

Trade Approach versus Development Approach to the Convergence of CEEC with the EU under the Integrative Competitive Pressures. Focus on Romania.

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Abstract

The aim of this paper is to analyze the driving forces of Romanian convergence to the EU that leave it lagging behind providing further explanatory variables for the uneven convergence to the EU and the performance of EU newcomers. There is no doubt that convergence cannot be taken for granted. What proves to provide real explanatory dimension is the analysis of convergence speed of CEEC advance towards EU integration by opposing the development approach to the trade approach, in the context of endogenous and exogenous competitive structures and pressures. We believe that the catching-up process is fundamentally determined by growth competitiveness and business environment competitiveness, as proxies that we use respectively for the development or trade approach to convergence. This would oppose the convergence potential of CEECs to the rather mechanistic GDP/capita convergence. Some industries and some classes of labour have highly converged to the EU development standard, others have not. At the macroeconomic level, the higher the endogenous competitive pressures derived from the business environment, the higher the speed of CEEC GDP per capita convergence to the EU. Institutional quality, microeconomic reforms, national business environment, foreign direct investments, foreign trade and technology upgrading are all part of this story, and moreover they are indispensable for the catching-up of the post-communist countries. Their complex interactions in determining Romania's convergence speed are unexplored economic frameworks that we propose to reflect upon. The argument for this approach rests on the necessity of not underestimating the fact that the wealth or standard of living of a nation is created at the microeconomic level, and that the interactions between growth and trade performances (competitiveness) reveal complex patterns in the transition economies which provide in-depth explanations of the higher or lower speed of CEEC convergence to the EU. Unless these capabilities improve, macroeconomic, political, legal and social reforms will not prove fully successful. This paper also provides several key messages related to the CEEC-10 framework of the *trade liberalization – economic growth – human development* relationship in the context of the EU integration process. Finally, we build a new convergence composite indicator, in order to limit the uncertainty of classical convergence approaches and growth projections for CEECs: *the growth competitiveness convergence indicator*. This takes into account the above-mentioned neglected aspects of the convergence process and changes the overall picture of CEEC convergence performances.

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1. Introduction

The speed and intensity of changes in the CEEC led to a historical challenge in May 2004: integration of the 8 CEE and 2 Mediterranean economies into the EU, the world's biggest trade block, itself facing many difficulties in achieving the Lisbon Agenda to become the world leader in competitiveness in the knowledge-based economy by 2010. As part of the Copenhagen criteria for accession, the EU strongly suggest that the applicant countries had to have a 'functioning market economy' able to withstand the competitive pressures within the European Internal Market. This reality must be met by all the transition economies wishing to become a full EU member. Strong domestic competitive pressures derived from structural and socio-political changes add to these external competitive forces.

The first aim of this paper is to analyze why the process of transformation and convergence to the EU has been so uneven in Romania, in comparison with other candidate countries. Evaluating the challenges and opportunities for Romania to reach acceptable levels of performance among EU newcomers will help us to understand the forces making it lag behind. Speeding up economic growth in the accession countries is obviously a major policy objective. This is still a serious problem as achievements have been too few and resources are too limited. So there is no doubt that convergence cannot be taken for granted. What proves to provide a real explanatory dimension is the analysis of the speed of convergence of CEE countries advancing towards EU integration obtained by contrasting the development approach with the trade approach, in the context of endogenous and exogenous competitive structures and pressures. Beyond issues of industrial specialization, productivity gaps, labour market distortions and foreign investments, there are unexplored economic factors that we propose to reflect upon, which can secure or impede economic development and the catching-up process: microeconomic reforms, the national business environment, the quality of public institutions, technology upgrading, etc. The argument for this approach rests on the necessity of not underestimating the fact that the wealth or standard of living of a nation is created at the microeconomic level, and that interactions between growth and trade performances (competitiveness) reveal complex patterns which provide further explanations of the higher or lower speed of CEEC convergence to the EU. Unless these capabilities improve, macroeconomic, political, legal and social reforms will not prove fully successful.

This paper will also provide several key messages related to the CEEC framework of the relationship of *trade liberalization – economic growth – human development* in the context of the EU integration process, by emphasizing:

- Ø the economic and institutional mechanisms of trade – growth – human development links in the transition economies;
- Ø whether trade liberalization has been good for growth and human development in the transition economies;
- Ø whether liberalization improved income distribution;
- Ø whether the massive learning effects and the spreading effects of CEECs' foreign trade helped close the development gap with the EU over the last decade, or are we still prisoners of the traditional input-costs comparative advantages?¹

¹ Porter (1990) identifies three stages of competitive development: the *factor-driven economy* (based on input costs); the *investment-driven economy* (based on efficiency); and the *innovation-driven economy* (based on unique values).

Finally, this approach is targeted at proposing a deeper analysis of driving forces for convergence, which will lead us to design a new composite indicator of convergence, in order to limit the uncertainty of classical convergence approaches and growth projections for the CEEC: *the growth competitiveness convergence indicator*. We believe that both growth theory and past experience of previous enlargements offer us many lessons to reflect upon, but they cannot guide in any economically robust manner our assessment of the likely economic consequences of CEEC integration into the EU. There are many differences derived from the transition process from planned economies to a market-based system, involving these countries in undergoing difficult economic reforms independently of their efforts to join the EU. We also believe that the catching-up process is fundamentally determined by the growth competitiveness and business environment competitiveness as proxies that we use for the development rather than the alternative trade approach to convergence. There are some inherent tensions between the convergence potential of CEECs and the trade context. The higher the endogenous competitive pressures derived from the business environment, the higher the rate of the CEECs' GDP per capita convergence to the EU. Institutional quality, foreign direct investments, foreign trade and technology are all part of this, and moreover they are indispensable for the catching-up of the post-communist countries, so they are drivers of economic and social growth in the current stage of competitive development that involves struggling and fighting for efficiency upgrading.

The paper is organized as follows:

Ø Section 2 reviews the international literature on convergence methodologies and puts forward the main findings and limits with respect to driving forces for growth in the CEEC-10 (8 new EU members, plus Romania and Bulgaria); it also explains the basic theoretical arguments for linking the trade and development approaches on convergence and the role of specialization;

Ø Section 3 sets up the empirical findings of our analytical scheme, with a special focus on Romania's economic performance and convergence in a comparative perspective, not only with CEEC but with European laggards and other emerging countries as well (used for benchmarking);

Ø Section 4 explains how the growth competitiveness convergence indicator is built up and compares the results of the new convergence methodology with existing views; it also builds scenarios for CEEC catching-up, in estimating the years needed to reach the EU average level.

2. Literature overview

Current convergence approaches

The extensive international literature operates with real GDP per capita levels adjusted for purchasing power as a proxy for living standards of a nation in evaluating the speed and timing of CEEC convergence to the EU. Empirically, two different techniques have been employed in order to measure convergence: *β-convergence* (the result of higher rates of growth in poorer countries than in the rich countries) and *σ-convergence* (decrease in the degree of dispersion in income levels). Most empirical studies on growth and convergence in transition economies use a neoclassical growth-accounting framework (*unconditional* – i.e. in considering two countries with the same value of fundamental parameters, the country with a higher level of GDP per capita must have a lower productivity of capital and therefore grow at a lower rate than the country with a lower level of GDP per capita; or *conditional* – countries allowed to differ in such parameters can

He also highlights that improvements in competitiveness are not a simple linear process but where nations at different levels of development face different challenges and priorities.

still converge after controlling for these differences). Its weaknesses are addressed in alternative approaches, which have stressed the importance of *technological change and congruence*, and *social capability*, in explaining economic growth and the catching-up process (Abramovitz, 1993). The former constraint depends on the fact that any technology is defined by differences in the use of natural resources and other factors of production, by differing degrees of economies of scale, and by requirements of differing technological abilities (so that countries that are behind the technological frontier find it difficult to catch-up to the leader if they do not have the characteristics that conform with the prevailing technology). The latter refers to education, financial institutions, infrastructures, the political and social environment, and all elements that can favour or limit the ability of countries to exploit their growth potential.

To these key economic issues have been added other approaches for evaluating the major economic implications of EU enlargement on the catching-up of the accession economies:

- ∅ reform policies (shaped under the competitive forces of EU enlargement agreements and EU regulations (*acquis communautaire*) (Young and Wallace, 2000; Funck, 2002; Backe, 2002; Crespo-Cuaresma, 2003);

- ∅ the public sector (fiscal transfers to new members as a direct consequence of EU membership are included herein) (Breuss, 2001; Kopits and Szekely, 2002; Funck, 2002; Backe, 2002; Richter, 2003);

- ∅ labour markets and social policies (Barro, 1991; Stehrer et al., 1999; Sinn et al., 2001; Boeri et al., 2002; Ingham et al., 2002; Sinn and Ochel, 2003; Landesman and Stehrer, 2004);

- ∅ foreign direct investments (Buch, 1999; Resmini, 2000; Alessandrini, 2000; Altomonte and Resmini, 2001; Breuss, 2001; Hunya, 2002; Backe, 2002; Carkovic and Levine, 2002; Sinn, 2003; BERD, 2003; Landesmann and Stehrer, 2004);

- ∅ effects of schooling (Mankiw et al., 1992; Bassanini and Scarpeta, 2001; Landesmann, 2003);

- ∅ productivity and structural changes (Bernard and Jones, 1996; Stehrer et al., 1999; Midelfart-Knarvik et al., 2000; Lejour et al., 2001; Kopits and Szekely, 2002; Ingham and Ingham, 2002; Funck, 2002; Römisch, 2003; Landesmann, 2003; Lukas and Pöschl, 2003; Havlik, 2003);

- ∅ common currency area growth effects (Persson, 2001; Rose, 2000, 2001; Micco et al., 2003).

Main Convergence Estimation Methodologies used for measuring the economic gap between candidate countries and the EU average

	Indicators as proxy	Economic bases of the convergence methodology	Observations
Solow (1956)	<i>GDP/head</i>	Estimates of GDP/head that converge on the country <i>steady-state value</i> , based on three driving forces: technical progress and the accumulation of two factors of production: labour and capital	This is the standard neoclassical growth model with very strong and mechanistic assumptions that do not predict absolute convergence.
Mankiw et al. (1992)	<i>GDP/head at steady-state value</i>	<i>Unconditional convergence</i> : based on the hypothesis that countries are characterized by the same steady state if they have identical economic structures and differ only in their initial conditions. This is the hypothesis of absolute <i>temporal convergence</i> . <i>Conditional convergence</i> : based on the hypothesis of similar growth rates of output and capital if the countries have	This over-simplifies the economic growth reality, being heavily criticized on theoretical and methodological grounds, such as heterogeneity, endogeneity, and measurement problems. To sum up, there is not just one steady-state, to which all economies converge. Rather, there may be multiple, locally stable,

		the same technology and same population growth rates, but different propensities to save and different initial capital-labour ratios.	steady-state equilibria.
Barro and Sala-i-Martin (1992, 1995)	<i>GDP/head</i>	They define β -convergence as the negative correlation between the initial GDP/head level and annual growth rates, and σ -convergence as the spatial distribution of GDP/head.	This provides reliable ex-post evaluations for economies belonging to the same geographical area, but these methodologies do not offer solutions for economically robust projections.
Ben-David and Rahmand (1996) Pelkman (2002)	<i>GDP growth</i>	Trade induced-growth simulation: convergence occurs because of factor-price competition according to the Heckscher-Ohlin theory of international trade and because of trade-related convergence in technologies. Countries that trade extensively tend to converge more.	These are sectoral approaches based on strong or relaxed assumptions (static effects; dynamic effects). These models face similar problems to the Solow and Mankiw neoclassical models: too much focus on capital and labour, technology being exogenous; endogeneity is not addressed; the demand side is also ignored (helping to explain FDI, “imitation” etc.). Neither helps in explaining the convergence process in the modern world.
Tondl and Vuksic (2003)	<i>GDP/head</i>	They use a growth-accounting framework and focus especially on the role of economic geography. The main driving forces that may explain the different catching-up speed are identified as: FDI, geographical location near EU border, and higher education.	Regional growth clusters are identified on the basis of simple models of economic growth, using spatial econometric tools.
Herz and Vogel (2003)	<i>GDP/head and Gross-value added per capita and per employee</i>	They use a growth-accounting framework as well, and suggest that structural factors, e.g. the rate of labour participation, the share of agriculture and manufacturing in total employment, and the level of education, are relevant for regional growth performance in the first years of transition, but these explanatory variables weaken in later years.	Results from a cross-section of regions are compared with results from time-series analysis (two sub-periods: 1991-1996, 1996-2002) and with panel estimates. They don't provide strong variables to explain the variation in income or productivity growth in the period 1996-2002.
Le Gallo and Dall'erba (2003)	<i>GDP/head</i>	They built a general framework for testing simultaneously for temporal instability, spatial heterogeneity and spatial autocorrelation in β -convergence models.	They found temporal and spatial interdependence in the convergence process, but the problem of projections is still unsolved.
Wagner and Hlouskova (2004)	<i>GDP/head</i>	They proved that the neoclassical growth determinants are not relevant for growth convergence in the transition economies, and beside government consumption share and investment share in GDP, they introduced more explanatory variables: primary school	They addressed the problem of uncertainty in the growth projections, building several scenarios for the growth rate and convergence time distributions. The problem of linearity in the convergence approximation

