

21 November 2012

Statistics on R&D Activities
Year 2011. *Final results*

Main results

- **Expenditure on R&D** reaches **14,184** million euros in the year **2011**, with a **2.8% decrease** as compared with 2010. This expenditure represents **1.33% of GDP**.
- The Public Administration R&D expenditure decreases **5.7%** and the Higher Education sector decreases its expenditure **2.9%** as compared with 2010. In turn, that of Business sector decreases **1.5%**.
- The internal Public Administration financing on R&D decreases **7.3%** in 2011, as compared with the previous year.
- The number of R&D personnel in Full Time Equivalent (FTE) represents **11.9 per thousand** of the employed population.
- The Autonomous Communities with the greatest investment effort in R&D are **País Vasco, Comunidad Foral de Navarra, Comunidad de Madrid** and **Cataluña**.
- **País Vasco, Comunidad Foral de Navarra and Castilla-La Mancha** are the Autonomous Communities with the highest growth rates in R&D, as compared with **2010**.

Internal expenditure on Research and Development (R&D)

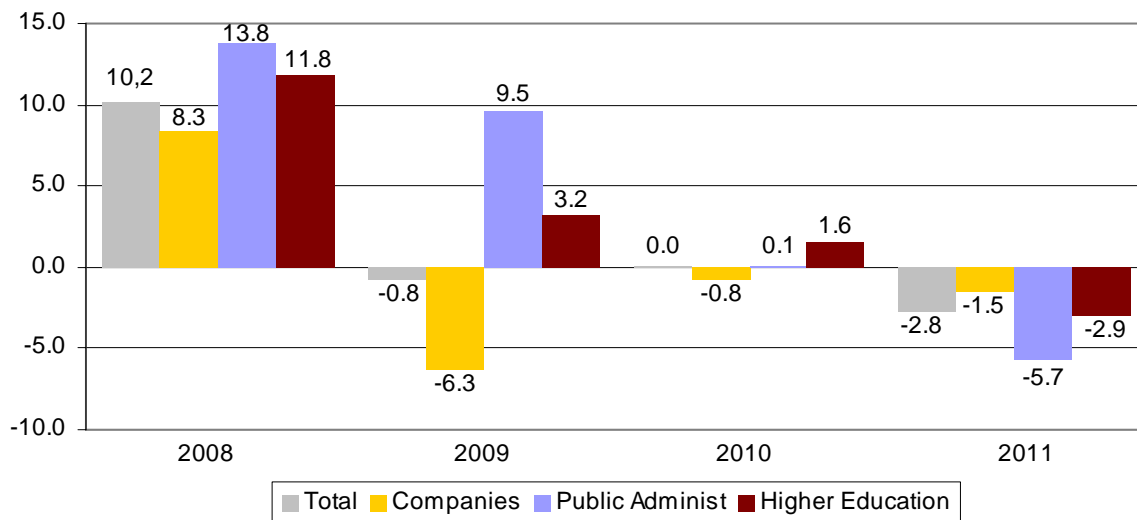
Internal expenditure on Research and Development (R&D) reached 14,184 million euros in 2011, indicating a decrease of 2.8%, as compared with the year 2010. This expenditure represented 1.33% of Gross Domestic Product (GDP).

By field of operation, the business sector registered the highest percentage over total R&D expenditure, standing at 52.1% (which accounted for 0.70% of GDP). The next sector in importance was Higher Education, with 28.2% of total expenditure, representing 0.38% of GDP.

In turn, Public Administration R&D expenditure accounted for 19.5% of total expenditure (0.26% of GDP). The remaining 0.2% corresponded to the Private Non-Profit Institutions sector (PNPI).

