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The Growing Export Performance of Transition Economies: EU Market Access versus Supply Capacity Factors

Summary: The paper examines the reasons for the remarkable growth of transition economies' export performance. We distinguish between foreign/EU market access and internal supply capacity factors. EU market access has been of great importance, while among supply capacity factors, stable institutional setup, structural reforms, and targeted FDI are in the forefront.

Key words: Export performance, Transition economies of Central and Eastern Europe, (EU) market access, Supply capacity, Institutional setup, FDI.

JEL: F120, F150, F210, O100, P300.

The remarkable upgrading of export performance has been one of the most outstanding features of the transition and European Union (EU) integration processes entered into by the former socialist countries of Central and Eastern Europe (CEEC). Since the beginning of the 1990s, these countries have recorded an extremely high growth of exports in absolute and in relative terms, which has been accompanied by increasing market shares abroad, by the dominance of the EU-15 as the main market, and by considerable changes in the structure of exports in favor of goods with higher value added. In this analysis, we confine ourselves to the most developed CEECs and distinguish between the countries that joined the EU in 2004 (the CEEC-8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia) and the

two countries that joined the EU in January 2007 plus Croatia (the CEEC-3: Bulgaria, Croatia, and Romania). We distinguish between both groups of countries on the grounds that, in the period that we analyze, the former has shown better export results than the latter and has also progressed much further in the EU integration and transition processes.

The objective of this paper is to examine the determinants of the impressive growth of transition economies' export performance. Based on the relevant theoretical concepts, we follow the approaches of Stephen Redding and Anthony J. Venables (2003, 2004) and Marco Fugazza (2004) and distinguish between market access and the supply capacity determinants of export performance. We build an econometric model to assess the determinants of export performance in two steps: first, we assess the contribution of market access, in general and to the EU-15, against that of supply capacity improvement, and second, we assess the importance of individual factors determining the supply capacity. Following the gravity approach, the proximity and size of the EU market and the EU integration process, are rather self-evident factors contributing to the improved market access of the transition economies. Factors determining the supply capacity are numerous, but so far their impact on the transition economies' export performance has not been fully assessed in the literature. In analyzing the supply capacity factors, we broaden the concepts outlined by Redding and Venables (2003, 2004) and Fugazza (2004) by including the impact of structural changes, productivity growth, foreign direct investment (FDI) penetration and institutional (transition) setting in the model. This is a specific new contribution of the paper, as the existing studies have not included these factors as explanatory variables of supply capacity in the model.

The paper is structured as follows. Section 1 examines the determinants of the transition economies' growing export performance as put forward by the literature. In Section 2, we construct an econometric model in order to account for the contribution of market access to export performance against that of supply capacity improvement. Section 3 assesses the importance of individual supply capacity factors, and the last section presents the conclusions.

1. Determinants of the Transition Economies' Export Performance

By far the most popular approach to an analysis of the CEECs' export performance is that inspired by gravity theory (Susan M. Collins and Dani Rodrik 1991; Carl B. Hamilton and Alan L. Winters 1992; Oleh Havrylyshyn and Lant Pritchett 1991; Dariusz Rosati 1992; Richard E. Baldwin 1994; Bartolomiej Kaminski, Zhen K. Wang, and Alan L. Winters 1996a; Havrylyshyn and Hassan Al-Atrash 1998; Zoltan Jakab, Mihaly A. Kovacs, and Andras Oszlay 2001; Peter Egger 2003; Jarko Fidrmuc and Jan Fidrmuc 2003; Matthieu Bussiere, Fidrmuc, and Bernd Schnatz 2005). The gravity models suggest that the lifting of central planning restrictions on foreign trade, the transition to market economies, and the independence of new countries have led to an increase in and geographical restructuring of foreign trade along the lines of gravity theory, that is, the foreign trade intensity of the CEEC increased to a great extent and

the EU-15, as a large, near, and highly developed market, assumed the role of the predominant trading partner. In addition, the CEECs have become an important location for the outsourcing of services from the EU-15 (Metka Stare and Luis Rubalcaba 2009). In short, the CEEC have gradually approached the "normal" level of trade with developed countries, especially the EU, but considerable differences exist among individual countries.

Redding and Venables (2003, 2004) and, on their work, Fugazza (2004) developed a model of trade that uses gravity techniques to estimate to what extent the export growth of a country is due to changed access to foreign markets and to what extent it is due to changes in the internal supply capacity of the exporting country. This is essentially a standard new trade theory model based on product differentiation derived from a constant elasticity of substitution demand structure. Market access segment, i.e. access to foreign markets is 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). The internal supply capacity is regressed on 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 transition countries, 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. Their results of Redding and Venables (2003, 2004), and Fugazza (2004) suggest that market access has been more important than supply capacity for the increasing export performance of the CEEC. In Redding and Venables (2003), growth in foreign market access was a much more important source of export growth than supply capacity growth. The main component of foreign market access growth was Western Europe (i.e., the EU). Nevertheless, the actual level of trade of Eastern Europe is lower than one would expect given good market access and better-than-average internal geography and institutions. This level is due to transition countries that are faced with supply capacity constraints. The results of Fugazza (2004) are more ambiguous. In the first phase of transition (1988-95), foreign market access was much more important for the export growth of the CEEC than supply capacity growth, whereas the situation in 1992-99 was quite the opposite. Thus, the beginning of the transition was characterized by the opening of the markets in the EU and elsewhere, whereas the supply capacity was not able to exploit the new opportunities.

