

Provision and export of computer services in Europe

Statistics in focus

INDUSTRY, TRADE AND SERVICES

15/2006

Author

Pekka ALAJÄÄSKÖ

Contents

Sweden and the UK most specialised Member States 1

United Kingdom dominates EU-25 computer services but highest productivity in Ireland 2

Computer services generated over 40 % of business services turnover in Ireland..... 3

Largest turnover from 'Software and other computer consultancy services' .. 4

Enterprises main clientele for computer services providers 4

Exports generated up to 28 % of computer services turnover 5

SMEs more focused on home market than exports 6

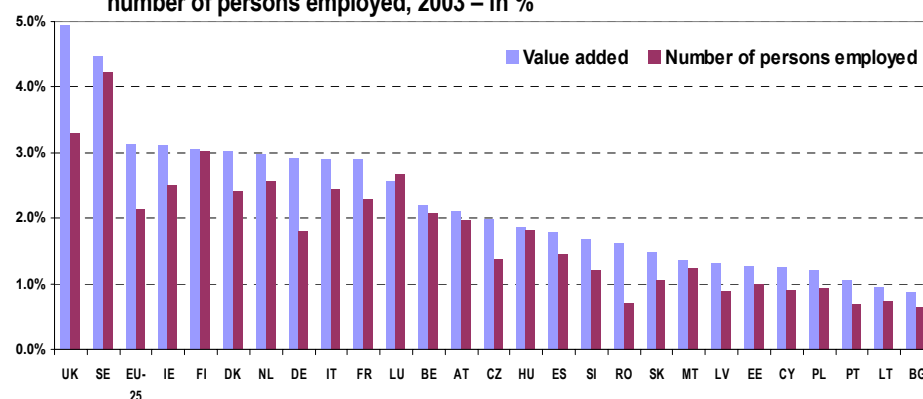


Manuscript completed on: 10.03.2006
Data extracted on: 15.12.2005
ISSN 1561-4840
Catalogue number: KS-NP-06-015-EN-N
© European Communities, 2006

Sweden and the UK most specialised Member States

In 2003, the provision of 'computer services' (NACE 72 computer and related activities) generated EUR 150 billion of value added and employed 2.5 million persons. This represented respectively about 3.1 % and 2.1 % of the non-financial business economy as a whole (NACE C to K excluding J). Making up the main activity of 446 499 enterprises in 2001, the sector generated a turnover of EUR 296 billion in 2003.

Graph 1: Importance of computer and related activities (NACE 72) in the non-financial business economy as a whole (NACE C-K, excl. J), in terms of value-added and number of persons employed, 2003 – in %



Note: BE: 2001 – LU, MT, PL: 2002 – EL not available

Source: Eurostat (SBS)

In terms of the sector's weight in the total non-financial business economy, the United Kingdom and Sweden were the most specialised Member States in 2003, measured by value added and employment. While the UK was most specialised in terms of value added (4.8 %), Sweden was most specialised in terms of employment (4.2 %). Moreover, they were the only countries to surpass the EU-25 average for value added.

By contrast, the sector was least important in Portugal and Spain, all the new Member States, and Bulgaria and Romania, accounting for shares of about 2 % and below of non-financial-business-economy value added.

Looking at the EU-25 as a whole, the sector's share in non-financial-business-economy value added was close to 1.5 times the employment share, which indicates a relatively high apparent labour productivity (value added per person employed) compared with the non-financial business economy average. Among the countries with data, the widest difference between value added and employment shares was in Romania where the value added share was about 2.3 times the employment share. It was followed by Slovenia (1.4 times) and Germany (1.6 times). The least difference was in Finland and Hungary. Luxembourg was the only Member State in which the sector was more important in terms of employment than value added.

'Computer services' refer to NACE division 72 'Computer and related activities' which includes the following: 'hardware consultancy' (72.1), 'Software consultancy and supply' (72.2), 'Publishing of software', (72.21) 'Other software consultancy and supply' (72.22), Data processing (72.3), 'Data base activities' (72.4), 'Maintenance and repair of office, accounting and computing machinery' (72.5) as well as 'Other computer related activities' (72.6).