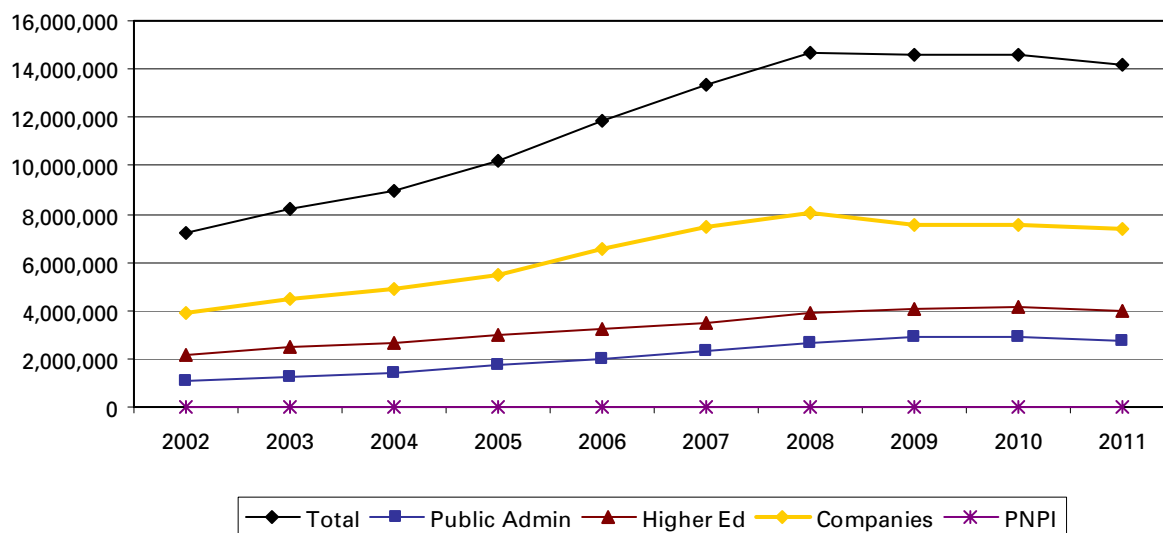
Comparing R&D expenditure activities in 2011 with that recorded the previous year, it is worth noting that the Public Administration sector and Higher Education sector experienced a decrease of 5.7% and 2.9%, respectively. On the other hand, the Business sector registered an annual decrease rate of 1.5%, as compared with that of 0.8% registered in 2010.

R&D expenditure variation rate during the period 2008-2011



The following chart shows the performance of the R&D expenditure during the last 10 years:

Historical evolution of the R&D expenditure (thousands of euros)



Financing of R&D activities

During the year 2011, R&D activities were mainly financed by the Public Administration (44.5%) and the Business sector (44.3%). The funds originating from foreign sources (6.7%), from Higher Education (4.0%) and from the PNPI (0.6%) financed the remaining total R&D expenditure.

By field of operation, the R&D expenditure from Public Administration sector and Higher Education sector was mainly financed by the Public Administration (85.5% and 71.9%, respectively). In turn, the Business sector finances its own R&D expenditure in 78.0% of the cases.

**Total internal R&D expenditure, by field of operation and origin of the funds.
Year 2011**

Thousand of euros

Field of operation	Total	Funds origin (%)				
		Public Admin.	Higher Education	Business	PNPI	Foreign sources
TOTAL	14,184,295	44.5	4.0	44.3	0.5	6.7
Public Admin.	2,762,385	85.5	0.3	6.9	0.7	6.6
Higher Education	4,002,024	71.9	13.9	8.0	0.9	5.3
Companies	7,396,369	14.4	0.0	78.0	0.2	7.4
PNPI	23,517	24.6	0.6	38.2	31.0	5.6

Personnel employed in R&D

In the year 2011, a total of 215,079 persons were dedicated to R&D activities, on a full-time equivalent, representing 11.9 per thousand of the total employed population. The number of persons registered a decrease of 3.1% as compared with the previous year.

The group of researchers reached the figure of 130,235 persons on a full-time equivalent (3.3% less as compared with the previous year), representing 7.2 per thousand of the total employed population.

40.1% of personnel in R&D on a full-time equivalent were women. The highest percentages of female participation were recorded in Private Non-Profit Institutions (53.2%) and in Public Administration (51.3%). In Higher Education this percentage stood at 44.4%, whereas that in business stood at 30.8%.

Personnel employed in R&D, by field of operation and according to occupation and sex. Year 2011

On a full-time equivalent

Field of operation	Total			Researchers		
	Total	Variation rate	% Women	Total	Variation rate	% Women
TOTAL	215,078.8	-3.1	40.1	130,234.9	-3.3	38.6
Public Administ	43,912.6	-4.6	51.3	22,892.6	-6.1	47.1
Higher Education	80,900.3	-2.9	44.4	62,185.4	-3.7	41.5
Companies	89,841.1	-2.6	30.8	44,914.9	-1.0	30.2
PNPI	424.8	-13.8	53.2	242.0	-21.6	46.6

R&D expenditure by Autonomous Community

The Autonomous Communities with the greatest effort in R&D activities in 2011 were País Vasco (2.10% of the GDP), Comunidad Foral de Navarra (2.05%), Comunidad de Madrid (1.99%) and Cataluña (1.55%). In turn, the Autonomous Communities with the lower effort in R&D activities in 2011 were Illes Balears (0.36% of the GDP), Canarias (0.58%), Castilla-La Mancha (0.68%) and Extremadura (0.82%).

