

**High Technology Indicators**  
Year 2015. *Final results*

**Turnover of the manufacturing companies increased 7.9% in 2015 in the High and Medium-high Technology sector and 3.8% in the High Technology Services sector**

**Occupancy in High Technology sectors increased 3.4%, as compared with the previous year**

**Imports of High Technology products increased by 17.1% and exports did so by 10.2%**

Turnover of the manufacturing companies in the High and Medium-High Technology sector stood at 170,540 million euros in 2015. This figure, which is 7.9% higher than that of the previous year, generated an added value of 37,848 million euros.

Within the High Technology manufacturing sectors, worth noting was *Manufacture of pharmaceutical products*, which reached a turnover of 13,672 million euros, representing 53.0% of the total generated by the sector.

In turn, turnover of *Manufacture of electrical material and equipment; machinery; motor vehicles, trailers and semi-trailers* exceeded 100,650 million, which represented 69.5% of the total of the Medium-High Technology manufacturing sectors.

Turnover for companies in the High Technology Services sector stood at 71,297 million euros in 2015, which is, an increase of 3.8% with respect to the previous year. The added value generated by these companies stood at 31,555 million euros, 5.0% more than in 2014.

## Turnover in the High Technology manufacturing sectors. Year 2015

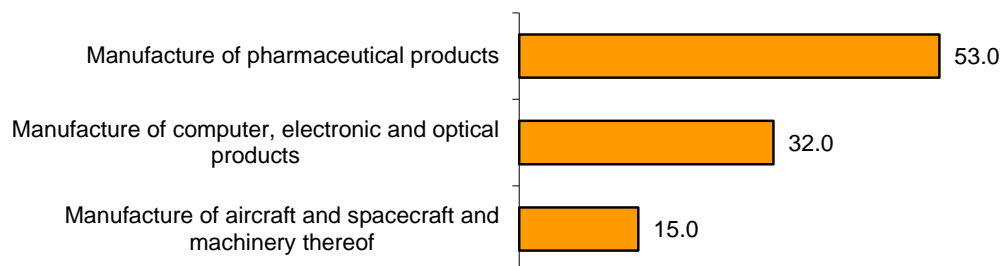
(thousands of euros)

CNAE-2009	Sectors	Year 2014 Turnover	Year 2015 Turnover	Annual variation
<b>A+B</b>	<b>High and Medium-High Technology manufacturing sectors</b>	<b>158,058,344</b>	<b>170,540,375</b>	<b>7.9</b>
<b>A</b>	<b>High Technology manufacturing sectors</b>	<b>24,508,575</b>	<b>25,818,535</b>	<b>5.3</b>
21	Manufacture of pharmaceutical products	13,703,638	13,672,022	-0.2
26	Manufacture of computer, electronic and optical products	3,489,696	3,875,789	11.1
30.3	Manufacture of aircraft and spacecraft and machinery thereof	7,315,241	8,270,724	13.1
<b>B</b>	<b>Medium-High Technology manufacturing sectors</b>	<b>133,549,769</b>	<b>144,721,840</b>	<b>8.4</b>
20	Chemical industry	38,081,639	38,676,650	1.6
25.4	Manufacture of weapons and ammunition	497,260	511,802	2.9
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	90,251,648	100,650,144	11.5
30 exc. 30.1 y 30.3	Manufacture of other transport equipment, except: naval construction; aircraft and spacecraft construction and machinery thereof	3,134,068	3,170,672	1.2
32.5	Manufacture of medical and dental instruments and supplies	1,585,153	1,712,572	8.0
<b>C</b>	<b>High-tech knowledge-intensive services</b>	<b>68,706,928</b>	<b>71,297,173</b>	<b>3.8</b>
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	66,742,986	69,035,458	3.4
72	Research and development	1,963,942	2,261,715	15.2
	<b>Total High and Medium-high Technology sectors</b>	<b>226,765,272</b>	<b>241,837,548</b>	<b>6.6</b>

