

25 July 2018

**High Technology Indicators**  
Year 2016

**Turnover of High and Medium-High Technology companies stood at 249,864 million euros in 2016**

**Exports of High Technology products increased by 8,0% and imports did so by 1.3%**

In 2016, high- and medium-tech companies achieved a turnover of 249,864 million euros. This figure generated a value added of 72,207 million.

**Main High Technology indicators Year 2016<sup>1</sup>**  
**Economic data in thousands of euros**

CNAE 2009		Número de empresas	Cifra de negocios	Valor añadido
<b>Sectores manufactureros de alta y media-alta tecnología</b>		<b>20,863</b>	<b>174,089,314</b>	<b>39,425,331</b>
<b>Sectores manufactureros de alta tecnología</b>		<b>2,800</b>	<b>26,571,705</b>	<b>8,298,736</b>
21	Fabricación de productos farmacéuticos	350	13,728,349	4,783,437
26	Fabricación de productos informáticos, electrónicos y ópticos	2,347	4,129,771	1,413,172
303	Construcción aeronáutica y espacial y su maquinaria	103	8,713,585	2,102,128
<b>Sectores manufactureros de media-alta tecnología</b>		<b>18,062</b>	<b>147,517,609</b>	<b>31,126,595</b>
20	Industria química	3,409	37,132,230	8,466,825
254	Fabricación de armas y municiones	..	..	..
27 a 29	Fabricación de material y equipo eléctrico; Fabricación de maquinaria y equipo n.c.o.p; Fabricación de vehículos de motor, remolques y semirremolques	9,044	104,420,244	20,653,301
30-301-303	Fabricación de otro material de transporte excepto: construcción naval; construcción aeronáutica y espacial y su maquinaria	..	..	..
325	Fabricación de instrumentos y suministros médicos y odontológicos	5,289	1,791,964	761,148
<b>Servicios de alta tecnología</b>		<b>62,703</b>	<b>75,775,164</b>	<b>32,781,897</b>
59 a 63	Actividades cinematográficas, de video y de programas de televisión, grabación de sonido y edición musical; Actividades de programación y emisión de radio y televisión; Telecomunicaciones; Programación, consultoría y otras actividades relacionadas con la informática; Servicios de información	56,633	73,744,307	30,649,681
72	Investigación y desarrollo	6,070	2,030,856	2,132,215
<b>Total sectores de alta y media-alta tecnología</b>		<b>83,566</b>	<b>249,864,478</b>	<b>72,207,228</b>

Fuente: Estadística Estructural de Empresas

<sup>1</sup> In 2016, a number of methodological improvements have been implemented in the Structural Business Statistics. Consequently, **the results are not strictly comparable to those of other years**. More information in the methodological note of this press release.

Turnover of the manufacturing companies in the High and Medium-High Technology sector stood at 174,089 million euros. This figure represented 69.7% of the sector's turnover and generated an value added of 39,425 million euros.

On the other hand, the turnover of companies in the high-tech services sector was 75,775 million euros and generated an value added of 32,782 million euros.

## Employment in the High Technology sectors

Employment in the high-tech sectors increased by 3.0% with respect to the previous year, according to the Economically Active Population Survey (EAPS).

The number of employed persons in the high-tech manufacturing sectors fell by 6.2%, while employment in the medium-high tech sectors grew by 6.5%. In turn, occupancy in high-tech services increased by 1.9%.

High-tech sectors employed 7.0% of the total number of employed persons in the Spanish economy in 2016. 28.4% of the total persons employed in these sectors were women.