		education and the average ratio of exports and imports to GDP. They indirectly approach the structural changes and the effects of upcoming EU membership.	remains unsolved (this leads in the long-run to richer CEECs than the EU).
Landesmann and Stehrer (2004)		They develop a multi-country and multi-sector Schumpeterian model of international specialization and catching-up, following up the impact of rent-seeking FDI, the speed of technology transfer, productivity growth and the migration flows.	They overcame some theoretical limitations of the traditional literature dealing with dynamic economic effects of increasing integration (e.g. specialization, demand-side catching-up patterns, FDI endogenization) but there are no empirical tests.
European Commission (regular reports on enlargement)	Convergence usually refers to <i>GDP/head</i> and <i>labour costs</i>	They have built a set of individual indicators, but they are not aggregated.	These do not quantify the structural convergence, but they enlarge on the key structural challenges.
Deutsche Bank (annual report, 2000 - 2004)	<i>Deutsche Bank Research Convergence Indicator</i>	<p>Four main criteria:</p> <ol style="list-style-type: none"> status of accession negotiations/political economy: <ul style="list-style-type: none"> Ø private sector/GDP (%); Ø legal system (EBRD); Ø governance (EBRD); Ø banking sector (EBRD); Ø trade and foreign exchange market liberalization (EBRD). structural convergence (<i>real economic convergence: economic, legal and institutional developments</i>): <ul style="list-style-type: none"> Ø GDP/head (euro and euro PPP); Ø GDP nominal (euro); Ø GDP growth (% p.a.); Ø investment/GDP (%); Ø productivity growth (%); Ø unemployment (%); Ø agriculture/GDP (%); Ø industry/GDP (%); External sector: <ul style="list-style-type: none"> Ø current account balance/GDP (%); Ø FDI / GDP (%); Ø trade integration, % of exports EMU convergence (<i>monetary and fiscal convergence</i>): <ul style="list-style-type: none"> Ø average consumer prices (% p.a.); Ø gross monthly wages (euro); Ø government expenditure/GDP (%); Ø fiscal balance/GDP (%); Ø general government debt/GDP (%); 	This represents the first attempt to assess structural convergence of the accession countries. The results reflect an oversimplification of the adjustments undertaken in the field of economic, legal, regulatory and other institutional aspects. Though it is highly informative it does not provide a clear highlighting of countries' economic strengths and weaknesses in terms of competitiveness, according to the Copenhagen accession criteria. Nor is the potential for prosperity and catching up derived from business sector quality and competitiveness.

The main findings are generally supported, as follows:

1. On the whole, the accession countries have been growing faster than most of the EU-15 countries, so that convergence has appeared and should continue to grow after enlargement in the context of full integration (Baldwin et al., 1997; Fischer et al., 1998; Breuss, 2001; Lejour et al., 2001; Fidrmuc et al., 2002; Tondl and Vuksic, 2003; Kaitila, 2004; Wagner and Hlouskova, 2004). Almost all CEE accession countries have recorded wider cyclical fluctuations than the EU, reflecting high investment ratios, so that a catching-up process of incomes is likely to be persistent (Süppel, 2003). This leads to the view of an EU-25 being more heterogeneous with respect to economic growth.

2. Significant differences appear in terms of reaping the gains from closer integration with the EU: GDP disparities are persistent despite integration through foreign trade, FDI, migration and the massive amount of pre-accession funds transferred to the poorer regions. This has also been valid at the EU regional level since the structural funds reform in 1989. A core-periphery pattern is therefore relevant to describe the spatial distribution of activities in the EU (Lopez-Bazo et al., 1999; Le Gallo and Ertur, 2003; Dall'erba, 2003) and at CEEC level as well (Herz and Vogel, 2003). Regional spillover effects were also detected (Rey and Montouri, 1999; Fingleton, 2001; Niebuhr, 2001; Kosfeld et al., 2002).

3. GDP per capita is higher in the more liberalized countries, in close-to-EU-border regions and those with high levels of education (Fidrmuc, 2000; Campos and Kinoshita, 2002; Tondl and Vuksic, 2003). So, investments, participation rates, technology transfer and innovation activity were found to be the main economic explanatory variables for the CEECs' per capita incomes and productivity growth gaps. We will come back later to this issue when we explain the determinants of inducing a positive spiral of growth.

Further changes in growth and welfare in the 8 CEECs will be triggered by their *de jure* integration into the EU, though these changes have already partly been taking place in the pre-accession process. Full EU membership will contribute to the improvement of economic growth through two basic mechanisms:

- Ø traditional trade effects of economic integration (trade creation and trade diversion), which depend partly on the ability of current member countries to react quickly to the changes in relative goods and factor prices that come with trade liberalization;
- Ø movements of factors of production and other dynamic effects (e.g. capital export/import, technology transfer, increased competition, economies of scale).

There appear to be greater or smaller differences in the evaluations of magnitude and speed of convergence in the last decade. This may be explained by differences in data availability, statistical data accuracy, or the methodology used in estimations associated with more or less mechanistic assumptions. Moreover, Wagner and Hlouskova (2004) pointed out in their growth projection that the heterogeneous levels of development in the CEEC-10 are essentially unrelated economically: they reflect the assumption of a systemic convergence towards the EU as being towards the "*statistical mean country*" of the sample being taken into consideration (EU-15).

Empirical evidence on the speed of convergence of the accession countries and the EU

	Convergence refers to:	Convergence speed	Observations
Barro and Sala-i-Martin (1995)	<i>GDP/head</i>	2%	Ex-post and ex-ante analysis regarding the average annual convergence speed in EU.
Breuss (2001)	<i>GDP growth over 10 years</i>	< 1%	Simulation on the basis of world macroeconomic model.
Doyle et al. (2001)	<i>GDP/head</i>	1-2%	Simulation using the growth accounting methodology.
European Commission (2001)			
Grabbe (2001)	<i>Trade-induced GDP growth</i>	0.2% of GDP	Simulation for the current EU members over the long run, by a one-time gain (on the assumption of a constant labour-output ratio)
Pelkman (2002)	<i>Trade-induced GDP growth</i>	1½% - 8% of GDP	Simulation for short to medium run, for CEEC as a group after enlargement.
Wagner and Hlouskova (2002)	<i>GDP/head</i>	3-4 decades for the catching-up	They estimate the EU historical convergence and apply it on the new-comers countries
Sinn and Ochel (2003)	<i>GDP/head</i>	1.1%	Period: 1963 – 2000, for EU.
European Commission (2003)	<i>GDP growth</i>	0.4 – 1.2%	Increase induced by the EU structural funds payments to CEECs.
Kaitila (2004)	<i>GDP/head</i>	2.6% 3.4%	Period: 1960 – 2001, for EU Period: 1995 – 2001, for CEEC-7
Wagner and Hlouskova (2004)	<i>GDP/head</i>	1.74% 3.05% - 3.52%	Period: 1990 - 2001, for EU-14 (except Luxembourg). These are individual mean growth rate projections for CEEC-10 based on scenarios and applying the EU historical convergence rate, including the effect of EU-enlargement related to structural funds payments.

Determinants of inducing a positive spiral of growth in the transition economies and their impact on convergence

The magic solution in understanding the growth mechanisms of catching-up economies has proved to be very difficult to find. Questions such as: *what are the causes of different growth performances in the CEECs?* have been addressed by many researchers. Some investigated the main growth determinants using large worldwide country sets (Sachs and Warner, 1995; Sala-i-Martin, 1997; Gallup et al., 1998; Barro and Sala-i-Martin, 1998; Rodrick, 2002; Doppelhofer, 2003; Blanke, Paua and Sala-i-Martin, 2004) or EU regional country sets (Fagerberg and Verspagen, 1996, Vanhoudt et al., 2000; Paci and Pigliaru, 2001; Badinger and Tondl, 2003). As regards the Eastern European countries the studies investigating multiple growth factors at the

country level can be divided into two main categories:

- a) those derived from the initial conditions, which particularly explain the factors of increased economic growth during the transition and recovery period;
- b) those related to the factors relevant for post-transition dynamic growth.

a) The analysis of the initial conditions in transition economies, derived from the nature of the communist institutional system, was and still is the aim of a huge international literature. The general common features were intensified by different systemic pressures at national levels in terms of the degree of extensive controls exerted by the communist state,² associated with an overgrown communist welfare state³ and with the provision of public goods.⁴ These differences may provide valuable explanations of the different development paths and economic performance. But they do not by themselves explain the different speeds of convergence attained relative to the EU.

Few people today disagree with this view, although this merely shifts the question to: *what are the central determinants for a success story?* Hernández-Cáta (1997), Fisher, Sahey and Vegh (1998), Piazzolo (1999), Falcetti, Raiser and Sanvey (2002) focused in their growth studies on *institutional reform* and *market liberalization* as major explanatory variables. Berg and Sahay (1999) consider that differences in *structural reforms* explain these differences and that the role of initial conditions in explaining cross-sectional variation in growth is surprisingly minor. Havrylyshyn (2000) and Barlow and Radulescu (2002) place the progress in achieving *macroeconomic stabilization* and implementing broad-based *economic reforms* as the main driving forces of growth. In addition, Fischer (2000) suggests that the more and the faster the reforms are, the better are the outcomes. Balcerowicz (2003) stresses again that the different performance of transition economies is due less to the initial conditions and more to the differences in the *quality of general policies* (horizontal: privatization, prudent regulation and supervision, protection of creditors' and minority shareholders' rights, restructuring of bad debts) and of *sectoral policies* (privatization, soft/hard budget constraints on enterprises).

What is worth mentioning is that the negative effects of unfavourable initial conditions decline over time (DeMelo et al., 1997; Berg et al., 1999) and should not be preserved as an excuse for inaction and for lagging behind. These effects can be compensated by modestly faster progress on reforms.

The main negative outcome of the initial conditions is in fact the lower *political will* and

² The *controls exerted by the communist state* are principally the following: private entrepreneurship was banned, which, together with the initial nationalizations, resulted in the monopoly of the state sector; state-owned enterprises were subject to central planning, which included command of output, rationing of inputs and foreign exchange, price controls and directed foreign trade; the range of financial assets available to enterprises and individuals was extremely limited, as a market-type financial system could not have coexisted with central planning; the setting up and functioning of non-economic organizations were also heavily controlled – that is, civil society was suppressed and political opposition was banned; foreign travel was restricted; media were subject to formal censorship, direct party controls and personnel policy – mass media were largely an instrument of communist state propaganda.

³ The *communist welfare state* included principally: relatively large transfers in kind (education, health); social protection delivered through state-owned enterprises; artificially low prices for foodstuffs; energy and housing rents; social safety nets, typical of some market economies, did not exist as the need for them was sharply limited through the curtailment of individuals' opportunities and risks.

⁴ The communist state was peculiar with respect to the provision of public goods. Defence expenditures were excessive and shaped by the imperial aspirations of the ruling elites. Law and order were kept at reasonable levels, however, at the cost of practices typical of a police state. The legal framework and the juridical system criminalized private economic activity and independent political activity, and were ill-suited to the market economy, rule of law and free society.

capacity for reform, which is obviously translated into lower economic growth and foreign competitiveness in terms of governance and business development. A comprehensive empirical model, built by Sachs and McArthur (2001), summarizes the set of institutions, policies and structures driving the growth process in three interwoven pillars: *macroeconomic environment*, *public institutions* and the *level of technological sophistication*. In the case of transition economies the *public institutions* and *organizational efficiency* play a more crucial role in the development process than they do in highly developed countries.

To sum up, all these explanations of economic growth are largely “*institutionalist*”, though exogenous to the models estimating the convergence process that were specified above. They themselves are in need of further explanation and endogenization.

b) A number of studies have addressed the central post-transition growth determinants, such as capital accumulation, productivity growth, FDI, labour force participation, educational attainment, technology transfer and innovation or geography location in the EU border area (Fidrmuc, 2000; Boeri, 2000; Altomonte and Resmini, 2001; Dobrinski, 2001; Campos and Kinoshita, 2002; Tondl and Vucsic, 2003; Herz and Vogel, 2003; Landesmann and Stehrer, 2004). The main findings of the empirical evidence have revealed the high importance of FDI, followed by geographical location and higher levels of education (as main drivers for further technology diffusion) that led to the stronger performance of some countries after 1995. A variable like FDI is not exclusively exogenous in explaining higher economic growth; it is partly endogenous. Its determinants, such as market size or wealth, cheap labour or highly-educated work force, etc., have to be considered. Increased capital accumulation was far less important than in the developed countries or the less advanced economies that joined the EU in the 1980s. This suggests that applying the speed of convergence of these countries as criteria for convergence among the new members is inappropriate. The analysis of the catching-up process must rely on the specificities of the transition economies, and moreover, it should be addressed in a different way for the two periods and for the two sets of countries: those from the first wave of integration and the second.

These views are in line with the findings of two recent papers (Herz and Vogel, 2003; Wagner and Hlouskova, 2004). The former accounts for regional economic growth convergence during transition by investigating the dynamics of regional disparities in gross value-added per capita and per employee. Comparing the results from the cross-section of regions for two sub-periods, 1991–1996 and 1996–2002, they concluded that a pronounced reduction in regional disparities took place, being largely attributable to the income convergence. This trend is relevant during the first years of transition, but thereafter, the regional pattern of disparities has remained stable. Their empirical findings reject unconditional convergence for the 3 CEECs analyzed here (Czech Republic, Hungary and Poland – accounting for 2/3 of CEEC GDP and more than 50% of the population), but they do find evidence for conditional convergence (i.e. poorer regions conditionally grow faster than richer ones). Their results further suggest that structural factors, e.g. the rate of labour participation, the share of agriculture and manufacturing in total employment, and the level of education, are relevant for the regional growth performance. The splitting of the sample into the two above-mentioned sub-periods suggested that conditional convergence is a phenomenon that characterized the first half of the 1990s, but not the second half. Therefore, the variables used to explain the variation in income or productivity growth substantially weaken in the period 1996–2002. They also find a strong influence of country characteristics. As a consequence, regional disparities *between* countries have diminished whereas, on average, they remained stable *within* countries (Herz and Vogel, 2003).