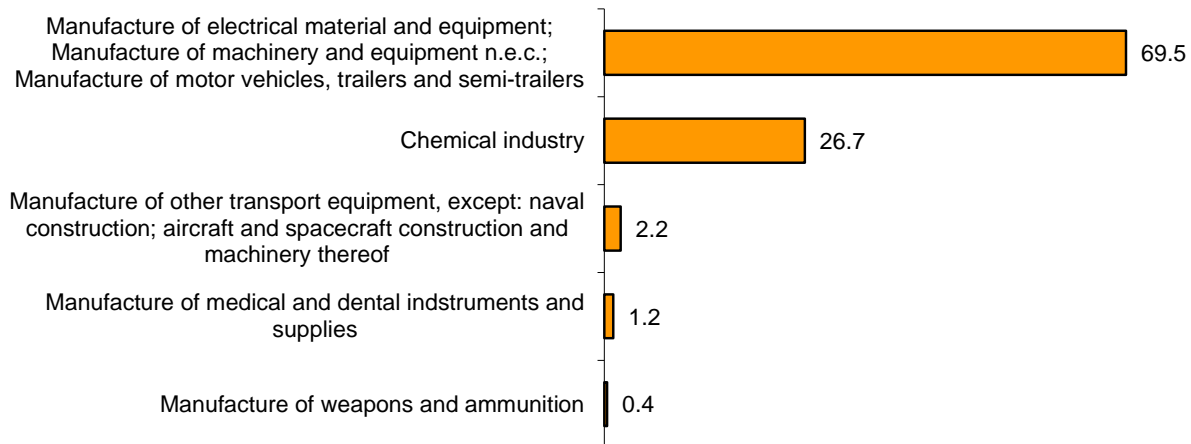
Source: Structural Business Statistics: Industrial Sector and Services Sector

## Percentage distribution of the turnover in the High and Medium-High manufacturing sectors and in the High Technology Services sector. Year 2015

### High Technology manufacturing sectors



### Medium-High Technology manufacturing sectors



### Employment in the High Technology sectors

The High Technology sectors employed 1,246,100 persons during the year 2015, accounting for 7.0% of the total persons employed in the Spanish economy. 28.1% of the total persons employed in these sectors were women.

The number of persons employed in the High Technology manufacturing sector reached 146,600, while the Medium-High Technology manufacturing sector employed 560,500 persons. High Technology services employed 539,000 persons.

### Employed persons in High Technology sectors according by activity branch. Year 2015

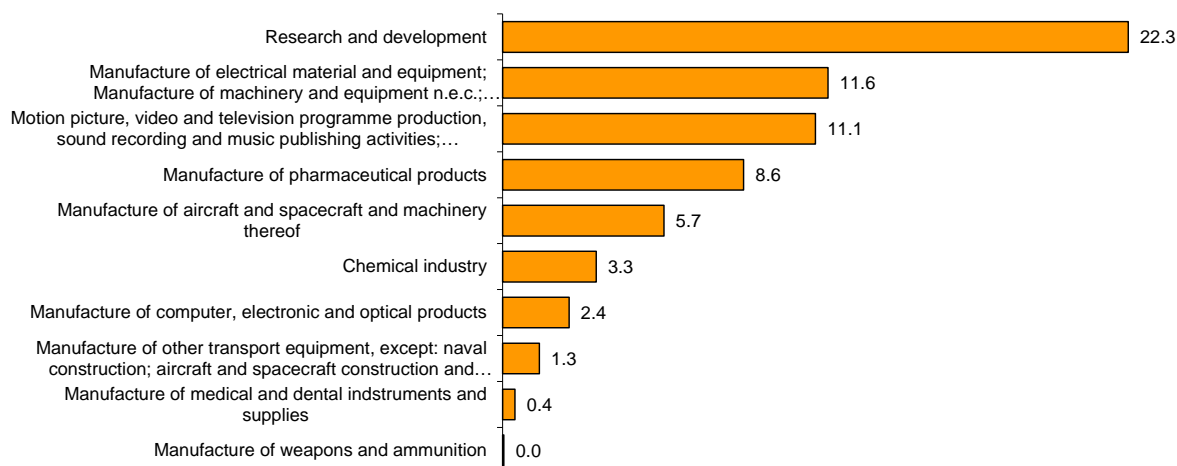
CNAE 2009 Sectors		(Thousands of persons)		
		Employed persons		
		Total	Women%	Women
<b>High and Medium-high Technology manufacturing sectors</b>		<b>707.1</b>	<b>183.1</b>	<b>25.9</b>
<b>High Technology manufacturing sectors</b>		<b>146.6</b>	<b>61.0</b>	<b>41.6</b>
21	Manufacture of pharmaceutical products	84.9	42.7	50.3
26	Manufacture of computer, electric and optical products	32.6	9.8	30.1
303	Manufacture of aircraft and spacecraft and machinery thereof	29.1	8.5	29.2
<b>Medium-high Technology manufacturing sectors</b>		<b>560.5</b>	<b>122.1</b>	<b>21.8</b>
20	Chemical industry	111.4	32.3	29.0
254, 27 a	Manufacture of weapons and ammunition; Manufacture of electrical material and equipment; Manufacture of machinery and equipment n.e.c.;			
29	Manufacture of motor vehicles, trailers and semi-trailers	416.4	80.1	19.2
30-301-303	Manufacture of other transport equipment except: naval construction; aircraft and spacecraft construction and machinery thereof	15.2	2.9	19.1
325	Manufacture of medical and dental instruments and supplies	17.6	6.8	38.6
<b>High-tech knowledge-intensive services</b>		<b>539.0</b>	<b>166.8</b>	<b>30.9</b>
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	476.2	137.0	28.8
72	Research and development	62.8	29.8	47.5
<b>Total High and Medium-high Technology sectors</b>		<b>1,246.1</b>	<b>349.9</b>	<b>28.1</b>
<b>Total employed persons</b>		<b>17,866.1</b>	<b>8,105.7</b>	<b>45.4</b>

