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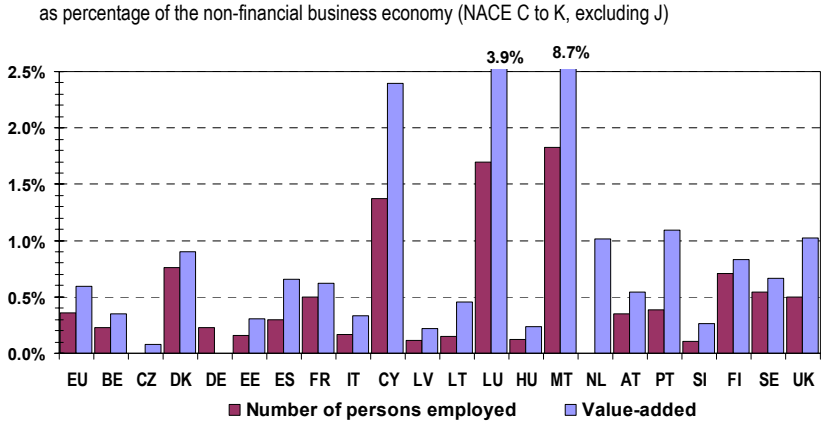
The air transport sector in the European Union

Overview

More than 400 000 people were employed in the air transport sector in the EU in 2002, according to Eurostat's Structural Business Statistics (SBS). This corresponds to 0.4 % of the total number employed in the non-financial business economy (NACE section C-K, excluding J). At the same time, air transport accounted for 0.6% of the EU's value-added, making the sector a very productive one, despite its low direct impact on the economy as a whole (see Graph 1).

Graph 1: Employment and value-added in air transport (NACE 62) in Member States, 2002



Note: 2002 data for CY excludes sector K, and for MT excludes section E. / 2001 data for BE, CZ (sections F-K), FR (persons employed; section G in value-added), LV, MT and UK (sectors C-K less J only). EL, IE, SK, PL: not available.

Source: Eurostat (SBS).

The importance of air transport in countries' economies varied widely, but generally remained relatively minor. The share of value-added was highest – and particularly high – in Malta (8.7%), followed by Luxembourg (3.9 %) and Cyprus (2.4 %).

In 2002, the United Kingdom was the largest contributor to EU value-added in the sector (with EUR 9.6 billion, a share of over one third). Its share was more than double France's contribution (EUR 4.2 billion), and nearly four times the amounts generated by Spain and the Netherlands (EUR 2.4 billion each).

Over 3 000 enterprises were active EU-wide, the vast majority of which were micro-enterprises (between 1-9 persons employed). However, although they were the most numerous, they only employed around 2% of the workforce. Large enterprises (with 250 persons employed or more) were by far the biggest employers.

Air transport corresponds to the classification NACE Rev.1.1 62, and includes 'scheduled air transport' (NACE 62.1), 'non-scheduled air transport' (NACE 62.2) and 'space transport' (NACE 62.3).
However, for reasons of data availability, analysis is limited to this aggregate sector. Air transport covers both passenger and freight/mail services (see methodological notes).
It should be noted that data in this publication refer to enterprises declaring 'air transport' as their main activity. Enterprises having ancillary or supporting activities (such as ground handling, air traffic control, catering) as their main activity are not included in NACE 62.

The United Kingdom and France dominate EU skies

Regardless of the indicator used to measure a country's share of the EU air transport market the United Kingdom always dominated, followed by France. The next countries to follow, albeit in varying order depending on the indicator, were Germany, Spain, Italy and the Netherlands (see Table 1).

Looking first at value-added, the United Kingdom recorded the highest value-added with EUR 9.6 billion, accounting for well over one third of total value-added by the industry in the EU. France followed with EUR 4.2 billion, Spain and the Netherlands with EUR 2.4 billion each.

Germany registered a negative value-added in 2002, due partly to national accounting practices by which some air transport enterprises and their subsidiaries record revenue and expenditure, and partly to statistical methodology [(1)].

