

Havlik, Peter; Landesmann, Michael; Stehrer, Robert

Research Report

Competitiveness of CEE Industries: Evidence From Foreign Trade Specialization and Quality Indicators

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No. 278
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*Peter Havlik,
Michael Landesmann and
Robert Stehrer*

**Competitiveness of
CEE Industries:
Evidence from
Foreign Trade
Specialization and
Quality Indicators**

Peter Havlik is WIIW Deputy Director. Michael Landesmann is Research Director of WIIW and professor of economics at Johannes Kepler University, Linz, Austria. Robert Stehrer is WIIW research economist and lecturer in economics at Johannes Kepler University.

This paper is part of an ongoing WIIW research on the competitiveness of CEE candidate countries' industry.

*Peter Havlik,
Michael Landesmann and
Robert Stehrer*

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Executive summary

This paper analyses the competitiveness of the manufacturing industry in the CEE candidate countries (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) with special emphasis on trade with the European Union during the second half of the 1990s. Changing specialization patterns, the evolution of sectoral trade balances and market shares, as well as price/quality gaps at detailed product level, are used as indicators of trade competitiveness.

The CEE candidate countries' market share in extra-EU manufacturing imports grew from 9.5% in 1995 to 11.4% in 1999, the EU export surplus in manufacturing trade is diminishing. Candidate countries' exports to the EU have been increasingly specialized on a few key industries: textiles and textile products, basic metals and fabricated metal products, electrical & optical equipment and transport equipment; in the Baltic states also on wood and wood products. The manufacturing industry in Slovakia features the highest number of branches with a trade surplus while the weakest competitive position in trade with the EU has been identified for the manufacturing industry in Slovenia, Poland and Latvia. Textiles, wood products, basic metals and furniture were identified as branches where candidate countries enjoy revealed comparative advantages (RCAs) in trade with the EU. Apart from chemicals, rubber and plastic products, nearly all candidate countries show negative RCAs also in pulp and paper, machinery and equipment n.e.c. and electrical and optical equipment.

Technology-driven industries account for a growing share of exports in nearly all candidate countries, labour-intensive industries have growing export shares in Bulgaria, Romania and the Baltic states. The representation of labour-intensive industries in candidate countries' exports to the EU is still – with the notable exception of Hungary – much bigger than in the present EU member states; the representation of technology-driven industries in candidate countries' exports to the EU is usually smaller (Hungary, the Czech Republic, Estonia and Slovakia are exceptions). Nevertheless, the initial export specialization pattern of CEE candidate countries has nearly completely reversed: in many candidate countries export specialization is evolving towards more sophisticated and less capital-intensive industries. Labour-intensive industries accounted for a major part of competitive export gains in Bulgaria, Latvia, Lithuania and Romania.

Finally, using very detailed information on export unit prices, an analysis of the 'quality' of candidate countries' export products shows that there were substantial price gaps between CEE producers and EU incumbents over the 1990s. However, some countries have closed these gaps (Hungary and Slovenia in particular), while others maintain very substantial price gaps (Bulgaria and Romania in particular). The largest price/quality gaps are found in 'technology-driven' and 'mainstream' industries, as well as in 'high-skill-intensive branches';

the lowest price gaps in capital-intensive and low-skill-intensive branches. Over time, however, the strongest 'quality catching-up' can be observed in 'technology-driven' and 'high-skill-intensive' industries. Again, Hungary occupies the position of an 'outlier' amongst the candidate countries, especially with regard to 'quality catching-up' in the 'technology-driven' and skill-intensive industries.

Keywords: *EU candidate countries, competitiveness, trade specialization, catching-up*

JEL classification numbers: *F14, F15, L6, P27*

Competitiveness of CEEE Industries: Evidence From Foreign Trade Specialization and Quality Indicators

1 Introduction

Trade integration between the EU and the CEE candidate countries (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) progressed with remarkable speed during the 1990s. Developments were rather dynamic: EU exports to the region increased about eight times, imports more than seven times between 1990 and 2000. After trade liberalization and re-orientation, the EU is nowadays the most important trading partner for all candidate countries, accounting for 50% (Bulgaria and Lithuania) to more than 75% (Hungary and Estonia) of their total exports. Import shares are as a rule lower (below 70% of candidate countries' imports originated in the EU in the year 2000), largely because energy and raw materials are imported from outside the EU (mainly from the CIS). After accession, the share of candidate countries' trade with the *enlarged EU* would rise by six to eight percentage points (much more in the Czech and Slovak Republics who trade more with each other). Most candidate countries are having *negative trade balances* with the EU, only Hungary (since 1997) and recently also Slovakia (since 1999) record trade surpluses with the EU. The largest trade deficit (growing until the year 2000) with the EU is reported for Poland.¹

A broadly similar picture can be observed in manufacturing trade as well. The bulk of candidate countries' manufacturing trade is nowadays also conducted with the EU: the shares of the EU in total manufacturing exports ranged from 43% in Bulgaria (year 1997) to more than 70% in Hungary (year 1998), import shares range from 38% (Bulgaria) to nearly 70% in Slovenia (Tables 1 and 3). Candidate countries' manufacturing exports to the EU increased by more than 75% between 1995 and 1999 in current ECU, much faster than exports of other competitors on the EU market (total extra-EU manufacturing imports grew by 47%).² Hungary, Estonia, the Czech Republic and Slovakia recorded the fastest export growth (Table 1). Consequently, the *candidate countries' market share* in extra-EU imports grew from 9.5% in 1995 to 11.4% in 1999, reaching about half of the US market share in the EU and surpassing that of Japan. The Czech Republic, Hungary and Poland supplied each about 2.5% of extra-EU manufacturing imports in 1999 (Table 2, more details in section 4 below). EU manufacturing exports to the candidate countries grew with nearly equal speed during this period (+74%), much faster than overall extra-EU manufacturing industry exports

¹ See Havlik et al. (2001) and WIIW (2000). Data on total trade are based on candidate countries' national statistics.

² In order to secure equal country coverage, we focus our analysis on the period after 1995 (since the last EU enlargement). It has to be kept in mind that Austria is an important trading partner of CEECs, and Finland and Sweden trade extensively with the Baltic states. The CEEC(7) market share in extra-EU(12) manufacturing imports amounted to about 3% in 1990 and 7.2% in 1995 – see Havlik (2000). Data on EU manufacturing industry trade are based on the Eurostat Comext Database.

(+32% – see Table 3). About 12.5% of all extra-EU manufacturing exports went to the candidate countries in 1999 (as compared with 9.5% in 1995 – see Table 4).³ The importance of the EU market for candidate countries' manufacturing exports and imports is thus already roughly comparable to that of the internal market for the current EU member states (intra-EU trade accounts for 63% of total EU manufacturing industry trade).

Table 1

EU(15) – Manufacturing industry imports from CEECs, ECU million

(without intra-EU trade)

	1995	1996	1997	1998	1999	1999/1995 growth in %	EU share (1998) % of total exports
Bulgaria	1678.3	1594.8	1940.2	2095.0	2098.7	25.0	43
Czech Republic	8318.1	9105.8	10989.1	13898.9	16022.8	92.6	66
Slovak Republic	2977.9	3297.1	3845.9	5230.2	5797.4	94.7	56
Hungary	7088.7	8215.9	11007.1	13790.6	16709.6	135.7	73
Poland	10891.5	10992.4	12771.9	14763.4	16238.9	49.1	68
Romania	3263.8	3488.6	4297.0	4990.7	5534.3	69.6	65
Slovenia	4182.8	4208.2	4596.0	5131.6	5221.7	24.8	65
Estonia	780.0	979.3	1337.0	1537.6	1664.6	113.4	55
Latvia	868.3	967.5	1106.0	1160.4	1207.0	39.0	49
Lithuania	904.4	1028.4	1238.8	1334.2	1519.6	68.0	38
CEEC(10)	40953.8	43878.0	53129.2	63932.4	72014.5	75.8	
USA	89583.7	97004.2	116927.5	128774.9	141204.2	57.6	
Japan	53427.6	51638.1	58438.2	63788.5	69354.0	29.8	
EU total	429876.9	452127.6	521519.6	574191.6	631469.5	46.9	

Source: UN, Eurostat COMEXT database, own calculations.

The overall manufacturing trade balance of the EU has traditionally been positive, though EU surpluses have been shrinking since 1997; EU trade with candidate countries is no exception in this respect. (EU manufacturing trade with Japan has been in a deficit.) In 1999, the EU export surplus in manufacturing industry trade with the candidate countries dropped to ECU 13.7 billion (from its peak of ECU 18.4 billion in 1997), mainly due to a declining trade surplus with the Czech Republic, Romania, Estonia and Lithuania. Hungary and the Slovak Republic have even managed to achieve a surplus in manufacturing trade with the EU (Table 5). Judging from these trade balance improvements – which result from different growth rates of exports and imports between 1995-1999 – the *international competitiveness of manufacturing industry* in the Czech Republic, Hungary, Slovakia and Estonia improved during this period, whereas it deteriorated further in the remaining candidate countries.

³ In 1990, less than 3% of EU(12) manufacturing exports went to the CEEC(7) – see Havlik (2000), p. 91.

Table 2

CEECs' market shares in the EU(15) manufacturing industry imports

(without intra-EU trade)

	1995	1996	1997	1998	1999
Bulgaria	0.39	0.35	0.37	0.36	0.33
Czech Republic	1.94	2.01	2.11	2.42	2.54
Slovak Republic	0.69	0.73	0.74	0.91	0.92
Hungary	1.65	1.82	2.11	2.40	2.65
Poland	2.53	2.43	2.45	2.57	2.57
Romania	0.76	0.77	0.82	0.87	0.88
Slovenia	0.97	0.93	0.88	0.89	0.83
Estonia	0.18	0.22	0.26	0.27	0.26
Latvia	0.20	0.21	0.21	0.20	0.19
Lithuania	0.21	0.23	0.24	0.23	0.24
CEEC(10)	9.53	9.70	10.19	11.13	11.40
USA	20.84	21.46	22.42	22.43	22.36
Japan	12.43	11.42	11.21	11.11	10.98

Source: UN, Eurostat COMEXT database, own calculations.

Table 3

EU(15) – Manufacturing industry exports to CEECs, ECU million

(without intra-EU trade)

	1995	1996	1997	1998	1999	1999/1995 growth in %	EU share (1998) % of total imports
Bulgaria	1891.4	1567.7	1674.1	2225.3	2479.8	31.1	38
Czech Republic	10846.3	13000.1	14616.8	15853.8	17177.2	58.4	64
Slovak Republic	2998.8	3754.8	4446.4	5347.3	5216.7	74.0	50
Hungary	8191.7	9341.4	11819.0	14317.1	16021.8	95.6	64
Poland	13906.1	17794.4	22634.4	25526.9	26641.8	91.6	66
Romania	3559.0	4156.7	4708.8	5955.7	5950.0	67.2	58
Slovenia	4902.1	5071.0	5922.2	6317.8	6498.6	32.6	69
Estonia	1292.8	1605.9	2289.3	2578.0	2300.7	78.0	60
Latvia	864.9	986.0	1416.2	1663.1	1546.6	78.8	53
Lithuania	934.3	1333.1	1971.0	2182.6	1922.9	105.8	50
CEEC(10)	49387.6	58611.2	71498.5	81967.5	85756.1	73.6	
USA	93923.6	104102.5	128291.2	146702.1	167400.4	78.2	
Japan	30753.5	33269.1	33216.0	28869.6	32778.6	6.6	
EU total	522077.2	572636.4	649658.6	661128.6	688245.4	31.8	

Source: UN, Eurostat COMEXT database, own calculations.

Table 4

CEECs' shares in the EU(15) manufacturing industry exports

(without intra-EU trade)

	1995	1996	1997	1998	1999
Bulgaria	0.36	0.27	0.26	0.34	0.36
Czech Republic	2.08	2.27	2.25	2.40	2.50
Slovak Republic	0.57	0.66	0.68	0.81	0.76
Hungary	1.57	1.63	1.82	2.17	2.33
Poland	2.66	3.11	3.48	3.86	3.87
Romania	0.68	0.73	0.72	0.90	0.86
Slovenia	0.94	0.89	0.91	0.96	0.94
Estonia	0.25	0.28	0.35	0.39	0.33
Latvia	0.17	0.17	0.22	0.25	0.22
Lithuania	0.18	0.23	0.30	0.33	0.28
CEEC(10)	9.46	10.24	11.01	12.40	12.46
USA	17.99	18.18	19.75	22.19	24.32
Japan	5.89	5.81	5.11	4.37	4.76

Source: UN, Eurostat COMEXT database, own calculations.

Table 5

**CEECs' trade balances in manufacturing industry trade
with the EU(15), ECU million**

	1995	1996	1997	1998	1999	Total TB (1998)
Bulgaria	-213.1	27.0	266.1	-130.3	-381.2	667.0
Czech Republic	-2528.2	-3894.3	-3627.7	-1954.8	-1154.3	-628.0
Slovak Republic	-20.9	-457.7	-600.5	-117.1	580.7	-845.0
Hungary	-1102.9	-1125.5	-811.9	-526.6	687.8	-1582.0
Poland	-3014.6	-6802.0	-9862.5	-10763.5	-10402.9	-13740.0
Romania	-295.2	-668.0	-411.8	-965.0	-415.7	-1844.0
Slovenia	-719.3	-862.8	-1326.2	-1186.2	-1276.9	-476.0
Estonia	-512.9	-626.6	-952.4	-1040.3	-636.1	-1582.0
Latvia	3.3	-18.5	-310.2	-502.8	-339.6	-617.0
Lithuania	-29.9	-304.7	-732.2	-848.4	-403.4	-1382.0
CEEC(10)	-8433.7	-14733.2	-18369.3	-18035.1	-13741.6	-22029.0
EU trade balance with:						
USA	4339.9	7098.4	11363.7	17927.2	26196.2	
Japan	-22674.1	-18368.9	-25222.2	-34918.9	-36575.4	
EU total	92200.3	120508.8	128139.0	86937.0	56775.9	

Source: UN, Eurostat COMEXT database, own calculations.

2 Specialization, branch balances and RCA in trade with the EU

Trade specialization

Unless otherwise stated, the analysis in the rest of this paper only covers candidate countries' trade with the EU since it is based on the Eurostat COMEXT Database. The COMEXT Database provides up-to-date, detailed and consistent mirror statistics which are not available from other sources. However, it has to be kept in mind that only a part of manufacturing trade (in most countries a larger part – see Tables 1 and 3) is covered. In most branches and countries, the share of the EU in total manufacturing industry trade has been overwhelming (exceptions are typically food and beverages (DA) as well as coke and refined petroleum (DF) exports – see Figures 1a and 1b).

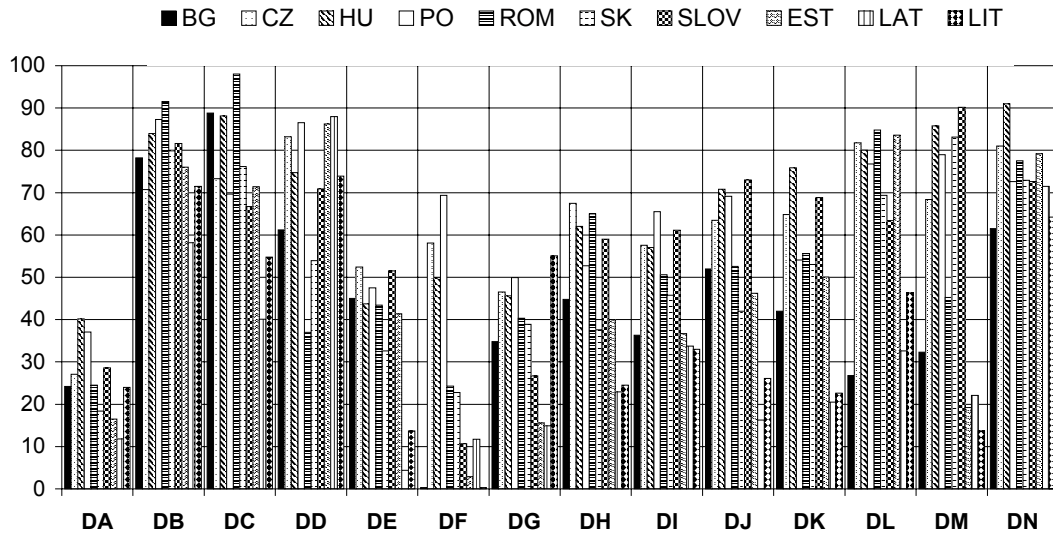
Candidate countries' manufacturing trade with the EU has been *increasingly specialized* on a few key industries. Measured by the concentration ratios, the share of the three largest NACE 2-digit industries in total manufacturing exports to the EU (CR3) has been growing after 1995 nearly everywhere in the region (except Bulgaria and Poland). Concentration ratios exceeded 60% in Bulgaria, Hungary and Romania, and even 75% in Latvia (year 1999 – see Figure 2a).⁴ In Hungary, for example, electrical, optical and transport equipment account for more than 60% of manufacturing exports, just as textiles and wood products do in Latvia. Such a high export concentration can be potentially dangerous. Typically, among the *most important exporting branches* are textiles and textile products (DB), basic metals and fabricated metal products (DJ), electrical and optical equipment (DL) and transport equipment (DM), in the Baltic states also wood and wood products (DD) – see Figure 3a.

Import specialization has been less pronounced, but has been growing as well in most candidate countries (except the Czech Republic – see Figure 2b). In 1999, concentration ratios measured by the first three largest import industries (CR3) accounted for less than 60% of all manufacturing imports (in Hungary, Romania and Slovakia), and even for less than 50% of total manufacturing imports in the remaining candidate countries. The biggest import shares are reported for textiles (DB), chemicals (DG), machinery and equipment (DK), electrical and optical equipment (DL) and transport equipment (DM) – see Figure 3b.

⁴ Compared to the present EU member states, trade specialization measured by concentration ratios has in the candidate countries thus been higher than in the EU – see European Commission (1999), pp. P3-25.

Figure 1a

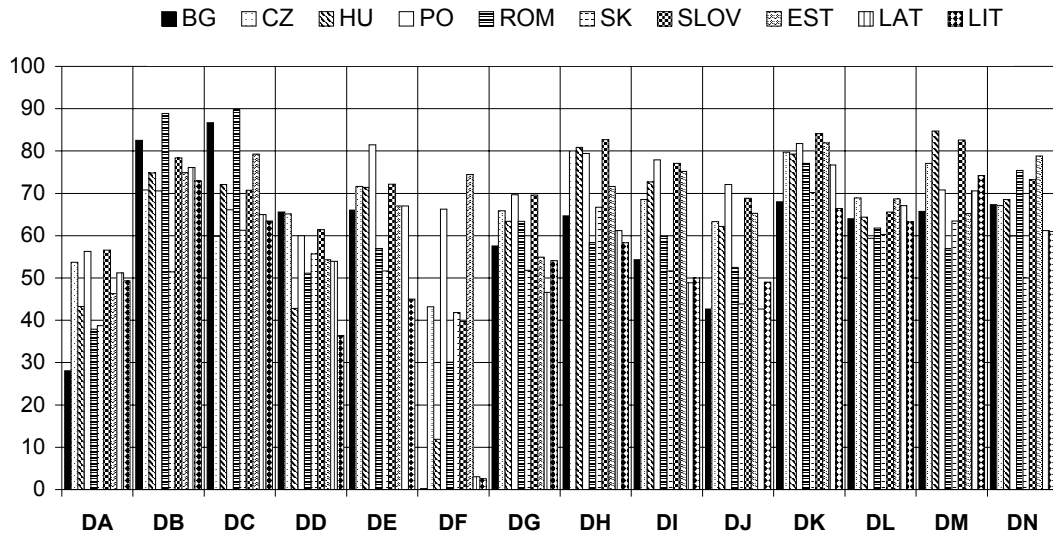
Share of the EU in CEE manufacturing exports, 1998



Note: See Annex for codes of individual 2-digit NACE industries.

