

Indicator (definition)	Gross domestic expenditure on R&D by source of funds – industry, government and abroad: Percentage of gross domestic expenditure on research and development (GERD) financed by business enterprise sector, by government and by abroad.
Eurostat Unit	Education, science and culture statistics
Other Commission DGs	DG RTD
European Statistical System Working Group (WG)	WG on Science, Technology and Innovation (STI) statistics
Date	December 2010

1. Overall assessment of accuracy and comparability (Description of quality grades under the following link: http://circa.europa.eu/Public/irc/dsis/structind/library?l=/general_information/quality_profiles/annex_enpdf/EN_1.0_&a=d)

A
 B
 C
 Indicator to be Developed

Data is collected from reliable sources applying high standards with regard to the methodology –as laid down in the Frascati Manual (OECD, 2002) and ensuring a high degree of comparability.

2. Objective and relevance of the indicator:

The total gross domestic expenditure on research and development (GERD) are divided into four institutional sectors of performance in which R&D takes place: Business enterprise sector, Higher education sector, Government sector and Private Non-Profit sector. R&D activity has various sources of financing: the four R&D- performing sectors and abroad.

GERD includes all expenditure within a country, whatever the source of funds.

R&D is an activity involving significant transfer of resources between sectors and these indicators illustrate financial flows related to R&D within country, but also cross border; for example the percentage of GERD financed by business enterprise sector, by government and abroad.

R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. As such, trends in the R&D expenditure indicator provide key indications of the future competitiveness and wealth of the EU.

The revised Lisbon Strategy (2005) stated new measures to increase R&D investment by the Member States and private organisations. Together with this legal document, the presidency launched the Lisbon Community Programme to fulfill the Lisbon objectives between 2008 and 2010.

To date, a consultation is in process in order to set the objectives for the European Union until 2020. In this consultation, again R&D investment becomes a priority.

Restriction of the indicator's relevance and other characteristics which may lead to restrictions in using it in monitoring and reporting

GERD includes total intramural expenditure on R&D performed within a country, funded nationally and from abroad but excludes payments for R&D performed abroad. To complete the picture, information on international purchases of R&D performed abroad should be taken into account. Furthermore, provided all parts have full access to the outcome of the project, an emerging EU emphasis on encouraging international collaboration in R&D may not be fully revealed as recording each partner's actual (intramural) R&D expenditure only understates the investment.

The indicator may fluctuate due to changes in GDP without any large changes in R&D activities.

In some countries small enterprises with less than 10 employees are excluded from the R&D surveys. However, this leads only to minor impact on the aggregates.

3. Data availability:

(**t₁**: earliest reference year available; **t₂**: latest reference year available in December 2010)

	Member States	Candidate and Acceding Countries	US and Japan	EEA-EFTA
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t ₁	1990: BG, DK, DE, IE, ES, FR, IT, HU, NL, AT, PT, UK 1991: BE, EL, CY, FI, SE 1993: RO, SI, SK 1994: PL 1995: CZ, LV 1998: EE 2000: LT, LU 2002: MT	1990: IS, TR 2002: HR	1990: US, JP	1991: NO 1992: CH
t ₂	2005: EL 2007: BE, LU, NL 2008: BG, DE, ES, FR, IT, CY, PT 2009: CZ, DK, EE, IE, LV, LT, HU, MT, PL, RO, SI, SK, FI, SE 2010: AT, UK	2008: IS, TR 2009: HR	2007: JP 2008: US	2007: NO 2008: CH

Comments (including information on time series): Data from Denmark, Greece, Luxembourg, Sweden and Norway available every second year. Data from Finland, until 1997 available every second year. Data from Netherland, since 2003 available every second year .Since 1992 data from Switzerland available every four years. From 1997 to 2004 data for Italy not available. From 1993 to 1997 data for Cyprus not available. For Iceland, missing data in 1996, 2000, 2002, 2004. Data for higher education sector in Germany and Hungary not available. Data from Abroad sector for the US not available. Breaks are quite common in R&D statistics as the nature of R&D is changing, the statistical domain is still developing fast and countries have to adapt to evolving standards.

4. Overall accuracy

High



Overall accuracy can be considered as high. The data on R&D is compiled on the basis of separate surveys on R&D performers. The survey population is updated regularly (on the basis of information coming from business registers, administrative sources, other surveys, etc.).

Accuracy is ensured through European legislation using proposed standard practice for surveys in research and following the OECD experimental development - Frascati Manual (2002).

Restricted



(sources, errors, methodology, etc.)

5. Comparability across countries

High



For the compilation of the R&D data all countries use the OECD Frascati methodology which assures comparability across countries. From December 2005 onwards R&D data are collected in co-operation with OECD using a common core questionnaire and two separate modules which cover each organisations specific statistical need.

The US data excludes most of the capital expenditure, thus data for the US is somewhat underestimated.

Comparability across countries is influenced by the differences in national industry structures, since there are large differences in R&D intensities across industries. Different coverage of industries and size classes in the national R&D surveys also may influence the comparability.

Restricted



6. Comparability over time

High



Comparability over time is ensured by the application of the Frascati Manual over years.

New Member States and Candidate Countries introduced the Frascati methodology in 1993–1995.

Breaks in series are indicated for several countries and years due to

methodological changes, introduction of new accounting methods or changes in classifications.

Restricted



7. Development perspective for improving the quality of this indicator (including as far as possible an indication of the burden on Member States and respondents.)

Possibilities to separately identifying R&D in the National Accounts should be explored in order to improve accuracy and international comparability.

8. Contribution to the coherence of the set/potential to qualify for an integrated policy analysis

Relevant European legislation:

Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics (OJ No L 87/164) stipulates the detailed rules for receiving, processing, disseminating and protecting the confidential data in the Commission (Eurostat)

Until 2003 R&D data were collected under gentleman's agreement. From the reference year 2003 onwards the data collection is based on the Commission Regulation No 753/2004 on statistics on science and technology (OJ L 118, page 23 from 23 April 2004), as amended by the Commission Regulation (EC) No 973/2007 (OJL 216, page 10 from 21 August 2007) as regards the implementation of the statistical classification of the economic activities NACE Revision 2 - (See annex at the bottom of the page).

Commission Regulation (EC) NO 753/2004 of 22 April 2004 implementing Decision No 1608/2003/EC of the European Parliament and of the Council as regards statistics on Science and Technology: data are collected in line with this Regulation from the reference year 2003 onwards.

Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community (ESA 95).

*The Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology says that the Commission shall within four years of the publication of the Decision present a *Report to European Parliament and the Council* to evaluate the implementation of it. In addition, *Commission Regulation No 753/2004* on statistics on science and technology defines that "Member States shall transmit to Eurostat the information necessary for the evaluation of the quality of the statistics".*

Manuals:

Proposed Standard Practice for Surveys of Research and Experimental Development - Frascati Manual, (OECD, 2002)