

Transport equipment



The transport equipment manufacturing sector is central to economic development, as it provides the means for transporting both individuals and goods. Demand for transport equipment has risen as the volume of goods transported and the distance travelled by passengers have expanded greatly - see Chapter 20 which provides information on transport flows, as well as information on selected transport equipment stocks. Increased international trade has stimulated demand for goods transport, while deregulation and liberalisation, improved living standards and access to transport equipment/networks have led to rapid expansions in the distances travelled by passengers. These trends have been accompanied by a modal shift towards road transport, reflected in the increased number of goods vehicles and passenger cars on Europe's roads.

The issue of sustainable development is likely to play an important role in future product developments, as transport equipment manufacturers try to meet demands for more environmentally friendly transport solutions, for example, motor vehicles that consume less fuel, consume alternative fuels (see Subchapter 16.2 concerning biofuels for example), produce less emissions, or that are easier to recycle or dispose of at the end of their life.

Most transport equipment manufacturing activities are structured on the basis of complex pyramidal relationships between major manufacturers and several tiers of component suppliers, ranging from fairly large enterprises

that supply whole systems down to very small, specialised manufacturers that may provide a single component for a vehicle. Deliveries from one level of the pyramid to the next are often made on a just-in-time basis and it is common to find clusters of enterprises concentrated in regions around the leading producers.

STRUCTURAL PROFILE

The EU-27's transport equipment manufacturing sector (NACE Subsection DM) consisted of 43 000 enterprises which generated EUR 176.7 billion of value added in 2004, while employing 3.2 million persons. The transport equipment manufacturing sector accounted for 3.5 % of the value added created within the EU-27's non-financial business economy (NACE Sections C to I and K) and 2.6 % of the non-financial business economy workforce. The sector is dominated by the manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34), as this activity represented 75.8 % of sectoral value added and 70.5 % of employment in 2004 - see Subchapter 10.1. Among the EU-27's other transport equipment manufacturing (NACE Division 35) activities, the manufacture of aerospace equipment (NACE Group 35.3; Subchapter 10.2) was by far the largest activity in 2004, with a 14.1 % share of value added for the whole of the transport equipment manufacturing sector, followed by the building and repairing of ships and boats (NACE Group 35.1; Subchapter 10.3) with 5.6 % and the manufacture of railway and tramway locomotives and rolling stock (NACE Group 35.2; see Subchapter 10.4) with a 3.1 % share.

The manufacture of transport equipment is covered by two NACE divisions, the first of which covers the manufacture of motor vehicles (NACE Division 34), while the other covers the manufacture of other types of transport equipment, namely, shipbuilding, railway rolling stock, aerospace equipment, motorcycles and bicycles, and a residual category of other transport equipment (all included under NACE Division 35).

NACE

- 34: manufacture of motor vehicles, trailers and semi-trailers;
- 34.1: manufacture of motor vehicles;
- 34.2: manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers;
- 34.3: manufacture of parts and accessories for motor vehicles and their engines;
- 35: manufacture of other transport equipment;
- 35.1: building and repairing of ships and boats;
- 35.2: manufacture of railway and tramway locomotives and rolling stock;
- 35.3: manufacture of aircraft and spacecraft;
- 35.4: manufacture of motorcycles and bicycles;
- 35.5: manufacture of other transport equipment n.e.c.

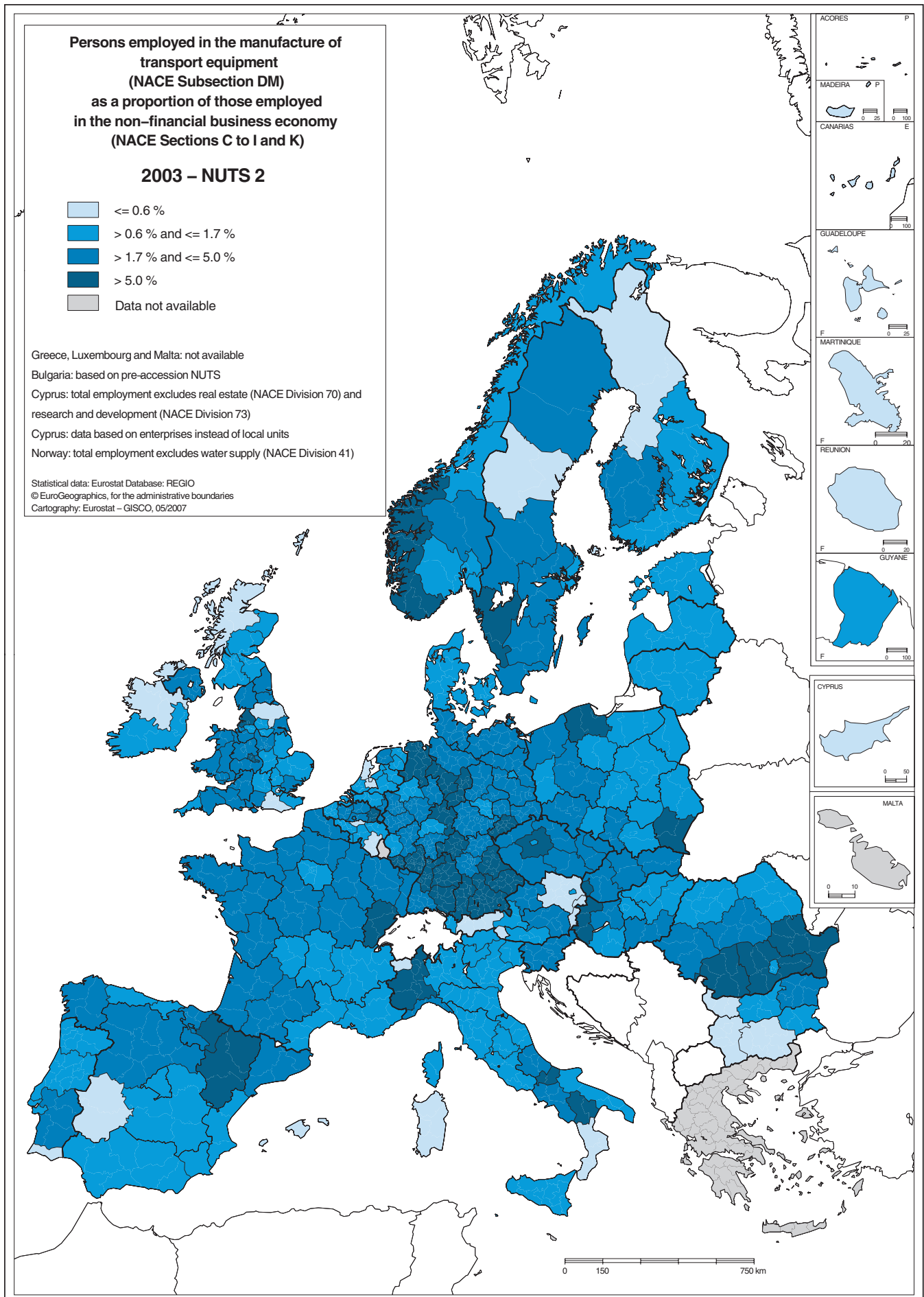


Table 10.1

Manufacture of transport equipment (NACE Subsection DM)
Structural profile, EU-27, 2004 (1)

	No. of enterprises		Turnover		Value added		Employment	
	(thousands)	(% of total)	(EUR million)	(% of total)	(EUR million)	(% of total)	(thousands)	(% of total)
Transport equipment	43.1	100.0	862 231	100.0	176 718	100.0	3 200.0	100.0
Motor vehicles, trailers and semi-trailers	18.3	42.3	704 000	81.6	134 000	75.8	2 256.0	70.5
Aircraft and spacecraft	2.2	5.2	91 000	10.6	25 000	14.1	380.0	11.9
Building and repairing of ships and boats	18.6	43.1	33 000	3.8	9 900	5.6	290.0	9.1
Railway, tramway locomotives, rolling stock	1.1	2.5	20 396	2.4	5 423	3.1	171.5	5.4
Miscellaneous transport equipment	3.0	7.0	12 500	1.4	2 900	1.6	70.0	2.2

(1) Rounded estimates based on non-confidential data.
 Source: Eurostat (SBS)

Table 10.2

Manufacture of transport equipment (NACE Subsection DM)
Structural profile: ranking of top five Member States, 2004

Rank	Value added (EUR million) (1)	Employment (thousands) (2)	Share of non-financial business economy			
			No. of enterprises (3)	Turnover (3)	Value added (3)	Employment (4)
1	Germany (70 152)	Germany (1 013.6)	Sweden (0.5 %)	Slovakia (9.3 %)	Germany (6.6 %)	Germany (4.9 %)
2	France (26 623)	France (427.3)	Netherlands (0.5 %)	Germany (8.6 %)	Czech Republic (5.1 %)	Sweden (4.2 %)
3	United Kingdom (24 978)	United Kingdom (356.6)	Finland (0.5 %)	Sweden (6.0 %)	Sweden (5.0 %)	Slovakia (3.4 %)
4	Italy (12 240)	Italy (262.0)	Slovakia (0.4 %)	France (5.6 %)	Hungary (4.8 %)	Czech Republic (3.3 %)
5	Spain (11 686)	Spain (220.8)	Estonia (0.4 %)	Czech Republic (5.3 %)	Slovakia (4.6 %)	Romania (3.2 %)

(1) Greece and Malta, not available; Luxembourg, 2003.
 (2) Greece and Malta, not available; Luxembourg and Slovenia, 2003.
 (3) Ireland, Greece, Cyprus and Malta, not available; Luxembourg, 2003.
 (4) Ireland, Greece, Cyprus and Malta, not available; Luxembourg and Slovenia, 2003.
 Source: Eurostat (SBS)

In employment terms the share of aerospace equipment manufacturing was notably lower (11.9 %) while the shares of the building and repairing of ships and boats (9.1 %) and the manufacture of railway and tramway locomotives and rolling stock (5.4 %) were higher. Miscellaneous transport equipment, namely the manufacture of motorcycles and bicycles (NACE Group 35.4) and other transport equipment manufacturing n.e.c. (NACE Group 35.5) had a combined share of just 1.6 % of transport equipment manufacturing value added and 2.2 % of employment - see Subchapter 10.5.

