

High Technology Indicators
Year 2013. *Final results*

Turnover of the manufacturing companies in the High and Medium-high Technology sector increases 0.7%* in 2013

Occupancy in High Technology sectors increases 1.9%, as compared with the previous year

Exports of High Technology products increases 12.9% in 2013

Turnover of the manufacturing companies in the High and Medium-High Technology sector stood at 150,238 million euros in the year 2013. This figure, which was 0.7%* higher than that recorded the previous year, generated an added value of 33,303 million euros.

Within the High Technology manufacturing sectors, worth noting was *Manufacture of pharmaceutical products*, which reached a turnover greater than 14,119 million euros, representing 58.5% of the total turnover generated by the High Technology manufacturing sector.

In turn, turnover of the *Manufacture of electrical material and equipment; machinery; motor vehicles, trailers and semi-trailers* exceeded 83,262 million in invoicing, 66.0% of the total of the Medium-High Technology manufacturing sectors.

Turnover in the high technology sectors

(Economic data in thousands of euros)

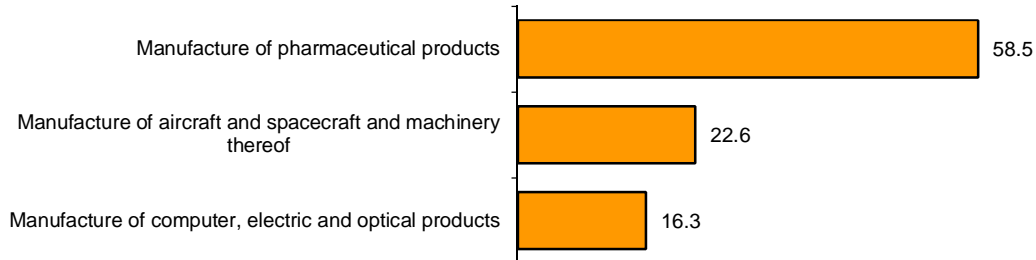
CNAE	Sectors	Year 2013 Turnover	Annual variation*
A+B	High and Medium-high Technology manufacturing sectors	150,237,917	0.7
A	High Technology manufacturing sectors	24,130,714	6.3
21	Manufacture of pharmaceutical products	14,119,496	1.9
26	Manufacture of computer, electric and optical products	3,520,651	-5.9
30.3	Manufacture of aircraft and spacecraft and machinery thereof	6,490,568	26.8
B	Medium-high Technology manufacturing sectors	126,107,202	-0.3
20	Chemical industry	37,959,967	-3.7
25.4	Manufacture of weapons and ammunition	396,507	-6.4
27, 28, 29	Manufacture of electrical material and equipment; machinery and equipment n.e.c.; motor vehicles, trailers and semi-trailers	83,262,527	2.1
30- 30.1 - 30.3	Manufacture of other transport equipment except: naval construction; aircraft and spacecraft construction and machinery thereof	3,007,144	-14.3
32.5	Manufacture of medical and dental instruments and supplies	1,481,058	-6.2

Source: Industrial Companies Survey

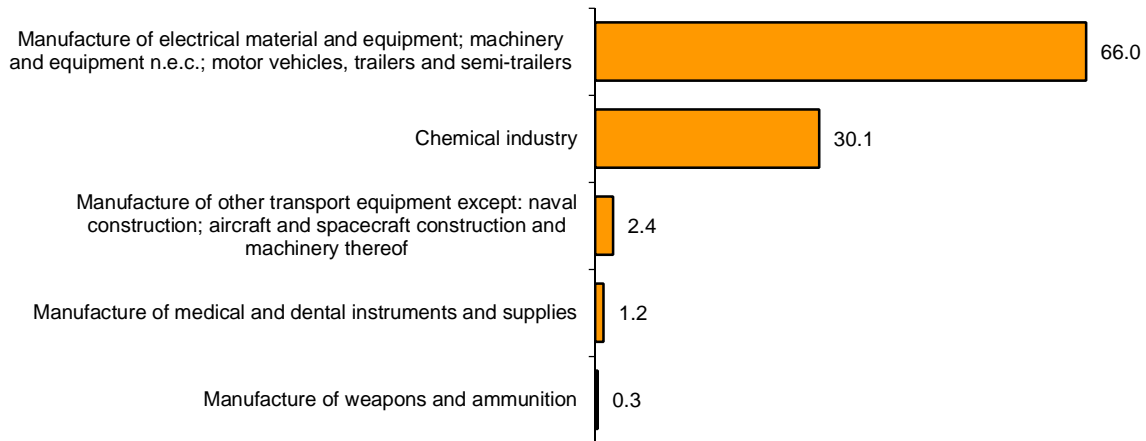
(*) Since the reference year 2013, the Industrial Companies Survey extends its population and territorial scope, including industrial companies with no wage earners and companies in Ceuta and Melilla. In order to allow the comparison with the previous year, all annual variation rates were figured out over the comparable common scopes for 2012 and 2013.

