Statistics in focus

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High-tech and knowledge-intensive sectors creating employment in Europe

Acceding Countries catching up in high-tech manufacturing but still lagging behind in KIS
EU-15 showing large regional differences

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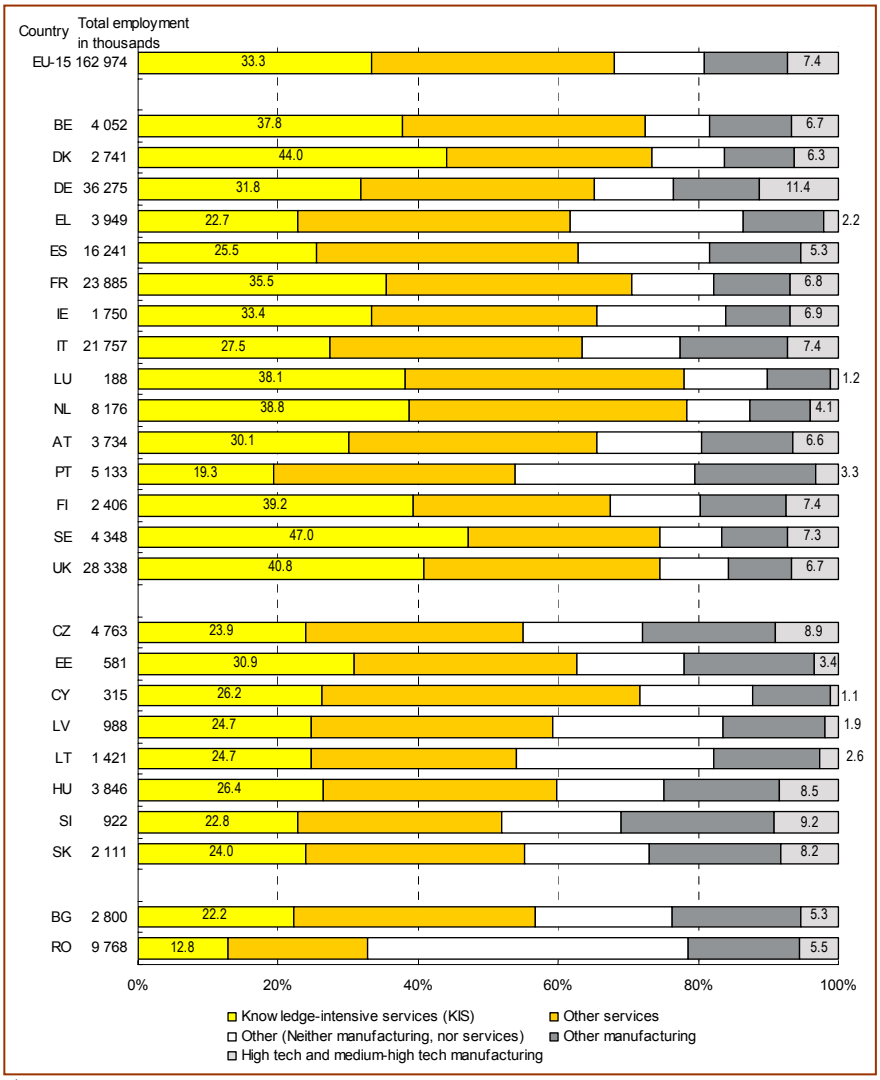
Figure 1: Distribution of employment in the EU, Acceding and Candidate Countries ([1]) by selected sectors — 2002



([1]) For explanations on why data for MT, PL and TR are not available and for the exact definition of the sectors here presented please see methodological note in p.7.

Source: Eurostat — CLFS.

- Employment in high tech and medium-high tech in the EU continued growing with an annual average growth rate of 0.9 % for the 1997-2002 period and accounted for 7.4 % of the EU's employment in 2002.
- With Slovenia (9.2 %), the Czech Republic (8.9 %), Hungary (8.5 %) and the Slovak Republic (8.2 %), already four Acceding Countries are above EU-15 average, with only Germany (11.4 %) showing a higher share of employment in these areas.
- Employment in knowledge-intensive services (KIS) in the EU grew at an annual average growth rate of 3.1 % during the 1997-2002 period, accounting for an increasing proportion of the EU's total employment (33.3 % in 2002).
- Among Member States, Sweden is most specialised in KIS (47.0 %), as is Estonia among Acceding Countries (30.9 %). However, all Acceding Countries show a KIS share on total employment that is below the EU average.

Employment in KIS is growing strongly in all Member States, whereas high tech and medium-high tech manufacturing sectors are on an upward trend in most Acceding Countries

On the eve of the accession of 10 new countries into the EU, this Statistics in Focus aims at analysing the role of high tech and knowledge-intensive employment in the Acceding and Candidate Countries. At the same time, it gives a national and regional insight into the situation within the EU.

The importance of high tech and medium-high technology manufacturing sectors, not to mention knowledge-intensive service sectors, has increased considerably in the last few years and this has had a significant impact on the structure and organisation of employment in Europe.