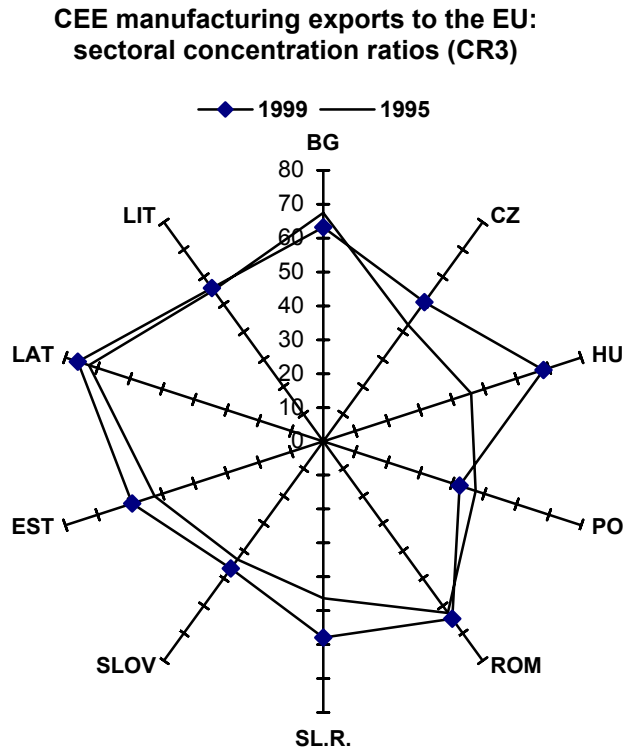
Figure 1b

Share of the EU in CEE manufacturing imports, 1998



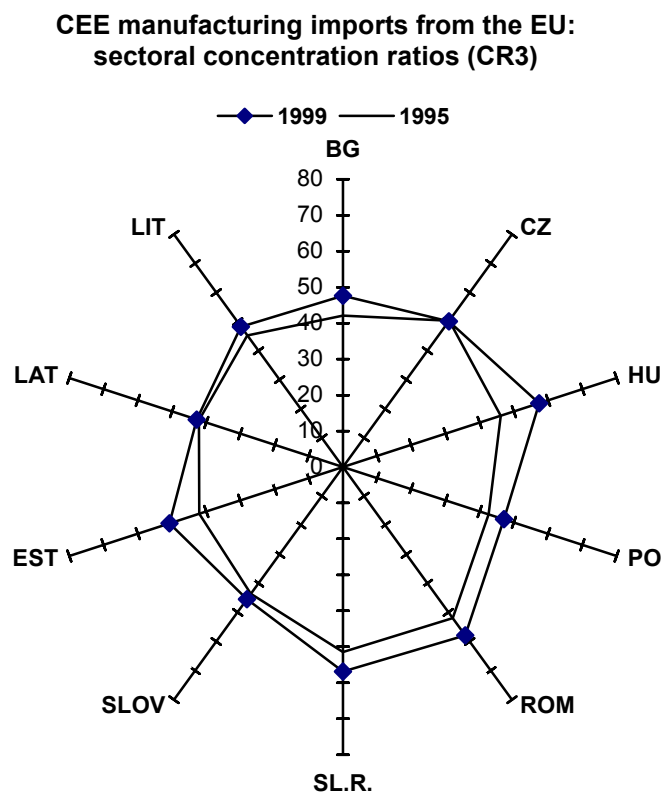
Note: See Annex for codes of individual 2-digit NACE industries.

Figure 2a



Source: UN, Eurostat COMEXT database, own calculations.

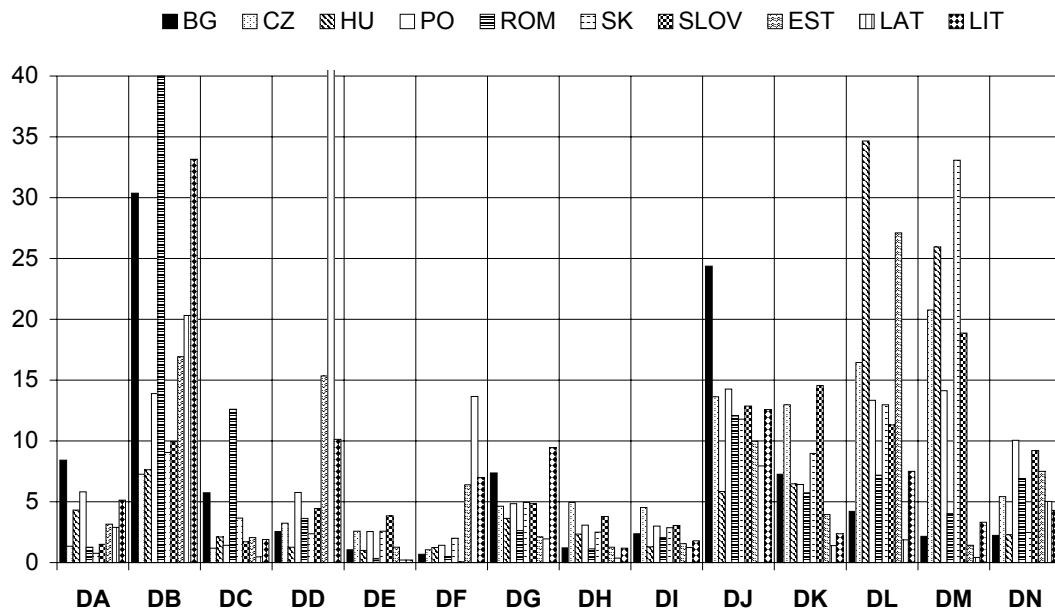
Figure 2b



Source: UN, Eurostat COMEXT database, own calculations.

Figure 3a

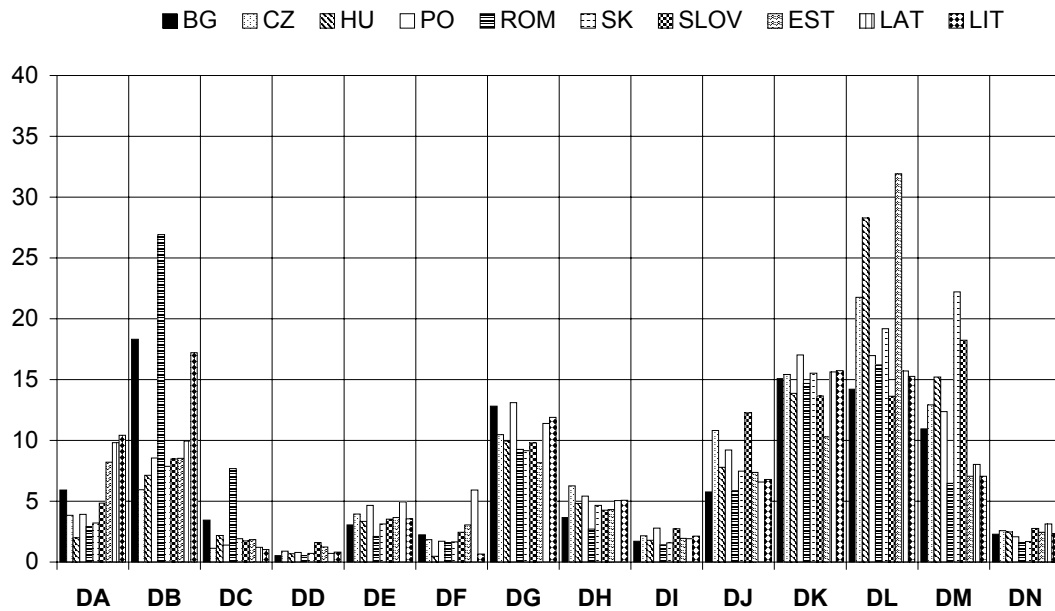
Structure of CEE manufacturing exports to the EU, 1999
(in % of total manufacturing)



Note: See Annex for codes of individual 2-digit NACE industries.

Figure 3b

Structure of CEE manufacturing imports from the EU, 1999
(in % of total manufacturing)



Note: See Annex for codes of individual 2-digit NACE industries.

A comparison of export and import structures reveals certain similarities – despite the fact that the export structures of the individual candidate countries (and therefore their trade specialization) are widely different. There is ample evidence for *growing intra-industry trade, or the simultaneous exports and imports of similar products*, between the more advanced CEECs and the EU. This is in line with the ‘new’ trade theory which suggests that trade among industrialized countries is motivated by product differentiation and economies of scale.⁵ Measured by Grubel-Lloyd indices, intra-industry trade has been most pronounced in EU trade of the Czech Republic, Slovenia and Hungary whereas it has been lowest in Latvia, Lithuania and Romania (Table 6).⁶ Moreover, intra-industry trade has been growing most rapidly in the Czech Republic and (less pronounced) in Poland; it stagnated either at a relatively high level in Hungary, Slovenia and the Slovak Republic, or at a low level in the remaining candidate countries. Compared to the early period of transition (and even more so with the pre-transition period), intra-industry trade between the more advanced CEECs (the Czech and Slovak Republics, Hungary and Poland) and the EU has increased further whereas it has more or less stagnated in Bulgaria and Romania.⁷ Judging also by the high shares in exports and imports, intra-industry trade (including outward processing trade – OPT) has been of particular importance in textiles as well as in electrical, optical and transport equipment.

Table 6

Indicators of intra-industry trade with the EU(15)

(Grubel-Lloyd indexes)

	1995	1996	1997	1998	1999
Bulgaria	0.401	0.419	0.413	0.415	0.401
Czech Rep.	0.645	0.660	0.709	0.729	0.729
Estonia	0.440	0.485	0.474	0.475	0.475
Hungary	0.578	0.601	0.606	0.611	0.606
Latvia	0.290	0.265	0.299	0.278	0.271
Lithuania	0.273	0.288	0.294	0.307	0.347
Poland	0.455	0.463	0.470	0.486	0.508
Romania	0.327	0.336	0.341	0.333	0.371
Slovak Rep.	0.534	0.574	0.577	0.541	0.553
Slovenia	0.651	0.661	0.670	0.684	0.674

GL = $1 - \frac{\sum \text{ABS}(x_{ij}-m_{ij})}{\sum (x_{ij}+m_{ij})}$
(calculated from trade data at NACE 3-digit level).

Source: Eurostat COMEXT database, own calculations.

⁵ See Vona (1991).

⁶ The Grubel-Lloyd index is defined as:

$$GL = 1 - \frac{\sum \text{ABS}(x_{ij}-m_{ij})}{\sum (x_{ij}+m_{ij})}$$

where x_{ij} and m_{ij} are country i 's exports and imports of NACE 3-digit sector j , respectively.

⁷ See Dobrinsky (1995). There are no comparable data for the 'new' countries Slovenia, Slovakia and the Baltics.

Branch trade balances and competitiveness

Figures A/1-10 in the Annex show the evolution of branch trade balances by individual candidate countries' trade with the EU over the period 1995-1999. As another sign of the candidate countries' diversity, there is no clear pattern either across countries or branches. We shall therefore point out the main features by each candidate country. A branch trade surplus can be interpreted as a rough proxy of competitiveness. A summary qualitative evaluation of trade competitiveness, based on the evolution of branch trade balances, is provided in Table 7 below.

Bulgaria has a lasting trade surplus with the EU in basic metals and fabricated metal products (DJ) and increasingly also in textiles (DB). The major part of the overall deficit (ECU 380 million in 1999) stems from trade with machinery and equipment (DK), electrical and optical equipment (DL) and transport equipment (DM). In its total trade with the world, Bulgaria reported for the year 1997 deficits in coke and refined petroleum (DF), machinery and equipment, as well as in electrical and optical equipment.

In the **Czech Republic**, the overall trade balance with the EU has markedly improved after 1996 (the 1999 trade deficit, ECU 115 million, was only one third of the 1996 level). The largest trade surpluses are being recorded in wood products (DD), other non-metallic mineral products (DI), other manufacturing (DN – mainly furniture) and, since 1998, especially in transport equipment (DM, more than ECU 1100 million in 1999). There have been growing deficits in food and beverages (DA) and in chemicals (DG), as well as huge (though recently declining) trade deficits in machinery and equipment (DK) and electrical and optical equipment (DL). In total manufacturing trade, the Czech Republic reported large deficits in chemicals (DG) and electrical and optical equipment (DL) in 1998.

In **Hungary**, manufacturing trade with the EU turned into a surplus in 1999 (nearly ECU 700 million). With lasting surpluses in food (DA), this has resulted from spectacular improvements in electrical and optical equipment (DL) as well as transport equipment (DM). The latter two branches achieved together a surplus of more than ECU 3 billion in 1999. But there have been lasting trade deficits in pulp and paper (DE), as well as growing trade deficits in chemicals (DG), machinery and equipment (DK) and rubber and plastics (DH). In total manufacturing trade, Hungary reported large deficits especially in chemicals (DG) and machinery and equipment (DK) in 1998.

Poland has a huge deficit in manufacturing trade with the EU (more than ECU 10 billion in both 1998 and 1999). There are only two branches recording a surplus: wood and wood products (DD) and manufacturing n.e.c. (DN, mainly furniture). The fastest growing deficits are recorded in chemicals (DG), machinery and equipment n.e.c. (DK) and electrical and optical equipment (DL). There is also a large (though recently declining) trade deficit in

transport equipment (DM). In total trade, Poland reported for 1998 surpluses only in food and beverages (DA), wood products (DD) and manufacturing n.e.c. (DN, mainly furniture).

Romania has a fluctuating deficit in manufacturing trade with the EU. It has growing surpluses in textiles (DB), leather (DC), wood products (DD) and manufacturing n.e.c. (DN, mainly furniture), and a declining surplus in basic metals and fabricated metal products (DJ). There are large and growing deficits in chemicals (DG) and in electrical and optical equipment (DL), as well as a lasting trade deficit in machinery and equipment (DK). It is interesting to note that, despite its large domestic food industry, the Romanian EU trade in food, beverages and tobacco (DA) has been in deficit as well. In its total trade for 1998, large trade deficits were reported for food and beverages, machinery and equipment n.e.c. and electrical equipment as well.

The **Slovak Republic's** manufacturing trade balance with the EU improved radically after 1997, and in 1999 the trade reached even a surplus (ECU 580 million). This improvement was clearly dominated by a surging surplus of transport equipment (DM), reaching nearly ECU 800 million in 1999. There has been also a large (but declining) trade surplus in basic metals and fabricated metal products (DJ). Food and beverages (DA), chemicals (DG), and especially machinery and equipment (DK) as well as electrical and optical equipment (DL, the latter improving) record large trade deficits. In total trade, large deficits were reported for 1998 in food and beverages, chemicals, machinery and equipment n.e.c. as well as in electrical and optical equipment.

Slovenia's trade deficit in manufacturing trade with the EU is relatively high (nearly ECU 1300 million in 1999). Surpluses are recorded only in wood products (DD) and manufacturing n.e.c. (DN, mainly furniture). There have been relatively large trade deficits in food and beverages (DA), chemicals (DG), electrical and optical equipment (DL) and, though recently declining, also in transport equipment industry (DM). In total trade, Slovenia reported in 1998 larger surpluses only in wood products, pulp and paper, machinery and equipment n.e.c. and furniture.

Estonia's trade deficit with the EU has remarkably improved after 1998 (from over ECU 1 billion to just ECU 640 million in 1999). This has been due mainly to a rising surplus in textiles (DB), wood products (DD) and manufacturing n.e.c. (DN, mainly furniture). On the other hand, there have been large deficits in food and beverages (DA), chemicals (DG), machinery and equipment n.e.c. (DK), electrical and optical equipment (DL) and transport equipment (DM). As in the case of trade with the EU, in total trade in 1998 surpluses were reported only in textiles, wood products, and furniture.

Table 7

Qualitative assessment of manufacturing industry trade competitiveness

(based on sectoral trade balances with the EU during 1995-1999)

	Czech R.	Slovak R.	Hungary	Poland	Slovenia	Romania	Bulgaria	Estonia	Latvia	Lithuania	positive countries	Number of: "+" cases (30 max.)	"-" cases (30 max.)
DA Food products; beverages and tobacco	---	--	+++	+	---	-	+	-	--	-	3	5	13
DB Textiles and textile products	+++	+++	++	--	---	+++	+++	+++	+++	+++	8	23	5
DC Leather and leather products	-	+++	+	---	---	+++	++	--	--	++	5	11	10
DD Wood and wood products	+++	+++	++	+++	++	+++	+++	+++	+++	++	10	27	0
DE Pulp, paper & paper products; publishing & printing	---	-	--	--	---	---	--	--	---	--	0	0	23
DF Coke, refined petroleum products & nuclear fuel	---	++	++	--	---	--	--	+	+	++	5	8	12
DG Chemicals, chemical products and man-made fibre	---	---	---	---	--	---	---	---	---	---	0	0	29
DH Rubber and plastic products	-	--	---	---	--	--	---	---	---	--	0	0	24
DI Other non-metallic mineral products	+++	+++	---	---	--	++	+	-	--	--	4	9	13
DJ Basic metals and fabricated metal products	+++	++	---	---	---	++	++	-	+	++	6	12	10
DK Machinery and equipment n.e.c.	-	-	---	---	--	--	---	-	---	---	0	0	22
DL Electrical and optical equipment	-	-	+++	---	---	--	---	-	---	--	1	3	19
DM Transport equipment	+++	+++	+++	-	--	--	---	-	---	-	3	9	13
DN Manufacturing n.e.c.	+++	+++	---	+++	+++	+++	--	+++	+++	+++	8	24	5
Number of positive branches	6	8	7	3	2	6	6	4	5	6			
Number of "+" cases (out of max. 42)	18	22	16	7	5	16	12	10	11	14			
% of "+" cases	42.9	52.4	38.1	16.7	11.9	38.1	28.6	23.8	26.2	33.3			
Number of "-" cases (out of max. 42)	16	10	20	28	31	17	21	16	24	16			
% of "-" cases	38.1	23.8	47.6	66.7	73.8	40.5	50.0	38.1	57.1	38.1			

Legend for evaluation:

---	rising deficits
--	low or stable deficits
-	declining deficits
+	small or declining surplus
++	stable surplus
+++	growing surplus

Sources: WIW evaluation based on EUROSTAT COMEXT Database.

Latvia's deficit in manufacturing trade with the EU was around ECU 300 to 500 million during 1997-1999. There was a growing surplus in textiles (DB) and especially wood products (DD) whereas the surplus in coke, refined petroleum (DF) was declining. Again, the largest trade deficits are recorded in food and beverages (DA), chemicals (DG), machinery (DK), electrical and optical equipment (DL) and transport equipment (DM). Like in Estonia, Latvian total trade for 1998 recorded surpluses only in textiles, wood products and furniture.

Lithuania's deficit in manufacturing trade with the EU improved in 1999 as well (it dropped from ECU 850 million in 1998 to just ECU 400 million). There are relatively high trade surpluses in textiles (DB), wood products (DD) and coke and refined petroleum (DF), but large deficits in food and beverages (DA), machinery and equipment (DK), electrical and optical equipment (DL) and (in 1999 declining) transport equipment (DM). In total trade, a surplus is reported only in textiles and wood products (in 1998).

Table 7 provides a *qualitative assessment of competitiveness* based on the analysis of branch trade balances during the period 1995-1999. This '*competitiveness map*' enables us to identify strong and weak branches in each of the candidate countries. It provides also a summary evaluation of the trade competitiveness of the respective branches and countries. In a sectoral perspective across candidate countries, the 'best' performer is wood and wood products industry (DD), where all candidate countries have a *stable or even growing trade surplus* with the EU, followed by textiles and textile products (DB) and manufacturing n.e.c. (DN, mainly furniture). On the other hand, *serious problems with trade competitiveness* have branches such as chemicals (DG), rubber and plastics (DH), pulp and paper (DE) as well as machinery and equipment n.e.c. (DK), with a high frequency of trade deficits. In a cross-country perspective, manufacturing industry in Slovakia has the highest number of surplus branches and scores the best also in terms of the number of "+" cases (more than 52% of the maximum score). The weakest competitive position has been identified for manufacturing industry in Slovenia, Poland and Latvia.

Revealed comparative advantage (RCA)

An alternative and more concise picture of trade specialization and competitiveness is provided by the indicator of revealed comparative advantage.⁸ The RCAs presented in Figure 4 indicate that in 1999 there were only two branches where all candidate countries had a (positive) *revealed comparative advantage* in trade with the EU: textiles and textile products (DB) and wood and wood products (DD). There were also two branches where all

⁸ RCAs compare the relative shares of exports and imports of a particular branch with the share of the country's total manufacturing exports and imports. We use here the following definition of revealed comparative advantage:

$$RCA = \ln(E_i/I_i)/(E_{tot}/I_{tot}) * 100.$$

A higher RCA reveals a comparative advantage of branch i – see Balassa (1965).

candidates had a comparative disadvantage (negative RCA): chemicals (DG) and rubber and plastics (DH). Besides, nearly all candidate countries have positive RCAs also in leather and leather products (DC – except Hungary and Latvia), basic metals and fabricated metal products (DJ – except Hungary) and in manufacturing n.e.c. (DN, mainly furniture – here except Bulgaria and Hungary). *Textiles, leather, wood, basic metals and furniture thus can be identified as branches where candidate countries enjoy revealed comparative advantages in trade with the EU.* On the other hand, nearly all candidate countries have negative RCAs in pulp and paper (DE – except Slovenia), machinery and equipment n.e.c. (DK – again except Slovenia) and electrical and optical equipment (DL – except Hungary). The remaining branches are more heterogeneous in terms of RCAs of individual candidate countries: food and beverages (DA) have positive RCAs only in Bulgaria, Hungary and Poland, transport equipment (DM) in the Czech Republic, Hungary, Poland, Slovakia and Slovenia. There is an even less clear RCA pattern in coke and refined petroleum products (DF) and other non-metallic mineral products (DI).