United Kingdom dominates EU-25 computer services but highest productivity in Ireland

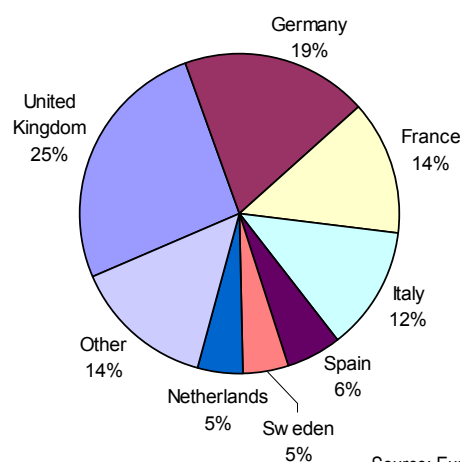
Turning to Member States' shares in the EU-25 computer services sector, seven Member States contributed about 5 % and above to EU-25 turnover (Graph 2). The UK's computer services sector accounted for the largest share (25 %) ahead of Germany (19 %) and France (14 %): shares that are not surprising given these countries' general economic weight. The UK's contribution was even higher to EU-25 value added, over 29 %, further ahead of Germany (20 %) and France (13 %). When looking at number of persons employed, the country ranking slightly changed with the UK employing 24 %, Germany 15 % and Italy 14 % of the total number employed.

Information on apparent labour productivity (Table 1) shows that each person employed in computer services in the EU-25 generated on average EUR 60 300 of value added, more than 1.5 times the average recorded for business services (NACE 72 and 74 combined). Five Member States registered higher values, led by Ireland (EUR 98 000). Readers should however treat Ireland's value with care, because of the presence of many (European) head offices of multinational enterprises in this country, especially in the IT sector.

Meanwhile, average personnel costs in the EU-25 were EUR 48 900 per employee in 2003, over 60 % more than the business services average. With over EUR 60 000, Sweden and Denmark recorded the two highest levels among the Member States, although these were exceeded in Norway.

Combining apparent labour productivity with average personnel costs, the resulting wage-adjusted labour productivity showed that value added per person employed was around 123 % of average personnel costs, approximately 3 percentage points less than the business services average. Ireland posted the

Graph 2: Turnover of computer and related activities (NACE 72) in the EU-25: share by Member State, 2003



highest level among the Member States, with 206 %, which was in fact surpassed in Romania.

Looking at the enterprise size-class distribution in 2001 (data not shown), SMEs (enterprises employing between 1 and 249 persons) accounted for 59 % of computer services turnover, 11 percentage points less than the business services average (NACE 72 and 74). For value added, this share was 57 %, 6 percentage points less than this same average. With a 72 % share, however, SMEs accounted for a larger proportion of total employment: around 6 percentage points more than the business-services average.

While apparent labour productivity was not much higher than the business services average for micro enterprises (1-9 persons employed) and small enterprises (10-49 persons employed), it was more than 1.5 times this average for medium-sized enterprises (50-249 persons employed) (EUR 63 000) and more than double the level for large enterprises (EUR 88 000).

