

High Technology Indicators
Year 2012. *Final results*

Turnover of the manufacturing companies in the High Technology sector decreases 3.8% in 2012

Occupancy in High Technology sectors decreases 2.4%, as compared with the previous year

Exports of High Technology products increases 9.3% in 2012

Turnover of the manufacturing companies in the High and Medium-High Technology sector stood at 148,899 million euros in the year 2012. This figure, which was 3.8% lower than that recorded the previous year, generated an added value of 32,798 million euros.

Within the High Technology manufacturing sectors, worth noting was the *Manufacture of pharmaceutical products*, which reached a turnover greater than 13,853 million euros, representing 61.1% 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 81,483 million in invoicing, 64.5% of the total of the Medium-High Technology manufacturing sectors.

Turnover in the High Technology sectors

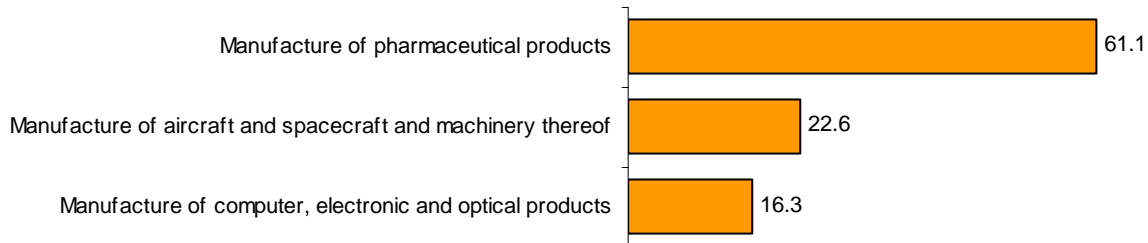
(Economic data in thousands of euros)

CNAE	Sectors	Year 2011	Year 2012	Annual variation
		Turnover	Turnover	
A+B	High and Medium-High Technology manufacturing sectors	154,705,217	148,898,882	-3.8
A	High Technology manufacturing sectors	23,316,588	22,659,743	-2.8
21	Manufacture of pharmaceutical products	14,281,655	13,853,363	-3.0
26	Manufacture of computer, electronic and optical products	4,178,188	3,688,536	-11.7
30.3	Manufacture of aircraft and spacecraft and machinery thereof	4,856,744	5,117,843	5.4
B	Medium-High Technology manufacturing sectors	131,388,630	126,239,139	-3.9
20	Chemical industry	38,188,007	39,340,432	3.0
25.4	Manufacture of weapons and ammunition	308,794	422,106	36.7
27, 28, 29	Manufacture of electrical material and equipment; Manufacture of machinery and equipment n.e.c.; Manufacture of motor vehicles, trailers and semi-trailers	87,635,483	81,483,003	-7.0
30- 30.1 - 30.3	Manufacture of other transport equipment, except: naval construction; aircraft and spacecraft construction and machinery thereof	3,747,865	3,502,690	-6.5
32.5	Manufacture of medical and dental instruments and supplies	1,508,481	1,490,908	-1.2

