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Indicators for the high tech sector
Provisional results. Year 2005

**Turnover for high tech and
medium-high tech companies increased 3.4% in 2005**

Expenditure in R&D activities in this sector increases 7.7%

Business volume for companies of the high and medium-high tech manufacturing sectors was of 163,657 million euros in 2005, with a 3.4% increase with respect to the previous year.

By sectors, the turnover for the medium-high tech manufacturer (concentrating 85.1% of the total sales of high and medium-high tech manufacturing companies) was 139,298 million euros, 2.8% more than in 2004.

The high technology manufacturing sector exceeded 24,359 million euros (14.9% of the total sales of high and medium-high tech manufacturing companies) with a 7.2% increase with respect to the previous year.

Turnover in the high tech sectors

Sectors	2004		2005	Interannual variation 2004-2005
	Turnover	%	Turnover	
High tech and medium-high tech manufacturing sectors	158,236.2	73.9	163,657.43	3.4
High tech manufacturing sectors	22,728.5	10.6	24,359.8	7.2
Pharmaceutical Industry	11,213.5	5.2	11,681.2	4.2
Office machinery and computers	739.4	0.3	937.7	26.8
Electrical components	1,313.7	0.6	1,256.8	-4.3
Radio, TV and communications apparatus	3,677.9	1.7	4,078.1	10.9
Medical, precision, optical and clocks and watches instruments	3,334.3	1.6	3,517.7	5.5
Manufacture of aircraft and spacecraft	2,449.8	1.1	2,888.3	17.9
Intermediate-high tech manufacturing sectors	135,507.6	63.2	139,297.6	2.8
Chemical industry except pharmaceutical industry	30,309.9	14.1	32,570.4	7.5
Machinery and equipment	26,269.2	12.3	26,653.8	1.5
Electrical machinery and apparatus	16,081.8	7.5	17,721.3	10.2
Automobile industry	56,800.8	26.5	55,587.5	-2.1
Construction of boats, trains, motorcycles and bicycles and other transport material	6,045.9	2.8	6,764.7	11.9
High tech or state of the art services	56,006.8	26.1	N/A	N/A
Post and communications	37,704.7	17.6	N/A	N/A
Computer activities	17,265.7	8.1	N/A	N/A
Research and development	1,036.4	0.5	N/A	N/A
Total high and medium-high technology sectors	214,243.0	100.0	N/A	N/A

Source: Industrial Companies Survey and Annual Services Survey

High tech sectors employ 7.4% of total employed persons

High tech sectors employed 1,399,300 persons in 2005, which implies 7.4% of total employed persons. The percentage of females was 25.4%.

The number of employed persons in high tech manufacturing sectors amounted to 173,600, whereas medium-high tech manufacturing sectors employed 713,400 persons and high-tech services employed 512,400.

By **Autonomous Communities**, Cataluña and Comunidad de Madrid were those with the greatest number of employed persons in high tech sectors, with 364,800 and 279,500, respectively. Communities with the greatest percentage of employment in these sectors with respect to total employed persons in each community were País Vasco (12.3%), Cataluña (11.1%) and Aragón (11.1%).

Employed persons in high tech sectors by Autonomous Communities

Year 2005

(thousands of persons)

C. Autonomous	Total employed	High tech sectors				
		High tech manufacturing sectors	Intermediate-high tech manufacturing sectors	High tech services	Total	% of total employed
TOTAL	18,973.2	173.7	713.3	512.3	1,399.3	7.38
Andalucía	2,959.6	19.4	52.3	60.7	132.4	4.47
Aragón	568.5	4.7	45.0	13.1	62.8	11.05
Asturias (Ppado de)	405.2	0.8	10.9	8.4	20.1	4.96
Balears (Illes)	468.1	1.1	5.0	7.3	13.4	2.86
Canarias	836.1	1.4	5.8	19.4	26.7	3.19
Cantabria	239.2	1.2	12.4	4.0	17.5	7.32
Castilla y León	1,022.7	4.4	41.5	18.7	64.6	6.32
Castilla La Mancha	763.7	4.1	16.1	11.6	31.8	4.16
Cataluña	3,291.1	51.9	219.0	93.9	364.8	11.08
Valencia	2,053.1	6.8	64.5	44.3	115.6	5.63
Extremadura	385.8	0.6	3.5	6.8	10.9	2.83
Galicia	1,130.1	4.3	50.0	19.9	74.2	6.57
Madrid (C. de)	2,858.8	54.1	62.7	162.6	279.5	9.78
Murcia (Región de)	569.7	3.3	15.8	8.5	27.6	4.84
Navarra (C. Foral de)	274.4	1.7	24.0	4.2	30.0	10.93
País Vasco	958.2	13.2	78.9	26.0	118.1	12.33
La Rioja	140.8	0.4	5.6	2.3	8.3	5.89
Ceuta and Melilla	48.1	0.1	0.1	0.8	0.9	1.87

Source: Economically Active Population Survey (Annual Averages)

Investment in R&D increases 7.7%

During 2005 high tech companies invested a total of 3,695 million euros in R&D, 7.7% more than during the previous year. This figure implied 67.4% of total expenditure of the business sector in R&D activities.

The number of employed persons in full time equivalent dedicated to R&D tasks in the high tech sector amounted to 48,530.6, which implies an annual increase of 4.1%.

The branches of the high tech sector concentrated 64.4% of the total personnel dedicated to R&D in the business sector and 68.5% of researchers.