As can clearly be seen from Table 10.2, Germany dominated the EU-27's transport equipment manufacturing sector: Germany's EUR 70.2 billion of value added was just under two fifths of the EU-27 total, and its workforce of just over 1 million persons was just under one third of the EU-27 workforce. It was not just in absolute size that Germany dominated this sector, as it was also the most specialised Member State, in that this sector contributed more to non-financial business economy value added (6.6 %) and non-financial business economy employment (4.9 %) than in any other Member State, and it was in this sector that Germany recorded its highest contribution

to EU-27 value added of any of the industrial NACE subsections. The manufacture of transport equipment was particularly concentrated within the larger Member States, as Germany, France (15.1 % of EU-27 value added) and the United Kingdom (14.1 %) had a cumulative share of EU-27 value added equal to 68.9 % in 2004, compared with their 54.0 % share of non-financial business economy value added. This high level of concentration meant that relatively few of the Member States were specialised in the manufacture of transport equipment, with Germany, the Czech Republic, Sweden, Hungary, Slovakia and France the only Member States ⁽¹⁾ to report that their respective transport equipment manufacturing sectors contributed more to national non-financial business economy value added than the EU-27 average in 2004.

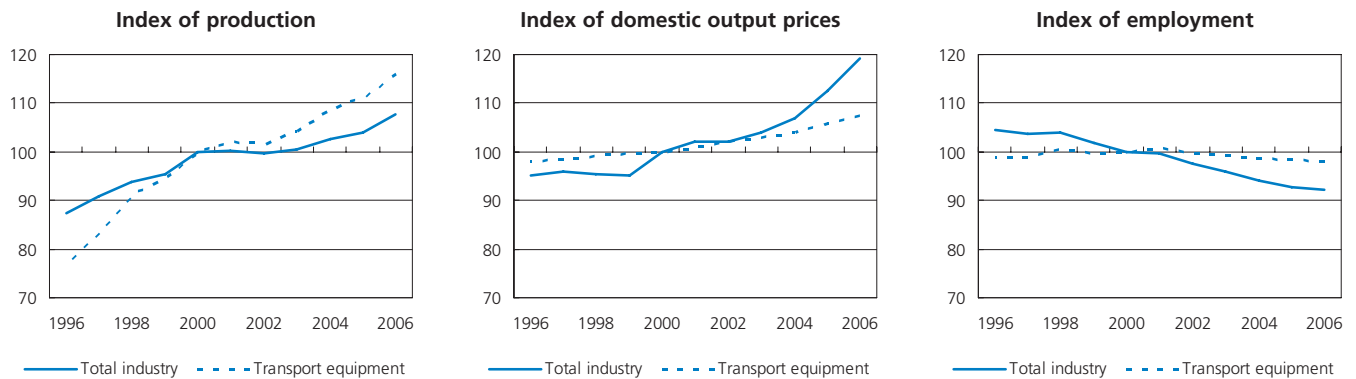
The regional specialisation of transport equipment manufacturing in employment terms is shown on the map on page 196. The top three most specialised regions (at the level of detail shown in the map) were all in

⁽¹⁾ Luxembourg, 2003; Greece, Ireland, Cyprus and Malta, not available.

Germany and German regions occupied at least half of the top ten places. Among the other Member States several regions in Romania were relatively specialised in this sector, providing evidence of the importance this activity has reached in parts of Central and Eastern Europe.

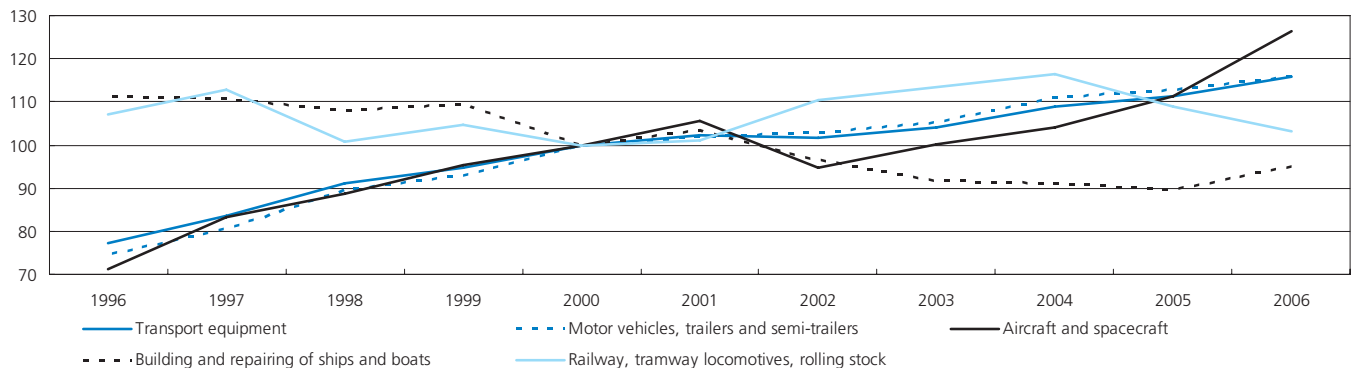
Changes in the EU-27 index of production for the manufacture of transport equipment generally took place at a more rapid pace than the industrial average during the ten years to 2006 - see Figure 10.1. On average, output rose by 4.1 % per annum compared with 2.1 % for the industrial economy as a whole. Year on year growth rates recorded for transport equipment manufacturing exceeded those for the industrial economy in each year from 1996 to 2006, except in 2002 when production fell by 0.5 % for the industrial economy as a whole and by 0.6 % for transport equipment manufacturing. Recently, particularly rapid growth was recorded for transport equipment manufacturing in 2004 and in 2006, exceeding 4 % in both years. Several Member States in central and eastern Europe recorded double-digit annual growth in the five years to 2006, ranging from a high of 19.9 % in Lithuania through Poland, Bulgaria, Romania and the Czech Republic, to 11.1 % in Slovakia.

Figure 10.1
Manufacture of transport equipment (NACE Subsection DM)
Evolution of main indicators, EU-27 (2000=100)



Source: Eurostat (STS)

Figure 10.2
Manufacture of transport equipment (NACE Subsection DM)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

The growth in output for the EU-27 as a whole was largely driven by the manufacture of motor vehicles, trailers and semi-trailers, where the index of production rose on average by 4.5 % per annum in the ten years to 2006, while for other transport equipment manufacturing growth averaged 3.3 % per annum during the same period. Figure 10.2 provides a more detailed analysis of the development of the production index and this shows a quite varied development for the various parts of other transport equipment manufacturing. The only one of these activities that recorded significant growth over the ten years to 2006 as a whole was aerospace equipment manufacturing, where the EU-27 production index rose by an average of 5.9 % per annum over the period considered. Over the same period the steady decline in output of the building and repairing of ships and boats can be contrasted with the more volatile output of the other transport equipment manufacturing activities shown.

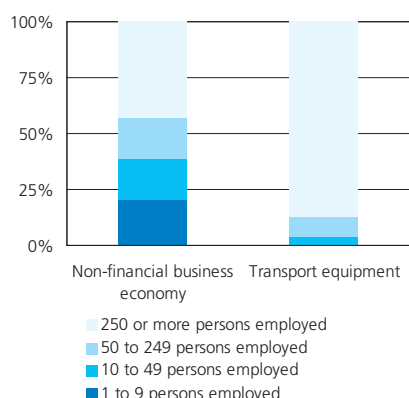
While transport equipment manufacturing employment remained more or less stable in the EU-27 during the ten year period up to 2006, this resulted from a slight increase in the employment index for the manufacture of motor vehicles, trailers and semi-trailers combined with a more rapid decline in the employment index for the smaller activity of other transport equipment manufacturing: employment in the latter increased just once during the ten year period analysed, in 2005. The manufacture of motor vehicles, trailers and semi-trailers recorded an overall annual average growth rate of employment in the EU-27 of 0.5 % in the ten years to 2006 - this activity was one of only four industrial NACE divisions ⁽²⁾ for which the EU-27 recorded an increase in employment levels over this period.

⁽²⁾ NACE Divisions 11, 12, 13 and 41, not available.

Not only was the manufacture of transport equipment concentrated within the larger Member States, it was also concentrated within relatively large enterprises, as SMEs (employing less than 250 persons) generated just 12.7 % of the EU-27's value added in 2004 (see Figure 10.3), compared with a non-financial business economy average of 57.0 %. This was by far the lowest value added contribution of SMEs recorded for any of the chapters in the present publication. The dominance of large enterprises (with 250 or more persons employed) was particularly prevalent within the manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34) where they accounted for 88.1 % of value added and 82.4 % of employment. The importance of large enterprises was particularly marked in France where they accounted for close to all value added (99.7 %) in transport equipment manufacturing in 2004, and this share was also ⁽³⁾ over 90 % in Germany, Hungary (2003) and the Czech Republic.

⁽³⁾ Hungary, 2003; Estonia, Greece, Luxembourg, not available.

Figure 10.3
Manufacture of transport equipment (NACE Subsection DM)
Share of value added by enterprise size class, EU-27, 2004



Source: Eurostat (SBS)

EMPLOYMENT CHARACTERISTICS

The most notable characteristics of the transport equipment manufacturing workforce are the very high proportions of men and the high propensity to employ on a full-time basis. Men accounted for 82.1 % of the EU-27 transport equipment manufacturing workforce in 2006, compared with a non-financial business economy average of 65.0 %. As such, this sector had the fourth highest proportion of the workforce that was male among the chapters in the present publication. The proportion of the workforce that was male was above the non-financial business economy average for both the manufacture of motor vehicles, trailers and semi-trailers (80.0 %) and the manufacture of other transport equipment (86.8 %). Across the Member States, the

proportion of men working in transport equipment manufacturing remained consistently above national non-financial business economy averages in 2006 ⁽⁴⁾. As many as 94.6 % of the EU-27's transport equipment manufacturing workforce worked on a full-time basis in 2006, with a slightly lower full-time rate in the manufacture of motor vehicles, trailers and semi-trailers (93.7 %) subsector. In 2006 in every Member State ⁽⁵⁾ full-time employment was more common in transport equipment manufacturing than in the non-financial business economy as a whole.

In terms of the age profile of the EU-27's transport equipment manufacturing workforce there was little difference compared with the non-financial business economy average when analysed according to the three age classes presented in Figure 10.4. Comparing the age structure of the two NACE divisions in this sector, the most notable difference was the proportion of the workforce that was aged 50 or over, which was 20.4 % in the manufacture of motor vehicles, trailers and semi-trailers, compared with 25.8 % for the manufacture of other transport equipment. Among the Member States the age profile of the transport equipment manufacturing workforce in Slovakia stands out, with more than two fifths (41.8 %) of the workers aged under 30, well above the Slovak average for the non-financial business economy of 27.3 %: this reflects the recent rapid expansion of this sector in Slovakia.