## Employment in the High Technology sectors

Thousands of persons and percentages

CNAE 2009	Ocupados 2016	% Mujeres 2016	Ocupados 2015	% variación ocupados respecto a 2015
<b>Sectores manufactureros de alta y media-alta tecnología</b>	<b>734.4</b>	<b>25.5</b>	<b>707.1</b>	<b>3.9</b>
Sectores manufactureros de alta tecnología	137.5	38.5	146.6	-6.2
Sectores manufactureros de media-alta tecnología	596.9	22.5	560.5	6.5
<b>Servicios de alta tecnología</b>	<b>549.3</b>	<b>32.2</b>	<b>539.0</b>	<b>1.9</b>
<b>Total sectores de alta y media-alta tecnología</b>	<b>1,283.7</b>	<b>28.4</b>	<b>1,246.1</b>	<b>3.0</b>
<b>Total ocupados</b>	<b>18,341.5</b>	<b>45.5</b>	<b>17866.1</b>	<b>2.7</b>

Fuente: Encuesta de Población Activa (medias anuales)

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

Companies in the High Technology sectors invested a total of 4,833 million euros in R&D in 2016, 4.6% more than the previous year.

This figure accounted for 67.8% of the total expenditure of the business sector in R&D activities.

## R&D expenditure in high technology sectors

Million euros

CNAE 2009	Gasto Total	% Gasto	%variación del gasto respecto a 2015
<b>Sectores manufactureros de alta y media-alta tecnología</b>	<b>2,480.5</b>	<b>34.8</b>	<b>7.4</b>
Sectores manufactureros de alta tecnología	1,206.7	16.9	4.5
Sectores manufactureros de media-alta tecnología	1,273.8	17.9	10.2
<b>Servicios de alta tecnología</b>	<b>2,352.3</b>	<b>33.0</b>	<b>1.8</b>
<b>Total sectores de alta y media-alta tecnología</b>	<b>4,832.8</b>	<b>67.8</b>	<b>4.6</b>
<b>Total sector empresarial</b>	<b>7,126.0</b>	<b>100.0</b>	<b>3.0</b>

Fuente: Estadística sobre I+D en el sector empresas

The number of full-time equivalent (FTE) employed persons dedicated to R&D tasks in the High Technology sector amounted to 59,166.3, 3.8% more than in the previous year.

The branches of the High Technology sector concentrated 65.6% of the total FTE personnel dedicated to R&D in the business sector, and 68.6% of researchers.

## R&D personnel in the High Technology sectors

Full-time equivalent employed persons

CNAE 2009	Personal Total	%Personal	%Investigadores	% variación del personal respecto a 2015
<b>Sectores manufactureros de alta y media-alta tecnología</b>	<b>26,570.4</b>	<b>29.5</b>	<b>28.1</b>	<b>4.6</b>
Sectores manufactureros de alta tecnología	10,560.6	11.7	12.5	1.5
Sectores manufactureros de media-alta tecnología	16,009.9	17.8	15.7	6.8
<b>Servicios de alta tecnología</b>	<b>32,595.9</b>	<b>36.2</b>	<b>40.5</b>	<b>3.2</b>
<b>Total sectores de alta y media-alta tecnología</b>	<b>59,166.3</b>	<b>65.6</b>	<b>68.6</b>	<b>3.8</b>
<b>Total sector empresarial</b>	<b>90,129.2</b>	<b>100.0</b>	<b>100.0</b>	<b>3.1</b>

Fuente: Estadística sobre I+D en el sector empresas

44.4% of the companies belonging to the high and medium-high technology manufacturing sectors were innovative in the period 2014-2016.

In the case of *high-tech services*, 39.2% of the companies were innovative in this period.

Compared to 2013-2015, the number of innovative companies increased by 5.3% in the high-tech sector and by 8.3% in the total business sectors.

## Innovative companies in the High Technology sectors Period 2014-2016

CNAE 2009	Total empresas Innovadoras	% empresas innovadoras	% variación respecto al periodo anterior (2013-2015)
<b>Sectores manufactureros de alta y media-alta tecnología</b>	<b>2,498.6</b>	<b>44.4</b>	<b>1.4</b>
Sectores manufactureros de alta tecnología	458.6	61.4	0.8
Sectores manufactureros de media-alta tecnología	2,040.0	41.8	0.5
<b>Servicios de alta tecnología</b>	<b>1,630.0</b>	<b>39.2</b>	<b>3.9</b>
<b>Total sectores de alta y media-alta tecnología</b>	<b>4,128.6</b>	<b>42.2</b>	<b>5.3</b>
<b>Total sectores empresariales</b>	<b>18,474.8</b>	<b>12.8</b>	<b>8.3</b>

Fuente: Encuesta de Innovación en las empresas

## Production value of high technology goods

According to the Annual Industrial Products Survey, the production value of high-technology goods increased 2.7% in 2016, reaching 8,688 million euros.

