

209/2015 - 30 November 2015

First estimates of Research & Development expenditure

R&D expenditure in the EU stable at slightly over 2% of GDP in 2014

Almost two thirds spent in the business sector

In 2014, the Member States of the European Union (EU) spent all together around €283 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 2014, the same as in 2013. Ten years ago (2004), R&D intensity was 1.76%.

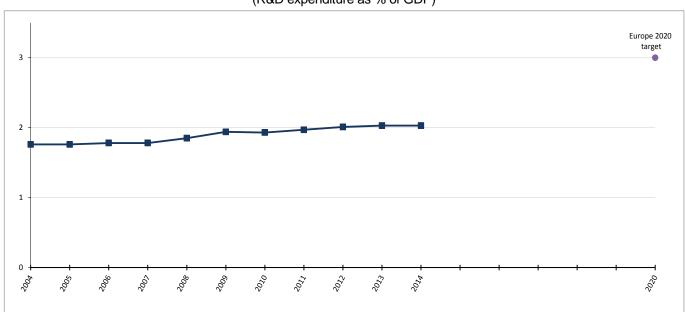
With respect to other major economies, R&D intensity in the EU was much lower than in South Korea (4.15% in 2013) and Japan (3.47% in 2013) and lower than in the United States (2.81% in 2012), while it was about the same level as in China (2.08% in 2013) and higher than in Russia (1.15%). In order to 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 2014, 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.

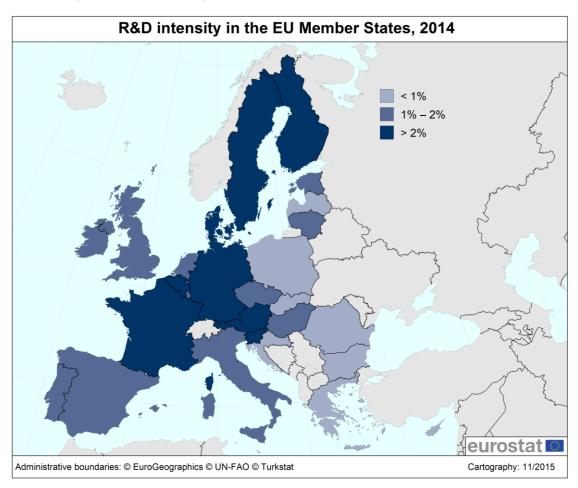
Research and development intensity in the EU, 2004-2014

(R&D expenditure as % of GDP)



R&D intensity above 3% in the Nordic Member States

In 2014, the highest R&D intensities were recorded in **Finland** (3.17%), **Sweden** (3.16%) and **Denmark** (3.08%), all with R&D expenditure above 3% of GDP, closely followed by **Austria** (2.99%) and **Germany** (2.84%). **Belgium** (2.46%), **Slovenia** (2.39%) and **France** (2.26%) registered R&D expenditure above 2% of GDP. At the opposite end of the scale, nine Member States recorded an R&D intensity below 1%: **Romania** (0.38%), **Cyprus** (0.47%), **Latvia** (0.68%), **Croatia** (0.79%), **Bulgaria** (0.80%), **Greece** (0.83%), **Malta** (0.85%), **Slovakia** (0.89%) and **Poland** (0.94%). Compared with 2004, R&D intensity increased in twenty-three Member States, decreased in **Croatia** (from 1.03% in 2004 to 0.79% in 2014), **Luxembourg** (from 1.62% to 1.24%), **Finland** (from 3.31% to 3.17%) and **Sweden** (from 3.39% to 3.16%), and remained stable in **Romania**.



Highest share of R&D spending in the business sector in Slovenia, Ireland, Belgium and Austria...

The main sector in which R&D was performed in 2014 was the business enterprise sector in all Member States, except **Estonia**, **Greece**, **Cyprus**, **Latvia**, **Lithuania** (where the higher education sector was the dominant performing sector) and **Romania** (where almost half of R&D expenditure was conducted within the government sector).

The highest shares of R&D expenditure performed in the business sector were observed in **Slovenia** (77%), **Ireland** (73%), **Hungary** (72%), **Belgium** and **Austria** (both 71%), **Germany** and **Finland** (both 68%), **Sweden** (67%), **Bulgaria** and **France** (both 65%), **Denmark** and the **United Kingdom** (both 64%). Compared with 2004, 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 Cyprus and Lithuania

For the government sector, the highest share was registered in **Romania** (43%), followed at a distance by **Luxembourg** (29%), **Slovakia** (28%), **Greece** (27%), **Croatia** (26%), **Bulgaria** (25%), **Latvia** and **Poland** (both 24%). The highest shares of R&D conducted within the higher education sector were recorded in **Cyprus** and **Lithuania** (both 53%), **Portugal** (45%), **Estonia** (44%), **Latvia** (41%) and **Greece** (38%).