Apart from the fundamentals of gravity theory, the literature puts forward five factors that deserve special attention when analyzing the CEEC's export performance:

a) *Improved access of the transition economies to EU markets.* Most of the increasing importance of the EU-15 as the main market for transition economies' exports is explained by gravity theory, that is, by the below-"normal" level of pre-transition trade with the EU-15. The size, proximity, and development level of the EU-15 represent an extremely strong gravity force for CEEC exports. In addition, the EU integration process has provided these countries with preferential access to EU-

15 markets. How important has this institutional factor been? The literature suggests that preferential market access, especially the Europe Agreements, provides the transition economies with a competitive edge over suppliers from other countries and has clearly been important for increasing the volume of CEEC trade but has not been directly responsible for much of the growth of their exports (Kaminski, Wang, and Winters 1996b, p. 34). This is so because the Europe Agreements retained a number of restrictions (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.

b) *Structural changes in the transition economies' exports.* Since the beginning of the transition process, the export structure of the transition economies has undergone significant structural changes in terms of an increasing share of medium- and high-skill and technology-intensive manufactures and the corresponding decrease in the share of primary commodities, labor-intensive and resource-based products, and low-skill and technology-intensive manufactures. In 1995-2004, the share of medium- and high-skill and technology-intensive manufactures in CEEC-8 exports increased from only 36.0% to 56.1% (UNCTAD, 2003; own calculations based on WIIW database). The export structures of the CEEC show a tendency of gradual convergence with the export structures of the EU-15 (Nuno Crespo and Maria P. Fontoura 2007). Extensive literature on the structural changes in CEEC exports tends to claim that structural upgrading of exports positively contributed to export performance (Bernard Hoekman and Simeon Djankov 1996; Chonira Aturupane, Djankov, and Hoekman 1997; Kaminski and Ng 2001; Uwe Dulleck et al. 2004). However, an important distinction between the most developed (Czech Republic, Hungary, Poland, Slovakia, Slovenia) and other transition countries can be observed. While the former appeared to be successful in substantial quality upgrading of their export structure, some evidence of a "low-quality trap" can be found for the latter (Dulleck et al. 2004, pp. 23-24).

c) *Increased levels of productivity in the transition economies*. According to Andrew B. Bernard and Bradford J. Jensen (1998), productivity growth is an important determinant of export growth; they claim that productivity gains from 1987-1992 accounted for about 10% of overall U.S. export growth in 1987-1994. The productivity growth of the CEEC has been remarkable since the beginning of the transition process and since 1995, has also been much faster than in the EU-15 (Peter Havlik 2005, pp. 3-21). The result is a strong productivity catching-up process in the CEEC.

d) *The role of FDI in the growing export performance of the transition economies*. The importance of FDI for the transition economies' exports is very high and increasing. Foreign subsidiaries are responsible for the majority of exports in most of the transition economies. Foreign subsidiaries, which are on average highly export oriented, are especially important for exports in high- and medium-high-tech industries. Foreign subsidiaries also show much faster restructuring towards high- and medium-high-tech exports and much higher export propensity than domestic enterprises (see Jože P. Damijan and Matija Rojec 2004). Apart from that, foreign subsidiaries may have positive spillover effects on domestic firms, especially via backward linkages with local suppliers, making them more competitive (see, for instance, Holger

Gőrg and David Greenaway 2004). In spite of the remarkable contribution of FDI to the export performance of the CEEC, the causal relationship between export propensity and strategic foreign ownership remains ambiguous. It seems that most of the superior export propensity of foreign subsidiaries is explained by factors other than foreign ownership, with multinationality being a very important one (Michael Pfaffermayr and Christian Bellak 2000; Rojec, Damijan, and Boris Majcen 2004).

e) *Transition from socialist to market economies: a complete change in the institutional setting*. Dani Rodrik, Arvind Subramanian, and Francesco Trebbi (2002) find that institutional quality has a positive and significant effect on (trade) integration. Gravity models also recognize that the business environment is an important determinant of a country's export performance (Redding and Venables 2003; Fugazza 2004). In the case of transition countries, which have gone through an overwhelming change in the entire socioeconomic system and the building of institutions, we need a complex measure of the reform process as an indicator of the development of the institutional setting. The most commonly used indicator of reform progress is the European Bank for Reconstruction and Development (EBRD) transition index. In 1991-2005, the combined CEEC-8 and CEEC-3 increased their overall EBRD transition index from only 1.79 (the minimum being 1) to 3.68 (EBRD 1999, 2000, 2002, 2003, 2004, 2005), which is near to the level of an "ideal" advanced market economy, 4.3.[1] The existing literature on the subject is pretty straightforward, stating that the speed and scope of transition reforms have been crucial to the growth of export performance. Thus, Havrylyshyn and Al-Atrash (1998) 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) detects a close link between export performance and the decision to move quickly to a market-based economy. More precisely, Kaminski, Wang, and Winters (1996b, p. 46) claim that 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.

2. Accounting for the Contribution of Market Access vs. Supply Capacity Improvement to Export Performance

The main features of the increasing export performance and changes in transition economies' exports are the following (see the Appendix table): i) In 1991-2004, exports of the CEEC-8 increased by 648%, and exports of the CEEC-3 increased by 382%; ii) The absolute increase of exports has been accompanied by a no-less-impressive increase of export intensity, i.e., of the exports-to-GDP ratio. In the CEEC-8, the ratio increased from 29.3% in 1995 to 46.0% in 2004, and in the CEEC-3, it increased from 22.8% in 1998 to 25.7% in 2004; iii) A high increase in exports has been achieved by acquiring much higher market shares abroad, especially in the EU-15. In 1991-2004, the share of CEEC-8 exports in the total world imports in-

[1] For a detailed definition and concept of the EBRD transition index, see EBRD (1999). EBRD does not include an overall indicator in its tables; it does, however, carry out analyses in its reports using such an aggregate (EBRD 1999: charts 2.1-2.4; see Clifford Zinnes, Yair Eilat, and Jeffrey Sachs 2001, p. 335).

creased from 1.11% to 2.81%, and its share in EU-15 imports increased from 1.54% to 5.38%. The corresponding increases for the CEEC-3's export shares are from 0.30% to 0.45% for the total world imports and from 0.28% to 0.78% for EU-15 imports; iv) The result has been an ever-growing importance of EU-15 markets for transition economies' exports. In 2004, the EU-15 absorbed 65.9% of CEEC-8 exports and 60.0% of CEEC-3 exports.

The data clearly show that the CEEC-8 have made much more considerable progress in export performance than the CEEC-3. The magnitude of the above trends and structural changes also varies among individual countries, but the direction is the same in all of them.

In this section, we assess the contribution of foreign market access to the export growth of individual CEECs vs. that of internal supply capacity improvement. This approach consists of two steps. In the first step, we quantify the respective roles of foreign market access and supply capacity as two key determinants of the export performance of a given country. In the second step, we then use the estimates obtained in the first stage of the analysis in order to construct supply capacity and foreign market access series. These serve as an analytical tool for revealing the importance of the supply capacity of the exporting economy and of foreign market access for a country's export performance.

