88.4	87.8	86.1	81.3 p	..
Colombia	98.1	98.0	96.6	97.7	98.2	98.4	98.9 e
Czech Republic	78.8 b	62.4	60.5	61.8	59.9	61.7	59.5
Denmark	86.0	..	91.7	..	88.5	..	94.0 p
Estonia	80.3	80.2	83.5	87.7	86.8	88.2	86.3
Finland	90.9	76.6	79.7	84.0	86.7	82.9	80.6
France	80.7	82.8	82.0	83.2	83.2 p	83.8 p	83.8 p
Germany	92.1 e	91.4 e	89.9	89.7 e	90.4	90.4 e	88.2
Greece	85.7	78.9	82.3	87.6	84.1	81.5	82.7
Hungary	77.8 d	64.3 d	64.8 d	73.6 d	70.1 d	67.4 b d	69.5 d
Iceland	84.9	55.2 d e	52.2 d	56.4 d e	56.0 d	60.8 d e	55.6 d
Ireland	86.1	72.4 e	66.8	66.8 e	68.0	68.0 e	83.0
Israel[1]	67.2 d	39.7 d	37.4 d	42.7 d	39.0 d	40.3 d	..
Italy	76.8	81.6	84.2	84.1 b	82.7	83.2	85.5
Japan	98.3	98.3	98.3	98.1	98.2	98.4	98.5
Korea	94.4 d	94.2	94.1	94.8	93.8	93.3	93.7
Latvia	61.7	59.7	47.9	65.6	69.3	71.3	74.5
Lithuania	83.9	75.7	72.4	87.7	80.7	79.6	69.1
Luxembourg	91.7	..	90.5	..	87.5	..	92.2
Mexico	86.8	83.0	86.9	79.1	79.2 e	77.3 e	77.9 e
Netherlands	79.0	81.4	80.3	80.9	80.8	81.0	82.2
New Zealand	80.5	..	76.3	..	75.8	75.7	74.8
Norway	81.6	77.9	78.2	77.1	78.0	78.2	78.4
Poland	83.0	79.4	79.8	79.1 b	79.5	78.5	..
Portugal	91.4	88.2	89.7	89.3	90.0	89.7	89.8
Slovak Republic	67.9	74.6	78.0	84.8	85.6	88.0	83.5
Slovenia	85.3	85.5	87.8	88.7	81.8	81.8	80.8
Spain	79.9	82.3	81.9	82.2	82.3	82.8	82.2
Sweden	86.1 b	..	80.4	..	83.6	..	..
Switzerland	..	..	85.4	..	92.5	..	..
Turkey	90.8	89.6	87.6	84.9	85.9	87.5	86.7
United Kingdom	64.5	70.6	72.2	75.3	77.2	79.2	77.8
United States	90.3 d w	85.3 d	85.6 d	85.6 d	84.3 d	84.6 d	84.3 d e
EU27 (from 01/02/2020)	84.6 e	83.8 e	83.3 e	84.4 e	84.8 e	84.7 e	84.2 e
OECD-Total	**89.3 e**	**86.7 e**	**86.5 e**	**86.7 e**	**86.2 e**	**86.4 e**	**86.0 e**
Argentina	94.5	..	79.3 b	74.8	65.1	67.4	71.9
China	91.2	93.7	93.7	94.7	95.0	95.6	96.1
Romania	57.5	59.2	69.5	77.3	87.0	89.0	86.9
Russian Federation	37.3	35.1	34.2	38.5	40.9	41.9	39.6
Singapore	87.8	83.7	85.0	84.8	84.1	84.9	..
South Africa	68.3	81.3	82.4	85.1	94.4	..	..
Chinese Taipei	97.7	98.4	98.5	98.5	98.6	98.5	98.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	4.0	..	2.2	..	2.4	..	..
Austria	..	..	12.0	..	3.7 b	..	3.7
Belgium	6.2	..	5.5	..	3.4	..	3.7
Canada	2.6 d	4.5 b	4.6	5.4	6.8	6.0	6.0 p
Chile	..	9.3	9.7	11.7	13.0	18.2 p	..
Colombia	1.9	2.0	3.4	2.3	1.8	1.6	1.1 e
Czech Republic	15.6 b	9.2	7.6	6.1	7.0	7.0	6.8
Denmark	2.4 d	..	2.7 d	..	2.1 d	..	2.4 d p
Estonia	6.9	10.3	8.4	4.7	4.4	5.7	5.4
Finland	3.8	3.0	3.6	3.6	3.1	2.8	2.5
France	10.1	7.8	8.8	7.7	8.0 p	7.5 p	7.4 p
Germany	4.5 e	3.4 e	3.3	3.4 e	3.2	3.1 e	3.2
Greece	5.6	10.5	8.8	3.3	4.1	6.0	6.3
Hungary	3.9 d	16.5 d	19.4 d	8.3 d	13.6 d	16.3 b d	16.4 d
Iceland	2.8	9.0 d e	7.8 d	8.4 d e	9.2 d	11.4 d e	7.8 d
Ireland	4.1	6.0 e	5.0	5.0 e	4.6	4.6 e	3.5
Israel[1]	4.8 d	3.7 d	3.2 d	2.8 d	2.8 d	2.3 d	..
Italy	11.0	5.7	5.5	3.5 b	3.5	4.9	4.2
Japan	1.2	1.0	1.0	0.9	0.9	0.8	0.8
Korea	4.6 d	5.1	5.1	4.2	4.7	4.4	4.4
Latvia	12.7	1.4	1.6	2.6	6.1	3.7	3.7
Lithuania	1.8	1.8	2.2	1.5	1.2	1.6	1.3
Luxembourg	5.2	..	6.9	..	6.5	..	5.7
Mexico	11.0	16.2	11.3	18.8	18.4 e	19.9 e	18.9 e
Netherlands	3.4	6.2	6.3	6.0	5.7	6.4	6.1
New Zealand	11.4	..	11.0	..	11.9	11.7	10.9
Norway	7.9	8.5	8.6	9.4	9.4	9.9	10.0
Poland	13.7	11.5	10.0	16.3 b	13.9	13.5	..
Portugal	4.2	9.1	5.5	3.8	4.2	5.6	5.8
Slovak Republic	26.7	3.9	6.5	3.7	2.5	2.5	3.4
Slovenia	7.0	7.7	4.3	3.1	5.3	6.2	7.7
Spain	13.6	9.7	9.4	8.9	8.7	9.0	9.6
Sweden	4.5 b	..	.. c	..	4.7	..	..
Switzerland	..	..	1.4	..	1.0	..	..
Turkey	6.9	8.9	10.6	9.9	9.0	10.0	11.7
United Kingdom	8.3	9.3	8.7	7.8	7.6	6.9	7.1
United States	9.7 d	7.8 d	7.6 d	6.4 d	6.2 d	5.7 d	5.8 d e
EU27 (from 01/02/2020)	7.3 e	6.2 e	6.2 e	5.4 e	5.1 e	5.3 e	5.2 e
OECD-Total	**6.8 e**	**5.9 e**	**5.9 e**	**5.2 e**	**5.1 e**	**4.9 e**	**5.0 e**
Argentina	4.5	..	7.1 b	2.0	3.4	1.9	1.3
China	4.6	4.2	4.3	3.7	3.4	3.2	3.8
Romania	36.8	19.0	13.7	12.2	7.2	4.9	4.9
Russian Federation	53.6	62.7	63.4	59.0	56.6	56.2	57.3
Singapore	6.3	5.5	4.8	5.1	4.7	4.3	..
South Africa	16.2	5.2	3.8	3.1	2.3	..	..
Chinese Taipei	2.2	1.5	1.4	1.4	1.3	1.4	1.3

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 the Higher Education and PNP sectors

Percentage

	2005	2014	2015	2016	2017	2018	2019
Australia	0.33	..	0.05	..	0.02	..	..
Austria	..	..	0.06	..	0.12	..	0.04
Belgium	0.04	..	0.02	..	0.05	..	0.62
Canada	.. k	0.80 b	1.18	1.34	1.48	1.38	1.39 p
Chile	..	0.23	0.08	0.08	0.10	0.16 p	..
Colombia	0.00	0.00	0.00	0.00	0.00	0.00	0.00 e
Czech Republic	0.10 b	0.04	0.05	0.07	0.08	0.07	0.07
Denmark	0.16 d	..	0.31 d	..	0.79 d	..	0.45 d p
Estonia	0.01	0.06	0.03	0.07	0.04	0.12	0.05
Finland	0.01	0.06	0.02	0.02	0.03	0.02	0.05
France	0.05	0.09	0.08	0.07	0.08 p	0.09 p	0.12 p
Germany	0.17 d	0.20 d	0.15 d	0.19 d e	0.13 d	0.13 d e	0.15 d
Greece	0.37	0.04	0.01	0.02	0.05	0.03	0.09
Hungary	0.06 d	0.05 d	0.04 d	0.05 d	0.04 d	0.03 b d	0.06 d
Iceland	0.00	3.58 d e	6.18 d	6.70 d e	2.12 d	2.93 d e	0.08 d
Ireland	0.00	0.09 e	0.03	0.03 e	0.14	0.14 e	0.00
Israel[1]	0.61 d	0.59 d	0.57 d	0.53 d	0.49 d	0.47 d	..
Italy	0.11	0.36	0.34	0.14 b	0.14	0.14	0.15
Japan	0.10	0.17	0.12	0.09	0.10	0.07	0.03
Korea	0.06 d	0.05	0.06	0.04	0.05	0.06	0.05
Latvia	..	..	..	..	..	..	..
Lithuania	0.2	0.4	0.5	0.1	0.1	0.1	0.2
Luxembourg	0.02	..	..	..	..	..	..
Mexico	0.02	0.12	0.66	0.84	0.95 e	1.06 e	1.17 e
Netherlands	0.33	0.66	0.68	0.65	0.73	0.92	0.97
New Zealand	1.05	..	.. c	..	.. c	1.70	1.62
Norway	0.01	0.04	0.05	0.04	0.00	0.02	0.02
Poland	0.08	0.11	0.14	0.10 b	0.11	0.06	..
Portugal	0.00	0.02	0.02	0.03	0.03	0.02	0.04
Slovak Republic	0.03	0.00	0.01	0.00	0.00	0.00	0.00
Slovenia	0.48	0.05	0.00	0.00	0.53	.. c	0.05
Spain	0.68	0.18	0.85	0.24	0.22	0.18	0.21
Sweden	0.20 b	..	0.38	..	0.17	..	..
Switzerland	..	..	0.52	..	0.45	..	..
Turkey	2.02 d	0.09	0.14	0.12	0.27	0.16	0.03
United Kingdom	0.02 d	0.68 d	0.62 d	0.84 d	1.28	0.98	0.40
United States	.. k	0.15 d	0.14 d	0.27 b d	0.15 d	0.10 d	0.11 d e
EU27 (from 01/02/2020)	0.16 e	0.20 e	0.21 e	0.18 e	0.17 e	..	0.20 e
OECD-Total	**..**	**0.20 e**	**0.20 e**	**0.25 e**	**0.22 e**	**0.18 e**	**0.16 e**
Argentina	0.00	..	0.00 b	0.03	0.03	0.01	0.04
China	..	..	..	..	..	..	..
Romania	0.16	0.20	0.28	0.32	0.34	0.08	0.00
Russian Federation	0.04	0.16	0.18	0.05	0.05	0.05	0.05
Singapore	0.08	0.01	0.01	0.01	0.05	0.01	..
South Africa	1.02	2.79	2.71	2.72	0.32	..	..
Chinese Taipei	0.04	0.01	0.01	0.01	0.02	0.01	0.01

