

First estimates of Research & Development expenditure
R&D expenditure in the EU remained nearly stable in 2015 at just over 2% of GDP
 Almost two thirds spent in the business sector

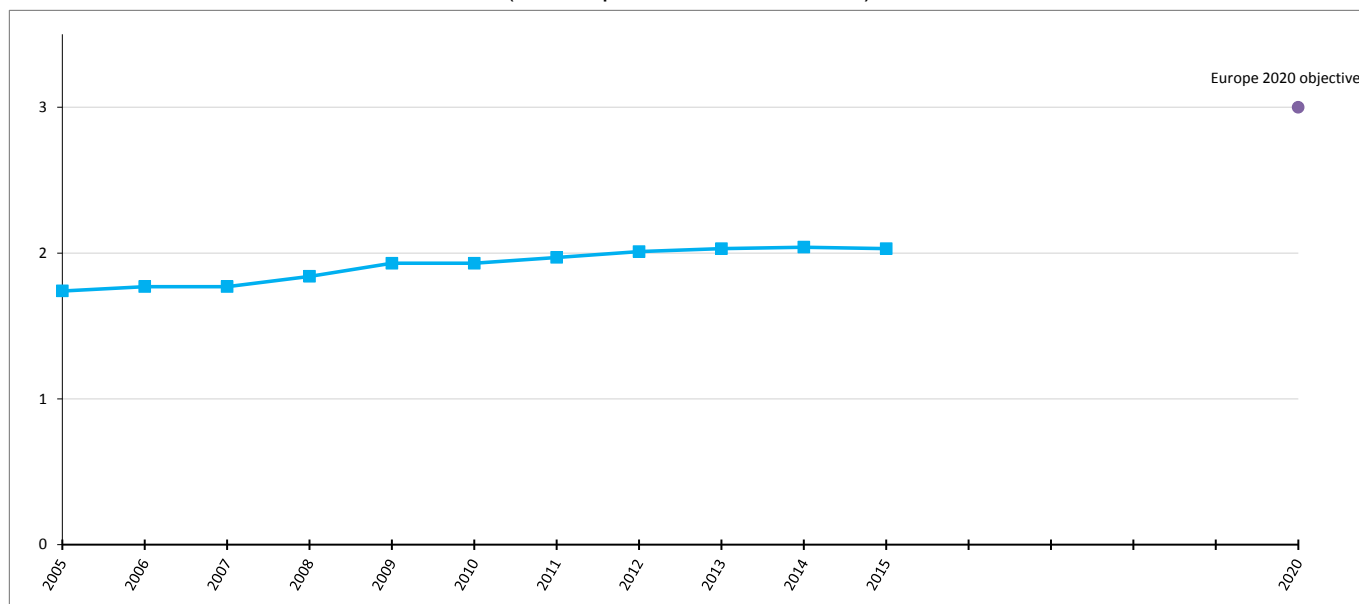
In 2015, the Member States of the **European Union** (EU) spent all together almost €300 billion on Research & Development (R&D). The R&D intensity, i.e. R&D expenditure as a percentage of GDP, stood at 2.03% in 2015, compared with 2.04% in 2014. Ten years ago (2005), R&D intensity was 1.74%.

With respect to other major economies, R&D intensity in the **EU** was much lower than in **South Korea** (4.29% in 2014) and **Japan** (3.59% in 2014) and lower than in the **United States** (2.73% in 2013), while it was about the same level as in **China** (2.05% in 2014) and much higher than in **Russia** (1.13%). In order to provide a stimulus to the EU's competitiveness, an increase by 2020 of the R&D intensity to 3% in the **EU** is one of the five headline targets of the Europe 2020 strategy.

The business enterprise sector continues to be the main sector in which R&D expenditure was spent, accounting for 64% of total R&D conducted in 2015, followed by the higher education sector (23%), the government sector (12%) and the private non-profit sector (1%).

