

## First estimates of Research & Development in 2013

# R&D expenditure just over 2% of GDP in the EU28 in 2013

Almost two thirds performed in the business sector

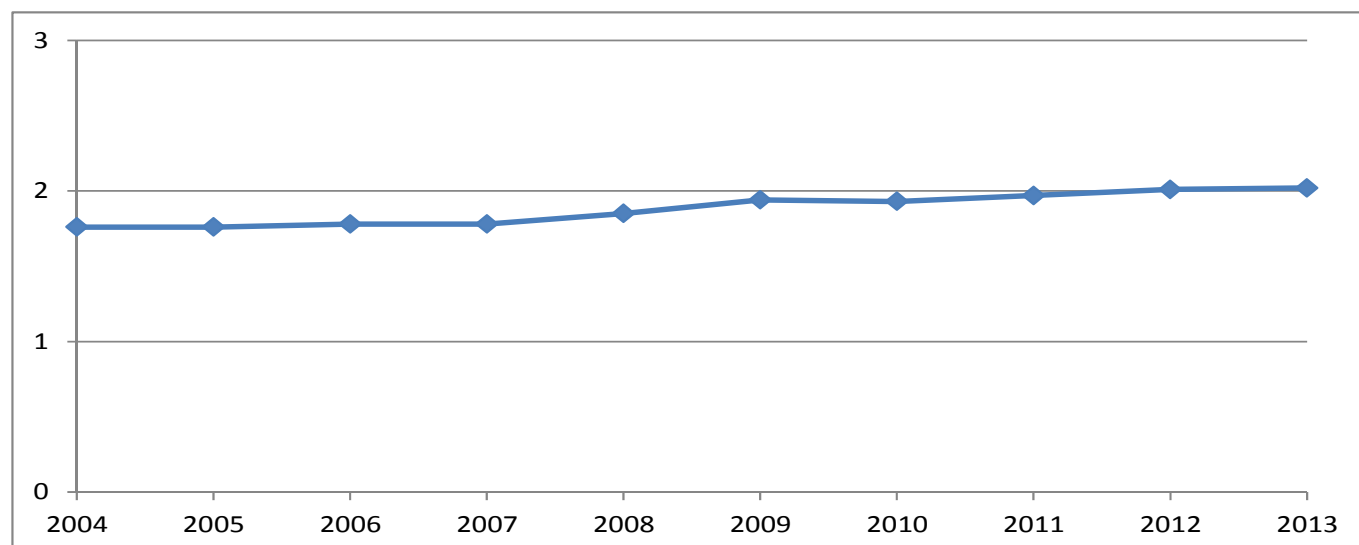
Eurostat publishes in this News Release R&D intensity, where the denominator (GDP) is for the first time based on the European System of Accounts 2010 (ESA 2010) methodology. On average, the use of ESA 2010 GDP leads to a downwards revision of the EU28 series on R&D intensity by around 0.07 percentage points.

In 2013, the **EU28** Member States spent almost €275 billion on Research & Development<sup>1</sup> (R&D). The R&D intensity<sup>2</sup>, i.e. R&D expenditure as a percentage of GDP, stood at 2.02% in the EU28 in 2013, compared with 1.76% in 2004. This level remained however lower in the **EU28** than in other major economies. R&D intensity was much higher in **South Korea** (4.04% in 2011) and **Japan** (3.38% in 2011) as well as, to a lesser extent, in the **United States** (2.81% in 2012), while in both **China** (1.98% in 2012) and **Russia** (1.11%) the R&D intensity was below that of the EU28. In order to provide a stimulus to the EU's competitiveness, an increase of the R&D intensity in the EU28 is one of the five headline targets of the Europe 2020 strategy<sup>3</sup>.

The business enterprise sector continued to be the main sector in which R&D expenditure was performed accounting for 64% of total R&D conducted in 2013, followed by the higher education sector (23%), the government sector (12%) and the private non-profit sector (1%).

This information is published by Eurostat, the statistical office of the European Union.

**Research and development intensity in the EU28, 2004-2013**  
(R&D expenditure as % of GDP)



## Highest R&D intensity in the Nordic Member States

In 2013, the highest R&D intensities were recorded in **Finland** (3.32%), **Sweden** (3.21%) and **Denmark** (3.05%), all above 3% of GDP, followed by **Germany** (2.94%) and **Austria** (2.81%). At the opposite end of the scale, ten Member States recorded an R&D intensity below 1% of GDP: **Romania** (0.39%), **Cyprus** (0.48%), **Latvia** (0.60%), **Bulgaria** (0.65%), **Greece** (0.78%), **Croatia** (0.81%), **Slovakia** (0.83%), **Malta** (0.85%), **Poland** (0.87%) and **Lithuania** (0.95%). Compared with 2004, R&D intensity increased in twenty-two Member States, decreased in **Croatia** (from 1.03% in 2004 to 0.81% in 2013), **Luxembourg** (from 1.63% to 1.16%) and **Sweden** (from 3.39% to 3.21%), and remained almost stable in **Romania**, **Finland** and the **United Kingdom**.