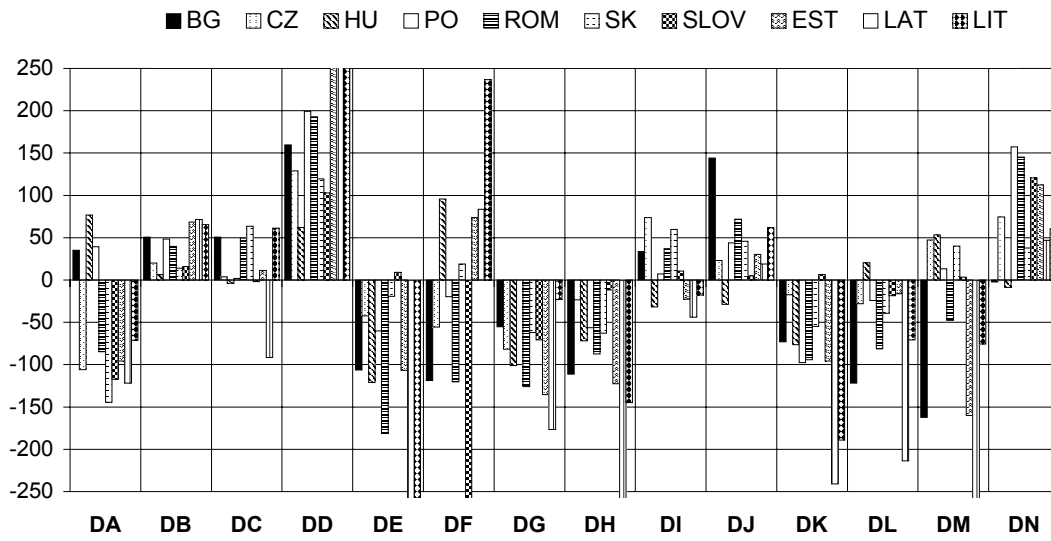
Due to the still ongoing structural adjustments, the effects of business cycles, etc., the pattern of RCAs has naturally been changing. One possibility to capture these changes in a more systematic manner is to look at RCA improvements (or deterioration) over time. Figure 5 shows average RCAs in 1998-1999 compared to 1995-1996.⁹ Positive numbers here indicate either a *growing revealed comparative advantage* (or declining comparative disadvantage) of a branch during the period concerned. Vice versa, negative numbers indicate either a growing comparative disadvantage (or a declining comparative advantage). All candidate countries record RCA improvements in transport equipment industry (DM), and most of them also in food and beverages (DA). The exceptions are the Czech Republic, where the RCA became more negative, and Hungary, where the comparative advantage became less pronounced. RCAs improved country-wise also in machinery and equipment (DK, except Hungary and Latvia), electrical equipment (DL, except Slovenia) and manufacturing n.e.c. (DN, except Hungary and Slovakia).

More pronounced RCA declines, that is a *deteriorating trade competitiveness* of most candidate countries, can be observed in pulp and paper (DE, except Bulgaria, Hungary and Poland – but all three countries already had negative RCAs in 1999), coke and refined petroleum (DF, except Estonia and Lithuania), chemicals (DG, here except Slovenia), other non-metallic mineral products (DI, except Bulgaria and Latvia), basic metals and fabricated metal products (DJ, except Bulgaria). Besides, more advanced candidate countries usually have deteriorating RCAs in labour intensive textiles, leather and wood industries.

⁹ A difference of averaged logarithms can roughly be interpreted as a RCA growth index.

Figure 4

Revealed comparative advantage (RCA) of CEE manufacturing trade with the EU, 1999

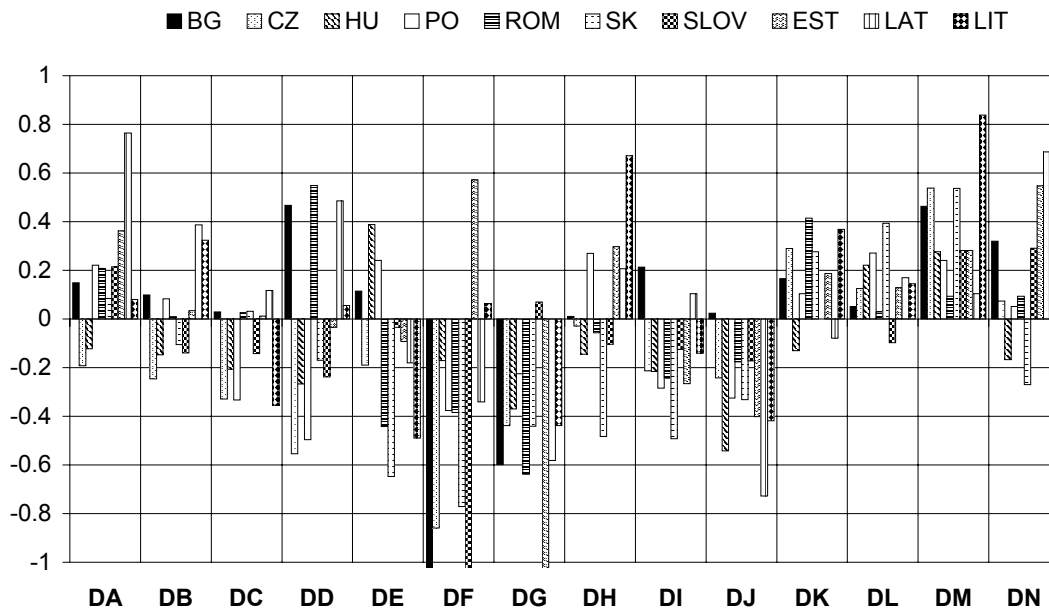


Note: See Annex for codes of individual 2-digit NACE industries.

Figure 5

RCA improvements in CEECs' trade with the EU

average 1998-1999 over 1995-1996



Note: See Annex for codes of individual 2-digit NACE industries.

Source: Own calculations based on COMEXT Database.

3 Factor inputs, skills and trade specialization

Detailed data on EU trade with the candidate countries (at NACE 3-digit level) permit to analyse the evolution of the *factor and skill content* of candidate countries' exports to the EU. Earlier studies have shown that the Central and East European countries started, in their trading structure with the EU(12), with a profile typical of less developed economies: their representation in exports of the labour-intensive industrial branches was above-average, in the capital-, R&D- and skill-intensive branches below-average (particularly in the latter two), while their representation in exports of energy-intensive branches was, except for Hungary, above-average – which reflects the heritage of cheap energy supplies within the CMEA in the CEECs' industrial export structure.¹⁰

Over time, important changes took place in the CEECs' export structure vis-à-vis overall EU imports and in their RCAs in these different categories of industries: the most remarkable change took place in Hungary: from sizeable deficits in its exports in the areas of capital-, R&D- and skill-intensive industries, it either completely eroded these deficits to zero or even achieved surpluses relative to the overall EU import structure. This pattern was followed in a much less spectacular manner by Poland and the Czech Republic, where deficits in the representation of skill-, R&D- and capital-intensive branches had been reduced. For these economies and also for the Slovak Republic the relatively strong presence of energy-intensive branches had been substantially reduced while this had not at all been the case with Romanian and Bulgarian exports to the EU (particularly in the latter case, dependence upon energy-intensive exports to the EU had increased markedly until 1998). Also the picture with respect to labour-intensive industries was remarkably different in the cases of Romania and Bulgaria, on the one hand, and the CEEC-5 on the other.

By 1998, the more advanced CEECs showed a much lower representation of labour-intensive industries in the export structure to the EU than did Greece, Portugal and Turkey; their export structure was more in line with that of Spain in this respect. The same could be said with respect to the representation of R&D- and skill-intensive branches in their exports to the EU: Most CEECs – again with the exception of Bulgaria and Romania – have reduced their sizeable deficits here relative to the EU overall import structure, which brings them more in line with the more advanced of the Southern EU economies rather than with the less advanced ones. Particularly remarkable were the developments of Hungary's trading structure with the EU. Given the degree of inter-industry branch specialization it was observed that the features of Hungary's export structure and RCA performance were close to Ireland's performance.¹¹

¹⁰ See Landesmann (2000) and Havlik (2000).

¹¹ See Landesmann (2000).

Discontinuity in statistics does not permit us to pursue this analysis in the exactly same manner for the more recent period. But following the methodology applied also for the member states, we shall use here the new *taxonomy of industries* (at NACE 3-digit level) where industries are clustered by their typical input combinations and different requirements for employment skills.¹² Figure 6 shows the evolution of shares in candidate countries' exports to the EU(15), where industries are classified by different factor inputs, in the period 1995-1999. One can see that *technology-driven industries* account for a growing share of exports in nearly all candidate countries, with the highest shares (and most spectacular increases) in Hungary (more than 47% of all manufacturing industry exports to the EU in 1999), Slovakia (30%), Estonia (24%) and the Czech Republic (21%). This group of industries is nearly absent in the exports of Bulgaria, Romania, Latvia and Lithuania. Capital-intensive industries still account for a large, though mostly diminishing, share of candidate countries' exports. On the other hand, *labour-intensive industries* have growing export shares in Bulgaria, Romania and the Baltic states while their importance has been declining in the Czech Republic and especially in Hungary.

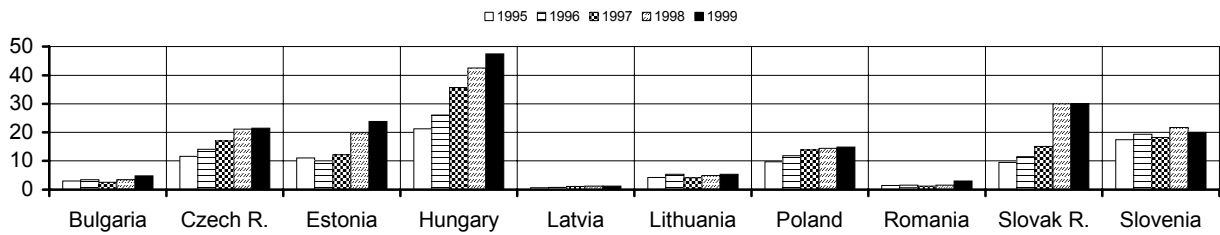
A comparison with present EU member states shows that Greece and Portugal had a higher share of labour-intensive exports to the EU (nearly 30%) than the Czech and Slovak Republics and Slovenia in 1999, whereas the share of this category in Austria and Italy (17%) was about the same as in Hungary.¹³ Again, the overall impression is that candidate countries' exports are much *more specialized* than is the case in the present EU member states: Bulgaria, Romania, Poland and the Baltic states specialize most on labour-intensive, Hungary and Slovakia on technology-intensive industries, whereas the Czech Republic and Slovenia on mainstream industries (measured by the largest shares in their exports to the EU in 1999).

¹² See European Commission (1999). For details on the WIFO taxonomy and underlying clustering technique see Peneder (2001).

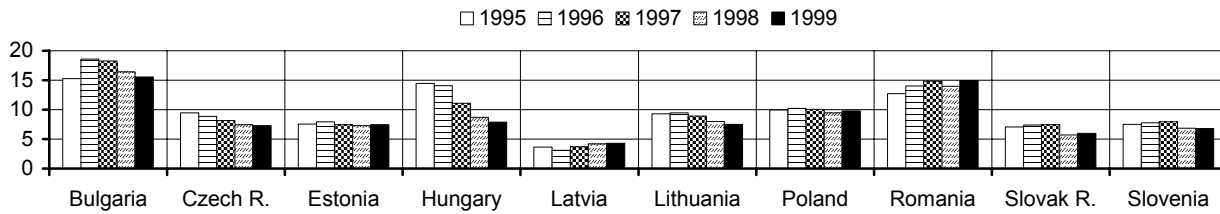
¹³ Hungary's exceptionally high export share of technology driven industries is similar to that of Ireland and most likely also reflects the impact of large FDI inflows – see European Commission (1998), Table 7.6.

Figure 6

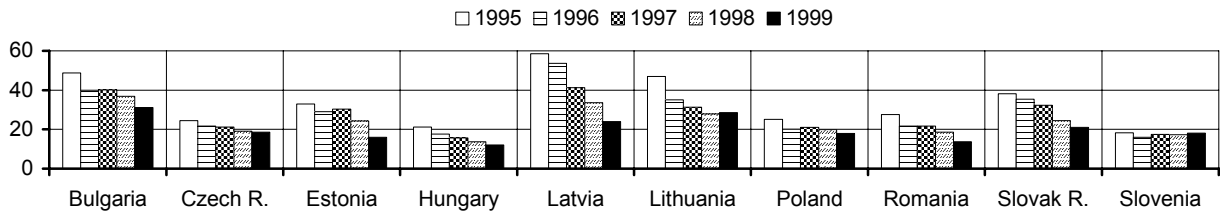
Shares in exports to the EU by different factor inputs (taxonomy I)
Technology-driven industries



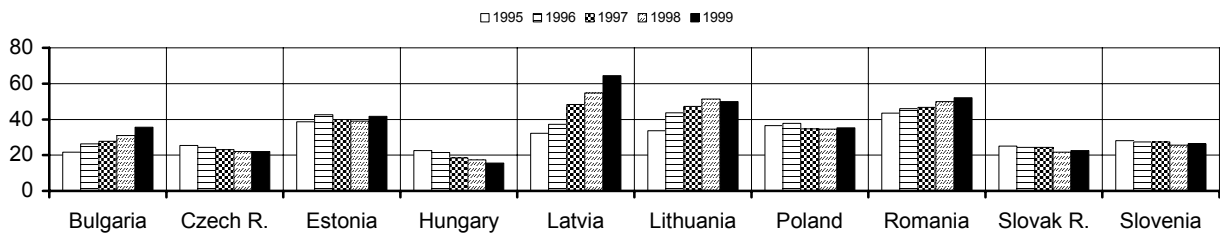
Marketing-driven industries



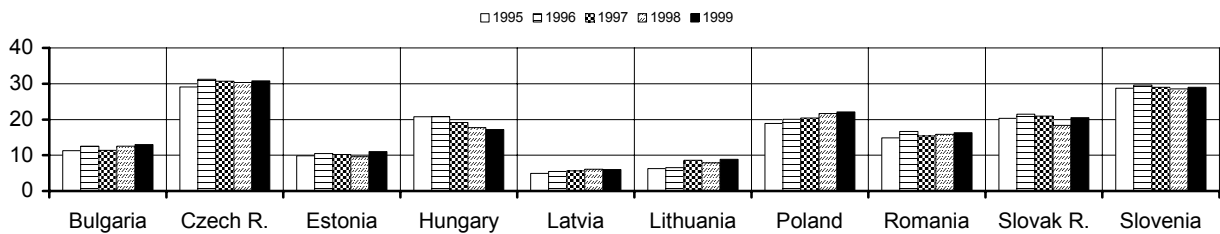
Capital-intensive industries



Labour-intensive industries



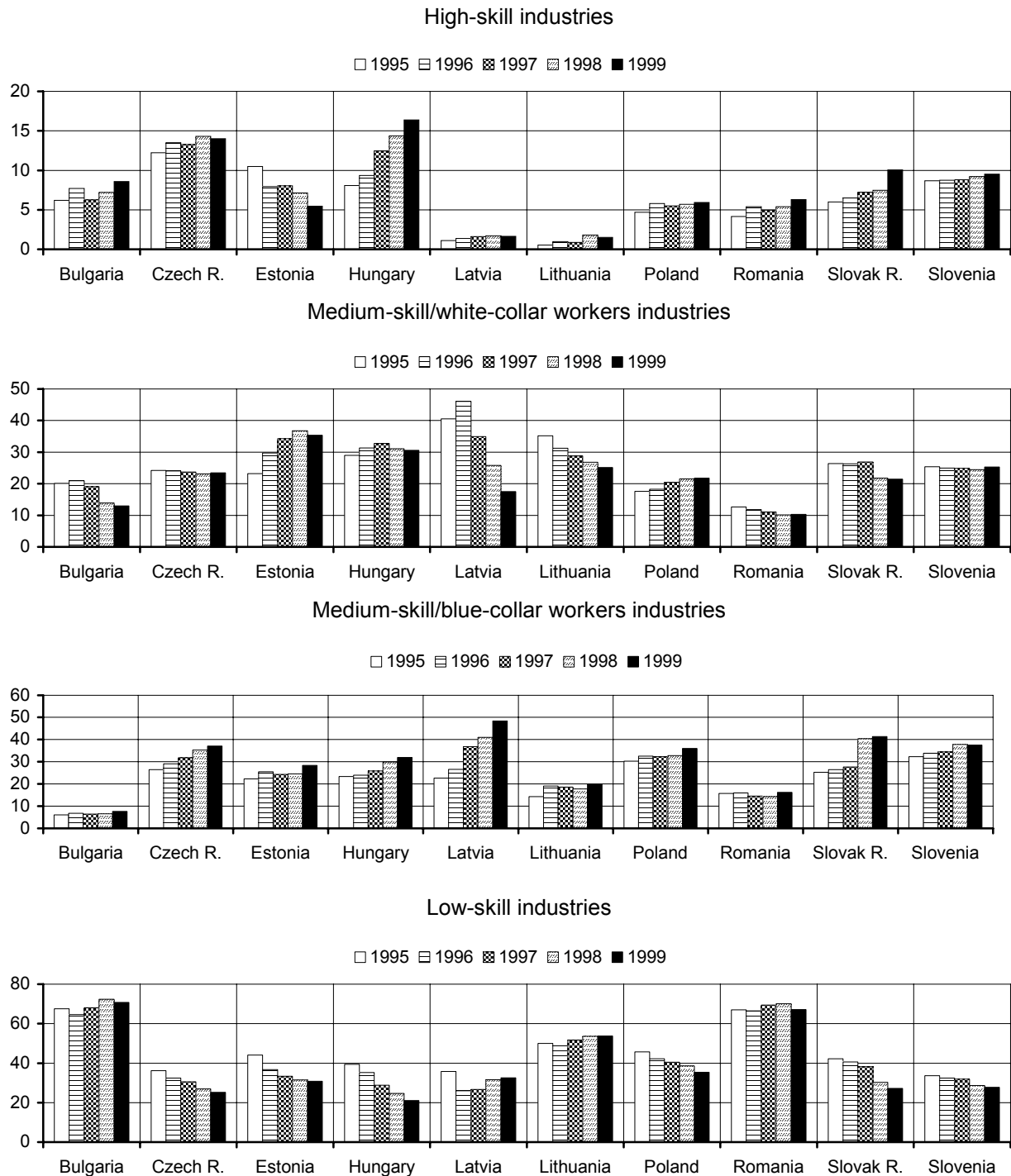
Mainstream industries



Source: Own calculations based on Eurostat Comext Database.

Figure 7

Shares in exports to the EU by labour skills requirements (taxonomy II)



Source: Own calculations based on Eurostat Comext Database.

A detailed look at the *employment skills* composition of candidate countries' exports (again using the above-mentioned taxonomy of industries)¹⁴ reveals a high and rising concentration on *low-skill industries* in exports of Bulgaria, Romania, Latvia and Lithuania whereas the importance of this group of industries diminishes in the rest of the region (Figure 7). The importance of low-skill industries in Bulgaria, Romania and Lithuania is thus comparable to the less advanced EU states such as Greece and Portugal, whereas in the Czech Republic, Hungary, Slovakia and Slovenia it lies below EU average and compares favourably even with the more advanced EU states such as Austria, Finland and the Netherlands. The *upper skill segment* (high-skill industries) has been rapidly gaining importance in exports of Hungary, and less distinctly so also in the Czech Republic, Slovakia and Slovenia. Hungary's share in high-skill industries' exports has already reached EU average and surpassed the shares of these industries in manufacturing value added in a number of more developed EU states (e.g. Austria, Finland, Denmark and Belgium).

4 Market share analysis: competitive gains and losses in the EU

The candidate countries' manufacturing exports to the EU increased by more than ECU 31 billion between 1995 and 1999; the lion's share of this increase was achieved by Hungary (ECU 9.6 billion), the Czech Republic (ECU 7.7 billion) and Poland (ECU 5.3 billion – see Table 8). A simple '*shift and share*' analysis can identify the main hypothetical components of the total export increment which can be attributed to the growth of general demand in the EU (component 1), structural effects (component 2) and the competition effects (component 3 – see Box 1 for details). Two thirds of the candidate countries' total increment of manufacturing exports to the EU can be attributed to *absolute market share gains* (component 3, competitive gains). In Hungary and in Estonia competitive gains in market shares accounted for nearly 80% of the total export increment, in the Czech and Slovak Republics as well as in Lithuania for more than 70%. While only Slovenia suffered from an overall '*competitive loss*' in market shares (negative component 3), the contribution of this component to the total export increase was less pronounced also in Bulgaria, Poland and Latvia.

It is also interesting to note that *structural effects* of changing demand in the EU had an adverse effect on candidate countries' exports (negative component 2). This effect was particularly strong in the Czech Republic and Poland, implying that both countries tend to specialize in industries demand for which has been growing below average in the EU.

¹⁴ See Peneder (2001).

Box 1

The shift and share analysis can be applied to decompose the increment of country i's (a given CEEC's) total exports to another country (in our case the EU) ΔX_i as follows:

$$\Delta X_i = \sum_j \Delta x_{ij} = \sum_j x_{ij} (\Delta M / M) + \sum_j x_{ij} [(\Delta M_j / M_j) - (\Delta M / M)] + \sum_j x_{ij} [(\Delta x_{ij} / x_{ij}) - (\Delta M_j / M_j)],$$

where x_{ij} is country i's exports of commodity/sector j; M_j denotes EU's total imports of commodity/sector j (in our case total imports from 'extra-EU', that is, from non-EU member states); M denotes EU's total imports (from 'extra-EU') and ' Δ ' stands for increment.

$\sum_j x_{ij} (\Delta M / M)$ can be interpreted as a general demand component; $\sum_j x_{ij} [(\Delta M_j / M_j) - (\Delta M / M)]$ is a structural effect component and $\sum_j x_{ij} [(\Delta x_{ij} / x_{ij}) - (\Delta M_j / M_j)]$ is a component measuring the competition effect.