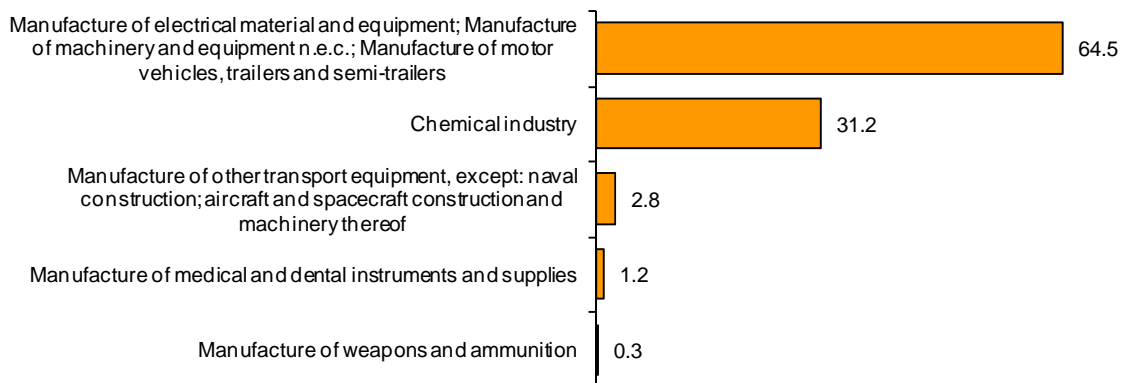
Source: Industrial Companies Survey

**Turnover distribution of the High Technology manufacturing sectors in %.
Year 2012.**

High Technology



Medium-High Technology



Employment in the High and Medium-High Technology sectors

The High and Medium-High Technology sectors employed 1,173,800 persons during the year 2012, accounting for 6.8% of the total persons employed in the Spanish economy. **29.4% of the total persons employed in these sectors were women.**

The number of persons employed in the High Technology manufacturing sector reached 135,000, whereas the Medium-High Technology manufacturing sector employed 526,400 persons. High Technology services employed 512,400 persons.

The Autonomous Communities with the highest number of employed persons in the High and Medium-High Technology sectors were Comunidad de Madrid (308,000), Cataluña (275,9000) and País Vasco (102,200).

Persons employed in the High and Medium-High Technology sectors, by Autonomous Community

Year 2012

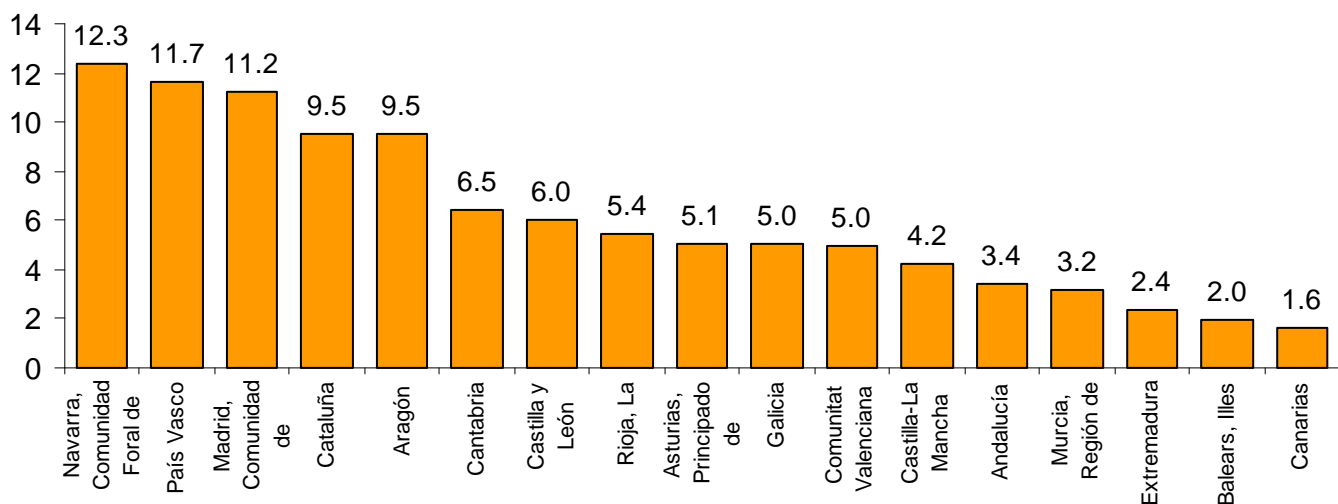
(thousands of persons)