2.1 Decomposition of Export Performance

Total export growth can be decomposed into supply capacity and foreign market access growth. Following the approach of Redding and Venables (2003, 2004) and Fugazza (2004), we estimate a gravity model equation where the dependent variable is total manufacturing exports (logarithmic) from country *i* to country *j* and the dependent variables are bilateral distance (logarithmic), an indicator of the existence of a common border, exporter-country dummies, and importer-partner dummies[2]:

$$\ln X_{ij} = \alpha + \beta_j Partner_j + \gamma_i Country_i + \delta_1 Dist_{ij} + \delta_2 Bord_{ij} + u_{ij} . \quad (1)$$

Bilateral distance $Dist_{ij}$ and the border dummy $Bord_{ij}$ are assumed to capture geographical bilateral trade costs. Exporters' and importers' fixed effects, $Country_i$ and $Partner_j$, respectively, are introduced in order to control for supplier capacity and market capacity. These terms can also serve as a control for institutions and policy-related bilateral trade costs.

The model is estimated for 11 CEECs (CEEC-8 and CEEC-3) at the level of the aggregate trade flows of these countries with their most important trading partners from all over the world. The data set spans the period 1994-2004, which creates a balanced panel for 11 years. Bilateral trade flows, distance measures, and GDP data were obtained from the UN COMTRADE and CEPII databases.

[2] Note that the gravity model used here is a special version of the standard gravity models. Standard gravity models regress exports on a set of a home country and a partner country's characteristics, such as size (measured by GDP), the level of development (measured by GDP per capita), the distance between countries and their having a common border or common language.

Table 1 Bilateral Trade Equation Estimation (with Country and Partner Dummies) for CEEC [Period 1994-2004, OLS Estimator]

$\ln(X_{ij})$	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ln(dist$_{ij}$)	***-0.778	***-0.781	***-0.853	***-0.728	***-0.922	***-0.899	***-0.807	***-0.831	***-0.826	***-0.885	***-0.861
	-7.83	*-7.97*	*-9.31*	*-8.76*	*-10.68*	*-10.59*	*-10.07*	*-10.2*	*-9.91*	*-10.63*	*-10.15*
Border$_{ij}$	***1.600	***1.618	***1.392	***1.758	***1.360	***1.326	***1.486	***1.447	***1.338	***1.255	***1.263
	4.51	*4.70*	*4.21*	*5.91*	*4.33*	*4.27*	*5.05*	*4.81*	*4.36*	*4.07*	*4.03*
CZ	***1.333	**1.254	***1.612	***1.478	***1.792	***1.961	***2.169	***2.127	***2.186	***2.016	***2.012
	2.58	*2.50*	*3.30*	*3.38*	*3.87*	*4.34*	*5.13*	*4.91*	*4.95*	*4.54*	*4.46*
EE	***-2.975	***-3.183	***-2.282	***-1.296	***-1.363	***-1.195	**-0.907	**-0.840	**-0.873	**-0.847	***-1.527
	-6.1	*-6.69*	*-4.96*	*-3.11*	*-3.14*	*-2.84*	*-2.32*	*-2.10*	*-2.14*	*-2.06*	*-3.67*
HU	*0.844	0.720	**0.992	***1.143	***1.507	***1.742	***1.885	***1.960	***1.985	***1.888	***1.940
	1.67	*1.46*	*2.07*	*2.66*	*3.31*	*3.93*	*4.56*	*4.62*	*4.59*	*4.34*	*4.40*
LV	***-2.275	***-2.637	***-2.175	***-2.240	***-1.893	***-1.808	***-1.585	***-1.818	***-1.687	***-1.967	***-1.748
	-4.62	*-5.45*	*-4.68*	*-5.39*	*-4.34*	*-4.26*	*-4.03*	*-4.53*	*-4.11*	*-4.79*	*-4.20*
LT	***-2.509	***-2.083	***-2.166	***-1.571	***-1.553	***-1.723	***-1.312	***-1.563	***-1.374	***-1.278	***-1.415
	-5.19	*-4.36*	*-4.71*	*-3.8*	*-3.55*	*-4.07*	*-3.34*	*-3.92*	*-3.38*	*-3.13*	*-3.42*
PL	***1.592	***1.443	***1.791	***1.765	***2.082	***2.215	***2.411	***2.423	***2.393	***2.357	***2.501
	3.09	*2.88*	*3.67*	*4.04*	*4.5*	*4.92*	*5.73*	*5.62*	*5.44*	*5.33*	*5.57*
SK	0.293	0.405	0.296	0.146	0.390	0.643	*0.819	*0.763	*0.762	**0.931	**0.957
	0.55	*0.77*	*0.61*	*0.34*	*0.85*	*1.43*	*1.95*	*1.77*	*1.73*	*2.11*	*2.14*
SI	0.008	-0.213	0.124	0.190	0.533	*0.793	*0.780	*0.769	*0.770	0.638	0.663
	0.02	*-0.43*	*0.26*	*0.44*	*1.18*	*1.80*	*1.90*	*1.83*	*1.79*	*1.48*	*1.51*
BG	0.278	0.202	*0.319	*0.284	*0.305	*0.326	**0.414	**0.420	**0.436	**0.397	**0.436
	1.41	*1.07*	*1.72*	*1.71*	*1.73*	*1.90*	*2.57*	*2.54*	*2.59*	*2.34*	*2.53*
CRO	***-1.151	***-1.238	***-1.359	***-1.248	***-1.008	***-0.864	***-1.008	***-0.925	***-1.060	***-1.047	***-1.130
	-3.56	*-3.97*	*-4.47*	*-4.59*	*-3.50*	*-3.04*	*-3.76*	*-3.37*	*-3.78*	*-3.71*	*-3.95*
Partner dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
EU	***2.124	***2.291	***2.113	***2.064	***2.278	***2.683	***2.757	***2.810	***3.013	***3.073	***3.144
	8.93	*9.86*	*9.48*	*10.3*	*10.81*	*12.93*	*14.07*	*14.04*	*14.77*	*15.00*	*15.13*
CEEC-8	***0.795	***0.873	***0.824	***0.730	***0.864	***1.131	***1.220	***1.280	***1.510	***1.564	***1.765
	2.48	*2.80*	*2.77*	*2.74*	*3.07*	*4.09*	*4.69*	*4.81*	*5.57*	*5.74*	*6.38*
CEEC-3	0.203	0.364	0.060	-0.121	0.100	0.450	0.365	0.342	**0.835	***1.142	***1.430
	0.47	*0.88*	*0.15*	*-0.34*	*0.26*	*1.19*	*1.02*	*0.93*	*2.23*	*3.03*	*3.74*
OECD	***1.549	***1.597	***1.506	***1.372	***1.525	***1.769	***1.784	***1.791	***2.029	***2.086	***2.173
	8.06	*8.4*	*8.39*	*8.45*	*9.08*	*10.73*	*11.48*	*11.36*	*12.59*	*12.93*	*13.27*
# obs	791	756	799	787	827	843	858	886	880	887	901
Adj R-sq.	*0.597*	*0.607*	*0.604*	*0.598*	*0.627*	*0.659*	*0.670*	*0.680*	*0.674*	*0.685*	*0.697*