Source: Economically Active Population Survey (annual averages)

## R&D and Innovation in the High Technology sectors

Companies in the High Technology sectors invested a total of 4,621 million euros in R&D in 2015, that is, 2.6% more than the previous year. This figure accounted for 66.8% of the total expenditure of the business sector in R&D activities.

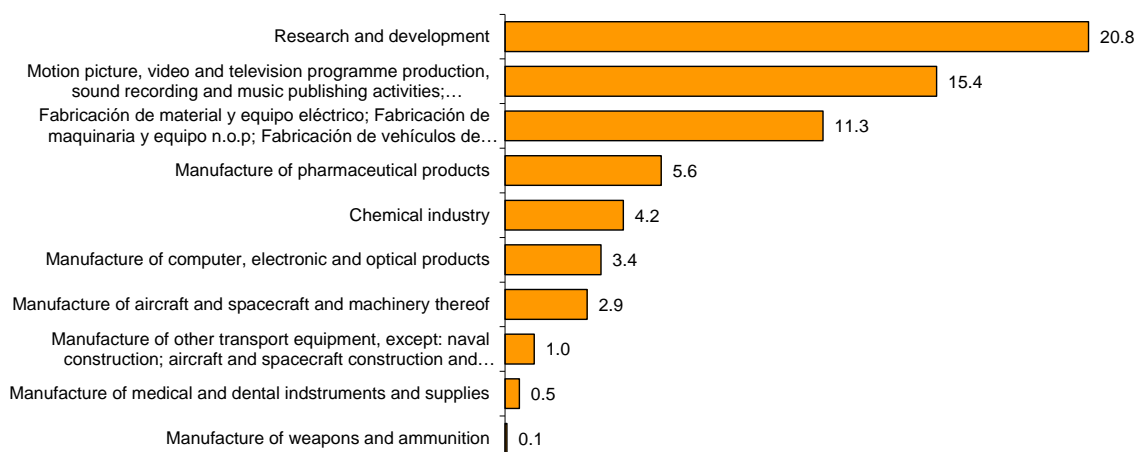
**Distribution of the percent internal R&D expenditure in High Technology sectors over the total expenditure in said sector. Year 2015.**



The number of employed persons dedicated on a full-time equivalent (FTE) to R&D tasks in the High Technology sector amounted to 56,991.2, that is, 1.5% more than in the previous year.

The branches of the High Technology sector concentrated 65.2% of the total personnel on FTE dedicated to R&D in the business sector, and 67.8% of researchers.

**Distribution of R&D personnel (FTE) in High Technology sectors over the total companies in the sector. Year 2015.**



In the 2013-2015 period, 44.0% of the companies in the High and Medium-High Technology manufacturing sector were innovative.

It is worth noting the *Manufacture of pharmaceutical products* (with 67.0% of innovative companies in this period) and the *Manufacture of other transport material except: shipbuilding; manufacture of air and spacecraft and related machinery* (with 58.4%).

In the case of High Technology services, 37.9% of the companies were innovative in the 2013-2015 period. It should be noted that 67.9% of the companies belonging to the branch of *R&D activities* were innovative in that period.

## Innovating and EIN<sup>1</sup> companies in the High Technology sectors. Year 2015

Sectors	Innovation in 2013-2015 period			
	Total innovating companies	% innovating companies	EIN <sup>1</sup> companies	% EIN <sup>1</sup>
<b>High and Medium-high Technology manufacturing sectors</b>	<b>2,465</b>	<b>44.0</b>	<b>2,887.4</b>	<b>51.6</b>
High Technology manufacturing sectors	438	56.5	527.5	68.1
Medium-high Technology manufacturing sectors	2,027	42.0	2,359.9	48.9
<b>High Technology services</b>	<b>1,535</b>	<b>37.9</b>	<b>1,925.7</b>	<b>47.5</b>
<b>Total High and Medium-high Technology sectors</b>	<b>3,999</b>	<b>41.4</b>	<b>4,813.0</b>	<b>49.9</b>
<b>Total business sector</b>	<b>18,269</b>	<b>12.8</b>	<b>21,283.5</b>	<b>14.9</b>

Source: Innovation in Companies Survey

<sup>1</sup> EIN: Technologically innovating companies or companies with technological innovations underway or unsuccessful ones in the 2013-2015 period

## Production value of High technology goods

According to the Annual Industrial Products Survey, the production value of the high-technology goods increased 2.4% in 2015, reaching 8,312 million euros.