The shift and share analysis makes it possible to decompose the total increment in the CEECs' exports to the EU into three hypothetical components:

1. a *general demand component*, showing how a given country's exports would develop if growing at the same rate as total EU imports;
2. a component measuring the *structural effect*, showing whether the country's exports are centred on commodities that are in above-average demand in the EU (that is, grew at above-average rate as compared with total EU imports); and
3. a component measuring the *competition effect*, namely, whether the country has exported more in certain commodities to the EU than its competitors outside the EU (this decomposition refers only to 'extra-EU' trade).

Table 8

**CEE manufacturing exports to the EU(15):
overview of 'shift and share' analysis (ECU million)**

	Exports	Exports	Export	shift and share analysis			Competitive
	1995	1999	increase 1999-1995	Component 1	Component 2	Component 3	gain in % of total
Bulgaria	1678.3	2098.7	420.3	535.8	-238.6	128.1	30.5
Czech Rep.	8318.1	16022.8	7704.7	2655.5	-518.1	5567.3	72.3
Hungary	7088.7	16709.6	9620.8	2263.0	-204.7	7562.5	78.6
Poland	10891.5	16238.9	5347.4	3477.0	-696.7	2567.1	48.0
Romania	3263.8	5534.3	2270.5	1041.9	-230.5	1458.8	64.3
Slovak Rep.	2977.9	5797.4	2819.5	950.7	-235.3	2104.1	74.6
Slovenia	4182.8	5221.7	1038.9	1335.3	-95.6	-200.8	-19.3
Estonia	780.0	1664.6	884.6	249.0	-70.2	705.8	79.8
Latvia	868.3	1207.0	338.7	277.2	-120.4	181.8	53.7
Lithuania	904.4	1519.6	615.1	288.7	-120.7	446.8	72.6
Total	40953.8	72014.5	31060.7	13074.2	-2530.7	20521.5	66.1

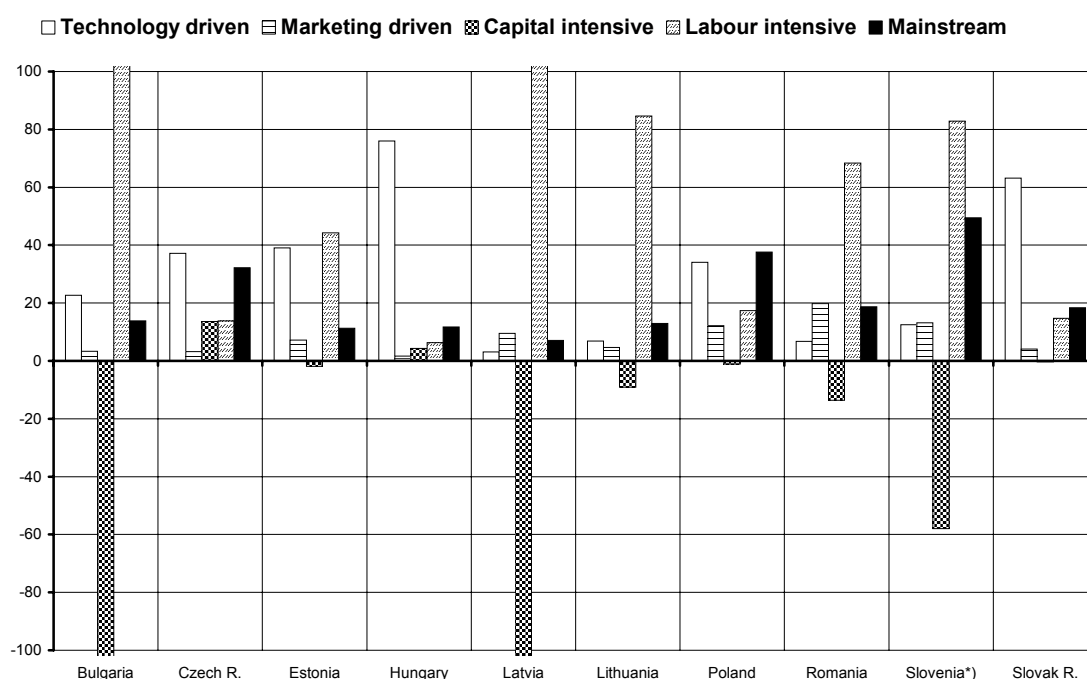
Source: Eurostat COMEXT database and own calculations (see Box 1).

The Annex tables provide a detailed list (at 3-digit NACE level) of industries which incurred the largest competitive gains and losses in each of the candidate countries during the period 1995-1999. Compared to the early phase of transition, both winner and loser

industries have now changed their positions – in fact in many cases the earlier winners turned out to be recent losers and vice versa.¹⁵ In the current pattern of *competitive winner industries*, motor vehicles, electrical equipment, TV and radio sets, office machinery and computers figure prominently in exports of the Czech Republic, Hungary, Poland and Slovakia (partly also in Slovenia and Estonia). Bulgaria, Romania, Latvia and Lithuania, on the other hand, have been more successful in exports of textiles, wearing apparel, footwear as well as of various wood products and furniture. And nearly in all candidate countries, *loser industries* have recently been iron and steel, basic chemicals, cement, lime and plaster, etc.

Figure 8

**Contribution of industry clusters to
competitive gains in exports to the EU during 1995-1999**
(in % of total competitive gain, industries classified by combinations of factor inputs)



*) Competitive loss.

Source: own calculations based on Eurostat Comext Database (see Box1 for definition of competitive gains).

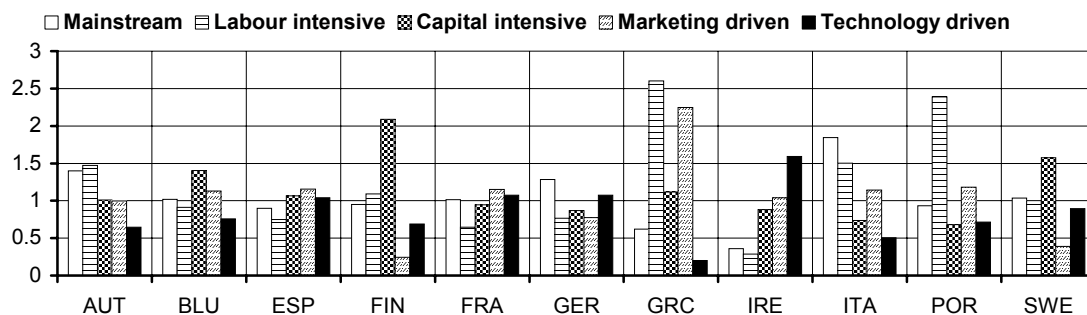
This confirms the hypothesis that the initial export specialization pattern of candidate countries has now nearly completely reversed. Moreover, it also complements the evidence for two distinct phases of industrial restructuring outlined in Havlik (2000). The general impression is that in many candidate countries, export specialization is now evolving towards *more sophisticated and less capital-intensive* industries. Figure 8

¹⁵ See Havlik (1995) for winners and losers during the early phase of transition. At that time, for example, iron and steel, non-ferrous metals, cement and lime, chemicals, knitting industry and clothing figured prominently among the winner branches in exports of Czechoslovakia, Hungary and Poland.

summarizes the contribution of different industry clusters to the absolute gain of market shares in candidate countries' manufacturing exports to the EU during 1995-1999. The total 'competitive gain' (loss in the case of Slovenia – see component 3 in Table 8) has been split among industries classified by factor inputs (taxonomy I, same as in Figure 6). *Technology-driven industries* contributed the bulk of the total competitive export gain in Hungary (76% of the total) and Slovakia (63%), and nearly 40% in the Czech Republic and Estonia (34% in Poland). *Labour-intensive industries* accounted for a major part of the competitive export gain in Bulgaria, Latvia, Lithuania and Romania (they suffered a competitive loss in Slovenia). And, as mentioned above, *capital-intensive industries* recorded in many candidate countries either only minor competitive gains, or even suffered from competitive export losses (Bulgaria, Latvia and Romania). Only the Czech Republic and Slovenia incurred some competitive gains in capital-intensive industries.

Figure 9a

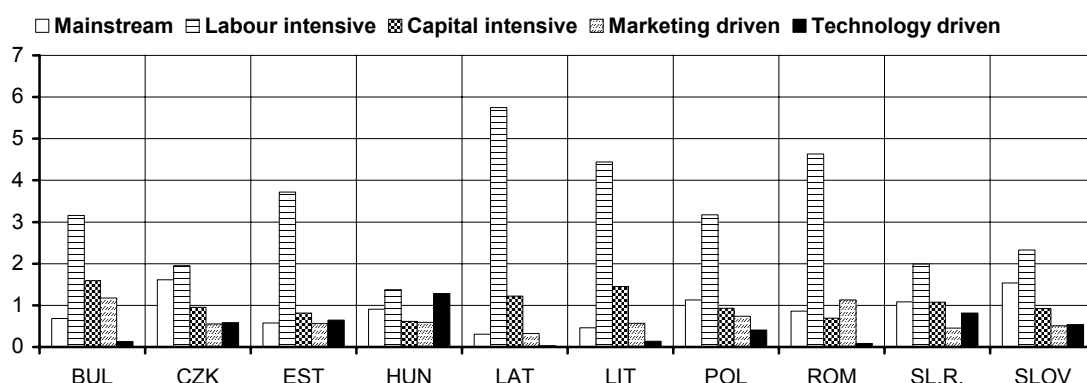
Relative market shares in the EU by industry clusters,1999
Selected EU member states



Note: Market shares of industry clusters relative to country's total market shares in all imports of the EU.

Figure 9b

Relative market shares in the EU by industry clusters,1999
CEE candidate countries



Note: Market shares of industry clusters relative to country's total market shares in all imports of the EU.

Source: Own calculations based on Eurostat Comext Database.

Figures 9a and 9b show the candidate countries' *export specialization on different industry clusters* in comparison with selected EU member states. Market shares of individual industry clusters are here put in relation to each country's total market share in all (extra plus intra) EU manufacturing imports in the year 1999.¹⁶ Typically, candidate countries' exports are more specialized on labour intensive industries and their specialization pattern is more diversified than in present EU member states. However, the Czech Republic, Slovakia, Slovenia and especially Hungary focus less on labour intensive industries than Greece and Portugal; Hungary's representation of labour intensive exports is comparable to that of Austria, Denmark and Italy. Hungary is also the only candidate country with an over-representation of technology driven industries in exports to the EU, comparable to United Kingdom and Ireland. On the other hand, Bulgaria, Latvia, Lithuania and Romania increasingly specialize on labour intensive industries (which require mainly low skilled labour) whereas their exports of technology driven industries are minimal.

5 Product quality of CEE exports to the EU

In this section we use export unit values to proxy differences in product quality of different producers of tradable goods (in our case CEE exporters and EU producers). If products are defined at a very detailed level and comparisons are made in the same market (in our case, the EU market) then – under certain conditions concerning market structure – differences in price do reveal differences in 'product quality' (including consumer loyalty to particular producers, marketing and product design differences, after sales services, etc.). The importance of price differences in trade even at the most detailed level of product classifications (in our case at the 8-digit CN level) has given rise to a number of studies of the phenomenon of 'vertical intra-industry trade', i.e. trade in products with quality differences (see Greenaway, Hine and Milner, 1994, Fontagné and Freudenberg, 1997, Jansen and Landesmann, 1999). It has been pointed out in previous studies that 'vertical intra-industry trade' is particularly relevant in trade relations between East and West European countries (see Burgstaller and Landesmann, 1999, Aturupane, Djankov and Hoekman, 1999).

¹⁶ Numbers greater than 1 in Figure 9 indicate the relative specialization of exports on a particular cluster of industries, industries are again classified by different factors inputs – see Peneder (2001). Note that scales of both figures are different.

Box 2

Methodology of the calculation of relative unit values

In the calculation of relative unit values of traded products we use the COMEXT trade database at the most detailed 8-digit level. Denoting the value of exports to the EU of commodity i by country c in year t by v_{it}^c and the quantity (measured in tons) by x_{it}^c , the export unit value is defined as

$$u_{it}^c = v_{it}^c / x_{it}^c \quad (1)$$

The unit values of country c 's exports to the EU is then compared to the unit values of total EU imports (from the world, including intra-EU trade) by calculating the logs of the unit value ratios

$$r_{it}^c = \ln (u_{it}^c / u_{it}^{EU}) \quad (2)$$

where u_{it}^{EU} denotes the unit value of total EU imports for a particular commodity i in year t .

Taking the logarithm of (u_{it}^c / u_{it}^{EU}) ensures a symmetric aggregation across products for ratios larger and smaller than 1 (see below). In logs, the ratio is thus larger (smaller) than zero if the export unit value of country c is larger (smaller) than the unit value of total EU imports.

We shall not present information at the very detailed (8-digit) product level but aggregate the unit value ratios to the level of (3-digit NACE) industries and further to industry groupings. This is done by constructing a weighted sum of the unit value ratios r_{it}^c across the products belonging to a particular industry j (or an industry group). The weight used for a particular commodity i in such an aggregation is the share of its export value in the industry's exports of country c . Denoting the set of commodities i belonging to an aggregate j (industry or industry grouping) by $i \in I(j)$ the weights are calculated as

$$w_{it}^c = v_{it}^c / \sum_{i \in I(j)} v_{it}^c \quad (3)$$

The unit value ratio for a particular aggregate j is then

$$r_{jt}^c = \sum_{i \in I(j)} r_{it}^c w_{it}^c \quad (4)$$

This measure can be interpreted analogously to the unit value ratios for a particular commodity as mentioned above. For ease of interpretation we report however

$$uvr_{jt}^c = \exp(r_{jt}^c) - 1 \quad (5)$$

to which we also refer as *unit value ratios* of industry (or industry grouping) j . This measure can then be interpreted more easily interpreted than the log values, namely as the percentage deviation from the average EU import unit value. We shall also refer to these ratios as '*export price/quality gaps*'; they can be positive or negative¹⁷.

¹⁷ See Box 3 for a description of our procedure to remove unreliable outliers in the data and for information concerning the distributions of traded products.

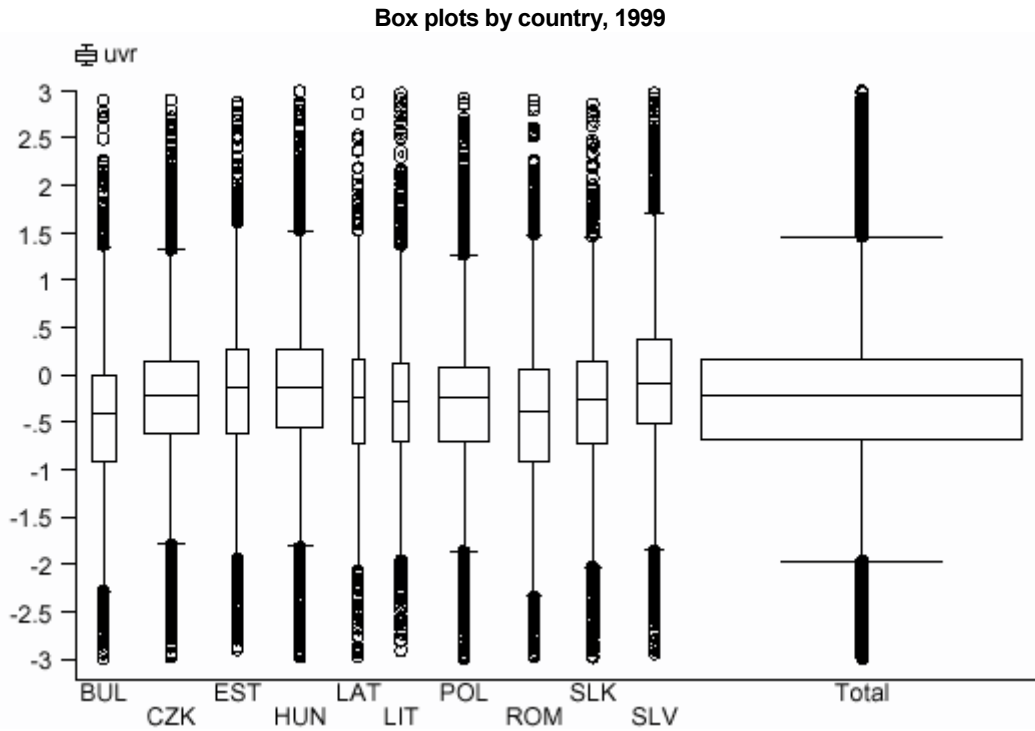
Box 3

Outlier removal and the distributions of exported products

As the COMEXT trade data can contain errors at the detailed product level, we have – in our procedure of calculating unit value ratios - deleted very extreme levels of relative unit values. The criterion we used to classify an observation as an outlier was derived from the levels of the so-called ‘adjucant values’ in the distribution of the unit value ratios in the following way: The lower (upper) adjucant values are defined as the 25th (75th) percentile of the data minus (plus) 1.5 times the interquartile range (i.e. the range from the 25th to the 75th percentile). The lowest adjucant value in the data was found for Bulgaria in 1995 with about 2.5 ($\approx -\ln 12$) and the highest adjucant value for Slovenia in 1999 with about 1.75 ($\approx \ln 5.75$). In the calculations we dropped observations where $r_{it}^c > \ln |20|$, i.e. at a value larger than the highest and lowest adjucant values in the sample. This means that observations where the ratio (u_{it}^c / u_{it}^{EU}) was higher than 20 or lower than 1/20 have been classified as outliers and removed from the sample. Using this criterion we think that extreme outlier values have been removed without biasing the data.

In Figure B1 we can see the distributions of the unit value ratios across all manufacturing products for the ten CEE candidate countries in 1999.

Figure B1



The boxplots show the median and percentiles of the sample distributions. The size of the boxes gives an impression of the number of observations for the particular countries (which we shall discuss below). One can easily see that the Czech Republic, Hungary, and Poland are the countries with the largest number of exported products to the EU-15; Latvia and Lithuania are by far the countries with the smallest number of observations.

The boxplots can be interpreted in the following way: First, the line in the middle of the boxes is the median (or 50th percentile of the data). A closer inspection of the median shows that in 1999 Estonia, Hungary, and Slovenia show a higher than the average median (that for total EU imports). Further, the Czech Republic, Latvia, Poland, and Slovakia, show a median which is more or less equal to the median of the total sample, whereas Bulgaria, Lithuania, and Romania are lagging behind. Second, the boxes represent the interquartile range, i.e. from the 25th percentile to the 75th percentile, which give a measure of the dispersion of the distribution. Finally, the whiskers (i.e. the lines from the boxes) range from the 25th and 75th percentile to the adjucant values described above.

We shall present some of the most recent evidence on the present position of the CEE producers in vertical intra-industry trade relations with the EU. The analysis of whether CEE producers trade in the low-, medium- or high-quality end of the product range and in which industries can serve as an important indicator for industrial strengths and weaknesses of CEE producers. We shall also analyse whether there is evidence for closure of 'price/quality gaps' between CEE and EU producers and how this 'quality catching-up' is proceeding across the different candidate countries. In the following we shall briefly introduce the methodology adopted to analyse product quality gaps at the product and industry level.

Aggregate export price gaps and number of products exported to the EU

To present a first overview of relative unit value ratios uvr_t^c (or 'export price/quality gaps') at the aggregate level (i.e. calculated across all manufacturing products traded with the EU) we can see a comparison in Figures 10a and 10b of these unit value ratios between the ten CEE candidate countries and the EU members for the years 1995 to 1999.¹⁸ Remember that the zero level refers to the average price line for total EU imports and the values off the zero price line can be interpreted as (positive or negative) export price gaps (in %) relative to that average.

In the first instance, we can see that – in the aggregate – EU members sell their products at prices above those of total EU imports, while candidate countries sell their products on EU markets below those of total EU trade. Exceptions amongst the EU member states are the Southern EU countries (Greece, Spain and Portugal) which sell at or just below the measured average (and weighted) price levels of total EU imports.

One can see some remarkable differences across the candidate countries. In 1995 the best performing country was Slovenia with a gap of about 6.4% and Hungary with 7.5%. Latvia ranked third with about 16%, followed by Slovakia with a 20% gap. The other countries experienced gaps of 22% (Latvia) to 29% (Romania). Over time all countries succeeded in catching up in export unit prices, only Bulgaria remained more or less stable at a gap of 23-25%. Hungary and Slovenia were the leaders also in 1999, although these two countries have changed their ranking. The two Baltic countries (Estonia and Lithuania) also experienced remarkable catching-up processes. Further, Romania reduced its gap from 29% in 1995 to about 17% in 1999.

¹⁸ Because of a break in the NACE industry classification and hence in the product-to-industry converters, we shall limit our analysis in this section to the years 1995 to 1999. For an analysis of developments over the earlier period, see the studies by Burgstaller and Landesmann, 1999 and Stehrer, Landesmann, and Burgstaller (1999).