With regard to turnover, again the United Kingdom had the highest value (EUR 28.1 billion), i.e. more than a quarter of the turnover generated by the sector in the EU. It was followed by France (EUR 17.7 billion), and Germany (EUR 10.3 billion) in third place.

In terms of purchases of goods and services a similar pattern also shows with the United Kingdom spending the most with EUR 17.8 billion, followed by France with 12.8 billion, and Germany with 11.3 billion.

Finally, the United Kingdom recorded the highest number of enterprises, followed by France, with 924 and 558 units respectively. Enterprises in the UK accounted for nearly one third of all enterprises in the whole EU.

As the share of air transport value-added in the non-financial business economy was close to 50 % higher than the relative share of persons employed in the EU, the sector was relatively productive when measured by apparent labour productivity (value-added over the number of persons employed). In 2001, the average labour productivity was EUR 63 000 per head, which was some 30% higher than the average of the transport, storage and communication sector (NACE Section I) (see Table 1).

The difference in apparent labour productivity was most striking in Malta, with EUR 106 100 in the air transport sector, against EUR 39 900 for the transport, storage and communication sector as a whole, in other words over 2.5 times higher. Only in Germany and Denmark was air transport less productive than the transport, storage and communication sector. In terms of range, apparent labour productivity varied from almost EUR 130 000 in Luxembourg to around EUR 20 000 in the three Baltic States.

A number of sometimes inter-related factors lie behind these values: frequency of air travel outbound, inbound or domestic, tourist attraction, geographical characteristics (e.g. mainland-island air services), the success of certain airport hubs, low-cost carriers or services (such as charter services, fractional or private jet ownership).

(1) All country data refer to turnover and expenditure etc recorded by enterprises in the specific country - excluding for example turnover and expenditure made by subsidiaries in other countries. Expensive repair and overhaul work for aircraft is carried out in Germany, whereas much of the mother company's revenue stems from subsidiaries abroad. This has the effect of increasing Germany's expenditure disproportionably as a share of revenue.

Table 1: Main indicators for the air transport sector (NACE I 62), 2002

	EU	BE*	CZ*	DK	DE	EE	ES	FR	IT	CY	LV
Number of enterprises	**3 075***	121	30	102	359	10	46	558	211	5	8
Number of persons employed	**411 052**	5 520	:	12 650	46 960	585	35 772	70 376*	23 291	2 423	576
Value-added (at factor cost) - in EUR million	**26 968**	440	29	850	- 104	12	2 417	4 152	1 803	123	12
Turnover - in EUR million	**102 615**	2 658	:	3 017	10 292	73	7 232	17 659	9 320	414	65
Average personnel cost - in EUR '000	**53.9***	58.4	:	:	70.2	13.3	50.3	56.0	68.7	40.8	12.3
Purchases of goods and services - in EUR million	**71 957***	2 217	:	2 248	11 313	58	4 997	12 776*	7 393	282	48
Investment rate (divided by value added at factor cost)	**:**	15.4	:	61.9	:	17.3	27.4	52.3	64.8	2.1	78.5
Apparent labour productivity - in EUR '000	**65.6**	79.7	:	67.2	:	20.4	67.6	56.1*	77.4	50.6	21.2
Apparent labour productivity in transport, storage and communication sector (NACE I) - in EUR '000	***48.7***	*59.2*	*10.6*	*69.5*	*53.9*	*17.3*	*47.8*	*49.9**	*55.8*	*41.5*	*12.7*

*2001 data. EL, IE, PL, SK: data not available. Source: Eurostat (SBS).

In the case of the United Kingdom for example, the size of the air transport sector is affected by many if not all of these factors. It was the main extra-EU-25 passenger gateway, particularly with North America, as well as the main passenger gateway to the ten new Member States. The UK also had the highest passenger transport in the EU-25 (178 million passengers; 2003 data) and the EU's busiest passenger airport with London Heathrow Airport (with 63 million) (see SIF 4/2005 "Passenger air transport 2002-2003").

Considerations such as these largely explain the different values recorded for other countries too. The Netherlands, despite its size, had a large share of Europe's air freight market (in fourth place in 2002), more than double the next ranked countries including Italy.

Another example is the relatively heavy weight of air transport in Cyprus and Malta: countries where tourism is the driving force of the economy.