## Production value of High Technology by group of products. Year 2015

Groups of products	Year 2014	Year 2015	(million euros)
			Growth 2014-2015
1. Manufacture of aircraft and spacecraft	661.3	634.2	-4.1
2. Office machinery and computers	106.5	114.9	7.9
3. Electronic material; radio, TV and communications equipment and apparatus	1,442.5	1,591.4	10.3
4. Pharmaceutical products	2,081.2	2,002.6	-3.8
5. Scientific instruments	919.4	968.7	5.4
6. Electrical machinery and material	149.7	156.2	4.3
7. Chemical products	1,518.0	1,592.2	4.9
8. Mechanical machinery and equipment	806.7	771.8	-4.3
9. Weapons and ammunition	433.7	479.6	10.6
<b>Total High Technology products</b>	<b>8,118.9</b>	<b>8,311.6</b>	<b>2.4</b>
<b>Total Industrial Production</b>	<b>372,871.7</b>	<b>380,504.6</b>	<b>2.0</b>

Source: Industrial Products Survey

## Foreign trade of High Technology products

In 2015, exports of High Technology products increased 10.2%, as compared with the previous year, with a total of 13,819 million euros.

In turn, imports registered an increase of 17.1%, reaching 25,399 million euros.

## Foreign trade of High Technology products by type of product. Year 2015

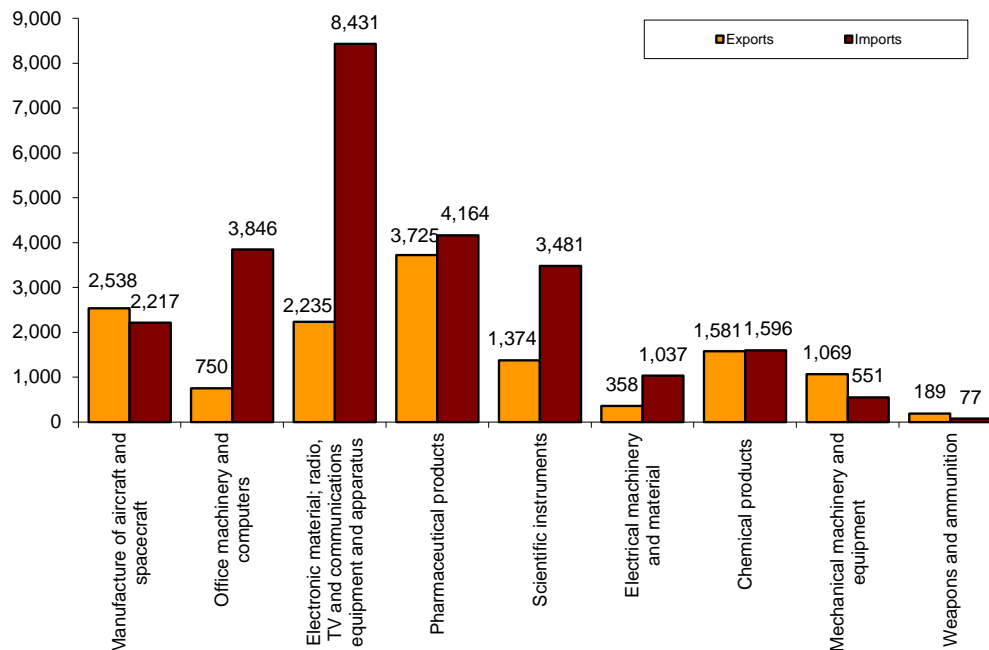
(millions of euros)