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	1.6	..	1.6	..	1.6	..	..
Austria	..	..	20.6	..	20.7	..	21.0
Belgium	11.0	..	15.3	..	10.2	..	12.1
Canada	14.9 d	14.7 b	17.6	19.5	16.1	17.0	17.0 p
Chile	..	1.9	1.9	0.5	0.8	0.3 p	..
Colombia	0.0	0.0	0.0	0.0	0.0	0.0	0.0 e
Czech Republic	5.4 b	28.3	31.9	32.0	33.0	31.2	33.6
Denmark	11.4	..	5.3	..	8.6	..	3.1 p
Estonia	12.7	9.4	8.1	7.5	8.7	5.9	8.3
Finland	5.3 b	20.4	16.7	12.4	10.2	14.3	16.8
France	9.2	9.3	9.1	9.0	8.7 p	8.6 p	8.7 p
Germany	3.3	5.0 e	6.7	6.7 e	6.3	6.3 e	8.5
Greece	8.3	10.6	8.9	9.1	11.7	12.5	10.9
Hungary	18.1 d	19.2 d	15.8 d	18.0 d	16.3 d	16.3 b d	14.1 d
Iceland	12.2	32.2 d e	33.8 d	28.4 d e	32.8 d	24.8 d e	36.5 d
Ireland	9.8	21.5 e	28.2	28.2 e	27.3	27.3 e	13.5
Israel[1]	27.4 d	56.0 d	58.8 d	53.9 d	57.7 d	56.9 d	..
Italy	12.1	12.3	10.0	12.2 b	13.6	11.7	10.2
Japan	0.4	0.5	0.6	0.9	0.8	0.7	0.7
Korea	0.9 d	0.6	0.8	1.0	1.4	2.2	1.8
Latvia	25.6	38.9	50.5	31.9	24.5	25.1	21.8
Lithuania	14.1	22.1	24.9	10.7	18.0	18.7	29.4
Luxembourg	3.1	..	2.6	..	5.9	..	2.1
Mexico	2.1	0.6	1.2	1.3	1.5 e	1.7 e	2.0 e
Netherlands	17.2	11.7	12.7	12.5	12.8	11.7	10.7
New Zealand	7.0	..	10.5	..	11.1	10.8	12.7
Norway	10.5	13.6	13.1	13.5	12.6	11.9	11.5
Poland	3.2	9.0	10.1	4.4 b	6.5	7.9	..
Portugal	4.5	2.7	4.9	6.9	5.7	4.7	4.4
Slovak Republic	5.3	21.5	15.5	11.5	11.9	9.4	13.1
Slovenia	7.2	6.8	8.0	8.2	12.4	11.9	11.5
Spain	5.8	7.8	7.9	8.6	8.7	8.0	8.0
Sweden	9.1 b	..	.. c	..	11.6	..	..
Switzerland	..	..	12.6	..	6.1	..	..
Turkey	0.3	1.4	1.6	5.0	4.9	2.4	1.5
United Kingdom	27.1	19.4	18.5	16.0	13.9	13.0	14.7
United States	.. k	6.8 d	6.7 d	7.7 d	9.4 d	9.6 d	9.8 d e
EU27 (from 01/02/2020)	7.9 e	9.7 e	10.2 e	10.0 e	10.0 e	9.8 e	10.4 e
OECD-Total	**..**	**7.2 e**	**7.4 e**	**7.9 e**	**8.5 e**	**8.6 e**	**8.9 e**
Argentina	1.0	..	13.6 b	23.2	31.4	30.6	26.7
China	1.0	0.9	0.9	0.8	0.8	0.4	0.1
Romania	5.5	21.6	16.5	10.3	5.5	5.9	8.2
Russian Federation	9.1	2.1	2.2	2.5	2.4	1.8	3.1
Singapore	5.9	10.8	10.2	10.1	11.2	10.8	..
South Africa	14.5	10.7	11.1	9.1	3.0	..	..
Chinese Taipei	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	178.0 e	..	..	..	..	..	..
Austria	269.7 e	379.6 e	368.0	388.6 e	400.8	..	..
Belgium	814.5 e	1 948.5	1 989.3	2 617.4	2 871.3	..	..
Canada	878.1 d e	375.5 d	400.6 d	410.9 d	452.9 d	434.0 d	..
Chile	..	28.0	28.8	39.7 e	40.0	46.9	..
Colombia	..	..	..	..	..	..	..
Czech Republic	55.1	84.6	86.9	90.5	89.6	111.4	99.8
Denmark	..	1 162.6	1 238.7	1 484.8	1 410.4	..	..
Estonia	..	2.1	1.6	0.8	1.4	1.1	..
Finland	..	148.5	143.2	162.9	170.9	175.2	..
France	..	1 058.7 e	1 099.9 e	1 087.7	1 078.7	..	..
Germany	3 891.4 e	5 247.0	5 084.0	6 003.0	6 217.8	7 094.4	..
Greece	..	82.9 e	69.3	73.7 e	88.1	..	..
Hungary	279.2 e	433.2	406.8	414.5	400.1	553.9	..
Iceland	..	0.2	1.0	1.4	1.1	1.4	..
Ireland	..	186.9 e	179.1	280.6 e	430.2	..	..
Israel[1]	..	279.0 d	349.6 d	341.7 d	263.3 d	191.1 d	..
Italy	452.2 e	691.7	729.4	841.7	868.5	897.1	..
Japan	8 087.5	14 510.5	14 088.5	12 808.7	13 941.7	13 544.6	12 923.0
Korea	444.0	1 287.1	1 576.2	1 511.3	1 629.6	1 825.1	2 038.2
Latvia	..	5.4	5.4	5.7	8.5	9.2	..
Lithuania	..	17.1	5.0	1.2 e	1.6 e	1.8	..
Luxembourg	..	..	..	..	..	..	..
Mexico	216.8	120.3	129.9	126.7	112.2	102.3	99.7
Netherlands	..	316.7	318.5	296.2	319.6	..	..
New Zealand	..	..	..	..	..	..	..
Norway	52.1 e	36.8	33.2	35.5	41.5	44.7	..
Poland	71.0	150.7	215.9	179.9	262.8	303.7	..
Portugal	63.8 e	129.7	127.4	154.1	173.6	204.5	..
Slovak Republic	..	8.7	6.3	10.7	5.8	5.0	4.6
Slovenia	124.1 e	275.4	308.0	311.6	..	..	..
Spain	711.1 e	873.0	892.6	982.4	1 106.1	1 194.7	..
Sweden	..	764.4 e	860.8 e	828.3 e	847.8 e	..	..
Switzerland	2 295.3 e	4 194.0 e	4 480.7	4 611.3 e	4 672.8	..	..
Turkey	..	198.4	201.5	176.8	226.9	357.3	223.6
United Kingdom	..	572.6	560.2	556.1	710.3	658.3	..
United States	34 839.0 d	56 612.0 d	58 675.0 d	64 628.0 d	66 202.0 d	74 592.0 d	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	..	..	..	..	..	..	..
China	..	10 383.9	11 405.1	12 246.0	12 767.7	13 741.4	14 471.1
Romania	19.2 e	38.8	27.9	37.0	20.9	20.8	..
Russian Federation	..	..	..	..	..	..	..
Singapore	76.8 e	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	118.1	476.5	447.8	535.3	530.3	504.7	490.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	182.7 e	..	..	..	..	..	..
Austria	1 234.0 e	854.1 e	909.6	1 013.0 e	1 065.6	..	..
Belgium	556.1 e	550.1	578.5	625.0	682.3	..	..
Canada	2 398.6 d e	838.8 d	877.4 d	951.9 d	965.1 d	814.6 d	..
Chile	..	1.7	1.0	1.3 e	1.3	2.0	..
Colombia	..	..	..	..	..	..	..
Czech Republic	105.2	147.5	152.7	185.6	206.7	236.4	283.3
Denmark	..	412.4	438.3	492.1	517.3	..	..
Estonia	..	8.0	12.4	17.0	26.2	28.9	..
Finland	2 111.4 e	1 916.4	1 506.6	1 318.1	1 292.3	1 281.6	..
France	..	4 648.8 e	4 675.6 e	4 929.3	4 885.6	..	..
Germany	6 607.9 e	9 762.4	9 691.3	10 147.5	10 391.5	11 240.3	..
Greece	..	20.1 e	19.6	25.3 e	34.6	..	..
Hungary	57.2 e	35.7	37.8	45.8	44.7	67.0	..
Iceland	..	2.8	2.4	2.9	3.6	4.3	..
Ireland	..	289.2 e	339.6	313.4 e	338.2	..	..
Israel[1]	1 486.5 d e	1 518.7 d	1 460.6 d	1 545.3 d	1 691.0 d	1 973.7 d	..
Italy	1 518.7 e	1 771.2	1 856.5	1 391.9	1 494.9	1 586.8	..
Japan	..	28 017.8	27 878.6	24 901.7	25 398.4	26 707.7	25 618.8
Korea	11 753.5	30 402.1	29 888.6	31 758.2	36 759.2	41 075.0	41 799.1
Latvia	..	5.8	6.6	7.4	6.6	11.1	..
Lithuania	..	17.8	18.2	18.9	35.2	36.3	..
Luxembourg	..	..	..	..	..	..	..
Mexico	73.0	62.8	89.1	82.2	72.8	66.4	64.6
Netherlands	..	848.5	760.7	814.3	868.1	..	..
New Zealand	..	..	..	..	..	..	..
Norway	178.9 e	195.6	196.7	188.6	196.0	219.5	..
Poland	29.3	94.7	115.3	125.7	174.7	411.4	..
Portugal	121.8 e	49.8	53.1	64.1	63.7	62.6	..
Slovak Republic	12.4	7.2	9.0	12.2	11.8	13.6	12.2
Slovenia	66.7 e	69.1	66.5	57.1	59.7	49.6	..
Spain	319.2 e	257.0	246.1	263.8	304.9	321.2	..
Sweden	..	1 949.4 e	2 220.3	1 200.2 e	255.4	..	..
Switzerland	799.1 e	1 718.7 e	1 776.7	1 725.0 e	1 616.5	..	..
Turkey	279.2 e	237.1	292.7	1 408.3	1 888.1	2 272.6	2 383.7
United Kingdom	..	1 440.9	1 422.3	1 582.8	1 505.4	1 692.3	..
United States	49 725.0 d e	73 891.0 d	72 110.0 d	77 385.0 d	78 575.0 d	83 697.0 d	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	..	..	..	..	..	..	..
China	..	41 543.2	46 312.1	50 056.7	52 894.3	59 213.8	63 556.6
Romania	8.3 e	16.2	37.7	44.9	15.1	5.3	..
Russian Federation	..	..	..	..	..	..	..
Singapore	1 451.8 e	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	7 230.4	17 778.6	18 859.2	19 437.5	21 282.3	23 855.0	26 691.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	39.3 e	..	..	..	..	..	..
Austria	5.7 e	60.2 e	73.1	79.8 e	75.5	..	..
Belgium	77.9 e	..	..	..	..	..	..
Canada	708.6 d e	1 317.5 d	1 293.2 d e	1 256.8 d	1 118.5 d	780.4 d	..
Chile	..	..	..	..	..	..	..
Colombia	..	..	..	..	..	..	..
Czech Republic	37.6	69.4	47.5	61.5	92.8	84.2	136.9
Denmark	..	..	..	0.7	2.8	..	..
Estonia	0.0	0.0	0.0	0.0	0.0	0.0	..
Finland	..	5.2 e	8.4	6.8	8.0 e	..	..
France	..	3 963.7 e	3 857.4 e	3 657.1	3 412.2	..	..
Germany	2 285.8 e	2 342.5	2 193.7	2 300.7	2 002.3	2 317.3	..
Greece	..	..	..	..	..	..	..
Hungary	..	..	..	..	..	..	..
Iceland	..	0.2	0.1	0.0	0.0	0.0	..
Ireland	..	..	..	..	..	..	..
Israel[1]	..	..	..	..	..	..	..
Italy	924.0 e	1 049.6	991.1	1 727.2	1 837.6	1 745.6	..
Japan	12.4	477.7	657.1	733.3	834.3	792.0	631.5
Korea	165.5	86.6	275.1	440.2	391.2	414.5	509.3
Latvia	..	..	..	..	..	..	..
Lithuania	..	0.0	..	..	..	..	..
Luxembourg	..	..	..	..	..	..	..
Mexico	0.4	30.5	27.1	34.3	30.3	27.7	26.9
Netherlands	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..
Norway	..	1.1 e	1.1	1.0 e	0.9 e	1.7 e	..
Poland	30.4	92.4	104.7	100.5	116.8	128.5	..
Portugal	..	..	..	..	..	..	..
Slovak Republic	..	..	..	..	..	..	..
Slovenia	0.0 e	2.0	1.8	1.7	..	..	..
Spain	386.8 e	525.8	597.9	631.6	656.7	723.2	..
Sweden	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..
Turkey	..	..	..	..	..	..	..
United Kingdom	..	2 137.3	2 109.9	2 403.0	1 959.2	2 301.4	..
United States	15 005.0 d	26 181.0 d	27 464.0 d	26 645.0 d	26 383.0 d	24 291.0 d	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	..	7.8	0.7	2.1	4.3	7.5	..
Russian Federation	..	..	..	..	..	..	..
Singapore	21.9 e	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	..	..	..	..	..	..	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	3 085.1 e	6 742.6 e	6 672.0	7 237.1 e	7 260.3	..	..
Austria	1 306.3 e	3 409.1 e	3 463.6	3 540.7 e	3 341.0	..	..
Belgium	1 253.5 e	3 572.5	3 818.5	3 896.8	4 546.0	..	..
Canada	5 189.8 d e	8 135.0 d	7 869.1 d e	8 701.0 d e	9 076.9 d	9 859.2 d	..
Chile	..	220.9	202.5	245.5	245.1	278.4	..
Colombia	..	..	..	..	..	..	..
Czech Republic	556.0	1 708.1	1 685.3	1 738.6	2 036.3	2 250.9	2 428.8
Denmark	..	2 073.6	2 306.9	2 787.4	2 659.3	..	..
Estonia	50.4	155.0	173.3	175.4	170.1	187.6	..
Finland	737.2 e	1 277.3	1 301.8	1 381.7	1 514.3	1 673.6	..
France	..	17 785.5 e	18 148.6 e	19 279.4	20 823.2	..	..
Germany	4 682.3 e	9 219.6	11 093.4	12 029.1	13 210.7	13 699.9	..
Greece	..	556.4 e	649.5	838.2 e	1 074.1	..	..
Hungary	162.6 e	1 277.2	1 477.3	1 200.9	1 404.7	1 717.3	..
Iceland	..	132.5	174.3	179.8	184.3	183.5	..
Ireland	..	1 515.6 e	1 663.6	1 646.5 e	1 896.1	..	..
Israel[1]	3 497.4 d e	7 614.5 d	8 391.7 d	10 156.9 d	11 324.6 d	12 368.4 d	..
Italy	2 584.7 e	4 533.3	4 865.9	5 738.9	6 341.3	7 153.8	..
Japan	9 828.6	16 299.8	16 041.7	14 892.8	15 493.8	16 447.7	15 635.4
Korea	1 611.2	4 722.2	4 801.7	5 432.5	5 982.8	7 201.9	8 729.7
Latvia	..	..	39.6	..	33.5	..	..
Lithuania	..	145.8	152.8	173.3 e	204.5	223.2	..
Luxembourg	..	..	125.6	..	185.5	..	..
Mexico	457.5	656.5	651.3	735.8	651.6	594.2	578.8
Netherlands	..	3 277.1	3 626.1	4 045.2	4 182.1	..	..
New Zealand	202.2	503.5 e	564.9	743.9 e	944.8	1 070.4	1 205.0
Norway	886.3 e	1 818.2	1 943.2	2 028.7	2 287.8	2 367.5	..
Poland	461.3	2 130.2	2 472.5	4 371.9 e	4 425.8	5 322.0 e	..
Portugal	314.5 e	1 003.2	1 010.5	1 117.9	1 299.2	1 387.3	..
Slovak Republic	117.1 e	162.7	169.7	187.9	226.8	233.6	284.6
Slovenia	71.0 e	380.9	310.5	255.3	262.0	294.6	..
Spain	2 975.2 e	5 039.8	5 179.2	5 428.2	6 000.6	6 739.5	..
Sweden	..	2 755.2 e	3 177.4	4 237.1 e	5 563.4	..	..
Switzerland	1 237.2 e	3 817.5 e	4 065.1	4 065.3 e	3 937.3	..	..
Turkey	343.3 e	3 717.1	4 276.6	4 473.9	4 888.1	5 622.8	5 836.6
United Kingdom	..	16 810.5	17 735.2	18 277.0	20 481.4	21 571.2	..
United States	65 828.5 d e	102 696.0 d e	114 677.0 d e	120 230.0 d	138 819.0 d	164 122.0 d	..
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	..	..	315.4	323.6	530.8	..	..
China	..	..	..	..	..	..	..
Romania	47.1 e	286.0	506.7	774.7	954.7	1 100.3	..
Russian Federation	..	..	..	..	..	..	..
Singapore	1 242.0 e	..	..	..	..	..	..
South Africa	858.4	..	..	..	..	..	..
Chinese Taipei	733.7	2 025.4	2 088.3	2 171.0	2 397.7	2 653.9	2 758.7

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	6 984.6	6 479.6 e	7 500.9	7 603.8 e	8 257.0	..
Austria	1 689.8 e	3 047.5 e	3 089.8	3 187.4 b e	3 268.6	3 498.1	3 551.8
Belgium	1 389.2	2 464.7	2 571.1	2 939.9	3 034.7	3 167.9	3 329.9
Canada	7 841.7	10 478.3	10 612.6	11 441.2	11 827.9	12 592.6	12 577.4 p
Chile	..	591.3 b	598.4	678.7 b p	737.7	768.9 p	..
Colombia	280.9	638.5	637.4	522.6	528.5	662.8	601.7
Czech Republic	486.2	1 702.5	1 706.8	1 302.6	1 427.9	1 784.1	1 942.1
Denmark	1 090.8	2 641.4	2 890.3	2 980.3	3 107.5	3 319.8	3 485.7 p
Estonia	85.6	241.0	232.9	182.0	225.5	301.5	292.8
Finland	1 064.0	1 641.9	1 631.0	1 691.2	1 814.6	1 906.8	2 019.7
France	7 442.5	13 402.3 b	13 549.9	13 074.9	13 589.6 p	14 052.4 p	14 715.2 p
Germany	10 726.2	19 416.8	19 719.5	22 092.1 b	23 204.5	24 976.2	25 816.3
Greece	772.6	905.2	1 057.0	950.3	1 003.1	1 096.4	1 292.1
Hungary	399.0 d	460.0 d	428.1 d	360.6 d	505.4 d	596.7 b d	696.0 d
Iceland	65.2	95.8	104.2	116.8	125.4	129.6	141.5
Ireland	543.6	891.4	913.2 e	942.7	960.1 e	1 107.3	1 180.4 e
Israel[1]	1 035.2 d	1 450.6 d	1 534.7 d	1 590.9 d	1 520.7 d	1 596.4 d e	1 622.4 d e
Italy	5 509.9 b	7 863.1 e	7 652.7 e	7 989.4 e	8 129.6 e	8 462.1 e	8 821.6 e
Japan	17 250.4	21 326.7	20 690.3	19 741.3	20 015.6	19 973.5 b	20 259.1
Korea	3 040.0 d	6 614.4	6 995.9	7 382.2	7 658.0	8 144.0	8 487.1
Latvia	66.6	132.6	151.9	99.7	132.9	198.6	215.4
Lithuania	197.1	443.8	485.3	290.9	301.9	342.9	392.3
Luxembourg	7.5	116.9	139.8	159.3	173.0	172.3 e	173.3 e p
Mexico	1 536.9	4 617.5	4 820.9	4 658.3	4 057.4 e	4 019.0 e	3 761.8 e
Netherlands	3 775.3	5 269.5	5 423.6	5 410.8	5 761.0	5 910.4	6 237.9
New Zealand	386.3	..	593.4	..	670.9	..	751.5 p
Norway	1 010.1	1 802.0	1 883.6	2 055.0	2 392.0	2 625.8	2 697.3
Poland	942.5	2 668.0	2 954.6	3 249.2	3 881.5	4 648.9	6 109.3
Portugal	640.1	1 758.6	1 739.7	1 869.3	1 910.1	2 018.2	2 146.2
Slovak Republic	90.1	474.8	826.1	353.0	357.8	350.1	369.9
Slovenia	113.3	157.4	146.0	152.4	157.7	187.2	207.5
Spain	3 846.5	5 444.4	5 572.1	5 678.1	6 037.9	6 244.2	6 614.7
Sweden	2 284.9	4 111.2 e	4 136.8	4 358.4 e	4 380.9	4 582.1 e	4 561.1 b
Switzerland	..	4 415.2	4 761.8	..	5 234.7	..	..
Turkey	2 509.8	6 457.8	7 033.2	7 206.7	7 237.2	7 153.6	7 073.8
United Kingdom	7 885.7	11 294.4	11 564.8	11 668.8	11 938.6	12 786.2	13 140.7 p
United States	47 006.0 d	62 352.0 d	64 621.0 d	67 774.0 d	71 108.0 d	74 897.0 d	78 717.0 d p
EU27 (from 01/02/2020)	43 579.1 e	75 883.8 e	77 760.0 e	80 038.1 e	84 103.9 e	89 777.9 e	95 180.0 e
OECD-Total	**138 670.2 e**	**214 975.4 e**	**219 941.5 e**	**227 358.8 e**	**236 019.9 e**	**248 638.4 e**	**258 682.3 e**
Argentina	573.5	1 516.2	1 393.4	1 211.2	1 458.4	1 374.9	1 140.4
China	8 523.0	23 894.1	25 798.7	26 881.0	30 258.6	34 487.7	42 652.1
Romania	115.5	238.9	364.7	260.4	284.6	279.9	305.7
Russian Federation	1 047.3	3 947.4	3 723.3	3 552.1	3 810.9	4 034.4	4 728.7
Singapore	1 305.6	2 705.4	3 069.1	3 158.3	3 008.9	2 920.5	..
South Africa	781.3	1 503.5	1 695.5	1 893.0	2 024.3	..	..
Chinese Taipei	1 745.7	3 298.9	3 280.0	3 226.7	3 277.8	3 585.8	3 702.0

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	0.62	0.57 e	0.62	0.61 e	0.62	..
Austria	0.59 e	0.73 e	0.72	0.69 b e	0.69	0.69	0.68
Belgium	0.40	0.49	0.49	0.53	0.53	0.53	0.53
Canada	0.67	0.65	0.67	0.68	0.67	0.68	0.66 p
Chile	..	0.15 b	0.15	0.16 b p	0.16	0.17 p	..
Colombia	0.08	0.10	0.10	0.08	0.08	0.09	0.08
Czech Republic	0.22	0.50	0.48	0.34	0.35	0.41	0.42
Denmark	0.59	0.98	1.04	1.00	0.97	1.00	0.99 p
Estonia	0.38	0.63	0.60	0.44	0.51	0.63	0.57
Finland	0.63	0.72	0.70	0.68	0.69	0.69	0.71
France	0.39	0.50 b	0.50	0.46	0.46 p	0.45 p	0.44 p
Germany	0.41	0.51	0.51	0.53 b	0.53	0.55	0.56
Greece	0.27	0.31	0.37	0.32	0.33	0.34	0.39
Hungary	0.23 d	0.18 d	0.16 d	0.13 d	0.18 d	0.19 b d	0.21 d
Iceland	0.59	0.64	0.64	0.65	0.66	0.63	0.65
Ireland	0.32	0.37	0.28 e	0.28	0.25 e	0.27	0.27 e
Israel[1]	0.60 d	0.52 d	0.52 d	0.49 d	0.45 d	0.45 d e	0.43 d e
Italy	0.32 b	0.36 e	0.34 e	0.33 e	0.32 e	0.32 e	0.33 e
Japan	0.42	0.42	0.40	0.38	0.38	0.37 b	0.37
Korea	0.25 d	0.37	0.36	0.36	0.36	0.37	0.38
Latvia	0.21	0.28	0.31	0.19	0.24	0.33	0.35
Lithuania	0.4	0.5	0.6	0.3	0.3	0.3	0.4
Luxembourg	0.02	0.21	0.24	0.25	0.26	0.24 e	0.23 e p
Mexico	0.11	0.21	0.22	0.20	0.16 e	0.16 e	0.14 e
Netherlands	0.61	0.63	0.64	0.61	0.61	0.59	0.60
New Zealand	0.36	..	0.34	..	0.33	..	0.34 p
Norway	0.46	0.53	0.60	0.67	0.71	0.71	0.74
Poland	0.18	0.28	0.29	0.30	0.34	0.38	0.47
Portugal	0.27	0.59	0.57	0.57	0.56	0.56	0.57
Slovak Republic	0.10	0.30	0.51	0.22	0.22	0.20	0.21
Slovenia	0.24	0.25	0.22	0.22	0.21	0.23	0.24
Spain	0.32	0.35	0.34	0.33	0.33	0.33	0.33
Sweden	0.74	0.90 e	0.86	0.87 e	0.84	0.84 e	0.80 b
Switzerland	..	0.84	0.87	..	0.90	..	..
Turkey	0.31	0.35	0.35	0.34	0.32	0.31	0.31
United Kingdom	0.40	0.42	0.42	0.40	0.40	0.41	0.41 p
United States	0.36 d	0.36 d	0.35 d	0.36 d	0.36 d	0.36 d	0.37 d p
EU27 (from 01/02/2020)	0.37 e	0.46 e	0.46 e	0.44 e	0.44 e	0.45 e	0.46 e
OECD-Total	**0.37 e**	**0.41 e**	**0.41 e**	**0.41 e**	**0.40 e**	**0.41 e**	**0.41 e**
Argentina	0.11	0.18	0.16	0.14	0.14	0.13	0.11
China	0.13	0.14	0.14	0.14	0.15	0.16	0.18
Romania	0.06	0.06	0.09	0.05	0.05	0.05	0.05
Russian Federation	0.06	0.10	0.11	0.10	0.10	0.10	0.11
Singapore	0.52	0.59	0.64	0.63	0.56	0.51	..
South Africa	0.17	0.22	0.24	0.27	0.28	..	..
Chinese Taipei	0.27	0.31	0.30	0.29	0.29	0.30	0.29