**Turnover distribution of the High Technology manufacturing sectors in %.
Year 2013**

High Technology



Medium-High Technology



Employment in the High and Medium-High Technology sectors

The High and Medium-High Technology sectors employed 1,196,600 persons during the year 2013, accounting for 7.0% of the total persons employed in the Spanish economy. 29% of the total persons employed in these sectors were women.

The number of persons employed in the High Technology manufacturing sector reached 147,300, whereas the Medium-High Technology manufacturing sector employed 524,800 persons. High Technology services employed 524,500 persons.

Employed persons in High Technology sectors according to sex by activity branch. Year 2013
Thousands of persons

Year 2013

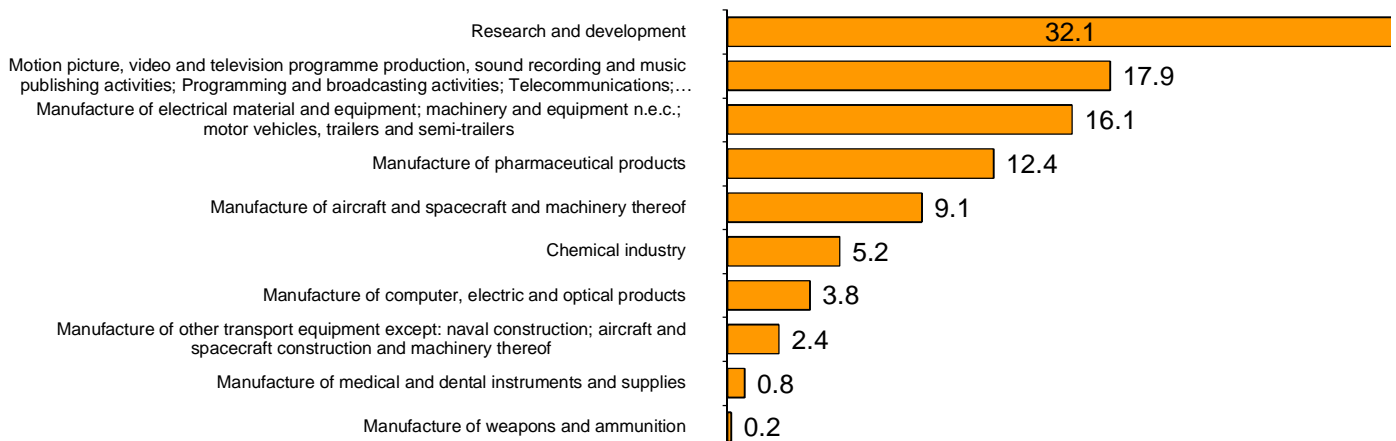
CNAE	Sectors	Employed persons		
		Total	Women	% Women
	High and Medium-high Technology manufacturing sectors	672.1	167.6	24.9
	High Technology manufacturing sectors	147.3	48.1	32.7
21	Manufacture of pharmaceutical products	70.6	33.8	47.9
26	Manufacture of computer, electric and optical products	41.6	9.4	22.6
303	Manufacture of aircraft and spacecraft and machinery thereof	35.0	4.9	14.0
	Medium-high Technology manufacturing sectors	524.8	119.5	22.8
20	Chemical industry	100.1	28.3	28.3
254, 27 a 29	Manufacture of weapons and ammunition; Manufacture of electrical material and equipment; Manufacture of machinery and equipment n.e.c.; Manufacture of motor vehicles, trailers and semi-trailers	388.3	80.5	20.7
30-301-303	Manufacture of other transport equipment except: naval construction; aircraft and spacecraft construction and machinery thereof	15.9	2.9	18.2
325	Manufacture of medical and dental instruments and supplies	20.5	7.8	38.0
	High Technology services	524.5	179.3	34
59 a 63	Motion picture, video and television programme production, sound recording and music publishing activities; Programming and broadcasting activities; Telecommunications; Computer programming, consultancy and related activities; Information service activities	466.2	148.7	32
72	Research and development	58.3	30.6	52
	Total High and Medium-high Technology sectors	1,196.6	346.9	29.0
	Total employed persons	17,139.0	7823.2	45.6

