

OVERVIEW OF EXPORT PERFORMANCE OF 'NEW EUROPE': Theoretical Underpinnings and Empirical Evidence

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Competitiveness of 'New Europe': Trade Performance and Its Underpinnings

Abstract

Remarkable upgrading of export performance of the 'New Europe' has been one of the most outstanding features of the transition and EU integration processes of CEEC. We overview existing theoretical and empirical literature on export performance of CEEC and analyze its determinants. Opening up of CEEC economies has been the *sine qua non* for their improved export importance because it enabled gravity forces to act and to make EU-15 the main market of CEEC. Market access has been more important than supply capacity for growing export performance of CEEC. Still, analysis of CEEC's (export) competitiveness also suggests positive contribution of supply capacity factors. The existing literature puts forward five factors, which deserve special attention in analyzing CEEC's export performance. They are improved access to EU market, changes in export structure, increased levels of productivity, the role of FDI, and institutional changes.

1. Introduction

Remarkable upgrading of export performance of the 'New Europe' has been one of the most outstanding features of the transition and EU integration processes of the former socialist countries of Central and Eastern Europe (CEEC). Since the beginning of the 1990s, these countries recorded extremely high growth of exports in absolute as well as in relative terms, that has been accompanied by increasing market shares abroad, by a domination of EU-15 as the main market, and by considerable changes in the structure of exports in favor of goods with higher value added. In the analysis we confine ourselves to the most developed CEEC and distinguish between the new members states of the EU (NMS-8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) and the three candidates for EU membership (CC-3: Bulgaria, Croatia and Romania).

In the period of 1990-2004, exports of NMS-8 increased by almost seven times, i.e. by 667%, as compared to 220% for EU-15 (in 1991-2004) and 263% for world total. Absolute increase of exports has been accompanied by no less impressive increase of export intensity; exports to GDP ratio in NMS-8 increased from 29.3% in 1995 to 46.0 in 2004, compared to increase from 20.5% to 26.6% in the case of EU-15 (in 1991-2004) and from 16.1% to 22.0% in the case of world total. A mirror picture of the above average increase of export intensity of NMS-8 has been their growing competitiveness, reflected in higher market shares abroad, especially in the EU-15; the share of NMS-8 exports in total world imports increased from 1.11% in 1990 to as

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Table 1: Main exports related indicators of NMS-8, CC-3, EU-15 and World in 1990-2004 (in mill. EUR current prices and %)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
WORLD															
Exports of goods (in EUR)	2744364	2825290	2899256	3220729	3627651	3951773	4256672	4918471	4905154	5347581	6965078	6894386	6848770	6622691	7220908
Imports of goods (in EUR)	2836352	2922542	2980536	3275259	3676185	3995077	4322374	4996528	5012916	5473587	7178605	7121075	7009480	6794693	7437393
Exports index (1990=100)	100	103	106	117	132	144	155	179	179	195	254	251	250	241	263
Exports as % of GDP	16,1	15,4	15,5	15,3	16,2	17,6	18,0	18,7	18,5	18,6	20,4	19,7	19,9	20,5	22,0
EU-15															
Exports of goods (in EUR)	n.a.	1201850	1224991	1247462	1396704	1572823	1665205	1856468	1944269	2033628	2411635	2473163	2481826	2453286	2639310
Imports of goods (in EUR)	n.a.	1232648	1235180	1183345	1319305	1476558	1547433	1720310	1835065	1969006	2394873	2398083	2358467	2351142	2564615
Exports index (1991=100)	n.a.	100	102	104	116	131	139	154	162	169	201	206	207	204	220
Exports as % of GDP	n.a.	20,5	20,0	20,3	21,7	23,4	23,6	25,0	25,1	24,9	27,7	27,4	26,5	25,8	26,6
Exports as % of World imports	n.a.	41,1	41,1	38,1	38,0	39,4	38,5	37,2	38,8	37,2	33,6	34,7	35,4	36,1	35,5
NMS-8															
Exports of goods (in EUR)	31357,9	32296,8	34753,6	44575,1	52126,4	61702,7	66691,1	81695,5	94109,4	98758,6	129082,4	148052,8	159724,4	173113,3	209204,6
Imports of goods (in EUR)	28150,7	33433,8	38384,9	53203,6	61423,5	74031,2	89023,1	108973,8	122628,0	127080,8	162833,3	179233,4	189009,4	200259,2	235200,5
Exports index (1990=100)	100,0	103,0	110,8	142,1	166,2	196,8	212,7	260,5	300,1	314,9	411,6	472,1	509,4	552,1	667,2
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	29,3	27,9	30,3	32,4	32,5	36,7	37,4	37,8	41,5	46,0
Exports as % of World imports	1,11	1,11	1,17	1,36	1,42	1,54	1,54	1,64	1,88	1,80	1,80	2,08	2,28	2,55	2,81
Exports as % of EU-15 imports	n.a.	2,62	2,81	3,77	3,95	4,18	4,31	4,75	5,13	5,02	5,39	6,17	6,77	7,36	8,16
Exports to EU-15 as % of total exports	46,0	58,9	62,2	56,8	59,2	60,6	58,8	60,4	65,1	69,1	68,4	67,8	67,5	67,1	65,9
CC-3															
Exports of goods (in EUR)	17887	8766	9771	10588	12117	13854	13955	15503	15264	15747	21344	23647	25925	27750	33372
Imports of goods (in EUR)	20990	9793	11649	13267	13891	18134	19393	22414	22471	22397	29909	35744	38617	43358	51242
Exports index (1990=100)	100	49	55	59	68	77	78	87	85	88	119	132	145	155	187
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	22,8	23,8	21,3	25,9	26,4	26,9	25,7
Exports as % of World imports	0,63	0,30	0,33	0,32	0,33	0,35	0,32	0,31	0,30	0,29	0,30	0,33	0,37	0,41	0,45
Exports as % of EU-15 imports	n.a.	0,71	0,79	0,89	0,92	0,94	0,90	0,90	0,83	0,80	0,89	0,99	1,10	1,18	0,00
Exports to EU-15 as % of total exports	21,7	38,9	40,5	42,9	48,6	50,1	50,2	51,1	56,2	57,9	58,4	61,5	61,5	62,3	60,0

Sources: UNCTAD, World Bank and WIIW (The Vienna Institute for International Economic Studies) data bases.

Note: * Data for NMS-10.

much as 2.81% in 2004, and in total EU-15 imports from 2.62% to 8.16% (in 1991-2004). The result has been an ever growing importance of EU-15 for NMS-8 exports. EU-15 is now far the dominant foreign market of NMS-8, which in 2004 absorbed 65.9% of NMS-8 exports, as compared to 46.0% in 1990. Yet another feature of NMS-8 export expansion has been a major structural shift in favor of medium and high skill/technology intensity products in exports; in 1995-2004 the share of these products in NMS-10 exports increased from only 36,0% to 56.1%. The magnitude of the above trends and structural changes varies among individual countries, but the direction is the same in all of them. In spite of the fact that CC-3 also improved their export performance considerably since 1990 and that they experienced similar structural changes in exports, the scale of the improvement and structural changes has been much more modest than in NMS-8¹ (See Table 1 and Table in the Appendix for detail).

Overall, the picture depicted by the above data clearly shows an impressive improvement and structural changes in export performance of 'New Europe' since the beginning of transition. The question is what are the reasons behind, what are the determinants of the impressive improvement of NMS-8 and CC-3 exports performance. The objective of the paper is to overview the existing literature on export performance of CEEC and to analyze theoretical underpinnings and empirical evidence of the phenomenon. In analyzing the determinants of export performance, it seems convenient to distinguish between factors determining market access and factors determining supply capacity of exporting countries (see, for instance, Redding and Enables 2003, 2004; Fugazza 2004).

As far as market access is concerned, the gravity theory presents the most powerful explanatory tool. In gravity models, trade between two countries is positively related to both countries economic size and development level and negatively to the distance between them, the latter determining transport costs (Rivera-Baits and Olive 2003: 99-102). Size determines the supply conditions in the source country and the demand conditions in the host country. Other factors, which influence the magnitude of bilateral trade, like common language, two countries were part of the same territory, common border, free trade arrangement, are also commonly included in the model (Busier *et al.* 2005: 14-15). Opening up of CEEC economies as such, seems to be the most important factor of their improved export importance, simply because it enabled gravity forces - proximity of and integration in the large and high purchasing power EU markets - to act and to make EU-15 the main market of CEEC.

The supply capacity factors of export performance can be explained by comparative advantages arising from different factor intensities/endowments and/or by economies of scale in (horizontal) intra-industry trade characterized by similarities in technology and quality standards. The recognition that the main part of international trade is the intra-industry trade among developed countries has led to two strands of development in international trade theory. One strand tackles the problem by upgrading the traditional comparative advantages and factor abundancies approach of Heckscher-Ohlin-Vanek (HOV) in a way to include important modifications in the model, i.e. relaxing the assumption that all countries have the same technologies and allowing for

¹ One of the reasons is also that the initial year of our analysis is 1990. Namely, CC-3 experienced a sharp decline of exports from 1990 to 1991, which has been since then followed by a constant increase. If one would take 1991 as the base year, the indicators of export performance improvement of CC-3 would be much higher.

international productivity differences, introducing a demand function that permits home biases in consumption, incorporating trade costs and distance, and introducing intermediate inputs and distinguishing between tradable and nontradable goods. The other strand is the 'new trade theory'. This is in fact a theory of (horizontal) intra-industry trade, i.e. a theory of trade in differentiated products produced under increasing returns to scale and imperfect competition and is not based on comparative advantages and factor abundances. In new trade theory models, products are produced with the same technologies and factor intensities². Both theoretical approaches are relevant for the explanation of CEEC's export performance because, as documented by the data, the main part of CEEC's trade is still interindustry trade and vertical intra-industry trade, however, the share of horizontal intra-industry trade is slowly increasing. More horizontal intra-industry trade will only gradually outweigh trade based on comparative advantages.

The paper is structured as follows. Section two analyses the literature, which tackles CEEC's increasing export performance by a complex, in some cases model approach (gravity models, shift share analysis, export competitiveness' analysis). Further sections analyze particular factors of CEEC's improved export performance, as put forward by the literature, i.e. section three deals with improved access of CEEC to EU markets, section four with structural changes in CEEC's exports, section five with increased levels of productivity in CEEC, section six with the role of foreign direct investment (FDI) in growing export performance, and section seven with the role of the institutional changes, i.e. with the complete change of institutional setting in CEEC. Section eight concludes.