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 2015 prices and PPP

Million 2015 USD

	2005	2014	2015	2016	2017	2018	2019
Australia	..	6 847.4	6 479.6 e	7 115.4	7 213.2 e	7 549.2	..
Austria	2 247.9 e	3 117.5 e	3 089.8	3 043.8 b e	3 087.1	3 202.3	3 193.5
Belgium	1 812.6	2 498.2	2 571.1	2 816.1	2 835.0	2 872.3	2 942.1
Canada	9 065.9	10 239.2	10 612.6	10 982.5	11 118.0	11 496.8	11 436.6 p
Chile	..	582.5 b	598.4	659.8 b p	685.1	722.4 p	..
Colombia	319.2	625.5	637.4	500.4	492.4	594.7	523.4
Czech Republic	626.7	1 688.2	1 706.8	1 251.9	1 338.3	1 623.3	1 722.5
Denmark	1 524.9	2 661.3	2 890.3	2 881.0	2 881.5	3 015.0	3 089.9 p
Estonia	126.8	238.9	232.9	174.7	212.7	275.8	262.1
Finland	1 401.8	1 667.4	1 631.0	1 639.8	1 710.9	1 739.2	1 798.4
France	9 577.1	13 536.0 b	13 549.9	12 546.1	12 807.1 p	12 863.6 p	12 861.2 p
Germany	13 798.2	19 543.3	19 719.5	21 087.7 b	21 626.4	22 645.9	23 091.1
Greece	992.4	905.7	1 057.0	923.7	948.9	1 018.6	1 176.9
Hungary	554.3 d	461.6 d	428.1 d	354.4 d	492.1 d	567.6 b d	649.8 d
Iceland	79.3	99.1	104.2	112.6	118.3	119.2	126.4
Ireland	741.0	970.3	913.2 e	915.5	917.5 e	1 050.6	1 107.2 e
Israel[1]	1 217.3 d	1 498.1 d	1 534.7 d	1 520.3 d	1 436.9 d	1 473.9 d e	1 462.1 d e
Italy	7 420.4 b	7 946.6 e	7 652.7 e	7 491.8 e	7 453.3 e	7 565.4 e	7 693.0 e
Japan	20 669.8	21 761.5	20 690.3	20 002.2	20 312.8	19 953.2 b	20 093.9
Korea	3 374.4 d	6 939.7	6 995.9	7 249.6	7 475.3	7 848.9	8 282.9
Latvia	90.8	132.6	151.9	96.2	124.6	181.6	194.8
Lithuania	268.1	440.9	485.3	281.6	283.1	313.4	351.7
Luxembourg	10.7	117.5	139.8	152.8	162.5	157.6 e	153.3 e p
Mexico	2 051.5	4 587.5	4 820.9	4 473.8	3 853.7 e	3 755.2 e	3 442.5 e
Netherlands	4 711.9	5 302.5	5 423.6	5 289.7	5 469.0	5 432.5	5 634.8
New Zealand	501.1	..	593.4	..	617.0	..	668.5 p
Norway	1 251.1	1 717.3	1 883.6	2 038.7	2 253.1	2 359.4	2 406.5
Poland	1 241.2	2 697.1	2 954.6	3 179.9	3 750.9	4 449.7	5 723.0
Portugal	834.3	1 775.5	1 739.7	1 795.2	1 820.7	1 874.5	1 935.1
Slovak Republic	113.3	467.8	826.1	363.2	373.3	360.9	377.8
Slovenia	138.4	157.9	146.0	146.5	147.5	170.9	183.4
Spain	4 939.4	5 454.5	5 572.1	5 471.7	5 638.3	5 772.6	5 974.9
Sweden	2 923.2	4 138.1 e	4 136.8	4 277.5 e	4 223.9	4 318.5 e	4 199.9 b
Switzerland	..	4 524.3	4 761.8	..	5 080.3	..	..
Turkey	3 786.0	6 617.3	7 033.2	7 115.4	7 180.0	7 190.9	7 244.1
United Kingdom	9 791.4	11 465.8	11 564.8	11 358.0	11 333.4	11 852.7	11 932.7 p
United States	56 256.3 d	62 945.6 d	64 621.0 d	67 070.3 d	69 071.1 d	71 045.7 d	73 359.7 d p
EU27 (from 01/02/2020)	56 696.2 e	76 554.1 e	77 760.0 e	76 869.7 e	78 985.9 e	82 241.4 e	85 197.7 e
OECD-Total	**171 696.0 e**	**216 960.9 e**	**219 941.5 e**	**221 946.3 e**	**226 543.2 e**	**233 237.7 e**	**238 713.7 e**
Argentina	689.8	1 523.8	1 393.4	1 161.8	1 225.1	1 127.5	917.4
China	9 199.8	23 203.0	25 798.7	27 317.0	30 942.7	34 428.7	41 768.0
Romania	182.5	241.5	364.7	244.1	257.5	247.0	255.7
Russian Federation	1 562.3	3 772.9	3 723.3	3 546.1	3 601.2	3 543.2	4 165.6
Singapore	1 449.1	2 738.9	3 069.1	3 131.6	2 928.3	2 742.9	..
South Africa	892.1	1 512.5	1 695.5	1 867.0	1 979.0	..	..
Chinese Taipei	2 060.5	3 360.8	3 280.0	3 264.7	3 334.9	3 562.9	3 613.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	5.1	..	5.1	..	4.9	..
Austria	..	..	5.3	..	5.1	..	5.0
Belgium	10.9	11.7	12.9	12.1	11.7	11.1	11.7
Canada	8.4	7.7	7.9	7.9	7.8	8.0	8.0 p
Chile	..	3.3 b	3.0	2.8 b p	2.6	3.2 p	..
Colombia	7.6	6.9	5.2	4.8	11.0	11.4	8.5
Czech Republic	0.8	2.4	4.0	4.7	5.1	4.6	3.8
Denmark	2.4	1.9	2.5	2.6	2.6	2.6	1.9 p
Estonia	5.2	4.4	5.4	7.4	5.8	6.9	7.9
Finland	6.5	4.0	3.7	3.7	3.2	2.9	3.1
France	1.6	2.5 b	2.8	2.6	2.7 p	2.8 p	3.0 p
Germany	14.6 d	14.1 d	13.9 d	13.8 b d	13.3 d	13.5 d	13.6 d
Greece	8.9	6.0	7.6	7.3	8.4	8.5	7.9
Hungary	11.8 d	9.1 d	8.0 d	9.6 d	6.1 d	5.4 b d	2.6 d
Iceland	11.3	3.4	2.0	2.3	0.8	0.5	1.8
Ireland	2.7	2.7	2.9 e	3.2	3.4 e	3.6	3.9 e
Israel[1]	7.3 d	9.5 d	8.6 d	9.5 d	7.2 d	6.9 d e	..
Italy	1.4 b	1.3 e	1.3 e	1.3 e	6.0 e	6.0 e	6.0 e
Japan	2.8	2.6	2.6	2.8	2.9	3.2 b	3.4
Korea	15.2 d	11.2	12.3	12.6	13.7	14.3	14.3
Latvia	15.4	7.1	7.8	5.6	5.9	4.2	4.6
Lithuania	3.8	13.9	11.6	12.2	6.8	6.4	5.7
Luxembourg	1.4	..	1.1	1.2	1.3	0.9 e	1.3 e p
Mexico	1.2 e	0.2	0.3	0.4	0.4 e	0.3 e	0.3 e
Netherlands	7.8	7.7	7.9	7.8	8.3	8.7	8.3
New Zealand	8.0	..	3.5	..	4.5	..	4.5 p
Norway	4.7	..	3.1	3.1	2.3	2.3 e	2.3
Poland	5.4	2.8	2.6	3.0	3.5	3.9	..
Portugal	1.2	1.6	1.9	1.8	1.9	2.0	2.1
Slovak Republic	0.7	2.4	1.6	1.9	2.1	0.7	0.8
Slovenia	9.0	12.6	11.4	10.6	8.7	8.5	8.6
Spain	6.9	5.9	5.7	5.1	5.2	5.5	5.6
Sweden	5.1	..	4.0	..	3.6	..	..
Switzerland	..	10.0	9.8	..	9.7	..	..
Turkey	22.7 d	1.1	1.2	1.2	1.3	1.9	1.7
United Kingdom	4.6	4.3	4.4	4.4	4.4	4.4	..
United States	5.0 d	5.1 d	5.2 d	5.3 d	5.3 d	5.4 d	5.6 d p
EU27 (from 01/02/2020)	6.9 e	6.7 e	6.7 e	6.9 e	7.2 e	7.3 e	7.2 e
OECD-Total	**6.1 e**	**5.6 e**	**5.7 e**	**5.8 e**	**6.0 e**	**6.2 e**	**6.2 e**
Argentina	0.6	0.2	0.1	0.3	0.3	0.2	1.7
China	36.7	33.7	30.2	29.0	28.5	26.6	26.2
Romania	7.5	6.9	5.1	6.2	6.6	5.7	4.8
Russian Federation	29.3	27.3	27.4	27.7	28.2	29.1	32.2
Singapore	1.7	7.3	5.5	5.9	6.1	4.2	..
South Africa	11.6	10.6	7.8	7.8	5.2	..	..
Chinese Taipei	5.8	8.3	9.3	9.7	10.0	9.9	11.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	68 528	..	69 287	..	70 441	..
Austria	8 962 d e	13 462 d e	13 658 d	13 363 d e	13 513 d	14 356 d p	14 669 d
Belgium	13 853	19 157	20 362 b	19 601	19 705	19 934	20 272
Canada	43 400	58 550	58 850	59 240	60 320	61 430	..
Chile	..	3 600 d	4 004 d	4 357 d	4 520 d	4 601 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	7 762 b	10 965	11 357	10 511	10 875	12 001	12 663
Denmark	8 242	15 854	16 193	16 233	16 046	16 496	16 747 p
Estonia	1 905	2 443	2 431	2 426	2 452	2 718	2 442
Finland	12 879	12 381	12 240	11 987	12 731	12 824	13 411
France	66 290	78 409 b	79 622	81 565	81 771 p	82 633 p	82 830 e
Germany	65 363	100 992	103 148	109 877 b	112 143	114 868	114 512
Greece	11 356 d	18 801 d	22 149 d	17 241 d	17 853 d	18 588 d	20 347 d
Hungary	5 911	5 860	5 610	5 592	6 032	9 547 d	9 999 d
Iceland	585	1 033	892 b	1 151	927	..	..
Ireland	4 400	12 836	12 731 e	12 627	12 523 e	12 421	12 319 e
Israel[1]	..	9 639 d e	9 590 d e	9 524 d e	9 802 d e	9 981 d e	..
Italy	37 073 b d	48 198 d	48 841 d e	50 816 d e	51 362 d e	51 989 d e	54 501 d e
Japan	156 176 d	137 586 d	137 078 d	138 095 d	138 697 d	134 740 b d	135 509 d
Korea	27 416 d	41 938	40 866	40 759	38 813	40 736	41 448
Latvia	2 224 d	2 291 d	2 318 d	1 944 d	2 264 d	2 200 d	2 308 d
Lithuania	5 116.0	5 241.0	4 830.0	4 992.7	4 574.5	4 521.4	4 946.8
Luxembourg	157	906	945	972	1 048	1 085	1 048 e p
Mexico	16 691 e	14 921	16 677	17 008	16 746 e	16 414 e	16 886 e
Netherlands	17 928	21 921	22 342	22 244	22 788	23 029	23 806
New Zealand	7 481	..	16 000	..	13 000	..	16 000 p
Norway	7 512	10 296	10 976	11 795	12 538	13 051	13 836
Poland	40 449	39 695	40 126	44 414	56 397 d	57 049 d	59 947 d
Portugal	10 956	24 978	25 043	26 106	27 562	28 831	28 812
Slovak Republic	6 458 d	8 959 d	8 508 d	8 154 d	8 745 d	9 279 d	9 664 d
Slovenia	1 695	2 180	2 069	1 951	2 020 d	2 104 d	2 277 d
Spain	54 028	57 156 d	57 107 d	58 413 d	62 542 d	64 007 d	66 630 d
Sweden	15 125 b	19 616 e	18 215	19 726 e	17 501	16 676 e	18 217 p
Switzerland	..	..	21 375	..	22 724	..	..
Turkey	25 434	41 269	43 293	40 996	42 916	44 240	46 055
United Kingdom	141 762 b e	163 838	167 463	167 519	170 971	171 527	172 669 p
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	409 884 e	537 394 e	544 587 e	557 373 e	578 001 e	592 203 e	607 632 e
OECD-Total	**..**	**1 410 414 e**	**..**	**1 460 435 e**	**..**	**..**	**..**
Argentina	14 200	23 153	21 701	22 781	20 720	20 933	22 075
China	221 908 d	282 304	298 728	307 923	327 891	352 836	502 611
Romania	5 386	6 378	6 480	6 314	6 413	5 832	5 773
Russian Federation	70 494	91 501	92 503	83 024	75 977	80 678	82 749
Singapore	8 187	16 180	17 275	17 418	17 140	16 565	..
South Africa	9 235	15 804	18 367	19 629	20 996	..	..
Chinese Taipei	23 180	30 621	29 828	29 099	28 810	28 767	28 793

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	31.5 d e	31.6 d e	31.4 d	28.4 d e	28.4 d	28.4 d p	27.8 d
Belgium	41.8	37.7	38.3 b	36.1 e	36.5	34.7	33.4
Canada	31.7	36.1 b	36.1	37.3	37.1	36.7	..
Chile	..	47.5 d	49.0 d	48.5 d	49.7 d	50.0 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	32.1 b	30.4	29.8	28.2	27.8	29.1	29.8
Denmark	29.2	38.3	37.8	36.2	36.5	37.6	37.5 p
Estonia	57.2	56.5	58.1	55.9	52.5	54.7	48.9
Finland	32.5	32.3	32.6	33.4	34.4	33.8	33.5
France	32.7	28.9 b	28.7	28.6	27.6 p	27.1 p	26.4 e
Germany	24.0	28.7	26.6	27.5 b	26.7	26.5	25.4
Greece	58.0 d	62.9 d	63.8 d	58.6 d	51.0 d	50.7 d	52.1 d
Hungary	37.2	22.4	22.2	21.7	21.2	25.4 d	25.4 d
Iceland	27.2	..	45.9 b	..	45.2	..	..
Ireland	38.0	52.3 e	51.9 e	51.9 e	48.8 e	49.2 e	47.6 e
Israel[1]	..	..	..	..	..	..	..
Italy	44.9 b d	40.8 d	38.8 d e	38.0 b d e	36.6 d e	34.1 d e	33.9 d e
Japan	22.9 d	20.1 d	20.7 d	20.7 d	20.5 d	19.9 b d	19.9 d
Korea	15.2 d	12.1	11.5	11.3	10.1	10.0	9.6
Latvia	67.8 d	61.1 d	64.2 d	61.7 d	65.0 d	63.7 d	63.5 d
Lithuania	67.0	57.8	59.1	58.6	52.3	50.6	51.4
Luxembourg	7.1	34.5	36.2	35.1	35.7	37.9	35.6 e p
Mexico	38.0 e	47.6	48.6	43.7	42.8 e	41.9 e	40.4 e
Netherlands	37.5	26.2	26.8	25.4	25.0	24.1	24.4
New Zealand	57.6	..	64.0	..	54.2	..	57.1 p
Norway	35.4	35.2	35.8	37.0	37.3	38.0	38.5
Poland	65.1	50.5	48.6	50.4	49.2 d	48.4 d	49.6 d
Portugal	51.9	65.5	64.8	63.1	61.3	60.5	57.4
Slovak Republic	59.1 d	60.8 d	59.1 d	57.6 d	57.4 d	56.8 d	56.9 d
Slovenia	32.3	25.4	26.2	24.0	21.7 d	20.9 d	21.7 d
Spain	49.2	46.8 d	46.6 d	46.1 d	46.9 d	45.7 d	46.3 d
Sweden	27.5 b e	29.4 e	27.3 e	28.0 e	23.9	22.2 e	23.5 p
Switzerland	..	..	48.9	..	49.3	..	..
Turkey	65.0	46.0	45.5	40.9	38.4	35.0	34.0
United Kingdom	57.0 b e	59.2 e	58.9	58.0 e	57.8 e	56.1 e	54.4 p s
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	36.4 e	35.7 e	34.8 e	34.5 e	33.8 e	33.1 e	32.8 e
OECD-Total	**..**	**30.1 e**	**..**	**30.0 e**	**..**	**..**	**..**
Argentina	44.6	44.8	41.0	41.6	39.0	38.5	40.1
China	19.8 d	18.5	18.5	18.2	18.8	18.9	23.8
Romania	23.5	35.2	37.1	35.0	36.6	33.9	33.3
Russian Federation	15.2	20.6	20.6	19.4	18.5	19.9	20.7
Singapore	34.4	44.1	44.1	44.4	44.1	42.2	..
South Africa	53.4	67.0	70.2	71.0	71.1	..	..
Chinese Taipei	26.1	21.5	20.6	19.8	19.2	18.7	18.1

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	78 038	..	79 008	..	81 717	..
Austria	12 353 d e	17 479 d e	17 682 d	17 484 d e	17 680 d	18 783 d p	18 971 d
Belgium	17 767	23 733	26 156 b	24 953	25 060	25 363	25 872
Canada	56 950	72 510	72 720	73 210	74 510	75 970	..
Chile	..	7 361 d	7 190 d	8 058 d	8 233 d	8 078 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	10 972 b	16 525	16 868	15 201	15 803	18 226	19 647
Denmark	11 561	20 956	21 258	21 969	21 751	21 891	22 185 p
Estonia	2 176	3 103	3 062	2 969	3 015	3 233	2 957
Finland	17 453	16 034	15 515	15 157	16 007	16 418	17 002
France	98 743	119 081 b	120 480	119 367	119 286 p	119 932 p	119 920 e
Germany	94 522	132 542	134 032	141 661 b	143 753	147 160	147 316
Greece	17 401 d	23 924 d	27 383 d	20 404 d	21 986 d	23 431 d	25 240 d
Hungary	8 194	7 937	7 706	7 476	8 442	12 994 d	14 111 d
Iceland	742	1 232	1 062	1 360	1 096	..	..
Ireland	5 220	14 847	15 012 e	15 178	15 399 e	15 664	15 979 e
Israel[1]	9 011 d	11 340 d e	11 283 d e	11 205 d e	11 532 d e	11 743 d e	..
Italy	66 976 b d	75 235 d	76 858 d e	80 226 d e	80 358 d e	81 233 d e	83 776 d e
Japan	209 734 d	209 101 d	208 579 d	210 683 d	212 212 d	210 100 b d	211 602 d
Korea	42 157 d	74 861	72 745	72 482	70 037	71 333	71 727
Latvia	2 856 d	3 177 d	3 241 d	3 147 d	3 448 d	3 553 d	3 721 d
Lithuania	6 699.0	6 260.0	5 737.0	5 895.3	5 386.6	5 318.9	5 876.3
Luxembourg	169	989	1 057	1 097	1 164	1 210	1 164 e p
Mexico	25 218 e	21 721	23 998	25 130	25 136 e	24 999 e	26 023 e
Netherlands	32 305	33 237	33 604	33 300	34 350	34 742	35 963
New Zealand	9 660	..	18 000	..	16 000	..	18 000 p
Norway	9 420	13 010	13 952	14 937	15 675	16 237	16 957
Poland	44 763	44 304	44 961	51 652	65 325 d	70 172 d	73 196 d
Portugal	11 680	26 870	27 001	28 265	30 078	31 451	31 556
Slovak Republic	7 146 d	9 297 d	8 815 d	8 623 d	9 056 d	9 620 d	9 996 d
Slovenia	2 099	2 667	2 555	2 321	2 395 d	2 659 d	2 888 d
Spain	66 996	73 428 d	73 327 d	75 191 d	79 286 d	80 318 d	83 048 d
Sweden	17 686 b	22 410 e	21 435	21 918 e	20 196	19 453 e	21 080 p
Switzerland	..	..	29 717	..	31 523	..	..
Turkey	25 434 e	41 269 e	43 293 e	52 576 b	54 289	56 364	59 031
United Kingdom	152 634 b e	183 023 e	186 724	186 770	190 078	190 526	191 795 p
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	570 624 e	713 301 e	722 993 e	734 201 e	758 564 e	781 509 e	800 567 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	15 507	27 896	26 015	27 434	28 128	31 872	33 060
China	227 163 d	334 794	354 861	360 049	382 160	410 893	565 478
Romania	6 803	8 966	9 008	8 627	8 416	7 695	7 600
Russian Federation	97 672	121 526	121 680	110 379	101 628	107 756	116 732
Singapore	9 337	17 386	18 532	18 634	18 278	17 608	..
South Africa	10 611	17 944	20 812	22 061	23 415	..	..
Chinese Taipei	25 752	34 135	33 177	32 349	31 866	31 896	31 871