This information on Research and Development in the EU is published by **Eurostat, the statistical office of the European Union**. R&D is a major driver of innovation, and R&D expenditure and intensity are two of the key indicators used to monitor resources devoted to science and technology worldwide.

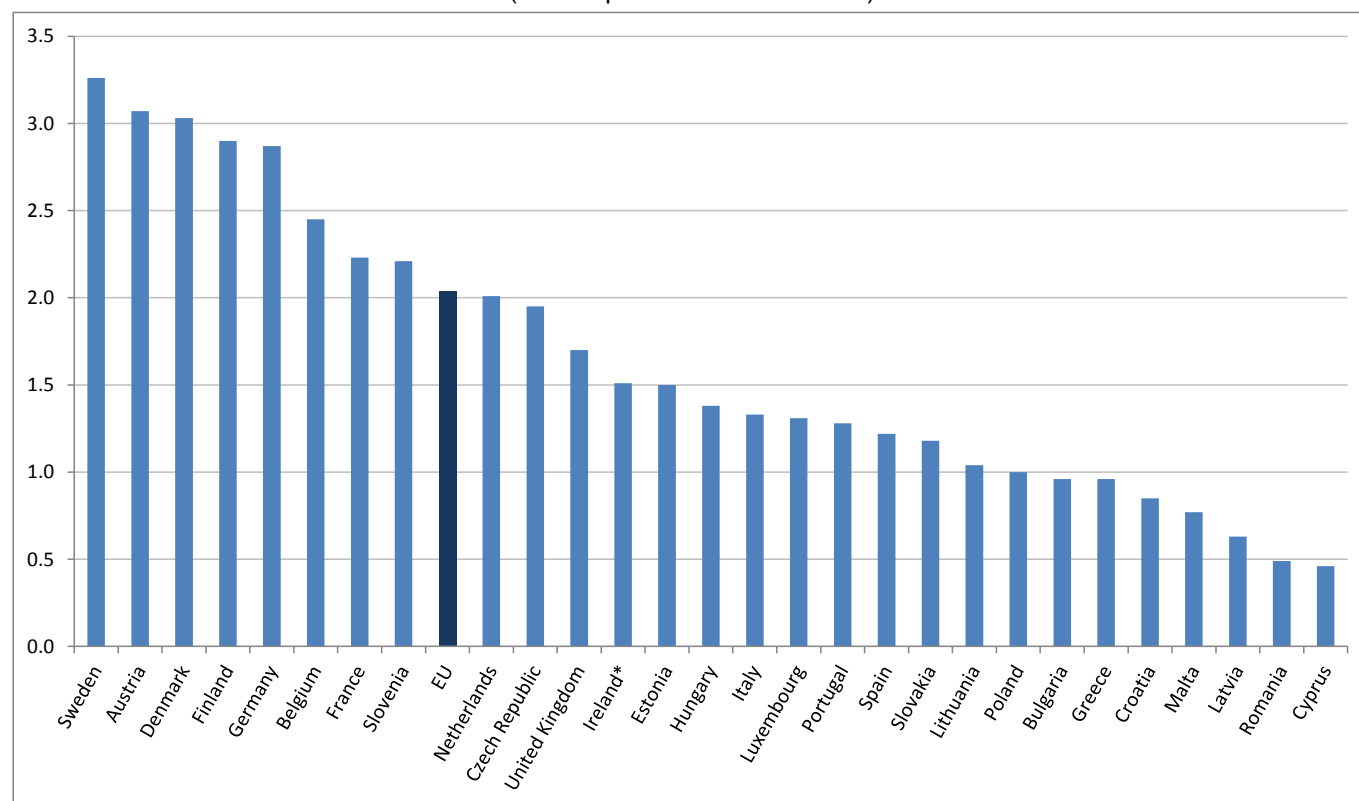
Research and development intensity in the EU, 2005-2015
 (R&D expenditure as % of GDP)