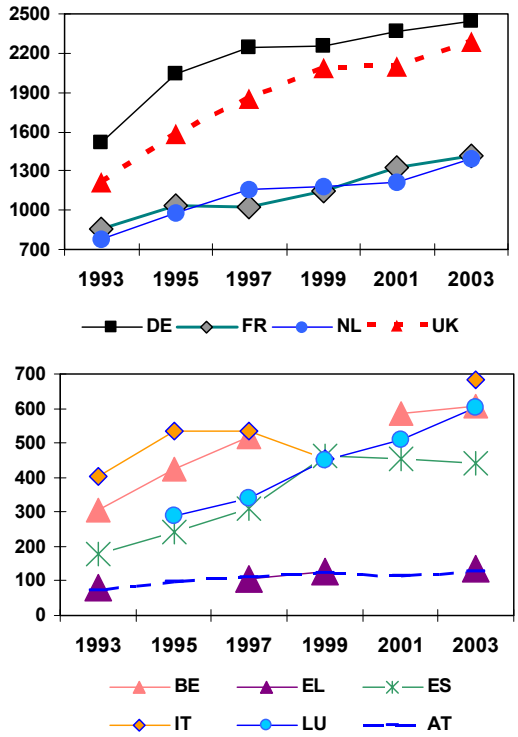
Air transport climbs higher between 1993 and 2003

Over the last decade, air transport – both passenger and freight – have substantially increased, as Graphs 2 and 3 illustrate. It should be noted that the volumes of freight and mail transport by air are obviously low, compared with maritime, rail and road transport.

The general increase in freight transport, however, hides certain differences between countries which are worth investigating. By following the evolution of air freight (national and international) over a 10-year period for a collection of countries recording the highest tonnages, it is possible to detect huge differences which take the shape of a three-tier pattern of upward curves (see Graph 2).

Looking at absolute figures, Germany and the United Kingdom were clearly in the top tier over the whole period. It was also in these countries where the growth in absolute volumes was most staggering between 1993 and 2000, from 1.5 to 2.4 million tonnes in Germany, and from 1.2 to 2.3 million tonnes in the UK.

Graph 2: Evolution in freight and mail transport for selected Member States, 1993-2003, in 1000 tonnes



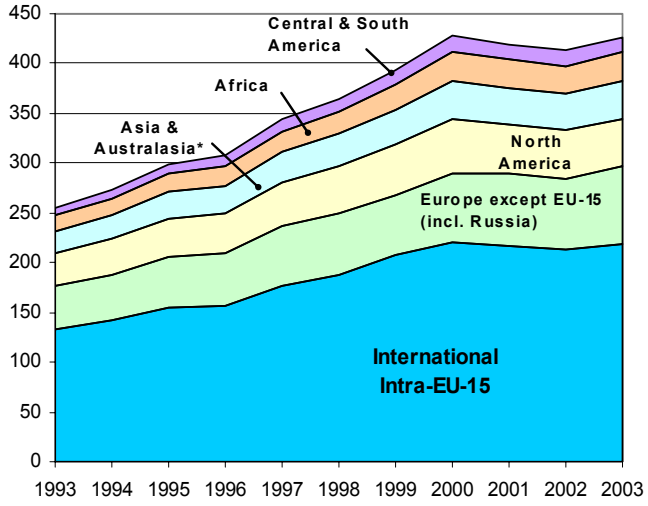
BE (1999), EL (1995 and 2001), LU (1993), IT (2001): not available.
Source: Eurostat (Transport statistics).