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	2 292.1	2 686.5 e	2 261.0	2 253.0 e	2 261.4	..
Austria	355.9 e	585.3 e	602.3	1 016.3 b e	1 040.8	1 113.8	1 196.4
Belgium	520.6	1 073.8	1 161.7	1 339.0	1 436.5	1 577.4	1 754.2
Canada	2 238.7	2 392.8	1 878.9	1 927.8	2 096.0	2 240.9	2 270.7 p
Chile	..	123.6	121.3	203.3	211.0	205.0 p	..
Colombia	32.9	60.4	50.3	145.8	152.4	163.5	194.3
Czech Republic	596.5 b	1 271.0	1 398.3	1 156.9	1 254.1	1 357.9	1 450.6
Denmark	285.7	180.5	190.0	203.9	287.0	286.7	297.2 p
Estonia	23.3	59.7	60.8	58.5	66.9	77.4	85.0
Finland	534.0	620.7	546.6	548.8	610.3	628.2	643.5
France	7 024.1	7 717.1	7 861.0	8 089.8	8 208.8 p	8 547.1 p	9 069.1 p
Germany	9 014.2 d	16 022.1 d	16 045.8 d	16 902.4 d	18 104.6 d	19 232.0 d	20 227.5 d
Greece	329.9	675.3	787.0	745.6	784.5	865.1	945.4
Hungary	444.3 d	468.3 d	469.6 d	434.0 d	477.5 d	510.6 b d	490.2 d
Iceland	69.8	17.7	16.5	17.9	16.6	17.1	16.1
Ireland	148.3	159.1	168.2	168.1	179.3	200.5	203.8
Israel[1]	186.4 d	208.9 d	211.0 d	227.3 d	247.7 d	266.5 d	276.4 d e
Italy	3 158.8	4 001.6	3 940.2	4 155.8	4 259.5	4 604.6	4 946.2
Japan	10 669.1	14 116.7	13 310.5	12 098.2	13 019.4	13 394.8	13 534.3
Korea	3 631.6 d	8 196.6	9 032.6	9 329.8	9 660.2	9 975.7	10 244.6
Latvia	30.7	78.4	78.4	72.4	74.3	86.4	74.3
Lithuania	90.1	144.7	149.2	195.0	239.0	212.2	219.8
Luxembourg	60.1 d	212.7 d	224.0 d	212.9 d	202.6 d	216.7 d e	203.0 e p
Mexico	1 238.8	3 058.3	2 884.6	2 438.1	2 114.2 e	2 086.0 e	1 939.4 e
Netherlands	1 355.4 d	1 099.2 d	1 111.1 d	1 160.4 d	1 159.6 d	1 251.7 d	1 290.9 d
New Zealand	308.1	..	445.2	..	578.6	..	526.5
Norway	513.1	884.7	911.7	892.8	970.4	1 050.6	1 001.8
Poland	1 085.2	2 191.5	2 496.0	260.3 b	269.8	285.4	217.7
Portugal	264.3	241.6	247.7	219.7	246.2	257.4	272.2
Slovak Republic	130.8 d	390.9 d	525.6	273.0	301.7	306.1	293.0
Slovenia	163.7	183.2	193.5	189.1	194.1	212.8	242.9
Spain	2 258.7	3 636.5	3 791.0	3 817.0	3 955.1	3 979.8	4 229.8
Sweden	506.9 b	531.7 e	529.3	553.2 e	636.3	654.5 e	869.5 b
Switzerland	..	148.7 d	156.9 d	..	155.3 d	..	..
Turkey	531.0	1 544.0	1 833.0	1 884.2 d	2 065.4 d	2 178.9 d	1 606.2 d
United Kingdom	3 234.9	3 181.6	3 028.1	3 153.1	3 208.3	3 599.3	3 750.1 p
United States	40 378.0 d	54 106.0	54 666.0	52 499.0	54 124.0	60 224.0	64 961.0
EU27 (from 01/02/2020)	28 755.3 e	42 182.5 e	43 347.0 e	42 423.2 e	44 734.9 e	47 199.1 e	50 124.3 e
OECD-Total	**93 228.4 e**	**131 765.6 e**	**133 247.6 e**	**128 928.4 e**	**134 191.2 e**	**144 145.5 e**	**151 451.1 e**
Argentina	881.6	2 375.2	2 744.5	2 324.7	2 706.5	2 137.5	1 879.7
China	18 778.4	54 720.2	59 161.1	61 685.9	64 055.0	70 644.4	81 314.3
Romania	288.6	674.2	799.9	765.5	865.7	874.3	952.1
Russian Federation	4 723.4	12 302.6	12 059.5	12 474.0	12 851.4	14 355.5	12 587.6
Singapore	521.8	1 125.0	1 168.6	1 167.7	1 139.6	1 213.0	..
South Africa	842.7	1 237.9	1 331.1	1 337.0	1 344.3	..	..
Chinese Taipei	3 217.1	3 908.6	4 014.3	4 389.7	4 286.1	4 304.9	4 646.2

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	0.20	0.24 e	0.19	0.18 e	0.17	..
Austria	0.12 e	0.14 e	0.14	0.22 b e	0.22	0.22	0.23
Belgium	0.15	0.21	0.22	0.24	0.25	0.26	0.28
Canada	0.19	0.15	0.12	0.11	0.12	0.12	0.12 p
Chile	..	0.03	0.03	0.05	0.05	0.04 p	..
Colombia	0.01	0.01	0.01	0.02	0.02	0.02	0.02
Czech Republic	0.26 b	0.37	0.39	0.30	0.30	0.31	0.32
Denmark	0.15	0.07	0.07	0.07	0.09	0.09	0.08 p
Estonia	0.10	0.16	0.16	0.14	0.15	0.16	0.17
Finland	0.32	0.27	0.23	0.22	0.23	0.23	0.23
France	0.36	0.29	0.29	0.28	0.28 p	0.27 p	0.27 p
Germany	0.34 d	0.42 d	0.41 d	0.41 d	0.41 d	0.42 d	0.44 d
Greece	0.12	0.23	0.27	0.25	0.25	0.27	0.29
Hungary	0.26 d	0.19 d	0.18 d	0.16 d	0.17 d	0.16 b d	0.15 d
Iceland	0.63	0.12	0.10	0.10	0.09	0.08	0.07
Ireland	0.09	0.07	0.05	0.05	0.05	0.05	0.05
Israel[1]	0.11 d	0.07 d	0.07 d	0.07 d	0.07 d	0.07 d	0.07 d e
Italy	0.18	0.18	0.18	0.17	0.17	0.18	0.18
Japan	0.26	0.28	0.26	0.23	0.25	0.25	0.25
Korea	0.30 d	0.46	0.47	0.46	0.46	0.45	0.46
Latvia	0.10	0.17	0.16	0.14	0.13	0.15	0.12
Lithuania	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Luxembourg	0.19 d	0.38 d	0.38 d	0.33 d	0.30 d	0.31 d e	0.27 e p
Mexico	0.09	0.14	0.13	0.10	0.09 e	0.08 e	0.07 e
Netherlands	0.22 d	0.13 d	0.13 d	0.13 d	0.12 d	0.13 d	0.12 d
New Zealand	0.29	..	0.26	..	0.28	..	0.24
Norway	0.23	0.26	0.29	0.29	0.29	0.28	0.27
Poland	0.20	0.23	0.24	0.02 b	0.02	0.02	0.02
Portugal	0.11	0.08	0.08	0.07	0.07	0.07	0.07
Slovak Republic	0.15 d	0.25 d	0.32	0.17	0.18	0.18	0.17
Slovenia	0.34	0.29	0.30	0.27	0.26	0.26	0.28
Spain	0.19	0.23	0.23	0.22	0.21	0.21	0.21
Sweden	0.16 b	0.12 e	0.11	0.11 e	0.12	0.12 e	0.15 b
Switzerland	..	0.03 d	0.03 d	..	0.03 d	..	..
Turkey	0.07	0.08	0.09	0.09 d	0.09 d	0.09 d	0.07 d
United Kingdom	0.16	0.12	0.11	0.11	0.11	0.11	0.12 p
United States	0.31 d	0.31	0.30	0.28	0.28	0.29	0.30
EU27 (from 01/02/2020)	0.25 e	0.26 e	0.26 e	0.23 e	0.24 e	0.24 e	0.24 e
OECD-Total	**0.25 e**	**0.25 e**	**0.25 e**	**0.23 e**	**0.23 e**	**0.24 e**	**0.24 e**
Argentina	0.17	0.28	0.32	0.26	0.26	0.21	0.18
China	0.28	0.32	0.33	0.33	0.32	0.32	0.35
Romania	0.14	0.16	0.19	0.16	0.16	0.15	0.15
Russian Federation	0.26	0.33	0.34	0.35	0.34	0.34	0.29
Singapore	0.21	0.24	0.24	0.23	0.21	0.21	..
South Africa	0.18	0.18	0.19	0.19	0.19	..	..
Chinese Taipei	0.49	0.37	0.36	0.39	0.37	0.36	0.37

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 2015 prices and PPP

Million 2015 USD

	2005	2014	2015	2016	2017	2018	2019
Australia	..	2 247.1	2 686.5 e	2 144.8	2 137.3 e	2 067.6	..
Austria	473.5 e	598.8 e	602.3	970.6 b e	983.0	1 019.7	1 075.7
Belgium	679.3	1 088.4	1 161.7	1 282.6	1 341.9	1 430.2	1 549.9
Canada	2 588.2	2 338.2	1 878.9	1 850.6	1 970.2	2 045.9	2 064.7 p
Chile	..	121.8	121.3	197.6	196.0	192.6 p	..
Colombia	37.4	59.2	50.3	139.6	142.0	146.7	169.0
Czech Republic	768.8 b	1 260.3	1 398.3	1 111.9	1 175.4	1 235.6	1 286.6
Denmark	399.4	181.9	190.0	197.1	266.1	260.4	263.4 p
Estonia	34.5	59.2	60.8	56.2	63.2	70.8	76.1
Finland	703.5	630.4	546.6	532.1	575.4	573.0	573.0
France	9 038.8	7 794.0	7 861.0	7 762.6	7 736.1 p	7 824.0 p	7 926.5 p
Germany	11 595.9 d	16 126.4 d	16 045.8 d	16 133.9 d	16 873.3 d	17 437.6 d	18 092.3 d
Greece	423.8	675.6	787.0	724.7	742.1	803.7	861.1
Hungary	617.2 d	469.9 d	469.6 d	426.5 d	465.0 d	485.7 b d	457.6 d
Iceland	84.9	18.4	16.5	17.2	15.7	15.7	14.4
Ireland	202.1	173.2	168.2	163.2	171.3	190.2	191.2
Israel[1]	219.2 d	215.7 d	211.0 d	217.2 d	234.1 d	246.0 d	249.1 d e
Italy	4 254.1	4 044.1	3 940.2	3 897.0	3 905.1	4 116.7	4 313.5
Japan	12 783.9	14 404.5	13 310.5	12 258.0	13 212.7	13 381.2	13 423.9
Korea	4 031.0 d	8 599.7	9 032.6	9 162.3	9 429.7	9 614.3	9 998.1
Latvia	41.8	78.4	78.4	69.9	69.7	79.0	67.2
Lithuania	122.6	143.7	149.2	188.8	224.1	194.0	197.1
Luxembourg	86.1 d	213.8 d	224.0 d	204.3 d	190.3 d	198.2 d e	179.5 e p
Mexico	1 653.6	3 038.4	2 884.6	2 341.6	2 008.0 e	1 949.0 e	1 774.8 e
Netherlands	1 691.7 d	1 106.0 d	1 111.1 d	1 134.4 d	1 100.8 d	1 150.5 d	1 166.1 d
New Zealand	399.8	..	445.2	..	532.2	..	468.3
Norway	635.5	843.1	911.7	885.7	914.1	944.0	893.8
Poland	1 429.1	2 215.4	2 496.0	254.7 b	260.7	273.2	204.0
Portugal	344.5	243.9	247.7	211.0	234.7	239.1	245.5
Slovak Republic	164.6 d	385.2 d	525.6	281.0	314.8	315.6	299.3
Slovenia	199.9	183.7	193.5	181.7	181.6	194.3	214.6
Spain	2 900.4	3 643.3	3 791.0	3 678.3	3 693.3	3 679.2	3 820.7
Sweden	648.5 b	535.1 e	529.3	543.0 e	613.5	616.8 e	800.6 b
Switzerland	..	152.4 d	156.9 d	..	150.7 d	..	..
Turkey	801.0	1 582.2	1 833.0	1 860.3 d	2 049.0 d	2 190.3 d	1 644.8 d
United Kingdom	4 016.7	3 229.9	3 028.1	3 069.1	3 045.6	3 336.5	3 405.4 p
United States	48 324.0 d	54 621.1	54 666.0	51 953.9	52 573.6	57 127.2	60 539.9
EU27 (from 01/02/2020)	37 415.8 e	42 494.6 e	43 347.0 e	40 615.2 e	41 854.7 e	43 032.8 e	44 607.2 e
OECD-Total	**114 562.8 e**	**133 202.1 e**	**133 247.6 e**	**126 177.2 e**	**129 167.1 e**	**135 667.5 e**	**140 229.0 e**
Argentina	1 060.3	2 387.1	2 744.5	2 229.9	2 273.5	1 752.9	1 512.1
China	20 269.5	53 137.4	59 161.1	62 686.4	65 503.2	70 523.7	79 628.9
Romania	456.1	681.7	799.9	717.6	783.3	771.5	796.3
Russian Federation	7 046.4	11 758.9	12 059.5	12 453.2	12 144.1	12 607.5	11 088.7
Singapore	579.1	1 139.0	1 168.6	1 157.8	1 109.0	1 139.2	..
South Africa	962.2	1 245.3	1 331.1	1 318.6	1 314.2	..	..
Chinese Taipei	3 797.4	3 982.0	4 014.3	4 441.4	4 360.7	4 277.4	4 535.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	9.9	..	10.3	..	10.0	..
Austria	..	..	6.0	..	8.7	..	9.0
Belgium	9.2	3.6	6.2	5.8	5.4	6.7	6.5
Canada	3.8	2.1	0.9	0.9	0.9	1.0	0.9 p
Chile	..	3.3	2.7	1.8	2.0	1.6 p	..
Colombia	0.0	0.5	0.9	0.3	0.3	0.0	0.0
Czech Republic	9.4 b	3.8	2.8	4.0	3.6	3.9	3.6
Denmark	2.1	1.7	1.2	2.1	3.9	3.8	2.7 p
Estonia	0.0	1.3	1.6	2.9	1.8	1.7	2.1
Finland	12.4	8.3	8.7	9.1	7.4	7.8	7.4
France	7.4	8.0	7.6	8.1	7.9 p	8.0 p	5.4 p
Germany	9.9 d	11.2 d	11.3 d	11.2 d	10.1 d	9.9 d	9.7 d
Greece	1.3	3.1	4.5	3.2	5.6	3.3	3.4
Hungary	10.3 d	7.8 d	8.8 d	6.0 d	5.2 d	6.6 b d	3.4 d
Iceland	7.4	15.3	15.5	12.2	3.8	21.7	4.9
Ireland	4.1	1.9	0.8	0.9	3.9	3.0	2.7
Israel[1]	7.7 d	2.1 d	2.1 d	2.2 d	2.1 d	2.0 d	..
Italy	2.4	4.1	4.2	3.8	4.3	3.8	3.9
Japan	0.7	1.9	2.3	2.4	2.8	2.7	2.5
Korea	4.3 d	2.8	2.3	3.0	3.4	3.0	3.0
Latvia	15.6	15.6	16.9	9.7	9.7	10.6	11.7
Lithuania	6.6	12.3	13.3	13.5	11.9	10.9	10.0
Luxembourg	3.9 d	..	1.3 d	1.1 d	2.1 d	3.2 d e	2.1 e p
Mexico	1.2 e	1.8	2.7	3.1	3.2 e	2.9 e	3.1 e
Netherlands	14.6 d	8.2 d	7.8 d	7.8 d	8.6 d	9.2 d	8.3 d
New Zealand	19.0	..	18.2	..	17.3	..	26.0
Norway	10.6	9.6	7.4	8.0	7.5	7.0	6.8
Poland	14.3	.. c	4.5	5.3 b	4.8	3.9	..
Portugal	2.0	1.2	1.9	5.9	5.0	5.6	2.8
Slovak Republic	8.5 d	13.4 d	8.6	12.0	8.8	4.1	3.7
Slovenia	12.1	7.8	8.0	6.8	.. c	.. c	5.9
Spain	7.3	5.8	6.0	5.6	5.9	6.9	7.8
Sweden	1.3 b	..	3.9	..	6.8	..	..
Switzerland	..	0.0 d	2.4 d	..	3.9 d	..	..
Turkey	1.5	2.6	2.8	2.1 d	1.9 d	1.7 d	2.7 d
United Kingdom	9.9	12.0	2.2	1.8	1.6	2.8	..
United States	0.0 d	0.4 d	0.4 d	0.4 d	0.4 d	0.3 d	0.3 d p
EU27 (from 01/02/2020)	8.1 e	8.0 e	8.0 e	8.3 e	7.9 e	7.8 e	7.2 e
OECD-Total	**3.5 e**	**3.7 e**	**3.5 e**	**3.7 e**	**3.6 e**	**3.5 e**	**3.3 e**
Argentina	0.2	0.2	0.3	0.5	0.2	0.2	0.2
China	4.9	4.1	3.9	4.7	4.6	4.4	4.6
Romania	16.1	17.0	15.2	18.0	13.3	12.0	12.2
Russian Federation	11.4	11.5	11.6	9.1	9.7	9.6	9.4
Singapore	2.3	4.3	4.0	3.5	3.1	3.0	..
South Africa	7.9	3.2	4.7	5.9	4.1	..	..
Chinese Taipei	3.0	3.0	2.7	2.6	3.4	3.2	2.8