Figure 10a

**Export price gaps – all manufacturing products traded with the EU
CEE candidate countries**

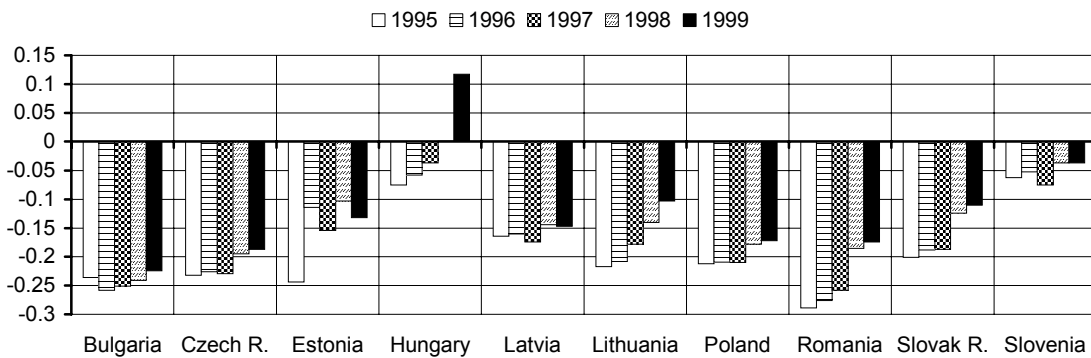
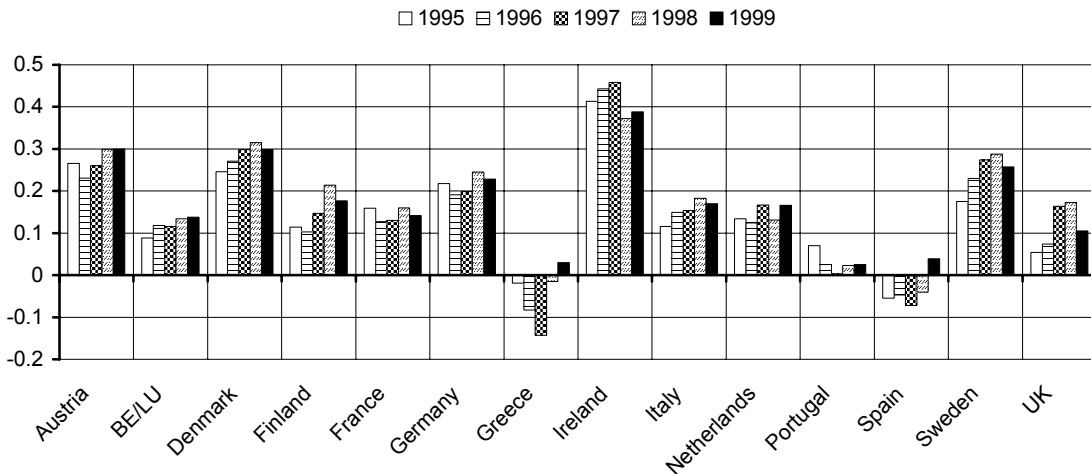


Figure 10b

EU member states



Note: Export price gaps have been calculated from detailed product-by-product comparisons and are expressed in percentage deviations from the average price of the products traded in EU markets (i.e. all imports to the EU including intra-EU imports); for details see Box 2.

Source: Own calculations based on Eurostat Comext Database.

We now move on to check on ‘*product coverage*’, i.e. the range of products exported by country *c* relative to the range of products traded in the EU market as a whole. This indicator can be seen as a measure to which degree a country participates in the range of (horizontally) product differentiated trade (within an industry or industry grouping or in the aggregate). The number of products exported by a country depends, of course, on the size of the economy (one expects that smaller economies export a smaller range of goods than larger ones) but also other determinants such as technologies adopted, abilities to participate in horizontal product differentiation, transport costs, market barriers, etc. Figures 11a and 11b present the product coverage ratios (i.e. the number of products exported by country *c* relative to the total number of products imported by the EU) in 1995

and 1999. Such product coverage ratios have also been calculated for individual industries and industry groupings but will not be presented here, although we shall refer to these in the text.

Figure 11a

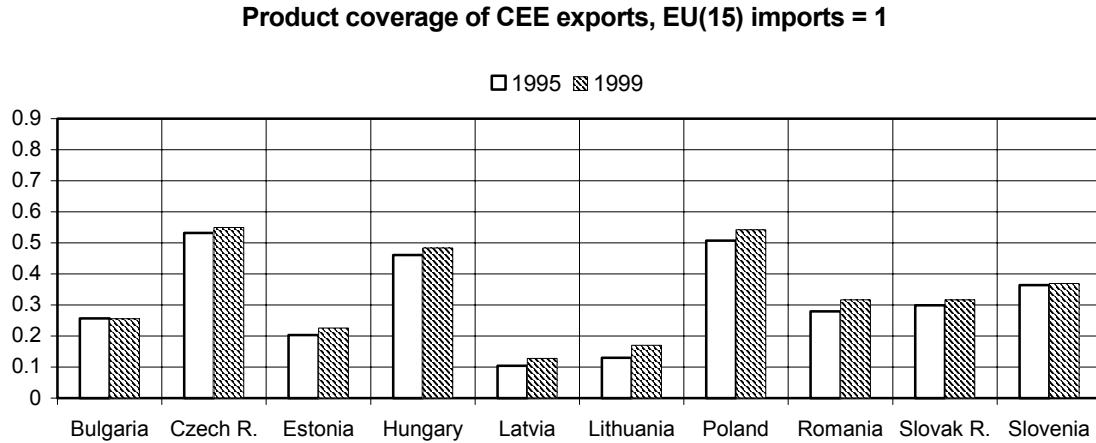
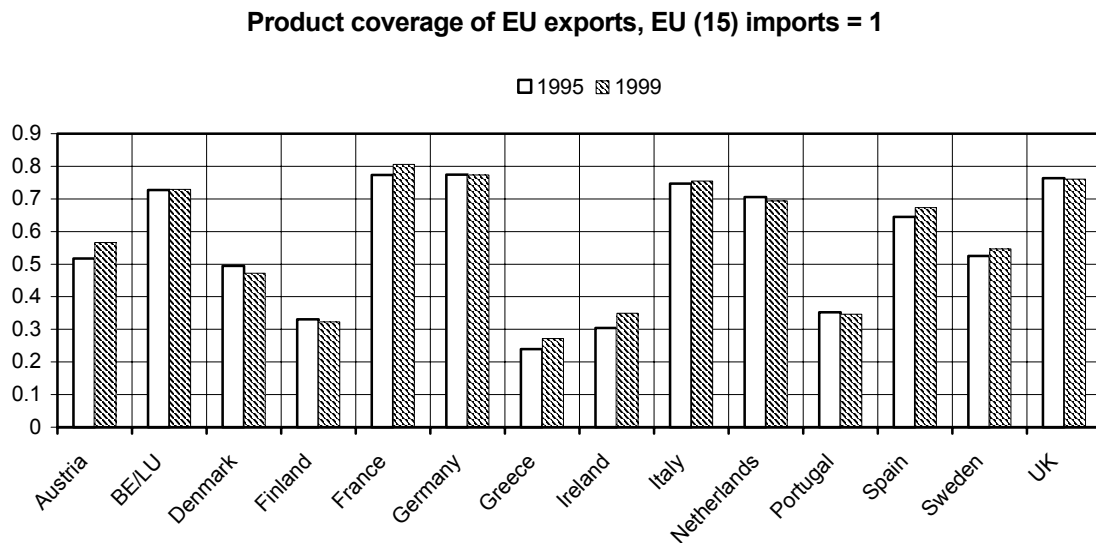


Figure 11b



Note: Product coverage refers here to the share of product items exported by a country to the EU relative to the total number of product items traded in EU markets (i.e. in total EU imports including intra-EU trade).

Source: Own calculations based on Eurostat Comext Database.

We can see that the CEE candidate countries with the highest coverage ratios (Czech Republic, Hungary and Poland) have product coverage ratios in line with those for Austria, Denmark and Sweden, but substantially below the smaller EU countries, Belgium and Netherlands, as well as the larger EU member states (France, Germany, Italy, Spain, UK). Romania, the Slovak Republic and Slovenia have product coverage ratios in line with Finland, Ireland and Portugal, while the small Baltic states and Bulgaria show coverage

ratios below that of Greece (the EU country with the smallest coverage). At this aggregate level, we can conclude that CEE candidate countries have reached coverage ratios below the 'old' EU member states, but quite close to the more recent entrants. Except for Bulgaria, the coverage ratios have increased for all candidate countries over the period 1995 to 1999, although at slow rates.

Unit value ratios at the level of industry groupings

We now move on to discuss the positions of CEE producers in particular industry groupings which are differentiated by various criteria, including a combination of factor inputs and market strategy criteria (taxonomy 1), and labour skills (taxonomy 2). We use here again the taxonomies given in Peneder (2000).

Table 9 presents the calculated unit value ratios uvr_{jt} ('export price gaps') across the five identified industry clusters and for the whole group of CEE candidate countries. The last column also shows the (per annum) growth rates of unit value ratios over the period 1995 to 1999.

Table 9

Unit value ratios for taxonomy I (factor inputs) – aggregate over all CEE candidate countries, in %

Industry clusters						p.a. growth
	1995	1996	1997	1998	1999	95-99
1 mainstream	-35.5%	-37.2%	-34.2%	-29.3%	-26.8%	3.71%
2 labour-intensive	-23.7%	-18.5%	-21.9%	-16.0%	-14.4%	2.60%
3 capital-intensive	-12.3%	-12.9%	-12.3%	-13.1%	-11.7%	0.12%
4 marketing-driven	-16.6%	-15.6%	-16.8%	-13.2%	-16.1%	0.40%
5 technology-driven	-23.4%	-21.3%	-16.2%	-10.2%	-2.5%	6.16%

Note: Unit value ratios refer here to the ratios of export prices sold by a particular country to the EU (in the different industry categories) relative to the average import prices in total EU trades (in the respective industry categories).

Source: Own calculations based on Eurostat Comext Database.

We can see the following: The highest gap in 1995 was in the industries classified as 'mainstream' with a gap of about 35 %. In labour intensive and technology driven industries the gap was about 23 %. The best performer in 1995 has been the group of industries classified as 'capital intensive' with a gap of only 12 %. The growth rates have been highest in the technology driven industries with an exponential (per annum) growth rate of about 6.2 %, second highest in the mainstream industries with 3.7% and the labour intensive industries with 2.6 %. This pattern of growth has changed the ranking of industries in 1999, where the technology driven industries now have a gap of only about 2.5 %, whereas all other classes have a gap larger than at least 10 %. The mainstream industries show the biggest gap with about 27 %.

The pattern of the gaps and the catching-up in the particular classes for the individual candidate countries can be seen in Figure 12. In this figure the y-axes are scaled identically for all groupings of industries. The figures thus allow to compare levels and developments for countries and industry groups simultaneously. We can see that in the *technology driven industries* the most successful countries are Hungary, the Slovak Republic and Slovenia where the unit value ratio uvr_{jt}^c is at a level of about zero and has been strongly increasing for Hungary. The other countries had a gap in 1995 between 20 % (Poland) and more than 70 % in Estonia. There have been catching up processes taking place in almost all countries (especially remarkable for Estonia). All the countries succeeded in diminishing the gaps which have been between 10 and 30 % in 1999. Hungary achieved above average unit value ratios in this industry grouping (+20 % in 1999). Such a catching-up process cannot be observed in the *marketing driven industries* where the gap for most countries is more or less stable at about 10% to 20 % for most countries. The best performers are again Hungary and Lithuania that succeeded in fully catching-up with the average price levels. Other quite well performing countries are Estonia, Latvia, the Slovak Republic and Slovenia. On the other hand, Bulgaria, the Czech Republic and Romania show a gap of about 20 % or even more. The *capital intensive industries* were the industries for which the gap in 1995 was smallest with a gap of about only 12 % as stated above. Here only very little convergence can be observed with the remarkable exception of Lithuania. In the *labour intensive industries* the gap in 1995 ranges from 10 % (Czech Republic, Estonia, Romania, Slovak Republic) to about 30 % in Bulgaria. Here the best performer is Slovenia with 'positive gaps' of +20 % and Hungary which also succeeded to reach a level above the average. Finally, the industries classified as *mainstream* show high gaps in 1995 (on average 35 %) with at times remarkable catching-up processes taking place in all countries so that the gaps reach about 25 % on average. Here the best performing country is Estonia with export unit values comparable to the EU average.

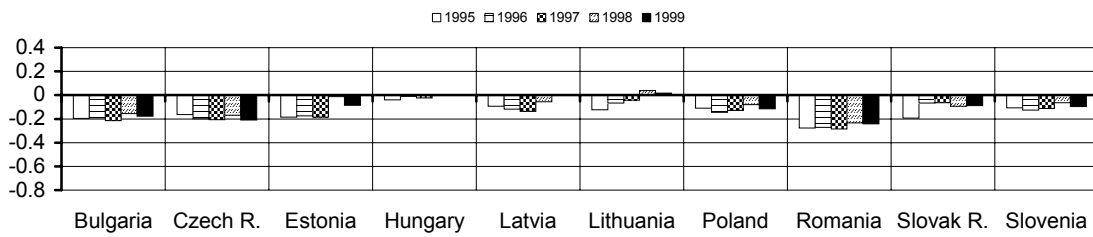
Further one may look at the number of products exported to the EU over time. The catching-up process in quality levels may stem from either an increase in quality of particular commodities or from the widening of the range of products exported in the more sophisticated types of industries.

For this reason we take a look at the *product coverage ratios* in the five industry groupings. In order to control for a country's overall product coverage ratio, we look at the product coverage ratios in each of the industry groupings relative to the national average. Taking an (arithmetic) average of these relative coverage ratios in the different industry groupings across all candidate countries, we find that they have high relative coverage ratios in mainstream and labour-intensive branches (on average +37% and +75% respectively above the national average in 1999) and have – again relative to the respective national

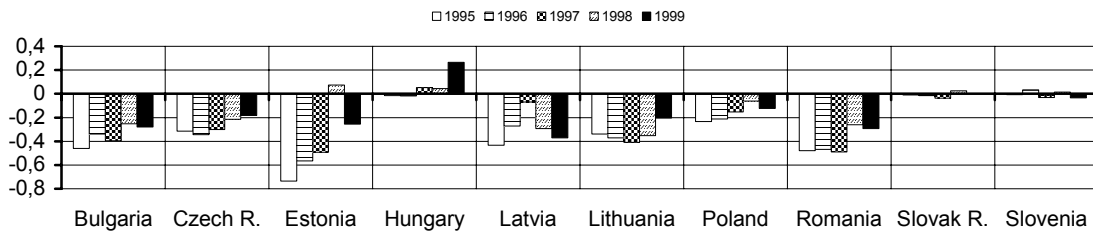
Figure 12

Unit value ratios by taxonomy I (factor inputs)

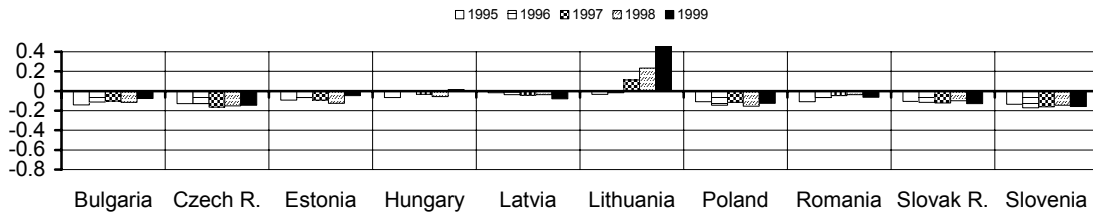
Technology-driven industries



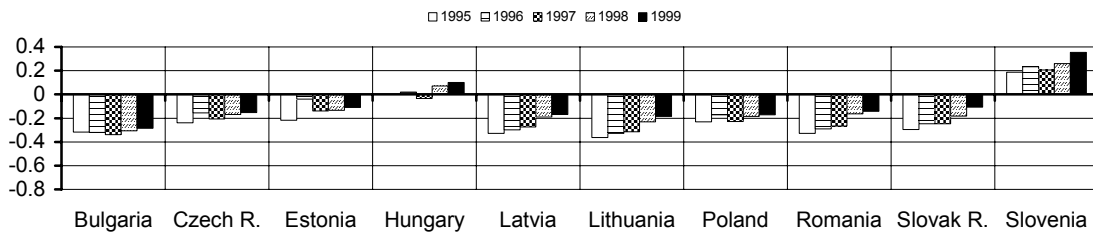
Marketing-driven industries



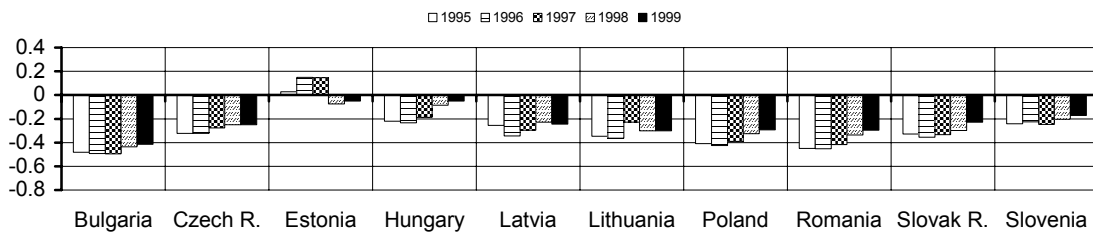
Capital-intensive industries



Labour-intensive industries



Mainstream industries



Note: Unit value ratios refer here to the ratios of export prices sold by a particular country to the EU (in the different industry categories) relative to the average import prices in total EU trades (in the respective industry categories).

Source: Own calculations based on Eurostat Comext Database.

product coverage ratios - a relatively low product coverage in the marketing- and the technology-driven industries (-36% and -34% respectively). Over time (i.e. over the period 1995-99), however, the product coverage ratios increased (relative to the national average) the most in two areas: labour-intensive products (+7%) and in technology-driven products (+8%) and fall in the capital-intensive industries (-12%). We shall return with a summary assessment of these developments in coverage ratios after presenting the equivalent results obtained from applying taxonomy II based on skill-groupings.

Utilizing the alternative classification (Peneder's taxonomy II introduced above) industry groups are classified according to relative labour skill requirements. Again we first present in Table 10, the 'export price gaps' for the aggregate of the candidate countries by these 4 industry groupings over the period 1995-1999 and we present again the p.a. growth rate in the last column. The export price gaps for the different accession countries are then given in Figure 13 (the y-axes are again scaled identically to allow cross-industry comparisons).

Table 10

Unit value ratios for taxonomy II (labour skills) – aggregate over all CEE candidate countries, in %						
Industry clusters	1995	1996	1997	1998	1999	p.a. growth 95-99
1 low skill	-13.7%	-13.6%	-12.9%	-8.9%	-8.0%	1.8%
2 medium skill/blue collar	-29.0%	-22.5%	-24.8%	-19.2%	-15.6%	3.9%
3 medium skill/white collar	-18.4%	-21.8%	-20.0%	-13.5%	-15.0%	1.8%
4 high skill	-53.7%	-51.9%	-44.1%	-42.1%	-26.4%	11.1%

Note: Unit value ratios refer here to the ratios of export prices sold by a particular country to the EU (in the different industry categories) relative to the average import prices in total EU trades (in the respective industry categories).

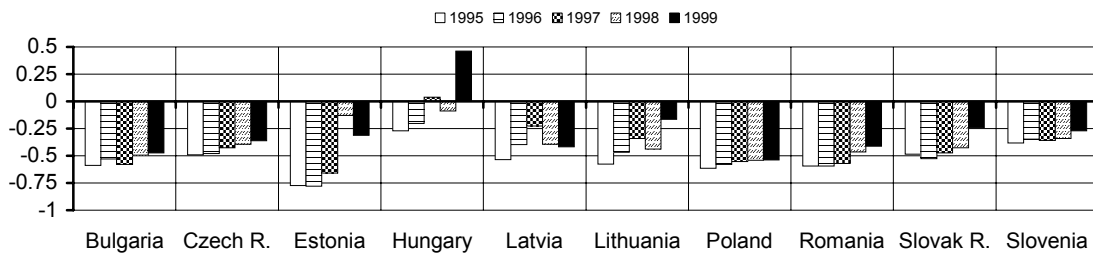
Source: Own calculations based on Eurostat Comext Database.

Table 10 shows that for candidate countries as a whole the largest gap in 1995 could be measured in the industries classified as 'high-skill intensive' industries with a gap of about 50 %. The smallest gap in 1995 could be observed in the 'low-skill intensive' industries. Between the two medium-skill intensive industry groupings the gap is smaller in the medium/white collar industries (with about 18 %) compared to the medium/blue collar industries with about 30 %. The highest growth rates of the unit value ratios over the period 1995 to 1999 occurred in the high skill industries (the class of industries with the highest gaps in 1995) with an exponential growth rate of about 11% and for the medium/blue collar industries with a growth rate of about 4 %.