Source: Economically Active Population Survey (annual averages)

Investment in R&D

High and Medium-High Technology companies invested a total of 4,572.5 million euros in R&D during the year 2013, that is, 1.9% less than the previous year. This figure accounted for 66.2% of total expenditure of the business sector on R&D activities.

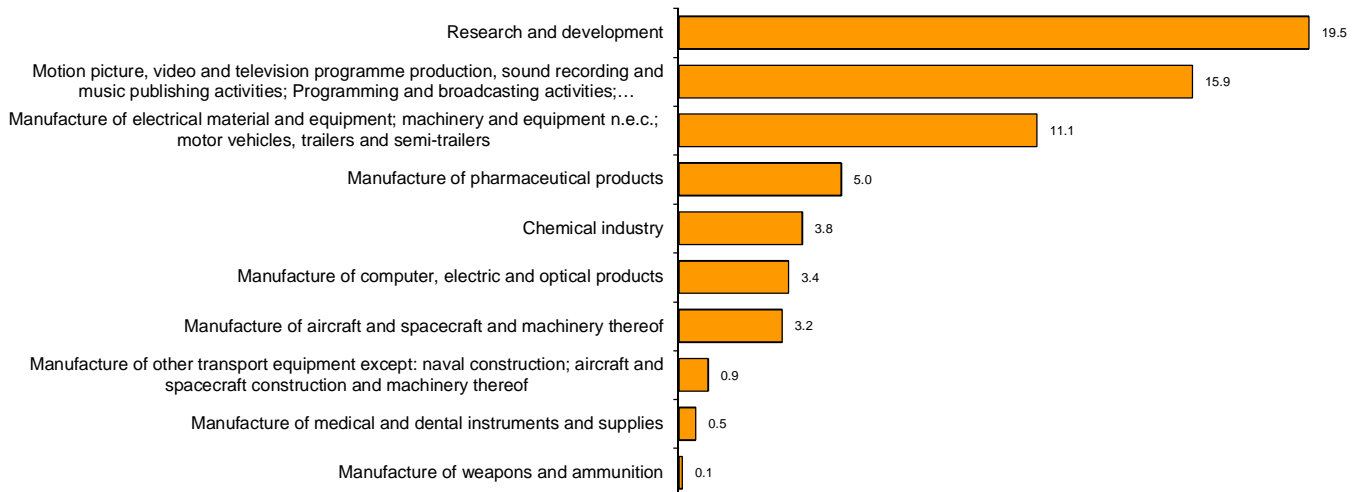
Distribution of the percent internal R&D expenditure in High and Medium-high Technology sectors over the total expenditure in said sector. Year 2013.



The number of employed persons dedicated on a full-time equivalent to R&D tasks in the High Technology sector amounted to 56,195.1, that is, 1.6% less than in the previous year.

The branches of the High and Medium-High Technology sectors represented 63.4% of the total personnel dedicated to R&D in the business sector, and 65.7% of researchers.