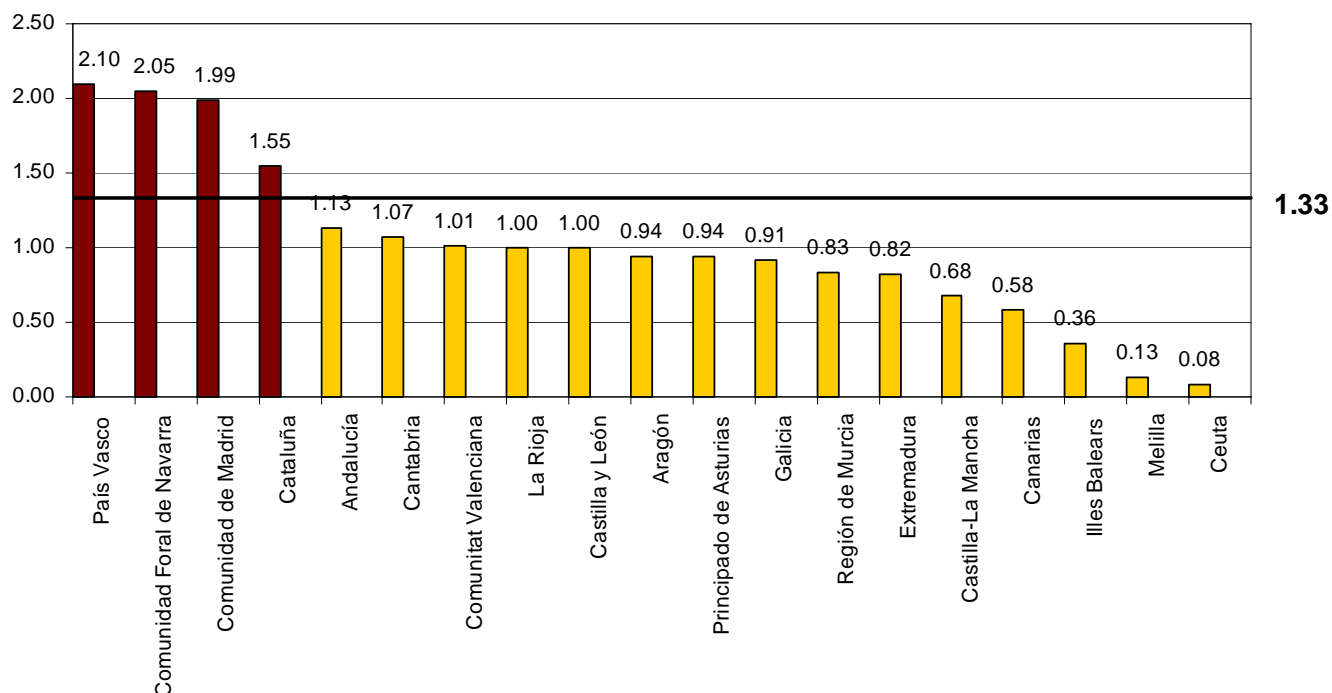
The Autonomous Communities with the highest growth rates as compared with 2010 were País Vasco (7.0%), Comunidad Foral de Navarra (5.0%) and Castilla-La Mancha (1.6%), whereas Aragón (-13.9%), Illes Balears (-13.2%) and Cantabria (-10.2%) registered the highest decreases.

Total internal R&D expenditure, by total personnel employed in FTE and Autonomous Community. Year 2011

Thousand of euros

Autonomous Communities	R&D expenditures			Total personnel employed in FTE		
	Total sectors	Expenditure	Variation rate 2010-2011	Total sectors	Personnel	Variation rate 2010-2011
TOTAL	14,184,295	100.0	-2.8	215,078.8	100.0	-3.1
Andalucía	1,648,471	11.6	-4.5	25,433.8	11.8	-1.3
Aragón	322,113	2.3	-13.9	6,534.2	3.0	-8.0
Asturias, Principado de	218,119	1.5	-8.4	3,678.6	1.7	-2.7
Balears, Illes	95,818	0.7	-13.2	2,007.3	0.9	-6.1
Canarias	242,968	1.7	-4.9	3,896.0	1.8	-5.0
Cantabria	141,816	1.0	-10.2	2,104.7	1.0	-0.5
Castilla y León	574,357	4.0	-5.6	9,734.0	4.5	0.0
Castilla-La Mancha	259,383	1.8	1.6	3,453.8	1.6	-3.1
Cataluña	3,103,712	21.9	-3.8	44,455.5	20.7	-4.1
Comunitat Valenciana	1,044,364	7.4	-3.4	19,964.6	9.3	1.1
Extremadura	143,837	1.0	-5.2	2,234.2	1.0	-7.0
Galicia	526,471	3.7	-1.0	10,146.3	4.7	-6.1
Madrid, Comunidad de	3,762,811	26.5	-2.4	51,108.8	23.8	-6.6
Murcia, Región de	234,082	1.7	-8.6	5,669.8	2.6	-6.2
Navarra, Comunidad Foral de	383,854	2.7	5.0	5,220.5	2.4	-0.2
País Vasco	1,397,208	9.9	7.0	17,970.8	8.4	6.2
Rioja, La	81,817	0.6	-3.6	1,422.6	0.7	-3.3
Ceuta	1,252	0.0	-12.6	16.0	0.0	14.3
Melilla	1,840	0.0	-13.9	27.3	0.0	11.0