Autonomous Community	National total employed persons	High and Medium-High Technology sectors				% of the total employed persons
		Total	Manufacturing sectors		High Technology services	
			High Technology	Medium-High Technology		
TOTAL	17,282.0	1,173.8	135.0	526.4	512.4	6.8
Andalucía	2,627.8	88.9	13.0	26.0	49.9	3.4
Aragón	533.7	50.7	3.9	34.1	12.7	9.5
Asturias, Principado de	376.2	19.0	1.4	9.0	8.6	5.1
Balears, Illes	464.7	9.2	0.1	1.1	8.0	2.0
Canarias	750.9	12.3	0.8	1.9	9.7	1.6
Cantabria	229.2	14.8	0.7	9.0	5.1	6.5
Castilla y León	943.3	56.9	4.1	32.9	19.9	6.0
Castilla-La Mancha	710.9	30.1	4.8	15.1	10.3	4.2
Cataluña	2,889.2	275.9	38.2	150.1	87.6	9.5
Comunitat Valenciana	1,804.6	90.0	6.8	51.5	31.7	5.0
Extremadura	336.2	8.0	0.1	3.9	4.0	2.4
Galicia	1,039.4	52.2	2.9	28.2	21.1	5.0
Madrid, Comunidad de	2,741.1	308.0	45.1	60.2	202.8	11.2
Murcia, Región de	535.2	16.9	1.9	9.0	6.0	3.2
Navarra, Comunidad Foral de	258.5	31.9	1.4	26.7	3.9	12.3
País Vasco	875.3	102.2	9.4	63.6	29.1	11.7
La Rioja	121.6	6.6	0.5	4.0	2.1	5.4
Ceuta	21.2	..	..	..	..	..
Melilla	23.0	..	..	..	..	..

Source: Economically Active Population Survey (EAPS)

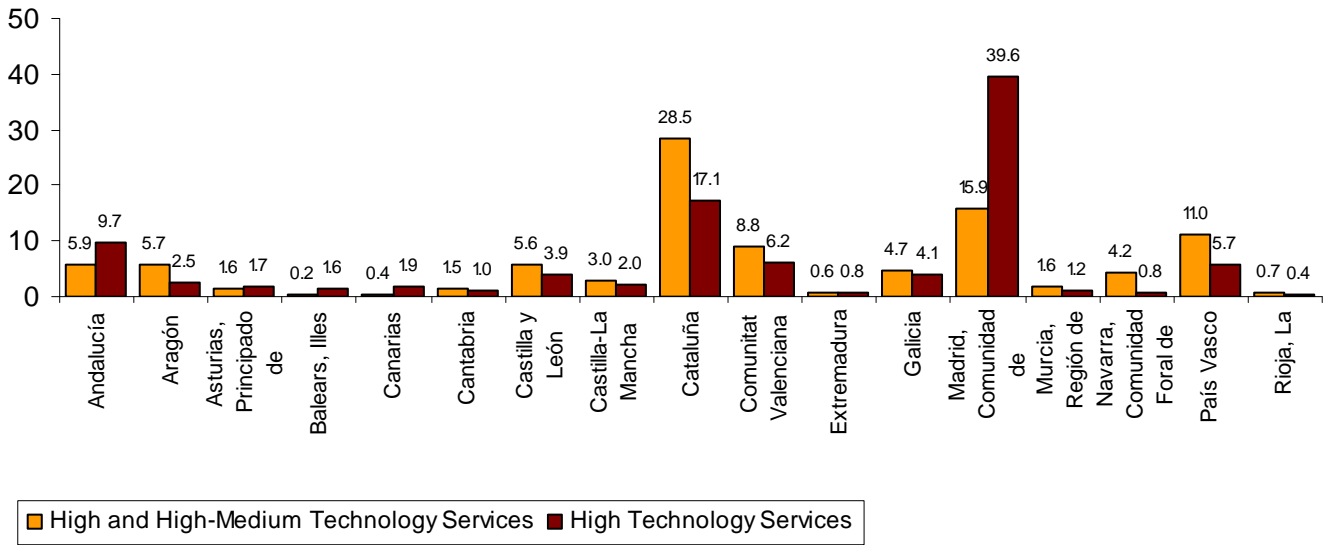
Regarding to employment in these sectors, as compared with the total of the employed persons, the Autonomous Communities with the greatest percentage were Comunidad Foral de Navarra (12.3%), País Vasco (11.7%) and Comunidad de Madrid (11.2%).

