

High Technology Indicators
Year 2011. *Final results*

Turnover of the manufacturing companies in the High Technology sector increases 1.5% in 2011

Occupancy in high technology sectors increases 0.5%, as compared with the previous year

Exports of high technology products increases 14.1% in 2011

Turnover of the manufacturing companies in the High and Medium-High Technology sector stood at 154,705 million euros in the year 2011. This figure, which was 1.5% higher than that recorded the previous year, generated an added value of 34,627 million euros.

Within the High Technology manufacturing sectors, worth noting was the *Manufacture of pharmaceutical products*, which reached a turnover greater than 14,282 million euros, representing 61.3% of the 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 87,635 million in invoicing, 66.7% of the total of the Medium-high Technology manufacturing sectors.

Turnover in the High Technology sectors

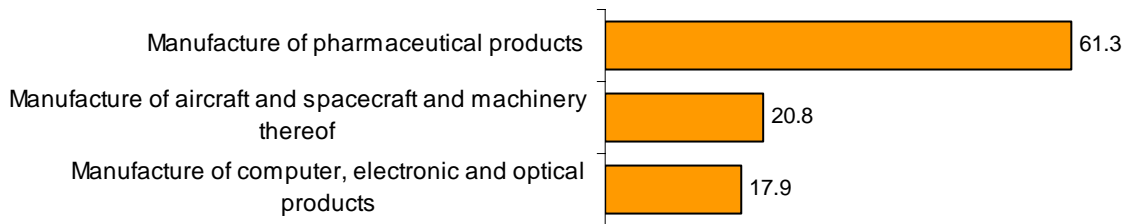
(Economic data in thousands of euros)

CNAE	Sectors	Year 2010	Year 2011	Interannual variation
		Turnover	Turnover	
A+B	High and Medium-High Technology manufacturing sectors	152,394,115	154,705,217	1.5
A	High Technology manufacturing sectors	25,410,532	23,316,588	-8.2
21	Manufacture of pharmaceutical products	14,868,862	14,281,655	-3.9
26	Manufacture of computer, electronic and optical products	5,993,070	4,178,188	-30.3
30.3	Manufacture of aircraft and spacecraft and machinery thereof	4,548,600	4,856,744	6.8
B	Medium-High Technology manufacturing sectors	126,983,584	131,388,630	3.5
20	Chemical industry	35,066,183	38,188,007	8.9
25.4	Manufacture of weapons and ammunition	277,190	308,794	11.4
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	85,385,442	87,635,483	2.6
30- 30.1 - 30.3	Manufacture of other transport equipment, except: naval construction; aircraft and spacecraft construction and machinery thereof.	4,724,612	3,747,865	-20.7
32.5	Manufacture of medical and dental instruments and supplies	1,530,156	1,508,481	-1.4