Notes: ln(*Xij*) is log bilateral exports from country *i* to partner *j* plus one; ln(*distij*) is bilateral distance between countries *i* and *j*; *borderij* is a dummy for a common border. *t*-statistics in italics; ***, **, and * denote the significance of parameters at 1%, 5% and 10%, respectively.

Source: Authors' estimations.

Model (1) is estimated year-by-year in order to allow for annual variations in estimated individual parameters of interest. A simple OLS estimator is used in these exercises. The results are presented in Table 1. The estimated coefficients of geographical distance are of the same size as those obtained by Fugazza (2004) for a larger and more heterogeneous data set. There is little variation in the estimated coefficients over time, indicating the robust importance of transport costs for the export performance of individual CEEC. On the other hand, the coefficients for border dummies are two to three times higher than those obtained by Redding and Venables (2003) and Fugazza (2004) but decrease over time. This finding indicates the high importance of cross-border trade for the CEEC, which, however, has been diminishing with the economic integration and economic development of these countries over the last decade. With closer integration into the EU economic area and with high rates of productivity growth, the relative importance of transportation costs might well be decreasing, and domestic firms can increasingly afford to bear the costs of shipping goods to non-neighboring countries. In 2004, however, the coefficient for border effects on trade was still twice that of those estimated in the above-mentioned studies.

We introduce exporters' and importers' fixed effects, $Country_i$ and $Partner_j$, where the former serves to control for supplier capacity and the latter for foreign market capacity. Exporter countries' parameters are mostly positive and significant as expected, with the exception of the three Baltic states and Croatia, where negative and significant parameters are revealed. This may indicate the divergent evolution of domestic supply capacities in these countries, as they have all undergone a substantial process of de-industrialization during this period. With a stagnating or even falling manufacturing output, these countries have decreased heir supply capacities. In all of the other countries exporter country coefficients are in line with expectations and reveal positive increasing trends over time, indicating a rise in domestic supply capacities. In accordance with the process of trade liberalization with the EU in the 1990s, the EU market predominates over other importer dummies. The importance of other OECD countries is about 60% of that of the EU markets, whereas the importance of trade with other members of CEEC-8 and CEEC-3 is much lower.

2.2 Accounting for Supply Capacity and Foreign Market Access

Calculation of a country's own supply capacity and its foreign market access follows directly from the gravity model (1). Here, an exporter's country dummy indicates the country's own scope of supply capacity, while the scope of foreign market access is determined by the partner country's effect weighted by the distance and by the border. Therefore, following Redding and Venables (2003), in the second step, the estimates obtained in the first stage of the analysis (estimates of model (1)) are used to construct supply capacity and foreign market access series. The supply capacity estimate for country i (SC_i) is given by the exponential of the exporter country dummy times its coefficient:

$$SC_i = \exp(\hat{\gamma}_i Country_i) \tag{2}$$

while the estimate of foreign market access (FMA_i) is given by

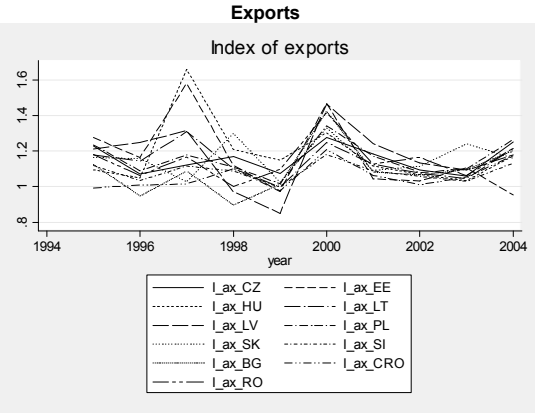
$$FMA_i = \sum_{i \neq j} \exp(\hat{\beta}_j Partner_j) * Dist_{ij}^{\hat{\delta}_1} * \exp(\hat{\delta}_2 Bord_{ij}) \quad (3)$$

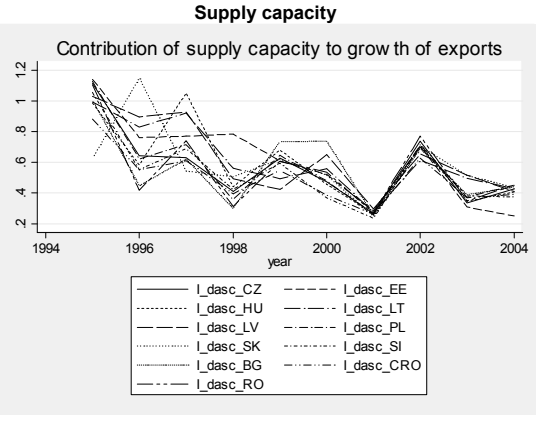
The estimates of supply capacity (2) and foreign market access (3) allow us to decompose the sources of export growth over the last decade and help us to analyze over time the contribution of both the supply capacity and the foreign market access to the export performance of each individual CEEC.