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	7 637	..	7 483	..	7 570	..
Austria	1 232 d e	1 654 d e	1 682 d	3 624 d e	3 665 d	3 894 d p	3 817 d
Belgium	2 274	4 062	4 041 b	4 290	4 486	5 283	5 490
Canada	8 360	9 250	7 930	7 400	7 940	7 710	..
Chile	..	769 d	863 d	1 296 d	1 163 d	1 316 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	6 564 b	6 979	7 393	7 500	7 908	7 879	7 968
Denmark	2 105	1 384	1 426	1 392	1 635	1 587	1 577 p
Estonia	474	533	514	504	549	489	524
Finland	4 374	4 089	3 550	3 209	3 318	3 236	3 260
France	25 889 d	28 065	28 445	28 890	29 077 p	29 207 p	29 310 e
Germany	39 911	52 854 b	54 011 d	53 971 d	54 715 d	57 183 d	59 221 d
Greece	2 076 d	5 844 d	7 256 d	6 263 d	7 184 d	7 768 d	8 151 d
Hungary	4 959	4 776	4 680	4 965	4 867	6 592 d	6 495 d
Iceland	501	..	239 b	143	247	..	..
Ireland	419	461	494	504	580	652	635
Israel[1]	..	..	..	..	..	..	..
Italy	14 454 d	21 045 d	21 592 d	21 711 d	22 118 d	22 712 d	23 276 d
Japan	34 035 d	30 373 d	30 242 d	30 238 d	30 610 d	30 585 d	30 532 d
Korea	12 791 d	24 750	26 431	27 170	27 185	27 364	28 686
Latvia	589 d	681 d	691 d	626 d	571 d	572 d	566 d
Lithuania	1 805.0	1 400.0	1 449.0	1 576.6	1 612.6	1 584.3	1 536.0
Luxembourg	374	708	617	601	612	644	612 e p
Mexico	6 589 e	6 772	6 798	6 670	6 450 e	6 189 e	6 034 e
Netherlands	7 028 d	5 413 d	5 538 d	5 668 d	5 563 d	5 845 d	6 083 d
New Zealand	1 800	..	1 900	..	1 900	..	1 900
Norway	3 449 d	4 627	4 735	4 788	4 752	4 607	4 522
Poland	12 175	13 847	13 618	2 369 b	3 392 d	3 110 d	2 220 d
Portugal	3 338	1 447	1 351	1 340	1 477	1 558	1 600
Slovak Republic	2 503 d	3 123 d	3 084 d	3 087 d	3 078 d	3 088 d	3 090 d
Slovenia	1 591	1 744	1 629	1 667	1 502 d	1 661 d	1 778 d
Spain	20 446	20 180 d	19 962 d	20 663 d	20 844 d	21 422 d	22 147 d
Sweden	2 929 b d e	2 304 e	3 322 b e	3 362 e	3 788	3 700 e	3 914
Switzerland	..	466 d	472 d	..	455 d	..	..
Turkey	4 249	6 541	6 555	6 700 d	6 672 d	6 701 d	5 754 d
United Kingdom	9 311	7 769	7 057	7 047	7 015	6 869	6 885 p
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	170 209 e	192 983 e	196 533 e	187 964 e	192 475 e	199 508 e	203 377 e
OECD-Total	**295 443 e**	**336 988 e**	**340 363 e**	**329 524 e**	**335 552 e**	**346 873 e**	**353 912 e**
Argentina	13 285	24 814	26 266	27 168	26 975	26 724	26 504
China	200 377 d	295 899	305 686	336 106	356 805	370 116	390 179
Romania	7 082	6 409	6 659	6 755	6 526	6 597	6 801
Russian Federation	154 827	144 700	146 840	145 956	139 479	144 548	124 183
Singapore	1 364	1 950	2 146	2 407	2 423	2 501	..
South Africa	1 974	2 735	2 781	2 910	2 691	..	..
Chinese Taipei	13 789	14 229	14 343	14 797	15 044	15 688	16 824

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	..	..	..	..	..	..
Austria	4.3 d e	3.9 d e	3.9 d	7.7 d e	7.7 d	7.7 d p	7.2 d
Belgium	6.9	8.0	7.6 b	7.9 e	8.3	9.2	9.1
Canada	6.1	5.7 b	4.9	4.7	4.9	4.6	..
Chile	..	10.1 d	10.6 d	14.4 d	12.8 d	14.3 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	27.2 b	19.4	19.4	20.1	20.2	19.1	18.7
Denmark	7.5	3.3	3.3	3.1	3.7	3.6	3.5 p
Estonia	14.2	12.3	12.3	11.6	11.7	9.8	10.5
Finland	11.1	10.7	9.5	8.9	9.0	8.5	8.2
France	12.8 d	10.3 b	10.2	10.1	9.8 p	9.6 p	9.3 e
Germany	14.7	15.0 b	13.9 d	13.5 d	13.0 d	13.2 d	13.1 d
Greece	10.6 d	19.6 d	20.9 d	21.3 d	20.5 d	21.2 d	20.9 d
Hungary	31.2	18.2	18.5	19.2	17.1	17.5 d	16.5 d
Iceland	23.3	..	12.3 b	..	12.0	..	..
Ireland	3.6	1.9 e	2.0 e	2.1 e	2.3 e	2.6 e	2.5
Israel[1]	..	..	..	..	..	..	..
Italy	17.5 d	17.8 d	17.2 d	16.2 b d	15.8 d	14.9 d	14.5 d
Japan	5.0 d	4.4 d	4.6 d	4.5 d	4.5 d	4.5 b d	4.5 d
Korea	7.1 d	7.2	7.4	7.5	7.1	6.7	6.7
Latvia	17.9 d	18.2 d	19.1 d	19.9 d	16.4 d	16.6 d	15.6 d
Lithuania	23.6	15.4	17.7	18.5	18.4	17.7	16.0
Luxembourg	16.8	26.9	23.6	21.7	20.8	22.5	20.8 e p
Mexico	15.0 e	21.6	19.8	17.2	16.5 e	15.8 e	14.5 e
Netherlands	14.7 d	6.5 d	6.6 d	6.5 d	6.1 d	6.1 d	6.2 d
New Zealand	13.9	..	7.6	..	7.9	..	6.8
Norway	16.3 d	15.8	15.5	15.0	14.1	13.4	12.6
Poland	19.6	17.6	16.5	2.7 b	3.0 d	2.6 d	1.8 d
Portugal	15.8	3.8	3.5	3.2	3.3	3.3	3.2
Slovak Republic	22.9 d	21.2 d	21.4 d	21.8 d	20.2 d	18.9 d	18.2 d
Slovenia	30.3	20.3	20.6	20.5	16.1 d	16.5 d	16.9 d
Spain	18.6	16.5 d	16.3 d	16.3 d	15.6 d	15.3 d	15.4 d
Sweden	5.3 b d e	3.5 e	5.0 b e	4.8 e	5.2	4.9 e	5.0
Switzerland	..	..	1.1 d	..	1.0 d	..	..
Turkey	10.9	7.3	6.9	6.7 d	6.0 d	5.3 d	4.2 d
United Kingdom	3.7 b e	2.8 e	2.5	2.4 e	2.4 e	2.2 e	2.2 p s
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	15.1 e	12.8 e	12.6 e	11.6 e	11.3 e	11.2 e	11.0 e
OECD-Total	**8.0 e**	**7.2 e**	**7.1 e**	**6.8 e**	**6.6 e**	**6.5 e**	**..**
Argentina	41.7	48.0	49.6	49.6	50.7	49.2	48.1
China	17.9 d	19.4	18.9	19.9	20.5	19.8	18.5
Romania	30.8	35.4	38.1	37.4	37.3	38.3	39.2
Russian Federation	33.3	32.5	32.7	34.0	34.0	35.6	31.0
Singapore	5.7	5.3	5.5	6.1	6.2	6.4	..
South Africa	11.4	11.6	10.6	10.5	9.1	..	..
Chinese Taipei	15.5	10.0	9.9	10.1	10.0	10.2	10.6

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	..	14 715	..	14 773	..	14 521	..
Austria	2 318 d e	2 641 d e	2 674 d	5 208 d e	5 266 d	5 595 d p	5 472 d
Belgium	3 589	6 381	6 470 b	6 653	6 946	7 530	7 770
Canada	17 860	18 050	15 410	14 300	15 140	15 650	..
Chile	..	1 372 d	1 495 d	2 223 d	2 295 d	2 316 d p	..
Colombia	..	..	..	..	..	..	..
Czech Republic	11 054 b	12 380	12 953	13 099	13 689	14 163	14 530
Denmark	3 240	1 686	1 792	1 720	2 185	2 212	2 187 p
Estonia	696	800	782	841	847	680	705
Finland	7 422	5 880	4 519	4 039	4 240	4 217	4 177
France	49 645 d	49 375	49 413	49 409	49 195 p	49 261 p	49 190 e
Germany	76 254 d	101 005 d	101 717 d	103 206 d	106 025 d	109 487 d	112 592 d
Greece	4 345 d	11 125 d	13 628 d	11 750 d	12 074 d	13 350 d	13 896 d
Hungary	7 652	7 215	8 111	7 456	7 271	10 633 d	9 708 d
Iceland	849	..	275	185	277	..	..
Ireland	1 132	826	951	993	1 051	1 196	1 194
Israel[1]	..	..	..	..	..	..	..
Italy	32 684 d	38 506 d	38 669 d	38 490 d	38 756 d	39 442 d	39 973 d
Japan	62 975 d	61 585 d	60 299 d	61 615 d	62 046 d	62 470 d	61 717 d
Korea	16 847 d	35 574	38 174	38 119	37 578	38 738	40 364
Latvia	1 256 d	1 180 d	1 184 d	1 077 d	974 d	1 032 d	1 028 d
Lithuania	3 113.0	2 224.0	2 156.0	2 398.5	2 407.5	2 332.9	2 308.5
Luxembourg	560 d	1 187 d	1 136 d	1 072 d	1 129 d	1 172 d	1 129 d e p
Mexico	14 837 e	13 158	12 959	13 183	12 674 e	12 091 e	11 494 e
Netherlands	12 706 d	8 325 d	8 335 d	8 568 d	8 553 d	9 326 d	9 336 d
New Zealand	3 100	..	3 500	..	3 500	..	3 600
Norway	5 147	6 690	6 820	6 810	6 793	6 598	6 612
Poland	17 877	22 614	22 073	3 733 b	4 596 d	4 377 d	3 235 d
Portugal	4 533	2 037	2 066	2 098	2 212	2 283	2 315
Slovak Republic	3 717 d	4 147 d	4 335 d	4 414 d	4 213 d	4 060 d	4 079 d
Slovenia	2 517	2 490	2 437	2 501	2 323 d	2 497 d	2 664 d
Spain	32 077	38 764 d	39 678 d	39 972 d	40 283 d	40 332 d	41 372 d
Sweden	3 444 b e	3 404 e	4 234 b e	4 269 e	4 894	4 918 e	5 344
Switzerland	..	897 d	909 d	..	875 d	..	..
Turkey	8 825	12 230	12 328	11 799 d	11 345 d	11 379 d	8 886 d
United Kingdom	20 415	16 250	14 615	14 531	14 698	14 631	14 665 p
United States	..	..	..	..	..	..	..
EU27 (from 01/02/2020)	300 979 e	342 782 e	347 622 e	331 241 e	337 093 e	347 609 e	351 945 e
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	21 688	37 757	39 271	40 248	38 245	37 304	36 774
China	254 506 d	479 435	493 200	505 927	531 629	545 771	566 858
Romania	10 055	11 866	12 080	12 663	12 500	11 986	12 220
Russian Federation	296 428	283 161	283 968	287 129	283 620	289 612	244 022
Singapore	2 173	3 497	3 879	4 075	4 009	4 073	..
South Africa	5 586	6 362	6 417	6 453	6 295	..	..
Chinese Taipei	25 673	24 322	24 408	25 031	25 460	26 411	28 612

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2016	2017	2018	2019	2020	2021
Australia	3 729.1 d	4 761.4 d	5 262.5 d	5 108.4 d p	5 137.0 d p	6 370.4 d p	..
Austria	1 836.6 d	3 701.4 d	3 728.7 d	3 813.0 d	3 942.5 d	4 304.4 p	..
Belgium	2 004.6	3 439.6	3 778.8	3 798.9	4 371.2	4 365.0 p	..
Canada	6 777.1 d	8 450.4 d	9 111.6 d	9 073.0 d	..	..	..
Chile	..	936.8	976.5	1 005.8	1 024.8	..	..
Colombia	171.2	509.0	566.4	599.5	663.6	..	..
Czech Republic	1 129.0	2 225.2	2 467.1	2 698.3	2 859.1	2 863.6 p	..
Denmark	1 329.3	2 694.4 e	2 829.1 e	2 953.2 e	3 101.8 p	3 416.0 e	..
Estonia	89.9 e	275.0 b	267.6	337.7	321.4	352.1 p	..
Finland	1 648.0	2 084.7	2 183.6	2 291.0	2 380.3	2 454.2 p	..
France	18 220.2	18 009.5	19 150.4	20 597.4	20 923.5	..	..
Germany	19 732.0	37 667.8	40 496.1	43 111.7	45 600.7	49 437.2 p	..
Greece	895.8	1 607.7	1 538.4	1 981.6	2 325.0	2 917.9 p	..
Hungary	696.1	1 060.3	1 001.3	929.3	901.7	899.0 p	..
Iceland	94.0	166.4	180.7	196.7	197.8	..	..
Ireland	710.7	905.6	930.6	967.8	994.2	1 108.9 p	..
Israel[1]	1 044.9 d	1 997.4 d	2 062.3 d	2 216.0 d	2 338.4 d	..	..
Italy	11 199.3	12 467.6	12 743.8	13 250.0	14 712.3	15 757.8 p	..
Japan	27 617.8 d	33 802.9 b d	34 138.3 d	37 029.0 d	40 934.9 d	42 579.3 d p	..
Korea	9 886.5 b d	22 297.4	22 348.5	22 811.3	24 008.6	..	..
Latvia	57.4	108.6	123.8	130.1	138.9	164.4 p	..
Lithuania	169.8	278.7	298.7	299.2	338.2 p	..	..
Luxembourg	81.5	394.5	410.3	421.8	481.6	473.4 p	..
Mexico	2 963.4	6 597.6	5 669.5 p	5 550.8	5 149.3	5 165.1	..
Netherlands	4 391.9	6 192.8	6 338.9	7 116.8	7 173.5	7 672.7 p	..
New Zealand	..	933.0	1 054.0	..	..	..	..
Norway	1 535.9	3 081.1	3 477.9	3 645.9	3 740.4	3 927.0	..
Poland	1 548.8	3 526.9	4 122.7	3 464.8	..	..	..
Portugal	1 045.6	1 240.2	1 270.4	1 303.8	1 324.6	1 290.8 e p	..
Slovak Republic	244.6	600.7	593.6	630.3	681.0	685.9 p	..
Slovenia	273.3	282.1	299.1	337.3	390.7	449.2 p	..
Spain	6 440.7	9 422.4	9 505.6	9 919.7	10 355.2	11 048.4 p	..
Sweden	2 508.0	3 897.8	4 143.4	4 230.4	4 169.8	4 388.6 p	..
Switzerland	..	..	5 479.6	..	..	..	..
Turkey	..	7 345.4	7 738.7	7 973.5	7 873.2	6 721.8 p	..
United Kingdom	12 116.1	14 881.2	15 848.9	17 139.5	18 072.0	..	..
United States	111 332.0	126 093.0	127 306.0	144 459.0	149 971.0	164 453.0 p	..
EU27 (from 01/02/2020)	77 493.5 e	114 599.8 e	120 470.1 e	126 934.1 e	134 498.4 e	142 351.0 e	..
OECD-Total	**258 615.5 e**	**349 086.9 e**	**359 443.2 e**	**388 085.0 e**	**406 739.1 e**	**434 762.4 e**	**..**
Argentina	1 190.2 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	448.5	1 338.4	997.8	980.3	1 201.6	806.0	..
Russian Federation	6 038.6 b	16 646.7	15 664.0	17 049.2	19 182.3	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	4 881.6	7 647.0	7 817.0	7 643.6	8 098.4	8 173.9	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2016	2017	2018	2019	2020	2021
Australia	6.9 d	7.4 d	7.4 d	7.2 d p	6.2 d p	5.6 d p	..
Austria	0.0 d	0.1 d	0.2 d	0.2 d	0.2 d	0.2 p	0.2 p
Belgium	0.3	0.1	0.1	0.1	0.1	0.2 p	..
Canada	4.1 d	2.2 d	..	..	..	..	..
Chile	..	0.0	0.0	0.0	0.0	..	..
Colombia	1.3	1.9	1.7	1.9	0.9	..	..
Czech Republic	2.5	1.2	1.3	1.2	1.1	1.1 p	..
Denmark	0.7	0.3 e	0.3 e	0.3 e	0.3 e p	0.3 e	0.4 e p
Estonia	1.0 e	2.3 b	1.9	3.4	1.7	2.4 p	..
Finland	3.3	1.9	2.2	2.4	2.5	2.2 p	..
France	20.8	6.4 d	7.5 d	6.2 d	1.2 d	..	..
Germany	5.8 s	2.7	3.8	3.3	4.4	4.2 p	..
Greece	0.5	0.9	1.8	1.7	1.5	1.4 p	..
Hungary	0.1	0.1	0.4	0.0	0.0	0.1 p	..
Iceland	0.0	0.0	0.0	0.0	0.0	..	..
Ireland	0.0	0.0	0.0	0.0	0.0	0.0 p	..
Israel[1]	..	..	..	..	..	..	..
Italy	3.6	0.6	0.6	0.6	0.6	0.5 p	..
Japan	4.0 d m	3.0 b d	3.4 d	2.7 d	3.0 d	2.9 d p	..
Korea	12.4 b d	14.0	15.0	15.8	16.3	..	..
Latvia	1.1	2.7	.. c	.. c	.. c	.. c	..
Lithuania	0.2	0.3	0.1	0.2	0.3 p	..	..
Luxembourg	0.0	0.0	0.0	0.0	0.0 p	0.0 p	..
Mexico	0.0	0.1	0.2 p	0.1	0.2	0.2	0.2 p
Netherlands	2.0	1.2	1.1	1.2	1.2	1.3 p	1.3 p
New Zealand	..	0.0	0.0	..	..	..	..
Norway	6.4	3.7	3.5	3.5	3.0 b	2.9	3.1 p
Poland	1.3	15.5	9.2	5.8	..	..	..
Portugal	0.1	0.3	0.3	0.4	0.3	0.3 e p	..
Slovak Republic	8.3 d	1.5	1.7	1.8	2.4	2.3 p	..
Slovenia	4.9	0.2	0.3	0.3	0.6	0.9 p	..
Spain	3.9	1.0	1.1	0.9	1.5	1.0 p	..
Sweden	17.4	3.4 e	3.0 e	3.7 e	2.8 e	2.5 e p	..
Switzerland	..	..	0.3	..	..	..	..
Turkey	..	13.1	17.3	20.0	18.7	20.8 p	..
United Kingdom	23.5	15.9	15.2	14.1	11.4	..	..
United States	49.1	42.7	43.5	46.7	46.9	48.1 p	..
EU27 (from 01/02/2020)	8.1 e	2.8 e	3.3 e	2.8 e	2.4 e	2.2 e	..
OECD-Total	**26.0 e**	**18.7 e**	**19.0 e**	**20.7 e**	**20.4 e**	**21.2 e**	**..**
Argentina	0.4 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	1.7	1.7	4.5	7.7	8.3	1.4	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	10.6	5.2	6.4	7.0	9.8	8.1	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2016	2017	2018	2019	2020	2021
Australia	93.1 d	92.6 d	92.6 d	92.8 d p	93.8 d p	94.4 d p	..
Austria	100.0 d	99.9 d	99.8 d	99.8 d	99.8 d	99.8 p	99.8 p
Belgium	99.7	99.9	99.9	99.9	99.9	99.8 p	..
Canada	95.9 d	97.8 d	..	..	..	..	..
Chile	..	100.0	100.0	100.0	100.0	..	..
Colombia	98.7	98.1	98.3	98.1	99.1	..	..
Czech Republic	97.5	98.8	98.7	98.8	98.9	98.9 p	..
Denmark	99.3	99.7 e	99.7 e	99.7 e	99.7 e p	99.7 e	99.6 e p
Estonia	99.0 e	97.7 b	98.1	96.6	98.3	97.6 p	..
Finland	96.7	98.1	97.8	97.6	97.5	97.8 p	..
France	79.2	93.6 d	92.5 d	93.8 d	98.8 d	..	..
Germany	94.2 s	97.3	96.2	96.7	95.6	95.8 p	..
Greece	99.5	99.1	98.2	98.3	98.5	98.6 p	..
Hungary	99.9	99.9	99.6	100.0	100.0	99.9 p	..
Iceland	100.0	100.0	100.0	100.0	100.0	..	..
Ireland	100.0	100.0	100.0	100.0	100.0	100.0 p	..
Israel[1]	..	..	..	..	..	..	..
Italy	96.4	99.4	99.4	99.4	99.4	99.5 p	..
Japan	96.0 d	97.0 b d	96.6 d	97.3 d	97.0 d	97.1 d p	..
Korea	87.6 b d	86.0	85.0	84.2	83.7	..	..
Latvia	98.9	97.3	.. c	.. c	.. c	.. c	..
Lithuania	99.8	99.7	99.9	99.8	99.7 p	..	..
Luxembourg	100.0	100.0	100.0	100.0	100.0 p	100.0 p	..
Mexico	100.0	99.9	99.8 p	99.9	99.8	99.8	99.8 p
Netherlands	98.0	98.8	98.9	98.8	98.8	98.7 p	98.7 p
New Zealand	..	100.0	100.0	..	..	..	..
Norway	93.6	96.3	96.5	96.5	97.0 b	97.1	96.9 p
Poland	98.7	84.5	90.8	94.2	..	..	..
Portugal	99.9	99.7	99.7	99.6	99.7	99.7 e p	..
Slovak Republic	91.7 d	98.5	98.3	98.2	97.6	97.7 p	..
Slovenia	95.1	99.8	99.7	99.7	99.4	99.1 p	..
Spain	96.1	99.0	98.9	99.1	98.5	99.0 p	..
Sweden	82.6	96.6 e	97.0 e	96.3 e	97.2 e	97.5 e p	..
Switzerland	..	..	99.7	..	..	..	..
Turkey	..	86.9	82.7	80.0	81.3	79.2 p	..
United Kingdom	76.5	84.1	84.8	85.9	88.6	..	..
United States	50.9	57.3	56.5	53.3	53.1	51.9 p	..
EU27 (from 01/02/2020)	91.9 e	97.2 e	96.7 e	97.2 e	97.6 e	97.8 e	..
OECD-Total	**74.0 e**	**81.3 e**	**81.0 e**	**79.3 e**	**79.6 e**	**78.8 e**	**..**
Argentina	99.6 d	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	98.3	98.3	95.5	92.3	91.7	98.6	..
Russian Federation	..	..	..	..	..	..	..
Singapore	..	..	..	..	..	..	..
South Africa	..	..	..	..	..	..	..
Chinese Taipei	89.4	94.8	93.6	93.0	90.2	91.9	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Source: OECD, Main Science and Technology Indicators database