The “new growth” set of factors did not provide an adequate explanation of the growth patterns in the CEEC-10, but they became more and more important as the economy passed beyond the transition period. In 1991–1995, the negative correlation between initial real per capita GDP and subsequent growth (β -convergence) prevails. The correlation between investment share

and output growth is negative (though insignificant) and the correlation between government expenditures and output growth is positive. But β -convergence and both the above-mentioned correlations disappear when the Baltic states of Latvia, Lithuania and Estonia are excluded from CEEC-10. The following years, 1995–2001, show a quite similar picture, but it is associated with a positive correlation between investment share and output growth. Thus the transition behaviours are not consistent with respect to the long-run implications of the neoclassical growth models (Wagner and Hlouskova, 2004).

In Romania's case, and Bulgaria's as well, displaying these two sets of factors suggested that a growth convergence projection would have to weight them differently. For example, a negative correlation between FDI flows and changes in GDP is persists in Romania in 1995–2001 (Voinea, 2002a). Further systemic change and other transitional transformations should continue over the next 3 years, until 2007 when it is supposed that it will join the EU. Thereafter, the convergence trend will be shaped by the effects of EU accession and the gains that the national business environment is able to reap from integration into the common market. This "calibration approach", geared to the phasing of structural change, is a key question to be addressed.

Linking trade and development in the process of competing for economic growth

In macroeconomics, trade theory and growth theory have mostly developed as two separate disciplines. The primary aim of trade theory is to explain the direction and magnitude of trade flows between nations, while growth theory is trying to explain the rate of growth of the wealth of nations, and the magnitude of convergence or divergence of growth rates of GDP over time. When economists try to explain the growth performance of a firm, a crucial explanatory factor is the way in which the firm can compete in the markets for its products. Obviously, there is a direct relation between market (trade) performance and growth. In the modern world of increasing importance of international relations, however, the relevant markets for firms are no longer exclusively the domestic markets. Realizing that the growth performance of a country is determined by the performance of its firms, it becomes undoubtedly the case that the theories of international trade and international growth cannot be viewed as separate bodies.⁵

Since there is a relationship between trade and growth, there are a number of factors which are well known from trade theory that have entered the analysis of economic growth: competitiveness, the exchange rate, the terms of trade, the elasticity of demand with regard to income and price. These factors and their role in the growth process were discussed at length by Krugman, Obstfeld, de Grauw, Krueger, Bhagwati, Hoekman and many others, being transformed into the so-called *import-substitution industrialization strategy of development* (ISI) implemented by many countries in the 1950s–1970s; or the *export promotion strategy*, which later also went under the name of the *outward oriented strategy* (OES), gaining popularity firstly among the academics, and then quickly among policy-makers in the developing countries since the 1980s. Political economists such as Wade argue that there is no simple choice between ISI and OES. The most successful Asian developers have used both, at various times. In any case, many economists noticed that despite the centuries-old ideas of trade being the *engine of growth*, recent decades have still been characterized by protectionist theories and practice. Despite the globalization process, national or regional economies organize themselves in different ways, having diverse

⁵ One example of a theoretical framework that has tried to make this combination is the so-called "balance of payments constrained growth rate". First introduced by Thirlwall (1979) and later refined by, among others, Fagerberg (1988) and Dosi et al. (1990), it assumes that the long-run growth rate of a country is exactly that which is consistent with a balanced trade account. A more formal analysis of the balance of payments constraints on growth in a multi-sector dynamic evolutionary framework was given by Verspagen (1991).

expectations of their governments and market players. The struggle to impose the rules of the *free foreign trade* game in the context of the new global economy and especially in the EU integration process is drawn from the concept of “*fair trade*”. The behaviour of national markets in the global competition battle proved the usage of technical barriers to restrict unfair trade sometimes became protectionist trade instruments, detrimentally to the originally declared intentions. The domestic constraints imposed by regionalization and globalization led to its compensation through these trade instruments, sometimes overwhelming the competitive advantage of the others and, implicitly, the potential for economic growth and well-being.

Export-led growth or growth-led exports? The focus of debate nowadays has switched from how biased export-led growth strategy is for the causal relationship between exports and growth. What is clear without doubt is that “trade has been a friend of economic development and growth, not an enemy, as many policymakers and economists feared in the immediate postwar period” (Rodrick, 1995). But what is far less clear is whether a rise in exports was the most important determinant of growth or just one of its facilitators. The OECD examines in some detail this relationship between exports and growth, supporting the view that strategies pursued in East Asian countries were building up national internal competitiveness, which resulted in dynamic growth and then in an increased supply of exports. In these sense it is correct to talk about growth-led exports and not export-led growth. This interpretation is a result of recent developments in growth theories which are focused on the role of increasing returns to scale, technology strategies, knowledge absorption processes and investments in generating dynamic economic growth. This economic growth is then the source of rapid growth in the export of manufactures.

Trade policy as an input to transition, specialization and convergence. One of the common features of all transition programmes is the placement of trade liberalization among the fundamental ingredients of an early phase of a transition process. The key role of trade liberalization in potential domestic economic impact may be found in price reform and competition policy, which push domestic producers to achieve the highest potential efficiency. From an external perspective, trade liberalization is expected to upgrade the technological level of the national economy, hoping that it will bring about an increase in exports, therefore building up demand for domestically produced goods and a decrease of per capita income gaps. For the countries in transition one of the most important findings is that costs of protection do not automatically transfer into benefits from liberalization (Venables, 1999; Barry, 2001) and that these benefits are larger when:

- Ø there is a movement from high tariffs or other barriers to low ones;
- Ø in the presence of pro-competitive effects, scale efficiency and technology improve;
- Ø there are opportunities to import new technologies/knowledge, thereby fostering economic growth (import-led growth *à la* Romer).

The most important effects of trade liberalization can be expected in the following areas, without enlarging on them at this point: effects on consumers (*à la* Spence – Dixit – Stiglitz or *à la* Lancaster), effects on producers (*à la* Schumpeter or *à la* Dornbusch), effects on fiscal revenue (World Bank Development Report, 1996), effects on the labour market (Feenstra and Hanson, 2001; Ghose, 2003), effects on the balance of payments (OECD reports), and effects on countries’ international competitiveness through changes in the composition of technological activities (Meliciani, 2001; Landesmann and Stehrer, 2004). The latter aspect is crucially important in the specialization pattern of a catching-up country and is addressed differently in three leading theories of trade and growth.

In *traditional neoclassical growth theory*, neither the opening of trade nor different patterns of specialization can play a role in affecting countries’ rates of growth. This assumes a production function with constant returns to scale and decreasing marginal product for any single factor of production. As a consequence technical change is an exogenous process and there are no inter-country differences in production functions. So it is asserted that countries with a higher capital-

labour ratio must have a lower productivity of capital and lower growth rates compared with countries with lower capital-labour ratios. *Neoclassical trade theories*, in their simplest form, assume identical tastes and perfect competition along with identical production functions, to prove that relative specialization occurs in the relatively abundant factor endowments (the Heckscher-Ohlin theorem). At the macroeconomic level, the neoclassical theory of international trade stresses the role of adjustments in relative prices in restoring the balance-of-payments equilibrium. As Eastern Europe is capital-poor but labour-abundant, trade will induce a reduction of relative prices of labour-intensive goods along with real wages in the EU and labour to move out of these sectors to more capital-intensive ones.⁶ In the steady state, when output and capital grow at the same rate, the increase in per capita income is explained only by exogenous technological progress. In this framework trade liberalization is beneficial to all countries and leads to specialization according to comparative advantage and not to effects of economies of scale or learning opportunities. Thus no importance is given as to which goods to produce (the effect of constant returns to scale and exogenous technological progress).

The endogenization and/or appropriation of technical change (through imitation) may better assess the proper relationship between trade and growth (Meliciani, 2001). We may distinguish three different major theoretical approaches that provide useful frameworks for shedding light on the impact of specialization on growth and international competitiveness:

Ø *new growth and trade theory* (Arrow, Krugman, Helpman, Sala-i-Martin, Grossman, Romer, Young, Matsuyama, etc.): is a development of the neoclassical approach that overcomes some of its main drawbacks (long-term growth dependency on unexplained technological change and the forecast of convergence in growth and per capita incomes). The effects of trade on growth are explained through economies of scale and more efficient resource allocation. The theory introduces monopolistic competition, product differentiation and increasing returns as explanations when trade that is not based on comparative advantage occurs. This approach has the power to explain intra-industry trade, trade within rather similar instead of different economies, the two-way trade in goods of similar factor intensity, and the foreign direct investments. However it is not completely satisfactory for assessing the role of specialization and technical change and omits the role of demand in affecting growth.

Ø *post-keynesian models of growth* (Harrod, Domar, Kaldor, Hufbauer): emphasize the importance of aggregate demand for growth, by rejecting the assumption that supply creates its own demand (Say's Law). In other words, in a monetary economy, producing new goods may improve purchasing parity, but may not result in higher expenditures. In the static framework, investments are the source of demand increase that determines the level of output. The dynamic framework accounts also for the feedback effect of output on investment (the accelerator mechanism), so that investment becomes an endogenous variable. The role of trade in affecting the rate of growth has been emphasized in export-led accounts of growth (Beckerman, Lamfalussy, Balassa, Thirlwall). The higher the income elasticities for exports and lower those for imports, the higher the rates of growth that are consistent with balance-of-payments equilibrium (the main constraint on demand). The role of specialization patterns intervenes only in their influence on the income elasticities of exports and imports, and technological differences across countries do not play an explicit role in explaining the gaps in economic performance. The presence of increasing returns also explains why the convergence in per capita income and factor prices forecast by neoclassical theory does not apply in reality. In this framework, the proper division of international trade is not so much the traditional one between capital-intensive and labour-intensive trade, but

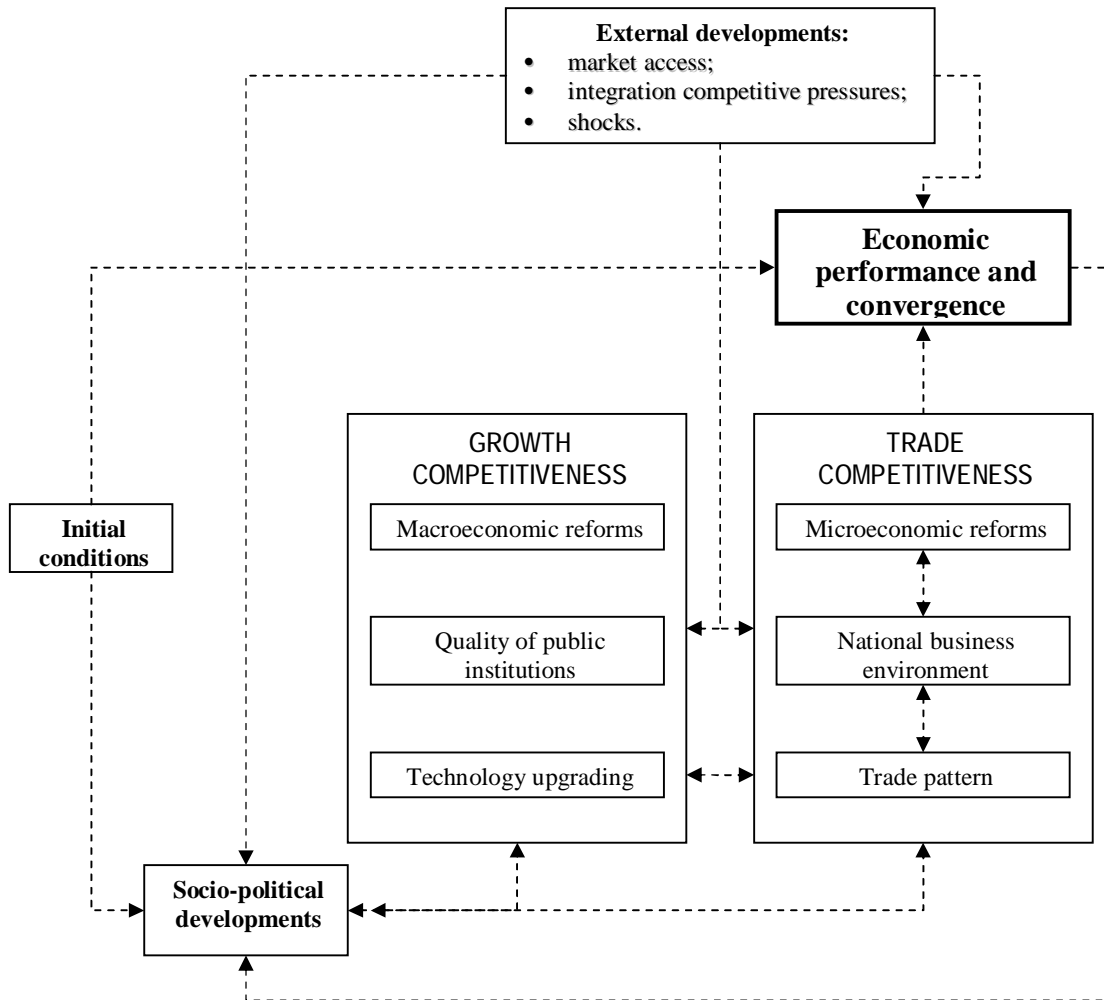
⁶ If these wage adjustments do not occur because of trade unions or social income replacement offered by the EU welfare state, unemployment could take the place of gains from trade.

between low-wage and technology-led trade. So a multi-sectoral approach, which takes into account the sector-specific elements of technical progress and demand, is a better approach to economic growth. Structural changes then play an important role in explaining the growth phenomenon.