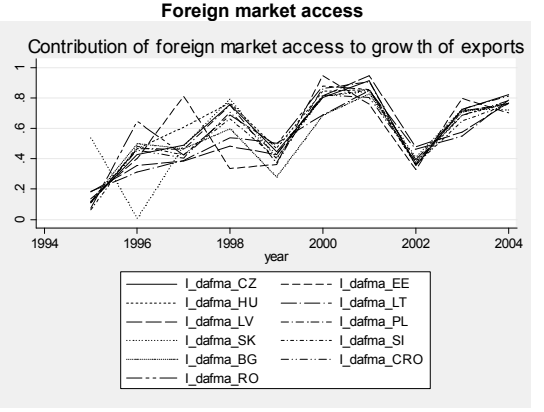
As revealed in Figure 1, the evolution of exports as well as of supply capacity and foreign market access are remarkably uniform across the individual CEECs. Some variation in the export figures around the common increasing trend of exports is present. This variation is higher in the period 1994-2000 but then dies out in the period 2000-2004. Table 2 further demonstrates some differences in export performance among both groups of CEEC. It is shown that the CEEC-8 has increased its exports at a faster pace than the CEEC-3 in the periods 1994-1996 and 1996-1998 (biannual growth rates of 33% and 46% as compared to 11% and 9%, respectively), while both groups of countries have recently converged to similar growth rates of exports (biannual growth rates of 27% to 28%).

The contribution of market access improvement vs. that of supply capacity upgrading to export growth is almost identical for the CEEC-8 and the CEEC-3. In both groups of countries, the contribution of the upgrading of supply capacity was initially dominant but has gradually been decreasing (i.e., from 94.3% in 1994-96 to 24.5% in 2002-04 for the CEEC-8 and from 89.7% to 22.7% for the CEEC-3). The opposite is true for improvement in foreign market access, whose contribution to export growth increased remarkably, from 5.7% to 75.5% for the CEEC-8 and from 10.3% to 77.3% for the CEEC-3. The liberalization of foreign trade following WTO standards and, above all, the EU integration processes seem to have decisively improved foreign market access for the CEEC. However, it obviously took some time before the CEECs were truly capable of using their potentially favorable position in terms of foreign market access. This is in line with Kaminski, Wang, and Winters (1996b), who say that preferential treatment provided by Europe Agreements to the CEEC was initially limited by a number of inherent limitations, which were removed only gradually in the process of EU integration. Table 2 indicates that the main positive impact of the Europe Agreements for CEEC exports came into effect in 1996-1998, which then unfolded into a massive long-lasting export effect.

This finding is also confirmed by Table 3, which illustrates the decomposition of foreign market access into five regional components: the EU-15, the 2004 new member states of the EU (the CEEC-8, Cyprus, Malta), the CEEC-3, three Southeastern European countries (Albania, Macedonia, and Serbia and Montenegro), and non-EU OECD countries. Improving access to EU-15 markets has been decisive, but the growth of exports to the EU-15 has contributed significantly more to the overall export growth of the CEEC-8 than of the CEEC-3. Throughout the entire 1994-2004 period, the EU-15 contributed approximately two-thirds of the overall growth in the foreign market access of the CEEC-8. In the case of the CEEC-3, the contribution of the EU-15 was much lower but was constantly increasing (from 28.6% in 1994-96 to 38.5% in 2002-04). Compared to the CEEC-8, the CEEC-3 have benefited much more from the export growth to the non-EU OECD and Southeastern European countries.







Source: Authors' estimations.

Figure 1 Growth Index for Exports, Supply Capacity and Foreign Market Access

Table 2 Components of Export Growth, 1994-2004

	Export index					Contribution to export index (in %)									
						Supply capacity growth					Foreign market access improvement				
	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04
Czech Republic	1.31	1.31	1.37	1.29	1.33	93.6	41.1	45.4	37.9	19.4	6.4	58.9	54.6	62.1	80.6
Estonia	1.48	1.77	1.43	1.08	1.05	94.1	68.9	48.1	44.5	12.2	5.9	31.1	51.9	55.5	87.8
Hungary	1.15	2.01	1.50	1.19	1.21	91.9	49.8	44.1	37.6	21.2	8.1	50.2	55.9	62.4	78.8
Lithuania	1.51	1.28	1.24	1.41	1.29	93.5	71.1	44.2	30.0	32.5	6.5	28.9	55.8	70.0	67.5
Latvia	1.35	1.44	1.24	1.21	1.27	93.5	71.2	44.4	30.1	33.0	6.5	28.8	55.6	69.9	67.0
Poland	1.35	1.31	1.36	1.27	1.39	93.2	42.4	49.1	36.5	22.2	6.8	57.6	50.9	63.5	77.8
Slovakia	1.35	1.34	1.36	1.22	1.44	99.4	41.7	49.4	33.7	30.0	0.6	58.3	50.6	66.3	70.0
Slovenia	1.16	1.21	1.18	1.15	1.17	94.9	50.7	40.0	35.0	22.6	5.1	49.3	60.0	65.0	77.4
Bulgaria	1.07	0.98	1.44	1.15	1.32	88.1	40.2	73.9	35.9	24.2	11.9	59.8	26.1	64.1	75.8
Croatia	1.00	1.12	1.18	1.08	1.24	90.5	45.9	37.7	34.8	21.2	9.5	54.1	62.3	65.2	78.8
Romania	1.25	1.17	1.55	1.31	1.29	90.4	44.2	43.1	38.2	22.5	9.6	55.8	56.9	61.8	77.5
CEEC-8	1.33	1.46	1.34	1.23	1.27	94.3	55.0	45.7	35.5	24.5	5.7	45.0	54.3	64.5	75.5
CEEC-3	1.11	1.09	1.39	1.18	1.28	89.7	43.6	52.2	36.4	22.7	10.3	56.4	47.8	63.6	77.3
All countries	1.24	1.31	1.36	1.20	1.27	91.2	58.5	40.3	39.2	24.1	8.8	41.5	59.7	60.8	75.9

Notes: Bi-annual index of growth of exports. calculated from equations (2) and (3); and contribution of supply capacity and foreign market access to export growth (in %).

Source: Authors' estimations.