Main R&D indicators in high tech sectors

Year 2005

	Internal expenditure ¹		Personnel in R+D ²			
	Total	%	Total		Researchers	
			Total	%	Total	%
High and medium-high technology manufacturing sectors	2,211,201	40.3	26,945.8	35.8	12,173.2	34.7
High tech manufacturing sectors	1,125,890	20.5	11,509.6	15.3	6,302.7	18.0
Intermediate-high tech manufacturing sectors	1,085,311	19.8	15,436.3	20.5	5,870.5	16.8
High tech or state of the art services	1,483,434	27.0	21,584.7	28.6	11,836.6	33.8
Total high and medium-high technology sectors	3,694,634	67.4	48,530.6	64.4	24,009.9	68.5
Total business sector	5,485,034	100.0	75,344.7	100.0	35,033.6	100.0

Source: Statistics on Scientific Research and Technological Development activities

1 Units: thousands of euros

2 In Full Time Equivalent (FTE)

47.4% of high and medium-high tech companies were innovative in the 2003-2005 period. Within the high tech and medium-high tech manufacturing sectors we can highlight the branches of aircraft and spacecraft manufacture (71.8% of innovative companies) and those manufacturing radio, TV and communications apparatus (70.8%).

In high tech services, the branch of R&D activities stands out with 86.4% of innovative companies.

Production value for goods exceeds 8,300 million euros

Production value of high tech goods reached 8,349.5 million euros in 2005, according to the Industrial Products Survey.

High tech production value by groups of products (million euros)

Groups of products	2005
Weapons and ammunition	573,710.4
Manufacture of aircraft and spacecraft	349,382.4
Office machinery and computers	567,222.1
Electronic Material; radio, television and communications equipment	2,358,049.4
Pharmaceutical products	1,510,100.7
Scientific instruments	757,149.0
Electrical machinery and material	400,450.4
Chemical products	1,142,113.1
Mechanical machinery and equipment	691,297.2
Total high tech products	8,349,474.6
Total industrial production	380,791,070.0

Source: Industrial Products Survey

Exports of high tech products amounted to a total of 9,110.1 million euros in 2005, which implies a 4.6% increase with respect to 2004.

On the other hand, **imports** reached 24,778.6 million euros, a 12.21% increase.

Foreign trade of high tech products by type of products
Year 2005

(million euros)			
Groups of products	Value of exports	Value of imports	Commercial Balance
Weapons and ammunition	99.2	154.7	-55.5
Manufacture of aircraft and spacecraft	1,402.3	2,864.2	-1,462.0
Office machinery and computers	960.0	5,364.9	-4,404.9
Electronic Material; radio, television and communications equipment	2,758.5	8,333.4	-5,574.9
Pharmaceutical products	1,135.4	2,172.9	-1,037.5
Scientific instruments	812.7	3,042.9	-2,230.2
Electrical machinery and material	456.2	803.5	-347.3
Chemical products	899.1	1,174.2	-275.1
Mechanical machinery and equipment	586.8	868.0	-281.1
Total	9,110.1	24,778.6	-15,668.5

Source: Own compilation from AEAT data

For further information see **INEbase-www.ine.es** All press releases at: **www.ine.es/prensa/prensa.htm**

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Methodology 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 complexity it demands a continuous effort in research and a solid technological base.

For statistical reasons, the definition of high technology is performed by an exhaustive listing of the branches of activity (**approach by sectors**) and of products (**approach by products**) that are considered, at a certain moment in time, of high technological content.

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

High Tech and Medium-High Tech Sectors

List used by the INE

NCEA-93	Sectors
	High tech manufacturing sectors
244	Pharmaceutical Industry
30	Office machinery and computers
321	Electrical components
32-32.1	Radio, TV and communications apparatus
33	Medical, precision, optical and clocks and watches instruments
35.3	Manufacture of aircraft and spacecraft
	Intermediate-high tech manufacturing sectors
24-24.4	Chemical industry except pharmaceutical industry
29	Machinery and equipment
31	Electrical machinery and apparatus
34	Automobile industry
35-35.3	Other transport material
	High tech or state of the art services
64	Post and communications
72	Computer activities
73	Research and development

The study of high technology from the product point of view is based on the construction of indicators that reflect the technological content of the goods produced and exported by an industrial country or sector.

List of high tech products.		
Group	Sector	SITC Code
1	Aerospatial	[7921+7922+7923+7924+7925+79291+79293+(714-71489-71499)+87411]
2	Office machines and computers	[75113+75131+75132+75134+(752-7529)+75997]
3	Electronics-communications	[76381+76383+(764-76493-76499)+7722+77261+77318+77625+77627+7763+7764+7768+89879]
4	Pharmaceutical industry	[5413+5415+5416+5421+5422]
5	Scientific instruments	[774+8711+8713+8714+8719+87211+(874-87411-8742)+88111+88121+88411+88419+89961+89963+89966+89967]
6	Electrical machinery	[77862+77863+77864+77865+7787+77884]
7	Chemistry	[52222+52223+52229+52269+525+531+57433+591]
8	Mechanical machinery and equipment	[71489+71499+71871+71877+71878+72847+7311+73131+73135+73142+73144+73151+73153+73161+73163+73165+73167+73314+73316+7359+73733+73735]
9	Armament	[891]

The tables showed in this statistical operation are built from 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 (own compilation from AEAT data)
- Survey on the use of Communication and Information Technologies and E-Commerce in Companies (INE)

This survey shows the data from 2005 except for those referring to the services sector, which are not published until the second quarter of 2007.