

## Business enterprise R-D expenditure by industry

### ■Data source(s) used

Joint OECD-Eurostat international data collection on resources devoted to RD

### ■Other data characteristics

#### Sources and Methods Databases

R&D data reported in this dataset have been collected according to 2002 guidelines of the Frascati Manual, which have been now superseded by the Manual's 2015 edition. Revised definitions are not expected to revise significantly the major indicators.

### ■Reference period

1987 onward.

### ■Unit of measure used

Data are provided in million national currency (for the euro zone, pre-EMU euro or EUR), million current PPP USD and million constant USD (2010 prices and PPPs).

### ■Variables collected

This table presents research and development (R&D) expenditure statistics performed in the business enterprise sector by industry according to the International Standard Industrial Classification (ISIC) revision 3.1.

Data at the industry level are presented from 1987, year when most of the countries converted their data from ISIC rev.2 to the current ISIC rev. 3 classification. This breakdown between industries is, in principle, made at the enterprise level, although some countries are able to break down R&D data for multi product enterprises between their main lines of business. National statistical regulations prevent publication of results where there are very few firms in the given category, hence the many gaps in the tables. Depending on the country, R&D institutes serving enterprises are either classified with the industry concerned, or grouped under "Research and Development" (ISIC rev.3.1, Division 73). When these R&D institutes are classified with the industry served, the evaluation of R&D in these industries is more complete and more comparable between countries for the industries concerned. This results, however, in an underestimation of the percentage of BERD performed by the service sector as compared with other countries.

The Frascati Manual recommendation concerning data on R&D by industry is to report BERD on an enterprise basis (see FM section 3.4). When this is interpreted strictly, all the BERD of a diversified enterprise will be allocated to the industrial class of its principal activity. In circumstances where a few large firms dominate R&D spending in several areas, this can and does lead to underestimates of R&D associated with the secondary activities of the firms. Overall, R&D is therefore overestimated for some industries and underestimated for others.

However, not all countries follow a strict enterprise basis for allocating R&D expenditures to industrial classes. Some countries make a disaggregation of the R&D of their largest, diversified firms into a number of different activities. In other countries, the enterprise approach has been abandoned and data are reported on a product field basis. This is why two classification criteria for BERD by industry are included in this view of "BERD by industry" (see the variable CLASSIFICATION CRITERIA: Main activity or Product field) depending on which approach is more closely followed by each country (only a few countries currently collect these data both ways and are therefore included according to both criteria)). The two tables that follow, "BERD by industry and source of funds" and "BERD by industry and type of costs" present data for only one of the criteria, depending on the country.

### ■Population & Scope

#### ■Geographic coverage

OECD COUNTRIES :

Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

NON-MEMBER ECONOMIES :

Argentina, China, Romania, Singapore, South Africa, and Chinese Taipei.