Distribution of R&D personnel (FTE) in High and Medium-high Technology sectors over the total companies in the sector. Year 2013.



Main R&D indicators in the High Technology sectors

Year 2013

Sectors	Internal expenditure in R&D ¹		Personnel in R&D ²			
	Total	%Total business sector	Total	%Total business sector	Researchers	
					Total	%Total business sector
High and Medium-high Technology manufacturing sectors	2,287,557	33.12	24,841.8	28.0	11,743.0	26.3
High Technology manufacturing sectors	1,158,559	16.8	10,287.0	11.6	5,567.1	12.5
Medium-high Technology manufacturing sectors	1,128,997	16.4	14,554.8	16.4	6,175.9	13.8
High Technology services	2,284,929	33.1	31,353.4	35.4	17,640.5	39.5
Total High and Medium-high Technology sectors	4,572,486	66.2	56,195.1	63.4	29,383.5	65.7
Total business sector	6,906,396	100.0	88,635.1	100.0	44,713.8	100.0

Source: Statistics on Scientific Research and Technological Development Activities

¹ Units: thousands of euros

² On a full-time equivalent (FTE)

40.9% of High and Medium-High Technology manufacturing sector companies were innovative in the 2011-2013 period. In this sense, it was important to note the branches of *Manufacture of pharmaceutical products* (with 59.4% of innovative companies), *Manufacture of computer, electronic and optical products* (with 56.7%) and *Chemical industry* (48.2%).

In the case of High Technology services, 40.0% of the companies were innovative in the 2011-2013 period. It was also important to note that 63.9% of the companies belonging to the branch of *R&D activities* were innovative in that period.

Value of the production of goods

According to the Industrial Products Survey, the value of the production of High Technology goods reached 8,097.8 million euros in the year 2013, that is, 2.5% less than in the previous year.

Production value of High Technology by group of products (million euros)

Groups of products	Año	Año	%
	2012	2013	Variación
1. Manufacture of aircraft and spacecraft	573.0	565.0	-1.4
2. Office machinery and computers	109.5	94.3	-13.9
3. Electronic material; radio, TV and communications equipment and apparatus	1,431.3	1,328.7	-7.2
4. Pharmaceutical products	2,157.9	2,147.6	-0.5
5. Scientific instruments	922.3	937.2	1.6
6. Electrical machinery and material	162.8	161.7	-0.7
7. Chemical products	1,614.0	1,561.0	-3.3
8. Mechanical machinery and equipment	834.0	864.8	3.7
9. Weapons and ammunition	502.0	437.5	-12.8
Total High Technology products	8,306.9	8,097.8	-2.5
Total Industrial Production	377,318.6	369,629.5	-2.0

Source: Industrial Products Survey

Foreign trade of High Technology products

In 2013, exports of High Technology products increased 12.9%, as compared with the previous year, with a total of 12,869.8 million euros.