Table 60. Triadic patent families

By priority year

Number

	2005	2014	2015	2016	2017	2018	2019
Australia	479	324	350	349	363	370 e	366 e
Austria	411	402	400	358	373	383 e	385 e
Belgium	543	394	425	412	431	438 e	437 e
Canada	720	592	590	637	663	682 e	693 e
Chile	6	8	13	8	9	9 e	9 e
Colombia	2	5	5	3	6	7 e	7 e
Czech Republic	25	44	53	54	58	59 e	58 e
Denmark	390	308	325	291	316	325 e	324 e
Estonia	3	6	4	4	4	5 e	5 e
Finland	391	313	267	269	269	272 e	272 e
France	3 048	2 496	2 298	2 043	1 978	1 915 e	1 857 e
Germany	7 145	4 658	4 752	4 719	4 757	4 772 e	4 621 e
Greece	24	23	10	15	16	18 e	18 e
Hungary	58	35	36	46	45	47 e	49 e
Iceland	7	1	4	2	3	2 e	3 e
Ireland	99	108	101	103	108	111 e	110 e
Israel[1]	502	454	514	486	502	521 e	517 e
Italy	966	819	826	895	919	943 e	947 e
Japan	18 933	17 618	17 775	17 562	17 596	17 649 e	17 702 e
Korea	2 747	2 212	2 255	2 334	2 287	2 410 e	2 558 e
Latvia	10	1	4	5	7	7 e	7 e
Lithuania	1.0	4.7	3.6	6.7	7.8	8.4 e	8.4 e
Luxembourg	21	20	23	36	35	37 e	38 e
Mexico	19	28	30	25	27	26 e	25 e
Netherlands	1 762	1 287	1 135	912	990	979 e	957 e
New Zealand	73	100	69	53	60	61 e	62 e
Norway	141	111	101	139	148	152 e	149 e
Poland	18	54	81	74	85	88 e	88 e
Portugal	16	32	33	49	51	53 e	54 e
Slovak Republic	2	8	9	10	11	11 e	11 e
Slovenia	22	13	7	8	9	10 e	10 e
Spain	293	256	290	314	325	338 e	343 e
Sweden	970	676	730	740	768	820 e	852 e
Switzerland	1 083	1 181	1 225	1 165	1 224	1 236 e	1 225 e
Turkey	16	27	50	62	73	78 e	80 e
United Kingdom	2 165	1 678	1 683	1 584	1 650	1 677 e	1 690 e
United States	17 372	13 679	13 672	13 112	12 971	12 888 e	12 881 e
EU27 (from 01/02/2020)	16 249	11 983	11 838	11 397	11 597	11 676 e	11 491 e
OECD-Total	**60 483**	**49 974**	**50 148**	**48 886**	**49 144**	**49 407 e**	**49 419 e**
Argentina	16	10	11	13	14	13 e	12 e
China	524	2 838	3 251	3 395	4 052	5 014 e	5 597 e
Romania	7	9	14	13	13	14 e	14 e
Russian Federation	91	111	90	111	94	99 e	100 e
Singapore	171	149	121	129	134	138 e	138 e
South Africa	49	26	24	26	25	26 e	25 e
Chinese Taipei	145	389	445	517	692	724 e	737 e

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Source: OECD, Patent database

Table 61. Share of countries in triadic patent families

By priority year

Percentage

	2005	2014	2015	2016	2017	2018	2019
Australia	0.77	0.60	0.64	0.65	0.66	0.66 e	0.64 e
Austria	0.66	0.74	0.73	0.67	0.68	0.68 e	0.67 e
Belgium	0.88	0.73	0.77	0.76	0.78	0.78 e	0.77 e
Canada	1.16	1.09	1.07	1.18	1.20	1.21 e	1.21 e
Chile	0.01	0.02	0.02	0.02	0.02	0.02 e	0.02 e
Colombia	0.00	0.01	0.01	0.01	0.01	0.01 e	0.01 e
Czech Republic	0.04	0.08	0.10	0.10	0.11	0.10 e	0.10 e
Denmark	0.63	0.57	0.59	0.54	0.57	0.58 e	0.57 e
Estonia	0.00	0.01	0.01	0.01	0.01	0.01 e	0.01 e
Finland	0.63	0.58	0.49	0.50	0.49	0.48 e	0.48 e
France	4.92	4.60	4.19	3.80	3.59	3.40 e	3.26 e
Germany	11.53	8.59	8.65	8.76	8.64	8.46 e	8.10 e
Greece	0.04	0.04	0.02	0.03	0.03	0.03 e	0.03 e
Hungary	0.09	0.06	0.07	0.09	0.08	0.08 e	0.09 e
Iceland	0.01	0.00	0.01	0.00	0.01	0.00 e	0.01 e
Ireland	0.16	0.20	0.18	0.19	0.20	0.20 e	0.19 e
Israel[1]	0.81	0.84	0.94	0.90	0.91	0.92 e	0.91 e
Italy	1.56	1.51	1.50	1.66	1.67	1.67 e	1.66 e
Japan	30.54	32.49	32.37	32.62	31.95	31.28 e	31.04 e
Korea	4.43	4.08	4.11	4.33	4.15	4.27 e	4.49 e
Latvia	0.02	0.00	0.01	0.01	0.01	0.01 e	0.01 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	0.07	0.06	0.06 e	0.07 e
Mexico	0.03	0.05	0.05	0.05	0.05	0.05 e	0.04 e
Netherlands	2.84	2.37	2.07	1.69	1.80	1.74 e	1.68 e
New Zealand	0.12	0.19	0.13	0.10	0.11	0.11 e	0.11 e
Norway	0.23	0.20	0.18	0.26	0.27	0.27 e	0.26 e
Poland	0.03	0.10	0.15	0.14	0.15	0.16 e	0.15 e
Portugal	0.03	0.06	0.06	0.09	0.09	0.09 e	0.10 e
Slovak Republic	0.00	0.01	0.02	0.02	0.02	0.02 e	0.02 e
Slovenia	0.04	0.02	0.01	0.02	0.02	0.02 e	0.02 e
Spain	0.47	0.47	0.53	0.58	0.59	0.60 e	0.60 e
Sweden	1.56	1.25	1.33	1.37	1.39	1.45 e	1.49 e
Switzerland	1.75	2.18	2.23	2.16	2.22	2.19 e	2.15 e
Turkey	0.03	0.05	0.09	0.12	0.13	0.14 e	0.14 e
United Kingdom	3.49	3.10	3.06	2.94	3.00	2.97 e	2.96 e
United States	28.02	25.23	24.90	24.35	23.55	22.85 e	22.59 e
EU27 (from 01/02/2020)	26.21	22.10	21.56	21.17	21.05	20.70 e	20.15 e
OECD-Total	**97.57**	**92.17**	**91.34**	**90.80**	**89.22**	**87.58 e**	**86.65 e**
Argentina	0.03	0.02	0.02	0.02	0.02	0.02 e	0.02 e
China	0.84	5.23	5.92	6.31	7.36	8.89 e	9.81 e
Romania	0.01	0.02	0.03	0.02	0.02	0.02 e	0.03 e
Russian Federation	0.15	0.21	0.16	0.21	0.17	0.18 e	0.18 e
Singapore	0.28	0.27	0.22	0.24	0.24	0.25 e	0.24 e
South Africa	0.08	0.05	0.04	0.05	0.05	0.05 e	0.04 e
Chinese Taipei	0.23	0.72	0.81	0.96	1.26	1.28 e	1.29 e

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Source: OECD, Patent database

Table 62. Patents in the ICT sector - applications filed under the PCT

By priority year

Number

	2005	2014	2015	2016	2017	2018	2019
Australia	385	401	392	388	352	352	..
Austria	211	162	153	173	169	163	..
Belgium	143	233	214	196	187	156	..
Canada	819	814	912	912	829	870	..
Chile	2	16	19	10	4	11	..
Colombia	3.0	6.3	6.8	5.1	7.0	13.5	..
Czech Republic	18	20	22	21	29	16	..
Denmark	161	150	154	136	131	138	..
Estonia	6	10	6	10	10	12	..
Finland	754	549	497	488	574	579	..
France	1 502	1 429	1 349	1 284	1 301	1 340	..
Germany	2 289	2 325	2 527	2 646	2 931	3 071	..
Greece	14	25	12	22	20	19	..
Hungary	27	67	58	77	59	82	..
Iceland	5	2	2	0	3	0	..
Ireland	84	124	136	172	142	88	..
Israel[1]	669	744	754	730	633	555	..
Italy	346	322	307	315	315	323	..
Japan	6 358	9 064	9 494	9 908	10 286	12 080	..
Korea	2 132	5 089	5 381	4 969	5 282	6 146	..
Latvia	4	3	7	1	4	4	..
Lithuania	2.1	6.0	4.0	4.3	5.5	3.0	..
Luxembourg	5	15	7	24	19	16	..
Mexico	14	32	50	43	42	21	..
Netherlands	1 268	579	593	539	483	465	..
New Zealand	43	34	37	31	33	28	..
Norway	99	70	74	76	100	116	..
Poland	13	71	103	79	65	70	..
Portugal	20	18	36	39	31	36	..
Slovak Republic	3	10	13	9	3	8	..
Slovenia	5	7	8	7	4	5	..
Spain	130	229	179	207	180	225	..
Sweden	688	1 354	1 420	1 444	1 523	1 490	..
Switzerland	219	277	262	335	319	318	..
Turkey	11	104	152	170	189	226	..
United Kingdom	1 348	1 441	1 358	1 415	1 456	1 438	..
United States	14 912	17 279	16 909	16 982	16 805	16 756	..
EU27 (from 01/02/2020)	7 715	7 766	7 861	7 929	8 212	8 338	..
OECD-Total	**34 712**	**43 084**	**43 628**	**43 867**	**44 528**	**47 239**	**..**
Argentina	7	5	12	4	5	3	..
China	1 816	14 457	18 951	22 030	24 474	25 895	..
Romania	6	31	36	21	12	13	..
Russian Federation	153	280	262	275	238	251	..
Singapore	192	216	242	230	289	302	..
South Africa	54	65	52	48	43	69	..
Chinese Taipei	64	284	221	248	389	318	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Source: OECD, Patent database

Table 63. Patents in the biotechnology sector - applications filed under the PCT

By priority year

Number

	2005	2014	2015	2016	2017	2018	2019
Australia	219	162	164	161	169	176	..
Austria	61	75	78	63	69	76	..
Belgium	119	112	130	141	140	124	..
Canada	309	240	258	239	251	279	..
Chile	3	29	36	23	32	32	..
Colombia	1.0	4.7	10.4	6.8	11.6	8.7	..
Czech Republic	5	14	14	8	12	7	..
Denmark	193	196	164	167	188	173	..
Estonia	2	1	3	5	6	3	..
Finland	50	50	48	53	43	49	..
France	341	542	545	514	527	474	..
Germany	701	650	707	622	673	638	..
Greece	6	6	5	6	7	4	..
Hungary	10	10	16	13	14	12	..
Iceland	5	2	2	0	2	3	..
Ireland	27	37	30	36	27	33	..
Israel[1]	171	174	198	185	211	214	..
Italy	169	155	147	168	160	183	..
Japan	1 450	1 335	1 443	1 625	1 550	1 710	..
Korea	219	621	738	883	930	1 008	..
Latvia	1	1	1	3	2	4	..
Lithuania	1.3	5.1	4.0	2.8	6.7	3.5	..
Luxembourg	1	4	8	4	6	2	..
Mexico	11	18	24	22	20	16	..
Netherlands	234	223	256	230	222	243	..
New Zealand	53	26	26	26	28	19	..
Norway	32	62	35	47	30	36	..
Poland	10	37	33	25	22	28	..
Portugal	10	12	17	15	18	23	..
Slovak Republic	0	2	2	5	3	4	..
Slovenia	4	6	6	3	6	7	..
Spain	123	172	169	134	168	158	..
Sweden	135	115	116	140	122	125	..
Switzerland	150	186	215	203	232	250	..
Turkey	2	12	16	25	33	50	..
United Kingdom	518	515	537	496	504	576	..
United States	4 759	4 949	5 521	5 722	5 935	6 340	..
EU27 (from 01/02/2020)	2 208	2 434	2 503	2 365	2 450	2 382	..
OECD-Total	**10 103**	**10 763**	**11 722**	**12 022**	**12 377**	**13 095**	**..**
Argentina	10	13	6	4	2	9	..
China	122	654	845	1 123	1 518	1 868	..
Romania	1	3	2	0	1	1	..
Russian Federation	60	55	51	34	61	67	..
Singapore	64	99	90	107	105	88	..
South Africa	16	22	16	16	16	13	..
Chinese Taipei	11	86	92	87	87	70	..