2. Complex (model) approach to analyzing CEEC's export performance: gravity models, shift share analysis, export competitiveness' analysis

In this section we analyze the literature, which tackles CEEC's increasing export performance by a complex, in some cases model approach. This ranges from gravity models, upgraded gravity models, distinguishing between market access and supply capacity factors, shift share analysis, analysis of (export) competitiveness and more or less comprehensive descriptive analysis of factors behind growing export performance. Main findings of this literature are the following:

- Transition from centrally planned to market economies has led to increase and geographical restructuring of foreign trade along the lines of the gravity theory, i.e. foreign trade intensity of CEEC increased to a major extent and EU-15, as large, near, highly developed market, assumed the role of the dominant trading partner.
- Gravity models show that CEEC gradually approach to the »normal« level of their trade with developed countries, especially the EU, but their are considerable differences among individual countries.
- Market access has been more important than supply capacity in for growing export performance of CEEC.
- Shift-share analysis show that CEEC considerably improved their competitive position in EU-15 compared to non-EU competitors, due to preferential trade arrangements but also due to improved supply capacity.

² For a comprehensive overview of developments in international trade theory see Rivera-Batiz and Oliva 2003:1-123.

- Speed and scope of transition reforms prove to be more important than initial conditions and market access in explaining inter-country differences in export performance.
- (Export) competitiveness analysis of CEEC suggests positive contribution of supply capacity factors to CEEC's export performance.

Far the most popular approach to the analysis of CEEC's export performance is the one inspired by the gravity theory, saying that trade between two countries is positively related to both countries economic size and development level and negatively to the distance between them. The gravity models explain whether trade of a particular country with individual country is above or below a ('normal') benchmark level of trade predicted by the model. Collins and Rodrik (1991) were the first to assess how the opening up and transformation of former socialist economies would affect their future trade patterns. They predicted considerably increased trade levels in the future and a considerable concentration of their trade on EU. Havrylyshyn and Pritchett (1991), Rosati (1992), Hamilton and Winters (1992), and Baldwin (1994) all came to basically the same conclusion, i.e. that pre-transition trade of CEEC with industrial countries and in particular EU was much smaller than potential trade level predicted by the gravity model. Kaminski *et al.* (1996a) and Jakab *et al.* (2001) predicted especially fast catching-up with the potential trade levels for CEEC having free trade arrangements with the EU. This prediction was a kind of confirmed by Havrylyshyn and Al-Atrash (1998), Egger (2003), and Fidrmuc and Fidrmuc (2003) who claim that by the end of the 1990s most CEEC have achieved trade openness ratio similar or at least approaching that of market economies of comparable size and level of development, and that trade between the EU-15 and CEEC was already close to the potential level predicted by the model. The last in the long line of gravity models on transition countries' trade is the one of Bussiere *et al.* (2005). They use a much longer period of time (1980-2003), with more than half of the period being already in the transition era, and find that trade integration between the more developed transition countries and Euro area is already relatively well advanced, while some Baltic and South Eastern European countries still have significant scope for trade integration.

The gravity models, thus, suggest that, at the beginning of transition, CEEC's foreign trade with developed market economies was much under the 'normal' level, but it converged to more 'normal' levels over time. There still remains some open space for converging, for some countries more than for the others. In fact, central planning, trade restrictions and preferential trade arrangements under the CMEA prevented normal trade relations and functioning of gravity fundamentals. As put by Havrylyshyn and Al-Atrash (1998), independence and transition process has resulted in increased foreign trade intensity and in more normal geographical distribution of trade as the central planning restrictions on foreign trade were lifted. Or, in the words of Bussiere *et al.* (2005), due to their geographical proximity with the Euro area and their GDP levels, it is natural for CEEC to have a significant share of their trade with the Euro area. Havrylyshyn and Al-Atrash (1998) and Busier *et al.* (2005) specifically point to the importance of the speed and scope of transition reforms for the pace of individual countries' converging to the 'normal' level and geographical structure of trade as predicted by gravity models.

Redding and Venables (2003, 2004), and on their basis Fugazza (2004) developed the theoretical framework-model of trade which uses gravity techniques in a way to estimate separately the contribution of demand conditions in the host country and of supply conditions in the source country. This is essentially a standard new trade theory model based on product differentiation derived from a constant elasticity of substitution demand structure (Fugazza 2004: 7). They attempt to explain to what extent export growth of a country is due to changed access to foreign markets and to what extent due to changes in internal supply capacity of exporting country. Market access segment, i.e. access to foreign markets is then desegregated to particular regional groupings. Countries at the center of (or at least near to) a fast growing region experience favorable foreign market access (Fugazza 2004). Particularly positive for foreign market access may be regional economic integration (Redding and Venables 2003). Favorable geographic position (proximity of EU-15) and EU integration processes seem to be obvious positive factor in upgrading of NMS-8 and CC-3 export performance. The internal supply capacity is regressed to variables such as GDP, population, internal transport costs and one or two institutional variables (real exchange rate fluctuations, risk of expropriation, labor market characteristics). The institutional variable may be of particular importance in the case of NMS-8 and CC-3, which have gone through an overwhelming transformation process from socialist to a market economy, and may still have some implementation gap as far as institutional framework is concerned. In addition to the institutional variable, Fugazza (2004) introduces technological environment as another variable affecting export sector competitiveness. He measures it by the level of FDI penetration.

TABLE 2: Components of export growth in CEEC included in Fugazza (2004) and Redding and Venables (2003)

Period	Exports growth	Foreign market access (FMA) growth	Supply capacity growth	FMA growth within the region	FMA growth outside the region/ Western Europe ¹
FUGAZZA: Eastern Europe and Central Asia²					
1980-87	9	-2	7	-17	-1
1984-91	23	31	34	30	31
1988-95	4	80	-90	117	79
1992-99	66	-9	48	5	-9
REDDING AND VENABLES: Eastern Europe³					
1970/73-1994/97	187	95	40	3	61
1970/73-1982/85	44	34	11	0	18
1982/85-1994/97	100	45	26	3	32

Notes: 1/ 'Outside the region' in the case of Fugazza and 'Western Europe' in the case of Redding and Venables; 2/ Hungary, Poland, Romania, Bulgaria and Turkey; 3/ Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania

Results of Redding and Venables (2003) and Fugazza (2004) confirm the predicted direction of influence of foreign market access and individual factors of supply capacity on exports performance, and of considerable variation of individual factors' impact on different countries' exports performance. Coverage of CEEC in both papers (see notes to Table 2) is such that it does not allow specific conclusions for NMS-8 and CC-3. It does, however, provide some relevant insights. Results of Redding and Venables (2003) are rather straightforward. In both periods they analyzed, foreign market access growth was much more important source of export growth than supply capacity growth. In both periods, the main component of foreign market access growth was Western Europe. Results of Fugazza are more ambiguous. In the first phase of transition (1988-95), foreign market access was much more important for export growth than supply capacity growth, while the situation in 1992-99 is quite the opposite. It is more or less obvious that beginning of transition was characterized by the opening of the markets in EU and elsewhere, while defensive enterprise

restructuring (elimination of non-viable companies and production programs) reduced the supply capacity. What is really surprising is negative contribution of foreign market access growth outside the region in 1992-99. One would expect that EU integration process, which has been going on in that period, would bring quite the opposite results.

Analyzing the factors of supply capacity growth in Eastern Europe in Redding and Venables (2003:18-19) shows that actual level of trade is lower than one would expect with regard to good market access and better than average internal geography and institutions. Supply capacity constraints seem to be the main problem of export performance of CEEC. Results of Fugazza (2004) are similar; supply capacity does not appear to have been a limiting factor of export performance, but neither a driving force behind the export performance of the analyzed CEEC. All in all, if foreign market access of CEEC has been constantly improving since the beginning of transition, there is more to be done as far as supply capacity is concerned. Obviously transition and real convergence is a long lasting process.

Havlik *et al.* (2001) analyze export growth by the so-called shift-share analysis method, which decomposes the overall increase in exports into general demand component, structural effect component and competitive effect component. The general demand component indicates how a given country exports would evolve if growing at the same rate as total imports of export markets; structural effect component shows to what extent a given country's exports grow because they are centered on goods that are in above-average import demand in the export markets; competitive effect component shows if a country increased the exports of certain goods to the export markets more than its competitors. The competitiveness effect component is the main indicator of trends in competitiveness. Havlik *et al.* (2001: 20-24) apply the shift-share analysis on the manufacturing exports of ten CEEC (Bulgaria, Czech Republic, Slovakia, Hungary, Poland, Romania, Slovenia, Estonia, Latvia and Lithuania) to EU-15 in 1995-1999. The figures indicate that the contribution of the general demand component accounted for 42.1% of export increase, the contribution of structural effect component was negative, i.e. -8.1%, while as much as 66.1% was accounted for by competitive effect component. This means that the analyzed transition countries increased their market shares in the EU largely by raising their competitiveness against the other non-member states exporters to the EU-15³.

To analyze and compare CEEC's progress in foreign trade in 1985-1994, Kaminski *et al.* (1996b) create a synthetic index of export performance⁴ and classified countries into top, satisfactory and poor performers, based on the synthetic index value. Top performers are the Visegrad countries and Estonia, satisfactory performers are Bulgaria, Lithuania, Latvia and Romania, while all the other, i.e. the former Soviet

³ Estonia increased its market share on account of increased competitiveness ("competitive gains") by 79.8%, Hungary by 78.6%, Slovakia by 74.6%, Lithuania by 72.6%, Czech Republic by 72.3%, etc. The improved competitive effect component may be a result of improved market access of the analyzed countries, due to preferential trade arrangements in the framework of EU integration process, and/or of their improved supply capacity. Differences in competitive effect component among the analyzed transition countries, which were subject to similar preferential trade arrangements with EU, suggest difference among countries in the growth of their supply capacity.

⁴ The index is composed of four criteria: (i) the change in the dollar value of total exports, (ii) the change in the share of CMEA countries trade in total exports, (iii) the percentage increase in manufactured exports to OECD, and (iv) the ratio of OECD-oriented manufactured exports to GDP.

republics, are poor performers. In searching for the reasons of countries' variation in the development of export performance, Kaminski *et al* (1996b) considers three broad sets of determinants, i.e. initial, pre-transition conditions, changes in access to Western markets, and policy stances as reflected in the reform process. They claim that initial conditions and changes in market access do influence trade performance, but do not seem to distinguish strong from weak export performers. 'Policy, on the other hand appears to offer almost perfect discriminatory power between classes of export performance, with sound stabilization and thorough-going domestic price liberalization characterizing almost exactly the same set of transitional countries as strong export performance' (Kaminski *et al.* 1996b: vii-viii). Kaminski *et al.* (1996b) thus consider the speed and scope of the reform process as being the main determinant of transition countries' export performance⁵.