Ø *Schumpeterian – evolutionary models* (Schumpeter, Nelson, Winter, Dosi, Arthur, Silverberg, Freeman, Perez, Fagerberg, Verspagen, Vernon): address technical change endogenously as the main factor driving economic growth, but which is unevenly distributed through time and across firms, industries and countries. Technical change is tacit, firm-specific and difficult to transfer. In this approach the distribution of countries' technological activities may affect national economic performance. The waves of development are linked to specific emerging industries with very high rates of growth and that exploit clusters of related innovations. The other industries are subject to the impulses generated by the most innovative ones, so they can expand production through inter-sectoral links. The main pluses relative to the traditional approaches derive from emphasizing the roles of: history and the irreversibility of economic environments; continuous change; strong uncertainty derived from technological progress that involves discovery and creation; diversity at the micro level; and the attempt to link macroeconomic phenomena to non-optimizing microeconomic behaviours, as fundamental elements of economic growth. At the same time it deals with creative destruction and rejects the concept of the production function in any simple way, and along with that the tools of equilibrium analysis, replacing the notion of equilibrium with a stable path of evolution, similar to the stability of system theory. In evolutionary models, even if the system is indeterminate and permanently out of equilibrium, order is generated by self organization, being the result of varying combinations among learning, selection mechanisms and institutional structures.

3. Romania's convergence to the EU in comparative perspective

Analytical scheme



Development approach to Romania's convergence: the start and current standing

Why is it still important to look once again at the development path undertaken by Romania in comparison with other countries? In the case of the CEEC-10 we cannot speak about a *convergence club*, which is a group of economies whose initial conditions are near enough to converge toward the same long-term equilibrium. Regional economies are often characterized by strong geographic patterns, such as the core-periphery pattern (Le Gallo and dal'Erba, 2003). The latter is representative of *spatial heterogeneity*. More generally, spatial heterogeneity means that macroeconomic behaviours are not stable over space. We should add here that firms' behaviours

are unstable as well, where they act differently according to their knowledge base and accumulated experience together with their entrepreneurial spirit.⁷ This leads to a *microeconomic heterogeneity* that induces higher or lower economic growth, according to the changes in the competitiveness of the national business environment. This is highly correlated with organizational and social change, being also dependent on the reaction of the institutional framework in which these changes take place.

The growth process of the transition economies started initially with a transformational recession, associated with drastic falls in output, high unemployment and often hyper-inflation (Kornai, 1994; Traistaru and Wolff, 2002; Wagner and Hlouskova, 2002; Campos and Coricelli, 2002). In this context, any growth convergence analysis must take into account two main driving forces:

- Ø the country's place in the picture of the complex transition process (usually involving the institutionalist approaches identified earlier under point (a));
- Ø the determinants of growth (usually those identified by the new neoclassical growth theory in the long-run, see point (b)).

Macroeconomic environment

The initial conditions and the following outcomes in terms of economic structures, economic performance, infrastructure and human development are presented synthetically, underlining the main gaps between Romania (red coloured), the EU (black coloured) and other candidate countries (blue coloured). We also use Asian or Latin American emerging economies, less advanced European economies or other CIS transition economies for benchmarking (green coloured).

In various respects the development paths of the ex-communist countries differed considerably from one another. In the case of Romania, the increased speed of industrialization in the 1960s and 1970s, associated with massive technology imports from the West, did not bring about the achievement of efficiency targets. In terms of the employment in industry as a percentage of total employment (Figure A.1.1) and value added in industry as a percentage of GDP, in 1989 (Figure A.1.2), the degree of industrialization in Romania was comparable with that of former Czechoslovakia and Bulgaria, but larger than in the other transition economies and even larger than in the other comparable emerging economies or in the euro zone. In the catching-up process of CEECs in terms of labour productivity in industry, Hungary outperformed all the other countries in 1992–2001 (Figure A.1.3). These two figures indicate a positive β -coefficient of productivity convergence, in accordance with the well-known Gerschenkron hypothesis of the “*advantage of backwardness*” at the industrial level (the technologically lagging country will experience higher rates of productivity growth in those industries which start off with a higher initial productivity gap, relative to the leader). Romania's performance is similar in relative terms to Estonia and the Czech Republic.

The extensive industrialization process was still associated with a large agricultural sector. Romania had in 1989 the largest agricultural sector in terms of share of employment (Figure A.1.4) and followed Lithuania in terms of value added in agriculture as a percentage of GDP (Fig. A.1.5). This proportionate size was comparable to that of China, but much larger relative to Chile or Mexico. These last two figures indicate that agricultural productivity (value added in agriculture/employment in agriculture) relative to overall productivity (total employment/GDP) was significantly higher in Romania (0.85) than in the other transition economies (Slovakia – 0.69; Bulgaria – 0.57; Poland – 0.52; Czech Republic – 0.50, except for the Baltic States: 1 for

⁷ This idea is derived from the dynamic evolutionary models.

Estonia or higher than 1 for Lithuania or Latvia) and even than in the euro zone (0.5) or the other emerging countries used here for benchmarking (Korea – 0.5; Chile – 0.47; China – 0.43; Mexico – 0.34; Thailand – 0.22).

The natural outcome of the industrialization policies of communism in the 1960s and 1970s was an ever-growing foreign debt.⁸ After the second worldwide oil shock, the Romanian regime was the sole one among the communist countries that undertook extensive efforts to repay its entire foreign debt, at the cost of lagging behind in the infant economic liberalization process. So the rule of the 1980s was an annual foreign trade surplus ranging between 1 and 3 billion USD, leading to a very low foreign debt as a percentage of GDP in the pre-transition years in Romania (Figure A.1.6) and the low scale of Romania's trade dependence on COMECON markets (Figure A.1.7).

The main effects consisted of a severe compression of domestic absorption, technology obsolescence, virtually no important investment in modern infrastructures, and a real isolation from the development of the outside world (Figure A.1.8). These explain the lower general government expenditure relative to GDP (Figure A.1.9), particularly the public expenditure on social security and welfare relative to GDP (Figure A.1.10), than that recorded in 1989 in Slovakia, Czech Republic, Bulgaria, Hungary and Poland. Public expenditure on social security and welfare comprises: compensation for loss of income to the sick and temporarily disabled; payments to the elderly, the permanently disabled, and the unemployed; family, maternity, and child allowances; and the cost of welfare services, such as care of the aged, the disabled, and children. This category approximates social transfers but excluding transfers in education and health. Nevertheless, government expenditure shares are tricky indicators. Some neoclassical economists would see them as "crowding out" private expenditures, and therefore assume negative effects of a high level of these indicators. A similar ambiguity is suggested by the substantial variation between the models of fiscal transition in the following decade by country, ranging from the Irish model: Hungary, Estonia and Latvia, by increasing the share of government expenditure in GDP, to the collapse-of-the-state model: Slovakia, Czech Republic, Bulgaria, Romania and Lithuania, by decreasing this share. In any case, in 2001, the share of public expenditure on social security and welfare in GDP in Romania was similar to that in Hungary and Estonia, and much smaller than that recorded in Poland, Czech Republic, Bulgaria or Latvia.

In the survey of the main economic structural developments we should also add that the transition economies differed a lot with respect to macroeconomic imbalances. Romania registered the lowest annual inflation rate in 1989 (Figure A.2.1), which was associated with the highest repressed inflation rate in 1987–1990, estimated as the difference between the increase in real wages and real GDP from 1987 to 1990 (Figure A.2.2). In 2002, Romania was a big laggard in combating inflation: an inflation rate four times higher than in Bulgaria or the other accession countries, ranking it in first place for the Maastricht convergence criteria gaps (Figure A.2.3). During the gradual price liberalization, Romanian monetary policy relied constantly on the exchange rate as an inflation anchor until 1997. Afterwards, for only short periods of time (seasonal or conjunctural shocks, e.g. imports of energy resources), did the necessity of controlling the trade balance and current account deficit permit a relaxation of the exchange rate policy used as a nominal anchor.

The financial sector in the transition economies developed at a varying pace. On the one hand, the black market premium as a percentage of the official exchange rate was much higher in Romania than in the CEEC-8, reflecting the high level of overvaluation of the exchange rate (Figure A.2.4). In the meantime, the real appreciation of the annual exchange rate during 1991–2002 was near to 5-6% (Figure A.2.5), similar to that registered in Poland, and higher than in

⁸ This is not the case in Lithuania, Estonia and Latvia, which had almost zero foreign debt relative to GDP, explained by their less sustained industrialization efforts.

Hungary (2.5 – 4%) or Slovenia (1.5 – 2%) in the same period. An estimated average of 1.5% undervaluation of the effective real exchange rate from its equilibrium level (1992–2003) should have improved external competitiveness, as it stimulates the price competitiveness of exports and diminishes that of imports.⁹ This is the case for the last years of transition, but before 1999 the imprudent salary policy associated with low labour productivity induced a worsening of external competitiveness. After 1999, despite the appreciation of the real exchange rate, the external competitiveness improved as the increase of productivity was higher relative to earnings. As a consequence, the improvement of competitiveness was predominant in the labour-intensive industries.

On the other hand, in the majority of these countries the private sector is heavily financed by domestic credits, the financial sector being bank-dominated.¹⁰ A stock market capitalization of 2.9% and the low 7.8% ratio of domestic credit to the private sector in GDP meant Romania was lagging far behind in the CEEC-10, in 2001 (Figure A.2.6). The performance of the financial sector is highly correlated with the enterprise sector. The above-mentioned Romanian performance therefore expresses, on the one hand, hard budget constraints on enterprises, a slower process of privatization and restructuring of bad debt,¹¹ and on the other hand a low share of foreign investments in a capital-poor economy.

In the 13 years following the collapse of communism, CEECs experienced enormously diverse outcomes in terms of FDI attractiveness and economic growth. Romania was a constant laggard regarding cumulative per capita FDI inflows in 1989–2002 relative to the CEEC-10, including the emerging countries as well (Figure A.3.1); despite the fact that neoclassical models would predict FDI moving to capital-poor countries like Romania, the opposite occurred. Romania's capacity of attracting FDI per capita is more than 8 times lower than for the Czech Republic, and 2 times lower than for Poland – the least FDI competitive country among the new EU members. Romania still ranked in 5th place in the CEEC-10 in terms of cumulative FDI inflows in the same period, being more than 4 times lower than Poland (Figure A.3.2). This aspect will be addressed later in more detail, when discussing the national business environment characteristics.

The average real growth rates over the same period were positive, with the exception of Latvia, Lithuania, Bulgaria, Romania and Estonia. This is equivalent to saying that the initial output losses in these 5 countries were so large that, despite their sound recent growth performance, they have not reached recorded 1989 income levels (Figure A.4.1).¹² Romania's

⁹ In order to achieve the ERM II criteria (+/-15% from the central exchange rate estimated by ECB) as a pre-accession condition for EMU integration, keeping the undervalued exchange rate is not a consistent policy, as achieving its real appreciation equilibrium level in these conditions would imply an increase in the inflation rate, associated with the risk of not meeting the Maastricht criteria. So an overvaluation of the exchange rate is predicted for the future, as a condition for catching-up with the EU. A real appreciation of the ROL/EURO rate favourable to external competitiveness is not possible through nominal factors (NBR interventions), but should be a consequence of real economy improvements in terms of efficiency and productivity.

¹⁰ For a more detailed analysis see De Melo et al. (1997); Caviglia, Krause and Thimann (2002); Ickes, von Hagen and Traistaru (2002); or the European Commission's annual country reports.

¹¹ To take just one example: in 1998 the Romanian banking sector was still dominated by five large state-owned banks, accounting for about three quarters of total banking sector assets. These banks extended credit to loss-making state enterprises and thus accumulated large amounts of bad loans. Though the regulatory framework for bank supervision was improved with the adoption of three new laws in 1998, political interference constrained effective supervision. A decision by the central bank (NBR) to revoke two bank licences was overruled by the courts in December 1997. The NBR also took on its books five-year bonds worth about USD 1 billion, issued by the Ministry of Finance to cover bad debts of the two largest state-owned banks. This indicated the weakness of central bank independence and the use of inflationary bail-out operations.

¹² Here it is important to underline the problem of data unreliability as regards the 1989 GDP level and growth.

average growth rate of real GDP per capita in 1992–2001 was 0.3%,¹³ leading to a relative GDP per capita to the euro zone of almost 30% in 2001, much lower than the CEEC-10 average. According to the optimistic scenario estimates of Wagner and Hlouskova (2004), Romania needs 94 years to reach the EU-24 GDP per capita level (Luxembourg excluded). Below But the year 2000 was the first for registering an annual positive real GDP increase in Romania (2.1%), and this increased even more in the following years (5.7% in 2001; 4.9% in 2002 and 4.7% in 2003, according to WIIW statistics), which led to an annual average increase in GDP/head of 3.35% in 2000–2003.