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Source: OECD, Patent database

Table 64. Trade balance and export market share: Pharmaceutical industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2012	2015	2018	2013	2016	2019
Australia	-6 168.0	-5 842.9	-5 293.5	0.69	0.49	0.67
Austria	1 039.6	369.5	172.3	1.99	1.74	1.83
Belgium	3 489.8	3 209.5	5 047.0	3.68	4.89	6.18
Canada	-7 624.7	-4 715.2	-5 914.4	1.11	1.62	1.31
Chile	-946.4	-1 114.3	-1 473.3	0.03	0.03	0.03
Colombia	-1 734.5	-1 966.3	-2 196.5	0.10	0.08	0.06
Czech Republic	-2 112.3	-1 666.1	-2 224.6	0.39	0.47	0.49
Denmark	7 434.8	8 722.4	11 076.7	2.53	2.57	2.90
Estonia	-320.5	-328.9	-478.1	0.02	0.02	0.02
Finland	-919.9	-1 254.7	-1 420.8	0.25	0.18	0.11
France	5 838.1	4 665.7	5 367.8	7.60	5.91	5.57
Germany	24 807.4	28 328.1	37 259.4	15.20	14.66	14.08
Greece	-2 516.9	-1 954.9	-2 019.9	0.28	0.22	0.33
Hungary	894.6	749.4	676.6	0.97	0.89	0.90
Iceland	-7.9	-47.7	-166.0	0.02	0.01	0.00
Ireland	25 950.3	27 000.2	41 314.8	5.66	6.37	8.49
Israel	4 874.2	4 608.3	3 195.0	1.23	1.28	0.46
Italy	-2 603.2	-2 468.8	-681.8	5.02	4.34	5.41
Japan	-20 348.6	-20 167.4	-20 652.2	0.72	0.84	1.01
Korea	-3 089.0	-2 862.6	-3 284.1	0.31	0.52	0.64
Latvia	-188.0	-200.0	-181.4	0.08	0.09	0.08
Lithuania	-436.6	-369.7	-343.1	0.10	0.15	0.14
Luxembourg	-361.8	-314.2	-406.6	0.02	0.02	0.02
Mexico	-3 418.4	-3 319.8	-3 701.7	0.39	0.31	0.23
Netherlands	6 277.7	8 353.9	11 596.9	4.77	4.57	4.59
New Zealand	-668.4	-533.3	-673.1	0.06	0.06	0.05
Norway	-1 149.4	-1 080.0	-1 402.2	0.16	0.13	0.12
Poland	-2 939.4	-2 231.4	-3 904.2	0.63	0.56	0.58
Portugal	-1 860.2	-1 568.1	-2 088.1	0.20	0.24	0.21
Slovak Republic	-1 408.9	-1 284.3	-1 555.8	0.10	0.11	0.07
Slovenia	1 624.4	1 474.2	1 591.7	0.61	0.53	0.85
Spain	-1 611.4	-3 198.4	-4 258.0	2.76	2.19	2.03
Sweden	3 957.2	4 527.4	4 746.9	1.73	1.54	1.70
Switzerland	36 446.3	41 235.8	47 548.1	12.46	13.56	13.29
Turkey	-3 612.8	-3 652.2	-3 532.0	0.21	0.19	0.22
United Kingdom	8 266.0	2 059.0	-372.3	6.57	6.34	4.37
United States	-25 273.1	-37 945.4	-67 899.7	8.71	9.62	8.84
EU27 (from 01/02/2020)	..	..	..	..	..	..
OECD-Total	**39 580.2**	**35 216.8**	**33 470.1**	**87.36**	**87.34**	**87.89**
Argentina	-1 293.3	-1 442.5	-1 822.8	0.20	0.20	0.11
China	-1 745.1	-6 522.2	-11 704.5	2.50	2.61	2.67
Romania	-2 038.8	-1 931.0	-2 669.7	0.25	0.15	0.14
Russian Federation	-12 882.1	-8 444.6	-10 146.4	0.12	0.12	0.13
Singapore	6 595.7	4 841.0	6 164.8	1.59	1.24	1.35
South Africa	-1 981.8	-1 830.8	-2 126.9	0.09	0.09	0.07
Chinese Taipei	-2 100.2	-2 417.3	-3 361.8	0.10	0.11	0.11

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

	Trade balance (Million current USD)			Export market share (Percentage)		
	2012	2015	2018	2013	2016	2019
Australia	-23 675.8	-20 565.2	-24 834.0	0.16	0.18	0.18
Austria	-2 169.6	-1 239.1	-2 698.0	0.45	0.39	0.35
Belgium	-5 977.4	-4 522.6	-5 613.8	0.36	0.40	0.40
Canada	-28 405.5	-24 465.0	-27 574.9	0.61	0.59	0.53
Chile	-6 141.2	-5 771.5	-6 554.8	0.02	0.02	0.01
Colombia	-6 162.9	-5 936.7	-5 801.2	0.01	0.01	0.01
Czech Republic	2 267.0	-955.2	518.8	0.99	1.01	1.32
Denmark	-2 109.9	-1 675.4	-1 839.1	0.28	0.28	0.26
Estonia	-159.0	-95.7	-143.4	0.10	0.09	0.06
Finland	-2 020.3	-2 182.0	-3 251.4	0.14	0.14	0.15
France	-18 581.1	-17 011.2	-17 626.4	1.54	1.41	1.32
Germany	-6 601.0	-7 936.1	-5 171.6	4.75	4.92	4.98
Greece	-2 851.7	-1 703.8	-1 945.6	0.03	0.05	0.06
Hungary	3 644.6	455.7	336.3	0.78	0.61	0.68
Iceland	-216.2	-321.2	-491.0	0.00	0.00	0.00
Ireland	4 803.3	3 958.4	7 221.9	0.49	0.72	0.74
Israel	2 888.0	3 766.5	2 591.0	0.47	0.43	0.36
Italy	-16 822.9	-13 796.0	-14 990.5	0.69	0.66	0.64
Japan	6 727.6	-10 609.1	-9 237.0	4.08	3.77	3.44
Korea	61 159.7	63 978.4	96 757.0	5.72	5.76	5.63
Latvia	-274.3	-176.5	-417.7	0.05	0.06	0.05
Lithuania	-497.0	-454.1	-563.2	0.04	0.06	0.06
Luxembourg	-581.0	-540.1	-634.3	0.02	0.02	0.02
Mexico	-2 083.7	-5 932.6	-3 954.2	2.88	3.01	2.91
Netherlands	-2 168.6	-2 994.3	-5 636.9	2.96	2.69	2.70
New Zealand	-2 986.6	-2 983.5	-3 311.3	0.02	0.02	0.02
Norway	-4 805.9	-4 206.6	-5 416.1	0.13	0.11	0.10
Poland	-5 069.0	-4 268.9	-5 416.7	0.63	0.69	0.74
Portugal	-1 994.4	-2 102.1	-2 696.8	0.10	0.12	0.15
Slovak Republic	1 031.5	-558.0	-256.4	0.64	0.57	0.46
Slovenia	-363.7	-385.1	-587.2	0.04	0.04	0.05
Spain	-13 551.4	-14 660.6	-17 252.0	0.24	0.29	0.30
Sweden	-3 390.5	-3 627.8	-5 871.5	0.61	0.54	0.48
Switzerland	17 714.0	16 353.4	15 207.4	1.45	1.31	1.22
Turkey	-9 732.5	-12 409.2	-10 398.0	0.14	0.11	0.10
United Kingdom	-28 787.0	-32 184.2	-35 777.2	1.49	1.39	1.26
United States	-157 208.6	-181 709.4	-212 256.7	8.04	8.19	7.29
EU27 (from 01/02/2020)	..	..	..	..	..	..
OECD-Total	**-255 153.2**	**-299 466.4**	**-315 586.6**	**41.18**	**40.65**	**39.03**
Argentina	-6 761.4	-6 888.5	-6 025.6	0.01	0.01	0.01
China	161 022.9	184 852.3	160 469.8	27.84	26.40	26.18
Romania	-2 288.9	-3 270.4	-4 114.3	0.14	0.15	0.19
Russian Federation	-28 027.7	-16 133.3	-24 464.4	0.15	0.17	0.17
Singapore	28 348.4	36 350.8	27 757.5	5.59	5.33	4.78
South Africa	-7 733.1	-7 414.5	-7 445.5	0.07	0.07	0.05
Chinese Taipei	65 690.1	68 266.9	75 984.4	5.19	5.73	6.04

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 66. Trade balance and export market share: Aerospace industry

	Trade balance (Million current USD)			Export market share (Percentage)		
	2013	2016	2019	2012	2015	2018
Australia	771.55	-975.11	-870.93	0.37	0.39	0.40
Austria	-59.07	718.98	292.74	0.44	0.37	0.40
Belgium	391.86	352.04	541.02	0.48	0.58	0.59
Canada	3 177.25	2 814.56	1 243.42	3.72	3.85	3.32
Chile	-1 153.23	-965.72	-246.36	0.01	0.01	0.01
Colombia	-2 456.29	-928.02	-1 283.91	0.01	0.01	0.01
Czech Republic	421.52	280.66	433.50	0.20	0.18	0.23
Denmark	-30.43	-260.03	-225.54	0.10	0.14	0.10
Estonia	-5.72	-20.11	20.09	0.00	0.01	0.02
Finland	-445.20	-575.78	-513.50	0.07	0.16	0.03
France	29 066.73	20 523.22	34 483.37	18.41	15.98	14.89
Germany	15 006.77	21 746.89	23 173.06	14.34	12.34	11.36
Greece	-13.51	-158.29	-118.86	0.06	0.03	0.01
Hungary	-2.89	-635.23	-777.36	0.04	0.03	0.05
Iceland	-79.52	-269.37	16.44	0.00	0.00	0.00
Ireland	-7 582.50	-11 371.28	-18 845.65	0.81	1.60	1.46
Israel	1 143.52	1 543.66	-917.51	0.54	0.76	0.52
Italy	4 353.93	3 042.06	3 214.83	1.92	1.56	1.49
Japan	-3 839.49	-3 658.04	-6 247.84	1.82	1.97	1.76
Korea	-1 315.54	-2 735.55	-1 971.36	0.44	0.53	0.69
Latvia	-14.48	-31.41	-712.21	0.00	0.00	0.11
Lithuania	-28.75	-33.25	-39.95	0.02	0.01	0.01
Luxembourg	-1 661.56	-788.55	-388.88	0.07	0.05	0.03
Mexico	929.99	845.87	1 407.81	0.44	0.49	0.65
Netherlands	816.58	-1 316.27	-282.99	0.85	0.88	1.26
New Zealand	-901.24	-1 484.23	-1 678.05	0.03	0.02	0.02
Norway	-564.55	-544.65	-994.42	0.15	0.20	0.21
Poland	590.39	689.74	721.17	0.51	0.56	0.84
Portugal	-279.67	-555.09	-2 789.45	0.05	0.06	0.10
Slovak Republic	-32.77	-86.24	-97.46	0.01	0.01	0.01
Slovenia	-51.33	2.66	-56.42	0.01	0.02	0.03
Spain	4 036.96	2 175.38	2 894.45	1.50	1.28	1.59
Sweden	318.59	0.45	-66.65	0.24	0.19	0.19
Switzerland	47.77	-2 176.26	-844.31	0.61	0.67	0.45
Turkey	-1 647.02	-3 979.45	-2 912.55	0.22	0.26	0.32
United Kingdom	7 805.62	3 995.93	13 559.51	9.81	9.23	9.60
United States	69 865.91	86 993.38	75 055.51	30.21	33.41	31.38
EU27 (from 01/02/2020)	..	..	..	..	..	..
OECD-Total	**116 580.16**	**112 177.55**	**114 174.77**	**88.52**	**87.85**	**84.12**
Argentina	208.82	-878.02	62.80	0.15	0.06	0.03
China	-23 000.56	-20 727.18	-19 209.68	0.87	1.60	1.73
Romania	43.39	2.09	203.28	0.06	0.07	0.10
Russian Federation	978.87	-1 922.40	-1 170.85	1.69	0.94	0.89
Singapore	-1 905.02	-1 078.16	-7 552.16	2.56	2.67	4.15
South Africa	-289.05	-725.57	-696.37	0.15	0.17	0.08
Chinese Taipei	-312.54	-3 315.55	-3 367.92	0.17	0.21	0.68

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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

Annex. Background Economic Indicators

Table A. Gross domestic product at current prices and PPP

Million USD

	2005	2014	2015	2016	2017	2018	2019
Australia	717 705	1 118 494	1 126 908	1 215 297	1 251 096	1 326 164	1 346 385
Austria	288 087	417 060	430 976	460 283	476 564	504 355	520 804
Belgium	347 658	503 620	520 878	550 678	573 789	601 777	628 556
Canada	1 171 340	1 621 397	1 594 851	1 678 093	1 765 763	1 862 154	1 904 503
Chile	206 274	404 667	407 878	426 777	451 985	463 369	492 274
Colombia	351 495	618 793	624 119	665 398	693 117	738 256	786 357
Czech Republic	225 621	342 100	357 504	381 420	411 328	437 252	458 950
Denmark	185 074	270 331	278 748	297 719	319 130	332 918	350 812
Estonia	22 523	38 300	38 659	41 549	44 602	48 023	51 509
Finland	168 147	228 059	232 868	246 928	262 027	274 426	284 675
France	1 926 880	2 662 033	2 718 495	2 864 106	2 983 011	3 128 337	3 336 887
Germany	2 622 040	3 807 115	3 889 082	4 165 170	4 376 928	4 556 073	4 644 164
Greece	281 028	290 197	289 146	296 030	308 068	318 562	330 966
Hungary	172 222	253 001	263 571	273 926	288 404	311 176	331 797
Iceland	11 075	15 059	16 276	17 939	19 106	20 536	21 663
Ireland	168 261	238 264	324 636	340 946	378 128	413 287	441 285
Israel[1]	172 243	281 527	297 286	322 994	338 372	358 360	379 793
Italy	1 746 658	2 200 256	2 240 922	2 420 672	2 517 184	2 605 605	2 678 904
Japan	4 110 440	5 034 455	5 199 915	5 158 900	5 262 255	5 363 113	5 416 302
Korea	1 213 618	1 792 600	1 933 589	2 026 968	2 103 651	2 192 613	2 209 424
Latvia	31 069	47 460	49 362	52 339	55 645	59 356	61 248
Lithuania	48 212	82 647	83 762	88 700	95 492	101 826	108 315
Luxembourg	31 733	56 354	59 081	64 406	66 973	70 914	74 997
Mexico	1 341 775	2 173 227	2 230 189	2 383 253	2 460 766	2 556 351	2 608 650
Netherlands	614 044	830 318	851 885	890 489	943 740	997 730	1 035 059
New Zealand	106 148	168 435	172 759	188 356	203 545	215 288	223 650
Norway	220 982	338 506	313 231	308 522	337 994	370 296	365 502
Poland	530 377	968 368	1 020 393	1 075 393	1 141 694	1 214 377	1 299 684
Portugal	238 691	298 952	307 230	326 364	340 370	359 232	379 274
Slovak Republic	89 400	157 124	162 278	161 074	163 600	171 601	177 572
Slovenia	47 717	63 653	65 266	70 079	75 435	80 707	86 029
Spain	1 205 129	1 558 307	1 621 070	1 733 214	1 841 780	1 905 614	1 988 355
Sweden	309 213	457 508	481 171	500 424	522 477	544 916	568 812
Switzerland	310 494	524 917	546 806	570 267	584 052	610 525	626 977
Turkey	815 102	1 860 471	2 022 398	2 116 398	2 264 269	2 300 826	2 279 166
United Kingdom	1 968 627	2 667 371	2 771 840	2 896 753	3 021 844	3 133 332	3 242 466
United States	13 036 637	17 527 258	18 238 301	18 745 075	19 542 980	20 611 861	21 433 226
EU27 (from 01/02/2020)	11 678 781 e	16 443 233 e	16 987 123 e	18 075 191 e	19 032 602 e	19 942 117 e	20 818 957 e
OECD-Total	**37 053 742 e**	**51 918 204 e**	**53 783 327 e**	**56 022 901 e**	**58 487 163 e**	**61 161 109 e**	**63 174 991 e**
Argentina	527 729	839 897	867 177	885 228	1 039 331	1 037 337	1 035 401
China	6 588 930	17 121 277	17 796 747	18 712 097	19 887 035	21 746 511	23 523 357
Romania	204 714	411 274	428 132	478 202	531 675	569 588	625 707
Russian Federation	1 822 445	3 763 537	3 526 234	3 538 975	3 807 099	4 211 363	4 283 892
Singapore	250 652	461 713	481 393	501 247	532 833	571 120	585 578
South Africa	468 782	682 955	695 229	707 744	724 101	747 578	763 258
Chinese Taipei	654 737	1 066 102	1 102 034	1 112 783	1 143 252	1 203 262	1 261 076

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 B. Implicit GDP price indices

Year 2010 = 1.000

	2005	2014	2015	2016	2017	2018	2019
Australia	0.790	1.005	1.000	1.037	1.057	1.093	1.114
Austria	0.830	0.978	1.000	1.018	1.027	1.045	1.063
Belgium	0.854	0.987	1.000	1.019	1.038	1.055	1.072
Canada	0.841	1.009	1.000	1.008	1.033	1.052	1.069
Chile	0.628	0.953	1.000	1.045	1.095	1.121	1.142
Colombia	0.656	0.976	1.000	1.051	1.105	1.157	1.203
Czech Republic	0.873	0.990	1.000	1.011	1.025	1.051	1.092
Denmark	0.839	0.996	1.000	1.003	1.014	1.020	1.028
Estonia	1	1	1	1	1	1	1
Finland	0.819	0.984	1.000	1.001	1.009	1.029	1.044
France	0.881	0.989	1.000	1.005	1.010	1.020	1.034
Germany	0.872	0.982	1.000	1.013	1.027	1.044	1.067
Greece	0.906	1.003	1.000	0.994	0.998	0.997	0.999
Hungary	0.711	0.973	1.000	1.014	1.054	1.105	1.158
Iceland	0.555	0.943	1.000	1.023	1.032	1.060	1.108
Ireland	0.917	0.929	1.000	1.010	1.027	1.030	1.062
Israel[1]	0.806	0.972	1.000	1.010	1.012	1.025	1.047
Italy	0.860	0.991	1.000	1.011	1.019	1.030	1.038
Japan	1.045	0.976	1.000	1.007	1.001	1.003	1.010
Korea	0.829	0.969	1.000	1.020	1.043	1.048	1.038
Latvia	0.6	1.0	1.0	1.0	1.0	1.1	1.1
Lithuania	1	1	1	1	1	1	1
Luxembourg	0.750	0.998	1.000	1.008	1.025	1.051	1.086
Mexico	0.641	0.972	1.000	1.056	1.127	1.183	1.230
Netherlands	0.887	0.992	1.000	1.005	1.017	1.042	1.074
New Zealand	0.800	0.993	1.000	1.024	1.053	1.064	1.095
Norway	0.732	0.980	1.000	1.019	1.042	1.075	1.102
Poland	0.803	0.990	1.000	1.003	1.022	1.034	1.067
Portugal	0.871	0.980	1.000	1.017	1.033	1.051	1.070
Slovak Republic	0.913	1.002	1.000	0.995	1.007	1.027	1.053
Slovenia	0.839	0.990	1.000	1.009	1.024	1.046	1.069
Spain	0.901	0.995	1.000	1.003	1.016	1.028	1.043
Sweden	0.837	0.979	1.000	1.015	1.037	1.062	1.089
Switzerland	0.953	1.012	1.000	0.994	0.990	0.997	0.997
Turkey	0.476	0.927	1.000	1.081	1.200	1.398	1.592
United Kingdom	0.823	0.993	1.000	1.022	1.041	1.065	1.088
United States	0.836	0.991	1.000	1.010	1.029	1.054	1.073
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	0.134	0.790	1.000	1.411	1.778	2.490	3.750
China	0.680	1.000	1.000	1.014	1.057	1.094	1.111
Romania	0.533	0.968	1.000	1.024	1.072	1.139	1.216
Russian Federation	0.362	0.932	1.000	1.028	1.083	1.192	1.229
Singapore	0.869	0.970	1.000	1.007	1.035	1.067	1.068
South Africa	0.526	0.951	1.000	1.072	1.129	1.173	1.220
Chinese Taipei	1.006	0.967	1.000	1.008	0.999	0.993	0.994

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 C. Purchasing power parities