High tech sectors are generally known as producers of high value added. Table 1 shows the value added and labour productivity for EU, Acceding and Candidate Countries by selected sectors in 2000. Whilst the labour productivity for the overall manufacturing sector in the EU was EUR 52 thousand per person employed, high tech manufacturing sectors registered a rate of EUR 73 thousand.

As shown in Figure 1, in 2002 there were 163 million people employed in the EU, of which 7.4 % were employed in high tech and medium-high tech manufacturing sectors and 33.3 % in knowledge-intensive services (KIS).

At the Member State level, Germany was the country where high tech and medium-high tech manufacturing sectors accounted for the largest proportion (11.4 % of total employment) in 2002. Following Germany were Italy and Finland (both 7.4 %). The rest of the EU Member States recorded ratios that were below the EU average.

As for the Acceding Countries, Slovenia recorded the highest percentage of people employed in high tech and medium-high tech manufacturing sectors (9.2 %). The Czech Republic (8.9 %), Hungary (8.5 %) and the Slovak Republic (8.2 %) also recorded rates above the EU average.

Table 1: Value added and labour productivity in the EU, Acceding and Candidate Countries by selected sectors — 2000

	High tech and medium-high tech manufacturing		High tech manufacturing		Know ledge-intensive market services		High tech services	
	Value added at factor cost MIO EUR	Labour productivity Thousand EUR per person employed	Value added at factor cost MIO EUR	Labour productivity Thousand EUR per person employed	Value added at factor cost MIO EUR	Labour productivity Thousand EUR per person employed	Value added at factor cost MIO EUR	Labour productivity Thousand EUR per person employed
EU-15 (1)	654 491	62	201 121	73	848 176 u	53 u	330 534 u	68 u
BE	19 418	84	5 534	103	17 081	41	8 938	68
DK	9 414	58	3 511	79	15 745	59	5 995	56
DE	218 698	61	46 320	65	283 147 u	100 u	88 356 u	107 u
EL (2)	1 832	41	552	44	:	:	:	:
ES	32 896	49	6 666	57	51 091	30	17 275	50
FR	95 412	63	37 521	72	113 613	47	45 988	57
IE	21 860	192	10 201	154	5 617	48	5 600	120
IT	75 405	51	19 988	58	59 139	34	34 683	57
LU	416	63	72	44	1 698	60 u	1 264	124
NL	21 723	71	6 762	69	44 872	38	16 174	52
AT	13 768	65	4 018	71	12 508	51	5 401	53
PT	4 512	28	1 134	35	6 594	24	3 516	65
FI	13 046	84	7 301	126	7 757	46	4 135	51
SE	23 987	68	7 816	76	23 421 u	51 u	11 352 u	55 u
UK	102 104	68	43 725	82	205 893	56	81 857	69
CZ	5 237	12	877	12	2 580	11	2 206	21
EE	170	8	64	7	347	9	241	20
CY	111	29	35	42	:	:	:	:
LV	126	6	36	8	501	11	382	18
LT	:	:	:	:	338	7	326	15
HU (2)	4 480	17	1 333	17	1 183	10	1 957	23
MT (3)	429	60	353	73	327	76	175	50
PL	8 807	15	1 882	17	9 993	23	6 149	23
SI (4)	1 356	18	475	23	640	16	233	22
SK	1 028	7	173	7	574	9	595	12
BG	505	3	121	5	225	3	528	10
RO	1 740	4	319	7	656	5	1 408	10

NB: Cells flagged as 'u' refer to values partly estimated, and hence, their quality might be inferior.
(1) Knowledge-intensive market services and high tech services: EU-15 excludes EL.
(2) Exceptions to the minimum enterprise size (number of persons employed) — EL: 10; HU: 5.
(3) MT: high technology services excludes 73 as no data are available for these sectors.
(4) SI: high technology services excludes 72 and 73 as no data are available for these sectors.

Source: Eurostat —SBS.

Concerning the proportion of employment accounted for by knowledge-intensive services (KIS), in 2002, Sweden was the EU Member State most specialised in these sectors (47.0 % of total employment). With the exception of Germany, Greece, Spain, Italy, Austria and Portugal, employment in KIS accounted for a proportion above the EU average in all the Member States. As regards the Acceding Countries, Estonia had the highest percentage of people employed in KIS (30.9 %), still below the EU average (Figure 1).

Looking at high tech and medium-high tech manufacturing sectors alone, in 2002 there were 12 million people employed in these sectors in the EU, of which over 2 million were working in high tech manufacturing sectors (Table 2). The EU Member State with most people employed in high tech and medium-high tech manufacturing in 2002 was Germany (4 122 thousand), followed by the UK (1 901 thousand), France (1 628 thousand) and Italy (1 603 thousand). Out of these countries, Italy (2.0 %) shows the biggest annual average growth rate for the period 1997-2002, while the UK showed an average decline of 1.5 %.

Among the Acceding Countries, the Czech Republic registered the largest number of people employed in these sectors (425 thousand), which amounted to 8.9 % of the country's total employment.