Another stream of literature of relevance for the analysis of CEEC's export performance is the one on (export) competitiveness. This literature actually concentrates on the supply capacity segment of export performance and analyses export competitiveness on the national, industry or firm level⁶. On the national level, the most commonly used indicator is the real exchange rate developments. Other authors propose also foreign market shares, export unit values in manufacturing, unit labor costs in manufacturing etc. (see, Halpern 2002)⁷. A rather common approach of assessing competitiveness at the national level is the so-called benchmarking, the most commonly known being that of IMD (2004) and WEF (2004). These publications use a rather complex system of competitiveness' indicators, which at the end are usually summed up into several and/or one synthetic indicator. Transition countries as a rule show gradual but constant improving of their ranks in IMD and WEF rankings. A benchmark model specifically developed for transition countries is the one of Zinnes *et al.* (2001). Their synthetic indicator of competitiveness is composed of seven sub-indicators, the most important from the point of view of export performance being the one on openness. According to Zinnes *et al.* (2001: 325), the indicator of openness 'seeks to capture the ease in which economic activity can take advantage of the foreign sector for markets, know-how, competition, financing, investment, sources of inputs, and other components linking its markets and firms to the global economy'. As expected, as far as synthetic indicator of competitiveness as well as the openness sub-indicator is concerned, the NMS-8 ranked one to eight among analyzed 25 CEEC and CC-3 follow. Unfortunately, Zinnes *et al.* (2001) just provide the results for 1998 and not for a longer period of time, what would indicate the developments in openness and competitiveness in general.

Havlik (2000) attempt to evaluate various aspects of international competitiveness of the four more developed CEEC (Czech Republic, Hungary, Poland and Slovenia), both at the macroeconomic and industrial branch levels. He focuses on the evolution of labor costs and trade competitiveness, as well as on the role of exchange rate

⁵ Apart from that, Kaminski (1993) claims that differences among Czechoslovakia, Hungary and Poland in 1990-92 export growth to the OECD were positively correlated with the size of the contraction in GDP, i.e. the domestic demand slump associated with the transformation was a very important determinant of export performance in the initial period.

⁶ For a short inventory of the approaches to measuring (export) competitiveness at different levels, see Halpern (2002: 59-62).

⁷ Most of these indicators of competitiveness, plus a number of other, like structural changes and FDI penetration, are analyzed in various parts of this paper.

policies and FDI in the process of catching-up and integration with the EU. Havlik's main conclusions are the following: (i) all four countries are competitive due to their low labor costs, (ii) in the 1990s, wage competitiveness in Hungary and Slovenia improved, but not so in Poland and Czech Republic, (iii) productivity and quality gaps of the analyzed countries partly eliminated their cost advantages arising from the low wages. The analysis of unit labor costs developments at the macro level shows that the labor cost competitiveness has deteriorated since the early 1990s in the Czech Republic, Poland and Slovenia, while it has markedly improved in Hungary. According to Havlik (2000), this can be partly attributed to much higher foreign investment penetration in this country. In particular, a more intensive involvement of foreign investors in the Hungarian manufacturing industry has brought about large efficiency gains.

Apart from foreign trade fundamentals of the gravity theory, the existing literature puts forward five factors which deserves special attention in analyzing CEEC's export performance: improved access to the EU market, changes in export structure, increased levels of productivity, the role of FDI, and institutional changes.

3. Improved access of CEEC to EU markets

One of the most outstanding features of CEEC's export performance since the beginning of transition is increasing importance of EU-15 as the main market of their exports (see Table 1 and Table in the Appendix). Most of this development is explained by gravity theory, i.e. by the fact that pre transition trade with CMEA countries was much above the 'normal' level and with EU-15 much below the 'normal' level. Size, proximity and development level of EU-15 is an extremely strong gravity force for CEEC's exports. Additionally to that, EU integration process has provided these countries with a preferential access to EU-15 markets. How important has been this institutional factor? The fact that NMS-8 and CC-3 considerably increased their market shares in the EU-15 suggests that preferential access to EU-15 markets has produced the anticipated effects. Unfortunately, to our knowledge, no econometric estimation of the subject has been done so far⁸. The literature suggests, that preferential market access, especially the Europe Agreements, has clearly been important for increasing the volume of CEEC's trade, but has not been directly responsible for much of the growth of their exports (Kaminski *et al.* 1996b: 34). This is so because the scope of preferential treatment has been limited by a number of inherent limitations (antidumping procedures, tight rules of origin, delays in liberalizing imports of sensitive products) and even more so because other basic factors of export performance have been more important for export expansion. That is why transition countries with basically the same scope of preferential access to EU-15 perform differently as far as their exports to EU-15 are concerned.

The access of transition countries to OECD markets has evolved in three stages. The first stage was the removal of discriminatory measures (non-tariff barriers) aimed specifically against state trading economies, in fact the granting of the MFN status.

⁸ Recent analysis of Mongelli *et al.* (2005) in a part deals with this issue, although not directly related to the EU accession process. They investigate the link between economic integration and the overall institutional process of regional integration in Europe. The evidence suggests that the interaction between regional institutional and trade integration matters. Such interaction runs in both directions, although the link from institutional to trade integration dominates.

EU was the first to do that. The second stage was granting of preferential market access under the General System of Preferences (GSP), which put transition economies on a par with developing countries with quota limited free access for most products. Again EU was the first to do that. The third stage was concluding of Europe Agreements between EU-15 and most of the NMS-8 and CC-3 by mid 1990s, and their anticipated accession to the EU after the Copenhagen EU summit (Kaminski *et al.* 1996b). According to Kaminski *et al.* (1996b: 33), GSP represented a big step in tariff liberalization⁹, but there is little evidence that, 'with its limitations and exclusions (quantity limits, special treatment of sensitive products, uncertainty of access), it alone can explain changes in transition economies shares in OECD imports'.

Clearly, Europe Agreements have been more important than GSP. Kaminski (1994) analyzed the effects of Europe Agreements with Czechoslovakia, Hungary, Poland, Romania and Bulgaria signed in 1991 and 1992. He claims that provisions on trade with industrial products, which affected about 80% of exports of five countries to the EU, significantly improved their access to EU markets. In 1992, the first year they were in force in Hungary, Poland and former Czechoslovakia, the Agreements freed slightly less than 50% of total exports to the EU from import duties and non-tariff barriers. According to the Agreements, these shares were to increase over five years to about 80% for the former Czechoslovakia, 60% for Hungary and 70% for Poland. Apart from that, tariffs were reduced for a number of other products, and Copenhagen summit further cut the time to reach the top of the EU preferential trade pyramid, at that time occupied by EFTA countries. These reductions translated into a competitive edge over suppliers from other countries. Still, the Europe Agreements retained a number of restrictions characteristic for GSP (delays in liberalizing imports of sensitive products, tight rules of origin, continuing threats of antidumping and the virtual exclusion of agriculture), which were removed only gradually in the process of EU integration.

4. Structural changes in CEEC's exports

Since the beginning of transition, export structure of NMS-8 and CC-3 has undergone significant structural changes in terms of an increasing share of medium and high skill/technology intensive manufactures and corresponding decrease of the share of primary commodities, labor intensive and resource based manufactures and of low skill/technology intensive manufactures (see Table 3). Structural upgrading, originating from the transition related restructuring of the manufacturing sector, has been much more intensive than in the case of EU-15, indicating that CEEC have been gradually closing down the structural gap in exports. The question here is, to what extent has the structural upgrading of exports contributed to the growing export performance of CEEC. The answer could not be a straightforward one, as there is no such thing as 'optimal economic structure', i.e. higher share of medium and high skill/technology intensity products in exports is not per se a guarantee of a better export performance or competitiveness. Still, extensive literature on structural changes in CEEC's exports tends to claim that structural upgrading positively

⁹ At the time of its introduction for CEEC, MFN tariffs on industrial products in the EU averaged around 6%, whereas average GSP tariffs were around 2%, and most of GSP items (94%) were subject to zero rates. 74% of tariff lines of industrial products had zero rates (Kaminski *et al.* 1996b: 34).

contributed to export performance. Firstly, as claimed by Hoekman and Djankov (1996), export growth of CEEC has been based on products that were not exported in the pre-transition era and on 'traditional' export items that have been substantially upgraded or differentiated. Secondly, (export) restructuring has been characterized by positive specialization patterns between and within industries, and accompanied by quality upgrading as indicated by increased value added per employee, increased unit values and more engagement in medium and high quality segments of industries. Thirdly, the share of horizontal intra-industry trade with the EU also seems to increase, albeit slowly. There are, however, difference among countries. In the words of Dulleck *et al.* (2005), there is little evidence of CEEC entering into the 'low-quality trap', except for low quality segments specialization of Romania, Bulgaria and the Baltics in the high technology industries.

TABLE 3: Structure of merchandise exports of NMS-10 and EU-15 according to UNCTAD classification¹, in 1995-2004, in %

	1995	2000	2001	2002	2003	2004
Primary commodities						
EU-15	19.8	18.1	17.8	17.9	18.3	19.2
EU-10	28.2	19.6	19.0	18.3	17.9	17.4
Labor intensive and resource based manufactures						
EU-15	11.8	10.2	10.3	10.2	10.2	10.1
EU-10	19.7	16.7	16.6	16.0	14.6	13.6
Low skill and technology intensive manufactures						
EU-15	7.9	6.7	6.8	6.8	8.0	9.2
EU-10	14.1	10.4	10.9	10.3	10.6	10.9
Medium skill and technology intensive manufactures						
EU-15	30.1	30.0	30.8	30.9	31.7	32.8
EU-10	21.4	32.6	32.8	33.9	34.9	35.9
High skill and technology intensive manufactures						
EU-15	24.5	29.6	29.9	29.9	27.9	23.5
EU-10	14.6	18.9	18.2	19.7	20.0	20.2

Source: UNCTAD (2003), own calculations.

Notes: 1/ See UNCTAD (2002, Classification of world merchandise exports, Annex 1 to chapter III). The classification does not classify all commodities, therefore, the sum of the shares of five commodity groups does not add to 100%.

The issue of changing export structure is probably the most extensively analyzed export-related issue of CEEC. Here, it is important to note that structural change in itself does not necessarily lead to increase of competitiveness. An increased share of high-technology products in exports is not per se an indicator of higher export competitiveness. As put by Szalavetz (2005), in some developed and catching-up countries, the relation between upgrading economic structure and competitiveness looks strong, but there are also countries featuring strong competitiveness despite an outdated, traditional structure. What matters is the quality of properties of economic activity. Thus, what does the existing literature say about the quality of structural changes in transition countries' exports? Two streams of studies have been tackling this issue. The first concentrates on the extent and characteristics of intra-industry trade, and the second on structural changes between and within the industries and on the related quality upgrading processes.