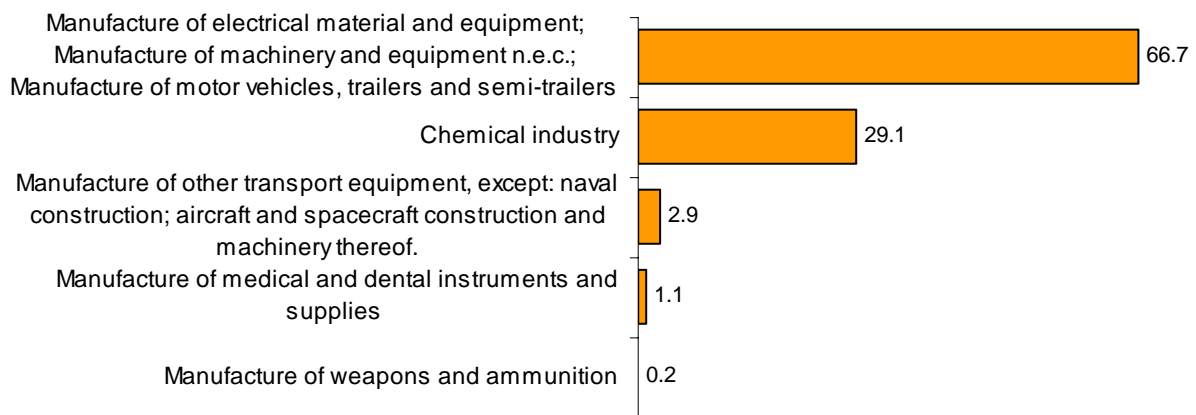
Source: Industrial Companies Survey

Turnover distribution of the High Technology manufacturing sectors in %

High Technology



Medium-High Technology



Employment in the High and Medium-High Technology sectors

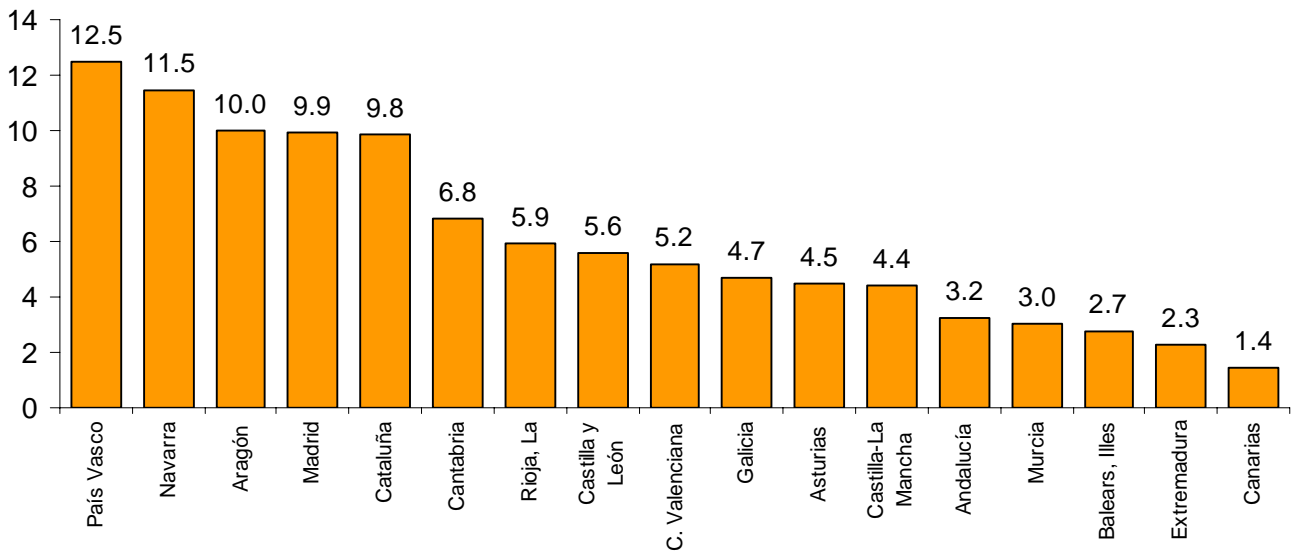
The High and Medium-high Technology sectors employed 1,202,300 persons during the year 2011, accounting for 6.6% of the total persons employed in the Spanish economy. **28.8% of the total persons employed in these sectors were women.**

The number of persons employed in the High Technology manufacturing sectors reached 142,100, whereas the Medium-High Technology manufacturing sectors employed 546,200 persons. High Technology services employed 514,000 persons.

The Autonomous Communities with the highest number of employed persons were Cataluña (with 302,900), Comunidad de Madrid (279,100) and País Vasco (116,300).