Research and development expenditure, 2004 and 2014

	R&D intens (R&D expenditure as		R&D expenditure (in millions of euro)		
	2004	2014	2004	2014	
EU	1.76	2.03	194 341	283 009	
Belgium	1.81	2.46	5 404	9 875	
Bulgaria	0.48	0.80	99	335	
Czech Republic	1.15	2.00	1 100	3 091	
Denmark	2.42	3.08	4 897	7 952	
Germany	2.42	2.84	54 967	82 866	
Estonia	0.85	1.46	83	286	
Ireland	1.18	1.55	1 840	2 871	
Greece	0.53	0.83	1 021	1 482	
Spain	1.04	1.20	8 946	12 725	
France	2.09	2.26	35 693	48 108	
Croatia	1.03	0.79	345	340	
Italy	1.05	1.29	15 253	20 770	
Cyprus	0.34	0.47	47	83	
Latvia	0.40	0.68	47	163	
Lithuania	0.75	1.02	137	370	
Luxembourg	1.62	1.24	448	614	
Hungary	0.87	1.38	721	1 429	
Malta	0.49	0.85	24	67	
Netherlands	1.81	1.97	9 469	13 075	
Austria	2.17	2.99	5 250	9 833	
Poland	0.56	0.94	1 139	3 864	
Portugal	0.73	1.29	1 110	2 229	
Romania	0.38	0.38	235	575	
Slovenia	1.37	2.39	379	890	
Slovakia	0.50	0.89	174	670	
Finland	3.31	3.17	5 253	6 512	
Sweden	3.39	3.16	10 426	13 612	
United Kingdom	1.61	1.72	29 834	38 323	
Iceland*	2.69	1.89	364	243	
Norway	1.55	1.71	3 290	6 437	
Switzerland**	2.68	2.96	8 486	15 357	
Serbia	:	0.78	:	256	
Turkey***	0.52	0.95	1 630	5 845	
China***	1.23	2.08	19 097	145 097	
Japan***	3.13	3.47	117 396	128 645	
Russia	1.15	1.19	5 473	16 634	
South Korea***	2.68	4.15	15 595	40 787	
United States**	2.49	2.81	245 711	353 007	

Data not available



²⁰⁰⁵ data instead of 2004

^{** 2012} data instead of 2014

^{*** 2013} data instead of 2014 2014 data are preliminary for all countries, except Croatia, Hungary, Poland, Romania, Slovakia, Finland, Iceland, Serbia 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	
	2004	2014	2004	2014	2004	2014	2004	2014
EU	63	64	13	12	22	23	1	1
Belgium	69	71	8	8	22	20	1	0
Bulgaria	24	65	67	25	9	9	1	1
Czech Republic	62	56	22	18	15	25	0	0
Denmark	68	64	7	2	24	33	1	0
Germany	70	68	14	15	17	17	-	-
Estonia	39	43	13	11	45	44	2	1
Ireland	66	73	8	5	27	22	-	-
Greece	31	34	20	27	48	38	1	1
Spain	54	53	16	19	30	28	0	0
France	63	65	17	13	19	21	1	2
Croatia	42	48	21	26	37	26	-	-
Italy	48	56	18	14	33	27	2	3
Cyprus	21	17	36	14	35	53	7	16
Latvia	44	36	19	24	36	41	0	-
Lithuania	21	30	25	17	54	53	-	-
Luxembourg	88	53	11	29	1	19	-	-
Hungary	41	72	30	14	25	13	-	-
Malta	66	60	3	9	31	31	0	0
Netherlands	54	56	13	11	33	32	-	-
Austria	68	71	5	4	27	24	0	0
Poland	29	47	39	24	32	29	0	0
Portugal	36	46	16	6	37	45	12	2
Romania	55	41	34	43	10	15	0	0
Slovenia	67	77	20	12	13	10	0	0
Slovakia	49	37	30	28	20	34	0	0
Finland	70	68	9	9	20	23	1	1
Sweden	74	67	3	4	23	29	0	0
United Kingdom	63	64	11	8	25	26	2	2

⁻ not applicable

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 <u>Frascati Manual</u> (2002 edition) published by the <u>OECD</u>. 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

2014 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 2016 respectively.



⁰ means less than 0.5%

Shares might not add up to 100% due to rounding

The source dataset can be found here.

For more information

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

Eurostat database on science and technology.

Eurostat website section dedicated to <u>Europe 2020 indicators</u>. See also Eurostat publication "<u>Smarter, greener, more inclusive?</u> <u>- Indicators to support the Europe 2020 strategy</u>" (2015 edition).

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