The level of intra-industry trade is one of frequently used quality indicators of foreign trade. Intra-industry trade driven by product differentiation and economies of scale represents the lion's share in trade among developed countries. Relatively high level of industrialization, significant stock of human capital, geographic proximity and significantly lower real wages provide significant scope for rapid growth of intra

industry trade between CEEC and the EU-15 (Aturupane *et al.* 1997). The data in Table 4 show a mixed picture in this regard. Czech Republic, Slovenia and Hungary have the highest level of intra-industry trade, followed by Slovakia, Poland and Estonia. Intra industry trade has risen rapidly in Czech Republic, Poland, and it has stagnated at a relatively high level in Hungary, Slovenia and Slovakia (Havlik *et al.* 2001: 9).

TABLE 4: Indicators of intra industry trade of Central and Eastern European transition countries with the EU in 1995 and 1999 (Grubel-Lloyd indices¹)

	1995	1999	Index 99/95
Bulgaria	0.401	0.401	100
Czech Republic	0.645	0.729	113
Estonia	0.440	0.475	108
Hungary	0.578	0.606	105
Latvia	0.290	0.271	93
Lithuania	0.273	0.347	127
Poland	0.455	0.508	112
Romania	0.327	0.371	113
Slovakia	0.534	0.553	104
Slovenia	0.651	0.674	104

Notes: $1/ GL = 1 - \frac{\sum ABS(x_{ij}-m_{ij})}{\sum (x_{ij}+m_{ij})}$; where x_{ij} and m_{ij} are country i 's exports and imports of 3-digit Standard Classification of Activities sector j .

Source: Havlik *et al.* 2001: Table 6, p. 9.

Analysis of intra industry trade further distinguishes between vertical and horizontal intra industry trade. The latter (implying an approximate equality of the trading partners) is trade in which the difference between unit values of similar imported and exported products is low, whereas in the former (implying inequality of the trading partners), this difference is bigger. Thus horizontal intra-industry trade comprises the exchange of similar goods that are differentiated by characteristics rather than quality, while vertical intra-industry trade consists of exchange of similar goods of different quality. The level and growth of horizontal intra-industry trade is a good indicator of the extent to which the trading economies are similar to each other. A normal expectation is that in intra-industry trade between CEEC and EU the vertical one prevails. Indeed, Aturupane *et al.* (1997) claim that, in the 1990-1995 period, 80% to 90% of intra-industry trade between the transition economies and the EU was vertical and there was no trend of increasing the share of horizontal intra-industry trade. This is less than half of the level of horizontal intra-industry trade of Austria, Spain, or Switzerland with the EU in the same period. Figures quoted by Soss (2002) go in the same direction, but with a positive trend of increasing the share of non-inferior intra-industry trade. Intra-industry trade is inferior when a country sells cheaper products than it buys within the same industries. Non-inferior intra-industry trade is a sum of horizontal intra-industry trade and the part of vertical intra-industry trade in which this country is in a superior position, i.e. it sells more expensive products than buys. In 1993 and 2000, the estimated shares of non-inferior intra-industry trade in total trade with EU were respectively: for Slovenia 12.5% and 16%, Hungary 12.5% and 18%, Czech Republic 7% and 17%, Ireland 20% and 20%, and Portugal 16.5% and 26%.

High and increasing level of vertical intra-industry trade among the transition economies and EU is due to the increasing integration of the former into production and marketing networks of EU companies. Aturupane *et al.* (1997), Hoekman and Djankov (1996), and Kaminski and Ng (2001) all find a strong relationship between export performance of CEEC and growth in vertical intra-industry trade with the EU,

that is getting inputs from EU suppliers that are then used in the production of goods exported to the EU. According to Kaminski and Ng (2001), CEEC - and especially the most developed among them - are increasingly integrated into the globalization of production processes, in global production fragmentation and trade arising thereof, into EU networks of production and marketing.

TABLE 5: Export specialization patterns and quality upgrading in ten CEEC

	Central European countries ¹			Bulgaria & Romania			Baltic countries		
	1995	2000	Difference	1995	2000	Difference	1995	2000	Difference
Industry specialization pattern (export structure in %)									
<i>Low-technology</i>	24.6	16.0	-8.6	43.1	47.8	+4.7	43.5	37.8	-5.7
<i>High-technology</i>	27.1	37.3	10.2	8.2	10.6	+2.4	4.9	10.1	+5.2
Specialization pattern within industries (export structure in %)									
<i>Low-technology</i>	100.0	100.0		100.0	100.0		100.0	100.0	
Low-quality segment	28.6	33.3	+4.7	15.3	11.6	-3.7	26.8	25.4	-1.4
Medium-quality segment	26.9	27.4	+0.5	31.3	29.9	-1.4	29.5	30.1	+0.6
High-quality segment	44.5	39.3	-5.2	53.4	58.5	+5.1	43.6	44.6	+1.0
<i>High-technology</i>	100.0	100.0		100.0	100.0		100.0	100.0	
Low-quality segment	70.5	67.6	-2.9	62.4	67.3	+4.9	71.2	75.1	+3.9
Medium-quality segment	19.0	20.7	+1.7	26.3	23.9	-2.4	20.4	16.9	-3.5
High-quality segment	10.5	11.8	+1.3	11.3	8.8	-2.5	8.4	8.0	-0.4
Quality upgrading within quality segments of industries - unit values² (current weights)									
<i>Low-technology</i>	19.4	18.1	-1.3	15.5	18.3	+2.8	13.6	17.3	+3.7
Low-quality segment	8.3	7.4	-0.9	6.3	8.3	+2.0	5.6	7.7	+2.1
Medium-quality segment	15.1	17.2	+2.1	12.2	15.5	+3.3	12.7	18.6	+5.9
High-quality segment	29.1	27.8	-1.3	20.2	21.8	+1.6	19.2	21.9	+2.7
<i>High-technology</i>	12.1	18.8	+6.7	11.5	12.0	+0.5	10.8	16.5	+5.7
Low-quality segment	5.6	8.4	+2.8	6.2	5.7	-0.5	3.6	11.1	+7.5
Medium-quality segment	15.6	20.6	+5.0	9.3	16.4	+7.1	35.7	24.9	-10.8
High-quality segment	49.2	75.9	+26.7	46.1	48.3	+2.2	11.9	49.3	+37.4
Quality upgrading within quality segments of industries - unit value ratios³ (current weights)									
<i>Low-technology</i>	-0.03	0.05	+0.08	-0.29	-0.15	+0.14	-0.23	-0.02	+0.21
Low-quality segment	-0.06	-0.04	+0.02	-0.27	-0.11	+0.16	-0.21	0.06	+0.27
Medium-quality segment	0.02	0.14	+0.12	-0.20	0.00	+0.20	-0.14	0.13	+0.28
High-quality segment	-0.03	0.06	+0.09	-0.37	-0.24	+0.13	-0.30	-0.16	+0.14
<i>High-technology</i>	-0.35	-0.17	+0.18	-0.74	-0.35	+0.38	-0.38	-0.19	+0.18
Low-quality segment	-0.36	-0.21	+0.15	-0.62	-0.29	+0.33	-0.58	-0.07	+0.51
Medium-quality segment	-0.48	-0.33	+0.15	-0.94	-0.79	+0.15	-0.73	-0.53	+0.20
High-quality segment	-0.55	-0.32	+0.23	-0.81	-0.94	-0.12	-0.86	-0.44	+0.41

Source: Dulleck *et al.* (2004: Tables 1, 2, 3a, pp. 11, 12, 14).

Notes: 1/ Czech Republic, Hungary, Poland, Slovakia, Slovenia; 2/ Unit value is the ratio between value and quantity of exports (For methodology see Dulleck *et al.* 2004: 8-9); 3/ Unit value ratio is a unit value for a particular country in a particular quality segment compared to the unit value of total EU-15 imports in the same quality segment. The logs of the unit value ratios are presented. In logs, the ratio is greater (smaller) than zero if the export unit value of particular country group is greater (smaller) than the unit value of total EU-15 imports (For methodology see Dulleck *et al.* 2004: 8-9).

Dulleck *et al.* (2004) tackles the issue of export specialization and quality upgrading in three groups of CEEC: five Central European countries (Czech Republic, Hungary, Poland, Slovakia, Slovenia), the Baltics and Bulgaria & Romania, and consider three dimensions of quality upgrading. The first dimension refers to shifts in export structure from low to high technology industries. The second dimension identifies shifts inside industries from low to high quality segments. In the third dimension, they look at quality improvements inside quality segments within industries. The countries find themselves in a 'low-quality trap' if they specialize in low technology industries, or in low-quality segments within industries, or if they experience negative trends in unit values or unit value ratios. The results are presented in Table 5.

The general picture arising from Table 5 is that CEEC are successfully upgrading the quality of their products with respect to industry specialization patterns, specialization

patterns within industries and quality upgrading within segments. The compositions of their exports have moved towards high-technology industries and the unit values of exports have increased in nearly all industries and quality segments¹⁰. Further, their unit value ratios compared to the EU also increased in most quality segments. However, an important distinction between five Central European countries and five other countries can be observed. While five Central European countries appeared to be successful in substantial quality upgrading of their export structure according to all three dimensions, some evidence of a 'low-quality trap' can be found for the Baltics and Bulgaria & Romania in the second dimension, i.e. low end specialization within industries. Bulgaria and Romania, and Baltic countries show the tendency of increasing specialization in low-quality segments of high tech industries. These developments were confirmed by the regression analysis (Dulleck *et al.* 2004: 23-24).

5. Increased levels of productivity in CEEC

Productivity growth has been another (potential) source of growing export performance of CEEC. Productivity growth of CEEC has been remarkable since the beginning of transition. Unfortunately, there is no econometric analysis available, which would assess the impact of productivity growth on CEEC's export performance. Bernard and Jensen (1998), who analyzed the U.S. export boom in 1987-1994, claim that in aggregate productivity gains from 1987-1992 accounted for under 10% of overall export growth; the dominant sources of the export boom were foreign income growth and exchange rate changes. This speaks in favor of a relatively small role played by productivity increases in export growth.

Table 6 points to a very high productivity growth in NMS-8, especially since 1995. Altogether since 1990, NMS-8 increased their macro-productivity by 52.8% (3.3% on average annually), as compared to only 18.9% increase in EU-15. The increase of NMS-8 productivity and the differential against EU-15 is even much higher if one looks only at the manufacturing sector; 79.1% (8.7% on average annually) for NMS-8 against 16.4% for EU-15 in 1995-2002. In NMS-8, productivity growth in NMS-8 really took-off only after 1995. Before that, the productivity growth in NMS-8 was actually slower than in EU-15. Obviously, the transition process on the ground needed quite some time to take root.