The average real per capita GDP of the CEEC-10 compared to the EU rose from about 35% in 1992 to almost 40% in 2001 (Figure A.4.2). At the same time the share of total real GDP declined from 15% to about 13%. This is explained by the different annual rates of population growth: -0.15% for the CEEC-10 in comparison with +0.33% for the EU.

These gaps translate into human capital development indicators. Romania had the highest infant mortality rate in 1990–2001 (Figure A.5.1), the lowest life expectancy at birth (Figure A.5.2) and living standards (Figure A.5.3). As regards the income distribution, Romania's Gini coefficient of GDP per capita in 1996–98 relative to 1987–90 increased more than in the Czech Republic, Hungary, Latvia and Poland, but less than in Lithuania, Estonia and Bulgaria (Figure A.5.3).

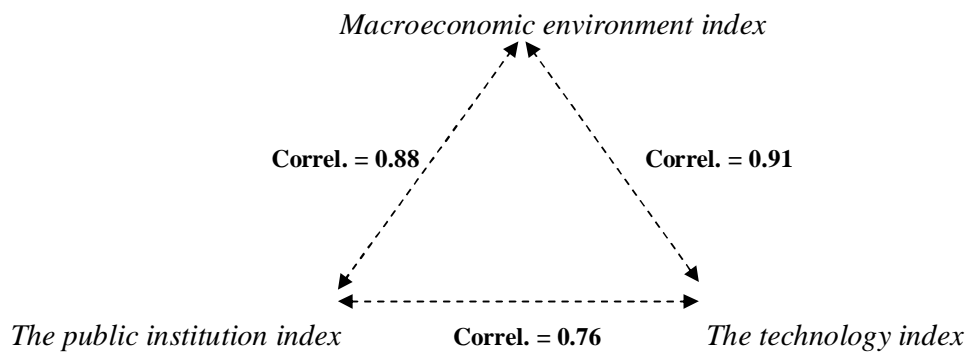
In sum, a quantification of the soundness of the macroeconomic environment as a determinant factor of GDP per capita growth was made by Blanke, Paua and Sala-i-Martin (2004), on the basis of the first model developed by Sachs and McArthur (2001). According to their approach, the *macroeconomic environment index* in 2003 (ranging from 1 – unfavourable to 7 – favourable) is a weighted average of three subindexes: the *macroeconomic stability subindex* (weighted at 1/2), the *country credit rating* in March 2003, and *government waste*¹⁴ in 2003 (each weighted at 1/4), built on the basis of hard data (government surplus/deficits, national saving rates, inflation, real exchange rates relative to USD, lending-borrowing interest rate spread in 2002) and survey questions. Despite the macroeconomic environment improvements after 2001, Romania is lagging far behind the other accession countries (Figure A.7.1), at 1.07 percentage points below the CEEC-10 average in 2003 (Figure A.7.2).

Figure A.7.1 also brings out a crucially important notion, in the existence of a correlation at country level between the macroeconomic environment index, the public institution index and the technology index, which together suggest complex patterns of interaction. In the case of Romania, the public institutions quality proves to be largest lagging-behind force in terms of growth competitiveness. The gap between Romania and the CEEC-10 average is -1.34, greater than the gaps in the macroeconomic stability index (-1.07) and in the technology sophistication index (-0.56).

¹³ In 1990–2001 the EU per capita growth rate was 1.74%.

¹⁴ Government waste is estimated on the basis of survey questions, taking into consideration three variables: extent of distortive government subsidies, diversion of public funds, and public trust in the financial honesty of politicians. For further discussion see Blanke et al. (2004)

Correlations between the three pillars of growth competitiveness in the CEEC-10



Socio-political and public institutional development

A first assessment of the interaction between economic reforms and politics should consider the ability of the political system to overcome the macroeconomic cost of reform during transition. We saw that, the closer to a market system, the more that beneficial effects on growth can be expected. However, in the literature it is found that current reform affects growth negatively, while lagged reform affects growth positively and eventually starts to dominate. In the transition context, the content of reform was more or less agreed upon, but the speed (and sequencing) of reform was heavily debated, focusing on the choice of the appropriate strategy: big bang or gradualism. From a theoretical point of view, the importance of reform reversals lies in the existence of reversal costs. This issue was addressed by Merlevede (2003), who analyses the incidence of reform reversal costs that are crucial for gradualist strategies to dominate big-bang strategies in the presence of aggregate uncertainty (in terms of the distribution of costs and gains). A reform reversal is defined as a downgrading in the level of an average reform indicator. He explicitly introduces a reversal parameter into a simultaneous equation system with growth and the level of reform as dependent variables, and concludes that a reversal generates an immediate negative contribution to real output growth. Taking into account the level of reform a country achieved, a reversal is found to be more costly at higher levels of the reform indicator. For a sample of 16 highly studied reforming countries (Romania and other 2 CEE countries included), Tommasi and Velasco (1997) report election outcomes and their impact upon the reform process. In only one out of the sixteen countries were reforms reversed by the new government, where in a small number of countries a change in political circumstances led to a slowdown in reform, and in several countries reforms were continued even after the opposition to the initial reforming government came to power.

The political systems in transition economies have been grouped into four main categories, according to the ratings based on average scores for political rights and civil liberties ranging from 1 (free) to 7 (not free), by Freedom House from 1990 to 1999. The thresholds for determining the country groups are:

- competitive democracies: political rights ≤ 2.0 and civil liberties ≤ 2.5 ;
- concentrated political regimes: political rights or civil liberties > 2.5 ;
- war-torn regimes: > 5 political rights or civil liberties > 2.5 ;
- non-competitive political regimes: political rights or civil liberties > 5 .

Romania is evaluated as having a concentrated political regime, higher than in Bulgaria and 1.6 times higher than the CEEC-8 average (Figure A.6.1).

A second assessment should address governments as having a major role in building

efficient public institutions that businesses have to deal with. The property rights and contracts enforcement guaranteed by a legal and judicial system, by a strong rule of law, are crucial for creating the wealth potential derived from a free market economy.¹⁵ Corruption is also a major source of economic growth and development distortion. In the quantification of the soundness of public institutions in 2003 undertaken by Blanke et al. (2004), the *public institutions index* (ranging from 1 – weak or non-existent to 7 – strong) is a simple average of two subindexes: the contracts and law subindex and the corruption subindex, aggregated on the basis of survey questions. Democratic institutions have improved in the past seven years, except for Bulgaria and Romania, but remained weak compared with the advanced economies. Despite the improvements in political stability after 2001, Romania is lagging far behind the other accession countries (Figure A.7.1), at 1.34 percentage points below the CEEC-10 average in 2003 (Figure A.7.2). The high correlation between the level of economic development measured in terms of GDP per capita and institutional quality underlines the huge importance of developing better institutions of governance in the laggard countries.

Public institutional maturity itself depends also on the expectation that membership can be attained, so that for the following 3 years we estimate a much higher speed of institutional and economic improvements in Bulgaria and Romania from the perspective of the optimistic 2007 date of joining the EU.

Technology upgrading

The main lesson of neoclassical growth theory is that an economy cannot grow in the long run unless technological progress occurs (Solow, 1956). This may be translated into much cheaper products and/or dramatically improved quality, which will lead to higher market shares and economic growth. In the context of more efficient institutions and more stable macroeconomic environments, the importance and effects of technology improvements on economic growth are increasing drastically (Blanke et al., 2004). Related to this comes the next important lesson of the more open and integrated world, which consists in the fact that improvements in a nation's competitiveness are not a linear process, but one where countries at different levels of development face different challenges and priorities (in *Schumpeterian – evolutionary models*).

These underlying features of technology progress explain Romania's lagging behind in the transition period, and that of Bulgaria as well, as they are still struggling with a low quality of public institutions and an unsound stable macroeconomic context relative to the other CEECs. Instead, technology upgrading seems to be and should be the main driving force in the catching-up process.

The capacity of innovation in the Romanian investment-driven stage of the economy's development is rather small, being concentrated on manufacturing and outsourced service exports (financial crises and external sector-specific demand shocks are evident in this stage). The main mechanisms of technology diffusion remain: the higher inflow of FDI, a more complex structure of foreign trade, and the imitation or adoption of knowledge previously developed in the technologically leading economies. Improvements in the information and communication technology infrastructure, educational and research capabilities should accelerate further the technology transfer process.

A method for measuring the technological sophistication of an economy was designed by Blanke et al. (2004), called the technology index, which represents a weighted average of three subindexes: an innovation subindex (weighted at 1/2 for the core-innovator economies and 1/3 for

¹⁵ Details on the importance of institutions for long-run economic growth may be found in Rodrick (2002), Acemoglu, Johnson and Robinson (2002), Kaufmann (2002), or the World Economic Outlook 2003 (IMF).

the non-core innovators), an information and communication technology subindex and a technology transfer subindex (each weighted at 1/4 for the core-innovator economies and 1/3 for the non-core innovators).¹⁶ Romania's technology transfer index is rather close to the CEEC-10 average, but is lagging behind in terms of the innovation and information and communication technology endowments, which leads to an overall 0.59 percentage points gap in technology sophistication behind the CEEC average, in 2003.

Trade approach to CEEC convergence

The analysis of the revealed economic developments and prospects for future growth depends to a large extent on trade, investment (e.g. Tondl and Vuksic, 2003), institutional change (e.g. Crespo-Cuaresma, 2002) and to a lesser extent migration (Sinn and Ocheal, 2003). In terms of trade, extensive economic integration between the current and new member states has already occurred as part of the pre-accession process (Ben-David and Rahmand, 1996; Brenton and Gros, 1997; Forslid et al., 1999; Venables, 1999, 2001; Breuss, 2001; Grabbe, 2001; Lejour et al., 2001; Manzocchi and Ottaviano, 2001; Brenton and Manzocchi, 2002; Pelkman, 2002; Fidrmuc et al., 2002).

The growth of the economy and foreign trade in the transition economies was higher than in the EU (intra-trade included) in 1995–2002 (Figure B.1.1). An important role was played by the increase of FDI inflow into the transition economies, associated with a remarkable decrease in that going to Latin America (Figure B.1.2); but the FDI distribution among the CEEC-10 was disproportionate relative to the countries' potentials. Therefore the CEEC trade pattern is heterogeneous, in terms of average annual export growth rates, GDP per capita, the stock of FDI per capita, or the simple average MFN tariff (Figure B.1.3). It is noticeable that the highest simple average MFN tariff in Romania, which is associated with the lowest stock of FDI per capita and GDP per capita (except for Bulgaria), is correlated with relatively similar annual average export growth rates as for Poland, Czech Republic and Slovak Republic, in 1995–2002.

Significant structural changes in exports took place between 1995 and 2002. The share of manufactures in total merchandise exports increased in all CEECs, with higher levels being registered in the countries that succeeded in attracting more FDI: Hungary (+19.8 percentage points), Poland (+10.9 percentage points), Czech Republic (+6.8 percentage points), Bulgaria (+5 percentage points), and Romania (+3.7 percentage points) (Figures B.1.4 and B.1.5). The share of agricultural products in total merchandise exports decreased in all the accession countries to a greater extent than at the world or EU level: Hungary (-15.6 percentage points), Bulgaria (-10.3 percentage points), Poland and Czech Republic (each -4.4 percentage points), and Romania (-3.5 percentage points).

Romania's trade performance is relatively weak despite the high rates of export and import increase in 1995–2002. Average Romanian trade per capita in 2000–2002 represented less than one third from the Czech Republic and Hungary levels, approximately one half of the Slovakia level, being almost equal to Poland, and higher than in Bulgaria (Table B.1.1.).

Analyzed according to three main product groups, namely clothing, textiles and automotive products, we observe that Romania has by far the highest share of clothing products in total merchandise exports (an increase of 17.1 percentage points in 2002 relative to 1990, equivalent to an increase of almost 10 times in the same period). At the same time, the share of

¹⁶ For a detailed discussion of the aggregation methodologies see Blanke, Paua and Sala-i-Martin (2004).

clothing products increased by only 0.1 percentage points at the world level (equivalent to an increase of 2 times in 2002 over 1990), and in EU exports decreased by 0.6 percentage points. The share of textiles in total merchandise exports decreased at the world level, in the CEECs and the EU as well. Except for Poland that preserved its share at a constant level, Romania decreased it to the least extent of all the accession countries in 2002 relative to 1995. Romania is doing very well in clothing exports, and to a lesser extent in textiles, where the doubling of exports took place on a background of stagnant world trade in 1995 – 2002. This specialization pattern is explained by the high ratio of outward processing trade (*lohn* production) in the clothing and textile sector. Romania is however doing badly in the automotive sector, where world trade also increased 2 times in 2002 relative to 1990, and with 30% relative to 1995; Romania has the lowest share and the slowest increase of automotive products in total merchandise exports. The Slovak Republic (+15.5 percentage points) and Hungary (+12.3 percentage points) are the best performers, in terms of both shares and share increases between 1995 and 2002. Czech Republic and Poland come next with increases of 9.6 and 8.3 percentage points respectively in the same period (Table B.1.2).