As shown in Table 2, Employment in high tech and medium-high tech in the EU continues to be more dynamic than manufacturing overall, as during the 1997-2002 period it grew at an annual average growth rate of 0.9 %, compared to 0.4 % of total manufacturing. Although this was also true for most Member States, during the 1997-2002 period, employment in high tech and medium-high tech manufacturing decreased in Belgium, Luxembourg, the Netherlands, Sweden and the UK (although for the UK it decreased at a lower rate than for manufacturing overall).

With the exception of Estonia and Lithuania, employment in high tech and medium-high tech manufacturing sectors performed better than their respective manufacturing average in all Acceding Countries.

Table 2: Employment in high tech and medium-high tech manufacturing in the EU, Acceding and Candidate Countries 1997-2002 ([1])

	Number of persons employed in thousands						Annual average growth rates in %		
	Manufacturing		High tech and medium-high tech manufacturing		High tech manufacturing		Manufacturing	High tech and medium-high tech manufacturing	High tech manufacturing
	1997	2002	1997	2002	1997	2002	1997-2002	1997-2002	1997-2002
EU-15	30 567	31 201	11 492	12 018	2 097	2 126	0.4	0.9	0.3
BE	758	742	288	271	46	40	-0.4	-1.2	-2.5
DK	502	444	169	173	22	30	-2.4	0.5	6.6
DE	8 423	8 541	3 824	4 122	627	704	0.3	1.5	2.3
EL	559	541	85	87	7	11	-0.6	0.5	10.0
ES	2 489	3 000	717	869	78 u	77	3.8	3.9	-0.2 u
FR	4 110	4 256	1 558	1 628	325	314	0.7	0.9	-0.7
IE	262	283	102	120	41	55	1.6	3.3	6.0
IT	4 500	4 934	1 449	1 603	215	231	1.9	2.0	1.4
LU	22	19	3	2	1 u	1 u	-2.5	-7.0	2.9 u
NL	1 074	1 031	367	332	89	89	-0.8	-2.0	0.0
AT	743	729	233	246	66	67	-0.4	1.1	0.5
PT	1 146	1 056	170	171	20	19	-2.0	0.2	-0.9
FI	423	474	147	177	39	48	2.3	3.8	4.4
SE	753	724	338	316	75	64	-0.8	-1.3	-3.3
UK	5 002	4 428	2 052	1 901	451	376	-2.4	-1.5	-3.6
CZ	1 384	1 333	426	425	54	67	-0.7	0.0	4.3
EE	147	128	28	20	4	3	-2.7	-6.5	-7.3
CY	37	39	3	4	0	: u	1.7	6.4	: u
LV	191	162	8	19	1	2	-4.1	25.4	9.9
LT	291	253	59	38	10	9	-3.4	-10.7	-1.3
HU	856	958	282	327	57	100	2.3	3.0	12.2
SI	287	287	79	85	9 u	8 u	0.0	1.4	-3.2 u
SK	546	570	141	173	20	32	1.4	7.2	17.2
BG	673	667	161	149	16	14	-0.4	-3.7	-9.3
RO	2 446	2 101	751	537	39	34	-3.0	-6.5	-2.9

([1]) Exceptions to the reference year 1997 — PT, LV, LT: 1998; CY, SK: 1999; BG: 2000.

Source: Eurostat — CLFS.

Table 3 provides details on the number of persons employed and the annual average growth rates recorded for the 1997-2002 period in the services sectors, with an especial focus on knowledge-intensive services (KIS) and, among these, high tech services.

Out of the 111 million people employed in services in the EU, 54 million were engaged in knowledge-intensive services (KIS), of which almost 6 million worked in high tech services. According to Figure 1, employment in knowledge-intensive services (KIS) represented 33.3 % of total employment in the EU.

Among the Member States, the largest number of people employed in knowledge-intensive services (KIS) in 2002 was retained by the UK (11 552 thousand), followed by Germany (11 536 thousand), and France (8 485 thousand). All of them showed similar annual average growth rates for the period 1997-2001: 2.7 % in the UK and Germany and 2.6 % in France. Proportionally, KIS represented 40.8 % of the UK's employment and 35.5 % of that of France, but only 31.8 % in Germany (Figure 1).

The Acceding Country with most people employed in knowledge-intensive services (KIS) in 2002 was the Czech Republic (1 138 thousand), which according to Figure 1 represented 23.9 % of the country's employment. Following the Czech Republic was Hungary with 1 016 thousand people working in these sectors (26.4 % of total employment).

Table 3 reveals that KIS are the most dynamic sectors in the EU, especially high tech services: for the 1997-2002 period, the EU recorded an annual average growth rate of 3.1 % for KIS and 5.6 % for high tech services, compared to 2.3 % in total services and 0.4 % in manufacturing. In this period, annual average growth rates for KIS were above their respective growth rates for services for all the Member States.

Among Acceding Countries the situation varies: whilst knowledge-intensive services (KIS) grew faster than services overall in Cyprus, Estonia, Hungary and Slovenia, the Czech republic and Latvia retained equal rates. On the contrary, employment in KIS in Lithuania and the Slovak Republic decreased during the 1997-2002 period.