## Research and development expenditure in the EU28 Member States

|                       | R&D intensity<br>(R&D expenditure as % of GDP) |             | R&D expenditure<br>(in millions of euro) |                |
|-----------------------|--|-------------|--|----------------|
|                       | 2004   | 2013        | 2004                                     | 2013           |
| <b>EU28</b>           | <b>1.76</b>                                    | <b>2.02</b> | <b>194 341</b>                           | <b>273 464</b> |
| <b>Belgium</b>        | 1.81   | 2.28        | 5 404                                    | 9 015          |
| <b>Bulgaria</b>       | 0.48   | 0.65        | 99                                       | 267            |
| <b>Czech Republic</b> | 1.15   | 1.91        | 1 100                                    | 2 997          |
| <b>Denmark</b>        | 2.42   | 3.05        | 4 897                                    | 7 731          |
| <b>Germany</b>        | 2.42   | 2.94        | 54 967                                   | 82 482         |
| <b>Estonia</b>        | 0.85   | 1.74        | 83                                       | 326            |
| <b>Ireland*</b>       | 1.18   | 1.58        | 1 840                                    | 2 723          |
| <b>Greece</b>         | 0.53   | 0.78        | 1 021                                    | 1 427          |
| <b>Spain</b>          | 1.04   | 1.24        | 8 946                                    | 13 052         |
| <b>France</b>         | 2.09   | 2.23        | 35 693                                   | 47 160         |
| <b>Croatia</b>        | 1.03   | 0.81        | 345                                      | 355            |
| <b>Italy</b>          | 1.05   | 1.25        | 15 253                                   | 20 203         |
| <b>Cyprus</b>         | 0.34   | 0.48        | 47                                       | 86             |
| <b>Latvia</b>         | 0.40   | 0.60        | 47                                       | 139            |
| <b>Lithuania</b>      | 0.75   | 0.95        | 137                                      | 332            |
| <b>Luxembourg</b>     | 1.63   | 1.16        | 448                                      | 523            |
| <b>Hungary</b>        | 0.87   | 1.41        | 721                                      | 1 415          |
| <b>Malta</b>          | 0.49   | 0.85        | 24                                       | 64             |
| <b>Netherlands</b>    | 1.82   | 1.98        | 9 469                                    | 12 743         |
| <b>Austria</b>        | 2.17   | 2.81        | 5 250                                    | 9 074          |
| <b>Poland</b>         | 0.56   | 0.87        | 1 139                                    | 3 436          |
| <b>Portugal</b>       | 0.73   | 1.36        | 1 110                                    | 2 322          |
| <b>Romania</b>        | 0.38   | 0.39        | 235                                      | 558            |
| <b>Slovenia</b>       | 1.37   | 2.59        | 379                                      | 935            |
| <b>Slovakia</b>       | 0.50   | 0.83        | 174                                      | 611            |
| <b>Finland</b>        | 3.31   | 3.32        | 5 253                                    | 6 684          |
| <b>Sweden</b>         | 3.39   | 3.21        | 10 426                                   | 13 995         |
| <b>United Kingdom</b> | 1.61   | 1.63        | 29 834                                   | 32 784         |
| <b>Iceland**</b>      | 2.69   | 2.49        | 364                                      | 263            |
| <b>Norway</b>         | 1.57   | 1.69        | 3 290                                    | 6 530          |
| <b>Switzerland*</b>   | 2.82   | 3.13        | 8 486                                    | 15 357         |
| <b>Serbia*</b>        | :  | 0.91        | :  | 287            |
| <b>Turkey*</b>        | 0.52   | 0.92        | 1 630                                    | 5 646          |
| <b>China*</b>         | 1.23   | 1.98        | 19 097                                   | 127 059        |
| <b>Japan***</b>       | 3.13   | 3.38        | 117 396                                  | 143 701        |
| <b>Russia</b>         | 1.15   | 1.11        | 5 473                                    | 17 710         |
| <b>South Korea***</b> | 2.68   | 4.04        | 15 595                                   | 32 371         |
| <b>United States*</b> | 2.49   | 2.81        | 245 711                                  | 353 007        |

: Data not available

\* 2012 data instead of 2013

\*\* 2005 data instead of 2004 and 2011 data instead of 2013

\*\*\* 2011 data instead of 2013

2013 data are preliminary for all countries, except for Croatia, Hungary, Poland, Romania, Slovakia, Finland and Russia.

Estimated data - 2004: Greece, Portugal, Sweden; 2012: Ireland; 2013: EU28, Denmark, Germany, Austria, Sweden, the United Kingdom.