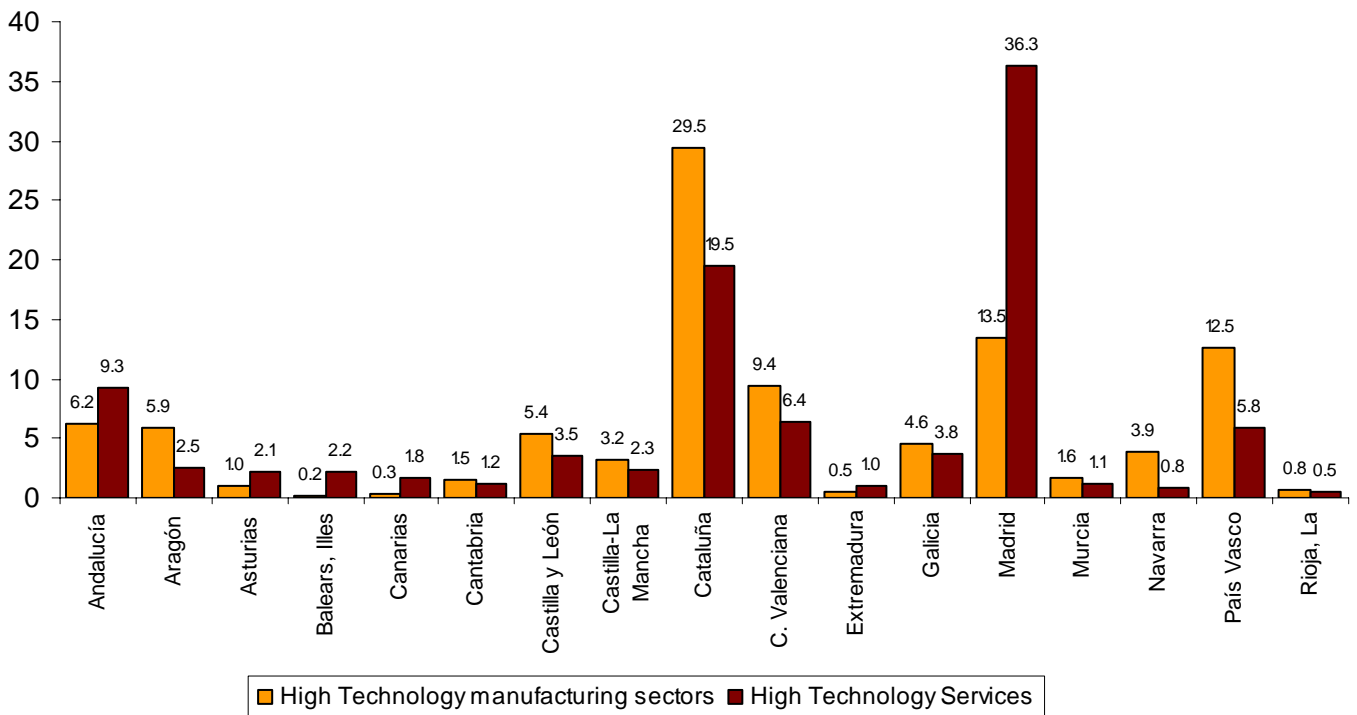
Regarding to employment in these sectors, as compared with the total of the employed persons, the Autonomous Communities with the greatest percentage were País Vasco (12.5%), Comunidad Foral de Navarra (11.5%) and Aragón (10.0%).

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



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 %



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

Year 2011

(thousands of persons)

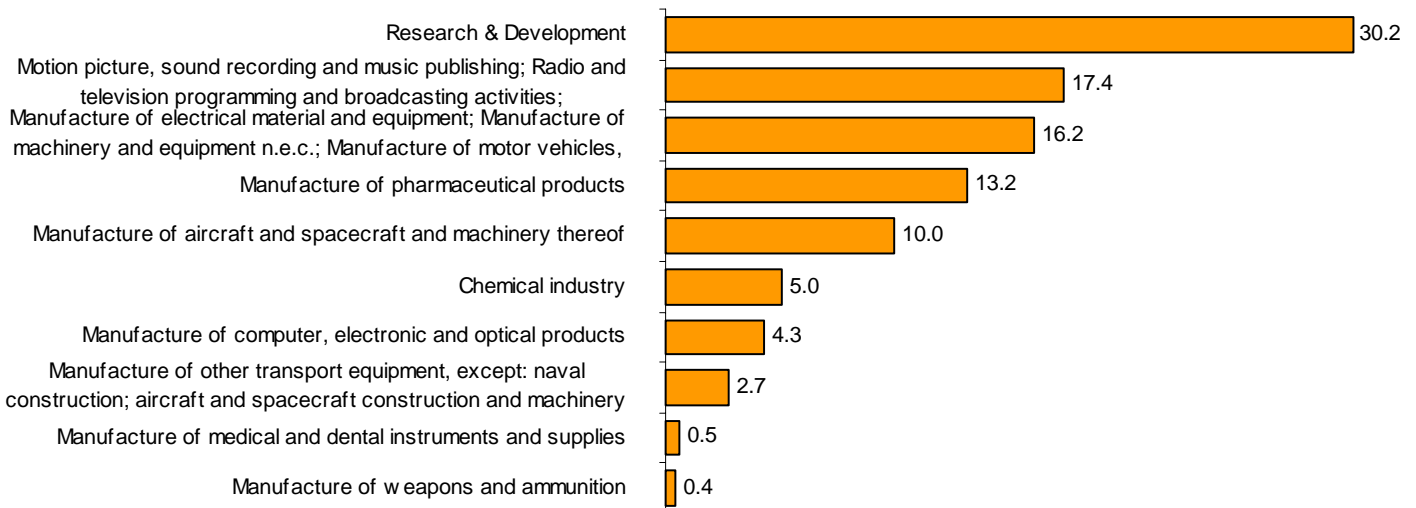
Autonomous Community	National total employed persons	High and Medium-High Technology sectors				% of the total employed persons
		Total	Manufacturing sectors		High Technology services	
			High Technology	Medium-High Technology		
TOTAL	181,046.0	1,202.3	142.1	546.2	514.0	6.6
Andalucía	2,776.2	90.1	15.7	26.7	47.7	3.2
Aragón	537.9	53.7	3.7	37.1	12.9	10.0
Asturias, Principado de	394.2	17.7	0.8	6.0	10.9	4.5
Baleares, Illes	460.6	12.6	0.4	1.1	11.2	2.7
Canarias	778.2	11.2	0.6	1.6	9.0	1.4
Cantabria	235.4	16.1	1.1	9.0	6.0	6.8
Castilla y León	984.6	55.2	5.3	31.8	18.0	5.6
Castilla-La Mancha	770.5	34.2	5.9	16.4	11.9	4.4
Cataluña	3,079.6	302.9	46.5	156.3	100.1	9.8
Comunitat Valenciana	1,888.8	97.7	7.6	57.2	33.0	5.2
Extremadura	370.1	8.5	0.3	3.4	4.9	2.3
Galicia	1,083.0	51.0	3.0	28.6	19.3	4.7
Madrid, Comunidad de	2,816.9	279.1	36.8	55.8	186.5	9.9
Murcia, Región de	550.1	16.7	1.6	9.4	5.7	3.0
Navarra, Comunidad Foral de	269.7	30.9	1.9	25.1	3.9	11.5
País Vasco	931.6	116.3	10.1	76.2	30.0	12.5
La Rioja	130.0	7.7	0.7	4.5	2.4	5.9
Ceuta	24.7	.	.	.	.	.
Melilla	22.1	.	.	.	.	.