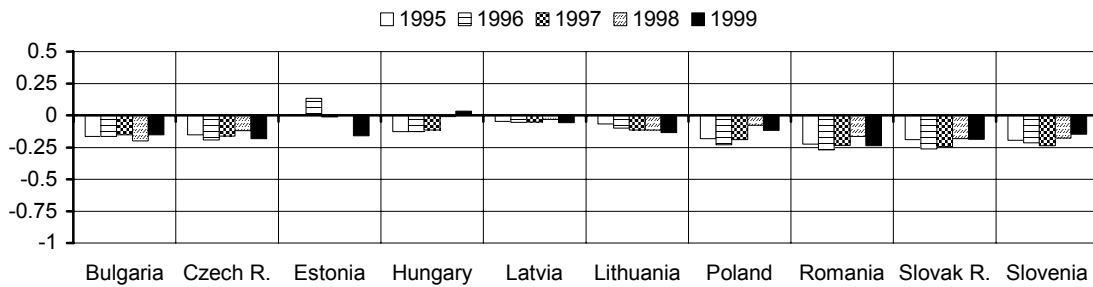
Figure 13

Unit value ratios by taxonomy II (labour skills)

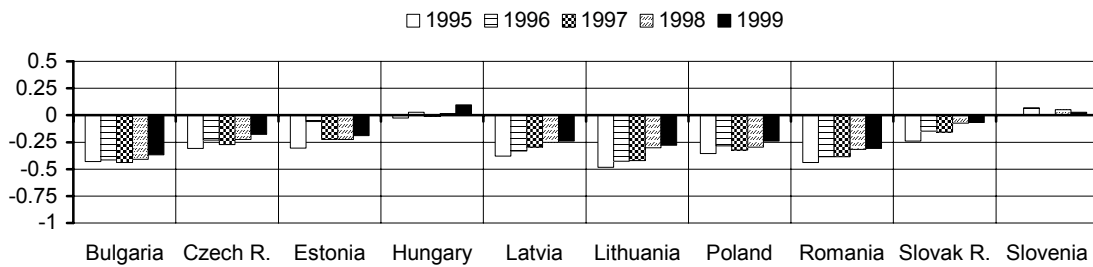
High-skill industries



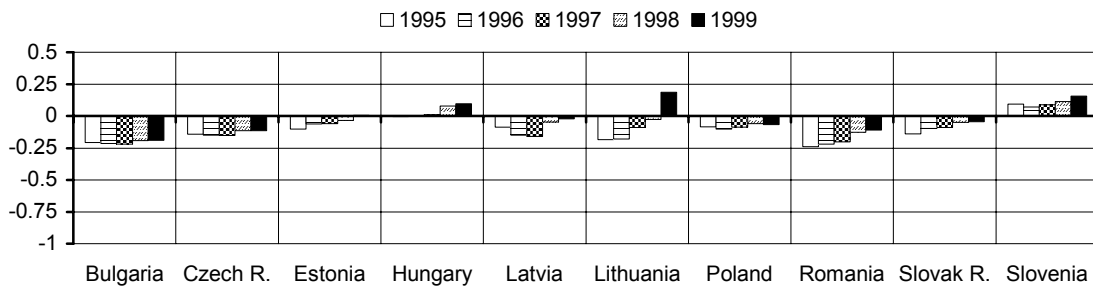
Medium-skill/white-collar workers industries



Medium-skill/blue-collar workers industries



Low-skill industries



Note: Unit value ratios refer here to the ratios of export prices sold by a particular country to the EU (in the different industry categories) relative to the average import prices in total EU trades (in the respective industry categories).

Source: Own calculations based on Eurostat Comext Database.

Looking at Figure 13 we can again observe that the highest gaps in 1995 can be observed in the *high skill* and *medium skill/blue collar workers industries* with gaps of about or even more than 50 % in some countries (especially in Bulgaria, Estonia, Poland and Romania). In the other two categories, *medium skill/white collar workers* and *low skill industries*, the gap in 1995 was about 20 to 25 %. But here are some remarkable country differences. Especially Hungary performed better than the other countries in all four categories and has by 1999 no negative export price gaps in any of the industry groupings and a particularly good performance in the high-skill grouping.

As to product coverage ratios, we find relatively big product coverage in the industries with relatively more medium skill/blue collar workers and the high skill industries (where the gaps in quality levels are highest) while they are lower in the other two industry groupings. This is partly due to the fact that some of the industries which contain at the EU level the largest overall number of products (such as food products) are in the other two groupings.

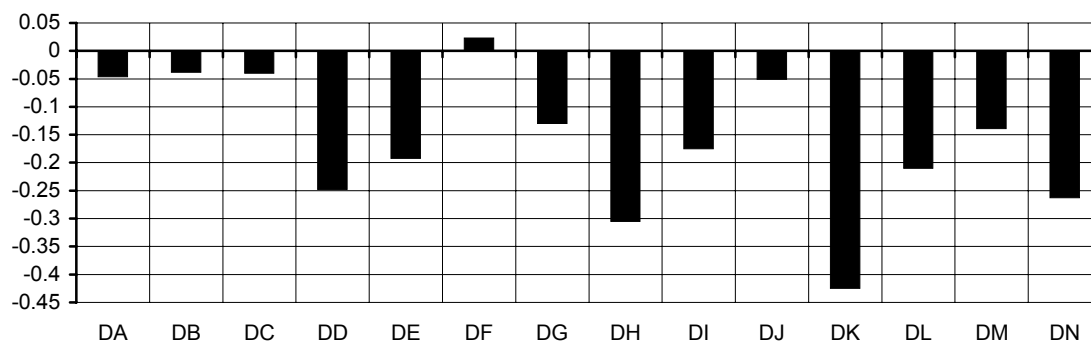
As regards the movements over time of these product coverage ratios, it is in the high skill industries that the CEE product coverage ratios are rising the fastest compared to the other types of industry groupings; this is the case in all countries with the exception of Bulgaria. This means that in the high skill industries the catching-up process a second component (beside the quality improvement of individual commodities) is important; and that is the widening of the range of exported products particularly in the high-skill and, as we saw earlier, the technology-driven industries.

Unit value ratios at the NACE 2-digit level

We finally give a short overview of ‘export price/quality gaps’ at the NACE 2-digit level. Figure 14 shows the average export price gaps as an average over the five-year period

Figure 14

**Export price gaps- by NACE 2-digit industries, average 1995-1999,
all CEE candidate countries**



Source: Own calculations based on Eurostat Comext Database.

1995-99, and for the whole group of candidate countries. We can see that there are relatively small gaps (between 5% and 10%) in the labour- and low-skill-intensive areas of food products, textiles, and leather products, and also in basic metals and metal products; there are no gaps in coke and petroleum products. The largest export price/quality gaps (25% to 30% range) are in machinery, rubber and plastics, wood and wood products, and manufacturing n.e.c. (which consists most prominently of furniture); in chemicals and the transport equipment industry, the gaps were in the 10% to 15% range.

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ANNEX

2-digit NACE (Nomenclature générale des activités économiques dans les communautés européennes, rev. 1):

D	Manufacturing total
DA	Food products; beverages and tobacco
DB	Textiles and textile products
DC	Leather and leather products
DD	Wood and wood products
DE	Pulp, paper & paper products; publishing & printing
DF	Coke, refined petroleum products & nuclear fuel
DG	Chemicals, chemical products and man-made fibres
DH	Rubber and plastic products
DI	Other non-metallic mineral products
DJ	Basic metals and fabricated metal products
DK	Machinery and equipment n.e.c.
DL	Electrical and optical equipment
DM	Transport equipment
DN	Manufacturing n.e.c.

WIFO Taxonomies

	NACE rev. 1	Taxonomy I factor inputs	Taxonomy II labour skills
Meat products	151	4	1
Fish and fish products	152	4	1
Fruits and vegetables	153	4	1
Vegetable and animal oils and fats	154	4	1
Dairy products; ice cream	155	4	1
Grain mill products and starches	156	4	1
Prepared animal feeds	157	4	1
Other food products	158	4	1
Beverages	159	4	1
Tobacco products	160	4	1
Textile fibres	171	3	1
Textile weaving	172	2	1
Made-up textile articles	174	2	1
Other textiles	175	1	1
Knitted and crocheted fabrics	176	1	1
Knitted and crocheted articles	177	1	1
Leather clothes	181	2	1
Other wearing apparel and accessories	182	2	1
Dressing and dyeing of fur; articles of fur	183	2	1
Tanning and dressing of leather	191	4	1
Luggage, handbags, saddlery and harness	192	4	1
Footwear	193	4	1
Sawmilling, planing and impregnation of wood	201	2	2
Panels and boards of wood	202	2	2
Builders' carpentry and joinery	203	2	2
Wooden containers	204	2	2
Other products of wood; articles of cork, etc.	205	2	2
Pulp, paper and paperboard	211	3	3
Articles of paper and paperboard	212	1	3
Publishing	221	4	3
Printing	222	4	3
Coke oven products	231		
Refined petroleum and nuclear fuel	232	3	3
Nuclear fuel	233		
Basic chemicals	241	3	3
Pesticides, other agro-chemical products	242	5	3
Paints, coatings, printing ink	243	1	3
Pharmaceuticals	244	5	4
Detergents, cleaning and polishing, perfumes	245	4	3
Other chemical products	246	5	3
Man-made fibres	247	3	3
Rubber products	251	1	1
Plastic products	252	1	1
Glass and glass products	261	1	1
Ceramic goods	262	2	1
Ceramic tiles and flags	263	3	1
Bricks, tiles and construction products	264	2	1
Cement, lime and plaster	265	3	1
Articles of concret, plaster and cement	266	1	1
Cutting, shaping, finishing of stone	267	2	1
Other non-metallic mineral products	268	1	1

(continued)

WIFO Taxonomies (continued)

	NACE rev. 1	Taxonomy I factor inputs	Taxonomy II labour skills
Basic iron and steel, ferro-alloys (ECSC)	271	3	1
Tubes	272	1	1
Other first processing of iron and steel	273	3	1
Basic precious and non-ferrous metals	274	3	1
Structural metal products	281	2	2
Tanks, reservoirs, central heating radiators and boilers	282	4	2
Steam generators	283	2	2
Cutlery, tools and general hardware	286	4	2
Other fabricated metal products	287	1	2
Machinery for production, use of mech. power	291	1	4
Other general purpose machinery	292	1	4
Agricultural and forestry machinery	293	1	4
Machine-tools	294	2	4
Other special purpose machinery	295	1	4
Weapons and ammunition	296	1	4
Domestic appliances n. e. c.	297	1	3
Office machinery and computers	300	5	4
Electric motors, generators and transformers	311	1	3
Electricity distribution and control apparatus	312	5	3
Isolated wire and cable	313	1	3
Accumulators, primary cells and primary batteries	314	1	3
Lighting equipment and electric lamps	315	1	3
Electrical equipment n. e. c.	316	2	3
Electronic valves and tubes, other electronic comp.	321	5	3
TV, and radio transmitters, apparatus for line telephony	322	5	3
TV, radio and recording apparatus	323	5	3
Medical equipment	331	5	3
Instruments for measuring, checking, testing, navigating	332	5	3
Optical instruments and photographic equipment	334	5	3
Watches and clocks	335	4	3
Motor vehicles	341	5	2
Bodies for motor vehicles, trailers	342	2	2
Parts and accessories for motor vehicles	343	3	2
Ships and boats	351	2	2
Railway locomotives and rolling stock	352	2	2
Aircraft and spacecraft	353	5	4
Motorcycles and bicycles	354	1	2
Other transport equipment n. e. c.	355	1	2
Furniture	361	2	2
Jewellery and related articles	362	2	2
Musical instruments	363	4	2
Sports goods	364	4	2
Games and toys	365	4	2
Miscellaneous manufacturing n. e. c.	366	4	2

	Taxonomy I :	Taxonomy II :
Industry clusters:	1. Mainstream	1. Low-skill industries
	2. Labour-intensive industries	2. Medium-skill/blue-collar workers
	3. Capital-intensive industries	3. Medium-skill/white-collar workers
	4. Marketing-driven industries	4. High-skill industries
	5. Technology-driven industries	

Source: M. Peneder (2001), *Entrepreneurial Competition and Industrial Location*, Edward Elgar, Cheltenham, UK.

Figure A/1

Bulgaria: Sectoral trade balances with the EU, 1995-1999

(in 1000 ECU)

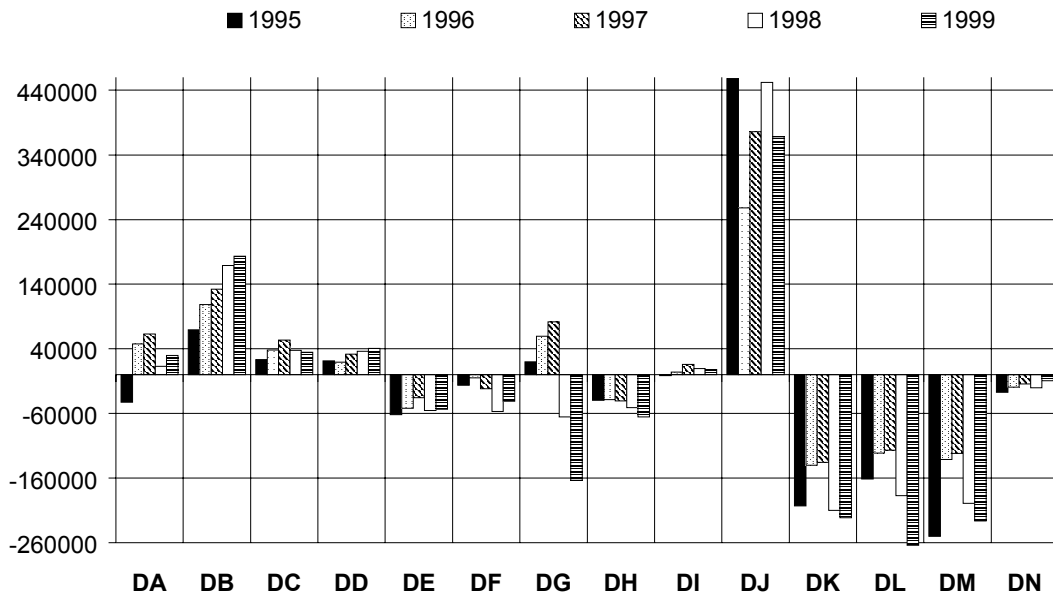


Figure A/2

Czech Republic: Sectoral trade balances with the EU, 1995-1999

(in 1000 ECU)

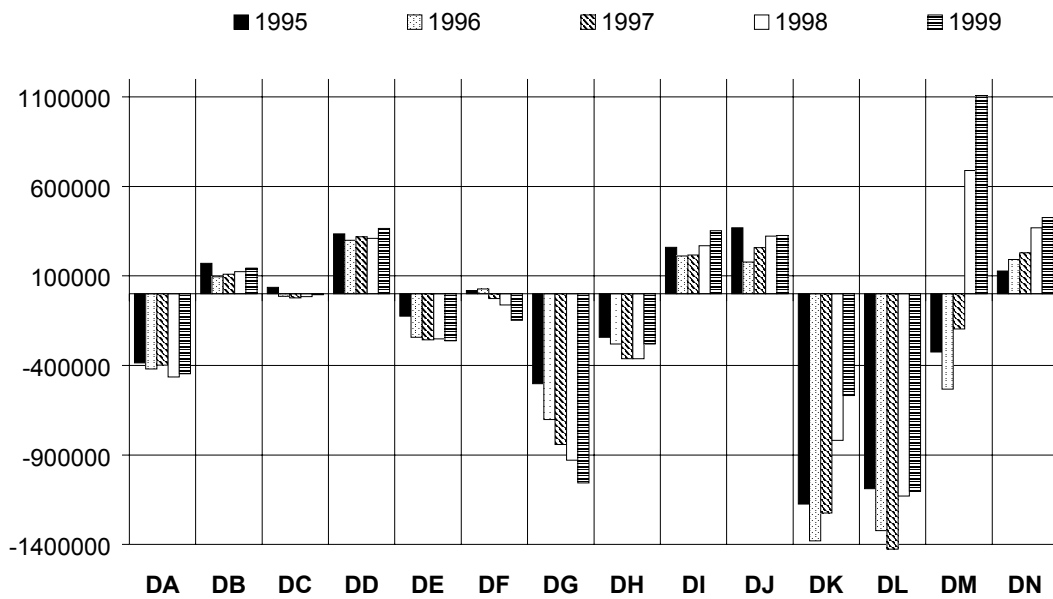


Figure A/3

Hungary: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

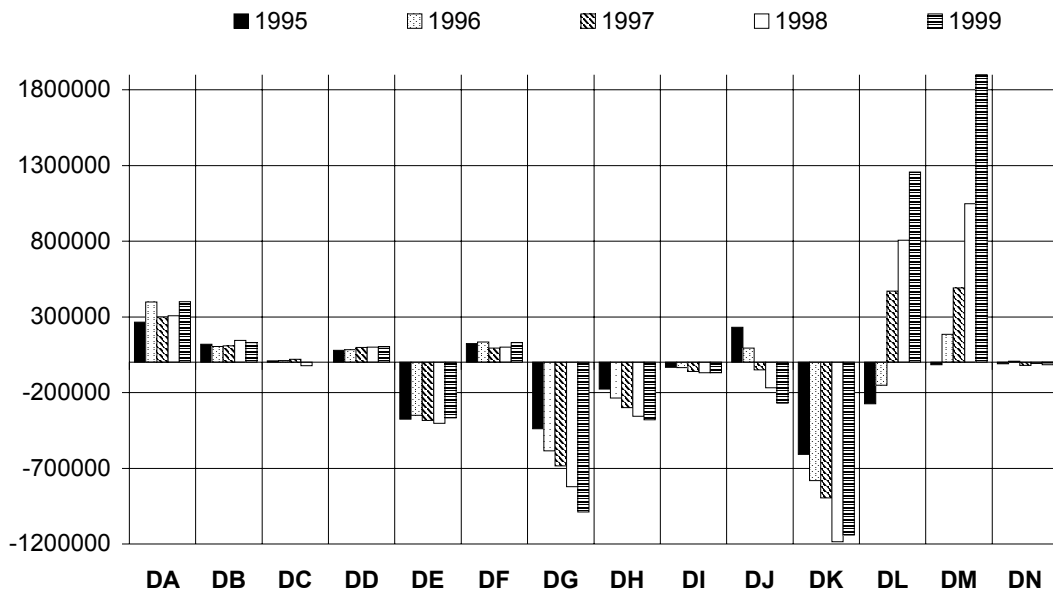


Figure A/4

Poland: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

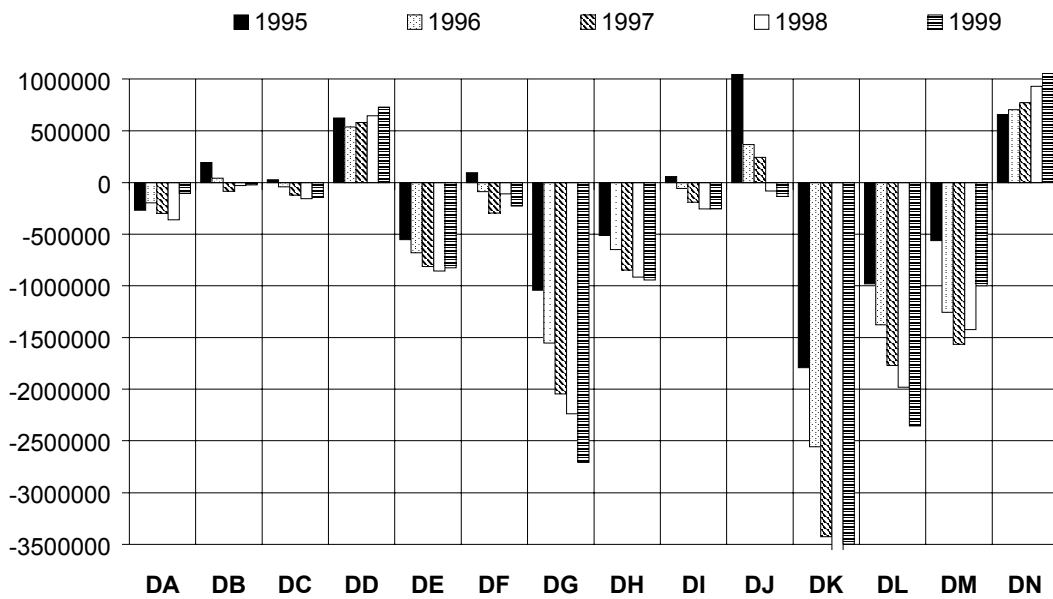


Figure A/5

Romania: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

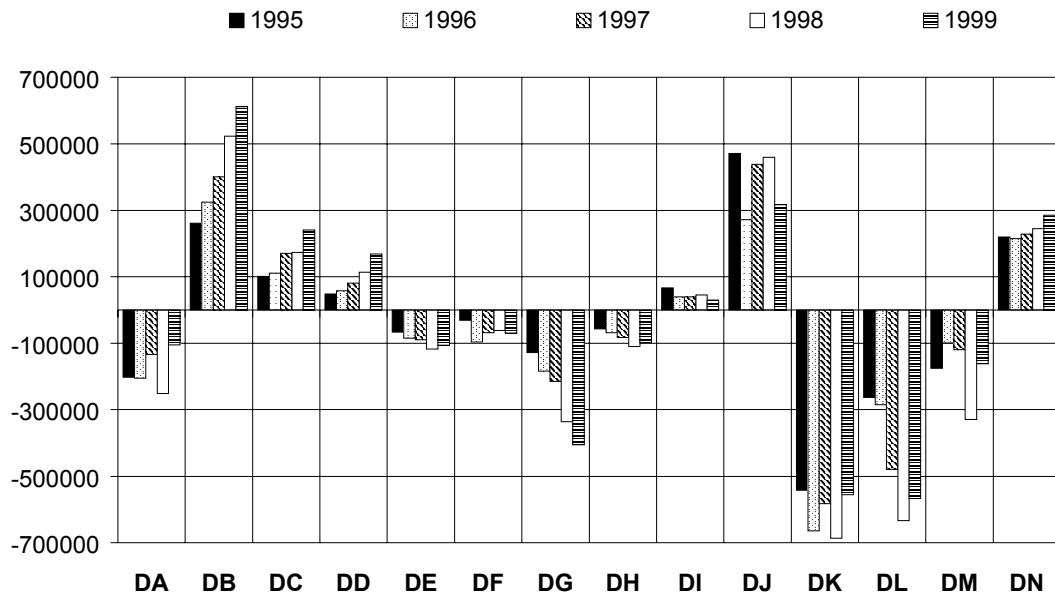


Figure A/6

Slovak Republic: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

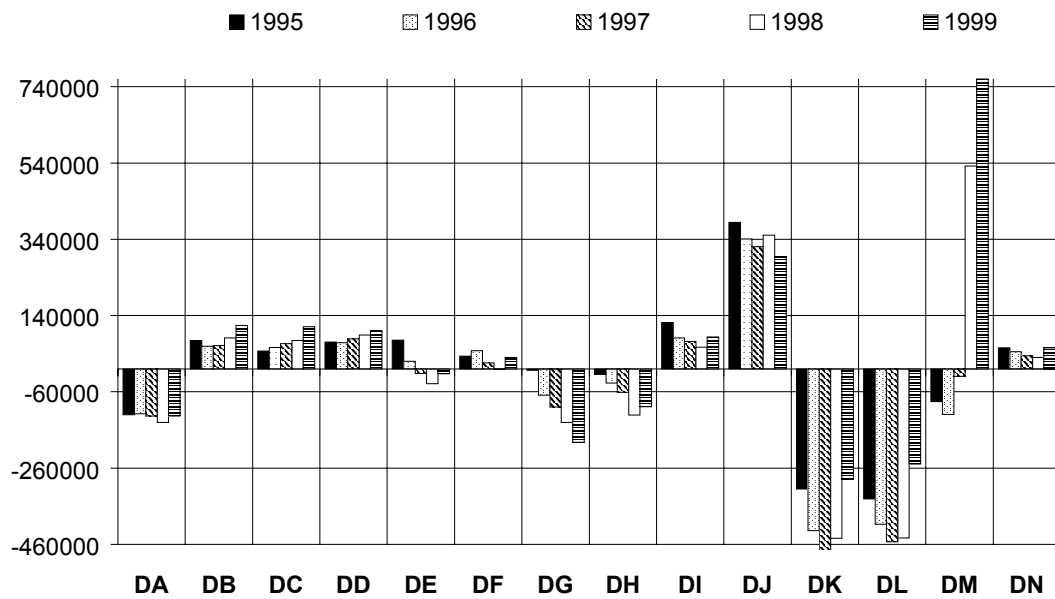


Figure A/7

Slovenia: Sectoral trade balances with the EU, 1995-1999

(in 1000 ECU)