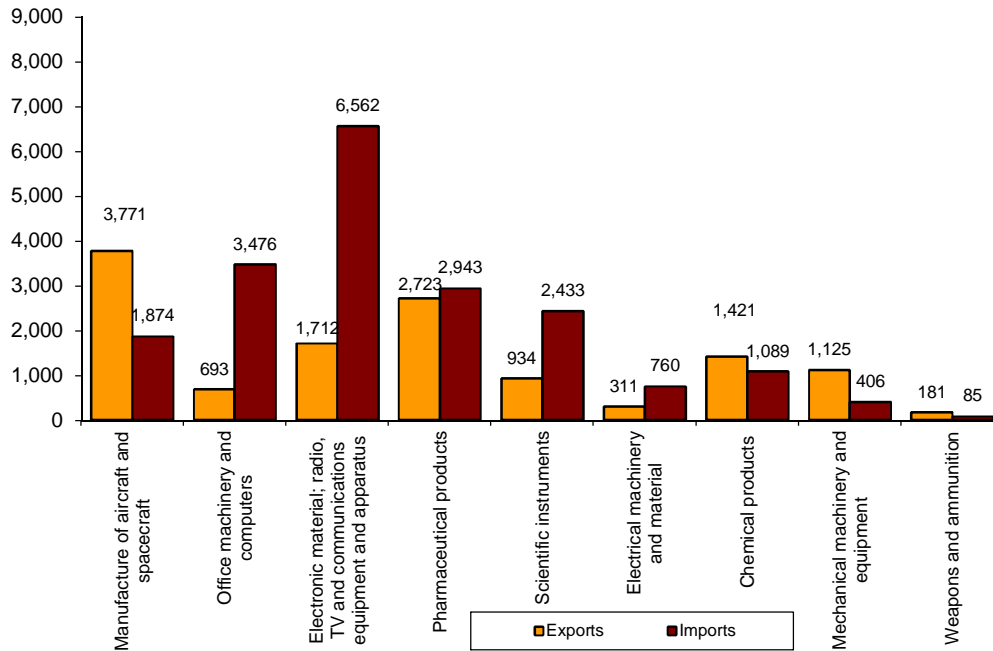
In turn, imports registered a decrease of 1.2%, reaching 19,628.2 million euros.

Foreign trade of High Technology products by type of product Year 2013 (millions of euros)

Groups of products	Value of	Value of imports	Trade
	exports		balance
Manufacture of aircraft and spacecraft	3,770.6	1,874.1	1,896.5
Office machinery and computers	693.3	3,476.4	-2,783.1
Electronic material; radio, TV and communications equipment and apparatus	1,711.8	6,562.3	-4,850.4
Pharmaceutical products	2,722.6	2,942.9	-220.3
Scientific instruments	933.8	2,433.1	-1,499.3
Electrical machinery and material	310.7	759.6	-448.9
Chemical products	1,420.6	1,088.5	332.1
Mechanical machinery and equipment	1,125.5	406.1	719.4
Weapons and ammunition	181.0	85.4	95.7
Total High Technology	12,869.8	19,628.2	-6,758.4
Total	235,814.1	252,346.8	-16,532.7

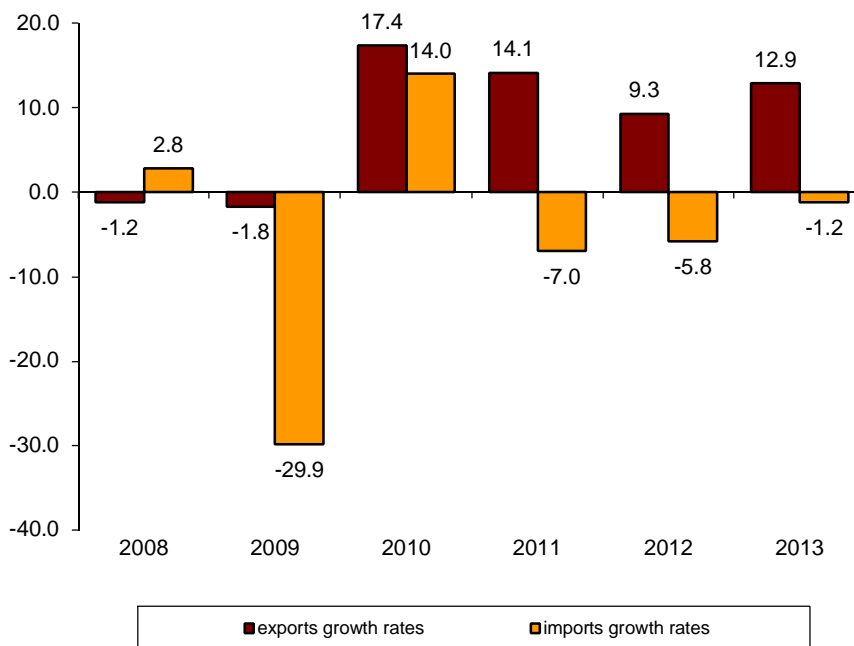
Source: INE compilation with data from the State Tax Administration Agency

Foreign trade of High Technology products (in million euros)



Evolution of the foreign trade coverage rate (quotient between exports and imports) in High Technology was positive in the last years, as it can be observed in the variation rates trajectory, which is showed in the following chart:

Variation rates of exports-imports of High Technology products in the 2007-2013 period



Methodological annex

Considering technology as the knowledge base necessary for producing new products and processes, High Technology is characterised by a fast renewal of knowledge, much greater than other technologies, and by its degree of complexity, which requires a continuous effort in research and a solid technological base.