Source: Economically Active Population Survey (EAPS)

Investment in R&D

High and Medium-high Technology companies invested a total of 4,810.0 million euros in R&D during the year 2011, that is, 0.9% less than the previous year. This figure accounted for 65.0% of total expenditure of the business sector on R&D activities.

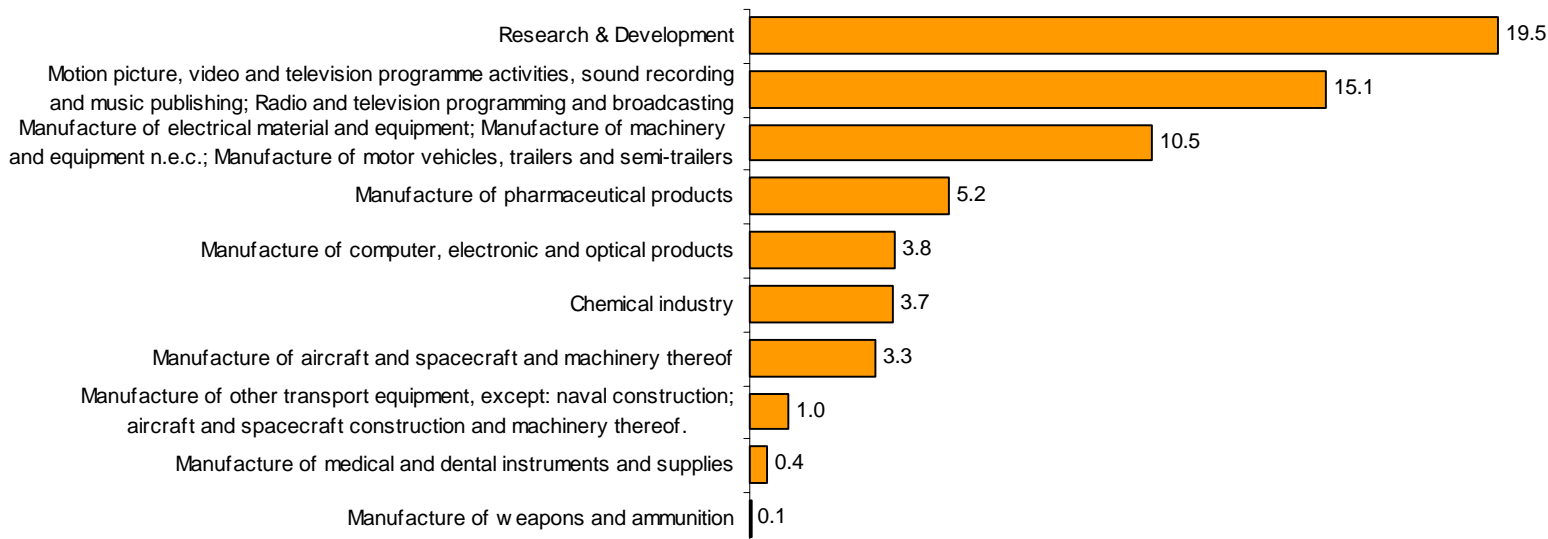
Distribution of R&D investment by High Technology branches, in %



The number of employed persons dedicated on a full-time equivalent to R&D tasks in the High Technology sector amounted to 56,238.2 (2.4% less than in 2010).