R&D intensity above 3% in Sweden, Austria and Denmark

In 2015, the highest R&D intensities were recorded in **Sweden** (3.26%), **Austria** (3.07%) and **Denmark** (3.03%), all with R&D expenditure above 3% of GDP, closely followed by **Finland** (2.90%) and **Germany** (2.87%). **Belgium** (2.45%), **France** (2.23%), **Slovenia** (2.21%) and the **Netherlands** (2.01%) registered R&D expenditure between 2.0% and 2.5% of GDP. At the opposite end of the scale, seven Member States recorded a R&D intensity below 1%: **Cyprus** (0.46%), **Romania** (0.49%), **Latvia** (0.63%), **Malta** (0.77%), **Croatia** (0.85%), **Bulgaria** and **Greece** (both 0.96%). Compared with 2005, R&D intensity increased in twenty-four Member States, decreased in **Finland** (from 3.33% in 2005 to 2.90% in 2015), **Luxembourg** (from 1.59% to 1.31%) and **Sweden** (from 3.39% to 3.26%), while it remained nearly stable in **Croatia**.

R&D intensity in the EU Member States, 2015
(R&D expenditure as % of GDP)



* 2014 data instead of 2015

Highest share of R&D spending in the business sector in Slovenia, Bulgaria and Hungary...

The main sector in which R&D was performed in 2015 was the business enterprise sector in all Member States, except **Greece**, **Cyprus**, **Latvia**, **Lithuania** and **Slovakia** (where the higher education sector was the dominant performing sector).

The highest shares of R&D expenditure performed in the business sector were observed in **Slovenia** (76%), **Bulgaria** and **Hungary** (both 73%), **Belgium** and **Ireland** (both 72%, 2014 data for Ireland), **Austria** (71%), **Sweden** (70%), **Germany** (68%), **Finland** (67%), the **United Kingdom** (66%) and **France** (65%). Compared with 2005, the share of R&D conducted in the business enterprise sector increased in sixteen Member States, while it decreased in twelve.

... in the government sector in Romania and the higher education sector in Lithuania and Cyprus

For the government sector, the highest share was registered in **Romania** (38%), followed by **Luxembourg** (31%), **Greece** and **Slovakia** (both 28%), **Latvia** (26%), **Croatia** (25%) and **Poland** (24%). The highest shares of R&D conducted within the higher education sector were recorded in **Lithuania** (56%), **Cyprus** (54%) and **Latvia** (50%), ahead of **Portugal** (46%), **Slovakia** (44%), **Estonia** (41%) and **Greece** (38%).

Research and development expenditure, 2005 and 2015

	R&D intensity (R&D expenditure as % of GDP)		R&D expenditure (in millions of euro)	
	2005	2015	2005	2015
EU	1.74	2.03	202 129	298 811
Belgium	1.78	2.45	5 552	10 072
Bulgaria	0.45	0.96	106	433
Czech Republic	1.17	1.95	1 281	3 250
Denmark	2.39	3.03	5 094	8 054
Germany	2.42	2.87	55 739	87 188
Estonia	0.92	1.50	104	303
Ireland*	1.19	1.51	2 030	2 921
Greece	0.58	0.96	1 154	1 684
Spain	1.10	1.22	10 197	13 172
France	2.04	2.23	36 228	48 643
Croatia	0.86	0.85	312	375
Italy	1.05	1.33	15 599	21 892
Cyprus	0.37	0.46	55	80
Latvia	0.53	0.63	73	152
Lithuania	0.75	1.04	157	387
Luxembourg	1.59	1.31	472	671
Hungary	0.92	1.38	838	1 511
Malta	0.53	0.77	27	68
Netherlands	1.79	2.01	9 772	13 630
Austria	2.38	3.07	6 030	10 444
Poland	0.56	1.00	1 386	4 317
Portugal	0.76	1.28	1 201	2 289
Romania	0.41	0.49	327	782
Slovenia	1.41	2.21	413	853
Slovakia	0.49	1.18	194	927
Finland	3.33	2.90	5 474	6 071
Sweden	3.39	3.26	10 609	14 581
United Kingdom	1.57	1.70	31 707	43 878
Iceland	2.71	2.19	364	332
Norway	1.48	1.93	3 683	6 739
Montenegro*	:	0.36	:	13
Serbia*	:	0.77	:	256
Turkey*	0.59	1.01	2 287	6 055
China*	1.32	2.05	24 030	159 004
Japan*	3.31	3.59	121 831	124 531
Russia	1.00	1.13	6 559	13 437
South Korea*	2.63	4.29	18 966	45 585
United States**	2.51	2.73	263 747	344 083