⁽⁴⁾ Estonia, Cyprus, Lithuania and Luxembourg, not available.

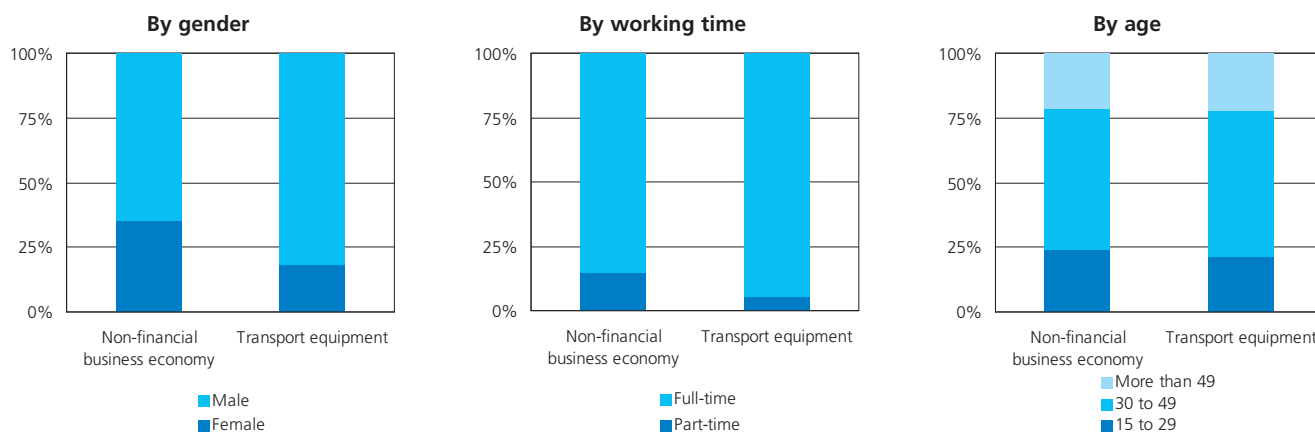
⁽⁵⁾ Ireland, Cyprus, Lithuania and Luxembourg, not available.

Structural business statistics data show that in 2004 nearly all (98.9 %) persons employed in transport equipment manufacturing were paid employees. This is higher than the industrial average (94.5 %) and the non-financial business economy average (86.2 %). In every Member State for which data is available this share was above the national industrial average. For the EU-27 as a whole this share was particularly high in aerospace manufacturing, the manufacture of railway and tramway locomotives and rolling stock and motor vehicles, trailers and semi-trailers manufacturing.

COSTS, PRODUCTIVITY AND PROFITABILITY

In 2004 the transport equipment manufacturing sector recorded a share of gross tangible investment in total expenditure (personnel costs plus purchases of goods and services plus tangible investment) of 4.0 % in the EU-27, resulting from a 4.1 % share for motor vehicles, trailers and semi-trailers manufacturing and a 3.2 % share for other transport equipment manufacturing; in both cases this ratio was below the non-financial business economy average of 4.9 %. Based on this calculation the share of investment was particularly low in railway equipment manufacturing (2.0 %) and building and repairing of ships and boats (2.9 %). The share of personnel costs were also lower for transport equipment manufacturing (15.7 %) than for the non-financial business economy as a whole (16.4 %). This however was not the case concerning other transport equipment manufacturing, where personnel costs made up 22.0 % of total expenditure. Among the Member States the share of investment was

Figure 10.4
Manufacture of transport equipment (NACE Subsection DM)
Labour force characteristics, EU-27, 2006



Source: Eurostat (LFS)

Table 10.3

**Manufacture of transport equipment (NACE Subsection DM)
Productivity and profitability, EU-27, 2004**

	Apparent labour productivity (EUR thousand)	Average personnel costs (EUR thousand)	Wage adjusted labour productivity (%)	Gross operating rate (%)
Transport equipment (1)	56.0	43.0	129.0	4.8
Motor vehicles, trailers and semi-trailers (1)	59.0	45.0	132.0	4.7
Aircraft and spacecraft (1)	66.0	55.0	120.0	5.0
Building and repairing of ships and boats (1)	34.0	29.0	119.0	5.9
Railway, tramway locomotives, rolling stock	31.6	28.9	109.4	2.4
Miscellaneous transport equipment (1)	42.0	29.0	144.0	7.7

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

relatively high in the Czech Republic, as investment was equivalent to 9.9 % of total expenditure in transport equipment manufacturing compared to a national non-financial business economy average of 5.4 %. The share of investment was highest in Romania (13.9 %), but this was broadly in line with the national average.

Apparent labour productivity in the EU-27's transport equipment manufacturing sector was EUR 56 000 per person employed in 2004 (see Table 10.3), which was around 37 % higher than the non-financial business economy average. Despite this high level of apparent labour productivity, relatively high average personnel costs weighed on the transport equipment manufacturing sector: average personnel costs were EUR 43 000 per employee, which was 56 % higher than the non-financial business economy average and the second highest among the industrial NACE subsections. As such the value added created within the EU-27's transport equipment manufacturing sector covered personnel costs (adjusted for the share of employees in persons employed) by 129.0 % in 2004, which was well below the 148.0 % average wage adjusted labour productivity ratio recorded for the non-financial business economy, and was the lowest such ratio for any industrial NACE subsection. Among the transport equipment subsectors the highest wage adjusted labour productivity ratio was 144.0 % recorded for the manufacture of miscellaneous transport equipment, still below the non-financial business economy average. Among the Member States, there was an above average wage adjusted labour productivity ratio in transport equipment manufacturing notably in Hungary and the Czech Republic, where this ratio was more than one third higher than the national non-financial business economy average.

In a similar manner, the gross operating rate for the EU-27's transport equipment manufacturing sector stood at 4.8 % in 2004, which was less than half the non-financial business economy average (11.0 %) as the high average personnel costs kept the gross operating surplus low: this was the lowest gross operating rate of any industrial NACE subsection. Note that the gross operating rate was particularly low in railway equipment manufacturing (2.4 %), and in none of the EU-27's transport equipment manufacturing subsectors did the gross operating rate exceed the non-financial business economy average in 2004. Luxembourg (2003) and Hungary recorded the highest gross operating rate in this sector (16.4 % and 13.1 % respectively) relative to the non-financial business economy average, and the Netherlands, Bulgaria and the Czech Republic were the only other Member States ⁽⁶⁾ to record an above average gross operating rate in transport equipment manufacturing.

⁽⁶⁾ Luxembourg, 2003; Ireland, Greece, Cyprus and Malta, not available.

EXTERNAL TRADE

Just over two thirds (68.4 %) of exports of transport equipment (CPA Subsection DM) by the EU-27 Member States was destined for other Member States, in other words intra-EU trade. This share was slightly higher than the average for all industrial products (CPA Sections C to E).

The EU-27 ran a significant trade surplus with non-member countries for transport equipment which was valued at EUR 74.3 billion in 2006, the second highest surplus among the industrial chapters (Chapters 2 to 13) in the present publication. Exports from the EU-27 were valued at EUR 176.3 billion, and imports at EUR 101.9 billion, 16.3 % and 8.1 % respectively of industrial trade. Over two thirds (68.1 %) of exports were accounted for by motor vehicles, trailers and semi-trailers (CPA Division 34), up 12.2 percentage points from 2001, while in contrast, only just over half (53.1 %) of the imports were accounted for by the same products, up 12.7 percentage points from 2001. These differences in the respective shares of transport equipment exports and imports were reflected in the EU-27's trade surplus for motor vehicles, trailers and semi-trailers (EUR 65.9 billion).

Table 10.4
Transport equipment (CPA Subsection DM)
External trade, EU-27, 2006

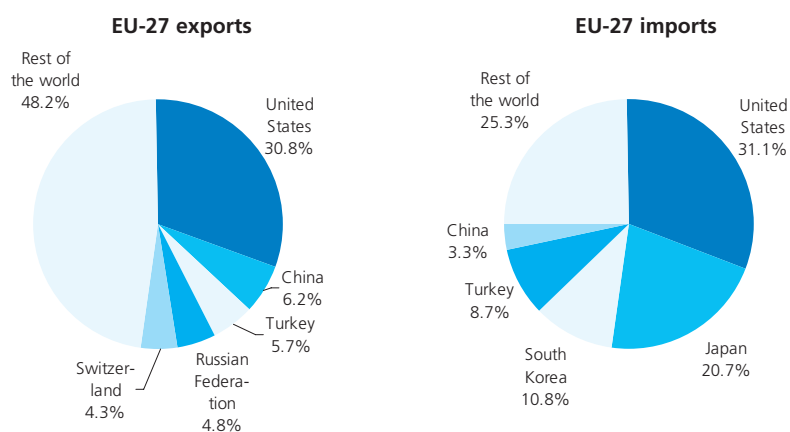
	Extra-EU exports		Extra-EU imports		Trade balance (EUR million)	Cover ratio (%)
	(EUR million)	(% share of industrial exports)	(EUR million)	(% share of industrial imports)		
Transport equipment	176 297	16.3	101 947	8.1	74 350	172.9
Motor vehicles, trailers and semi-trailers	120 014	11.1	54 085	4.3	65 929	221.9
Aircraft and spacecraft	39 250	3.6	29 469	2.4	9 781	133.2
Ships and boats	12 745	1.2	11 564	0.9	1 181	110.2
Railway and tramway locomotives and rolling-stock	2 390	0.2	745	0.1	1 645	320.9
Miscellaneous transport equipment	1 898	0.2	6 084	0.5	-4 186	31.2

Source: Eurostat (Comext)

Figure 10.5 clearly shows the importance of Asian countries for EU-27 imports of transport equipment, with Japan, South Korea and China all in the top five in 2006, although their aggregated share was only slightly more than that of the United States (31.1%) alone. Turkey, with an 8.7% share, completed the top five.

Germany was by far the most important EU exporter of transport equipment in 2006, with exports to the rest of the world valued at EUR 187.5 billion, some 33.6% of the total for all Member States. France (15.5%) was the only other Member State to report a double-digit share of exports among the EU-27 Member States. Germany and France were also the largest importers of transport equipment, although Germany's share of imports (19.9%) was considerably less than its export share. The largest share of industrial trade accounted for by transport equipment was in Spain, both for import and export, accounting for 19.4% of Spanish industrial imports and 28.4% of Spanish industrial exports.