The branches of the High Technology sector represented 62.6% of the total personnel dedicated to R&D in the business sector, and 65.8% 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 2011

Sectors	Internal expenditure ¹		R&D PERSONNEL ²			
	Total	%	Total	% Women	Researchers Total	% Women
High and Medium-High Technology manufacturing sectors	2,520,431	34.1	25,173.2	28.9	11,900.7	32.4
High Technology manufacturing sectors	1,326,109	17.9	11,014.2	37.9	5,953.1	36.5
Medium-High Technology manufacturing sectors	1,194,322	16.2	14,159.0	21.9	5,947.6	28.3
High Technology or state-of-the-art services	2,289,547	31.0	31,065.0	33.7	17,651.0	38.7
Total High and Medium-High Technology sectors	4,809,978	65.0	56,238.2	31.6	29,551.7	36.2
Total business sector	7,396,369	100.0	89,941.1	30.8	44,914.9	38.8

Source: Statistics on Scientific Research and Technological Development activities

¹ Units: thousands of euros

² On a Full-Time Equivalent (FTE)

44.1% of High and Medium-High Technology manufacturing sector companies were innovative in the 2009-2011 period. In this sense, it was important to note the branches of *Manufacture of pharmaceutical products* (with 64.3% of innovative companies), *Manufacture of weapons and ammunition* (with 86.7%) and *Manufacture of transport equipment, except naval construction* (65.6%).

In the case of High Technology services, 70.6% of the companies belonging to the branch of R&D activities were innovative.

Value of the production of goods

According to the Industrial Products Survey, the value of the production of High Technology goods reached 8,633.3 million euros in the year 2011, that is, 0.3% less than in 2010.

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

Groups of products	2010	2011	Growth 2009-2010 (%)
1. Manufacture of aircraft and spacecraft	605.0	568.1	-6.1
2. Office machinery and computers and apparatus	89.1	95.3	7.0
3. Office machinery and computers and apparatus	2,352.1	1,999.3	-15.0
4. Pharmaceutical products	2,039.6	2,087.4	2.3
5. Scientific instruments	969.9	875.9	-9.7
6. Electrical machinery and material	152.6	166.1	8.8
7. Chemical products	1,216.0	1,616.3	32.9
8. Mechanical machinery and equipment	624.0	712.5	14.2
9. Weapons and ammunition	614.8	512.5	-16.7
Total High Technology products	8,663.2	8,633.3	-0.3
Total industrial production	359,807.1	382,380.8	6.3

Source: Industrial Companies Survey

Foreign trade of High Technology products

In 2011, **exports** of High Technology products **increased 14.1%**, as compared with the previous year, arriving at a total of 10,432.3 million euros.