Percentage of employed persons in High Technology, as compared with the total employed, by Autonomous Community. Year 2012



The following chart shows the distribution by Autonomous Community of every High Technology sector in %:

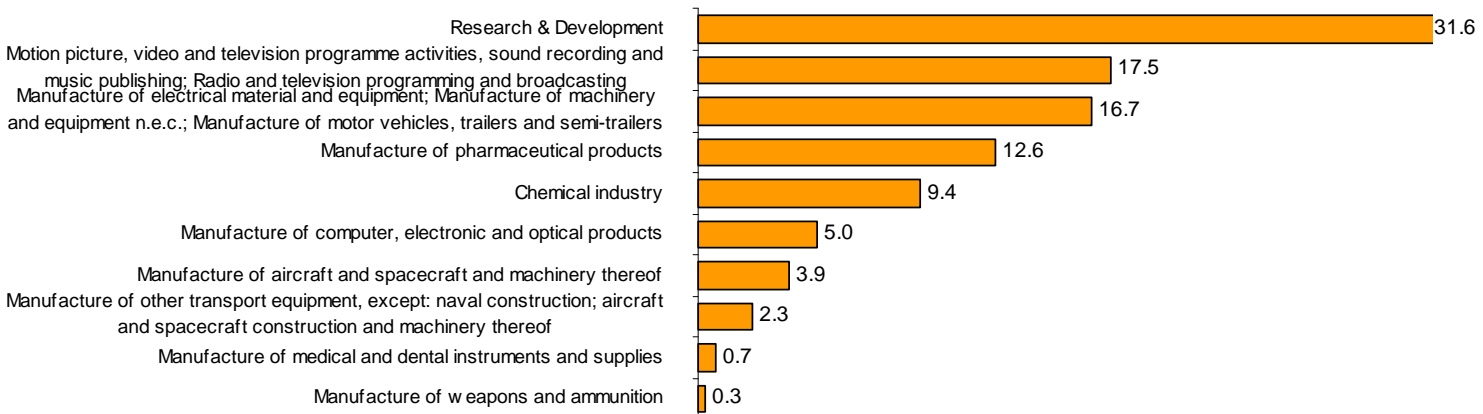
Distribution of employed persons in High Technology sectors, by Autonomous Community, in % Year 2012.



Investment in R&D

High and Medium-High Technology companies invested a total of 4,663.4 million euros in R&D during the year 2012, that is, 3.0% less than the previous year. This figure accounted for 65.7% of total expenditure of the business sector on R&D activities.

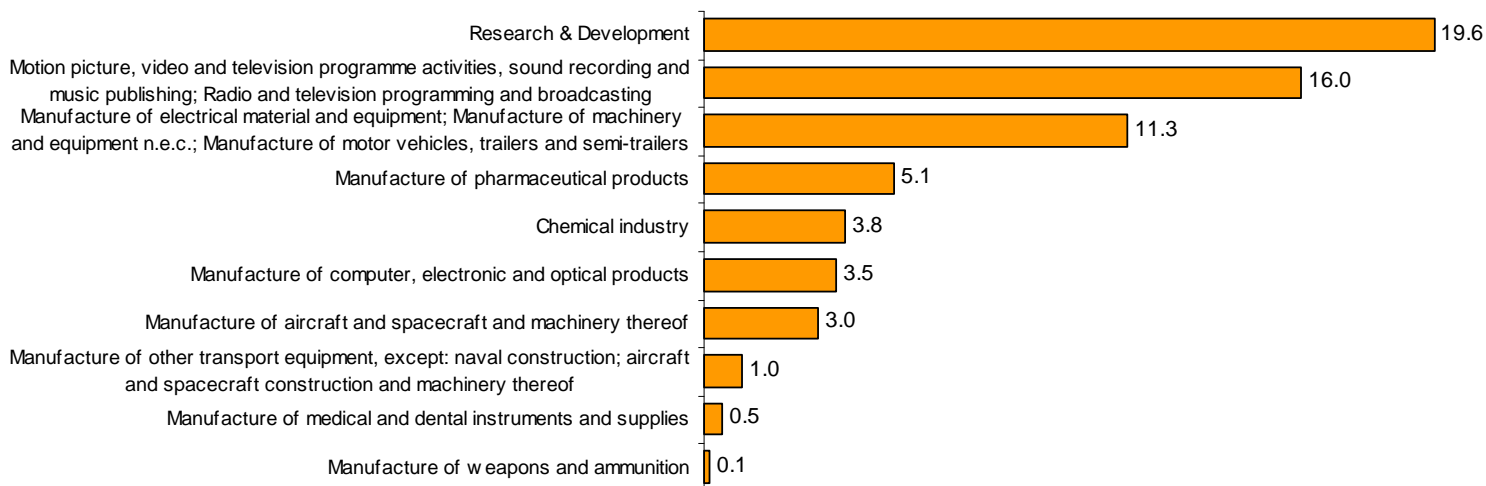
Distribution of R&D investment by High Technology branches, in % Year 2012.