Table 1: Main indicators of computer and related activities (NACE 72), 2003

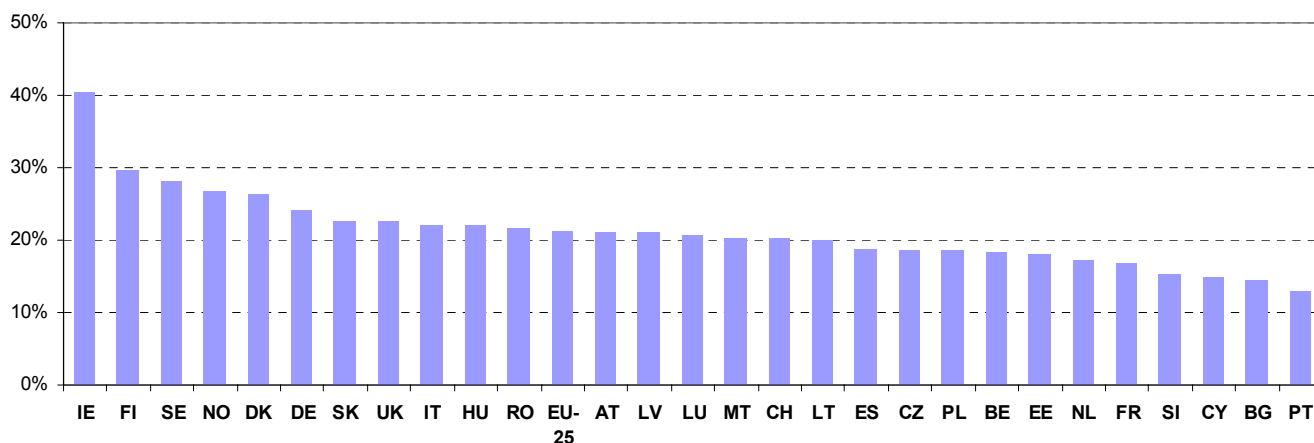
	EU-25	BE*	CZ	DK	DE	EE	ES	FR	IE	IT	CY	LV	LT	LU**	HU
Value-added at factor cost - in million EUR	149 950	2 937	953	2 889	29 577	56	7 615	19 874	2 361	15 575	65	64	55	262	622
Persons employed	2 491 300	49 446	49 227	39 329	368 263	3 725	179 459	322 606	24 030	356 659	1 661	4 829	5 582	4 861	46 068
Number of enterprises	446 499*	8 646	23 611	6 350	42 154	738	23 265	45 875	3 434	84 050	160	818	973	955	20 364
Turnover - in million EUR	295 708	7 794	2 392	6 002	54 685	140	16 251	39 701	6 211	35 640	108	117	180	625	2 400
Average personnel costs - in thousand EUR	48.9	58.4	16.4	60.7	58.6	12.6	36.6	56.0	47.7	38.5	29.1	8.4	6.5	53.3	11.1
Apparent labour productivity (value-added per person employed) - in thousand EUR	60.3	59.4	19.4	73.5	80.3	14.9	42.4	61.6	98.2	43.7	39.3	13.3	9.8	53.9	13.5
Wage adjusted labour productivity - in %	123.4	101.7	118.3	121.1	137.0	118.9	115.9	110.0	205.8	113.4	135.4	158.8	150.8	101.1	121.9

* 2001 data - ** 2002 data - EL not available

Source: Eurostat (SBS)

Computer services generated over 40 % of business services turnover in Ireland

Graph 3: Turnover share of computer services (NACE 72) in total business services (NACE 72 and 74), 2003 – in %



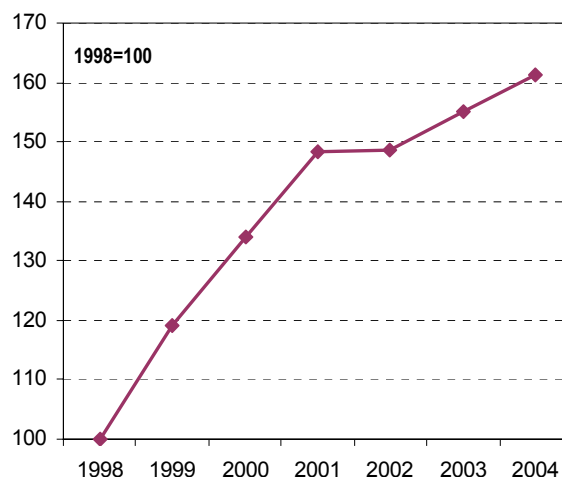
2002 data: FI, IE, LT, LU, MT, PL, SE, SL – 2001 data: BE – EL not available

Source: Eurostat (SBS)

As shown in Graph 3, computer services generated 21 % of turnover in total business services (NACE 72 and 74). As such, it was the second largest business services activity after NACE 74.1 encompassing legal, accounting, auditing and business management services (see SIF, 'Advertising services and labour recruitment in Europe').

Moreover, computer services turnover grew very rapidly between 1998 and 2004, by 61 % (Graph 4), which contrasts starkly with the 19% growth recorded in manufacturing over the same period (data not shown here). Growth over the 1998-2004 period was steepest between 1998 and 2001, when the turnover index increased by 48 %, recording annual double-digit growths, among which the evolution between 1998 and 1999 was the fastest (19 %). Against the backdrop of a general economic slowdown, and stock market devaluations, the sector experienced a marked slowdown in 2001, before lifting up again, by about 4 % in both 2003 and 2004.