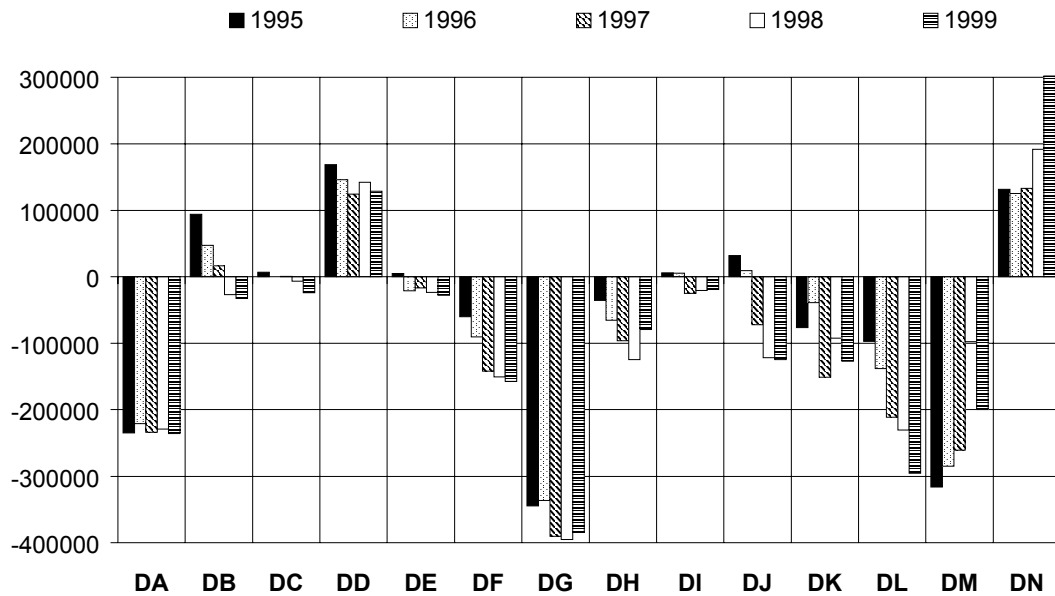


Figure A/8

Estonia: Sectoral trade balances with the EU, 1995-1999

(in 1000 ECU)

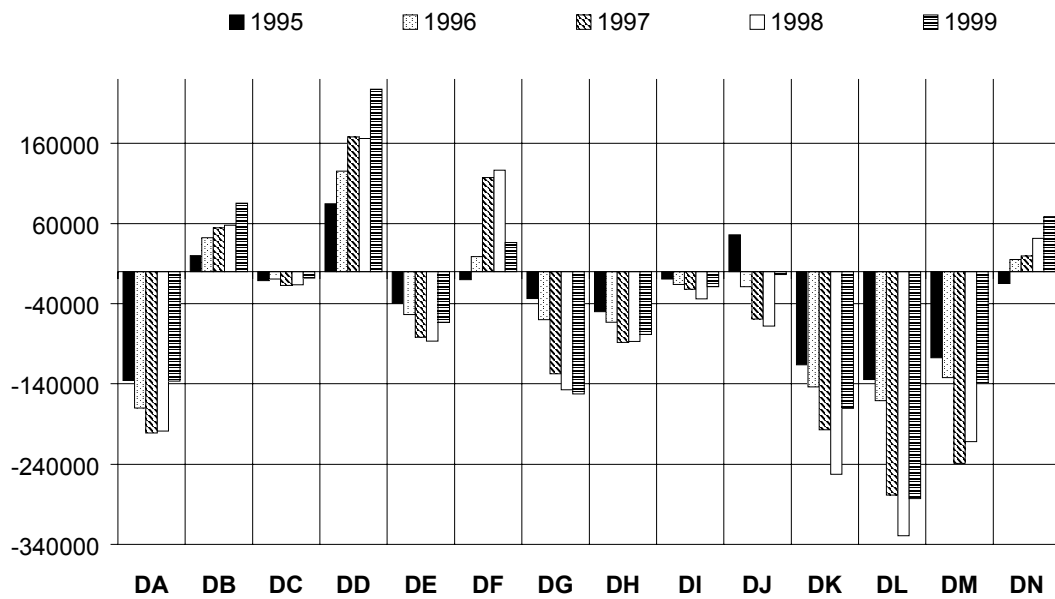


Figure A/9

Latvia: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

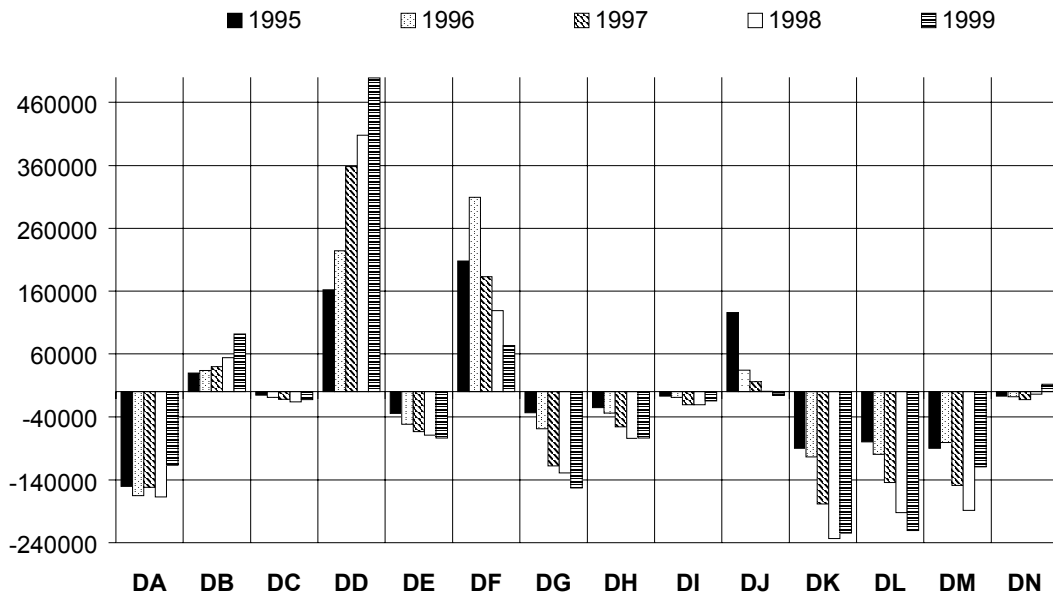


Figure A/10

Lithuania: Sectoral trade balances with the EU, 1995-1999
(in 1000 ECU)

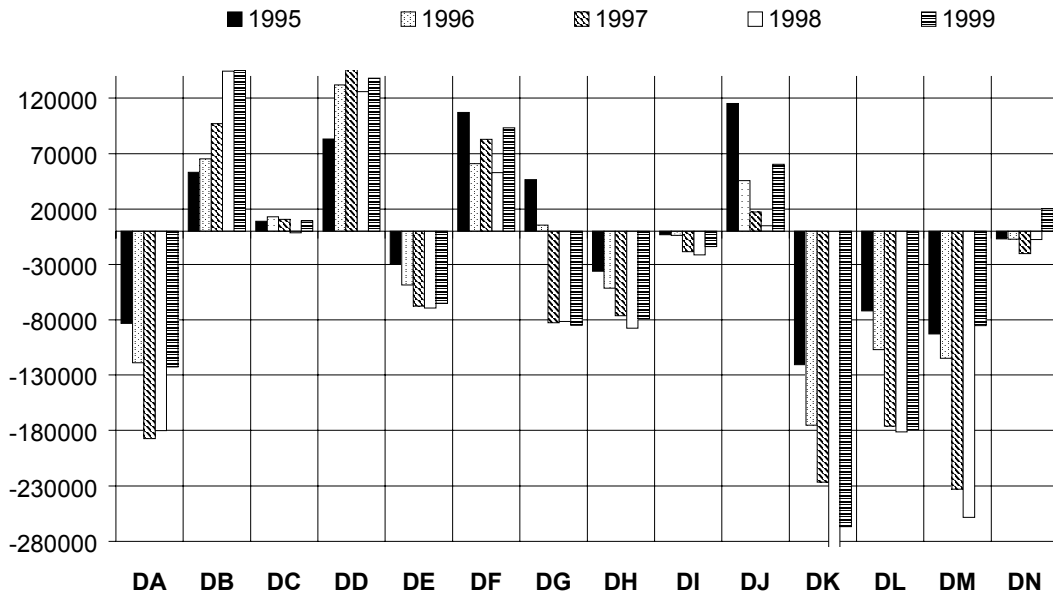


Table A/1

Bulgaria: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain,1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Other wearing apparel and accessories	182	522.0	23.8	239.3	1.49
Machinery for production, use of mech. power	291	59.8	30.8	32.7	0.42
Footwear	193	102.6	14.0	22.3	1.32
Aircraft and spacecraft	353	20.7	90.3	18.2	0.05
Ships and boats	351	13.2	196.0	13.0	0.32
Ceramic goods	262	21.7	32.5	12.2	1.21
TV, radio and recording apparatus	323	13.3	84.8	11.8	0.08
Furniture	361	35.9	19.8	10.0	0.43
Knitted and crocheted articles	177	50.8	13.9	7.8	0.80
Basic precious and non-ferrous metals	274	260.7	2.0	7.7	0.93
Fruits and vegetables	153	44.2	9.0	7.3	0.90
Meat products	151	35.5	5.6	6.4	0.78
Panels and boards of wood	202	23.6	11.4	6.4	1.06
Made-up textile articles	174	19.4	18.2	5.9	0.48
Electricity distribution and control apparatus	312	9.5	35.6	5.8	0.14
Lighting equipment and electric lamps	315	8.8	39.6	5.5	0.30
Sawmilling, planing and impregnation of wood	201	20.1	11.8	4.7	0.42
Articles of paper and paperboard	212	7.2	31.7	4.1	0.41
Cement, lime and plaster	265	5.7	28.0	3.4	1.07
Optical instruments and photographic equipment	334	7.3	25.5	3.4	0.13
Cutlery, tools and general hardware	286	10.4	17.4	3.3	0.22
Wooden containers	204	4.4	48.8	3.2	1.26
Electronic valves and tubes, other electronic comp.	321	7.4	20.0	2.8	0.03
Other special purpose machinery	295	15.4	13.0	2.7	0.12
TV, and radio transmitters, apparatus for line telephony	322	3.2	62.9	2.5	0.02
Refined petroleum and nuclear fuel	232	14.4	9.4	2.2	0.13
Domestic appliances n. e. c.	297	10.0	15.0	2.1	0.23
Other products of wood; articles of cork, etc.	205	5.0	19.2	1.8	0.31
Railway locomotives and rolling stock	352	1.6	98.9	1.5	0.18
Leather clothes	181	2.0	29.1	1.3	0.18
10 biggest losers					
Electric motors, generators and transformers	311	15.8	0.0	-6.8	0.21
Pulp, paper and paperboard	211	13.6	-12.9	-7.4	0.16
Ceramic tiles and flags	263	10.4	-7.8	-7.6	3.88
Pharmaceuticals	244	14.5	-1.4	-7.6	0.08
Luggage, handbags, saddlery and harness	192	10.9	-7.1	-8.3	0.30
Glass and glass products	261	8.8	-12.2	-10.4	0.31
Beverages	159	74.2	7.3	-10.4	2.78
Other first processing of iron and steel	273	5.1	-26.9	-12.2	0.17
Basic iron and steel, ferro-alloys (ECSC)	271	204.6	-6.0	-54.9	3.12
Basic chemicals	241	121.5	-14.2	-134.8	0.44
Total		2098.7	5.7	128.1	0.33

Source: Own calculations based on Eurostat Comext Database.

Table A/2

Czech Republic: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Motor vehicles	341	1887.7	53.3	1363.3	5.93
Parts and accessories for motor vehicles	343	1089.8	49.1	783.8	9.46
Other general purpose machinery	292	534.8	33.2	294.8	4.68
Electricity distribution and control apparatus	312	482.6	30.1	257.6	7.03
Machinery for production, use of mech. power	291	475.3	27.3	235.5	3.32
Other fabricated metal products	287	644.0	20.0	232.6	8.34
Electrical equipment n. e. c.	316	409.2	32.8	217.7	4.21
Rubber products	251	416.1	28.4	212.6	7.38
Furniture	361	615.7	21.8	200.6	7.40
Other special purpose machinery	295	546.1	19.6	187.9	4.17
Plastic products	252	377.2	26.3	182.8	4.13
Electronic valves and tubes, other electronic comp.	321	326.9	29.8	177.3	1.24
Machine-tools	294	335.1	20.3	145.1	4.07
Isolated wire and cable	313	229.5	33.2	128.1	8.29
Accumulators, primary cells and primary batteries	314	129.2	32.9	107.6	5.91
Cutlery, tools and general hardware	286	220.9	21.5	90.2	4.60
Electric motors, generators and transformers	311	378.1	16.6	86.0	4.98
Railway locomotives and rolling stock	352	164.4	29.9	79.6	17.81
TV, radio and recording apparatus	323	135.6	31.4	74.5	0.81
Printing	222	113.9	37.6	73.1	11.83
Office machinery and computers	300	188.8	20.0	58.4	0.31
Glass and glass products	261	357.7	11.6	57.9	12.72
Basic precious and non-ferrous metals	274	280.7	6.5	51.4	1.00
Other textiles	175	96.3	24.4	50.2	2.96
Structural metal products	281	261.8	13.2	50.1	18.32
TV, and radio transmitters, apparatus for line telephony	322	62.7	63.1	48.6	0.43
Instruments for measuring, checking, testing, navigating	332	120.8	20.8	45.7	0.99
Refined petroleum and nuclear fuel	232	108.6	17.9	40.4	0.99
Textile fibres	171	89.4	17.8	39.7	3.19
Made-up textile articles	174	189.0	14.4	39.2	4.73
10 biggest losers					
Sawmilling, planing and impregnation of wood	201	225.1	3.3	-11.2	4.68
Beverages	159	64.0	6.0	-12.8	2.40
Knitted and crocheted articles	177	59.5	4.0	-13.0	0.94
Luggage, handbags, saddlery and harness	192	29.6	-6.6	-21.6	0.82
Cement, lime and plaster	265	53.0	-6.8	-24.4	9.96
Agricultural and forestry machinery	293	80.4	-2.0	-29.0	4.36
Footwear	193	152.5	1.5	-37.9	1.97
Basic iron and steel, ferro-alloys (ECSC)	271	393.0	-4.0	-64.3	5.99
Other wearing apparel and accessories	182	447.6	2.5	-67.2	1.28
Basic chemicals	241	542.9	-2.0	-130.3	1.96
Total		16022.8	17.8	5567.3	2.54

Source: Own calculations based on Eurostat Comext Database.

Table A/3

Hungary: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Motor vehicles	341	3411.7	44.4	2207.3	10.72
Office machinery and computers	300	1879.4	109.8	1740.3	3.13
TV, radio and recording apparatus	323	1548.3	52.9	1167.9	9.26
Parts and accessories for motor vehicles	343	697.8	42.9	465.7	6.06
Electronic valves and tubes, other electronic comp.	321	332.8	68.1	278.6	1.26
Electrical equipment n. e. c.	316	597.9	24.5	236.5	6.16
Electricity distribution and control apparatus	312	328.7	27.9	164.8	4.79
Domestic appliances n. e. c.	297	308.8	22.2	117.1	7.02
Other general purpose machinery	292	214.0	28.0	101.3	1.87
Rubber products	251	209.4	26.3	100.2	3.72
Electric motors, generators and transformers	311	317.5	20.0	98.9	4.19
Isolated wire and cable	313	171.3	31.9	92.6	6.19
Instruments for measuring, checking, testing, navigating	332	127.8	39.3	82.8	1.05
Lighting equipment and electric lamps	315	324.6	16.8	76.9	11.26
Furniture	361	276.6	18.6	69.5	3.32
Other special purpose machinery	295	215.5	16.6	59.0	1.65
Articles of paper and paperboard	212	79.3	43.8	55.0	4.49
Railway locomotives and rolling stock	352	64.6	65.9	52.1	7.00
Pulp, paper and paperboard	211	65.3	26.6	42.6	0.78
TV, and radio transmitters, apparatus for line telephony	322	62.4	49.0	42.2	0.42
Plastic products	252	183.9	13.9	40.4	2.01
Machinery for production, use of mech. power	291	192.4	12.6	33.7	1.34
Other wearing apparel and accessories	182	887.7	7.2	32.4	2.53
Meat products	151	416.2	2.5	32.3	9.11
Other fabricated metal products	287	190.3	11.8	29.4	2.47
Knitted and crocheted articles	177	120.7	16.6	27.8	1.90
Optical instruments and photographic equipment	334	43.1	38.2	27.2	0.77
Sawmilling, planing and impregnation of wood	201	76.6	15.6	25.3	1.59
Cutlery, tools and general hardware	286	65.9	19.4	24.1	1.37
Miscellaneous manufacturing n. e. c.	366	44.3	25.0	20.7	0.99
10 biggest losers					
Publishing	221	15.1	-6.0	-7.2	0.63
Games and toys	365	33.4	0.5	-10.3	0.56
Builders' carpentry and joinery	203	41.9	-0.8	-12.6	3.12
Other food products	158	39.4	-3.7	-13.1	0.95
Tubes	272	36.0	-4.7	-14.0	2.31
Made-up textile articles	174	80.6	2.4	-18.8	2.02
Refined petroleum and nuclear fuel	232	199.8	2.6	-19.1	1.82
Basic precious and non-ferrous metals	274	323.2	-1.0	-30.0	1.15
Basic iron and steel, ferro-alloys (ECSC)	271	181.4	-8.8	-78.3	2.76
Basic chemicals	241	429.9	-1.2	-85.8	1.55
Total		16709.6	23.9	7562.5	2.65

Source: Own calculations based on Eurostat Comext Database.