TABLE 6: Productivity¹ growth rates in NMS-8 and EU-15 in 1990-2003

	1990-1995		1995-2003		1990-2003	
	Cumu- lated	Annual average	Cumu- lated	Annual average	Cumu- lated	Annual average
NMS-8						
Total economy	9.6	1.9	39.5	4.3	52.8	3.3
Manufacturing ²	n.a.	n.a.	79.1	8.7	n.a.	n.a.
EU-15						
Total economy	10.1	1.9	7.5	0.9	18.9	1.3
Manufacturing ²			16.4	2.2		

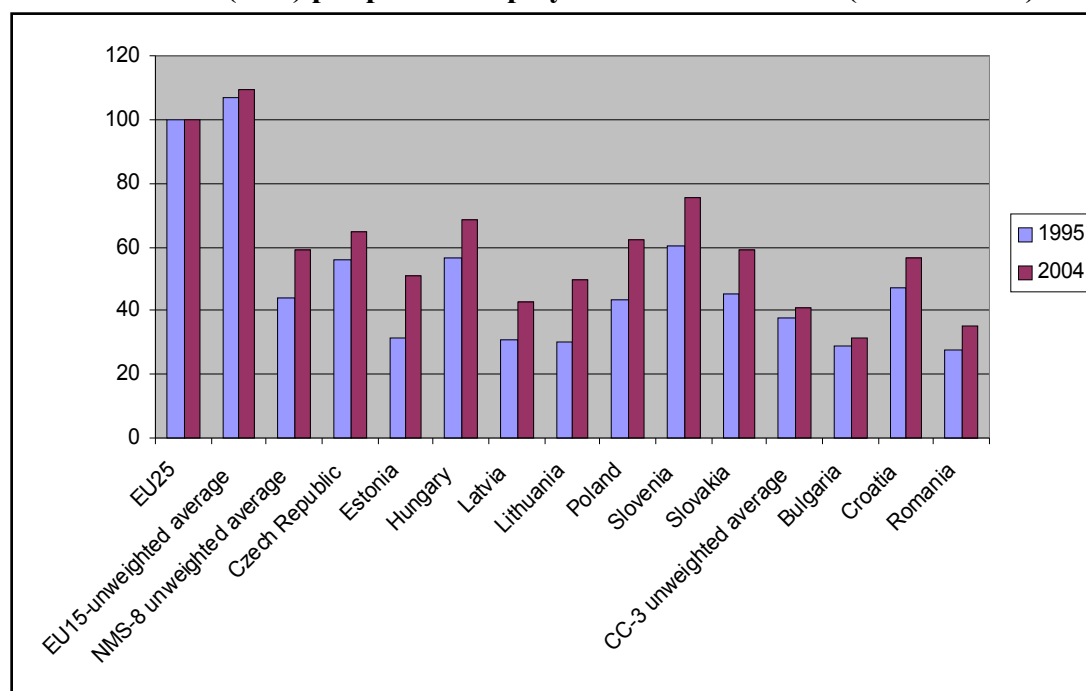
¹⁰ Landesmann and Stehrer (2002) report similar findings for the 1995-99 period. In general, unit values of ten transition countries (NMS-8, Bulgaria and Romania) exports to EU are much below average unit values of total EU imports but, in 1995-99, they managed to considerably reduce this gap. The gap was eliminated in technology-driven industries, and considerably reduced in high skill industries and medium skill/blue collar industries. However, it is particularly in the latter two industries that the lag behind the average import prices in the EU remains by far the largest, in particular in high skill industries.

GROWTH DIFFERENTIAL BETWEEN NMS-8 AND EU-15, in percentage points						
Total economy	-0.5	-0.1	32.0	3.4	52.8	3.3
Manufacturing	n.a.	n.a.	62.7	6.5	n.a.	n.a.

Source: Havlik 2005: 3, 21.

Notes: 1/ For total economy in terms of GDP per person employed, and for the manufacturing in terms of gross value added in constant prices per employee; 2/ For manufacturing 1995-2002.

FIGURE 1: Labor productivity per person employed, GDP in Purchasing Power Standards (PPS) per person employed relative to EU-25 (EU-25 = 100)



Source: Key Indicators on EU Policy – Economy and Finance – National Accounts (Eurostat), <http://epp.eurostat.cec.eu.int/portal/>

Note: Bulgaria and Croatia for 1996-2004, and for Romania for 2000-2004.

The result of the above trends is a strong productivity catching-up process of NMS-8. In 1995-2004, the unweighed average of labor productivity of NMS-8 relative to EU-25 increased from 44.2% to 59.1%, while the unweighted average for EU-15 nearly stagnated, i.e. increased from 107.0% to only 109.3%. The increase for CC-3 is much less impressive. The highest increase, by 20.0 percentage points, was achieved by Estonia, followed by Lithuania (19.5 percentage points), Poland (19.0), Slovenia (15.0) etc. In 2004, the highest productivity level in terms of EU-25 benchmark was exhibited by Slovenia (75.3%), followed by Hungary (68.2%), Czech Republic (64.4%), Poland (62.2%), Slovakia (59.1%) and the Baltic countries (see Figure 1). Still, the productivity levels of NMS-8 remain much under that of EU-15 and there is a lot of scope for further productivity catching-up of the NMS-8.

TABLE 7: Trends in wage competitiveness¹ in NMS-8 and CC-3 in 1995-2004

	1995-2000	2000-2004	1995-2004
Czech Republic	1.00	1.02	1.03
Estonia	0.87	1.01	0.88
Hungary	1.01	1.08	1.10
Latvia	0.81	0.98	0.79
Lithuania	0.94	0.89	0.84
Poland	1.19	0.92	1.10

Slovakia	0.96	1.01	0.97
Slovenia	0.90	1.07	0.96
Bulgaria	0.91	0.96	0.87
Croatia	1.03	0.91	0.94
Romania	0.89	0.83	0.74

Source: WIIW data base.

Note: 1/ Calculated as a ratio between growth of average annual gross wages in national currency and the growth of GDP per employed person in national currency. Ratio higher than 1 means that growth of wages per employee lags behind the growth of GDP per employee.

In terms of export performance, two additional productivity growth related issues are worth mentioning. The first relates to wage competitiveness and the second to the impact of structural changes on the productivity growth. As far as wage competitiveness is concerned, Table 7 shows that with the exception of Czech Republic, Hungary and Poland, wage competitiveness of CEEC improved in the 1995-2004 period. Among NMS-8, growth of wage competitiveness has been the most remarkable in Baltic countries. To assess the impact of structural changes on productivity growth of NMS-8, Havlik (2005) applies the shift-share analysis. The shift-share analysis allows distinguishing between labor productivity growth due to shifts of labor from less to more productive sectors and due to differential growth of labor productivity within sectors. More than 80% of aggregate productivity growth in NMS-8 during 1995-2002 can be attributed to the productivity growth within individual economic sectors. Aggregate productivity growth in NMS-8 has, thus, 'mostly resulted from productivity improvements within individual sectors and their across the board productivity catching up' (Havlik 2005: 12).

6. The role of FDI in growing export performance of CEEC

The importance of FDI for NMS-8 exports is very high and increases. At the end of 2001, foreign subsidiaries were responsible for 87.9% of manufacturing exports in Hungary, for 69.3% in the Czech Republic, 66.2% in Poland, 48.5% in Estonia and 36.8% in Slovenia. Foreign subsidiaries are especially important for exports in high and medium-high tech industries; they dominate high and medium-high tech exports of Hungary, Poland and Estonia (see Table 8). Foreign subsidiaries also show much faster restructuring towards high and medium-high tech exports and much higher export propensity than domestic enterprises.

TABLE 8: Share of foreign subsidiaries¹ in total manufacturing exports in selected NMS in 1993-2001, in %

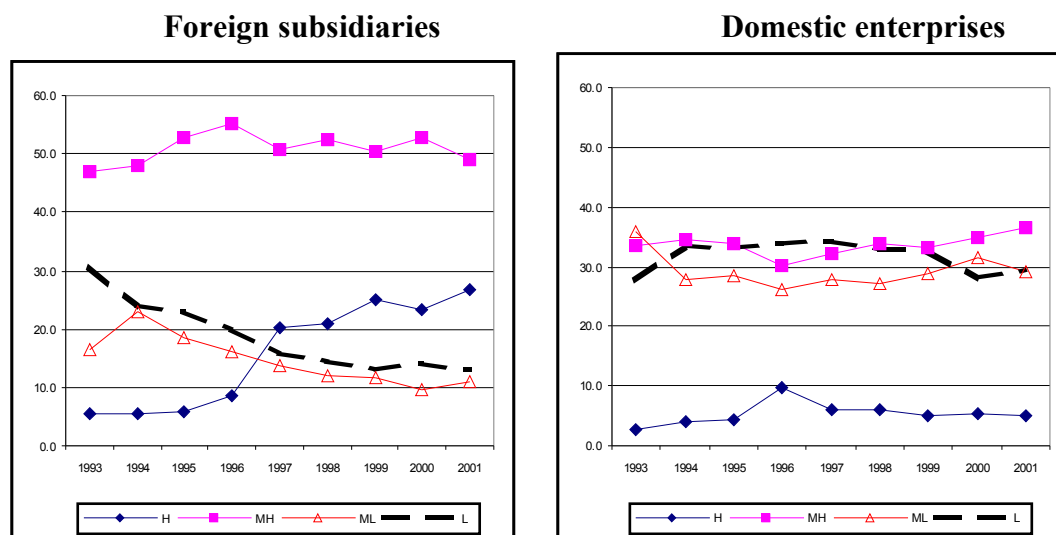
	Czech Republic	Estonia	Hungary	Poland	Slovenia
1993	14.9	n.a.	52.2	34.6	n.a.
1994	15.9	n.a.	65.5	25.3	21.1
1995	n.a.	25.4	68.3	32.6	23.2
1996	n.a.	32.5	73.9	39.5	25.8
1997	41.9	32.1	83.0	44.9	28.0
1998	47.5	35.2	85.9	52.3	32.9
1999	60.5	43.3	88.8	59.8	30.3
2000	62.5	44.9	84.7	63.8	34.2
2001	69.3	48.5	87.9	66.2	36.8
Of that					
High technology industries	n.a.	76.0	97.6	89.9	47.0
Medium-high technology ind.	n.a.	58.1	92.0	69.1	43.5
Medium-low technology ind.	n.a.	39.4	72.3	49.7	23.1

Low technology ind.	n.a.	43.7	69.3	68.5	35.7
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Source: WIIW data base.

Note: 1/ Enterprises with 10% or higher foreign equity share.