Table 3: Employment in knowledge-intensive services in the EU, Acceding and Candidate Countries — 1997-2002 ([1])

	Number of persons employed in thousands						Annual average growth rates in %		
	Services		Knowledge-intensive services (KIS)		High tech services		Services	Knowledge-intensive services (KIS)	High tech services
	1997	2002	1997	2002	1997	2002	1997-2002	1997-2002	1997-2002
EU-15	98 877	110 737	46 670	54 257	4 418	5 803	2.3	3.1	5.6
BE	2 679	2 935	1 340	1 531	128	169	1.8	2.7	5.7
DK	1 877	2 011	1 093	1 205	104	130	1.4	2.0	4.4
DE	22 021	23 632	10 078	11 536	1 000	1 209	1.4	2.7	3.9
EL	2 223	2 438	801	898	55	69	1.9	2.3	4.7
ES	8 177	10 189	3 150	4 148	227	406	4.5	5.7	12.3
FR	15 110	16 833	7 447	8 485	783	971	2.2	2.6	4.4
IE	833	1 145	402	584	32	75	6.6	7.8	18.2
IT	12 377	13 811	5 031	5 973	524	657	2.2	3.5	4.6
LU	126	147	58	72	4	4	3.1	4.3	1.4
NL	5 387	6 404	2 653	3 168	219	304	3.5	3.6	6.8
AT	2 290	2 444	994	1 124	84	129	1.3	2.5	8.9
PT	2 406	2 766	847	991	66	74	3.5	4.0	3.2
FI	1 377	1 622	792	944	73	114	3.3	3.6	9.2
SE	2 790	3 241	1 728	2 045	158	227	3.0	3.4	7.5
UK	19 090	21 120	10 120	11 552	956	1 265	2.0	2.7	5.8
CZ	2 584	2 622	1 121	1 138	167	147	0.3	0.3	-2.4
EE	343	364	166	179	17	17	1.2	1.5	-0.1
CY	191	226	66	83	4	6	5.7	8.0	14.6
LV	544	584	227	244	18	21	1.8	1.8	3.5
LT	796	767	366	351	39	24	-0.9	-1.0	-11.2
HU	2 110	2 298	908	1 016	101	118	1.7	2.3	3.1
SI	424	479	180	211	18	22	2.4	3.2	3.6
SK	1 156	1 167	515	507	58	60	0.3	-0.5	0.7
BG	1 557	1 587	608	621	72	74	1.0	1.1	1.6
RO	3 229	3 195	1 313	1 254	180	153	-0.2	-0.9	-3.2

([1]) Exceptions to the reference year 1997 — PT, LV, LT: 1998; CY, SK: 1999; BG: 2000.

Source: Eurostat — CLFS.

Whilst Tübingen (DE) leads in high tech and medium-high tech manufacturing, Comunidad de Madrid (ES) leads in knowledge-intensive services (KIS)

Table 4 provides details on the top 20 EU regions (NUTS 2) listed according to the lowest summed up ranking figure, which combines the rankings of high tech and medium-high tech manufacturing sectors in thousands, as a percentage of total employment and in terms of annual average growth rates. With 18.7 % of employment in these sectors and an annual average growth rate of 5.1 %, Tübingen (DE) is leading.

At the regional level, the percentage of employment accounted for by high tech and medium-high tech manufacturing sectors in the EU ranged from 0.8 % in Extremadura (ES) to 21.2 % in Stuttgart (DE). Regional disparities are largest for Germany, France and Italy, with Stuttgart (21.2 %), Franche-Comté (17.4 %) and Piemonte (13.2 %) recording the highest percentage of employment respectively (Figure 2).