Figure 10.5
Transport equipment (CPA Subsection DM)
Main destination of EU-27 exports and main origin of EU-27 imports, 2006



Source: Eurostat (Comext)

10.1: MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS

NACE Division 34 covers the manufacture of motor vehicles, trailers and semi-trailers. It contains three NACE groups, namely, the manufacture of motor vehicles (NACE Group 34.1), the manufacture of bodies for motor vehicles, trailers and semi-trailers (NACE Group 34.2) and the manufacture of parts and accessories for motor vehicles and their engines (NACE Group 34.3). The data presented in this subchapter does not cover the manufacture of tyres (see Chapter 5), nor that of batteries or other electrical equipment used in motor vehicles (see Chapter 9).

The motor vehicles, trailers and semi-trailers manufacturing sector is characterised by a structure that is dominated by enterprises belonging to a few very large enterprise groups. These are supported by partners and contractors who deliver systems, parts and accessories. Motor vehicle manufacturers active within the EU currently include BMW, Mercedes-Benz, Fiat, Ford Europe, General Motors Europe, PSA (Peugeot-Citroën), Renault, and Volkswagen Group, as well as several Japanese, Korean and to a lesser extent Chinese groups with production facilities in the EU. Smaller volume producers often specialise in niche markets (such as sports or luxury cars). The major goods vehicles manufacturers in the EU include Mercedes-Benz trucks, MAN, Iveco (part of Fiat), DAF (part of PACCAR), Volvo trucks (including Renault trucks) and Scania.

Demand for vehicle parts and accessories is divided between that for original equipment (OE) which is supplied directly to motor vehicle manufacturers, and that for the after-market (AM) as used for the upkeep, repair and modification of vehicles. Larger vehicle parts suppliers tend to follow the motor vehicle manufacturers and to set-up their production facilities near to their major customers; this is particularly evident in eastern Europe and in China. By locating near to vehicle assembly plants, suppliers of parts and accessories are able to deliver products more rapidly, while drawing on lower local labour costs and maximising their share of added value as they increasingly deliver complete systems.

According to VDA ⁽⁷⁾, the EU-25 produced 28.1 % of the world's passenger cars in 2006 a slightly larger share than the three NAFTA ⁽⁸⁾ countries (26.8 %), but less than the Asian total of 35.1 % split evenly between Japan and the rest of Asia – see Figure 10.6. For more information on the retail sale of motor vehicles please refer to Chapter 16.

In December 2005 the European Commission published a ten year strategy for the EU's car sector put forward by the 'CARS 21 High Level Group', and followed this up in February 2007 with a communication ⁽⁹⁾ on „A competitive automotive regulatory framework for the 21st century“. This focused on replacing many of the existing directives concerning the sector with the aim to simplify and improve legislation, and reiterated the need to reduce CO₂ emissions and develop the use of biofuels. It addressed a number of other issues including taxation linked to emissions (see Chapter 16), road safety, research and development, and access to markets in non-member countries.

In May 2007 new standards (referred to as Euro 5 and 6) to reduce the emissions of new passenger cars and light commercial vehicles were adopted ⁽¹⁰⁾. These will gradually set tighter emission limits, in particular for nitrogen oxides (NOx) and particles. Euro 5 standards will apply from September 2009 and Euro 6, which sets significantly lower emission limits for NOx emissions from diesel cars, will enter into force in 2014.

In July 2003 the European Commission adopted a proposal for a new framework directive on car type-approval ⁽¹¹⁾, extending type approval to trucks, vans, buses, and trailers, whereas it was previously limited to passenger cars, motorbikes, mopeds and tractors. The new procedures aim to simplify administrative procedures for manufacturers, improve vehicle safety, and create a European small series type-approval system which is expected to be of particular interest for smaller manufacturers. This proposal was adopted by the European Parliament in May 2007, and adoption by the Council is expected in the near future.

⁽⁷⁾ VDA (Verband der Automobilindustrie), more information at: <http://www.vda.de>.

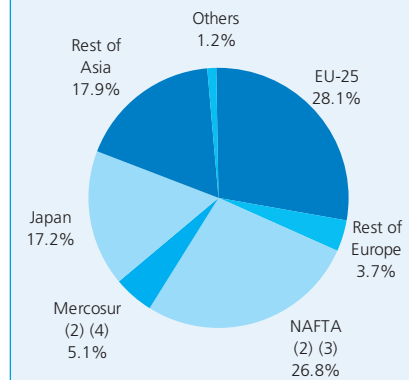
⁽⁸⁾ NAFTA (North American Free Trade Agreement) is a free trade agreement between Canada, the United States and Mexico.

⁽⁹⁾ COM(2007) 22.

⁽¹⁰⁾ Regulation (EC) No 715/2007.

⁽¹¹⁾ COM(2003) 418; COM(2004) 738.

Figure 10.6.
Largest passenger car producing countries/regions, 2006
(% share of world production) (1)



(1) Including interim or estimated figures.

(2) Including light trucks.

(3) North American Free Trade Agreement covering Canada, United States and Mexico.

(4) South American Common Market covering Argentina, Brazil, Paraguay and Uruguay.

Source: VDA, <http://www.vda.de>

STRUCTURAL PROFILE

The EU-27's motor vehicles, trailers and semi-trailers (NACE Division 34) sector consisted of 18 300 enterprises which generated EUR 134.0 billion of value added in 2004, which equated to 75.8 % of the transport equipment manufacturing (NACE Subsection DM) total. Its share of the transport equipment manufacturing workforce was less, at 70.5 %, implying a higher than average apparent labour productivity. Within this sector, the motor vehicles manufacturing subsector (NACE Group 34.1) generated 59.7 % of EU-27 sectoral value added, motor vehicle parts and accessories manufacturing (NACE Group 34.3) 34.1 % and the manufacture of bodies, trailers and semi-trailers (NACE Group 34.2) the remaining 6.0 %; in employment terms the share of motor vehicles manufacturing was considerably lower, 48.8 % and that of the other two subsectors higher.

As already noted, Germany dominated transport equipment manufacturing in general, and this was particularly true for the manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34) where it generated close to half (45.8 %) of the EU-27's value added in 2004 - see Table 10.6. Within the subsector of the manufacture of motor vehicles (NACE Group 34.1) Germany's share rose to 49.4 % of EU-27 value added, Germany's third highest share among the non-financial business economy NACE groups for which data are available.

Unsurprisingly Germany was the most specialised Member State regarding the manufacture of motor vehicles, trailers and semi-trailers, as this sector contributed 5.7 % of German non-financial business economy (NACE Sections C to I and K) value added. Looking at the two smaller subsectors, Sweden recorded a particularly high specialisation in the manufacture of bodies, trailers and semi-trailers, and the Czech Republic in the manufacture of motor vehicle parts and accessories.

Table 10.5
Manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34)
Structural profile, EU-27, 2004

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Motor vehicles, trailers and semi-trailers (1)	18.3	704 000	134 000	2 256.0
Motor vehicles (1)	2.1	507 000	80 000	1 100.0
Bodies; trailers and semi-trailers (1)	7.0	30 000	8 000	180.0
Motor vehicle parts and accessories	9.2	167 252	45 639	934.5

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

Table 10.6
Manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34)
Structural profile: ranking of top five Member States, 2004

Rank	Share of EU-27 value added (%) (1)	Share of EU-27 employment (%) (2)	Value added specialisation ratio (EU-27=100) (3)	Employment specialisation ratio (EU-27=100) (4)
1	Germany (45.8)	Germany (38.7)	Germany (218.7)	Germany (234.0)
2	France (14.4)	France (12.4)	Czech Republic (174.1)	Sweden (182.0)
3	United Kingdom (9.7)	United Kingdom (9.0)	Hungary (168.8)	Czech Republic (148.6)
4	Spain (6.8)	Italy (7.4)	Sweden (155.4)	Slovakia (140.2)
5	Italy (5.3)	Spain (7.2)	Slovakia (154.8)	Belgium (110.7)

(1) Greece, Luxembourg and Malta, not available.
(2) Greece, Luxembourg and Malta, not available; Slovenia, 2003.
(3) Ireland, Greece, Cyprus, Luxembourg and Malta, not available.
(4) Ireland, Greece, Cyprus, Luxembourg and Malta, not available; Slovenia, 2003.
Source: Eurostat (SBS)

Table 10.7
Production of selected products - motor vehicles, trailers and semi-trailers (CPA Division 34), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Motor vehicles with a petrol engine > 1 500 cm ³ (including motor caravans of a capacity > 3 000 cm ³) (excluding vehicles for transporting <= 10 persons, snowmobiles, golf cars and similar vehicles)	34.10.22.30	119 405	5 880	units
Motor vehicles with a diesel or semi-diesel engine > 1 500 cm ³ but <= 2 500 cm ³ (excluding vehicles for transporting <= 10 persons, motor caravans, snowmobiles, golf cars and similar vehicles)	34.10.23.30	96 646	5 600	units
Parts and accessories of bodies (including cabs), n.e.c.	34.30.30.90	32 503	-	-
Goods vehicles with a diesel or semi-diesel engine, of a gross vehicle weight <= 5 tonnes (excluding dumpers for off-highway use)	34.10.41.10	16 850	1 362	units
Vehicle compression-ignition internal combustion piston engines (diesel or semi-diesel) (excluding for railway or tramway rolling stock)	34.10.13.00	14 828	5 052	units
Vehicle reciprocating piston engines of a cylinder capacity > 1 000 cm ³	34.10.12.00	12 719	8 309	units
Gear boxes	34.30.20.33	10 921	50 141	units
Goods vehicles with compression-ignition internal combustion piston engine (diesel or semi-diesel), of a gross vehicle weight > 20 tonnes (excluding dumpers designed for off-highway use)	34.10.41.40	8 374	127	units
Goods vehicles with a diesel or semi-diesel engine, of a gross vehicle weight > 5 tonnes but <= 20 tonnes (including vans) (excluding dumpers for off-highway use, tractors)	34.10.41.30	8 123	186	units
Drive-axles with differential	34.30.20.35	4 842	20 533	units

(1) Estimated.
Source: Eurostat (PRODCOM)

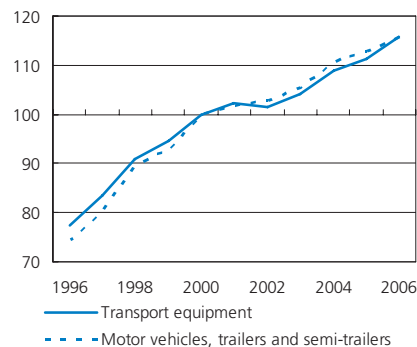
The evolution of output for the manufacture of motor vehicles, trailers and semi-trailers generally followed an upward path between 1996 and 2006, as year on year changes in the production index for the EU-27 were negative just once, in 2002 (-0.6%). In relation to transport equipment manufacturing as a whole, the index of production rose at a faster pace, gaining an average of 4.5 % per annum over the period considered (compared with 4.1 %). This was the second highest rate of growth over this period among all industrial NACE divisions, slower only than the manufacture of radio, television and communication equipment and apparatus (NACE Division 32).