Table 1: Main indicators for the air transport sector (NACE I62), 2002 (continued)

	LT	LU	HU	MT*	NL	AT	PT	SI	FI	SE	UK	BG
Number of enterprises	14	15	86	19	195	96	34	30	63	168	924	23
Number of persons employed	1 072	3 081	3 390	1 993	:	8 088	11 058	609	8 556	14 103	90 745	3 184*
Value-added (at factor cost) - in EUR million	23	400	72	211	2 428	629	648	27	571	868	9 640	:
Turnover - in EUR million	78	1 169	483	247	7 624	2 648	1 637	119	1 687	2 943	28 134	:
Average personnel cost - in EUR '000	10.9	63.6	23.8	7.4	:	52.4	41.1	37.7	50.9	60.3	54.5	13.8*
Purchases of goods and services - in EUR million	65	770	414	34	5 197	2 129	1 051	75	1 144	2 126	17 815	:
Investment rate (divided by value added at factor cost)	12.7	:	77.8	0.3	:	14.7	6.1	2.3	70.4*	60.2	9.6	:
Apparent labour productivity - in EUR '000	21.6	129.7	21.2	106.1	:	77.8	58.6	44.0	66.7	61.5	106.2	:
Apparent labour productivity in transport, storage and communication sector (NACE I) - in EUR '000	*10.9*	*88.3*	*15.5*	*39.9*	*62.6*	*56.7*	*41.7*	*19.2*	*53.5*	*48.9*	*65.2*	*6.3*

*2001 data. EL, IE, PL, SK: data not available. Source: Eurostat (SBS).

Graph 3: Development of international passenger air transport by world region between 1993 and 2003 (in million passengers), EU-15



*'Australasia includes Australia, New Zealand, Oceania and the Polar regions.
Source: Eurostat (Transport statistics).

France and the Netherlands came next, almost 1 million tonnes further down by 2003 (with approximately 1.4 million tonnes each).

It is in the bottom tier (of those countries under study) that growth was largest, with Spain seeing by far the greatest increase in air freight, with nearly 2.5 times as much goods transported in 2003 as in 1993.

Similar growth trends in the EU-15 can be found in passenger air transport (see Graph 3). The period was marked by growth worldwide, although it can be seen that this upward trend was punctuated twice: once by a significant slowdown between 1995 and 1996, and a second time by a dip between 2000 and 2002 – following the terrorist attacks in the United States in 2001.

After this decrease, international passenger air transport to all world regions regained its upward trend. For further information on passenger air transport, see SIF 4/2005 "Passenger air transport 2002-2003".

2001 marks the start of some contraction in employment growth

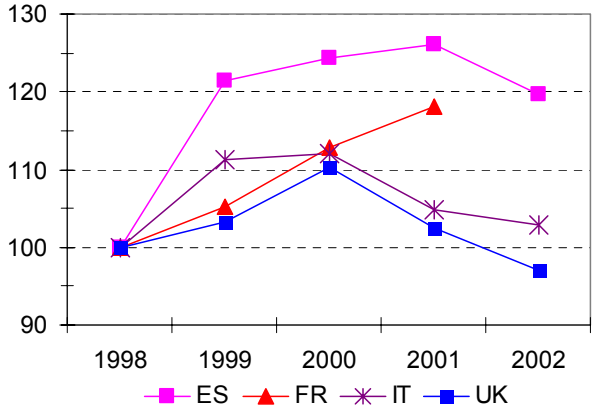
Turning to employment, in 2002 the number of persons employed in air transport was 90 745 in the United Kingdom, i.e. almost a quarter of the total employed in the EU. The United Kingdom was followed by France (70 376), Germany (46 960), Spain (35 772) and Italy (23 291).

Looking at the evolution of employment between 1998 and 2002 (see Graph 4 opposite) for a selection of the EU's largest countries, the general trend was a period of growth followed by a contraction. Employment grew between 1998 and 2000 in all four countries. However, although the growth was often well above average employment growth in the respective countries, it was sometimes below the average growth in the transport, storage and communication sector (sector I). This was the case especially for Italy and Spain between 1999 and 2002 where growth rates were consistently lower, and very much so from 2001.

Growth in air transport employment was particularly high in Spain between 1998 and 1999, rising by 21%, which is the single highest registered growth rate among the countries available, significantly higher than the country's high average employment growth rate – one of the highest rates in the EU during these years.

Growth in Italy was the second highest between these two years, although about half that of Spain (11 %). However, it was well in advance of the 3% average employment growth in the country's whole transport, storage and communication sector. France recorded the most stable growth between 1998 and 2001 with a year-on-year increase of around 5%.