National currency per USD

	2005	2014	2015	2016	2017	2018	2019
Australia	1.39	1.45	1.47	1.45	1.48	1.47	1.47
Austria	0.88	0.80	0.80	0.78	0.78	0.76	0.76
Belgium	0.89	0.80	0.80	0.78	0.78	0.77	0.76
Canada	1.21	1.23	1.25	1.21	1.21	1.20	1.21
Chile	333.69	367.21	391.18	397.25	397.69	411.82	398.92
Colombia	961.49	1 232.89	1 289.32	1 298.14	1 328.02	1 338.01	1 349.41
Czech Republic	14.56	12.70	12.94	12.58	12.42	12.37	12.53
Denmark	8.57	7.33	7.31	7.08	6.87	6.77	6.66
Estonia	1	1	1	1	1	1	1
Finland	0.98	0.91	0.91	0.88	0.86	0.85	0.84
France	0.92	0.81	0.81	0.78	0.77	0.76	0.73
Germany	0.87	0.77	0.78	0.75	0.74	0.74	0.74
Greece	0.71	0.61	0.61	0.59	0.58	0.56	0.55
Hungary	130.93	129.41	132.55	132.03	136.04	139.31	143.23
Iceland	95.84	138.55	141.97	140.03	138.28	138.30	140.57
Ireland	1.01	0.82	0.81	0.79	0.79	0.79	0.81
Israel[1]	3.72	3.94	3.92	3.79	3.75	3.71	3.70
Italy	0.86	0.74	0.74	0.70	0.69	0.68	0.67
Japan	129.55	103.05	103.47	105.52	105.10	103.71	103.63
Korea	788.92	871.88	857.48	858.81	872.62	865.72	868.57
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	0.88	0.88	0.85	0.85	0.85	0.85
Mexico	7.13	8.05	8.33	8.45	8.91	9.20	9.37
Netherlands	0.90	0.81	0.81	0.80	0.78	0.78	0.79
New Zealand	1.54	1.44	1.48	1.44	1.43	1.42	1.44
Norway	9.01	9.28	9.93	10.04	9.75	9.60	9.76
Poland	1.87	1.77	1.77	1.73	1.74	1.75	1.76
Portugal	0.66	0.58	0.58	0.57	0.58	0.57	0.56
Slovak Republic	0.56	0.49	0.49	0.50	0.52	0.52	0.53
Slovenia	0.61	0.59	0.60	0.58	0.57	0.57	0.56
Spain	0.77	0.66	0.66	0.64	0.63	0.63	0.63
Sweden	9.48	8.73	8.85	8.82	8.85	8.86	8.88
Switzerland	1.69	1.28	1.24	1.20	1.19	1.18	1.16
Turkey	0.83	1.10	1.16	1.24	1.38	1.63	1.90
United Kingdom	0.71	0.70	0.69	0.69	0.68	0.68	0.68
United States	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EU27 (from 01/02/2020)	..	..	..	..	..	..	..
OECD-Total	**..**	**..**	**..**	**..**	**..**	**..**	**..**
Argentina	1.10	5.45	6.87	9.29	10.26	14.02	20.71
China	2.84	3.76	3.87	3.99	4.18	4.23	4.21
Romania	1.40	1.63	1.66	1.60	1.61	1.67	1.69
Russian Federation	12.74	21.00	23.56	24.19	24.12	24.66	25.50
Singapore	0.85	0.86	0.88	0.88	0.89	0.88	0.87 e
South Africa	3.50	5.57	5.83	6.16	6.43	6.52	6.65
Chinese Taipei	18.38	15.25	15.48	15.78	15.73	15.27	15.01

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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	2014	2015	2016	2017	2018	2019
Australia	483 339	734 817	727 979	795 584	822 951	871 079	884 361 e
Austria	189 163	271 351	279 477	298 021	309 567	328 454	338 925 e
Belgium	220 965	309 467	322 702	340 848	355 122	370 421	387 578 e
Canada	780 788	1 046 146	1 004 821	1 044 078	1 107 884	1 170 539 e	1 198 968 e
Chile	150 597 e	279 286	278 517	288 811	303 706	309 347 e	328 644 e
Colombia	238 435	423 721	421 655	449 198	462 274	490 395	522 403
Czech Republic	155 817	234 396	245 602	261 121	278 461	293 109	306 089 e
Denmark	107 005	156 880	162 308	174 669	187 309	196 652	209 672 e
Estonia	15 380	25 154	24 735	25 870	28 349	30 810	33 101 e
Finland	103 138	129 152	131 847	140 184	151 749	158 601	164 977 e
France	1 144 059	1 533 004	1 570 322	1 648 926	1 709 949	1 787 759	1 908 040 e
Germany	1 691 833	2 424 686	2 477 878	2 656 206	2 786 305	2 899 402	2 936 155 e
Greece	172 823	155 423	156 452	159 130	168 362	174 062	182 267
Hungary	109 041	159 327	165 798	170 782	180 018	193 900	206 200 e
Iceland	6 689	9 283	10 138	11 137	11 581	12 533	13 222
Ireland	115 328	167 540	247 819	259 731	291 775	322 273	343 513
Israel[1]	104 189 e	165 656	176 806	191 903	200 798 e	213 477 e	226 246 e
Italy	1 108 896	1 339 992	1 368 415	1 486 645	1 553 672	1 601 233	1 644 867 e
Japan	3 061 437	3 586 371	3 726 978	3 681 071	3 769 218	3 826 527 e	3 864 477 e
Korea	858 894 e	1 260 737 e	1 348 198	1 407 070	1 459 754	1 512 572	1 524 169 e
Latvia	20 716	29 733	30 812	31 972	34 274	36 882	38 057 e
Lithuania	34 584	59 323	59 396	62 669	67 896	71 822	76 259 e
Luxembourg	21 125	37 830	40 612	44 784	46 487	48 856	51 499 e
Mexico	995 958	1 591 302	1 622 508	1 743 779	1 837 161	1 916 757	1 948 222 e
Netherlands	399 997	538 100	554 537	574 772	608 491	639 244	657 181 e
New Zealand	71 276	108 421	110 624	120 209	131 167	138 371	143 745 e
Norway	147 023	217 473	194 471	185 802	206 413	227 638	220 044 e
Poland	365 400	682 181	725 567	758 808	806 105	855 521	908 479 e
Portugal	141 398	174 424	180 421	191 178	199 133	209 606	220 178 e
Slovak Republic	61 334	110 753	114 060	109 634	110 418	116 998	118 821 e
Slovenia	31 688	41 581	42 737	45 786	49 779	53 688	57 467 e
Spain	807 808	961 410	1 010 192	1 083 769	1 160 660	1 197 496	1 252 702 e
Sweden	192 853	285 835	303 743	311 176	325 261	337 834	354 171
Switzerland	216 809	360 651	374 964	388 256	396 869	414 848	423 939 e
Turkey	560 357	1 290 013	1 407 714	1 460 484	1 603 343	1 644 464	1 622 018
United Kingdom	1 212 583	1 618 507	1 670 880	1 744 373	1 840 186	1 919 456	1 986 311 e
United States	8 398 985	11 023 460	11 457 897	11 725 359	12 279 548	12 982 536	13 483 259 e
EU27 (from 01/02/2020)	7 466 300 e	10 275 300 e	10 686 142 e	11 362 352 e	11 984 402 e	12 532 607 e	13 050 867 e
OECD-Total	**24 497 709 e**	**33 543 385 e**	**34 749 583 e**	**36 073 793 e**	**37 841 994 e**	**39 575 160 e**	**40 786 224 e**
Argentina	358 987	529 723 e	537 302 e	549 597 e	643 006 e	654 208 e	655 757 e
China	5 696 995 e	14 451 190 e	14 874 049 e	15 439 957 e	16 331 333 e	17 753 709 e	19 134 047 e
Romania	144 833	282 542	296 983	335 521	373 133	394 972	428 861
Russian Federation	1 222 530 e	2 426 263	2 382 232	2 384 606	2 588 076	2 856 744	2 902 203
Singapore	210 814 e	372 998 e	388 797 e	403 829 e	430 986 e	468 355 e	479 704 e
South Africa	330 979 e	471 176 e	476 954 e	483 345 e	497 087 e	507 172 e	518 578 e
Chinese Taipei	484 646 e	806 110	834 227	845 967	876 573	920 260	956 223

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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 E. Total population

Thousands

	2005	2014	2015	2016	2017	2018	2019
Australia	20 177	23 476	23 816	24 191	24 602	24 983	25 366
Austria	8 225	8 544	8 630	8 740	8 795	8 838	8 878
Belgium	10 479	11 209	11 274	11 331	11 375	11 427	11 489
Canada	32 244	35 437	35 703	36 109	36 546	37 065	37 593
Chile	16 283	17 836	18 045	18 278	18 522	18 770	19 038
Colombia	41 686	46 296	46 819	47 343	47 868	48 391	48 911
Czech Republic	10 234	10 525	10 543	10 565	10 590	10 626	10 669
Denmark	5 419	5 643	5 682	5 729	5 765	5 794	5 817
Estonia	1 359	1 316	1 313	1 316	1 316	1 319	1 325
Finland	5 246	5 463	5 481	5 495	5 508	5 516	5 522
France	63 168	66 312	66 581	66 831	67 063	67 265	67 456
Germany	81 337	80 983	81 687	82 349	82 657	82 906	83 093
Greece	10 987	10 892	10 821	10 776	10 755	10 733	10 722
Hungary	10 087	9 866	9 843	9 814	9 788	9 776	9 771
Iceland	296	327	331	335	343	353	361
Ireland	4 160	4 652	4 696	4 749	4 802	4 861	4 927
Israel[1]	6 961	8 212	8 377	8 543	8 710	8 881	9 050
Italy	58 191	60 789	60 731	60 628	60 537	60 459	60 339
Japan	127 755	127 262	127 110	126 933	126 706	126 443	126 140
Korea	48 185	50 747	51 015	51 218	51 362	51 607	51 709
Latvia	2 239	1 994	1 977	1 959	1 941	1 926	1 913
Lithuania	3 323	2 932	2 905	2 868	2 828	2 802	2 794
Luxembourg	466	558	569	584	597	609	622
Mexico	107 000	119 550	120 846	122 117	123 364	124 587	125 783
Netherlands	16 320	16 865	16 940	17 030	17 131	17 232	17 345
New Zealand	4 148	4 542	4 638	4 742	4 838	4 922	5 013
Norway	4 623	5 137	5 190	5 236	5 277	5 312	5 348
Poland	38 161	38 484	38 455	38 427	38 422	38 413	38 386
Portugal	10 503	10 401	10 358	10 326	10 300	10 284	10 286
Slovak Republic	5 387	5 419	5 422	5 431	5 438	5 446	5 453
Slovenia	2 001	2 062	2 063	2 065	2 066	2 072	2 089
Spain	43 663	46 455	46 410	46 450	46 533	46 729	47 104
Sweden	9 030	9 696	9 799	9 923	10 058	10 175	10 279
Switzerland	7 488	8 189	8 282	8 373	8 452	8 514	8 575
Turkey	68 435	77 182	78 218	79 278	80 313	81 407	82 579
United Kingdom	60 413	64 597	65 110	65 648	66 040	66 436	66 797
United States	295 993	318 631	320 918	323 186	325 220	326 949	328 527
EU27 (from 01/02/2020)	434 497 e	443 725 e	444 682 e	445 699 e	446 391 e	447 155 e	448 084 e
OECD-Total	**1 241 670 e**	**1 318 482 e**	**1 326 598 e**	**1 334 917 e**	**1 342 427 e**	**1 349 827 e**	**1 357 069 e**
Argentina	38 592	42 670	43 132	43 590	44 045	44 495	44 939
China	1 307 560	1 367 820	1 374 620	1 382 710	1 390 080	1 395 380 e	1 400 050 e
Romania	21 320	19 916	19 822	19 706	19 593	19 477	19 376
Russian Federation	143 519	146 091	146 406	146 675	146 842	146 831	146 765
Singapore	4 266	5 470	5 535	5 607	5 612	5 639	5 704
South Africa	47 602	53 912	54 750	55 620	56 522	57 354 e	58 182 e
Chinese Taipei	22 770	23 434	23 492	23 540	23 571	23 589	23 603

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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Table F. Total employment

Thousands

	2005	2014	2015	2016	2017	2018	2019
Australia	9 965	11 665	11 903	12 080	12 450	12 754	13 049 e
Austria	3 873	4 260	4 286	4 341	4 413	4 489	4 540 e
Belgium	4 273	4 577	4 617	4 675	4 752	4 817	4 893 e
Canada	16 427	18 092	18 250	18 436	18 789	19 036	19 442
Chile	6 079	7 903	8 028	8 115	8 276	8 390	8 501 e
Colombia	..	..	..	..	..	..	..
Czech Republic	4 923	5 109	5 182	5 264	5 346	5 418	5 432 e
Denmark	2 783	2 791	2 829	2 876	2 922	2 963	3 000 e
Estonia	618	610	623	625	642	650	650 e
Finland	2 419	2 526	2 524	2 535	2 562	2 626	2 673 e
France	26 321	27 334	27 391	27 567	27 842	28 114	28 430 e
Germany	39 311	42 721	43 122	43 655	44 248	44 854	45 255 e
Greece	4 647	4 454	4 323	4 470	4 447	4 509	4 565
Hungary	4 122	4 219	4 313	4 473	4 559	4 667	4 717 e
Iceland	162	176	181	189	197	203	202
Ireland	1 962	1 943	2 010	2 082	2 145	2 213	2 276
Israel[1]	2 924	3 847	3 934	4 026	4 124	4 195	4 266 e
Italy	24 511	24 357	24 516	24 849	25 138	25 342	25 474 e
Japan	65 531	65 934	66 220	66 852	67 501	68 626	69 251 e
Korea	22 831	25 897	26 178	26 409	26 725	26 822	27 123 e
Latvia	969	877	889	886	886	900	899 e
Lithuania	1 421	1 323	1 341	1 372	1 362	1 381	1 387 e
Luxembourg	308	396	406	418	433	449	465 e
Mexico	32 801	36 981	37 562	38 201	38 645	39 240	39 305 e
Netherlands	8 340	8 725	8 808	8 943	9 157	9 396	9 580 e
New Zealand	2 059	2 308	2 348	2 449	2 537	2 572	2 605 e
Norway	2 319	2 694	2 707	2 715	2 747	2 793	2 839 e
Poland	14 057	15 731	15 970	16 100	16 315	16 404	16 363 e
Portugal	5 041	4 513	4 576	4 650	4 803	4 914	4 953 e
Slovak Republic	2 089	2 223	2 267	2 321	2 372	2 420	2 445 e
Slovenia	930	932	944	961	990	1 021	1 047 e
Spain	19 704	17 988	18 491	18 885	19 388	19 817	20 258 e
Sweden	4 342	4 737	4 808	4 896	5 017	5 098	5 128
Switzerland	4 145	4 822	4 895	4 963	5 008	5 055	5 091 e
Turkey	19 489	25 633	26 330	26 907	27 919	28 483	27 791
United Kingdom	28 853	30 753	31 285	31 745	32 060	32 443	32 795 e
United States	143 979	148 513	151 000	153 586	155 491	157 921	159 721
EU27 (from 01/02/2020)	191 748 e	196 509 e	198 335 e	200 896 e	204 127 e	206 932 e	208 989 e
OECD-Total	**534 527 e**	**567 563 e**	**575 055 e**	**583 518 e**	**592 207 e**	**600 994 e**	**606 411 e**
Argentina	15 505	17 626	17 888	18 126	18 362	18 657	18 823
China	746 470	772 530	774 510	776 030	776 400	775 860	774 710
Romania	9 159	8 635	8 526	8 430	8 631	8 639	8 635
Russian Federation	68 339	71 539	72 324	72 393	72 316	72 532	71 933
Singapore	2 320	3 624	3 656	3 673	3 669	3 715	3 785
South Africa	12 769	15 146	15 741	15 780	16 169	16 394	16 350
Chinese Taipei	9 942	11 079	11 198	11 267	11 352	11 434	11 500

Note: Detailed metadata:*http://metalinks.oecd.org/msti/20210922/b090*

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Table G. Industrial employment

Thousands

	2005	2014	2015	2016	2017	2018	2019
Australia	7 453	8 406	8 506	8 583	8 835	9 020	9 229 e
Austria	2 951	3 206	3 212	3 245	3 299	3 360	3 399 e
Belgium	2 963	3 119	3 145	3 182	3 229	3 277	3 330 e
Canada	12 261	13 249	13 322	13 418	13 678	13 844	14 131
Chile	4 651 e	6 005	6 066	6 176	6 245	6 308	6 336 e
Colombia	..	..	..	..	..	..	..
Czech Republic	3 960	4 100	4 164	4 223	4 270	4 331	4 327 e
Denmark	1 858	1 836	1 871	1 917	1 961	1 997	2 026 e
Estonia	472	458	471	475	493	500	497 e
Finland	1 712	1 763	1 756	1 766	1 785	1 830	1 857 e
France	18 059	18 582	18 595	18 717	18 982	19 269 e	19 486 e
Germany	28 709	31 164	31 335	31 638	32 014	32 420	32 600 e
Greece	3 625	3 409	3 285	3 418	3 399	3 443	3 487
Hungary	3 178	3 181	3 231	3 359	3 467	3 563	3 632 e
Iceland	118	122	127	135	142	146	144
Ireland	1 534	1 425	1 478	1 547	1 590	1 635	1 673
Israel[1]	1 882	2 448	2 497	2 573	2 639	2 662	2 731 e
Italy	18 313	17 892	18 022	18 350	18 629	18 843	18 968 e
Japan	54 922	53 188	53 106	53 441	54 023	54 993	55 494 e
Korea	19 193	20 804	21 051	21 113	21 223	21 236	21 314 e
Latvia	747	673	685	679	678	692	692 e
Lithuania	1 084	1 013	1 021	1 041	1 035	1 053	1 053 e
Luxembourg	245	305	313	323	334	346	358 e
Mexico	25 303	28 082	28 456	29 087	29 497	30 048	29 996 e
Netherlands	6 089	6 246	6 350	6 480	6 651	6 838	6 948 e
New Zealand	1 574	1 713	1 741	1 810	1 874	1 891	1 915 e
Norway	1 492	1 710	1 706	1 698	1 716	1 749	1 787 e
Poland	11 097	12 302	12 516	12 658	12 841	12 874	12 869 e
Portugal	3 922	3 410	3 469	3 528	3 664	3 756	3 769 e
Slovak Republic	1 624	1 739	1 776	1 822	1 866	1 908	1 925 e
Slovenia	765	748	759	772	795	823	844 e
Spain	15 266	13 053	13 521	13 841	14 265	14 579	14 939 e
Sweden	2 834	3 140	3 167	3 195	3 294	3 361	3 390
Switzerland	3 173	3 595	3 628	3 651	3 668	3 697	3 710 e
Turkey	16 845	21 572	22 037	22 294	23 186	23 065	22 064
United Kingdom	21 280	22 331	22 824	23 255	23 548	23 763	24 039 e
United States	102 533	103 356	104 808	106 826	108 319	109 658	110 678
EU27 (from 01/02/2020)	143 530 e	144 785 e	145 988 e	147 993 e	150 646 e	152 896 e	154 287 e
OECD-Total	**403 684 e**	**419 342 e**	**424 015 e**	**430 236 e**	**437 134 e**	**442 776 e**	**445 637 e**
Argentina	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..
Romania	7 918	7 556	7 334	7 257	7 424	7 462	7 428
Russian Federation	50 969	52 929	53 353	53 268	53 250	53 450	53 129
Singapore	2 040	3 161	3 182	3 192	3 179	3 218	3 275
South Africa	9 714 e	11 202 e	11 694	11 749	12 091	12 301	12 273
Chinese Taipei	8 727	9 624	9 735	9 797	9 876	9 958	10 014

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Main Science and Technology Indicators

This biannual publication provides a set of indicators that reflect the level and structure of the efforts undertaken by OECD member countries and seven non-member economies (Argentina, China, Romania, Russian Federation, Singapore, South Africa, Chinese Taipei) in the field of science and technology. These data include final or provisional results as well as forecasts established by government authorities. The indicators cover the resources devoted to research and development, patent families, technology balance of payments and international trade in R&D-intensive industries. Also presented are the underlying economic series used to calculate these indicators. Series are presented for a reference year and for the last six years for which data are available.

ALSO AVAILABLE ON LINE

The data in this publication are also available on line via ***www.oecd-ilibrary.org*** under the title *OECD Science, Technology and R&D Statistics* (***https://doi.org/10.1787/strd-data-en***).

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