COSTS, PRODUCTIVITY AND PROFITABILITY

The share of gross tangible investment in total expenditure was 4.1 % in the motor vehicles, trailers and semi-trailers manufacturing sector, marginally above the transport equipment average, while the share of personnel costs was below average, 14.2 % compared with 15.7 % for transport equipment manufacturing as a whole.

Persons employed in motor vehicles, trailers and semi-trailers manufacturing generated an average of EUR 59 000 of value added in 2004, above the transport equipment manufacturing average (EUR 56 000). There was a stark contrast between the motor vehicles manufacturing subsector's apparent labour productivity (EUR 70 000 per person employed) and that of the other two subsectors (below EUR 50 000). This disparity was also reflected in average personnel costs, as employees cost an average of EUR 55 000 within the motor vehicles manufacturing subsector compared with less than EUR 36 000 in the other two subsectors. These different productivity and

Figure 10.7
Manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

average personnel costs balanced to a large extent, as the EU-27's wage adjusted labour productivity ratio for the motor vehicles manufacturing subsector, and the manufacturing of bodies, trailers and semi-trailers subsector was the same, 130.0 %, and as such only slightly lower than this ratio for the parts and accessories for motor vehicles subsector (136.8 %). Several of the Member States that joined the EU in 2004 recorded particularly high wage adjusted labour productivity ratios in this sector, notably Lithuania, Poland and Hungary where this ratio was over 300 %.

The gross operating rate for the EU-27's motor vehicles, trailers and semi-trailers manufacturing sector was low, just 4.7 %. This rate was particularly low for the motor vehicles manufacturing subsector where it was just 3.7 % compared with 7.0 % for bodies, trailers and semi-trailers manufacturing and 7.5 % for the motor vehicle parts and accessories subsector.

EXTERNAL TRADE

Total exports of motor vehicles, trailers and semi-trailers (CPA Division 34) in 2006 by EU-27 Member States was EUR 445.3 billion, of which 26.9 % (EUR 120.0 billion) was extra-EU trade. Extra-EU trade accounted for 14.1 % of imports by EU-27 Member States, and was valued at EUR 54.1 billion, giving the EU-27 a trade surplus of EUR 65.9 billion. This trade surplus was mainly fuelled by exports to the United States and to a lesser extent to other European countries, Japan and China. Germany accounted for more than one third (35.7 %) of total (intra- and extra-EU) exports made by EU-27 Member States in 2006, followed by France (11.4 %) and Spain (8.1 %). Spain, Slovakia, Hungary and Germany were the most specialised Member States in terms of exporting motor vehicles, trailers and semi-trailers relative to their exports of all industrial (CPA Sections C to E) goods.

Germany also recorded by far the highest trade surplus (intra and extra-EU trade) for motor vehicles, trailers and semi-trailers in 2006 at EUR 91.8 billion, which was more than fourteen times the next highest balance which was registered in the Czech Republic. The largest deficits were recorded in the United Kingdom and Italy (EUR 20.2 billion and EUR 11.0 billion respectively).

Table 10.8

Motor vehicles, trailers and semi-trailers (CPA Division 34)

External trade, EU-27, 2006

	Extra-EU exports		Extra-EU imports		Trade balance (EUR million)	Cover ratio (%)
	(EUR million)	(% share of chapter)	(EUR million)	(% share of chapter)		
Motor vehicles, trailers and semi-trailers	120 014	68.1	54 085	53.1	65 929	221.9
Motor vehicles	87 978	49.9	38 805	38.1	49 173	226.7
Bodies; trailers and semi-trailers	2 634	1.5	534	0.5	2 100	492.9
Motor vehicle parts and accessories	29 402	16.7	14 746	14.5	14 656	199.4

Source: Eurostat (Comext)

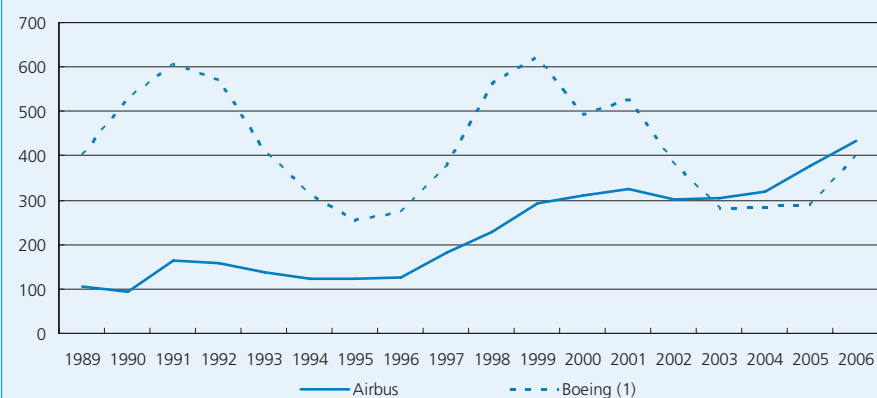
10.2: AEROSPACE EQUIPMENT

This subchapter includes information on the production of aircraft that are used for the transport of passengers or freight, as well as military applications. The data presented also cover other means of air transport, for example gliders, balloons and spacecraft, as well as the manufacture of parts and accessories which are used in the construction of aerospace equipment; all of these activities are classified under NACE Group 35.3.

The aerospace equipment manufacturing sector is highly concentrated within the EU and the United States, and within a few large manufacturers with a pyramidal supply chain: manufacturers of aircraft, missiles, space equipment and engines at the top of the pyramid, followed by a second-tier of suppliers making systems, medium-sized enterprises producing structural elements and components, and a final tier of SMEs producing materials, software and services (note that these may be excluded from data on this sector, as their principal activity may not be the manufacture of aerospace equipment). There are two main market segments for the aerospace sector, military and civilian, with the former dependent on government defence spending plans and the latter cyclical.

Globally the main producers of civil aircraft are Boeing and Airbus - Figure 10.8 shows their delivery figures since 1989 which also clearly indicates the cyclical nature of this part of the sector. The delivery of the first Airbus A380 aeroplane is expected by October 2007, while the first of Boeing's new 787 Dreamliner range is due to be completed in July 2007 and enter service in 2008. In December 2006 Airbus formally launched the A350XWB series which is seen as a competitor to the 787 Dreamliner, and is expected to come into service sometime around 2013.

Figure 10.8 Deliveries of commercial aircraft (number)



(1) Including McDonnell Douglas for all years. Source: Boeing (<http://www.boeing.com>) and Airbus (<http://www.airbus.com>)

Aerospace equipment manufacturing is one of the most important manufacturing sectors in terms of research and development (R&D). Table 10.9 shows the level of intra-mural R&D expenditure by this sector in seven of the Member States (that collectively accounted for more than four fifths of EU-27 value added in this sector). In these Member States alone intra-mural R&D expenditure exceeded EUR 6.5 billion in this sector. This sector's contribution to manufacturing (NACE Section D) R&D was particularly significant in France and the United Kingdom, the two EU-27 Member States most specialised in this sector.

Table 10.9 Manufacture of aircraft and spacecraft (NACE Group 35.3) Intra-mural research and development expenditure: selected Member States, 2004

	R&D expenditure (EUR million)	Share of manufacturing R&D expenditure (%)
DE	1 327.7	3.2
FR	2 603.1	16.7
AT	3.9	0.2
PT	0.3	2.5
RO	0.2	3.2
SE	220.9	3.7
UK (1)	2 400.2	19.1

(1) Share of manufacturing R&D expenditure, 2003. Source: Eurostat (SBS)

Table 10.10 Manufacture of aircraft and spacecraft (NACE Group 35.3) Structural profile: ranking of top five Member States, 2004

Rank	Share of EU-27 value added (%) (1)	Share of EU-27 employment (%) (2)	Value added specialisation ratio (EU-27=100) (3)	Employment specialisation ratio (EU-27=100) (4)
1	United Kingdom (37.8)	United Kingdom (26.5)	United Kingdom (199.6)	France (209.9)
2	Germany (22.2)	France (24.0)	France (131.6)	United Kingdom (184.4)
3	France (18.5)	Germany (19.7)	Germany (105.8)	Sweden (138.8)
4	Italy (7.1)	Italy (7.2)	Sweden (97.0)	Germany (119.1)
5	Spain (3.6)	Spain (3.8)	Belgium (69.8)	Belgium (88.9)

(1) Estonia, Greece, Latvia, Luxembourg and Malta, not available; Bulgaria, Ireland and Slovenia, 2003.
 (2) Estonia, Greece, Luxembourg and Malta, not available; Bulgaria, Ireland and Slovenia, 2003.
 (3) Estonia, Ireland, Greece, Cyprus, Latvia, Luxembourg and Malta, not available; Bulgaria and Slovenia, 2003.
 (4) Estonia, Ireland, Greece, Cyprus, Luxembourg and Malta, not available; Bulgaria and Slovenia, 2003.
 Source: Eurostat (SBS)

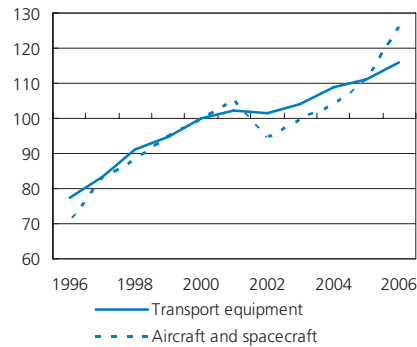
STRUCTURAL PROFILE

The EU-27's aerospace equipment manufacturing (NACE Group 35.3) sector consisted of 2 200 enterprises which created EUR 25 billion of value added in 2004, which was 14.1 % of the transport equipment manufacturing (NACE Subsection DM) total. This share of value added was considerably higher than the 11.9 % contribution to the EU-27's transport equipment manufacturing workforce, implying a high apparent labour productivity. The United Kingdom dominated this sector with a 37.8 % share of EU-27 value added (see Table 10.10), followed by Germany (22.2 %) and France (18.5 %). These three large Member States dominated this sector to such an extent that no other Member States were relatively specialised in this activity, in the sense that the contribution of this sector to national non-financial business economy value added was below the EU-27 average in all other Member States ⁽¹²⁾.