Graph 4: Evolution of employment in the air transport sector, 1998-2002 (1998=100)



Source: Eurostat (SBS).

Nevertheless, despite this general trend of employment growth, some contraction is noticeable after 2000 and 2001; a contraction that was stronger in the air transport sector than in the whole transport, storage and communication sector. Based on data available, employment decreased the most between 2000 and 2002 in the United Kingdom and Italy – a percentage decrease that was much larger than that recorded for the whole transport, storage and communication sector in these countries.

Although the upward trend continued beyond 2000 in Spain and France, growth turned downwards in Spain in 2002, while in France, growth continued to at least 2001 (the latest year for which data are available).

With regard to Germany (data not shown), employment increased between 2000 and 2002 by 24%, only slightly in advance of growth recorded in the whole transport, storage and communication sector. Trends before 2000 in Germany are not comparable because of methodological changes.

Based on available preliminary 2003 data, employment in the UK remained stable at its 2002 level, whereas employment in Spain grew again after its 2002 decline.

Larger enterprises main players, but micro-enterprises most numerous

Turning the focus now to enterprise size, it can be seen from table 2 that the importance of micro enterprises (1-9 persons employed) in air transport in the EU was very small in terms of employment, value-added and turnover.

Micro-enterprises accounted for only 1.3 % of the total persons employed in the sector, 1.7 % of the value-added and 2.0 % of the turnover generated in the sector: very low shares that reflect the dominance of larger enterprises such as national flag carriers and other airlines including low-cost carriers.

When looking at absolute number however (see Graph 5), micro-enterprises were by far the most numerous, which is not surprising given the existence of small charter services, private jet ownership and/or mainland/island services throughout the Union. The average size of enterprises in this sector amounted to more than 133 persons employed per enterprise in the EU.

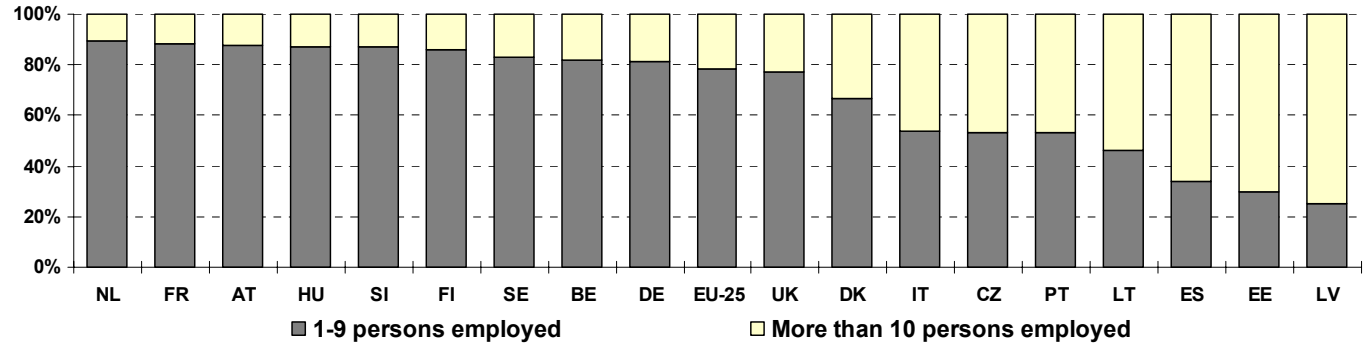
Table 2: Share of micro-enterprises in air transport, selected indicators in EU, 2002

	Total	Share
Number of enterprises	3 075 *	78.6% *
Number of persons employed	411 052	1.3% *
Value-added - in EUR million	26 968	1.7% *
Turnover- in EUR million	102 615	2.0% *

* 2001 data. Source: Eurostat (SBS).

Interestingly, 87% of France's micro-enterprises were 1-person enterprises (i.e. 77% of total air transport enterprises) about twice the share in Germany and Italy, 36% and 44% respectively. The structure in other countries with data available resembles France: Finland (74% of micro-enterprises), the Netherlands (66%) and Sweden (64%).