Table A/4

Poland: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
TV, radio and recording apparatus	323	556.9	59.2	440.5	3.33
Parts and accessories for motor vehicles	343	565.5	39.3	357.1	4.91
Motor vehicles	341	1200.9	17.7	240.4	3.77
Furniture	361	1481.4	15.2	232.4	17.80
Electrical equipment n. e. c.	316	318.1	36.2	183.5	3.28
Electric motors, generators and transformers	311	216.6	37.0	128.8	2.86
Plastic products	252	254.2	26.8	125.0	2.78
Pulp, paper and paperboard	211	241.9	14.4	115.7	2.88
Rubber products	251	247.0	21.6	96.9	4.38
Other general purpose machinery	292	207.8	26.0	91.2	1.82
Other special purpose machinery	295	256.9	20.1	90.9	1.96
Electricity distribution and control apparatus	312	180.8	25.7	84.1	2.63
Accumulators, primary cells and primary batteries	314	84.1	104.1	81.6	3.85
Other fabricated metal products	287	531.8	11.3	72.9	6.89
Other products of wood; articles of cork, etc.	205	289.3	14.1	67.3	17.68
Ships and boats	351	264.8	18.0	58.7	6.42
Fruits and vegetables	153	399.9	8.3	57.5	8.18
Panels and boards of wood	202	171.0	13.9	56.6	7.73
Domestic appliances n. e. c.	297	156.7	21.1	55.8	3.56
Glass and glass products	261	196.7	16.0	55.7	7.00
Lighting equipment and electric lamps	315	221.6	17.2	54.4	7.69
Machinery for production, use of mech. power	291	254.2	12.5	44.1	1.78
Other textiles	175	67.7	34.4	44.0	2.08
Meat products	151	191.6	6.9	42.2	4.19
Man-made fibres	247	81.7	23.5	40.6	4.23
Electronic valves and tubes, other electronic comp.	321	196.9	12.9	39.4	0.75
Cutlery, tools and general hardware	286	87.7	21.1	35.1	1.82
Made-up textile articles	174	252.9	11.9	33.5	6.32
Bodies for motor vehicles, trailers	342	130.1	17.3	32.3	17.90
Builders' carpentry and joinery	203	174.8	11.5	32.2	13.03
10 biggest losers					
Refined petroleum and nuclear fuel	232	68.1	0.3	-13.5	0.62
Footwear	193	159.4	4.9	-14.9	2.06
Tubes	272	85.4	-0.6	-14.9	5.47
Wooden containers	204	114.5	1.9	-30.2	32.54
Sawmilling, planing and impregnation of wood	201	185.5	-1.6	-51.4	3.86
Basic iron and steel, ferro-alloys (ECSC)	271	400.7	-5.0	-85.0	6.10
Cement, lime and plaster	265	70.7	-19.2	-112.0	13.28
Basic precious and non-ferrous metals	274	755.8	-3.9	-174.7	2.68
Basic chemicals	241	588.9	-3.1	-175.6	2.12
Other wearing apparel and accessories	182	1674.0	2.2	-274.8	4.77
Total		16238.9	10.5	2567.1	2.57

Source: Own calculations based on Eurostat Comext Database.

Table A/5

Romania: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Other wearing apparel and accessories	182	1831.1	20.4	724.4	5.22
Footwear	193	661.0	21.0	252.7	8.52
Knitted and crocheted articles	177	265.6	25.9	115.0	4.19
Ships and boats	351	115.4	73.2	96.1	2.80
Electrical equipment n. e. c.	316	148.5	27.6	67.0	1.53
Office machinery and computers	300	57.2	167.0	55.6	0.10
Sawmilling, planing and impregnation of wood	201	83.4	36.3	54.5	1.73
Machinery for production, use of mech. power	291	136.7	18.1	43.7	0.96
Builders' carpentry and joinery	203	56.5	45.6	40.7	4.21
Made-up textile articles	174	62.9	31.3	34.2	1.57
TV, and radio transmitters, apparatus for line telephony	322	32.0	179.3	31.2	0.22
Machine-tools	294	46.5	32.1	28.3	0.56
Domestic appliances n. e. c.	297	50.7	32.1	27.6	1.15
Parts and accessories for motor vehicles	343	55.8	27.1	26.1	0.48
Electric motors, generators and transformers	311	77.2	17.8	19.9	1.02
Other special purpose machinery	295	43.4	23.5	18.4	0.33
Other general purpose machinery	292	32.2	31.5	17.0	0.28
Plastic products	252	23.0	39.4	15.0	0.25
Railway locomotives and rolling stock	352	21.2	34.4	11.7	2.30
Ceramic goods	262	49.9	14.8	11.0	2.79
Luggage, handbags, saddlery and harness	192	21.4	26.2	10.3	0.60
Tanks, reservoirs, central heating radiators and boilers	282	12.5	58.1	9.9	2.20
Sports goods	364	11.7	67.3	9.8	0.59
Aircraft and spacecraft	353	12.1	59.8	9.2	0.03
Lighting equipment and electric lamps	315	22.3	24.3	9.0	0.77
Other textiles	175	13.6	35.3	9.0	0.42
Rubber products	251	39.8	14.4	8.9	0.71
Other products of wood; articles of cork, etc.	205	35.7	14.6	8.7	2.18
Tanning and dressing of leather	191	14.9	14.4	7.7	0.87
Panels and boards of wood	202	20.0	13.6	6.5	0.91
10 biggest losers					
Other first processing of iron and steel	273	17.7	-9.4	-7.8	0.59
Pharmaceuticals	244	12.2	-3.4	-8.0	0.07
Motor vehicles	341	4.6	-14.7	-8.8	0.01
Coke oven products	231	2.0	-41.4	-11.5	0.37
Glass and glass products	261	47.9	-1.6	-18.6	1.70
Refined petroleum and nuclear fuel	232	24.9	-12.1	-25.7	0.23
Cement, lime and plaster	265	7.0	-34.3	-34.1	1.31
Basic iron and steel, ferro-alloys (ECSC)	271	239.1	-6.0	-63.4	3.64
Furniture	361	347.0	4.2	-88.9	4.17
Basic chemicals	241	109.1	-11.1	-90.8	0.39
Total		5534.3	14.1	1458.8	0.88

Source: Own calculations based on Eurostat Comext Database.

Table A/6

Slovak Republic: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Motor vehicles	341	1431.1	65.0	1134.6	4.50
Electrical equipment n. e. c.	316	266.6	44.7	178.1	2.75
Parts and accessories for motor vehicles	343	282.2	28.5	138.7	2.45
Office machinery and computers	300	128.9	149.8	124.2	0.21
Machinery for production, use of mech. power	291	168.9	40.4	111.4	1.18
Basic precious and non-ferrous metals	274	164.0	21.8	85.6	0.58
Other special purpose machinery	295	121.0	31.1	65.9	0.92
Electric motors, generators and transformers	311	138.5	27.8	64.2	1.83
Footwear	193	175.0	17.6	54.1	2.26
Ships and boats	351	71.1	51.6	50.8	1.72
Refined petroleum and nuclear fuel	232	114.6	21.2	50.2	1.05
Other wearing apparel and accessories	182	378.1	10.0	50.2	1.08
Domestic appliances n. e. c.	297	79.5	24.3	33.4	1.81
TV, radio and recording apparatus	323	47.7	39.9	31.0	0.29
Other general purpose machinery	292	72.2	24.9	30.3	0.63
Machine-tools	294	68.0	19.0	27.7	0.82
Electronic valves and tubes, other electronic comp.	321	40.8	35.0	24.8	0.15
Articles of paper and paperboard	212	43.4	27.7	22.0	2.46
Bodies for motor vehicles, trailers	342	45.3	25.6	19.4	6.23
Rubber products	251	78.3	15.3	19.4	1.39
Knitted and crocheted articles	177	60.9	19.3	18.1	0.96
Electricity distribution and control apparatus	312	24.8	28.9	12.8	0.36
Sawmilling, planing and impregnation of wood	201	70.4	9.6	12.0	1.46
Tanning and dressing of leather	191	27.6	8.9	11.3	1.60
Other fabricated metal products	287	104.2	10.2	10.7	1.35
Tubes	272	56.9	8.6	10.0	3.64
Other textiles	175	11.0	56.1	8.9	0.34
Made-up textile articles	174	28.1	17.5	8.1	0.70
Textile weaving	172	37.0	8.4	8.0	0.78
Dairy products; ice cream	155	12.3	31.7	7.7	1.25
10 biggest losers					
Articles of concret, plaster and cement	266	7.0	-8.4	-5.3	2.50
Railway locomotives and rolling stock	352	81.9	7.2	-9.4	8.87
Pharmaceuticals	244	11.4	-7.3	-10.9	0.07
Man-made fibres	247	62.0	-3.6	-22.1	3.20
Other first processing of iron and steel	273	49.9	-11.8	-30.1	1.66
Cement, lime and plaster	265	49.3	-9.4	-31.2	9.26
Furniture	361	119.5	3.0	-37.9	1.44
Pulp, paper and paperboard	211	83.4	-11.9	-40.0	0.99
Basic chemicals	241	186.0	-4.7	-71.2	0.67
Basic iron and steel, ferro-alloys (ECSC)	271	217.0	-7.9	-81.8	3.31
Total		5797.4	18.1	2104.1	0.92

Source: Own calculations based on Eurostat Comext Database.

Table A/7

Slovenia: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Furniture	361	437.5	15.7	75.5	5.26
Parts and accessories for motor vehicles	343	189.0	19.2	59.2	1.64
Basic precious and non-ferrous metals	274	237.7	8.7	59.0	0.84
Other special purpose machinery	295	130.1	11.6	17.4	0.99
Other non-metallic mineral products	268	66.5	15.0	17.3	6.21
Electrical equipment n. e. c.	316	91.9	14.4	13.9	0.95
Meat products	151	38.9	11.0	12.9	0.85
Cutlery, tools and general hardware	286	82.0	10.5	11.0	1.71
Machine-tools	294	77.2	8.4	10.8	0.94
Plastic products	252	86.5	10.3	9.7	0.95
Electric motors, generators and transformers	311	154.9	11.0	9.0	2.04
Bodies for motor vehicles, trailers	342	50.3	14.6	8.8	6.92
Accumulators, primary cells and primary batteries	314	12.1	10.5	7.8	0.55
Electronic valves and tubes, other electronic comp.	321	43.9	12.0	7.6	0.17
Textile fibres	171	36.8	7.3	7.1	1.31
Railway locomotives and rolling stock	352	8.1	59.2	6.3	0.88
Tanks, reservoirs, central heating radiators and boilers	282	12.1	26.6	5.9	2.13
Sports goods	364	13.6	21.1	5.4	0.69
Medical equipment	331	16.4	18.8	4.6	0.18
Structural metal products	281	42.5	10.2	4.2	2.97
Printing	222	6.7	28.8	3.6	0.69
Other transport equipment n. e. c.	355	4.0	84.3	3.5	4.70
Basic iron and steel, ferro-alloys (ECSC)	271	83.5	0.8	3.3	1.27
Man-made fibres	247	44.9	6.0	3.3	2.32
Isolated wire and cable	313	16.4	14.0	2.9	0.59
Pharmaceuticals	244	23.3	13.3	2.9	0.14
Office machinery and computers	300	12.5	16.1	2.6	0.02
Dairy products; ice cream	155	7.3	13.8	2.4	0.74
Optical instruments and photographic equipment	334	31.4	9.3	1.8	0.56
Fish and fish products	152	3.3	21.9	1.4	0.04
10 biggest losers					
Motor vehicles	341	705.1	10.6	-18.0	2.22
Articles of paper and paperboard	212	47.3	-1.7	-19.1	2.68
Rubber products	251	111.7	2.9	-20.7	1.98
Domestic appliances n. e. c.	297	308.8	6.2	-27.2	7.02
Other fabricated metal products	287	131.2	2.3	-27.3	1.70
Made-up textile articles	174	35.5	-6.8	-28.4	0.89
Knitted and crocheted articles	177	49.0	-5.3	-37.7	0.77
Footwear	193	61.0	-5.8	-41.6	0.79
Builders' carpentry and joinery	203	114.3	-4.1	-55.8	8.52
Other wearing apparel and accessories	182	316.2	-4.5	-166.5	0.90
Total		5221.7	5.7	-200.8	0.83

Source: Own calculations based on Eurostat Comext Database.

Table A/8

Estonia: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain,1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
TV, and radio transmitters, apparatus for line telephony	322	221.2	316.1	220.0	1.50
Sawmilling, planing and impregnation of wood	201	146.1	27.4	79.7	3.04
TV, radio and recording apparatus	323	91.5	56.5	71.1	0.55
Furniture	361	105.2	31.7	53.3	1.26
Structural metal products	281	42.5	59.9	33.9	2.98
Made-up textile articles	174	57.0	29.7	29.6	1.43
Builders' carpentry and joinery	203	39.8	48.0	29.3	2.97
Refined petroleum and nuclear fuel	232	105.8	13.8	29.2	0.97
Isolated wire and cable	313	24.5	146.5	23.6	0.89
Other wearing apparel and accessories	182	153.4	10.3	21.9	0.44
Instruments for measuring, checking, testing, navigating	332	21.8	69.4	18.3	0.18
Textile weaving	172	38.5	18.3	17.2	0.82
Fish and fish products	152	24.8	28.1	13.4	0.28
Other general purpose machinery	292	18.4	45.0	12.5	0.16
Other special purpose machinery	295	26.4	25.8	12.2	0.20
Dairy products; ice cream	155	15.3	50.2	11.9	1.55
Panels and boards of wood	202	38.9	12.8	11.9	1.76
Footwear	193	30.6	20.2	11.2	0.39
Electricity distribution and control apparatus	312	11.8	65.5	9.7	0.17
Other products of wood; articles of cork, etc.	205	17.8	29.6	9.6	1.08
Electrical equipment n. e. c.	316	18.7	31.1	9.5	0.19
Plastic products	252	16.4	29.3	8.7	0.18
Other fabricated metal products	287	13.8	26.7	6.7	0.18
Other textiles	175	9.0	35.4	5.9	0.28
Domestic appliances n. e. c.	297	7.6	44.3	5.2	0.17
Parts and accessories for motor vehicles	343	7.2	47.2	5.1	0.06
Textile fibres	171	9.0	23.3	4.9	0.32
Medical equipment	331	7.1	44.6	4.8	0.08
Wooden containers	204	12.9	19.8	4.4	3.66
Basic iron and steel, ferro-alloys (ECSC)	271	44.9	2.2	4.1	0.68
10 biggest losers					
Fruits and vegetables	153	3.3	2.2	-0.3	0.07
Ceramic goods	262	0.8	-0.9	-0.3	0.04
Games and toys	365	0.4	-13.1	-0.5	0.01
Tanning and dressing of leather	191	0.3	-35.3	-1.0	0.01
Meat products	151	4.1	-8.3	-1.8	0.09
Sports goods	364	9.4	2.0	-1.8	0.47
Electric motors, generators and transformers	311	13.1	-5.6	-10.5	0.17
Basic chemicals	241	30.6	-12.4	-28.8	0.11
Other first processing of iron and steel	273	0.5	-64.1	-31.3	0.02
Office machinery and computers	300	29.9	-16.4	-57.7	0.05
Total		1664.6	20.9	705.8	0.26

Source: Own calculations based on Eurostat Comext Database.

Table A/9

Latvia: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain,1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Sawmilling, planing and impregnation of wood	201	389.8	31.8	235.5	8.10
Other wearing apparel and accessories	182	150.7	22.7	66.3	0.43
Panels and boards of wood	202	65.2	17.7	26.9	2.95
Furniture	361	53.7	29.2	25.2	0.64
Textile weaving	172	37.5	34.4	25.0	0.79
Builders' carpentry and joinery	203	26.9	96.3	24.7	2.01
Other products of wood; articles of cork, etc.	205	17.3	74.3	14.8	1.06
Dairy products; ice cream	155	19.2	46.4	14.5	1.95
Wooden containers	204	10.5	80.9	9.2	2.99
Knitted and crocheted articles	177	27.2	18.1	7.3	0.43
Electrical equipment n. e. c.	316	4.8	133.1	4.6	0.05
Miscellaneous manufacturing n. e. c.	366	4.4	77.2	3.8	0.10
Textile fibres	171	10.9	10.6	3.1	0.39
Other fabricated metal products	287	6.8	24.6	3.1	0.09
Electricity distribution and control apparatus	312	3.2	59.4	2.5	0.05
Agricultural and forestry machinery	293	3.9	35.6	2.4	0.21
Cement, lime and plaster	265	5.9	15.7	2.3	1.11
Plastic products	252	4.1	31.7	2.3	0.04
Footwear	193	4.4	28.3	2.2	0.06
Made-up textile articles	174	17.8	11.4	2.1	0.44
Other special purpose machinery	295	4.5	25.7	2.1	0.03
Lighting equipment and electric lamps	315	4.0	27.9	1.9	0.14
Office machinery and computers	300	1.8	85.5	1.6	0.00
Fish and fish products	152	5.6	13.6	1.4	0.06
Other food products	158	2.3	25.6	1.2	0.06
Publishing	221	1.2	204.2	1.2	0.05
Glass and glass products	261	8.4	10.8	1.2	0.30
Other general purpose machinery	292	2.0	30.4	1.0	0.02
Cutlery, tools and general hardware	286	1.3	57.6	1.0	0.03
Beverages	159	1.2	75.0	1.0	0.04
10 biggest losers					
Tanning and dressing of leather	191	0.2	-54.4	-2.9	0.01
Man-made fibres	247	9.2	-4.2	-3.6	0.47
Pulp, paper and paperboard	211	0.5	-44.6	-4.2	0.01
Meat products	151	4.9	-14.8	-4.6	0.11
Basic iron and steel, ferro-alloys (ECSC)	271	18.8	-6.1	-5.1	0.29
Electric motors, generators and transformers	311	1.9	-24.3	-6.5	0.03
Basic chemicals	241	10.5	-15.8	-13.5	0.04
Other first processing of iron and steel	273	25.3	-19.0	-31.7	0.84
Basic precious and non-ferrous metals	274	42.6	-13.8	-38.5	0.15
Refined petroleum and nuclear fuel	232	164.8	-13.9	-200.1	1.50
Total		1207.0	8.6	181.8	0.19

Source: Own calculations based on Eurostat Comext Database.

Table A/10

Lithuania: Gaining and losing industries in exports to the EU(15), 1995-1999

	NACE rev.1	Exports 1999 ECU mn	Average annual change in %	Competitive gain, 1995-99 ECU mn	Market share in the EU(15) 1999 in %
30 biggest winners					
Other wearing apparel and accessories	182	356.2	26.8	180.9	1.02
Basic precious and non-ferrous metals	274	133.6	10.2	38.3	0.47
Textile weaving	172	65.0	26.6	37.6	1.38
Furniture	361	61.8	38.4	36.8	0.74
Electrical equipment n. e. c.	316	45.5	32.6	24.1	0.47
Ships and boats	351	19.5	218.0	19.2	0.47
Prepared animal feeds	157	21.3	94.0	18.9	2.46
Structural metal products	281	17.2	156.7	16.7	1.21
Made-up textile articles	174	32.2	28.2	16.0	0.81
Other products of wood; articles of cork, etc.	205	18.2	59.8	14.6	1.11
TV, radio and recording apparatus	323	15.5	72.8	13.1	0.09
Plastic products	252	17.6	47.6	12.8	0.19
Builders' carpentry and joinery	203	15.0	60.7	12.2	1.12
Textile fibres	171	15.7	28.6	9.5	0.56
Footwear	193	16.2	33.5	9.4	0.21
Wooden containers	204	12.6	51.1	9.3	3.57
Motorcycles and bicycles	354	18.0	25.7	8.3	0.38
Motor vehicles	341	8.7	117.6	8.1	0.03
Knitted and crocheted articles	177	30.6	17.8	8.0	0.48
Sawmilling, planing and impregnation of wood	201	94.6	6.8	7.6	1.97
Domestic appliances n. e. c.	297	18.2	22.4	7.0	0.41
Medical equipment	331	5.7	77.4	4.9	0.06
Other general purpose machinery	292	5.9	65.6	4.8	0.05
Glass and glass products	261	10.8	19.4	3.9	0.38
Cement, lime and plaster	265	13.5	11.3	3.8	2.54
Other special purpose machinery	295	4.6	52.7	3.5	0.04
Other fabricated metal products	287	11.2	16.9	3.3	0.14
Fish and fish products	152	9.3	16.3	3.0	0.11
Other food products	158	6.0	18.5	2.5	0.14
Agricultural and forestry machinery	293	3.8	36.5	2.4	0.20
10 biggest losers					
Other chemical products	246	3.9	1.5	-0.8	0.04
Panels and boards of wood	202	13.5	1.1	-1.0	0.61
Pulp, paper and paperboard	211	0.6	-29.5	-1.6	0.01
Isolated wire and cable	313	2.0	-12.1	-2.7	0.07
Electronic valves and tubes, other electronic comp.	321	32.4	4.0	-3.7	0.12
Fruits and vegetables	153	5.7	-14.6	-6.9	0.12
Dairy products; ice cream	155	20.4	-6.7	-9.5	2.07
Basic chemicals	241	124.7	0.4	-15.4	0.45
Refined petroleum and nuclear fuel	232	106.0	-2.8	-38.5	0.97
Basic iron and steel, ferro-alloys (ECSC)	271	21.0	-23.2	-38.7	0.32
Total		1519.6	13.9	446.8	0.24

Source: Own calculations based on Eurostat Comext Database.

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