FIGURE 2: Distribution of manufacturing exports of foreign subsidiaries¹ and domestic enterprises by technology-defined groups of industries² in Estonia, Hungary, Poland and Slovenia in 1993-2001³ (In %)



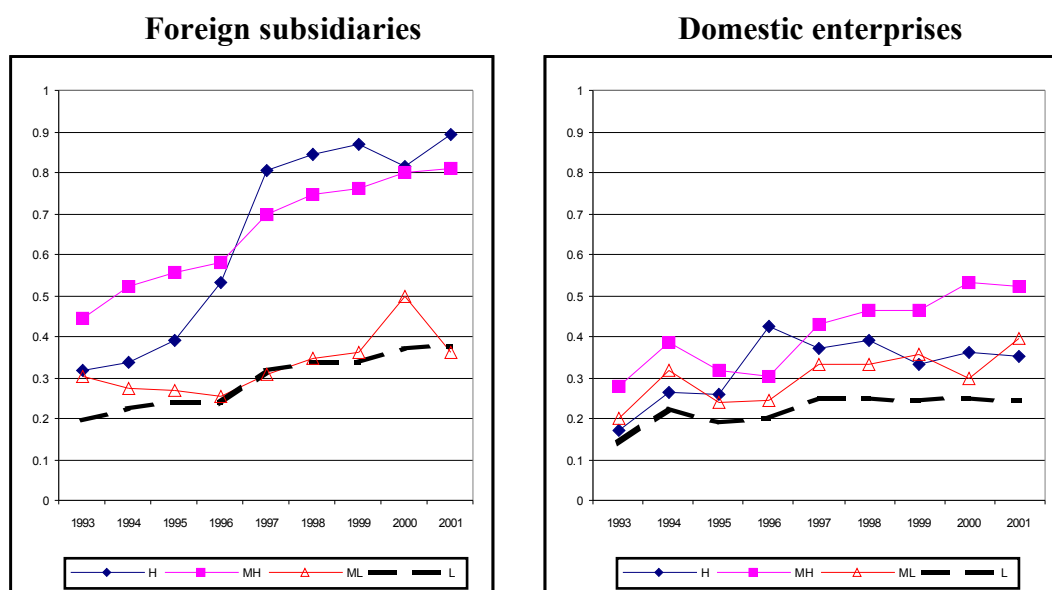
Source: WIIW database.

Notes: 1/ Enterprises with 10% or higher foreign equity share; 2/ H = High technology, MH = Medium-high technology, ML = Medium-low technology, L = Low technology industries. They sum up to 100%; 3/ Hungary and Poland for 1993-2001, Estonia for 1995-2001 and Slovenia for 1994-2001.

Figure 2 exhibits quite intensive and positive structural changes of the manufacturing exports in the case of foreign subsidiaries, but only slow structural changes in the case of domestic enterprises in Hungary, Poland, Estonia and Slovenia. In 1993-2001, the share of low technology industries in manufacturing exports of foreign subsidiaries decreased from 30.8% to only 13.2%, while that of high technology industries increased from only 5.6% to 26.8%. Comparable figures for domestic enterprises are increase of low technology industries from 27.8% to 29.4% and increase of high technology industries from 2.8% to 5.1%. Altogether in 2001, high and medium high technology industries accounted for 75.8% of foreign subsidiary exports and only 41.5% of domestic enterprise exports.

Positive structural trends have been accompanied by similar trends in export propensity of foreign subsidiaries. In 1993-2001, in Estonia, Hungary, Poland and Slovenia, exports to sales ratio of foreign subsidiaries in high technology industries on average increased from 31.5% to as much as 89.2%, and in medium-high technology industries from 44.4% to 81.0%. Export propensity of low (37.4% in 2001) and medium-low technology industries (36.0%) remained much lower. Except in the medium-low technology industries, export propensity of domestic enterprises has been much lower and also increased less in the analyzed period.

FIGURE 3: Exports to sales ratio of foreign subsidiaries¹ and domestic enterprises by technology-defined groups of industries² in Estonia, Hungary, Poland and Slovenia in 1993-2001³ (In %)



Source: WIIW database.

Notes: 1/ Enterprises with 10% or higher foreign equity share; 2/ H = High technology, MH = Medium-high technology, ML = Medium-low technology, L = Low technology industries. They sum up to 100%; 3/ Hungary and Poland for 1993-2001, Estonia for 1995-2001 and Slovenia for 1994-2001.

TABLE 9: Exports to sales ratio of foreign subsidiaries in the manufacturing sector of Estonia, Hungary, Poland and Slovenia in 2001 by technology defined groups of industries (In %)

	Estonia	Hungary	Poland	Slovenia
High technology industries	72.7	90.1	50.6	76.2
Medium-high technology industries	78.1	81.6	50.9	80.7
Medium-low technology industries	53.6	32.5	19.1	74.5
Low technology industries	62.0	33.8	23.9	55.7

Source: WIIW data base.

Note: 1/ Enterprises with 10% or higher foreign equity share.

Damijan and Rojec (2004) claim that the above pattern of FDI in CEEC's manufacturing speaks in favor of the so called 'flying geese growth model' (FGM), which says that as the leading country – in our case EU-15 – moves up on the technology ladder, it transfers lower technology level industries via FDI to less developed countries – in our case CEEC. FDI is an important vehicle of manufacturing sector restructuring and productivity growth in CEEC¹¹. In this context, increased exports, especially in high and medium-high technology industries, has been probably one of the main contributions of FDI to the catching-up process of CEEC.

In spite of the remarkable contribution of FDI to the export performance of CEEC, the causal relationship between export propensity and strategic foreign ownership remains ambiguous. The issue whether foreign ownership as such, after normalizing for all other differences between foreign subsidiaries and domestic enterprises, matters as far

¹¹ However, the catching up via FDI has been going on mostly in industries at the lower end of the technological intensity spectrum and less so when it comes to industries at the upper end of the technological intensity spectrum (Damijan and Rojec 2004).

as export propensity is concerned has been long discussed in the literature. There seems to be an agreement that most of the difference between exports propensity of foreign subsidiaries and domestic enterprises is explained by other factors, including the multinationality (Pfaffermayr and Bellak 2000). Rojec *et al.* (2004), in discussing the determinants of export propensity of foreign subsidiaries in the Estonian and Slovenian manufacturing sectors relative to domestic enterprises, claim that differences in export propensity between foreign subsidiaries and domestic enterprises are due to structural differences between them, which are reflected in different efficiency of factors utilization and productivity level, and in differences in other operational characteristics determining productivity and export propensity. The superior export propensity of foreign subsidiaries is, thus, partly due to the factor of foreign ownership itself, which also embraces the effect of multinationality.

7. Transition from socialist to market economies: complete change of institutional setting

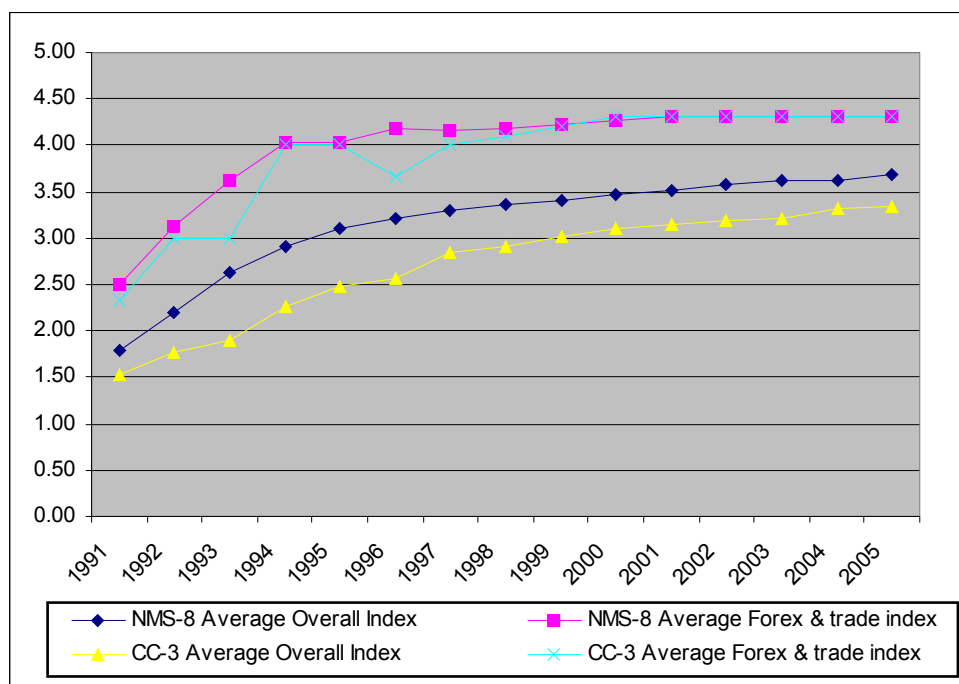
How important are institutions for export performance? To answer the question, one can apply a more broad or a more 'technical approach'. A more broad approach would say that a whole strand of thought in economic science stands for institutions being the most important¹². Rodrik *et al.* (2002) find that institutional quality has a positive and significant effect on (trade) integration. Integration also has a (positive) impact on institutional quality but it is the quality of institutions which is the most important. On the other side of the coin we have a more technical approach usually used in gravity models. These models recognize that business environment is an important determinant of country's export performance, more particular of costs of exporting, and then use some measure of institutional quality, like the protection of property rights or risk of expropriation (Redding and Venables 2003, Fugazza 2004), labor market institutions, real exchange rate as a measure of macroeconomic environment (Fugazza 2004), settlers' mortality, fraction of population speaking English (Rodrik *et al.* 2002) etc.

In the case of the 'New Europe', we have to do with countries, which have gone through an overwhelming change of the entire socioeconomic system and building of institutions, which normally takes decades to become really operational. This speaks in favor of the broadest possible concept of institutional quality when analyzing its influence on export performance. Simply taking, for instance, a risk of expropriation as a proxy for institutional quality would be too narrow in the case of 'New Europe'. What we need for CEEC is a complex measure of the reform process. Assuming that the extent to which transition reforms have been accomplished in any given country can be objectively measured, one can look at the most commonly used indicator of reform progress, namely, the transition index of the European Bank for Reconstruction and Development (EBRD). Table 10 below provides trends in two indices and for two groups of countries for 1990-2005 period. The first is the index of foreign exchange and trade liberalization and the second is the overall transition index, calculated as the average of individual country scores in nine key areas of

¹² According to Rodrik *et al.* (2002), three strands of thoughts stand out in explaining the differences in development levels of countries. The first is centered on geography, the second on (trade) integration and the third on institutions. They estimate the respective contribution of institutions, geography and trade integration to economic development, and claim that quality of institutions is the most important.

transition reforms (see note to Figure 4). Index ranges from 1 to 4+, 1 meaning only the initiation of transition reforms and 4+ meaning more or less the situation in advanced industrial economies. Thus, once a country approaches level 4, its institutional setting is near to that in advanced industrial countries. The higher the index the more favorable the comparative costs of exporting for a country.

FIGURE 4: Overall, and foreign exchange and trade liberalization EBRD transition indices for NMS-8 and CC-3 in 1991-2005



Source: EBRD 2000, 2002, 2003, 2004 and 2005.