Graph 5: Share of micro-enterprises (1-9 persons employed) in air transport for selected Member States, in 2002



EU-25, BE, CZ, ES, LV, LT, HU, UK: 2001 data. Source: Eurostat (SBS).

Large fluctuation in investment

The investment level provides an indication of the growth potential of a sector, or at least of confidence in anticipated growth. However, direct links to growth can be difficult to establish as time series tend to follow a far more ragged path than other indicators, with investment being concentrated over specific years, and returns generally reaped over a long time period. There is also the question of contractual obligations, for example the impossibility to cancel aircraft orders once signed.

As can be seen in Table 3, the size of investments varied considerably over the years, also when related to the number of persons employed. The country with the highest average investment rate per person employed over the period 1999-2002 was Austria with 45 850 EUR. Denmark had the second highest average rate (with 39 074 EUR) and also the least fluctuations, with values ranging between 36 302 EUR and 41 581 EUR over these four years.

Available data do not suggest a general contraction in 2002, as one might have anticipated following the terrorist attacks in the United States in 2001, even among the EU's larger Member States. For example, although investment decreased in Germany and the UK between 2001 and 2002, the opposite was true for Italy and Spain.

Table 3: Evolution of investment per person employed for selected Member States, 1999-2002, in EUR

	1999	2000	2001	2002	Average
BE	23 982	28 805	12 283	:	**21 690***
DK	37 881	40 534	36 302	41 581	**39 074**
DE	38 816	43 629	32 158	16 303	**32 727**
ES	21 786	16 040	13 910	18 517	**17 564**
FR	16 617	24 604	29 342	:	**23 521***
IT	20 466	37 776	24 179	50 200	**33 155**
CY	1 987	370	1 355	1 073	**1 196**
LV	4 281	9 705	14 911	16 667	**11 391**
LT	3 284	1 467	2 510	2 705	**2 492**
HU	8 474	7 948	4 970	16 519	**9 478**
MT	:	4 570	301	790	**1 887***
AT	78 756	59 253	33 941	11 449	**45 850**
PT	32 482	13 288	7 794	3 599	**14 291**
FI	24 326	18 432	42 753	10 647	**24 039**
SE	27 410	40 136	37 383	37 035	**35 491**
UK	31 270	33 579	27 608	10 192	**25 662**

*Average for three years. Source: Eurostat (SBS).

Compared with most other sectors of the non-financial business economy, investment per person employed were often considerably higher in air transport.

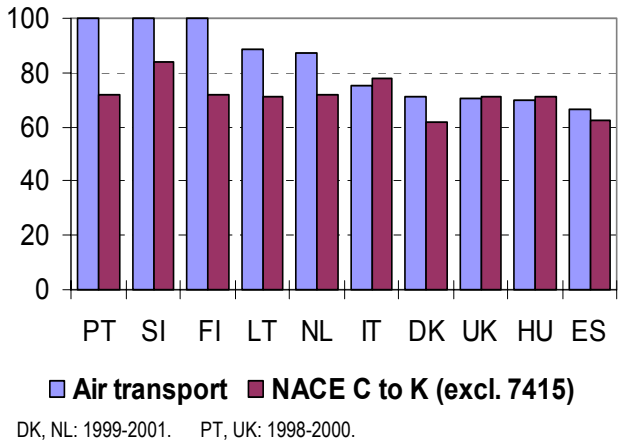
Newcomers more likely to survive in smaller countries

A good indicator of sector dynamics can be obtained by studying the survival rate of newly created enterprises in air transport.

The survival rate in this sector was - except for Italy, United Kingdom and Hungary - higher than the corresponding rate for the whole business economy (NACE C to K, excluding 7415). Graph 6 shows the survival rate (in air transport) measured as a percentage of all new enterprises created in 2000, which are still active in 2002. For those countries with data available, it can be noted that very few countries recorded a survival rate of 100%. Those that did were some of Europe's smaller countries (Finland, Portugal and Slovenia). Other countries with high survival rates close to 90% were Lithuania and the Netherlands.

By contrast, the survival rate was lowest in some of Europe's largest countries (Spain, the United Kingdom and Italy) as well as Hungary and Denmark.