Since trade in goods with the EU was largely liberalized in the course of the 1990s, EU membership means moving into a customs union from a pre-existing free-trade area. It should therefore lead to only a small immediate impact on trade in goods with the 8 new EU members, and further gains will come only in the medium and long run, as the result of increased investment and further specialization of production (Landesmann and Stehrer, 2002). Nevertheless there remain areas where trade has yet to be fully liberalized, such as the automobile sector, and there is limited trade in services, including financial services. Trade in agriculture is also not fully liberalized, although agro-food trade increased substantially in the pre-accession period.¹⁷ The increase of total Romanian foreign trade in the last 14 years was boosted by the main free trade agreements concluded, with imports constantly surpassing exports (the highest trade deficit was in 2003, after the 2002 elimination of tariff barriers on trade in industrial products with the EU, EFTA and CEFTA, see Figure B.1.6.).

The trade asymmetries between Romania and the EU, in terms of simple average MFN tariffs, are still relevant in 2002 (three times higher as an overall average, see Figure B.1.6).¹⁸ Experience in Romania and elsewhere suggests that highly protected domestic markets not only reduce the incentive to export, but also penalise the economy by allowing inefficient domestic producers to extract policy-induced rents from domestic consumers. While there is a plausible theoretical case for infant industry support of activities with strong learning effects and positive externalities, experience suggests that if such a policy is to be pursued it should be time-bound and performance linked. Theory also suggests that tariff protection is not the most economically efficient means of providing such support, although in practice it has been by far the most common.

Nevertheless, the trade openness/intensity – an estimator for trade integration of goods (average of imports and exports of the goods items of the balance of payments divided by GDP) – ranks Romania in 9th place in the CEEC-10. Slovakia is an out-performer in becoming more integrated within the international economy through trade, and Poland is the least integrated (Figure B.1.8). Hungary instead had the highest speed of trade integration growth in 1995–2002, associated with having one of the highest cumulative FDI stock and FDI stock per capita in the

¹⁷ Analysts remark that enlargement may increase the amount that the new members, particularly in Central and Eastern Europe, trade *with each other*. Estimates of the impact of enlargement for the present EU tend to be limited, given its much larger economic size.

¹⁸ According to a recent estimate (*Evaluarea gradului de concordanta a legislatiei romanesti cu acquis-ul comunitar, pe capitole de negociere*, PAIS II - Impact Pre-Accession Studies, coordinated by Augustin Fuerea, 2004) of the degree of transposition of the *acquis communautaire* related to chapter 25 of the negotiation: *Customs Union*, Romania had: a degree of legislation transposition of 84.9%; a degree of legislation compatibility of 51.0%; and a degree of regulation takeover of 58.5% in 2002.

same period. The share of MNCs in exports has become extremely large in Hungary, approximately 90%, followed by 60% in the Czech Republic and in Poland, and 30% in Slovakia. The GDP per capita convergence and FDI intensity (FDI inflows and outflows relative to GDP) show a positive correlation in 1991–2002 in the CEEC average, being higher in Poland and Lithuania, but lower in Slovakia, Latvia and Estonia.¹⁹ In Hungary, Czech Republic and Romania the correlation is negative.

The high FDI inflows in the transition period led to the exhaustion of the Hungarian economy's absorption capacity and, implicitly, to less FDI flows in the last few years; so that the FDI intensity²⁰ was the lowest in the CEEC-10 in 2002, but it is associated with relatively high trade openness (Figure B.1.9). Romania lags behind in the 2002 picture of integration into the international economy, in both trade and FDI intensity. Slovakia is an outperformer in both terms. A positive correlation (0.56) between trade and FDI intensity is maintained in 2002 for the CEEC-10. But this overall picture is highly dependent on the year taken into consideration. The positive correlation increases for the CEEC-10 to 0.72 if we take into account FDI stock per capita in 1989–2002 and trade openness in 2002.

On the contrary, in the case of Romania a very strong negative correlation (-0.90) between FDI and trade intensity in 1997–2002 is explained by the relatively constant level of FDI absorption, a high GDP rate of growth and even a higher trade growth; except for 1997–1999, when the record of FDI flows took place in a period of great GDP decline,²¹ which again explains the high negative correlation (Table B.1.10). These lead to the view that trade was a much more important driving force for convergence in Romania than foreign investments in the last 7 years, contrary to the empirical findings for the CEEC average mentioned earlier.

The high Romanian economic growth rates in the last 3 years were largely driven by domestic demand, in contrast to the neoclassical approach to economic growth (the lack of any role of demand in affecting the rate of growth, that is still present in the new growth theory), and to the economic growth pattern elsewhere in the CEEC. This raises the questions of the role of demand for the composition of national activities and the process of structural change in affecting Romania's performance, on the one hand, and of the sustainability of economic growth in the long run, on the other hand. Even if the new growth and trade models underestimate the role played by demand, they recognize the crucial role played by technical change and its endogeneity. But the impact of technological specialization on Romania's international competitiveness and economic growth will come up later, after first understanding the main challenges for the national business environment.

Microeconomic reform

While macro reforms end usually with problems in the short and medium run through raising interest rates and prices while cutting public expenditures, micro reforms are able to produce tangible and visible benefits for citizens,²² may ease inefficiencies, increase technology

¹⁹ A positive correlation between GDP/head convergence with the EU6 and FDI inflows in 1990–2001 was revealed in Ireland, Spain and Portugal, but it was negative in Greece (Kaitila, 2004).

²⁰ *FDI intensity* is the average of inward and outward Foreign Direct Investment flows divided by GDP. Direct investments involve both the initial transactions between the two entities and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated.

²¹ A 15% GDP loss on aggregate in 1997–1999, when a stock of 4 bn USD of FDI was accumulated. For further details on the FDI pattern in Romania see Voinea (2002a).

²² Breaking up local cartels and monopolies, for example, lowers the cost of food, housing, electricity, telephone services and other costs of living.

specialization, improve product quality and end anticompetitive practices (Porter, 2004). But no reforms, macro or micro, come without pain. In this context the political will and public support to make real economic changes are intercorrelated (see the earlier arguments related to socio-political and institutional systems).

The private sector has become a crucial actor in improving competitiveness and in setting economic policy. The effects of trade agreements and other market opening measures, a major focus in today's international economic policymaking, depend on microeconomic policies. The benefits of these market openings are highly correlated with the microeconomic progress.

In order to assess how deep were the microeconomic reforms and the effects on the adjustments of the Romanian business environment to the trade liberalization agreements, we propose the following methodology:

$$\text{LEXPORT} = C(1)*\text{LEXPORT}(-1) + C(2)*\text{LIMPORT} + C(3)*\text{LCURS}_(-1) + \\ + C(4)*\text{DUMMY1993} + C(5)*\text{DUMMY1995} + C(6)*\text{DUMMY1998} + \\ C(7)*\text{DUMMY2002} + C(8)$$

§ we identify the role and impact of the relevant determinant factors of export dynamics: exchange rate and imports (we do not include here GDP, as it is a function of microeconomic reforms as well), by introducing in our regression equation with exports as the dependent variable the following changes in logarithmic monthly time series (as the annual time series are too short), according to the statistical data at our disposal for the period 1991–2003:²³

Ø exports FOB in million USD, current prices (LEXPORT);

Ø ROL/USD nominal exchange rate (LROL_USD(-1)) – we consider that monthly exchange rate changes have a relevant influence on export dynamics in the next month;

Ø imports CIF in million USD, current prices (LIMPORT);

§ we identify the role and incidence of the most important Romanian liberalization agreements so that we may depict the component of the export dynamics which is not explained by the decrease or elimination of trade barriers, nor by the relevant macroeconomic factors. Estimating the incidence on the growth of Romanian foreign trade of the most important steps undertaken in the trade liberalization process, by introducing dummy variables in the above regression equation for the advent of the most relevant liberalization actions undertaken in Romania (also the end of trade barrier elimination on industrial products with the EU) will help us to proxy the degree to which the national business environment capacity can adjust to the new export opportunities. A significant part of this derives from the microeconomic reforms that facilitate the efforts of the private business sector in gaining further market shares. The most important trade liberalizations steps are:

Ø 1993, May – coming into force of the EU and EFTA Interim Association Agreement;

Ø 1995, February - coming into force of the EU Association Agreement; 1995 was also the year of Romania's WTO membership;

Ø 1998, July – coming into force of CEFTA membership;

Ø 2002, January – end of the elimination of trade barriers for industrial products with the EU, EFTA and CEFTA (except sensitive products).

Dummy variables take the value of 0 before the coming into force of the above-mentioned trade liberalization steps and 1 afterwards, as we take into consideration the long-run incidence on these liberalization stages. But we also take into account that the Romanian

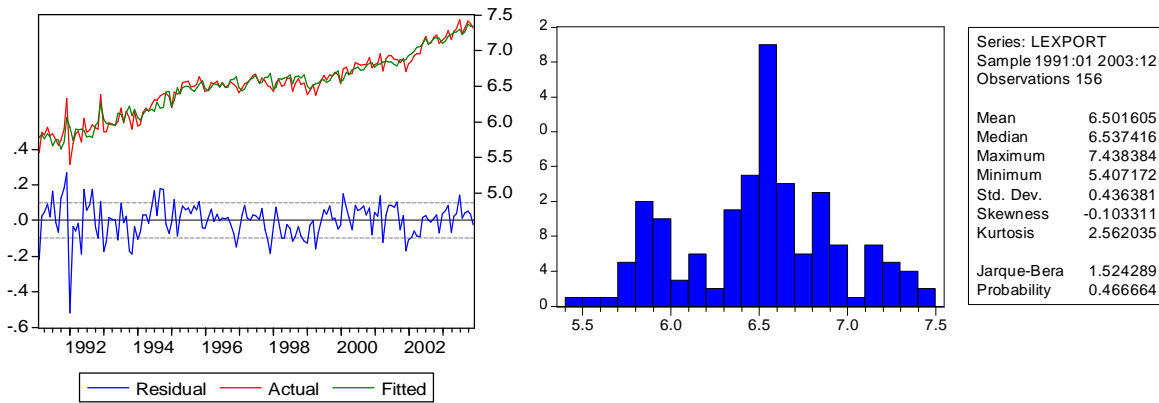
²³ That is why we omitted the foreign demand or world price dynamics.

agreements with EU are in fact replacing the previous ones, so that we consider the followings:

- § DUMMY1993 = 0 between 1991:2 and 1993:4,
= 1 between 1993:5 and 1995:2,
= 0 between 1995:3 and 2003:12, as the EU Interim Association Agreement is replaced with the EU Association Agreement;
- § DUMMY1995 = 0 between 1991:2 and 1995:1,
= 1 between 1995:2 and 2001:12,
= 0 between 2002:1 and 2003:12, as in December 2001 was the deadline for the completion of the transition period related to the tariff barriers reductions between Romania and EU, on an assymetric basis;
- § DUMMY1998 = 0 between 1991:6 and 1998:6,
= 1 between 1998:7 and 2001:12,
= 0 between 2002:1 and 2003:12, as in December 2001 was the deadline for the completion of the transition period related to the tariff barriers reductions between Romania and CEFTA, on a symetric basis;
- § DUMMY2002 = 0 between 1991:6 and 2001:12,
= 1 between 2002:1 and 2003:12, taking into consideration the long-run incidence of the tariff barriers elimination on the industrial products and reductions of other trade barriers on agricultural products in Romania, starting from January 2002.

The results are the followings:

$$\text{LEXPORT} = 0.18*\text{LEXPORT}(-1) + 0.41*\text{LIMPORT} + 0.05*\text{LCURS_USD}(-1) + 0.07*\text{DUMMY1993} + 0.11*\text{DUMMY1995} - 0.004*\text{DUMMY1998} + 0.27*\text{DUMMY2002} + 1.97$$



Dependent Variable: LEXPORT				
Method: Least Squares				
Sample (adjusted): 1991:02 2003:12				
Included observations: 155 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEXPORT(-1)	0.187018	0.062628	2.986192	0.0033

LIMPORT	0.413267	0.046482	8.890941	0.0000
LCURS_USD(-1)	0.052174	0.016118	3.236918	0.0015
DUMMY 1993	0.075619	0.041425	1.825433	0.0700
DUMMY 1995	0.110504	0.054878	2.013611	0.0459
DUMMY 1998	-0.004164	0.030990	-0.134370	0.8933
DUMMY 2002	0.270279	0.076361	3.539507	0.0005
C	1.979077	0.332398	5.953937	0.0000
R-squared	0.950894	Mean dependent var	6.506157	
Adjusted R-squared	0.948555	S.D. dependent var	0.434065	
S.E. of regression	0.098452	Akaike info criterion	-1.748261	
Sum squared resid	1.424842	Schwarz criterion	-1.591181	
Log likelihood	143.4902	F-statistic	406.6435	
Durbin-Watson stat	1.649377	Prob(F-statistic)	0.000000	

The statistically significant results of the estimation suggest that:

- the ***exchange rate has a positive incidence on export dynamics***, in accordance with economic theory, but to a small extent: with a 1% depreciation, exports increase by 0.05%;
- the ***high dependence of exports on imports***: with a 1% increase of imports, exports are increasing with 0,41%; this is explained by the high dependence of Romanian exports on imported raw materials, energy together with a deep fragmentation of the production system (a significant share of imports are re-exported, the *lohn* production system being relevant for the low-skilled manufacturing industry, highly relevant being the case of textile and clothing industry, with the highest share in the Romanian exports to EU);
- ***three from all the four liberalisation stages undertaken in Romania had a positive incidence on export growth, and one had a negative outcome***. The greatest effect came in 2002, when the trade liberalisation led to the most dynamic annual export increase (with a coefficient of 0.27), reinforced by high economic growth and a deepening of the macroeconomic stabilization process and learning effects occurred in the business environment, accelerating the total growth of exports. The 1995 and 1993 had also a positive incidence on the export dynamics, but to a relatively small extent: from the 6.5 mean of export dynamics, these two events explain only other 0.11, respectively 0.7 percentage points, reflecting the persistence of the systemic distortions of the domestic economy which was a relevant impediment to the export promotion. The free trade agreement with CEFTA did not lead to the expected positive effects (negative coefficient of 0.004, but the high Prob suggest that this event has a nul incidence on the export dynamics), Romania being a less competitive trade partner relative to these countries. The entering into force of this agreement proved to be quite unfavourable, as the increase of the trade deficit with the CEFTA countries was even higher than that registered with the EU. As a consequence, from a mean of 6.5 of the annual export dynamics, only 0.18 is explained by the free trade agreement concluded by Romania with EU, and other 0.27 to the end of the transition period of trade barriers reduction, expressing a relatively low capacity of the Romanian business environment to valorise the advantages derived from the access to the foreign markets. only 0.51 is due to free trade agreements), especially in the case of CEFTA membership (0.08). This express the less export competitiveness of Romanian exports relative to CEFTA countries, in contrast with the EU markets. The greatest effect came in 2002 (which explained 0.20 of the 6.45 mean of export dynamics), when the trade barrier elimination on industrial products, reinforced by high economic growth and a deepening of the macroeconomic stabilization process and learning effects occurred in the business environment, accelerating the total growth of exports.