For statistical purposes, the definition of High Technology is performed by a comprehensive listing of the branches of activity (**sector approach**) and of products (**product approach**) that are considered, at a given moment in time, to be of high technological content.

In order to determine the list of High Technology activities and products, we have started with the methodological tasks performed by the OECD in this matter, as well as with adaptations thereof to the European scope performed by Eurostat.

The list of High Technology products used is the SITC Rev.4.

High and Medium-High Technology sectors.

CNAE 2009	SECTORS
	High Technology manufacturing sectors
21	Manufacture of pharmaceutical products
26	Manufacture of computer, electronic and optical products
30.3	Manufacture of aircraft and spacecraft and machinery thereof
	Medium-High Technology manufacturing sectors
20	Chemical industry
25.4	Manufacture of weapons and ammunition
27 to 29	Manufacture of electrical material and equipment; Manufacture of machinery and equipment n.e.c.; Manufacture of motor vehicles, trailers and semi-trailers
30- 30.1 - 30.3	Manufacture of other transport equipment, except: naval construction; aircraft and spacecraft construction and machinery thereof.
32.5	Manufacture of medical and dental instruments and supplies
	High Technology or state-of-the-art services
59 to 63	Motion picture, video and television programme activities, sound recording and music publishing; Radio and television programming and broadcasting activities; Telecommunications; Programming, consultancy and other activities related to IT; Information services.
72	Research and development

The study of High Technology from the product perspective is based on the construction of indicators that reflect the technological content of the goods produced and exported by a country or industrial sector.

List of High Technology products.		
Group	Sector	SITC Rev.4 Code
1	Aerospace	[(714 - 714.89 - 714.99) + 792.1 + 792.2 + 792.3 + 792.4 + 792.5 + 792.91 + 792.93 + 874.11]
2	Office machines and computers	[751.94 + 751.95 + 752 + 759.97]
3	Electronics-communications	[763.31 + 763.8 + (764 - 764.93 - 764.99) + 772.2 + 772.61 + 773.18 + 776.25 + 776.27 + 776.3 + 776.4 + 776.8 + 898.44 + 898.46]
4	Pharmaceutical industry	[541.3 + 541.5 + 541.6 + 542.1 + 542.2]
5	Scientific instruments	[774 + 871 + 872.11 + (874 - 874.11 - 874.2) + 881.11 + 881.21 + 884.11 + 884.19 + (899.6 - 899.65 - 899.69)]
6	Electrical machinery	[(778.6 - 778.61 - 778.66 - 778.69) + 778.7 + 778.84]
7	Chemistry	[52222 + 52223 + 52229 + 52269 + 525 + 531 + 57433 + 591]
8	Mechanical machinery and equipment	[714.89 + 714.99 + 718.7 + 728.47 + 731.1 + 731.31 + 731.35 + 731.42 + 731.44 + 731.51 + 731.53 + 731.61 + 731.63 + 731.65 + 733.12 + 733.14 + 733.16 + 735.9 + 737.33 + 737.35]
9	Armament	[891]

The tables shown in this statistical operation are compiled with the results of the following operations:

- Industrial Companies Survey (INE)
- Annual Services Survey (INE)
- Statistics on R&D Activities (INE)
- Technological Innovation in Companies Survey (INE)
- Economically Active Population Survey (INE)
- Quarterly Labour Cost Survey (INE)
- Industrial Products Survey (INE)
- Foreign Trade Statistics (INE compilation with AEAT data)
- Survey on the Use of Information and Communication Technologies and Electronic Commerce in Companies (INE)

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