**Research and development expenditure in the EU28 Member States by performing sector**  
(% of total)

|                       | Business enterprise sector |           | Government sector |           | Higher education sector |           | Private non-profit sector |          |
|-----------------------|----------------------------|-----------|-------------------|-----------|-------------------------|-----------|---------------------------|----------|
|                       | 2004                       | 2013      | 2004              | 2013      | 2004                    | 2013      | 2004                      | 2013     |
| <b>EU28</b>           | <b>63</b>                  | <b>64</b> | <b>13</b>         | <b>12</b> | <b>22</b>               | <b>23</b> | <b>1</b>                  | <b>1</b> |
| <b>Belgium</b>        | 69                         | 69        | 8                 | 9         | 22                      | 22        | 1                         | 0        |
| <b>Bulgaria</b>       | 24                         | 61        | 67                | 30        | 9                       | 9         | 1                         | 1        |
| <b>Czech Republic</b> | 62                         | 54        | 22                | 18        | 15                      | 27        | 0                         | 0        |
| <b>Denmark</b>        | 68                         | 65        | 7                 | 2         | 24                      | 32        | 1                         | 0        |
| <b>Germany</b>        | 70                         | 68        | 14                | 15        | 17                      | 17        | -                         | -        |
| <b>Estonia</b>        | 39                         | 48        | 13                | 9         | 45                      | 42        | 2                         | 1        |
| <b>Ireland*</b>       | 66                         | 72        | 8                 | 5         | 27                      | 23        | -                         | -        |
| <b>Greece</b>         | 31                         | 35        | 20                | 27        | 48                      | 37        | 1                         | 1        |
| <b>Spain</b>          | 54                         | 53        | 16                | 19        | 30                      | 28        | 0                         | 0        |
| <b>France</b>         | 63                         | 65        | 17                | 13        | 19                      | 21        | 1                         | 1        |
| <b>Croatia</b>        | 42                         | 50        | 21                | 26        | 37                      | 24        | -                         | -        |
| <b>Italy</b>          | 48                         | 54        | 18                | 15        | 33                      | 28        | 2                         | 3        |
| <b>Cyprus</b>         | 21                         | 15        | 36                | 14        | 35                      | 57        | 7                         | 13       |
| <b>Latvia</b>         | 44                         | 28        | 19                | 29        | 36                      | 43        | -                         | -        |
| <b>Lithuania</b>      | 21                         | 25        | 25                | 20        | 54                      | 55        | -                         | -        |
| <b>Luxembourg</b>     | 88                         | 61        | 11                | 23        | 1                       | 15        | -                         | -        |
| <b>Hungary</b>        | 41                         | 69        | 30                | 15        | 25                      | 14        | -                         | -        |
| <b>Malta</b>          | 66                         | 54        | 3                 | 10        | 31                      | 36        | -                         | -        |
| <b>Netherlands</b>    | 54                         | 58        | 13                | 11        | 33                      | 32        | -                         | -        |
| <b>Austria</b>        | 68                         | 69        | 5                 | 5         | 27                      | 26        | 0                         | 0        |
| <b>Poland</b>         | 29                         | 44        | 39                | 27        | 32                      | 29        | 0                         | 0        |
| <b>Portugal</b>       | 36                         | 47        | 16                | 6         | 37                      | 38        | 12                        | 9        |
| <b>Romania</b>        | 55                         | 31        | 34                | 49        | 10                      | 20        | 0                         | 0        |
| <b>Slovenia</b>       | 67                         | 77        | 20                | 13        | 13                      | 10        | 0                         | 0        |
| <b>Slovakia</b>       | 49                         | 46        | 30                | 20        | 20                      | 33        | 0                         | 0        |
| <b>Finland</b>        | 70                         | 69        | 9                 | 9         | 20                      | 22        | 0                         | 0        |
| <b>Sweden</b>         | 74                         | 68        | 3                 | 4         | 23                      | 28        | 0                         | 0        |
| <b>United Kingdom</b> | 63                         | 65        | 11                | 7         | 25                      | 26        | 2                         | 2        |

\* 2012 data instead of 2013

- not applicable

0 means less than 0.5%

Figures may not add up to 100% due to rounding

### Highest share of R&D conducted within the business sector in Slovenia and Ireland...

The main sector in which R&D was performed in 2013 was the business enterprise sector in all Member States, except **Greece**, **Cyprus**, **Latvia**, **Lithuania** (where the higher education sector was the dominant performing sector) and **Romania** (where almost half of the 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** (72% in 2012), **Belgium**, **Hungary**, **Austria** and **Finland** (all 69%), **Germany** and **Sweden** (both 68%) and **Denmark**, **France** and the **United Kingdom** (all 65%). Compared with 2004, the share of R&D conducted in the business enterprise sector increased in fifteen Member States, decreased in twelve, while it remained stable in **Belgium**.

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

For the government sector, the highest share was by far registered in **Romania** (49%), followed by **Bulgaria** (30%), **Latvia** (29%), **Greece** and **Poland** (both 27%) and **Croatia** (26%). The highest shares of R&D conducted within the higher education sector were recorded in **Cyprus** (57%), **Lithuania** (55%), **Latvia** (43%) and **Estonia** (42%).

1. **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.
2. **R&D intensity** for a country is defined as the total R&D expenditure as a percentage of gross domestic product (GDP). All GDP figures used for the calculation of R&D intensity for EU28 Member States are based in this news release on the ESA 2010 methodology. For more information, see: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/2-17102014-BP/EN/2-17102014-BP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-17102014-BP/EN/2-17102014-BP-EN.PDF)
3. For more information on the Europe 2020 strategy: [http://ec.europa.eu/europe2020/index\\_en.htm](http://ec.europa.eu/europe2020/index_en.htm)

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