The evolution of the index of production for EU-27 aerospace equipment manufacturing followed a rather similar pattern to that for transport equipment manufacturing as a whole, although with a much greater contraction in activity after 2001, and a more rapid recovery after 2002. The effects of the general economic slowdown, coupled with a downturn in air transport after the terrorist attacks in the United States in September 2001, resulted in a 10.2 % contraction in output in 2002. Subsequently growth returned, and the output of aerospace equipment manufacturing rose by an average of 7.4 % per annum between 2002 and 2006, making it one of the fastest growing industrial NACE groups during this period.

⁽¹²⁾ Bulgaria and Slovenia, 2003; Estonia, Ireland, Greece, Cyprus, Latvia, Luxembourg and Malta, not available.

Figure 10.9
Manufacture of aircraft and spacecraft (NACE Group 35.3)
Index of production, EU-27 (2000=100)



Source: Eurostat (STS)

COSTS, PRODUCTIVITY AND PROFITABILITY

The EU-27's aerospace equipment manufacturing sector had quite a low share of gross tangible investment in total expenditure, just 3.6 %, below the transport equipment average of 4.0 %, and therefore well below the non-financial business economy (NACE Sections C to I and K) average of 4.9 %. In contrast the share of personnel costs was particularly high, 21.9 % compared to a transport equipment average of 15.7 %.

Nevertheless, apparent labour productivity in this sector was high, an average of EUR 66 000 of value added was generated per person employed in the EU-27, some EUR 10 000 above the average for the whole of transport equipment manufacturing and the second highest ratio among the NACE groups that make up the transport equipment manufacturing sector. Average personnel costs per employee were EUR 55 000, which was EUR 12 000 above the transport equipment manufacturing average. Combining the ratios of apparent labour productivity and average personnel costs, the EU-27's wage adjusted productivity ratio for aerospace equipment manufacturing showed that value added covered personnel costs (adjusted for the share of employees in persons employed) by 120.0 % in 2004. This was below the transport equipment manufacturing average (129.0 %). In all Member States ⁽¹³⁾ value added per person employed exceeded personnel costs per employee, except in France where the wage adjusted labour productivity ratio was just 80.3 %.

⁽¹³⁾ Bulgaria, Ireland and Slovenia, 2003; Estonia, Greece, Cyprus, Latvia, Luxembourg and Malta, not available.

The profitability of the EU-27's aerospace equipment manufacturing sector in 2004, as measured by the gross operating rate (5.0 %), stood slightly above the transport equipment manufacturing average (4.8 %), but was less than half the non-financial business economy average (11.0 %). This was in large part influenced by low rates in some of the largest Member States in this sector. In line with its low wage adjusted labour productivity, France recorded a negative gross operating rate (due to a gross operating deficit as personnel costs were higher than value added) and Germany recorded a gross operating rate of just 2.4 % compared to a non-financial business economy average of 10.5 %. In contrast the largest Member State in this sector, namely the United Kingdom, recorded a gross operating rate of 16.9 %, its highest rate among the transport equipment NACE groups.

EXTERNAL TRADE

In 2006 total trade in aerospace equipment (CPA Group 35.3) by EU-27 Member States was fairly evenly split between intra-EU and extra-EU trade. Extra-EU exports were valued at EUR 39.2 billion, some 51.5 % of total exports, and extra-EU imports were valued at EUR 29.5 billion, equivalent to 49.9 % of total imports. Some 22.3 % of the EU-27's exports of transport equipment to non-member countries in 2006 were accounted for by aerospace equipment, while these products share of transport equipment imports was 28.9 %.

France, Germany and the United Kingdom dominated trade in aerospace equipment, accounting together for 84.1 % of exports by EU-27 Member States and 78.5 % of imports. France (EUR 12.1 billion) and the United Kingdom (EUR 5.8 billion) recorded the largest trade surplus, and Ireland (EUR 1.3 billion) recorded the largest trade deficit reflecting the demand for aircraft in Ireland's growing air transport sector.

10.3: SHIPS AND BOATS

NACE Group 35.1 covers the building and repairing of ships and boats. Note that, unlike for motor vehicles, this activity does not include the manufacture of parts or (marine) engines.

STRUCTURAL PROFILE

EU-27 value added for the building and repairing of ships and boats (NACE Group 35.1) stood at EUR 9.9 billion in 2004, with 290 000 persons employed in the 18 600 enterprises that reported shipbuilding or repairing as their main activity. As such this sector contributed 5.6 % of transport equipment (NACE Subsection DM) value added, and 9.1 % of the transport equipment workforce. The building

and repairing of ships (NACE Class 35.11) was the largest subsector, accounting for just under three quarters of the EU-27's value added in this sector, with the remaining quarter derived from the building and repairing of pleasure and sporting boats (NACE Class 35.12). Production was spread over a relatively large number of Member States, with the 18.1 % share of EU-27 value added in the United Kingdom and 17.1 % share in Italy the highest shares among the Member States, just ahead of the other large Member States. Those Member States with a coastline tended to report relatively high shares of transport equipment value added within this sector and this was particularly the case in Bulgaria (2003), Lithuania and Finland

where more than half of transport equipment value added was generated in this sector. High shares were also recorded in the other Baltic Member States, Cyprus, Denmark, the Netherlands and Romania ⁽¹⁴⁾.

Output from the building and repairing of ships and boats declined most years between 1996 and 2006, with an average contraction of 1.6 % per annum in the EU-27. During this period annual growth was only recorded in 1999 and 2001, and most recently in 2006 when output expanded by 5.8 %.

⁽¹⁴⁾ Bulgaria and Luxembourg, 2003; Greece and Malta, not available.

Table 10.11

**Building and repairing of ships and boats (NACE Group 35.1)
Structural profile, EU-27, 2004 (1)**

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Building and repairing of ships and boats	18.6	33 000	9 900	290.0
Building and repairing of ships	9.5	:	7 000	230.0
Building and repairing of pleasure and sporting boats	9.1	8 000	2 600	63.8

(1) Rounded estimate based on non-confidential data.
Source: Eurostat (SBS)

Table 10.12

**Building and repairing of ships and boats (NACE Group 35.1)
Structural profile: ranking of top five Member States, 2004**

Rank	Share of EU-27 value added (%) (1)	Share of EU-27 employment (%) (1)	Value added specialisation ratio (EU-27=100) (2)	Employment specialisation ratio (EU-27=100) (2)
1	United Kingdom (18.1)	Italy (12.4)	Romania (373.3)	Finland (335.7)
2	Italy (17.1)	France (12.1)	Lithuania (302.9)	Romania (305.8)
3	France (15.8)	Poland (11.9)	Finland (282.3)	Estonia (253.1)
4	Germany (12.7)	United Kingdom (11.8)	Estonia (211.1)	Lithuania (247.6)
5	Netherlands (8.7)	Spain (10.4)	Poland (190.8)	Poland (198.6)

(1) Greece and Malta, not available; Bulgaria and Luxembourg, 2003.

(2) Ireland, Greece, Cyprus and Malta, not available; Bulgaria and Luxembourg, 2003.

Source: Eurostat (SBS)

Table 10.13

Production of selected products - ships and boats (CPA Group 35.1), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Bulk carriers, general cargo ships, container ships, ro-ro vessels, car carriers, gas carriers, etc., and other vessels for the transport of both persons and goods, sea-going	35.11.24.70	4 574	3 140	BRT
Sea-going motorboats for pleasure or sports (excluding outboard motorboats)	35.12.13.30	2 539	c	units
Maintenance, repair, reconstruction, fitting out services of pleasure and sporting boats	35.12.90.00	1 068	-	-
Crude oil and other tankers, sea-going	35.11.22.30	733	444	BRT
Non sea-going motorboats for pleasure or sports, > 7.5 m in length (excluding outboard motorboats)	35.12.13.57	642	c	units
Non sea-going sailboats for pleasure or sports, > 100 kg in weight and 7.5 m in length	35.12.11.57	396	5	units
Conversion of ships, boats and floating structures (excluding yachts, other pleasure or sports vessels, rowing boats and canoes)	35.11.92.00	340	-	-
Rigid boats > 100 kg in weight and <= 7.5 m in length (including outboard motorboats, rowing boats and canoes)	35.12.13.95	272	43	units
Non sea-going motorboats for pleasure or sports, <= 7.5 m in length (excluding outboard motorboats)	35.12.13.55	192	13	units

(1) Estimated.

Source: Eurostat (PRODCOM)

COSTS, PRODUCTIVITY AND PROFITABILITY

Gross tangible investment in the EU-27's building and repairing of ships and boats sector was equivalent to 2.9 % of total expenditure in 2004, one of the lowest shares among the transport equipment NACE groups.

The apparent labour productivity of the EU-27's building and repairing of ships and boats sector was relatively low at EUR 34 000 per person employed in 2004, while average personnel costs were EUR 29 000 per employee, resulting in a wage adjusted labour productivity ratio of 119.0 %. The gross operating rate was 5.9 %, above the transport equipment average of 4.8 %.

EXTERNAL TRADE

Extra-EU trade accounted for 66.8 % of exports of ships and boats (CPA Group 35.1) by the EU-27 Member States in 2006 and 72.2 % of imports: these were the highest shares of any of the product headings covered in Subchapters 10.1 to 10.5. The EU-27 ran a trade surplus of EUR 1.2 billion for ships and boats in 2006, based on exports of EUR 12.7 billion and imports of EUR 11.6 billion. This was equivalent to 7.2 % of exports of all transport equipment (CPA Subsection DM) and 11.3 % of imports.

Spain, Italy, Germany and Poland were the leading exporters (intra- and extra-EU combined) of ships and boats in 2006, each with over 10 % or more of all exports made by EU-27 Member States. Italy and Poland recorded the largest trade surplus and Greece the largest trade deficit.

10.4: RAILWAY EQUIPMENT

The manufacture of railway and tramway locomotives and rolling stock is covered by NACE Group 35.2).