Graph 6: Survival rate of air transport enterprises for selected Member States, (2000-2002) in %



DK, NL: 1999-2001. PT, UK: 1998-2000.

Source: Eurostat (SBS).

➢ *ESSENTIAL INFORMATION – METHODOLOGICAL NOTES*

EU: European Union, including the 25 Member States (EU-25): Belgium (BE), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Greece (EL), Spain (ES), France (FR), Ireland (IE), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

Missing data are estimated by Eurostat for the purpose of the calculation of EU-25 aggregates.

SYMBOLS

":" non available or confidential;
"-" not applicable.

DEFINITIONS

Division by sector of activity

Employment and other indicators in the Structural Business Statistics (SBS) are divided into sectors of activity according to the NACE Rev. 1.1 system of classification. This classifies activity by section (1-letter codes), subsection (2-letter codes), division (2-digit codes), groups (3-digit codes) and classes (4-digit codes).

The service sector 'air transport' (NACE 62) includes 'scheduled air transport' (NACE 62.1), 'non-scheduled air transport' (NACE 62.2) and 'space transport' (NACE 62.3). Data are collected from enterprises declaring 'air transport' as their main activity, which in many instances will rule out ancillary or supporting activities such as ground handling, air traffic control, catering. For data availability reasons this publication is limited to NACE 62.

The **non-financial business economy** in this publication includes NACE Rev.1.1 section C (mining and quarrying), D (manufacturing), E (electricity, gas and water supply), F (construction), G (wholesale and retail trade), H (hotels and restaurants), I (transport, storage and communication) and K (real estate, renting and business activities).

Number of persons employed: defined as the total number of persons who work in the observation unit (inclusive of working proprietors and partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). It includes part-time workers, seasonal workers, apprentices and home workers who are on the pay roll. The observation unit for aggregating data is the enterprise.

Enterprise: the enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit. Enterprises in this publication are classified by their main activity.

Survival rate: in the Business Demography context, survival occurs if an enterprise is active in terms of employment and/or turnover in the year of birth and the following year(s). Two types of survival can be distinguished: 1/ an enterprise born in year xx is considered to have survived in year xx+1 if it is active in terms of turnover and/or employment in any part of year xx+1 (= survival without changes). 2/ an enterprise is also considered to have survived if the linked legal unit(s) have ceased to be active, but their activity has been taken over by a new legal unit set up specifically to take over the factors of production of that enterprise (= survival by take-over).

Value-added: Value-added measured at factor cost, which is the gross income from operating activities after adjusting for operating subsidies and indirect taxes (including value-added tax).

DATA SOURCES

Structural Business Statistics (SBS): collected within the framework of Council Regulation on structural business statistics (EC, EURATOM) No. 58/97 of December 1996 (and amendments). The SBS Regulation governs the transmission of data to Eurostat from the reference year 1995 onwards and covers all market activities in sections C to K of NACE Rev. 1.1. For further information, visit:
http://forum.europa.eu.int/Public/irc/dsis/bmethods/info/data/new/main_en.html

Transport Statistics: Air transport statistics are collected in accordance with Commission Regulation (EC) 1358/2003 implementing Regulation (EC) 437/2003 of the European Parliament and of the Council on statistical returns in respect of the carriage of passengers, freight and mail by air. Data are collected at airport level in each Member State and then transmitted to Eurostat.

In principle, information provided is based on On Flight Origin/Destination data (OFOD) rather than Flight Stage data (FS). OFOD is defined as the traffic on a commercial air service identified by a unique flight number subdivided by airport pairs in accordance with the point of embarkation and point of disembarkation on that flight. FS is defined as the operation of an aircraft from take-off to its next landing. FS data have been used only for those countries where no OFOD data were reported.

The source of all figures presented in this publication is Eurostat and reflects the **state of data availability** in Eurostat's reference database NewCronos as of May 2005.

Further information:

Databases

EUROSTAT Website/Home page/Industry, trade and services/Data

- **Industry, trade and services**
  - Industry, trade and services - horizontal view
    - Short-term Business Statistics - Monthly and Quarterly (Industry, Construction, Retail Trade and Other Services)
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      - ***Annual enterprise statistics***
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