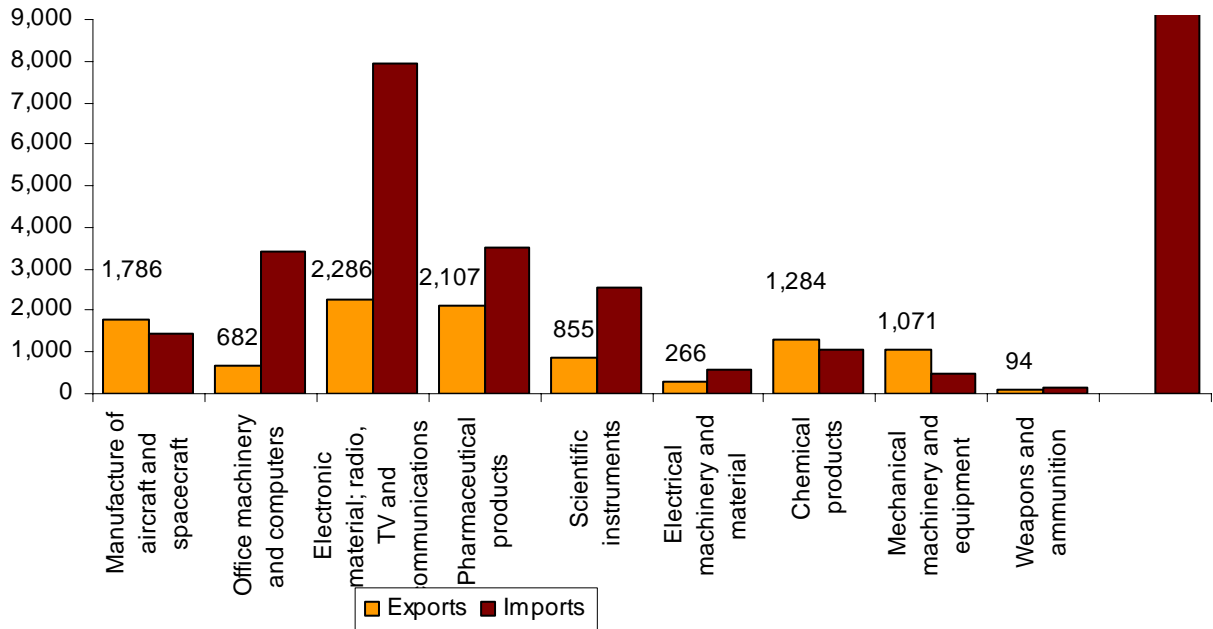
In turn, **imports** registered a **decrease of 7.0%**, reaching 21,103.6 million euros.

Foreign trade of High Technology products, by type of product

Year 2011	(million euros)		
Groups of products	Value of exports	Value of imports	Trade balance
1. Manufacture of aircraft and spacecraft	1,786.4	1,448.5	338.0
2. Office machinery and computers	681.9	3,423.2	-2,741.4
3. Electronic material; radio, TV and communications equipment and apparatus	2,285.9	7,920.2	-5,634.4
4. Pharmaceutical products	2,107.2	3,537.4	-1,430.2
5. Scientific instruments	855.5	2,531.5	-1,676.1
6. Electrical machinery and material	266.2	562.6	-296.3
7. Chemical products	1,284.1	1,063.2	220.3
8. Mechanical machinery and equipment	1,071.3	468.0	603.3
9. Weapons and ammunition	93.8	149.0	-55.2
Total	10,432.3	21,103.6	-10,671.3

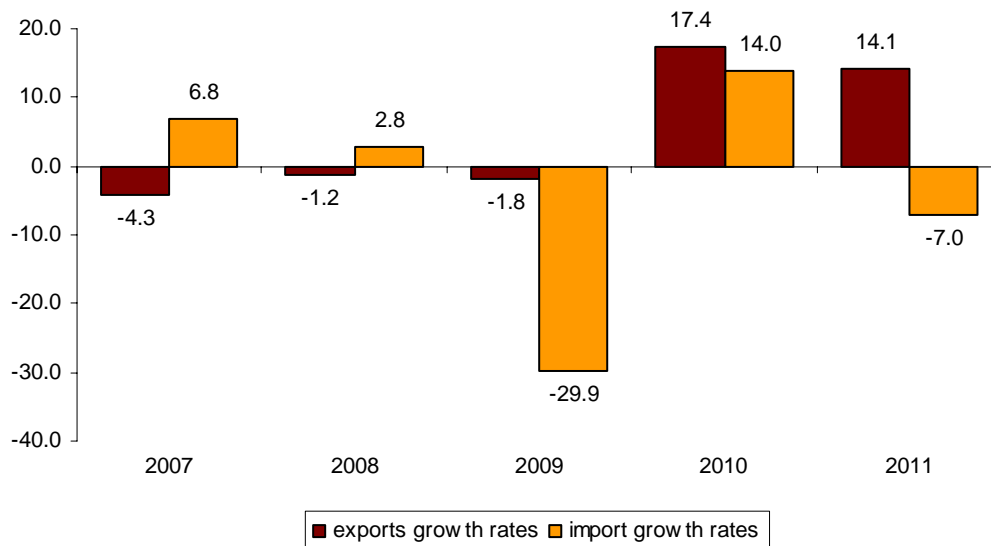
Source: INE compilation with data from the State Tax Administration Agency

Foreign trade of High Technology products (in million euros)



Performance of the foreign trade coverage trade (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 2006-2011 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 due to its degree of complexity, it requires a continuous effort in research and a solid technological base.

For statistical purposes, the definition of High Technology is performed by an 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 Scientific Research and Technological Development (R&D) (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)