Graph 4: Evolution of computer services (NACE 72) turnover EU-25, 1998-2004



Source: Eurostat (STS)

Table 1: Main indicators of computer and related activities (NACE 72), 2003 (continued)

	MT**	NL	AT	PL**	PT	SI	SK	FI	SE	UK	BG	RO	NO	CH
Value-added at factor cost - in million EUR	40	6 891	2 496	1 177	643	210	162	2 163	6 027	43 851	59	279	2 527	4 533
Persons employed	1 501	115 368	45 777	69 016	19 580	6 962	9 487	36 723	108 813	588 822	11 234	27 777	35 732	52 381
Number of enterprises	598	17 790	12 700	24 437	2 803	1 892	1 177	4 266	27 629	113 525	2 479	7 316	8 800	4 510
Turnover - in million EUR	70	13 235	5 525	3 246	1 574	581	427	4 067	13 558	74 528	165	667	5 149	8 808
Average personnel costs – in thousand EUR	18.9	50.6	52.1	29.9	28.6	24.3	11.4	49.0	61.9	53.1	4.0	4.7	66.2	:
Apparent labour productivity (value-added per person employed) – in thousand EUR	26.5	59.7	54.5	17.1	32.8	30.2	17.1	58.9	55.4	74.5	5.3	10.0	70.7	86.5
Wage adjusted labour productivity – in %	140.7	118.0	104.7	57.0	115.0	124.2	150.3	120.2	89.4	140.2	131.8	215.1	106.9	:

** 2002 data

Source: Eurostat (SBS)

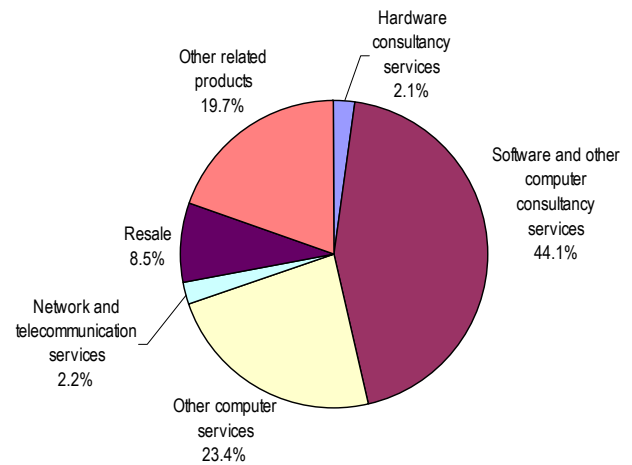
Largest turnover from 'Software and other computer consultancy services'

In order to know more about the market forces affecting the computer services sector, more detailed information on the products, services and clients of these services is needed. This is all the more so since the products and services produced are becoming increasingly non-standard and customised according to clients' requirements. The latest results from a development project – the aim of which is to gather more detailed information on these issues – will be the focus of the remainder of this publication.

The latest available data show that, among the various types of computer services, 'software and other computer consultancy services' generated the largest turnover in 10 of the 11 European countries available (Table 2), accounting for 44.1 % of the aggregate turnover of these 11 countries (Graph 5). Readers should bear in mind, however, that the compilation of this share is strongly influenced by the largest producers, the UK (42.7 %), and to a lesser extent, Spain and Sweden (respectively 50.9 % and 43.5 %).

The second largest category in seven countries was 'other computer services' (covering computer facilities and data processing, database services, system maintenance and the servicing and repair of hard-

Graph 5: Turnover in computer and related activities, share by type of service, based on an aggregate of available countries*, 2003



Source: Eurostat (SBS)

* DK, EE, EL, ES, LV, LU, PL, SI, SE, UK, RO

ware), which accounted for 23.4 % of the aggregate total. For three other countries, the second largest category was in fact 'Resale' of computer services. This category was also the largest service in Poland.