: Data not available

* 2014 data instead of 2015

** 2013 data instead of 2015

2015 data are preliminary for all countries, except Spain, Croatia, Hungary, Poland, Romania, Slovakia, Finland, Iceland and Russia.

The source dataset can be found [here](#).

Research and development expenditure in the EU Member States by performing sector
(% of total)

	Business enterprise		Government		Higher education		Private non-profit	
	2005	2015	2005	2015	2005	2015	2005	2015
EU	63	64	14	12	23	23	1	1
Belgium	68	72	8	8	22	20	1	0
Bulgaria	22	73	67	21	10	5	1	1
Czech Republic	59	54	22	20	18	25	1	0
Denmark	68	62	6	2	25	36	1	0
Germany	69	68	14	15	17	17	-	-
Estonia	45	46	11	11	41	41	2	2
Ireland*	66	72	7	4	27	23	-	-
Greece	31	33	20	28	47	38	1	1
Spain	54	53	17	19	29	28	0	0
France	62	65	18	13	19	20	1	2
Croatia	41	51	24	25	35	24	0	-
Italy	50	55	17	13	30	29	2	3
Cyprus	22	17	32	14	39	54	7	16
Latvia	41	25	19	26	41	50	0	-
Lithuania	20	27	25	17	55	56	-	-
Luxembourg	86	51	12	31	2	18	-	-
Hungary	43	73	28	13	25	12	-	-
Malta	66	49	5	18	29	34	0	0
Netherlands	53	56	12	12	35	32	-	-
Austria	70	71	5	4	25	24	0	0
Poland	32	47	36	24	32	29	0	0
Portugal	38	47	15	6	35	46	12	1
Romania	50	44	34	38	14	17	2	0
Slovenia	59	76	24	14	17	10	0	0
Slovakia	50	28	30	28	20	44	0	0
Finland	71	67	10	8	19	24	1	1
Sweden	73	70	5	3	22	27	0	0
United Kingdom	61	66	11	7	26	26	2	2

* 2014 data instead of 2015

- not applicable

0 means less than 0.5%

Shares might not add up to 100% due to rounding

The source dataset can be found [here](#).

Methods and definitions

Research and development, abbreviated as R&D, refers to creative work undertaken on a systematic basis in order to increase the stock of knowledge (including knowledge of man, culture and society), and the use of this knowledge to devise new applications.

Eurostat's statistics on R&D expenditure are compiled using guidelines laid out in the [Frascati Manual](#) (2002 edition) published by the [OECD](#). They cover intramural expenditure, in other words, all expenditures for R&D performed by enterprises or institutions in every sector of the economy in the EU Member States.

R&D intensity for a country is defined as the total R&D expenditure as a percentage of gross domestic product (GDP).

The main analysis of R&D statistics is based on **four institutional sectors of performance**. These four sectors are the business enterprise sector, the government sector, the higher education sector, and the private non-profit sector. Expenditure data considers the research performed on the national territory, regardless of the source of funds.

Revisions and timetable

2015 data on R&D expenditure presented in this News Release are preliminary and might therefore be revised. Following national calendar for the transmission of data, updated figures will be published in March and November 2017.

For more information


Eurostat website section dedicated to science, technology and innovation statistics.

Eurostat database on science and technology.

Eurostat website section dedicated to Europe 2020 indicators. See also Eurostat publication "Smarter, greener, more inclusive? - Indicators to support the Europe 2020 strategy" (2016 edition).

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