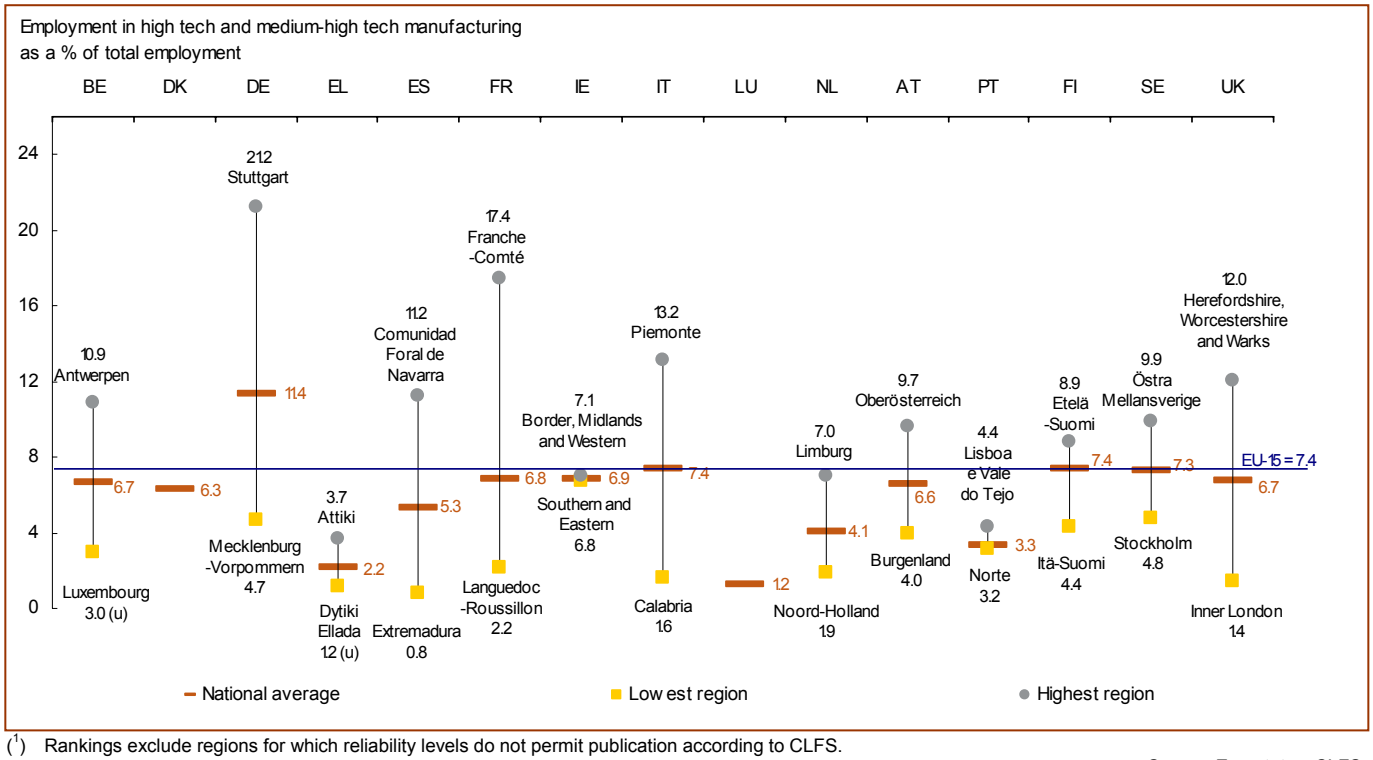
Table 4: Leading regions in Europe ([1]) in high tech and medium-high tech manufacturing — 1997-2002 ([2])

		Total	Manufacturing	High tech and medium-high tech manufacturing						High tech manufacturing					
		in thousands	in thousands	in thousands	*Ranking*	% of total employment	*Ranking*	AAGR in % 1997-2002	*Ranking*	in thousands	*Ranking*	% of total employment	*Ranking*	AAGR in % 1997-2002	*Ranking*
Country	NUTS 2 region														
EU-15		162 974	31 201	12 018		7.4		0.9		2 126		1.3		0.3	
DE	Tübingen	845	287	158	*16*	18.7	*2*	5.1	*31*	36	*9*	4.3	*2*	11.6	*23*
DE	Freiburg	1 010	323	151	*17*	14.9	*9*	4.7	*35*	49	*5*	**4.9**	***1***	6.2	*47*
IE	Southern and Eastern	1 311	205	89	*35*	6.8	*89*	17.0	*4*	39	*8*	3.0	*8*	21.2	*10*
DE	Oberbayern	2 055	486	285	*5*	13.9	*12*	2.4	*76*	54	*4*	2.6	*11*	5.5	*52*
DE	Schwaben	845	432	122	*20*	14.5	*10*	3.3	*61*	18	*40*	2.1	*27*	8.2	*37*
DE	Darmstadt	1 753	631	237	*6*	13.5	*13*	1.5	*92*	40	*7*	2.3	*22*	4.3	*58*
IT	Veneto	1 972	390	197	*11*	10.0	*32*	2.8	*69*	33	*12*	1.7	*52*	8.8	*32*
DE	Braunschweig	687	161	121	*21*	17.5	*3*	3.2	*63*	12	*60*	1.8	*39*	10.4	*28*
FR	Franche-Comté	503	773	88	*37*	17.4	*4*	2.9	*68*	19	*33*	3.8	*4*	2.1	*76*
DE	Arnsberg	1 559	658	163	*15*	10.4	*29*	1.9	*82*	27	*19*	1.7	*46*	7.8	*40*
DE	Stuttgart	1 889	1 284	401	*2*	**21.2**	***1***	1.5	*95*	63	*3*	3.3	*6*	-0.8	*128*
IT	Lombardia	4 011	248	**431**	***1***	10.7	*24*	1.2	*98*	67	*2*	1.7	*51*	4.2	*60*
DE	Unterfranken	619	148	96	*27*	15.6	*7*	1.9	*83*	14	*48*	2.3	*21*	4.4	*57*
DE	Oberpfalz	504	249	67	*64*	13.2	*14*	4.5	*38*	13	*56*	2.5	*13*	3.7	*65*
UK	Hampshire and Isle of Wight	923	191	97	*26*	10.5	*28*	2.1	*81*	30	*16*	3.2	*7*	0.4	*98*
DE	Thüringen	1 049	511	94	*30*	8.9	*51*	6.2	*25*	20	*31*	1.9	*37*	1.0	*89*
DE	Oberfranken	506	506	60	*76*	11.8	*19*	4.2	*43*	11	*68*	2.2	*24*	5.5	*53*
FR	Rhône-Alpes	2 376	198	205	*9*	8.6	*56*	1.5	*94*	48	*6*	2.0	*31*	1.0	*88*
DE	Karlsruhe	1 245	224	204	*10*	16.4	*5*	-0.1	*124*	36	*10*	2.9	*9*	-1.6	*133*
BE	Antwerpen	673	234	73	*57*	10.9	*23*	1.7	*86*	14	*50*	2.1	*28*	5.2	*54*