The number of employed persons dedicated on a full-time equivalent to R&D tasks in the High Technology sector amounted to 57,098.6, that is, 1.5% more than in the previous year.

The branches of the High and Medium-High Technology sectors represented 63.9% of the total personnel dedicated to R&D in the business sector, and 66.4% of researchers.

Distribution of R&D personnel by High and Medium-High Technology sector by work sector.
(% of the total of the business sector)



Main R&D indicators in the High Technology sectors

Year 2012

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	2,370,825	33.4	25,287.4	28.3	3,194.7	
High Technology manufacturing sectors	1,205,067	17.0	10,370.2	11.6	1,803.6	13.3
Medium-High Technology manufacturing sectors	1,165,758	16.4	14,917.2	16.7	1,391.1	10.2
High Technology or state-of-the-art services	2,292,612	32.3	31,811.2	35.6	5,825.0	42.9
Total High and Medium-High Technology sectors	4,663,437	65.7	57,098.6	63.9	9,019.6	66.4
Total business sector	7,094,280	100.0	89,364.3	100.0	13,584.3	100.0

Source: Statistics on Scientific Research and Technological Development activities

¹ Units: thousands of euros

² On a Full-Time Equivalent (FTE)

40.6% of High and Medium-High Technology manufacturing sector companies were innovative in the 2010-2012 period. In this sense, it was important to note the branches of *Manufacture of pharmaceutical products* (with 62.2% of innovative companies), *Manufacture of weapons and ammunition* (with 77.3%) and *Chemical industry* (49.7%).

In the case of High Technology services, 37.9% of the companies were innovative in the 2010-2012 period. It was also important to note that 67.7% of the companies belonging to the branch of &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 8,331.3 million euros in the year 2012, that is, 3.8% less than in the previous year.

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

Groups of products	Year 2011	Year 2012	% Variation
1. Manufacture of aircraft and spacecraft	568.1	573.0	0.9
2. Office machinery and computers	117.8	110.0	-6.6
3. Electronic material; radio, TV and communications equipment and apparatus	1,996.8	1,431.0	-28.3
4. Pharmaceutical products	2,087.4	2,206.4	5.7
5. Scientific instruments	899.2	924.9	2.9
6. Electrical machinery and material	165.8	164.9	-0.5
7. Chemical products	1,600.0	1,684.6	5.3
8. Mechanical machinery and equipment	709.6	734.4	3.5
9. Weapons and ammunition	512.4	502.0	-2.0
Total High Technology products	8,657.0	8,331.3	-3.8
Total industrial production	383,443.0	377,949.1	-1.4

Source: Industrial Companies Survey

Foreign trade of High Technology products

In 2012, **exports** of High Technology products **increased 9.3%**, as compared with the previous year, arriving at a total of 11,398.4 million euros.

In turn, **imports** registered a **decrease of 5.8%**, reaching 19,874.1 million euros.