Notes: Overall index for 1993-2004 is calculated as simple average of the following 9 indices: index of price liberalization, index of foreign exchange and trade liberalization, index of small scale privatization, index of large-scale privatization, index of enterprise reform, index of competition policy, index of infrastructure reform, index of banking sector reform, and index of reform of non-banking financial institutions. For 1990-1992, index of infrastructure reform is not available. EBRD does not include an overall indicator in its table of sub-indicators, it does, however, carry out analyses in its reports using such an aggregate (EBRD 1999, charts 2.1-2.4; see Zinnes *et al.* 2001: 335).

Figure 4 shows the long way of transition which NMS-8 and CC-3 have made since the beginning of the 1990s. As far as foreign trade (and foreign exchange) liberalization is concerned all of them achieved very high level (index four or higher) already in the early 1990s, while at the end of the analyzed period they all have the maximum possible level of foreign exchange and trade liberalization index (4.3). Trade liberalization was one of the first transition reform measures. As far as overall transition index is concerned, the development has been much more gradual, but constant and altogether without backward changes. If in 1991, the value of overall index was only 1.79, by 2005 it increased to 3.68, i.e. near to the level of 'ideal' advanced market economy.

Thus, how important has been the major institutional transformation of CEEC for their export performance? In the most basic sense, the transformation from a centrally planned to a market economy has been the only really *sine qua non* of growing export performance. Without that, the fundamentals of the gravity theory would not be allowed to work at all, there would be artificial barriers to normal foreign trade flows

and there would be no real expansion of trade with the EU and broader. Havrylyshyn and Al-Atrash (1998) say that independence and removal of central planning restrictions increased foreign trade intensity and led to a reorientation of trade to achieve a more normal geographical distribution of foreign trade. But once we go beyond this basic understanding of institutional setting, once we open up the economies and allow gravity theory fundamentals to work, how important have been institutional reforms for the growing export performance of the 'New Europe'. The existing literature on the subject is pretty straightforward. For Havrylyshyn and Al-Atrash (1998), Kaminski (1993) and Kaminski *et al.* (1996b), the speed and scope of transition reforms have been crucial for the growth of export performance.

Havrylyshyn and Al-Atrash (1998), by using a variant of the gravity model, find that geographic diversification of CEEC's exports to the EU is greater the closer is geographic proximity and the more progress a country makes in structural reforms. Kaminski (1993) finds a close link between export performance and the decision to move quickly to a market-based economy. He illustrates this by a big difference between the export performance of the most reformed transition countries (Czechoslovakia, Hungary, Poland) and that of the Balkan countries. Countries, which liberalized their trade regimes, devalued currencies, introduced unified exchange rates, and removed administrative controls over prices succeeded in increasing exports to OECD. Interestingly, he claims that developments in export performance, following the implementation of comprehensive transformation programs, have little to do with previous trends in export performance, external economic factors, and earlier attempts of trade regime and other systemic reforms.

Kaminski *et al.* (1996b) provide probably the most comprehensive analysis of the impact of the transition reform process on export performance. They analyze data on a number of aspects of economic reform (price liberalization, stabilization policy, exchange rate regime, trade regime, state monopoly of foreign trade, export and import controls) in transition economies and find strong empirical evidence of the link between radical domestic reforms, which bring about macroeconomic stability, competitive markets and liberal foreign trade regimes, and successful foreign trade reorientation. Reforms in one area reinforce reforms in other areas: hardening enterprises' budget constraints, liberalizing foreign trade, and making the domestic currency convertible all play a vital role in supporting export reorientation. Countries that scored the highest in terms of trade reorientation also recorded the greatest progress in reform. Thus, 'the common denominator among the top export performers is price decontrol combined with strong and credible government commitment to macroeconomic stabilization and broadly conceived liberalization. While resource endowments, past patterns of production, and the pace of adjustment in different industries determine the trade patterns of a country, progress in macroeconomic stabilization and in establishing market-supporting institutions was perhaps the single most important factor determining foreign trade performance over the transitional period' (Kaminski *et al.* 1996b: 46).

8. Conclusions

Remarkable upgrading of export performance of the 'New Europe' has been one of the most outstanding features of the transition and EU integration processes of CEEC.

Since the beginning of the 1990s, CEEC recorded extremely high growth of exports in absolute and relative terms, that has been accompanied by increasing market shares abroad, by a domination of EU-15 as the main market and by a considerable changes in the structure of exports in favor of goods with higher value added. Our objective has been to overview existing theoretical and empirical literature on export performance of CEEC and to analyze its determinants.

The existing literature on determinants of export performance tends to distinguish between factors determining market access and factors determining supply capacity of exporting countries. As far as market access is concerned, the gravity theory presents the most powerful explanatory tool. The supply capacity factors of export performance can be explained by comparative advantages arising from different factor intensities/endowments and/or by economies of scale in (horizontal) intra-industry trade characterized by similarities in technology and quality standards. Both theoretical approaches are relevant for the explanation of CEEC's export performance because the main part of CEEC's trade is still inter-industry trade and vertical intra-industry trade, however, the share of horizontal intra-industry trade is slowly increasing.

Opening up of CEEC economies has been the *sine qua non* for their improved export importance, simply because it enabled gravity forces - proximity of and integration in the large and high purchasing power EU markets - to act and to make EU-15 the main market of CEEC. Without the opening up and system transformation, the fundamentals of the gravity theory would not be allowed to work, there would be artificial barriers to normal foreign trade flows and there would be no real expansion of trade with EU and broader. Main findings of the literature based on gravity models, shift share analysis, analysis of (export) competitiveness and more or less comprehensive descriptive analysis of factors behind growing export performance are the following:

- Transition from centrally planned to market economies has led to increase and geographical restructuring of foreign trade along the lines of the gravity theory, i.e. foreign trade intensity of CEEC increased to a major extent and EU-15, as large, near, highly developed market, assumed the role of the dominant trading partner.
- Gravity models show that CEEC gradually approach to the »normal« level of their trade with developed countries, especially the EU, but their are considerable differences among individual countries.
- Market access has been more important than supply capacity for growing export performance of CEEC.
- Shift-share analysis show that CEEC considerably improved their competitive position in EU-15 compared to non-EU competitors, due to preferential trade arrangements but also due to improved supply capacity.
- Speed and scope of transition reforms prove to be more important than initial conditions and market access in explaining inter-country differences in export performance.
- (Export) competitiveness analysis of CEEC suggest positive contribution of supply capacity factors to CEEC's export performance.

Apart from foreign trade fundamentals of the gravity theory, the existing literature puts forward five factors which deserve special attention in analyzing CEEC's export

performance: improved access to EU market, changes in export structure, increased levels of productivity, the role of FDI, and institutional changes.

Improved access to EU market. Most of the export reorientation of NMS-8 and CC-3 exports to the EU-15 is explained by gravity theory, i.e. by the fact that size, proximity and development level of EU-15 is an extremely strong gravity force for CEEC's exports. However, since the beginning of transition we have also witnessed an EU integration process, which has provided CEEC with a preferential access to EU-15 markets. Preferential market access, especially the Europe Agreements, has clearly been important for increasing the volume of trade of CEEC, but has not been directly responsible for much of the growth of their exports. This is so because the scope of preferential treatment has been limited by a number of inherent limitations and even more so because other basic factors of export performance has been more important for export expansion.

Changes in export structure. Since the beginning of transition, export structure of NMS-8 and CC-3 has undergone significant structural changes. Structural upgrading positively contributed to their export performance. Export restructuring was characterized by positive specialization patterns between and within industries, and accompanied by quality upgrading as indicated by increased value added per employee, increased unit values and more engagement in medium and high quality segments of industries. The share of horizontal intra-industry trade with the EU also seems to increase, albeit slowly. There are, however, differences among CEEC.

Increased levels of productivity. Productivity growth has been another source of growing export performance of CEEC. Productivity growth of CEEC has been remarkable since the beginning of transition. Unfortunately, there is no econometric analysis available, which would assess the exact impact of productivity growth on export performance of CEEC. Econometric analysis done for some other countries speak in favor of positive but relatively small impact of productivity increase on export growth.

The role of FDI. The importance of FDI for NMS-8 exports is very high and increases. Foreign subsidiaries also show much faster restructuring towards high and medium-high technology exports and much higher export propensity than domestic enterprises. Differences in export propensity between foreign subsidiaries and domestic enterprises are due to structural differences between them, which are reflected in different efficiency of factors utilization and productivity level, and in differences in other operational characteristics determining productivity and export propensity.

Institutional changes. The existing literature on the importance of institutional reforms for the growing export performance of the 'New Europe' is pretty straightforward: the speed and scope of transition reforms have been crucial for the growth of export performance. There is a strong empirical evidence of the link between radical domestic reforms, which bring about macroeconomic stability, competitive markets and liberal foreign trade regimes, and successful foreign trade reorientation. Countries that scored the highest in terms of trade reorientation also recorded the greatest progress in reform.