Table 3 Decomposition of Foreign Market Access Growth by Foreign Markets, 1994-2004 (in %)

	EU-15					Contribution of 2004 New EU member states (CEEC-8, Cyprus and Malta)					CEEC-3				
	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04
Czech Republic	73.7	76.7	73.9	73.1	73.0	8.5	8.5	10.6	11.4	13.2	1.1	1.2	1.4	1.6	2.2
Estonia	90.7	90.1	89.7	90.1	86.7	2.9	3.5	4.2	4.2	6.4	0.1	0.2	0.2	0.2	0.4
Hungary	51.2	55.8	54.5	52.8	53.9	12.0	12.2	15.0	16.1	18.3	2.5	2.9	2.9	3.4	5.0
Lithuania	50.1	54.1	54.4	52.3	53.0	16.0	16.6	18.7	20.5	23.5	0.9	1.0	1.1	1.3	1.9
Latvia	61.5	63.8	63.6	62.0	60.5	15.3	15.8	17.6	19.3	22.4	0.5	0.6	0.7	0.8	1.2
Poland	58.8	62.1	62.2	60.4	60.1	13.1	13.4	15.7	17.1	19.8	1.3	1.4	1.6	1.8	2.5
Slovakia	88.4	88.8	86.2	86.5	84.0	4.2	4.6	6.1	6.2	8.4	0.6	0.7	0.9	1.0	1.5
Slovenia	58.8	63.6	61.4	58.9	59.8	6.8	6.8	9.0	9.4	10.5	10.0	10.3	9.7	12.1	14.6
Bulgaria	19.1	24.7	27.3	25.0	31.3	2.2	2.6	4.0	4.0	5.6	1.9	2.4	2.6	3.0	4.8
Croatia	40.9	44.6	46.5	44.0	44.9	19.3	19.9	22.9	25.0	28.0	0.6	0.7	0.8	0.9	1.3
Romania	28.8	34.5	37.1	34.7	39.4	3.8	4.4	5.7	6.0	7.8	3.6	4.4	4.2	5.1	7.5
CEEC-8	63.8	69.8	68.3	66.3	66.9	10.8	9.7	12.0	13.4	15.1	1.9	2.3	2.3	2.7	3.6
CEEC-3	28.6	34.7	38.7	34.4	38.5	7.5	9.0	11.8	11.3	13.7	2.1	2.5	2.6	3.1	4.5
All countries	39.6	61.7	49.5	54.9	52.9	7.3	8.4	9.8	10.4	11.9	3.9	2.6	4.7	3.9	6.5

Table 3 Continuation

	Non-EU OECD countries					Contribution of South East Europe (Albania, Macedonia, Serbia and Montenegro)					TOTAL				
	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04	1994-96	1996-98	1998-00	2000-02	2002-04
Czech Republic	13.0	10.7	11.0	10.8	9.1	3.7	3.0	3.1	3.1	2.5	100.0	100.0	100.0	100.0	100.0
Estonia	5.6	5.6	5.3	4.9	5.7	0.6	0.6	0.6	0.6	0.7	100.0	100.0	100.0	100.0	100.0
Hungary	27.9	23.8	22.1	22.2	18.4	6.5	5.3	5.6	5.5	4.3	100.0	100.0	100.0	100.0	100.0
Lithuania	29.1	24.9	22.6	22.8	19.0	3.9	3.3	3.2	3.2	2.7	100.0	100.0	100.0	100.0	100.0
Latvia	20.1	17.5	16.0	15.8	13.9	2.5	2.2	2.2	2.1	1.9	100.0	100.0	100.0	100.0	100.0
Poland	24.0	20.7	18.3	18.5	15.8	2.8	2.3	2.3	2.3	1.8	100.0	100.0	100.0	100.0	100.0
Slovakia	5.2	4.7	5.3	4.9	4.8	1.5	1.3	1.5	1.4	1.4	100.0	100.0	100.0	100.0	100.0
Slovenia	21.0	16.7	17.1	16.9	13.0	3.4	2.7	2.8	2.7	2.1	100.0	100.0	100.0	100.0	100.0
Bulgaria	28.8	27.6	26.8	26.7	24.7	48.1	42.7	39.4	41.3	33.6	100.0	100.0	100.0	100.0	100.0
Croatia	31.6	28.3	23.5	23.9	20.7	7.6	6.4	6.4	6.3	5.1	100.0	100.0	100.0	100.0	100.0
Romania	45.7	41.4	37.8	38.6	33.1	18.1	15.3	15.2	15.6	12.1	100.0	100.0	100.0	100.0	100.0
CEEC-8	20.1	15.4	14.7	14.9	12.2	3.3	2.8	2.7	2.6	2.2	100.0	100.0	100.0	100.0	100.0
CEEC-3	35.5	32.7	30.4	30.1	26.2	26.3	21.1	16.5	21.2	17.0	100.0	100.0	100.0	100.0	100.0
All countries	25.1	18.5	20.1	17.4	15.3	24.1	8.8	15.8	13.3	13.4	100.0	100.0	100.0	100.0	100.0

Note: Contribution of individual groups of countries is calculated from bi-annual index of growth of foreign market access from equation (3). weighted by the share of individual groups of countries in total exports.

Source: Authors' estimations.

3. The Importance of Supply Capacity Factors

In Section 1, we surveyed the most important determinants of domestic supply capacity as identified in the literature. In this section, we empirically take these determinants into account. We contribute to the field by accounting for the impact of individual determinants on the evolution of the supply capacity of the transition countries; that is, we account for the impact of structural changes, productivity growth, FDI penetration, and institutional (transition) changes on supply capacity in the model. Existing studies have not included these factors as explanatory variables of supply capacity in the model. We suppose that the factors determining export performance are decomposed into the foreign market access and supply capacity factors as follows:

$$X_{ij} = f\left(SC_i, FMA_{ij}\right) \tag{4}$$

As shown in equation (3), the foreign market access variable is a composite variable:

$$FMA_{ij} = g\left(GDP_j, GDPpc_j, Dist_{ij}, Bord_{ij}, Lang_{ij}, Region_{ij}\right) \tag{5}$$

FMA contains the impacts of the importing country *j's* characteristics, such as the level and growth of GDP and GDP per capita, as well as factors affecting costs related to trade flows, that is, trade costs, tariff and non-tariff barriers to trade, which

are usually picked up by the distance variable. There are also some other factors fostering bilateral trade, such as similarity in consumer preferences, a common language and cultural similarities, which we usually claim to control for by including dummy variables for countries' having a common border, language, and region.