Foreign trade of High Technology products, by type of product

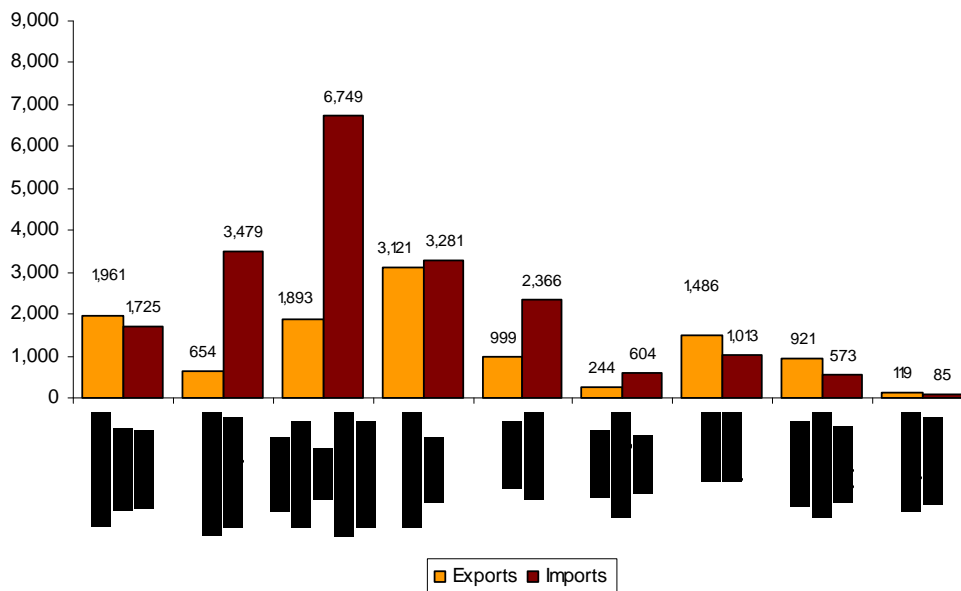
Year 2012

(million euros)

Groups of products	Value of exports	Value of imports	Trade balance
1. Manufacture of aircraft and spacecraft	1,960.5	1,724.5	236.0
2. Office machinery and computers	654.1	3,478.8	-2,824.7
3. Electronic material; radio, TV and communications equipment and apparatus	1,892.7	6,749.0	-4,856.3
4. Pharmaceutical products	3,121.1	3,281.1	-160.0
5. Scientific instruments	999.4	2,365.5	-1,366.1
6. Electrical machinery and material	244.1	604.1	-360.0
7. Chemical products	1,485.6	1,013.1	472.4
8. Mechanical machinery and equipment	921.5	573.1	348.4
9. Weapons and ammunition	119.4	84.9	34.6
Total High Technology	11,398.4	19,874.1	-8,475.7
Total	226,114.6	257,945.6	

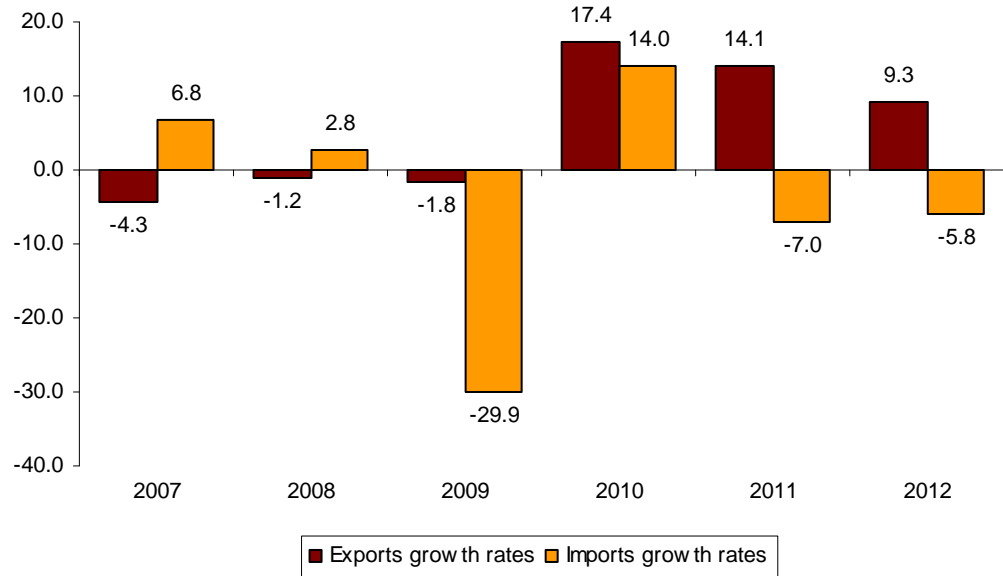
Source: INE compilation with data from the State Tax Administration Agency

Foreign trade of High Technology products
(in thousand 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 and imports in High Technology in 2007-2012



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)