Table 2: Turnover in computer and related activities, share by type of service, available countries, 2003 – in %

	DK	EE	EL	ES	LV	LU	PL	SI	SE	UK	RO
Hardware consultancy services	3.7	2.7	5.7	4.2	2.2	16.9	1.7	2.6	2.7	1.3	6.5
Software and other computer consultancy services	63.3	40.6	37.5	50.9	45.7	32.8	28.3	29.4	43.5	42.7	43.4
Other computer services	27.4	30.7	16.9	29.9	25.8	29.7	22.8	24.8	21.6	22.2	15.6
Network and telecommunication services	2.2	1.2	1.8	0.7	5.4	0.5	2.1	2.1	1.3	2.7	1.1
Resale	0.0	19.1	23.1	9.4	18.5	2.5	32.3	21.5	17.6	5.6	27.1
Other related products	3.3	5.7	15.0	4.8	2.5	17.7	12.9	19.7	13.4	25.5	6.3

Note: Due to rounding, the sum of shares may not add up to the overall total

Source: Eurostat (SBS)

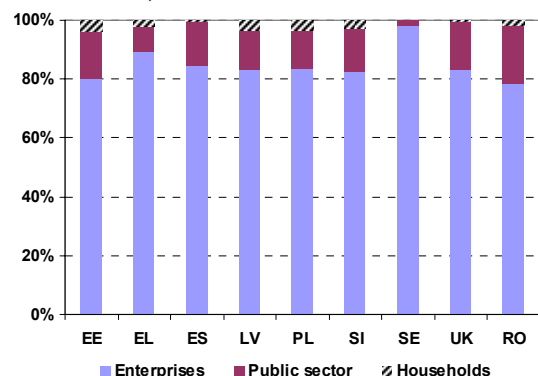
Enterprises main clientele for computer services providers

As is the case for business services in general, computer services are not only important because of the value added and employment they create, but also because they act as a facilitator in other economic domains. The dynamic relation between business services and their clients in other sectors of the economy results not only from their provision of support services, but also from a growing involvement in the production process itself. Looking at type of client is therefore useful when assessing the extent and the effect of networking in the economy.

Generally, enterprises are the largest client base for business services providers, far above the public sector and households. In 2003, 80 % and above of computer services turnover stemmed from services sold to enterprises in all of the nine countries with

data available except Romania; a share that reached even 98 % in Sweden (Graph 6).

Graph 6: Turnover of computer services (NACE 72), by type of client, 2003 – in %



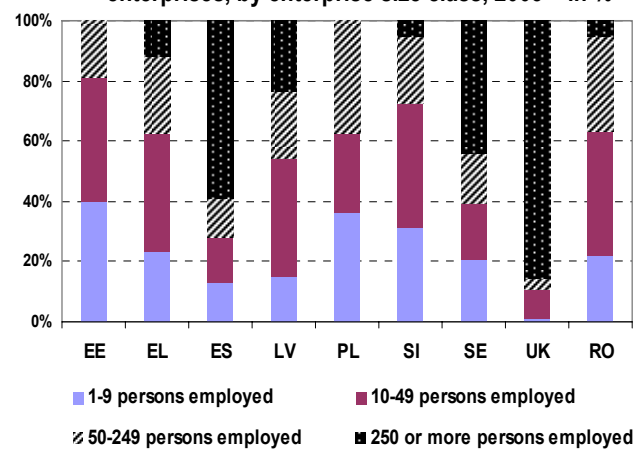
Source: Eurostat (SBS)

The second largest clientele was the public sector, accounting for over 13 % of computer services turnover in seven of the nine countries, and reaching as much as 20 % in Romania. Finally, household clients generated the smallest shares of turnover, reaching only between 1.7 % and 4 % in six of them, while they were even less important in Sweden.

A look at the distribution of the turnover from computer services provided to enterprise clients by size of the service provider, shows that small and medium-sized (SMEs: 1-249 persons employed) computer service providers were predominant in many of these countries in 2003 (Graph 7). They generated between 77 % and 100 % of the turnover in six countries, while the shares were lower in the UK (15 %), Spain (41 %) and Sweden (56 %). It should however be borne in mind that these results are partly reflective of the small size of countries participating in the development project: with SMEs generally being more dominant in smaller countries.

The predominance of SME service providers was even more marked with household clients, as one might reasonably expect.