STRUCTURAL PROFILE

Value added generated by the 1 100 enterprises with railway and tramway locomotives and rolling stock manufacturing (NACE Group 35.2) as their main activity in the EU-27 was EUR 5.4 billion in 2004, equivalent to a 3.1 % share of the transport equipment manufacturing (NACE Subsection DM) total. The workforce in this sector was 5.4 % of the transport equipment manufacturing workforce, and numbered 171 500 persons. Slightly more than one quarter of the EU-27's value added was accounted for by Germany (26.3 %), followed by France, Italy and Spain each with more than 10 % of the EU-27 total. In relative terms, this sector accounted for 46.2 % of

transport equipment manufacturing value added in Latvia, by far the highest share, and this sector was also relatively important in Slovakia and Romania ⁽¹⁵⁾.

Railway and tramway locomotives and rolling stock manufacturing saw output rise between 2000 and 2004 by a total of 16.4 %, and in the following two years fell back by 11.4 %. Among the five largest Member States this pattern of growth and sharp contraction in output since 2000 was observed in both France and the United Kingdom and to a lesser extent in Germany, while the opposite pattern, namely contraction followed by growth was recorded in Spain and to a lesser extent Italy.

⁽¹⁵⁾ Ireland, Luxembourg, Portugal and Slovenia, 2003; Belgium, Denmark, Estonia, Greece and Malta, not available.

COSTS, PRODUCTIVITY AND PROFITABILITY

In 2004 gross tangible investment in the EU-27's railway and tramway locomotives and rolling stock manufacturing sector was equivalent to 2.0 % of total expenditure, the lowest share among the transport equipment manufacturing NACE groups. At EUR 31 600 per person employed in 2004, the apparent labour productivity in this sector was also the lowest among the transport equipment manufacturing NACE groups, as were average personnel costs at EUR 28 900 per employee. Despite the low average personnel costs, the wage adjusted labour productivity ratio of 109.4 % was also the lowest among the NACE groups that constitute transport equipment manufacturing, and this contributed to the low gross operating rate of 2.4 %, just half the average for transport equipment manufacturing.

Table 10.14

Manufacture of railway, tramway locomotives, rolling stock (NACE Group 35.2) Structural profile: ranking of top five Member States, 2004

Rank	Share of EU-27 value added (%) (1)	Share of EU-27 employment (%) (2)	Value added specialisation ratio (EU-27=100) (3)	Employment specialisation ratio (EU-27=100) (4)
1	Germany (26.3)	Germany (16.7)	Romania (542.1)	Slovakia (515.3)
2	France (14.8)	Romania (15.9)	Slovakia (368.5)	Romania (498.2)
3	Italy (12.4)	Poland (10.1)	Latvia (357.6)	Latvia (421.9)
4	Spain (10.7)	France (8.3)	Czech Republic (296.9)	Czech Republic (210.6)
5	United Kingdom (9.6)	United Kingdom (7.4)	Hungary (263.1)	Hungary (182.6)

(1) Belgium, Denmark, Estonia, Greece and Malta, not available; Ireland, Luxembourg, Portugal and Slovenia, 2003.

(2) Belgium, Denmark, Estonia, Greece, Malta and Netherlands, not available; Ireland, Luxembourg, Portugal and Slovenia, 2003.

(3) Belgium, Denmark, Estonia, Ireland, Greece, Cyprus and Malta, not available; Luxembourg, Portugal and Slovenia, 2003.

(4) Belgium, Denmark, Estonia, Ireland, Greece, Cyprus, Malta and Netherlands, not available; Luxembourg, Portugal and Slovenia, 2003.

Source: Eurostat (SBS)

Table 10.15

Production of selected products - railway and tramway locomotives and rolling-stock (CPA Group 35.2), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Repair and maintenance of railway and tramway locomotives and rolling-stock and of mechanical (and electro mechanical) signalling, safety or traffic control equipment	35.20.91.00	4 707	-	-
Parts of locomotives or rolling-stock	35.20.40.30	4 266	-	-
Self-propelled railway or tramway coaches, vans and trucks powered from an external source of electricity (excluding railway or tramway maintenance or service vehicles)	35.20.20.30	3 344	2	units
Rail/tramway passenger coaches; luggage vans, post office coaches and other special purpose rail/tramway coaches excluding rail/tramway maintenance/service vehicles, self-propelled	35.20.32.00	1 877	1	units
Rail locomotives powered from an external source of electricity	35.20.11.00	1 038	1	units
Self-propelled railway or tramway coaches, vans and trucks (excluding those powered by electricity, railway and tramway maintenance or service vehicles)	35.20.20.90	765	1	units
Reconditioning of railway and tramway locomotives and rolling-stock	35.20.92.00	603	-	-
Railway or tramway track fixtures and fittings, and mechanical or electromechanical signalling, safety or traffic control equipment	35.20.40.55	599	177 135	kg
Diesel-electric locomotives	35.20.12.00	332	0	units
Rail/tramway goods vans/wagons including self-discharging vans/ wagons, open with non-removable sides <= 60 cm, tank wagons etc., insulated, refrigerated/covered, closed vans/wagons	35.20.33.50	229	6	units

(1) Estimated.

Source: Eurostat (PRODCOM)

EXTERNAL TRADE

Extra-EU trade accounted for 31.2 % of exports of railway and tramway locomotives and rolling-stock (CPA Group 35.2) by the EU-27 Member States in 2006 and 15.9 % of imports: The EU-27 exported EUR 2.4 billion of railway and tramway locomotives and rolling-stock in 2006, and recorded a trade surplus of EUR 1.6 billion. As such these products accounted for 1.4 % of all exports of transport equipment (CPA Subsection DM) and 0.7 % of imports. The largest proportion of exports (intra and extra-EU trade) by EU-27 Member States was accounted for by Germany (37.0 %), followed by Austria (14.2 %), and the same two Member States recorded the largest trade surplus while the Netherlands and Sweden recorded the largest deficits.

10.5: MISCELLANEOUS TRANSPORT EQUIPMENT

This subchapter brings together information on the manufacture of motorcycles and bicycles (NACE Group 35.4), and the manufacture of other transport equipment (NACE Group 35.5), such as wheelbarrows, hand-carts and luggage trucks.

MANUFACTURE OF MOTORCYCLES AND BICYCLES

The EU-27's motorcycles and bicycles manufacturing subsector (NACE Group 35.4) consisted of 2 200 enterprises which created EUR 2.6 billion of value added in 2004, equivalent to a 1.5 % share of the transport equipment manufacturing (NACE Subsection DM) total: around one half of this was created in the motorcycle manufacturing (NACE Class 35.41) subsector. The sector employed 60 000 persons, 1.9 % of the transport equipment manufacturing total. Italy was the largest producer of motorcycles and bicycles in the EU-27, with a 35.8 % share of EU-27 value added and a 33.9 % share of the workforce, as well as being the most specialised producer of motorcycles and bicycles within the EU-27 in terms of the sector's contribution to non-financial business economy (NACE Sections C to I and K) value added.

Table 10.16

Miscellaneous transport equipment (NACE Groups 35.4 and 35.5) Structural profile, EU-27, 2004 (1)

	No. of enterprises (thousands)	Turnover (EUR million)	Value added (EUR million)	Employment (thousands)
Miscellaneous transport equipment	3.0	12 500	2 900	70.0
Motorcycles and bicycles	2.2	11 500	2 600	60.0
Other transport equipment n.e.c.	0.7	1 010	348	9.0

(1) Rounded estimates based on non-confidential data.
Source: Eurostat (SBS)

The EU-27's motorcycles and bicycles manufacturing subsector combined an apparent labour productivity of EUR 43 000 per person employed in 2004 with low average personnel costs (EUR 29 000 per employee) to leave a wage adjusted labour productivity ratio of 146.0 %, the highest among the transport equipment manufacturing NACE groups.

The EU-27 ran a trade deficit for motorcycles and bicycles (CPA Group 35.4) that was valued at almost EUR 4.2 billion in 2006, with exports valued at just EUR 1.8 billion and imports 3.4 times as high at EUR 5.9 billion. Extra-EU exports represented only 19.8 % of all exports of motorcycles and bicycles by the EU-27 Member States. Italy and Austria recorded the largest trade surplus (intra- and extra-EU combined) for these products in 2006, and the largest deficits were recorded by France, Germany and the United Kingdom.

Table 10.17

Production of selected products - miscellaneous transport equipment (CPA Groups 35.4 and 35.5), EU-27, 2006 (1)

	Prodcom code	Production value (EUR million)	Volume of sold production (thousands)	Unit of volume
Parts and accessories for motorcycles, mopeds and scooters (excluding saddles)	35.41.20.90	1 720	-	-
Non-motorized bicycles and other cycles with ball bearings (including delivery tricycles)	35.42.10.50	1 670	10 401	units
Scooters with an engine capacity > 50 cm ³ but <= 250 cm ³	35.41.12.13	1 255	622	units
Motorcycles with an engine capacity > 500 cm ³ but <= 800 cm ³	35.41.12.50	983	172	units
Vehicles not mechanically propelled including industry trolleys, barrows, luggage trucks, hopper-trucks, hand pulled golf trolleys excluding shopping trolleys	35.50.10.00	704	9 248	units
Motorcycles, and cycles fitted with an auxiliary motor, with an engine capacity <= 50 cm ³	35.41.11.00	678	530	units
Parts of frames, front forks, brakes, coaster braking hubs, hub brakes, pedals crank-gear and free-wheel sprocket-wheels for bicycles, other non-motorized cycles and side-cars	35.42.20.19	412	-	-
Motorcycles with an engine capacity > 250 cm ³ but <= 500 cm ³	35.41.12.30	368	77	units
Invalid carriages motorized or mechanically propelled	35.43.11.90	249	168	units
Invalid carriages not mechanically propelled	35.43.11.30	249	862	units

(1) Estimated.
Source: Eurostat (PRODCOM)

Table 10.18

Miscellaneous transport equipment (CPA Groups 35.4 and 35.5)
External trade, EU-27, 2006

	Extra-EU exports		Extra-EU imports		Trade balance (EUR million)	Cover ratio (%)
	(EUR million)	(% share of chapter)	(EUR million)	(% share of chapter)		
Miscellaneous transport equipment	1 898	1.1	6 084	6.0	-4 186	31.2
Motorcycles and bicycles	1 752	1.0	5 945	5.8	-4 192	29.5
Other transport equipment n.e.c.	146	0.1	140	0.1	6	104.2

Source: Eurostat (Comext)

**MANUFACTURE OF OTHER TRANSPORT
EQUIPMENT N.E.C.**

The EU-27's other transport equipment manufacturing n.e.c. subsector (NACE Group 35.5) consisted of 650 enterprises which created just EUR 0.3 billion of value added in 2004 and employed around 9 000 persons, 0.2 % and 0.3 % respectively of transport equipment manufacturing value added and employment. Germany (45.4 % of EU-27 value added) and the United Kingdom (17.9 %) together dominated this small subsector.