Groups of products	Value of exports	Value of imports	Trade balance	Coverage rate
1. Manufacture of aircraft and spacecraft	2,538.2	2,217.4	320.9	114.5
2. Office machinery and computers	750.1	3,845.8	-3,095.7	19.5
3. Electronic material; radio, TV and communications equipment and apparatus	2,234.6	8,431.0	-6,196.4	26.5
4. Pharmaceutical products	3,724.5	4,163.7	-439.2	89.5
5. Scientific instruments	1,373.6	3,480.5	-2,106.9	39.5
6. Electrical machinery and material	357.5	1,036.8	-679.3	34.5
7. Chemical products	1,581.3	1,596.1	-14.8	99.1
8. Mechanical machinery and equipment	1,069.3	550.7	518.6	194.2
9. Weapons and ammunition	189.3	76.8	112.5	246.6
<b>Total High Technology</b>	<b>13,818.5</b>	<b>25,398.8</b>	<b>-11,580.3</b>	<b>54.4</b>
<b>Total</b>	<b>249,794.4</b>	<b>274,772.3</b>	<b>-24,977.9</b>	<b>90.9</b>

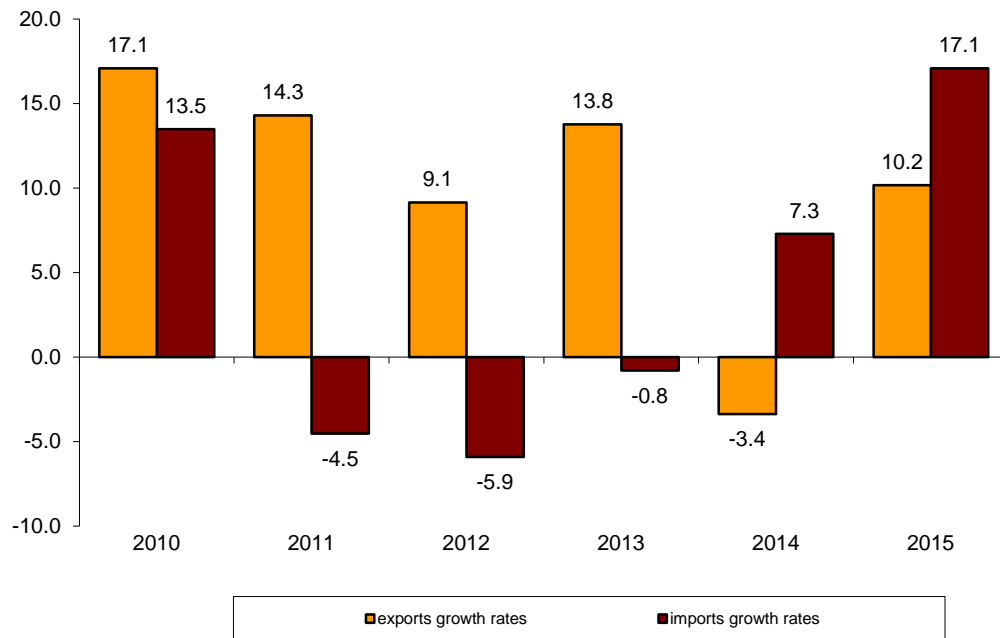
Source: INE compilation with data from the State Tax Administration Agency

The highest coverage rate (quotient between exports and imports, in percentage terms) in the foreign trade of high technology products corresponded to the group *Weapons and ammunitions* (246.6%). In turn, the group *Office machinery and computers* registered the lowest rate (19.5%).

Foreign trade of High Technology products by type of product (in million euros)



**Variation rates of exports-imports of High Technology products in the 2010-2015 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.

<b>List of High Technology sectors</b>	
<b>CNAE-2009</b>	<b>Sectors</b>
<b>A+B</b>	<b>High and Medium-High Technology manufacturing sectors</b>
<b>A</b>	<b>High Technology manufacturing sectors</b>
21	Manufacture of pharmaceutical products
26	Manufacture of computer, electronic and optical products
30.3	Manufacture of aircraft and spacecraft and machinery thereof
<b>B</b>	<b>Medium-High Technology manufacturing sectors</b>
20	Chemical industry
25.4	Manufacture of weapons and ammunition
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
30 exc. 30.1 y 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
<b>C</b>	<b>High-tech knowledge-intensive services</b>
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
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.

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



**List of High Technology sectors**

Group	Sector	SITC. Rev.4 Code
1	Manufacture of aircraft and spacecraft	[(714 - 714.89 - 714.99) + 792.1 + 792.2 + 792.3 + 792.4 + 792.5 + 792.91 + 792.93 + 874.11]
2	Office machinery and computers	[751.94 + 751.95 + 752 + 759.97]
3	Electronic material; radio, TV and communications equipment and apparatus	[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 products	[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 and material	[(778.6 - 778.61 - 778.66 - 778.69) + 778.7 + 778.84]
7	Chemical products	[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 +
9	Weapons and ammunition	[891]

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

- Structural Business Statistics: Industrial Sector and Services Sector (new denomination of the former Industrial Companies Survey and 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)
- Annual 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)