On the other hand, the variables affecting supply capacity are those affecting the economic potential of the exporting country and its ability to adjust to the changing global demand patterns. Supply capacity can hence be written as a function:

$$SC_i = h\left(GDP_i, GDPpc_i, FDI_i, C_i, Tech_i, I_i, ER_i\right) \tag{6}$$

where GDP and GDP per capita explain the economic potential of the exporting country, while FDI, the productivity level (C_i), level of technological development ($Tech_i$), the real exchange rate (ER_i), and institutional changes (I_i) affect the exporting country's ability to adjust to the changing global demand patterns.

Therefore, the model we estimate to verify the importance of the above supply capacity factors for CEEC export performance is as follows:

$$\begin{aligned} \ln X_{ijt} = \alpha + \beta_1 \ln FMA_{ijt} + \beta_2 \ln GDP_{it-1} + \beta_3 \ln FDI_{it-1} + \beta_4 C_{it} + \\ + \beta_5 ER_{it} + \beta_6 Tech_{it} + \beta_7 TI_{it} + u_{it} \end{aligned} \tag{7}$$

where FMA_{ij} accounts for the foreign market's characteristics contained in (5). We include FDI as a share of FDI stock in gross fixed capital formation ($FDI/GFCF_i$_1). Due to possible endogeneity, that is, the correlation with the current export flow, we include both GDP and FDI lagged by one year. As GDP per capita and country's productivity level are strongly correlated, in estimating (7), we omit the GDP per capita variable. We instead employ the productivity variable, which is more precise in defining the manufacturing productivity level. Productivity level (C_i) is measured in terms of a unit labor cost (ULC)[3]. The level of technological development ($Tech_i$) is measured as a share of medium-high- and high-tech industries in a country's total exports ($Sh\_MH\ tech_i$). Finally, the quality and changes in a country's institutional setup are proxied by one of the two standard EBRD indices, that is, the EBRD transition index for trade and foreign exchange systems or the EBRD transition index (an average of individual indices). These EBRD indices are usually employed in similar studies in order to control for the progression of trade liberalization or progression of market reforms in individual countries. Both indices are scaled from 1 to 4, whereby the highest score of 4 indicates full liberalization or that market reforms have been fully implemented.

The gravity model (7) is estimated both in levels as well as in first differences. The estimations in levels indicate the importance of individual supply capacity factors for the level of export performance with individual importing countries. We follow the approach of Egger (2003), who suggests estimating the gravity model using the full data set pooled over years and individual countries in order to make use of

[3] The unit labor cost (ULC) is defined as the ratio of the labor cost to the labor productivity level. An increase in the ULC thus indicates a deterioration in the country's productivity.

the full set of information contained in the data. We therefore employ standard panel data techniques, such as random- and fixed-effects models, in order to take into account a country pair's individual (fixed or random) effects. The random-effects estimator has been proven by the standard Hausman test as being the more efficient estimator of the two. We therefore present only results obtained by using the random-effects estimator on data in levels and results obtained by OLS on using the data in first differences. Note that the latter approach is warranted due to the fact that by first-differencing (7), the country-fixed effects are wiped out.

Table 4 Estimation Results for Gravity Model with Supply Capacity Factors for CEEC (Period 1994-2004; Specification in Levels; Random Effects Estimator)

$\ln X_{ij}$	1	2	3	4	5
ln*SC*$_i$	***1.516				
	18.26				
ln*FMA*$_i$	***4.062	***5.316	***5.464	***5.715	***5.491
	6.86	*9.09*	*9.33*	*10.25*	*9.85*
ln*GDP*$_i$_1		***3.270	***3.251	***2.548	***2.629
		20.78	*20.09*	*16.19*	*16.77*
ln*FDI/GFCF*$_i$_1			0.023	-0.101	-0.012
			0.2	*-0.83*	*-0.1*
ln*EBRDtrade*$_i$			***4.321	***4.192	
			3.81	*3.73*	
ln*EBRDtotal*$_i$					*-2.166
					-1.64
ln*ER*$_i$				***-8.728	***-9.026
				-18.45	*-18.8*
ln*ULC*$_i$				***-1.619	***-1.521
				-14.37	*-12.96*
ln*Sh_MH tech*$_i$				***0.049	***0.055
				4.33	*4.69*
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
No. of obs	10801	9819	9819	9819	9819
Adj R-sq.	0.416	0.352	0.351	0.382	0.389
Prob > chi^2	0.00	0.00	0.00	0.00	0.00

Notes: ln*Xij* is log bilateral exports from country *i* to partner *j* plus one. *SC* and *FMA* are supply capacity and foreign market access coefficients estimated in (1). *FDI/GFCF*$_i$_1 is FDI as a share of FDI stock in gross fixed capital formation, *EBRDtrade* and *EBRDtotal* indicate an EBRD transition index for trade and foreign exchange system and an overall EBRD transition index. *ER* is the exchange rate. *ULC* is the unit labor cost, defined as the ratio of the labor cost to the labor productivity level. *Sh_MH tech*$_i$ is the share of medium-high- and high-tech industries in a country's total exports.
t-statistics in italics; ***. **. and * denote the significance of parameters at 1%. 5% and 10%, respectively.

Source: Authors' estimations.

The results of the estimations in levels are presented in Table 4. We estimate the model by successively including additional variables into the model in order to

provide some kind of robustness check for our estimations. In the first model, both the supply capacity and foreign market access variables, which have been estimated previously by estimating model (1), are shown to have a significant impact on exports. In the second model, we swapped the composite supply capacity variable for one of its components, that is, the GDP level of the exporting country, whereas in the third model, we add FDI and the EBRD transition index for the trade and foreign exchange system. The exporting country's GDP level and its institutional setup are shown to have a strong impact on its export performance. Among other determinants of supply capacity (see models 4 and 5), one can confirm negative impacts of real exchange rate appreciation and of a lower productivity level on export flows. Interestingly, FDI and the resulting technological restructuring do not seem to affect the level of exports. However, the level of exporting country technological development (measured as a share of medium-high- and high-tech industries in exports) does contribute positively to a country's export performance.