Graph 7: Turnover of computer services (NACE 72): client: enterprises, by enterprise size class, 2003 – in %



Source: Eurostat (SBS)

Exports generated up to 28 % of computer services turnover

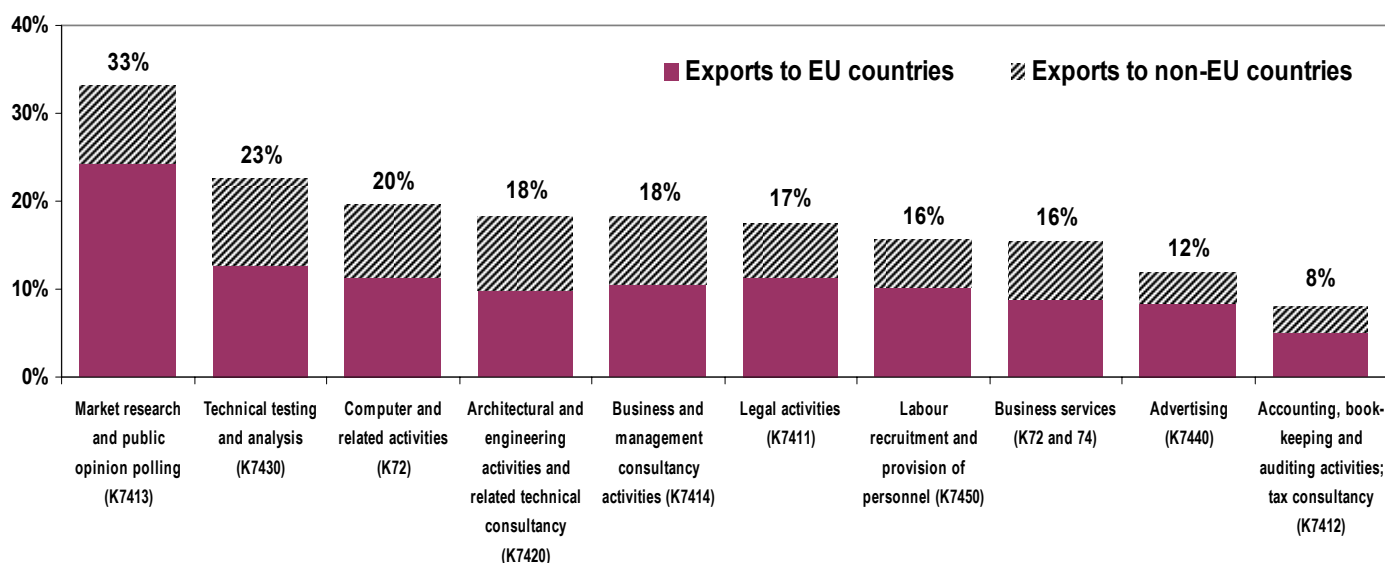
Trade in computer services has become significant in recent years: a trend which is not only a result of the increasing pervasiveness of information technology in people's everyday lives, but also because its trade benefits from the very creation of the information society and notably the Internet. This facilitates the provision of cross-border support services (for example, service agreements) and the delivery of software solutions online.

The location of clients, based on their 'residence', gives information on the size of business services exports. Among the various business services, computer services were one of the most exportable,

based on simple non-weighted averages of countries available (Graph 8). Exports accounted for almost 20 % of turnover in computer services, more than half of which consisted of exports to EU countries. As such, computer services were the third most exported service, with an export share equal to under two-thirds of that recorded for 'Market research and public opinion polling (NACE 74.13)' (33 %).

Based on data available for 10 European countries, the export of computer services generated above 15 % of the turnover in the sector in eight of the 10 countries, reaching as much as 28 % in Latvia and Denmark (Graph 9).