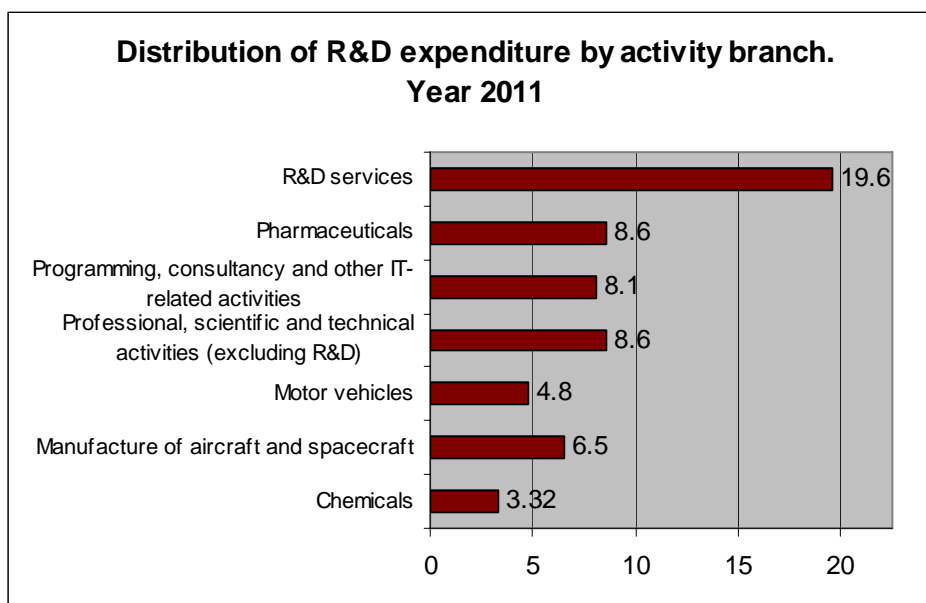
R&D expenditure / GDPpm (%)



R&D expenditure by branch of activity

Industry accounted for 49.0% of R&D expenditure in the year 2011. In turn, companies in the Services sector accounted for 48.1% thereof. By branch of activity, worth noting were *R&D Services*, with 19.6% of total expenditure, and *Professional, scientific and technical activities, except R&D services and Pharmaceuticals*, with 8.6%.

Distribution of R&D expenditure, by branch of activity. Year 2010.



Methodological note

The R&D statistics have been prepared following the methodological recommendations of the *Proposed Standard Practice for Surveys on Research and Experimental Development* of the OECD (Frascati Manual). In particular, the new version expressly recommends *that all companies carrying out R&D work, either continuously or sporadically, be included in R&D surveys*.

Until the year 2001, the R&D Statistics were based solely on a census of the known statistical units that carried out R&D activities. For this purpose, an annual request was made to different bodies of the State Central Administration and the Autonomous Communities for information on the units receiving aid in order to carry out R&D activities.

Since the year 2002, this statistical operation has been carried out co-ordinately with the survey on Innovation in Companies, researching a census of potentially researching statistical units, which is updated annually, and with a randomly chosen sample of companies.

Scientific research and technological development (R&D) comprises the creative work carried out systematically in order to increase the volume of knowledge, including the knowledge of man, culture and society, and the use of this knowledge to create new applications.

The main aggregates for quantifying the national effort invested in R&D activities are *internal R&D expenditure*, which includes current and capital expenditure corresponding to R&D activities undertaken within the State throughout the year, and the *personnel dedicated to R&D tasks*, which includes all of the persons who have worked in the country throughout the year, on a full-time equivalent (FTE).