([1]) Top 20 NUTS 2 regions listed according to the lowest summed up ranking figure, which combines all rankings shown in the table.
([2]) Exceptions to the reference year 1997 — DED1, DED2, DED3: 2000; PT regions: 1998.

Source: Eurostat — CLFS.

Figure 2: Regional range of percentage of employment accounted for by high tech and medium-high tech manufacturing by Member State in 2002 ([1])



([1]) Rankings exclude regions for which reliability levels do not permit publication according to CLFS.

Source: Eurostat — CLFS.

As for the knowledge-intensive services, Table 5 provides details on the top 20 EU regions listed according to the lowest summed up ranking figure, which combines the rankings of high-tech and knowledge-intensive services in thousands, as a percentage of total employment and in terms of annual average growth rates. With 37.7 % of employment in KIS and an annual average growth rate of 8.4 % during the 1997-2002 period, Comunidad de Madrid (ES) was ahead. This leading position may be explained by the great performance of this region concerning high tech services, as being the 2nd region with most people employed in these sectors, it was also the 8th as a percentage of total employment and the 4th in terms of annual average growth rates.

The proportion of employment accounted for by KIS sectors in the EU ranged from 11.1 % in Sterea Ellada (EL) to 59.1 % in Inner London (UK). Although regional disparities remain, the differences are less pronounced in these sectors than in high tech and medium-high manufacturing (Figure 3).

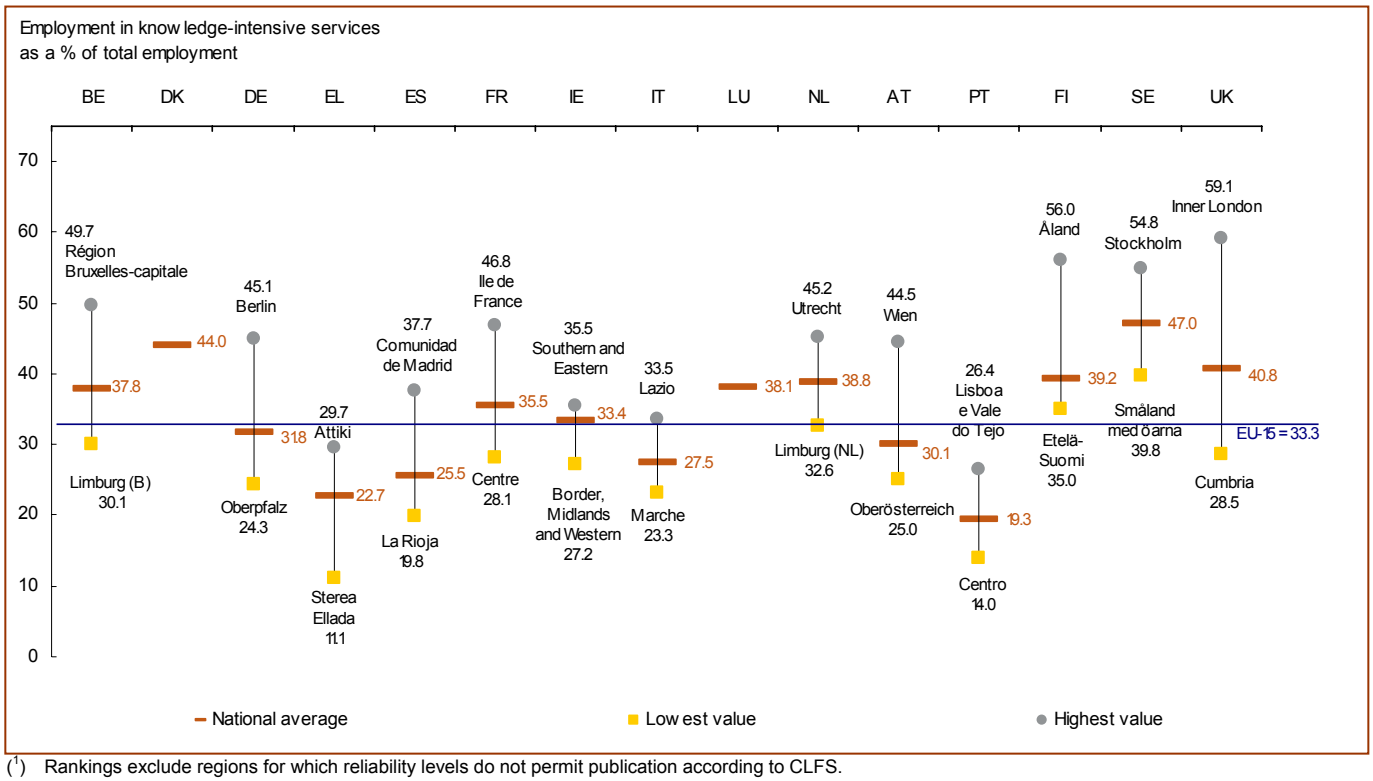
Table 5: Leading regions in Europe ([1]) in knowledge-intensive services — 1997-2002 ([2])