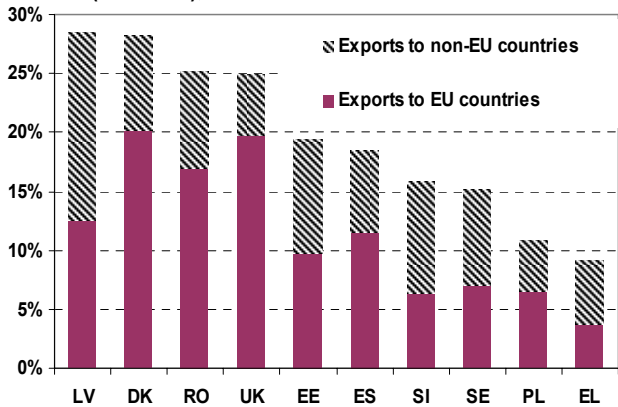
Graph 8: Exports of business services by type of activity, 2003 – in % of total turnover*



*Shares based on a simple non-weighted average of 11 to 8 available countries, according to business service (see Methodological Notes)

Source: Eurostat (SBS)

Graph 9: Exports as a share of turnover in computer services (NACE 72), 2003 – in %

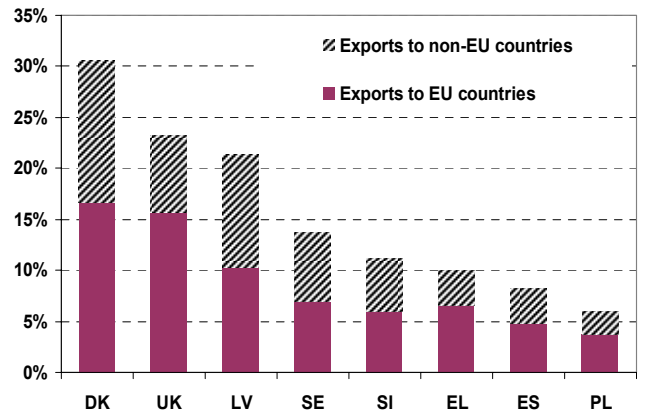


Source: Eurostat (SBS)

Turnover from exports to clients in EU countries was larger than that to clients in non-EU countries in six countries, reaching around 20 % of turnover in Denmark and the UK. However, the share of exports to non-EU countries was larger in the other four countries, reaching as much as 16 % of turnover in Latvia.

Exports generally accounted for a higher share of turnover in computer services than in business services (Graph 10). This comparison also reveals

Graph 10: Exports as a share of turnover in business services (NACE 72 and 74), 2003 – in %



Source: Eurostat (SBS)

some national characteristics with regard to exports. For instance, Denmark, Latvia and the UK displayed the highest export shares both for computer services and for business services as a whole, while Poland and Greece showed the lowest. Furthermore, while the export shares in e.g. Spain and Poland for computer services were respectively fifth and second lowest, these shares were around double the respective business services average.

SMEs more focused on home market than exports

Graph 11: Exports of computer and related activities (NACE 72) by enterprise size class, 2003 – in % of total turnover



Source: Eurostat (SBS)

Looking next at the enterprise size class distribution of the turnover generated from exports, and based on data for nine European countries, SMEs (enterprises with 1-249 persons employed) accounted for the majority share of turnover in seven countries, with shares ranging from 56 % to 100 %, partly reflecting the small size of most countries available (Graph 11). The opposite was true in the UK and Spain, where SMEs only accounted for 12 % and 15 % respectively.

Graph 12: Exports of business services (NACE 72 and 74) by enterprise size class, 2003 – in % of total turnover



Source: Eurostat (SBS)

However, comparing this with the size class distribution of total turnover (Graph 7) shows that SMEs – and micro enterprises (1-9 persons employed) in particular – accounted for a smaller share in exports than in total turnover. Comparing the size-class distribution of exports of computer services with the situation in business services generally (Graph 12) suggests that computer services exports are relatively more dominated by the largest enterprise size classes.

➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

DATA SOURCES

The source of all figures presented is Eurostat (unless specifically stated otherwise). Most data sources are continually updated and revised where necessary. This publication reflects the state of data availability in Eurostat's reference database as of December 2005.

Structural Business Statistics (SBS) is the main data source for this publication. Two main SBS data sets have been used: annual enterprise statistics, annual enterprise statistics broken down by size classes and business services statistics. These and other SBS data sets are available under the theme 'Industry, trade and services' on the Eurostat website <http://europa.eu.int/comm/eurostat/> (select 'Data' / 'Industry, trade and services' / 'Horizontal view' / 'Structural Business Statistics'). Selected publications and data are available in the section dedicated to European Business, located directly under the theme 'Industry, trade and services' on the Eurostat website. Further methodological information is available on 'Methods and explanatory texts: Business Methods' under the methodological area of the Eurostat website.