- the relatively high constant reveals that from the mean of the dependent variable of 6.5, 1.97 is explained by other factors not taken into consideration in this equation, such as the other changes in Romanian trade policy, foreign trade barrier effects, external market factors (foreign demand, foreign prices etc. not included in the regression because of the lack of data).

The general conclusion from these estimates is that the impacts on export dynamics of free trade agreements concluded by Romania with the EU were higher than those that emerged from CEFTA. But these positive trade performances were still below the CEEC average, and were highly driven by the human-intensive industries (especially clothing, leather and footwear, which are dominated by the outward processing trade). It could be concluded that the microeconomic reforms, and the national business environment in general, were less able to support exporters to reap the opportunities derived from the new market access benefits relatively to other CEECs (see once again Table B.1.1). If local companies do not improve their productivity and sophistication, then market opening will boost imports (relevant in this sense is the year 2003, see also Figure B.1.6), while the growth in exports and the attraction of FDI will be painfully slow. Moreover, in Romania, the improvements in the microeconomic business environment began after market opening measures were completed and not before, as should have been economically rational. All these prove that the border-in barriers (macro and micro-reforms, institutional reforms etc.) were more painful, and added to the foreign non-tariff barriers impeded the optimal export growth emerged from the trade liberalisation agreements.

National business environment

Romania is a low-wage, labour-intensive economy. However, while wages in Romania are low by international standards they are not low relative to near neighbours, particularly the Ukraine, Moldova, Bulgaria and CIS countries. Furthermore, cost competitiveness is determined by productivity, and allowing for differences in labour and capital productivity suggests that on average Romania may not be a lower cost location than its neighbours. Stabilization programmes have been implemented to speed up the privatization and restructuring of state-owned enterprises. It is widely acknowledged that slow growth in private investment, particularly in large-scale manufacturing, has been one of the key constraints on Romania's economic growth. Part of the explanation lies in the uncertain legislative scene, but more narrowly economic and institutional aspects of the general investment climate have also had negative impacts on investment decisions. It is a common complaint from the private sector that Romania still has a heavily regulated business environment. A particular cause for concern is the lengthy delay in customs clearance. The average time to clear customs, it is argued, is higher than in its neighbours. Delays at customs make it very difficult for businesses to keep optimal levels of inventories, and undermine the notion of '*just-in-time*' planning. However there is awareness of these problems and in particular of the need to streamline tax administration, and measures have been introduced to improve the national business environment.

Despite significant changes in the legal and regulatory framework, FDI inflows have not kept pace with expectations, as noted several times previously. However, the highest FDI inflows took place in the declining GDP period (in 1998, with more than USD 2 bn FDI inflows). After 1999, along with the government's introduction of major financial reform in early 2000 which aimed to reduce public expenditure, accelerate privatization and reform the fiscal system, the still modest FDI inflows were visible: an annual average of approximately USD 1.1 bn in 1999–2002 (approximately 15% as a percentage of annual gross fixed capital formation, compared to an

average of 2.7% in 1985–1995). Further incentives to FDI introduced during 2000–2002²⁴ kept constant the annual absorptive performance of Romanian FDI. In 2002, FDI in Romania represented: 3.8% of the total FDI inflow in CEECs, 4.6% of the FDI stock in the total CEEC and 0.16% of the world FDI inflows, despite Romania’s relatively greater economic size. However, FDI stock increased 10 times in 1991–1995, and 20 times in 1991–2002. The share of FDI stock in GDP reached 20% in 2002 (e.g. Czech Republic – 55%; Hungary – 38%; world average – 22.3%). These trends are associated with a 135% increase in the number of affiliates of foreign TNCs hosted in Romania’s economy during 1991–2002.²⁵ However, the inward FDI potential relative to its performance increased from 0.3% in 1993–1995 to an average of 0.6% in 1999–2002.²⁶

The lagging behind performance in terms of FDI attractiveness is translated into lower spillover effects in terms of the possible usage of newer or more sophisticated technologies in the

²⁴ The National Agency for Regional Development (incorporating the former Romanian Development Agency) is responsible for private business development. Under the Foreign Investment Law No. 35/1991 and its amendments, foreign investors are granted national treatment and benefit from the same legal framework as local investors regarding guarantees and incentives. Although foreign investors may establish wholly foreign-owned enterprises, joint ventures are usually the pattern. Investors (both foreign and domestic) are offered various kinds of incentives. According to the profit tax law No. 414 of 2002 and the VAT law No. 345 of 2002, “direct investments with significant impact on economy” made in accordance with Law No. 332 of 2001 may benefit from certain incentives. “Direct investments with a significant impact on economy” refers to investments with a value in excess of USD 1 million or equivalent, and which will contribute to the development and modernization of the Romanian economic infrastructure as well as determine a positive spin-off effect in the economy, to create new jobs. According to the profit tax law (law No. 414), investors may apply for exception from the payment of customs duties on technological tools, installations, equipment, measuring and control devices, automation equipment and software products bought from abroad, produced 1 year at most prior to bringing them to Romania and never being utilized in ways necessary for achieving the investment. According to the VAT law (No. 345), investors may benefit from delays in the payment of value added tax. New investment may benefit from a deduction of 20 per cent of their value (valid until 31 December 2004). Fiscal loss may be carried forward during the following 5 years from the taxable profit. Besides the rights and guarantees provided by the legislation in force for the direct investments, one could find a quite wide range of incentives and incentives granted by different general laws or by laws referring to specific domains, e.g. the law on SMEs, the use of accelerated depreciation (according to the specific legislation in force) for machines, installations, equipment and know-how providing that the enterprises do not register losses, law No. 490 of 2002 on industrial parks, including a deduction of 20 per cent of the value of the new investments made in the industrial park in constructions for transporting and distributing electric and thermal power, natural gas and water; and carrying forward the fiscal loss from the taxable profit, during the following 5 years; Government Ordinance No. 14 of 2002 related to scientific and technological parks; the new profit tax law (No. 414 of 2002), effective as of 1 July 2002, with a profits tax being chargeable at a flat rate of 25 per cent on the accounting profit and the profits earned from export of self-manufactured goods and services are taxed at a reduced rate of 6 per cent, if the export proceeds are cashed in hard currency in a Romanian bank account (the reduced profits tax rate applicable for exports was adjusted to 12.5 per cent as of 1 January 2003 and to 25 per cent from 1 January 2004); investors performing in free trade zones on a licence basis are liable to pay a 5 per cent profit tax rate for the taxable profit related to incomes derived from such activities, the reduced profits tax rate being effective up to 31 December 2004 (taxpayers who, until 1 July 2002, made investments of a minimum amount of US\$1,000,000 in the respective zone in depreciable tangible assets used in the processing industry, continue to benefit from the profit tax exemption until 30 June 2007); the current VAT standard rate is 19 per cent.

Source: UNCTAD: Romania country sheet, 2004, based on information received from the Government of Romania, the Romanian Agency for Foreign Investments; Ministry of Public Finance, Ministry for European Integration, Ministry of Foreign Affairs.

²⁵ Data refer to the number of companies with FDI registered annually, that is an increase from 5541 in 1991 to 7487 affiliates of foreign TNCs in 2002. At end-December 2002, the cumulative number of companies with FDI was 89,911 and the amount of issued capital subscribed by foreign investors was \$ 8,939.1 million (National Trade Register Office, 2003). The latter was distributed between FDI source countries as follows: 50% of the number of foreign TNCs’ affiliates originated from developed countries, 43.3% from developing countries and 6.7% from the CEEC.

²⁶ These estimates are based on National Bank, National Trade Register Office and UNCTAD statistics, 2004.

case of fully-owned enterprises, or in terms of higher requirements vis-à-vis domestic suppliers in the case of partially-owned enterprises. Even in the case of actual FDI this does not always happen.²⁷

Further, several observations about the competitiveness of the Romanian national business environment will help us to designate the (un)favourable characteristics for reaping the export opportunities to be derived from the free trade agreements (Croitoru and Tarhoaca, 2002; Scutaru and Florescu, 2003; Vass, 2004):

Ø the main export-oriented industries (23 industries with shares higher than 1% in the total manufacture exports) were the source of 80% of Romania's total exports: textiles and clothing (16.5%), leather products and footwear (7.5%), metals and articles thereof other than basic metals (5.6%), agriculture (5.5%), etc.;

Ø these industries absorbed only 3.24% of the total financial resources offered by the financial, banking and insurance sector, in 1999;

Ø the decreasing share of money transfers through bank export payment instruments (payment orders, letters of credit) in total exports leads to the conclusion that exporters sacrifice payment safety or security (at higher cost) in favour of the rapidity of less safe payment instruments (warrants, direct bank transfers, etc.); the high bank taxes and delays involved in handling secure systems can explain the decrease of exports paid through export letters of credit from 97.8% in 1993 to 12.1% in 2002, and those of payment orders from 21% to 4.4% in the same period;

Ø the major comparative advantage of Romanian exports derives from low labour force costs: the 23 main export industries accounted for only 24.5% of labour remuneration and only 30% of the total gross value added created in the Romanian economy, in 1999;

Ø the manufacturing industries with unfavourable opportunity social costs or negative value added contributed 40% of total manufacturing exports in 1998, which suggests that Romania was still in the stage of distress exports; exports were highly concentrated in the state sector operating at low levels of efficiency, with the exports assisted by exchange rate depreciation; but the share of the private sector in total exports increased from 48.7% in 1998 to 69.2% in 2003;

Ø if we examine the share of gross value added in the total remunerations offered to labour in the respective industries, the most competitive seem to be: air transport industry and machines and office equipment industry; but production matters more than productivity when estimating export performances;

Ø the 23 export-oriented industries consume only 20% of total Romanian R&D expenditure;

Ø these industries do not receive production subsidies except for vegetal products which are the beneficiary of almost a quarter of the total subsidies offered in the Romanian economy;

Ø the only export-oriented industry that has a significant share in total income tax receipts is the petroleum industry, with a share of 13.6% of VAT and other product taxes; this of course is a support industry for all the others, so that there are significant spillover effects;

Ø in the transition economies the new laws were designed to reduce state intervention in the

²⁷ One of the largest FDI projects in Romania, Renault's purchase of an equity stake in Dacia, the local automobile maker, may serve as an example. The initial transaction took place in 1999, with subsequent increases in Renault's share in 2001 and 2002. After the acquisition, the French company promised to continue sourcing inputs from local suppliers provided they lived up to the expectations of the new owner. This, however, does not seem to have been the case. In 2002, eleven foreign suppliers of the French group were expected to start operating in Romania, thus replacing the Romanian producers from whom Dacia used to source (*Ziarul Financiar*, April 19, 2002).

For further details see Beata Smarzynska JAVORCIK and Mariana SPATAREANU, *To Share or Not To Share: Does Local Participation Matter for Spillovers from Foreign Direct Investment?*, World Bank Policy Research Working Paper 3118, August 2003.

private sector; in Romania, legislative initiatives evolved *de facto* in quite different ways: it is quite important to look at the government 'reforms' that created new 24 Special Funds which imposed further financial and administrative obstacles at the microeconomic level, such as difficult certification procedures, authorizations, inspection or other compulsory operational tasks. Many of these came as a consequence of implementation of the *acquis communautaire*. But one of these did not and is directly affecting exporters, as it imposed a 0.5% tax on exports for the *Special Fund for Custom Development and Modernization*; this kind of tax does not exist at all in the other transition economies;

Ø there are also initiatives that promote the so-called 'one-window shop', which is an inter-institutional collaboration that tries to eliminate the subjective stages of public administration in the licensing, approval or notice procedures through a specialized electronic trade net. The implementation process of the automatic document approvals in accordance with the EU standards regarding the export-import operations is still quite slow. This is added to the inefficient applied systems related to foreign trade (e.g. drawbacks) and to the corruption and abuses of customs administrations.