The EU-27's other transport equipment n.e.c. subsector recorded apparent labour productivity of EUR 40 000 per person employed and average personnel costs of EUR 30 000 per employee in 2004, combining to produce a wage adjusted labour productivity ratio of 130.0 % which was comparable with the transport equipment manufacturing average. However the gross operating rate (9.7 %) was the highest among the transport equipment manufacturing NACE groups and nearly double the rate for transport equipment manufacturing as a whole.

The EU-27's exports of other transport equipment n.e.c. (CPA Group 35.5) were valued at around EUR 146 million in 2006, fractionally higher than the imports valued at EUR 140 million. The largest proportion of exports (intra and extra-EU trade) by EU-27 Member States was accounted for by Germany (39.7 %), which also recorded by far the largest trade surplus.

Table 10.19

Manufacture of motor vehicles, trailers and semi-trailers (NACE Division 34)
Main indicators, 2004

	EU-27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
No. of enterprises (thousands)	18.3	0.5	0.1	0.6	0.1	2.5	0.0	0.1	:	2.1	2.2	2.0	0.0	0.0	0.0
Turnover (EUR million) (1)	704 000	18 696	34	11 714	1 137	298 176	113	570	:	56 830	112 771	49 150	17	24	44
Production (EUR million) (1)	622 000	17 666	30	11 667	964	249 588	113	551	:	50 402	107 697	42 561	16	25	43
Value added (EUR million) (1)	134 000	3 232	10	2 401	325	61 403	34	198	:	9 111	19 284	7 148	6	6	10
Gross operating surplus (EUR million) (1)	33 300	780	3	1 390	85	7 628	16	98	:	3 457	6 237	1 294	2	3	7
Purchases of goods & services (EUR million) (1)	574 000	15 373	26	9 574	837	237 899	82	379	:	48 783	93 026	41 835	12	22	34
Personnel costs (EUR million) (1)	100 000	2 452	6	1 008	240	53 775	18	100	:	5 654	13 046	5 854	5	3	3
Investment in tangible goods (EUR million)	29 159	339	1	1 179	32	12 232	6	28	:	2 189	4 861	2 156	1	3	4
Employment (thousands)	2 256	48	3	96	6	874	2	3	:	163	279	167	0	1	1
Apparent labour prod. (EUR thousand) (1)	59.0	67.9	3.4	25.1	57.6	70.3	16.6	61.7	:	56.0	69.0	42.8	20.0	7.1	13.3
Average personnel costs (EUR thousand) (1)	45.0	51.9	2.3	10.6	42.8	61.7	8.7	31.6	:	35.0	46.7	35.7	16.1	3.9	4.0
Wage adjusted labour productivity (%) (1)	132.0	130.8	148.0	236.4	134.7	114.0	190.5	195.6	:	160.2	147.6	120.0	123.8	180.9	335.7
Gross operating rate (%) (1)	4.7	4.2	10.0	11.9	7.4	2.6	14.2	17.2	:	6.1	5.5	2.6	8.8	10.9	15.5
Investment / employment (EUR thousand)	12.9	7.1	0.5	12.3	5.7	14.0	2.9	8.7	:	13.5	17.4	12.9	2.9	3.6	5.4
	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	NO	
No. of enterprises (thousands) (2)	0.0	0.4	:	0.6	0.3	1.4	0.5	0.4	0.1	0.1	0.3	0.9	3.1	0.1	
Turnover (EUR million)	:	8 169	:	9 236	13 620	14 060	4 356	1 723	1 605	5 649	1 079	28 266	66 874	877	
Production (EUR million)	:	7 948	:	8 640	13 445	13 216	4 025	1 790	1 513	5 559	994	27 156	56 157	857	
Value added (EUR million)	:	1 602	:	2 177	2 767	2 629	786	351	238	537	318	6 043	12 989	306	
Gross operating surplus (EUR million)	:	1 086	:	1 184	1 256	1 805	343	131	107	330	65	1 892	4 065	72	
Purchases of goods & services (EUR million)	:	6 579	:	7 088	10 972	11 660	3 624	1 377	1 386	5 039	776	23 365	53 647	579	
Personnel costs (EUR million)	:	516	:	993	1 510	824	442	220	132	207	253	4 151	8 924	234	
Investment in tangible goods (EUR million) (3)	:	645	:	124	583	780	258	350	52	116	36	864	2 283	28	
Employment (thousands) (3)	:	41	:	24	33	102	23	64	7	23	7	85	204	5	
Apparent labour prod. (EUR thousand) (3)	:	39.1	:	92.2	83.3	25.9	34.7	5.5	26.1	23.7	47.5	71.3	63.7	62.2	
Average personnel costs (EUR thousand) (3)	:	12.6	:	42.8	45.7	8.3	19.6	3.5	16.2	9.1	38.3	50.9	44.1	47.7	
Wage adjusted labour productivity (%) (3)	:	309.8	:	215.3	182.4	313.3	176.3	158.4	161.4	259.6	124.1	140.0	144.4	130.3	
Gross operating rate (%)	:	13.3	:	12.8	9.2	12.8	7.9	7.6	6.6	5.8	6.0	6.7	6.1	8.2	
Investment / employment (EUR thousand) (3)	:	15.8	:	5.3	17.5	7.7	11.4	5.5	7.4	5.1	5.4	10.2	11.2	5.6	

(1) EU-27, rounded estimate based on non-confidential data. (2) Luxembourg, 2003. (3) Slovenia, 2003.

Source: Eurostat (SBS)

Table 10.20

Manufacture of other transport equipment (NACE Division 35)
Main indicators, 2004

	EU-27 (1)	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
No. of enterprises (thousands)	24.9	0.3	0.3	0.4	0.4	1.2	0.1	0.0	:	2.5	3.2	4.8	0.0	0.1	0.1
Turnover (EUR million)	158 000	1 568	192	851	1 543	28 463	158	426	:	8 564	50 029	16 272	9	120	189
Production (EUR million)	158 000	1 626	185	873	1 506	28 250	149	422	:	8 337	49 358	18 523	7	126	193
Value added (EUR million)	43 000	635	52	292	378	8 749	30	219	:	2 575	7 340	5 092	4	38	61
Gross operating surplus (EUR million)	7 940	142	18	91	7	676	8	28	:	444	-637	1 719	1	12	16
Purchases of goods & services (EUR million)	119 000	1 018	152	596	1 168	20 012	135	208	:	6 324	43 556	13 460	5	91	143
Personnel costs (EUR million)	35 000	494	34	201	370	8 073	23	191	:	2 131	7 976	3 374	3	26	45
Investment in tangible goods (EUR million)	5 170	53	22	74	62	1 007	6	16	:	389	1 297	658	0	6	12
Employment (thousands)	907	10	11	20	8	140	3	4	:	58	148	95	0	6	7
Apparent labour prod. (EUR thousand)	47.4	64.2	4.9	14.3	48.3	62.6	10.8	52.7	:	44.4	49.6	53.5	25.3	6.1	9.3
Average personnel costs (EUR thousand)	39.5	51.2	3.3	10.1	48.5	58.1	8.1	46.3	:	37.7	54.2	38.0	17.3	4.2	6.8
Wage adjusted labour productivity (%)	120.0	125.3	148.0	140.7	99.7	107.7	132.3	113.9	:	117.6	91.6	141.0	146.6	146.5	135.9
Gross operating rate (%)	5.0	9.0	9.4	10.7	0.5	2.4	4.8	6.5	:	5.2	-1.3	10.6	16.0	10.1	8.7
Investment / employment (EUR thousand)	5.7	5.4	2.0	3.6	7.9	7.2	2.0	3.9	:	6.7	8.8	6.9	1.7	1.0	1.8
	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	NO	
No. of enterprises (thousands) (2)	0.0	0.4	:	1.8	0.1	2.9	0.4	0.5	0.1	0.0	0.6	1.6	2.6	1.2	
Turnover (EUR million)	:	464	:	4 943	2 340	2 603	755	931	163	297	1 377	3 466	31 449	6 148	
Production (EUR million)	:	419	:	4 860	2 383	2 626	718	1 007	147	305	1 391	3 558	29 785	6 146	
Value added (EUR million)	:	142	:	1 380	338	804	232	328	53	68	469	1 314	11 989	1 986	
Gross operating surplus (EUR million)	:	41	:	409	-44	250	6	85	9	5	98	235	4 315	272	
Purchases of goods & services (EUR million)	:	315	:	3 716	2 107	1 923	529	704	113	239	941	2 303	18 465	4 244	
Personnel costs (EUR million)	:	101	:	971	382	555	226	244	45	63	371	1 080	7 674	1 714	
Investment in tangible goods (EUR million) (3)	:	16	:	89	44	112	46	63	11	10	33	178	942	118	
Employment (thousands)	:	9	:	28	7	70	10	63	3	8	11	23	153	30	
Apparent labour prod. (EUR thousand)	:	15.7	:	50.0	47.4	11.5	22.9	5.2	18.6	8.4	42.5	57.5	78.5	66.7	
Average personnel costs (EUR thousand)	:	11.5	:	37.8	54.1	8.2	22.6	3.9	15.9	7.8	34.1	50.8	50.8	58.3	
Wage adjusted labour productivity (%)	:	136.8	:	132.4	87.5	139.4	101.7	134.4	116.5	108.5	124.6	113.3	154.7	114.4	
Gross operating rate (%)	:	8.8	:	8.3	-1.9	9.6	0.8	9.1	5.2	1.8	7.1	6.8	13.7	4.4	
Investment / employment (EUR thousand) (3)	:	1.7	:	3.2	6.1	1.6	4.5	1.0	3.7	1.3	3.0	7.8	6.2	4.0	

(1) Rounded estimates based on non-confidential data, except for number of enterprises. (2) Luxembourg, 2003. (3) Slovenia, 2003.

Source: Eurostat (SBS)