## Production value of high-tech products by type of product. Year 2016

Million euros

Grupos de productos	Año 2015	Año 2016	% Variación respecto a 2015
1. Construcción aeronáutica y espacial	634.2	691.4	9.0
2. Maquinaria de oficina y equipo informático	114.9	121.6	5.9
3. Material electrónico; equipos y aparatos de radio, TV y comunicaciones	1,617.5	1,692.9	4.7
4. Productos farmacéuticos	2,010.6	2,006.4	-0.2
5. Instrumentos científicos	986.9	987.0	0.0
6. Maquinaria y material eléctrico	156.2	167.8	7.4
7. Productos químicos	1,575.0	1,772.0	12.5
8. Maquinaria y equipo mecánico	888.7	724.8	-18.4
9. Armas y municiones	479.6	524.2	9.3
<b>Total productos de alta tecnología</b>	<b>8,463.6</b>	<b>8,688.1</b>	<b>2.7</b>
<b>Total producción industrial</b>	<b>381,663.2</b>	<b>382,440.5</b>	<b>0.2</b>

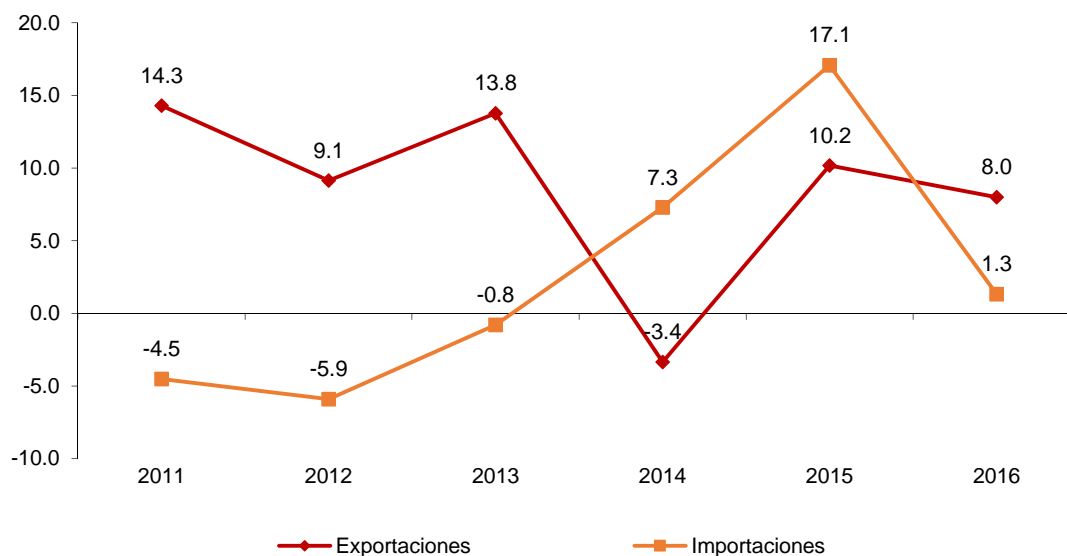
Fuente: Encuesta Industrial de Productos

## Foreign trade of High Technology products

In 2016, exports of High Technology products increased 8.0% to a total of 14,923 million euros.

In turn, imports registered an increase of 1.3% reaching 25,736 million euros.

## Variation in exports and imports. Period 2011-2016



Fuente: Elaboración propia a partir de datos de la Agencia Estatal de la Administración Tributaria

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* (218.8%).

In turn, the group *Office machinery and computers* registered the lowest rate (21.7%).