Short-Term Statistics (STS) have been used to complement SBS data with information on time series development, based on the turnover index. This index shows the evolution of value added at factor cost, and at constant prices.

COUNTRIES

This publication covers the 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). Also included are the Candidate Countries, EFTA and EEA countries with data available: Bulgaria (BG), Romania (RO), Switzerland (CH) and Norway (NO).

EU-25

EU-25 aggregates include estimates for missing components where necessary. In the absence of EU-25 aggregates, averages of available countries are presented where appropriate.

EXCHANGE RATES

All data are presented in ECU/EUR terms, with national currencies converted using average exchange rates prevailing for the year in question.

SYMBOLS

“.” not available or confidential.

SECTORS

Statistics are presented by sectors of activity according to the NACE Rev. 1.1 system of classification. The main focus of this Sif is NACE 72 ('Computer and related activities').

Comparisons are made with the whole non-financial business economy and/or 'business services' which is an aggregate of NACE Section K, Divisions 72 (Computer and related activities) with either 74 ('Other business activities') or only the knowledge-intensive sectors of NACE 74 (i.e. excluding 74.15 and 74.6-8).

Non-financial business economy includes the Sections 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). Please note that for such comparisons in this publication: IE excludes Section E; CY excludes Section K.

OBSERVATION UNIT

The observation unit is the enterprise. An enterprise carries out one or more activities at one or more locations. Enterprises are classified into sectors (by NACE) according to their main activity. The enterprise should not be confused with the local unit, which is an enterprise or part thereof situated in one geographically identified place.

STRUCTURAL BUSINESS STATISTICS VARIABLES

Variables are defined according to Commission Regulation No 2700/98 and include:

Number of enterprises

The number of enterprises active during at least part of the reference period.

Number of persons employed

The total number of persons who work in the observation unit, as well as persons who work outside the unit who belong to it and are paid by it. It includes working proprietors, unpaid family workers, part-time workers, seasonal workers etc.

Value added at factor cost

The gross income from operating activities after adjusting for operating subsidies and indirect taxes (including value added tax).

Turnover

The totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties.

Apparent labour productivity

This is a simple indicator of productivity calculated as value added divided by persons employed.

Average personnel costs

Personnel costs are the total remuneration, in cash or in kind, payable by an employer to an employee for work carried out. This is divided by the number of employees (paid workers), which includes part-time workers, seasonal workers etc, but excludes persons on long-term leave.

Wage adjusted labour productivity (in %)

Value added divided by personnel costs, after the latter has been divided by the share of employees (paid workers) in the number of total persons employed. It can also be calculated by dividing apparent labour productivity by average personnel costs.

Degree of specialisation

Specialisation is here defined based on the share of the value added or employment accounted for by an activity (NACE) in relation to the total non-financial business economy (NACE Sections C-K excl. J) of a country.

Further information:

Data: [EUROSTAT Website/Home page/Industry, trade and services/Data](#)

Industry, trade and services

 **Industry, trade and services - horizontal view**

 Structural Business Statistics (Industry, Construction, Trade and Services)

 Annual enterprise statistics



Annual detailed enterprise statistics on services (Annex 1)

 **Services**

 **Business services**

Journalists can contact the media support service:

Bech Building Office A4/017
L - 2920 Luxembourg

Tel. (352) 4301 33408

Fax (352) 4301 35349

E-mail: eurostat-mediasupport@cec.eu.int

European Statistical Data Support:

Eurostat set up with the members of the 'European statistical system' a network of support centres, which will exist in nearly all Member States as well as in some EFTA countries.

Their mission is to provide help and guidance to Internet users of European statistical data.

The complete details concerning this support network can be found on our Internet site:

www.europa.eu.int/comm/eurostat/

A list of worldwide sales outlets is available at the:
Office for Official Publications of the European Communities.

2, rue Mercier
L - 2985 Luxembourg

URL: <http://publications.eu.int>

E-mail: info-info-opoce@cec.eu.int