Before making any conclusions, we proceed by estimating the model in first differences, that is, growth rates. This is not done only to eliminate the country pair's fixed effects; rather, this is done predominantly because it allows us to take into account the impact of changes in the country's supply capacity on the growth of exports. We are especially interested in uncovering how indigenous productivity growth, technological restructuring, FDI, and changes in the institutional setup affect a country's export performance. The results in Table 5 are reassuring. First, the results demonstrate that the CEECs with higher levels of accumulated FDI do exhibit much larger growth of exports. This finding points towards the dynamic aspect of FDI, that is, that FDI does foster manufacturing restructuring and creates the economic potential for future export growth.[4] Second, changes in the institutional setup (measured by the EBRD trade index or the EBRD overall transition index) do significantly increase the growth rates of exports. Therefore, the more ambitious CEECs in terms of their ongoing structural reforms and their building of a stable institutional setup are more successful in fostering export growth. Third, the successful restructuring of individual CEECs shows up in lower labor unit costs, which in turn improve the competitiveness of exporters and increase exports.

Based upon the above empirical findings, one can draw important policy conclusions. It is obvious that openness and unrestricted access to many foreign markets increase the capacity of a country regarding its successful export performance. It is, however, of extreme importance that countries work on their internal supply capacity improvements in order to build their export performance. The key policy measures that should be focused on by less-developed transition countries (the CEEC-3, candidate countries for EU membership, and the successor states of the former Soviet Union) are predominantly the building of a stable institutional setup, ongoing structural reforms, and targeted FDI penetration.

[4] One should note, however, that the levels (not changes) of accumulated FDI are what enhance export growth.

Table 5 Estimation Results for Gravity Model with Supply Capacity Factors for CEEC (for the Period 1994-2004; Specification in First Differences; OLS Estimator)

dX_{ij}	1	2	3	4	5
d*GDP*$_i$	**3.222	***4.551	***4.744	**3.703	***4.532
	2.34	*2.9*	*3.36*	*2.43*	*2.93*
d*FMA*$_i$	-0.819	-0.651			
	-0.78	*-0.62*			
ln*FMA*$_i$			***1.119	***1.089	***1.185
			6.34	*6.12*	*6.58*
d*FDI/GFCF*$_i$		0.299			
		1.21			
ln*FDI/GFCF*$_i$_1			***0.217	***0.207	***0.241
			2.99	*2.79*	*3.22*
d*EBRDtrade*$_i$		**2.209	**2.487	*2.112	
		2.23	*2.52*	*2.11*	
d*EBRDtotal*$_i$					***7.081
					3.77
d*ER1*$_i$				**-1.305	**-1.235
				-2.11	*-2.01*
d*ULC1*$_i$				***-0.191	***-0.196
				-2.81	*-2.89*
d*MHT*$_i$				-0.177	0.075
				-0.5	*0.21*
Year Dummies	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
No. of obs	9818	9818	9818	9818	9818
Adj R-sq.	0.056	0.056	0.060	0.062	0.063
Prob > chi2	0.00	0.00	0.00	0.00	0.00

Notes: d*Xij* is rate of growth of bilateral exports from country *i* to partner *j* plus one. *t*-statistics in italics; ***. **. and * denote the significance of parameters at 1%. 5% and 10%, respectively.

Source: Authors' estimations.

4. Conclusions

The paper looks at the reasons behind the impressive growth of the transition economies' export performance in the last decade. We follow the empirical approach of Redding and Venables (2003, 2004) and Fugazza (2004), which helps us to decompose the export performance of individual countries into foreign market access factors and factors related to internal supply capacity building. The contribution of the improvement of a country's market access to its export growth vs. that of upgrading the country's supply capacity upgrading is almost identical between the CEEC-8 and the CEEC-3. In both groups of countries, the contribution of supply capacity upgrading was initially dominant but has been gradually decreasing. The opposite is true for improvement in foreign market access, whose contribution to export growth in-

creased remarkably in the period 1994-2004. Within foreign market access, improving access to EU-15 markets has been decisive, but the growth of exports to the EU-15 has contributed significantly more to the overall export growth of the CEEC-8 than it has to that of the CEEC-3. Compared to the CEEC-8, the CEEC-3 seem to have benefited much more from export growth to the non-EU OECD and South East Europe countries.

We amend the standard econometric gravity model by including those factors determining the evolution of the supply capacity of transition countries, which have been recognized by the literature as being of specific relevance. These factors are changes in export structure, increased levels of productivity, the role of FDI, and institutional changes. This represents a specific new contribution of the paper, as the existing studies have not included these factors as explanatory variables of supply capacity in the model. Our results are very conclusive. We find first that the CEECs with higher levels of accumulated FDI do exhibit a much larger growth of exports. This finding point towards the dynamic aspect of FDI, that is, that FDI does foster manufacturing restructuring and create the economic potential for future export growth, directly, via superior export performance of foreign subsidiaries and, indirectly, via knowledge spillovers from foreign subsidiaries to indigenous firms. Second, changes in the institutional setup (measured by the EBRD trade index or the EBRD overall transition index) do significantly increase the growth rates of exports. This demonstrates that the more ambitious CEEC in terms of ongoing structural reforms and the building of a stable institutional setup are more successful in fostering export growth. Third, the appearance of the successful restructuring of individual CEECs in their increased productivity improves the competitiveness of exporters from these countries and increases exports. Policy messages for the improvement of the supply capacity thus go in the direction of building a stable institutional setup, structural reforms, and targeted FDI penetration. Further research of the factors determining the export performance of transition economies and in general should first put more effort into the better identification and assessment of supply capacity factors.

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Appendix

Main Export Related Indicators of CEEC-8, CEEC-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
CEEC-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 to EU-15 as % of EU-15 total imports	n.a.	1.54	1.75	2.14	2.34	2.53	2.53	2.87	3.34	3.47	3.69	4.19	4.57	4.94	5.38
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
CEEC-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 to EU-15 as % of EU-15 total imports	n.a.	0.28	0.32	0.38	0.45	0.47	0.45	0.46	0.47	0.46	0.52	0.61	0.68	0.74	0.78
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.

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