## Foreign trade of high-tech products by groups of products. Year 2016

Million euros

Grupos de productos	Valor de las exportaciones	Valor de las importaciones	Saldo comercial	Tasa de cobertura
1. Construcción aeronáutica y espacial	4,130.8	3,353.7	777.1	123.2
2. Maquinaria de oficina y equipo informático	797.1	3,679.3	-2,882.2	21.7
3. Material electrónico; equipos y aparatos de radio, TV y comunicaciones	2,219.0	7,977.3	-5,758.2	27.8
4. Productos farmacéuticos	3,681.0	4,279.4	-598.4	86.0
5. Instrumentos científicos	1,346.6	3,592.6	-2,246.0	37.5
6. Maquinaria y material eléctrico	342.0	919.1	-577.1	37.2
7. Productos químicos	1,525.1	1,206.9	318.2	126.4
8. Maquinaria y equipo mecánico	715.1	651.5	63.6	109.8
9. Armas y municiones	166.6	76.1	90.4	218.8
<b>Total Alta Tecnología</b>	<b>14,923.3</b>	<b>25,735.9</b>	<b>-10,812.6</b>	<b>57.99</b>
<b>Total</b>	<b>256,393.4</b>	<b>273,778.6</b>	<b>-17,385.2</b>	<b>93.65</b>

Fuente: Elaboración propia a partir de datos de la Agencia Estatal de la Administración Tributaria

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**Press office**: Telephone numbers: (+34) 91 583 93 63 /94 08 – [gprensa@ine.es](mailto:gprensa@ine.es)

**Information Area**: Telephone number: (+34) 91 583 91 00 – [www.ine.es/infoine/?L=1](http://www.ine.es/infoine/?L=1)

## Methodological note

The annual statistics on High Technology indicators is a summary statistic that provides data on high technology production in Spain. Some of the variables provided by these statistics are: the number of companies, turnover, value added, rate of innovation, etc. in high-tech sectors or the value of production, exports and imports, etc. for high-tech products.

Considering technology as the stock of knowledge needed to produce 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>Lista de sectores de alta tecnología</b>	
<b>CNAE 2009</b>	<b>SECTORES</b>
<b>Sectores manufactureros de alta tecnología</b>	
21	Fabricación de productos farmacéuticos
26	Fabricación de productos informáticos, electrónicos y ópticos
30.3	Construcción aeronáutica y espacial y su maquinaria
<b>Sectores manufactureros de media-alta tecnología</b>	
20	Industria química
25.4	Fabricación de armas y municiones
27 a 29	Fabricación de material y equipo eléctrico; Fabricación de maquinaria y equipo n.c.o.p.; Fabricación de vehículos de motor, remolques y semirremolques
30- 30.1 - 30.3	Fabricación de otro material de transporte excepto: construcción naval; construcción aeronáutica y espacial y su maquinaria.
32.5	Fabricación de instrumentos y suministros médicos y odontológicos
<b>Servicios de alta tecnología</b>	
59 a 63	Actividades cinematográficas, de video y de programas de televisión, grabación de sonido y edición musical; Actividades de programación y emisión de radio y televisión; Telecomunicaciones; Programación, consultoría y otras actividades relacionadas con la informática; Servicios de información.

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 tables shown in this statistical operation are compiled with the results of the following INE operations: Structural Business Statistics: Industrial Sector and Services Sector; Statistics on R&D Activities; Survey on Innovation in Companies; Economically Active Population Survey; Quarterly Labour Cost Survey; Industrial Products Survey and Survey on the Use of

Information and Communication Technologies and Electronic Commerce in Companies. And also of Foreign Trade Statistics (own elaboration from data of the Tax Agency).

### **Methodological improvements**

**For the reference year 2016, several methodological improvements have been implemented** on Structural Business Statistics, within the framework of the “Integration Project of the Structural Business Statistics”. As a consequence of these changes, **the results presented today are not strictly comparable to those of other years** since the evolution of variables is due not only to possible real changes produced in this period, but also to the effects of the methodological improvements on the estimation of said variables. This effect is more pronounced for the variable number of companies in the Trade and Services Sectors, and relatively small for the rest of the information.

For more details, you can refer to the specific document “Measure of the impact of the methodological changes in Structural Business Statistics 2016”:

[http://www.ine.es/metodologia/t37/metodologia\\_eee\\_cambios2016.pdf](http://www.ine.es/metodologia/t37/metodologia_eee_cambios2016.pdf)