		Total	Services	Knowledge-intensive services						High tech services					
Country	NUTS 2 region	in thousands	in thousands	in thousands	*Ranking*	% of total employment	*Ranking*	AAGR in % 1997-2002	*Ranking*	in thousands	*Ranking*	% of total employment	*Ranking*	AAGR in % 1997-2002	*Ranking*
EU-15		162 974	110 737	54 257		33.3		3.1		4 418		3.6		5.6	
ES	Comunidad de Madrid	2 318	1 728	874	*5*	37.7	*47*	8.4	*4*	153	*2*	6.6	*8*	19.1	*4*
SE	Stockholm	969	893	532	*21*	54.8	*3*	4.1	*49*	85	*11*	**8.8**	***1***	8.6	*47*
FI	Uusimaa (Suuralue)	749	592	349	*53*	46.5	*9*	4.6	*33*	59	*23*	7.9	*3*	13.0	*15*
FR	Ile de France	5 029	4 144	**2 353**	***1***	46.8	*8*	3.4	*74*	**393**	***1***	7.8	*4*	8.0	*53*
IE	Southern and Eastern	1 311	831	465	*30*	35.5	*71*	**31.5**	***1***	63	*21*	4.8	*27*	**54.0**	***1***
UK	Hampshire and Isle of Wight	923	1 876	381	*48*	41.3	*28*	4.8	*26*	57	*27*	6.1	*10*	9.6	*38*
UK	Inner London	1 332	1 187	788	*7*	**59.1**	***1***	4.3	*43*	68	*19*	5.1	*21*	5.5	*89*
UK	East Anglia	1 110	1 416	432	*34*	38.9	*39*	4.6	*32*	57	*25*	5.2	*20*	7.1	*66*
AT	Wien	746	1 585	332	*58*	44.5	*18*	3.1	*100*	52	*31*	7.0	*5*	15.2	*8*
UK	Outer London	2 221	692	1 118	*4*	50.3	*4*	2.3	*141*	153	*3*	6.9	*6*	6.8	*71*
NL	Zuid-Holland	1 725	801	700	*10*	40.6	*32*	3.3	*86*	80	*13*	4.6	*33*	6.7	*72*
NL	Noord-Holland	1 345	1 223	593	*17*	44.1	*19*	3.7	*57*	52	*30*	3.9	*49*	6.3	*76*
SE	Sydsverige	608	446	276	*75*	45.5	*11*	4.3	*42*	30	*65*	5.0	*26*	10.7	*33*
DE	Darmstadt	1 753	1 132	673	*13*	38.4	*44*	3.5	*72*	90	*10*	5.1	*22*	5.4	*92*
UK	West Midlands	1 137	787	427	*35*	37.5	*48*	3.3	*87*	52	*29*	4.6	*34*	11.0	*30*
UK	Berkshire, Bucks and Oxford	1 165	884	510	*22*	43.8	*21*	2.5	*134*	99	*8*	8.5	*2*	6.1	*79*
BE	Antwerpen	673	457	252	*78*	37.5	*50*	4.2	*47*	32	*60*	4.8	*28*	14.8	*11*
IT	Lazio	2 039	595	684	*12*	33.5	*87*	3.5	*69*	116	*6*	5.7	*15*	5.5	*88*
DE	Oberbayern	2 055	1 363	736	*8*	35.8	*67*	2.6	*126*	109	*7*	5.3	*17*	5.8	*84*
DE	Berlin	1 448	1 159	652	*14*	45.1	*14*	1.8	*156*	75	*16*	5.2	*19*	5.4	*91*

([1]) Top 20 NUTS 2 regions listed according to the lowest summed up ranking figure, which combines all rankings shown in the table.
([2]) Exceptions to the reference year 1997 — DED1, DED2, DED3: 2000; PT regions: 1998.

Source: Eurostat — CLFS.

Figure 3: Regional range of percentage of employment accounted for by knowledge-intensive services (KIS) by Member State in 2002 ([1])



([1]) Rankings exclude regions for which reliability levels do not permit publication according to CLFS.

Source: Eurostat — CLFS.

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

Sources

Employment data here presented originate from Eurostat's Employment in High Tech database (EHT). Eurostat's EHT database includes data on employment in high technology and medium-high technology manufacturing sectors, knowledge-intensive service sectors, high technology service sectors, other sub-sectors and reference sectors. Employment in high tech data and derived indicators are extracted and built up using data from the Community Labour Force Survey (CLFS).