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Appendix: Main exports related indicators of NMS-8 and CC-3 in 1990-2004 (in mill. EUR current prices and %)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Czech Republic															
Exports of goods (in EUR)	7099	6382	6774	12362	13471	16504	17694	19811	23068	24640	31483	37251	40726	43051	53995
Imports of goods (in EUR)	7698	5704	8011	12493	14632	19406	22193	24014	25287	26386	34876	40675	43025	45243	54824
Exports index (1990=100)	100	90	95	174	190	232	249	279	325	347	443	525	574	606	761
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	31,9	34,2	35,6	36,4	41,7	40,8	46,3	47,5	50,7	49,6
Exports as % of World imports	0,3	0,2	0,2	0,4	0,4	0,4	0,4	0,4	0,5	0,5	0,4	0,5	0,6	0,6	0,7
Exports as % of EU-15 imports	n.a.	0,52	0,55	1,04	1,02	1,12	1,14	1,15	1,26	1,25	1,31	1,55	1,73	1,83	2,41
Exports to EU-15 as % of total exports	35,4	56,8	61,6	52,7	58,7	60,5	58,6	59,8	64,0	69,2	68,6	68,9	68,4	69,8	68,3
Estonia															
Exports of goods (in EUR)	n.a.	n.a.	273	687	1104	1407	1638	2585	2896	2829	4146	4486	4595	4972	4750
Imports of goods (in EUR)	n.a.	n.a.	412	764	1400	1946	2531	3912	4274	3853	5772	5840	6207	7044	6726
Exports index (1993=100)	n.a.	n.a.	100	251	404	515	599	945	1059	1035	1516	1641	1681	1819	1737
Exports as % of GDP	n.a.	n.a.	n.a.	18,6	33,7	38,4	38,4	37,5	52,2	55,4	47,6	62,1	60,0	56,5	55,0
Exports as % of World imports	n.a.	n.a.	0,01	0,02	0,03	0,04	0,04	0,05	0,06	0,05	0,06	0,06	0,07	0,07	0,06
Exports as % of EU-15 imports	n.a.	n.a.	n.a.	0,08	0,11	0,13	0,15	0,19	0,20	0,19	0,22	0,23	0,24	0,26	0,28
Exports to EU-15 as % of total exports	n.a.	n.a.	42,9	51,6	45,9	44,2	44,4	47,0	45,5	47,1	50,0	46,6	50,2	48,5	n.a.
Hungary															
Exports of goods (in EUR)	7500	8245	8262	7627	9045	9972	10472	16910	20477	23491	30545	34082	36523	38041	44630
Imports of goods (in EUR)	6771	9230	8604	10814	12318	11905	12912	18780	22871	26288	34856	37654	39939	42189	48550
Exports index (1990=100)	100	110	110	102	121	133	140	225	273	313	407	454	487	507	595
Exports as % of GDP	n.a.	42,7	48,4	25,1	21,8	26,5	28,0	26,0	40,3	45,4	46,0	52,3	49,0	49,7	46,9
Exports as % of World imports	0,26	0,28	0,28	0,23	0,25	0,25	0,24	0,34	0,41	0,43	0,43	0,48	0,52	0,56	0,60
Exports as % of EU-15 imports	n.a.	0,67	0,67	0,64	0,69	0,68	0,68	0,98	1,12	1,19	1,28	1,42	1,55	1,62	0,99
Exports to EU-15 as % of total exports	42,11	58,64	62,33	58,13	63,68	62,66	62,68	71,18	72,96	76,22	75,10	74,28	75,14	73,63	70,80
Latvia															
Exports of goods (in EUR)	n.a.	n.a.	734	887	833	981	1123	1473	1617	1615	2019	2277	2448	2558	3200
Imports of goods (in EUR)	n.a.	n.a.	700	901	1149	1384	1823	2399	2849	2762	3446	3915	4276	4637	5662
Exports index (1993=100)	n.a.	n.a.	100	121	114	134	153	201	220	220	275	310	334	349	436
Exports as % of GDP	n.a.	n.a.	n.a.	35,8	26,1	22,3	22,3	20,8	24,9	24,0	19,0	21,7	23,0	24,5	23,0
Exports as % of World imports	n.a.	n.a.	0,02	0,03	0,02	0,02	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,04
Exports as % of EU-15 imports	n.a.	n.a.	0,06	0,07	0,06	0,07	0,07	0,09	0,09	0,08	0,08	0,09	0,10	0,11	5,20
Exports to EU-15 as % of total exports	n.a.	n.a.	45,7	32,1	39,3	44,2	44,1	48,8	56,6	62,6	64,6	60,1	59,5	61,8	52,6

Appendix: Main exports related indicators of NMS-8 and CC-3 in 1990-2004 (in mill. EUR current prices and %); cont.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Lithuania															
Exports of goods (in EUR)	n.a.	n.a.	531	988	1707	2068	2588	3406	3313	2816	4123	5118	5796	6333	7477
Imports of goods (in EUR)	n.a.	n.a.	470	1183	1980	2789	3474	4976	5173	4532	5905	7093	8159	8669	9956
Exports index (1993=100)	n.a.	n.a.	100	186	321	389	487	641	623	530	776	963	1091	1192	1407%
Exports as % of GDP	n.a.	n.a.	n.a.	23,3	27,7	34,9	32,5	29,8	34,4	32,6	22,7	30,4	34,1	35,3	35,0
Exports as % of World imports	n.a.	n.a.	0,02	0,03	0,05	0,05	0,06	0,07	0,07	0,05	0,06	0,07	0,08	0,09	0,10
Exports as % of EU-15 imports	n.a.	n.a.	0,04	0,08	0,13	0,14	0,17	0,20	0,18	0,14	0,17	0,21	0,25	0,27	0,00
Exports to EU-15 as % of total exports	n.a.	n.a.	88,5	66,9	30,1	36,4	33,4	32,5	38,0	50,1	47,9	47,8	48,3	42,1	45,5
Poland															
Exports of goods (in EUR)	11250	12014	10165	12154	14559	17710	19488	22798	25145	25729	34383	40375	43400	47511	60014
Imports of goods (in EUR)	7484	12512	12443	16052	18205	22491	29677	37484	41539	43151	53122	56223	58307	60288	71812
Exports index (1990=100)	100	107	90	108	129	157	173	203	224	229	306	359	386	422	533
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	13,7	14,3	14,1	14,9	16,0	13,8	16,2	19,3	22,7	23,3
Exports as % of World imports	0,40	0,41	0,34	0,37	0,40	0,44	0,45	0,46	0,50	0,47	0,48	0,57	0,62	0,70	0,81
Exports as % of EU-15 imports	n.a.	0,97	0,82	1,03	1,10	1,20	1,26	1,33	1,37	1,31	1,44	1,68	1,84	2,02	0,00
Exports to EU-15 as % of total exports	49,9	64,2	65,7	69,2	69,2	70,0	66,2	64,0	68,3	70,5	69,9	69,2	68,7	68,8	67,4
Slovakia															
Exports of goods (in EUR)	2264	2654	2864	4662	5652	6634	7048	7299	9541	9602	12880	14115	15270	19359	22352
Imports of goods (in EUR)	2513	2915	2960	5421	5585	6783	8878	9119	11635	10628	13860	16488	17517	19947	23525
Exports index (1990=100)	100	117	126	206	250	293	311	322	421	424	569	623	674	855	987
Exports as % of GDP	n.a.	n.a.	n.a.	25,1	35,9	38,1	40,4	37,7	36,9	49,9	43,8	55,2	54,9	52,7	58,5
Exports as % of World imports	0,08	0,09	0,10	0,14	0,15	0,17	0,16	0,15	0,19	0,18	0,18	0,20	0,22	0,28	0,30
Exports as % of EU-15 imports	n.a.	n.a.	n.a.	0,55	0,59	0,59	0,57	0,62	0,64	0,60	0,65	0,71	0,78	0,96	0,99
Exports to EU-15 as % of total exports	36,9	41,3	50,7	29,7	35,0	37,2	41,3	41,7	55,7	59,4	59,0	59,9	60,6	60,6	59,7
Slovenia															
Exports of goods (in EUR)	3244	3003	5150	5207	5755	6426	6641	7413	8052	8037	9505	10349	10966	11288	12786
Imports of goods (in EUR)	3684	3072	4784	5575	6156	7327	7536	8290	8999	9482	10996	11345	11578	12242	14146
Exports index (1990=100)	100	93	159	161	177	198	205	229	248	248	293	319	338	348	394
Exports as % of GDP	n.a.	34,3	31,0	47,5	42,9	37,1	39,8	38,2	39,4	40,0	38,6	43,2	43,7	44,1	43,2
Exports as % of World imports	0,11	0,10	0,17	0,16	0,16	0,16	0,15	0,15	0,16	0,15	0,13	0,15	0,16	0,17	0,17
Exports as % of EU-15 imports	n.a.	0,24	0,42	0,44	0,44	0,44	0,43	0,43	0,44	0,41	0,40	0,43	0,46	0,48	0,00
Exports to EU-15 as % of total exports	64,7	71,2	60,9	63,2	65,6	67,0	64,5	63,5	65,5	66,0	63,7	62,1	59,4	58,4	58,2

Appendix: Main exports related indicators of NMS-8 and CC-3 in 1990-2004 (in mill. EUR current prices and %); cont.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
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Bulgaria

Exports of goods (in EUR)	10560	2773	3024	3174	3347	4142	3901	4368	3841	3734	5253	5714	6063	6668	7985
Imports of goods (in EUR)	10315	2181	3445	4058	3515	4377	4048	4361	4476	5140	7085	8128	8411	9611	11620
Exports index (1990=100)	100	26	29	30	32	39	37	41	36	35	50	54	57	63	76
Exports as % of GDP	n.a.	263,4	70,5	32,7	38,9	33,4	53,0	42,6	38,4	31,6	27,2	34,4	34,4	34,2	34,3
Exports as % of World imports	0,37	0,09	0,10	0,10	0,09	0,10	0,09	0,09	0,08	0,07	0,07	0,08	0,09	0,10	0,11
Exports as % of EU-15 imports	n.a.	0,22	0,24	0,27	0,25	0,28	0,25	0,25	0,21	0,19	0,22	0,24	0,26	0,28	0,00
Exports to EU-15 as % of total exports	5,6	17,4	31,5	30,0	37,6	37,7	39,1	43,2	49,6	52,0	51,1	54,8	55,7	56,5	54,2

Croatia

Exports of goods (in EUR)	3162	2554	3382	3210	3595	3595	3602	3666	4046	4027	4818	5210	5187	5468	6452
Imports of goods (in EUR)	4038	2941	3377	3606	4397	5810	6220	8060	7477	7324	8588	10232	11325	12546	13342
Exports index (1990=100)	100	81	107	102	114	114	114	116	128	127	152	165	164	173	204
Exports as % of GDP	n.a.	78,9	64,9	36,6	39,3	35,9	46,0	39,3	32,2	33,3	29,4	31,6	31,4	29,3	28,1
Exports as % of World imports	0,11	0,09	0,11	0,10	0,10	0,09	0,08	0,07	0,08	0,07	0,07	0,07	0,07	0,08	0,09
Exports as % of EU-15 imports	n.a.	0,21	0,27	0,27	0,27	0,24	0,23	0,21	0,22	0,20	0,20	0,22	0,22	0,23	130,21
Exports to EU-15 as % of total exports	59,8	64,8	53,9	57,9	59,5	57,6	51,0	49,7	47,6	48,7	54,3	54,1	52,9	54,7	51,6

Romania

Exports of goods (in EUR)	4166	3439	3365	4203	5174	6116	6451	7469	7376	7986	11273	12722	14675	15614	18935
Imports of goods (in EUR)	6637	4670	4827	5604	5980	7947	9125	9993	10518	9933	14235	17383	18881	21201	26281
Exports index (1990=100)	100	83	81	101	124	147	155	179	177	192	271	305	352	375	455
Exports as % of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	20,0	22,1	19,8	25,1	26,3	27,9	25,7
Exports as % of World imports	0,15	0,12	0,11	0,13	0,14	0,15	0,15	0,15	0,15	0,15	0,16	0,18	0,21	0,23	0,25
Exports as % of EU-15 imports	n.a.	0,28	0,27	0,36	0,39	0,41	0,42	0,43	0,40	0,41	0,47	0,53	0,62	0,66	28,60
Exports to EU-15 as % of total exports	33,9	36,9	35,1	41,3	48,2	54,0	56,4	56,4	64,3	65,3	63,6	67,6	67,0	67,5	65,3

Sources: UNCTAD, World Bank and WIIW (The Vienna Institute for International Economic Studies) data bases.

Note: * Data for NMS-10.