The database covers a time series from 1994 onwards, but differences exist and certain years are missing. Existence of data further depends on their reliability. Data are currently available at the national and regional levels (NUTS '99 levels 1 and 2) for the 15 Member States of the European Union. Data at the national level are also available for some Acceding and Candidate Countries, Iceland, Norway and Switzerland.

Data on value added and labour productivity were obtained from Eurostat's Structural Business Statistics (SBS) database.

NACE

The data here presented are based on the Statistical classification of economic activities in the European Community, NACE Rev.1.1.

NUTS

Regional data are presented according to the Nomenclature of Territorial Units for Statistics, NUTS 1999, developed by Eurostat. Data in this SIF are presented at the NUTS 2 level, subject to being statistically significant.

Quality of the data

The guidelines on the sample size reliability of the data established by the CLFS are applied to the EHT database and therefore regions for which reliability levels do not permit publication appear as not available and are flagged as unreliable. Regions for which reliability levels define the data as unreliable but allow for publication are included in the rankings and flagged as unreliable.

Value added at factor cost

Value added at factor cost is the gross income from operating activities after adjusting for operating subsidies and indirect taxes.

Labour productivity

Labour productivity refers to the gross value added per person employed.

Classification of high tech and knowledge intensive sectors

High tech and medium-high tech manufacturing sectors

The classification of high and medium-high technology manufacturing sectors is based on the OECD's classification (itself based on the ratio of R&D expenditure to GDP or R&D intensity). Since the CLFS only allows reporting of NACE at the 2 digit level, the following NACE Rev 1.1 sectors are included:

High tech Manufacturing

30 Manufacture of office machinery and computers
32 Manufacture of radio, television and communication equipment and apparatus
33 Manufacture of medical precision and optical instruments watches and clocks.

Medium-high tech manufacturing

24 Manufacture of chemicals and chemical products
29 Manufacture of machinery and equipment n.e.c.
31 Manufacture of electrical machinery and apparatus n.e.c.
34 Manufacture of motor vehicles, trailers and semi-trailers
35 Manufacture of other transport equipment.

Knowledge-intensive services (KIS)

Following a similar logic as for manufacturing, Eurostat defines the following sectors as knowledge-intensive services (KIS):

Knowledge-intensive services

61 Water transport
62 Air transport
64 Post and telecommunications
65 Financial intermediation, except insurance and pension funding
66 Insurance and pension funding, except compulsory social security
67 Activities auxiliary to financial intermediation
70 Real estate activities
71 Renting of machinery and equipment without operator and of personal and household goods
72 Computer and related activities
73 Research and development
74 Other business activities
80 Education
85 Health and social work
92 Recreational, cultural and sporting activities

Of these sectors, 64, 72 and 73 are considered high tech services. Sectors 61, 62, 70, 71 and 74 compose the sub-group of Knowledge-intensive market services (excluding high-tech services and financial intermediation), whereas sectors 65, 66 and 67 may be grouped as Knowledge-intensive financial services (1).

Due to the lack of employment data at the 2-digit level, employment in high tech and knowledge-intensive sector indicators for MT, PL and TR may not be calculated and therefore are not presented in this SIF.

SBS data are available at the three-digit level and therefore indicators based on this source follow the strict definitions of high tech and medium-high tech manufacturing sectors agreed by the OECD and Eurostat. In this sense, high tech manufacturing indicators in Table 1 include classes 24.4 (Manufacture of pharmaceuticals, medicinal chemicals and botanical products) and 35.3 (Manufacture of aircraft and spacecraft), whereas high tech and medium-high tech manufacturing indicators exclude class 35.1 (Building and repairing of ships and boats).

Statistical abbreviations and symbols

u unreliable
:u extremely unreliable data
: not available

Specific notes to Figure 1

The selected sectors presented in Figure 1 are defined as follows:

- ***Knowledge-intensive services*** (KIS): see above.
- ***Other services*** refers to total services (NACE Rev 1.1 Sections G to Q) excluding knowledge-intensive services (KIS) as defined above.
- ***Other*** (Neither manufacturing, nor services) refers to total economy excluding manufacturing (NACE Rev 1.1 Sections D) and services (NACE Rev 1.1 Sections G to Q) sectors.
- ***Other manufacturing*** refers to total manufacturing (NACE Rev 1.1 Sections D) excluding high tech and medium-high tech manufacturing sectors as defined above.
- ***High tech and medium-high tech manufacturing***: See above.

For further methodological notes, please refer to Eurostat's reference database NewCronos Theme 9, Domain Employment in high technology sectors — EHT.

(1) At the time of writing this SIF, the Employment in high tech domain does not yet contain data for the subgroups of KIS Knowledge-intensive market services and Knowledge-intensive financial services separately, but they are intended to be included in the future.

Further information:

➢ **Reference publications**

Title Statistics on Science and technology in Europe, 2003 edition (forthcoming)

➢ **Databases**

New Cronos, Theme 9, Domain: eht

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