The private sector is not only a consumer of the business environment, but it also can play an important role in shaping and improving it through educational programmes, attracting suppliers, defining standards, quality certification programmes, manufacturing assistance centres, building collective industry bodies (Porter, 2004). Collective industry bodies, such as trade associations, chambers of commerce, entrepreneurs' networks, standard setting agencies, quality centres and technology networks are also important in improving infrastructure, providing training and developing export markets that are often overlooked. All these were called *institutions for collaboration* (IFCs), as developed by Porter and Emmons (2003), which were largely ignored in economic development thinking, but which have the essential role of connecting the parts of the diamond (Porter, 1990) and fostering efficient collective activities.

Porter (1998) also estimated the Microeconomic Competitiveness Index, which turned in 2004 into the Business Competitiveness Index (ranking 80 countries). Being far from a perfect estimation of the complex array of national circumstances that support a high and sustainable level of productivity, it represents a step forward in understanding the framework of competitive strengths and weaknesses of a country and the firms operating there. An economy cannot be competitive unless companies operating there are competitive. True competitiveness comes from high production levels associated with high productivity that allows nations to support high wages, a strong currency and attractive returns to capital, and implicitly a high standard of living. Productivity growth is the main goal, and not exports *per se*.

The Business Competitiveness Index also proves to account for 83 percent of the variations across countries in the level of GDP per capita. According to this composite index that incorporates subindexes:²⁸ for the company operations and strategy index and the quality of national business environment index, Estonia in 2003 ranks in first place among the CEECs, followed by Latvia, Slovenia, Czech Republic, Hungary and Lithuania (all being ranked in the first half of the 80 countries sample, as all the EU countries are²⁹). Slovak Republic and Poland are ranked in the next 10 countries in the second half of the sample, while Romania and Bulgaria are lagging behind, ranking respectively at 67 and 68 (Table B.2.1).

These findings highlight the pressing need for Romania and Bulgaria to better incorporate

²⁸ For a detailed methodology discussion see: Porter, M., Global Competitiveness Report: Building the Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index, 2004

²⁹ Nevertheless, some of the accession countries rank better in 2003 than the EU laggards: Portugal-36, Greece-39. The other EU countries are ranked as follows: Finland-1, Sweden-3, Denmark-4, Germany-5, United Kingdom-6, Netherlands-9, France-10, Belgium-15, Austria-17, Ireland-21, Italy-24, Spain-25.

a microeconomic competitiveness agenda into efforts to stimulate economic growth, as their failures (disappointing or low increase in returns on investments, stagnant real wages, non-materialization of competitive exports or jobs) may diminish or even nullify macroeconomic and social programmes.

Romanian trade pattern with EU

Trade is a convergence-driving force for Romania towards the EU, so that in estimating its real role special attention should be paid to highlighting the different patterns and degree of learning effects occurring in trade with the EU, the extent of transformation witnessed by the trade structures and development, the magnitude of specialization, the increase in technology-intensive products, the fields dominated by foreign capital and domestic capital, etc. All these are also the result of transformation of the microeconomic environment and catch-up performance. The deepening ties with the EU led to the CEEC's *de facto* integration in the EU as far as trade flows are concerned (about two thirds of the CEE foreign trade takes place with the EU). The EU is also the largest investor in the CEE economies and is becoming the largest donor, through the various pre-accession and post-accession programs that it finances. However, the results would suggest that Romania's foreign trade-driven convergence with the EU is not as a whole spectacular in comparison with the other accession countries to the EU, but is more relevant than investment-driven convergence. The amount of trade extended considerably and Romania's export concentration is rather high, but natural resource-intensive and low-skilled labour-intensive products may face severe competitive pressures. Moreover, the fact that Romania is one of the largest net exporters of workforce from the region (Langewiesche and Lubyova, 2000) indicates that wage differentials are large enough to stimulate temporary and/or permanent emigration, meaning that income convergence still lies far ahead. In the first years of transition Romanian foreign-trade growth outperformed the other accession countries, but the trend inverted in the second half. Nevertheless, convergence towards similar structures of production shows little improvement. Of course, these situations may end up with positive results in short and medium term, as the differences in the production structures encourage specialization, and the money earned abroad returns as foreign remittances in the domestic economies (3.3% of GDP in the case of Romania, see Daianu, Voinea and Tolici, 2001). These positive implications may in turn create further incentives for resource allocation outside the economic convergence paradigm.

Foreign trade growth. Romania's trade performances in terms of growth face quite different speeds of increase relative to the other CEECs in the two periods: 1990–1995 and 1995–2002 (Tables B.3.1). In the first period Romania had the highest export and import growth rates (respectively 218% and 232%) in the CEE-5, except for Bulgaria. In the second period, 1995–2002:

Ø Romania's export performances (294%) are lower than those of Hungary (445%), Czech Republic, Slovakia, Lithuania, Latvia and Estonia (322%), and higher than in Poland (244%), Bulgaria or Slovenia (150%);

Ø Romania's import growth rates (273%) are lower than those of Lithuania (347%), Slovakia, Latvia, Hungary (309%), and higher than in Czech Republic (264%), Bulgaria, Poland, Estonia or Slovenia (154%).

In the first 6 years of transition imports grew faster than exports in the CEEC-5, except for Bulgaria and Czech Republic. In 1995–2002, the trend was inverted, so that exports grew faster than imports in the CEEC-10, except for Poland and Slovenia.

Territorial concentration index. There is a positive but not significant correlation between the CEEC's export growth rate to the EU in 1995–2002 and the concentration index of exports to the EU³⁰ in 2002 (Figure B.3.1). The countries near to the EU-15 border face higher concentration indexes of exports to EU markets, but not always higher export growth rates in 1995–2002. Romania is less dependent on small numbers of export markets than Czech Republic, Hungary, Poland, Slovenia or Slovakia. There is also a high correlation between the export and import concentration indexes, as might be expected, but Slovenia, Poland and Estonia are remarkable for having approximately one quarter higher concentration of exports than imports from EU countries.

Romania's high total export concentration index is explained by the increase of the EU share in total exports from 37% in 1991 to almost 68% in 2003, and the decrease of the European transition economies from 34% to 9% and of the Russian Federation from almost 23% to 0.3% in the same period. The case of Romania is distinguished from the other accession countries when taking into consideration the share of CEFTA countries in total exports, which increased slightly from 5.6% to 7.3% in the same period (Table B.3.2), associated with the lowest coverage ratio in trade between this group of countries. Romania is also the single country recording a lower coverage ratio with CEFTA than with the EU after the free trade agreement concluded in 1997 (Voinea, 2002).

Three aspects are important when considering the convergence process in the CEEC-10: trade concentration ratios show low instability over time but with a positive trend, spatial instability in the form of different convergence clubs, and spatial autocorrelation implying higher concentration ratios and positive growth spillovers between the EU and close-to-the-EU-border CEECs. All these results are of course dependent on the period used in this study. They should be reassessed using a longer period of time, which is left for future research.

Learning vs. demonstration effects. Analyzing the main indicators related to foreign trade with EU between 1993–2003 (Table B.3.3), we may conclude that in the last decade Romania faced a massive learning effect – expressed in the significantly improved coverage ratio (from 68.5% in 1993 to 86.1% in 2003, with the highest level of 89.6% recorded in 2000 and a quite close level recorded in 2002), in addition to the demonstration effects (including those to other potential exporters) – revealed by the rise in volume (reaching 67.7% for the EU share in the Romanian merchandise exports, and 57.7% in imports in 2003).

Besides trading more quantities, have we traded more complex products, thus helping Romania close the development gap with the EU?

First, the Romanian trade deficit with EU more than doubled in 2003 relative to 1993 (Table B.3.3), but this evolution is associated with an ever-growing trade intensity,³¹ which increased by more than 50%, from 1.88 in 1993 to 2.92 in 2003 (Figure B.3.2). The share of industrial products increased in the Romanian trade deficit with the EU by almost 20% in the same period; of course, in the meanwhile the share of agricultural products decreased by the same amount.

Second, the degree of Romanian trade specialization with the EU (estimated using the Hirschman

³⁰ We estimated the territorial concentration index relative to the EU-15 countries partners using the Hirschman concentration ratio: $TCI_{exp} = \sum(x_i/X)^2$ and $TCI_{imp} = \sum(m_i/M)^2$, $i = 1, \dots, 15$, where: x_i = share of exports to country i in total exports to the EU; m_i = share of imports from country i in total imports from the EU.

³¹ Trade intensity is estimated as: $TI = (x_{EU}/X_R) / (m_{EU}/M_W)$, that is the share of Romanian exports to the EU relative to the share of EU imports in world imports (R = Romania, W = World).

concentration index³² applied to product groups) increased in both exports (from 15.2% in 1993 to 17.6% in 2002) and imports (from 13.5% in 1993 to 13.9% in 2002). However it is significantly higher than the overall Romanian trade specialization (12% in imports and 13% in exports, in 2002). The current level of total export concentration in Romania is close to Hungary (14.36% in 2000), but much higher than in the other CEEC and developed economies (2002): Spain (7.34%), Greece (4.04%), Poland (5.33%), Turkey (5.42%), Slovakia (7.67%), Czech Republic (7.56% in 2000) (OECD, 2004, estimated at 2-digit level).³³ After 1999, the trade specialization with the EU decreases constantly, more in imports than in exports (Figure B.3.3). These trends are translated into a higher and much faster increase of import variety than export variety.³⁴ The latter is explained also by the gradual and time-consuming process of the rising variety of domestic production. Export variety has increased by almost 20% (from 782 product types in 1993 to 931 in 2000), using the simple count-based measure, and by 10% in imports (from 1040 to 1153 in the same period),³⁵ but to a less extent than in the other CEECs. The relationship between product variety and economic growth was addressed by Jones (1998) in a simple semi-endogenous growth model.³⁶ The conclusion was that economies become more productive as a widening of the available product spectrum occurs. Starting from this model, Funke and Ruhwedel (2003a) proved that export variety is beneficial for growth in transition economies and that the proliferation of varieties is highest in the front-runners such as Czech Republic, Hungary or Poland, in contrast to the degree of export variety which was much lower in Romania, close to that of Bulgaria and Slovakia until 2000. Export variety indeed matters for GDP per capita increase in transition economies, but not in all industries. The decomposition between ‘investment goods’ and ‘consumption goods’ suggests that the production and export of capital goods, which are on average higher-skill intensive, contribute significantly to growth and determine the path of economic development. The role of a higher trade variety of countries in explaining higher productivity was quantified in several other empirical works using larger sample of countries (Feenstra et al., 1999, for South Korea and Taiwan; Funke and Ruhwedel, 2001a,b, 2002, 2003b, for the OECD, East Asian Countries and CIS and East European Countries; Feenstra and Hiau Looi Kee, 2004, for developing countries). The main finding is that catching-up in export variety is associated with narrowing of the productivity gap. But a crucial question is still unanswered: whether the export variety heterogeneity across transition countries is inherent in the way competitive markets operate and evolve over time, or also depends on policy and institutional settings in product and labour markets that might be reformed in the context of a growth-oriented strategy.

³² Hirschman concentration ratio: $HEXP = \sum (x_i/X)^2$; $HEXP = \sum (m_i/M)^2$, where $i =$ product groups ($i = 1, \dots, 5$), $x_i/X =$ share of product group i in total exports to the EU; $m_i/M =$ share of product group i in total imports from the EU. $0 < H < 100\%$, and the higher the index, the higher the concentration of trade.

³³ Norway instead has the highest Herfindahl concentration index of exports in the OECD at 40%, the OECD countries’ average in 2002 being 7.12% with a slight trend of annual decrease from 7.40% in 1999-2002 (OECD, 2004, estimated at 2-digit level).

³⁴ This trend is valid within all the transition economies, but at different scales (Funke and Ruhwedel, 2003b).

³⁵ The maximum number of product categories counted herein is 1473 (Funke and Ruhwedel, 2003a). At a higher degree of disaggregation, according to the Combined Nomenclature, INSSE estimations suggest that Romania was exporting approximately 3,500 products and importing 6,000 from an approximate total number of 10,000.

³⁶ Semi-endogenous growth means that technological change itself is endogenous, while long-run growth is pinned down by exogenous factors. The importance of this last hypothesis lies in the property that the steady-state growth rate is independent of public policy.

Third, the Romanian convergence to the EU is revealed by the changes in the similarity of trade structures, estimated according to the Finger similarity index.³⁷ According to an index for export structure similarity of 0.77 in 2002 relative to 1993, and one of 0.81 for imports, we may conclude that the pace of structural change was much slower than in the other CEECs,³⁸ being translated into changes of the export structure of almost a quarter and one fifth as regards imports.³⁹ Up to now we have seen that trade structure changed to some extent, along with an increase in trade concentration/specialization and trade variety. These would increase the gains from trade when consumers have heterogeneous preferences (because trade increases the number of product varieties available), but the underlying premise is that the increasing returns-to-scale technologies have the potential to deliver larger welfare gains.

The analysis of convergence to EU structures requires an in-depth reflection on the complexity of trade structures in terms of technology complexity. There appears to be an improvement in the technological structure of trade. Estimated in accordance with the classification into high, medium and low complexity products developed by the Ministry of Development and Forecasting, the high complexity export products increased by 4.5 percentage points (machines and equipment; vehicles and associated transport equipment; optical, photographic, cinematographic, medical or surgical instruments, clocks and musical instruments; and components and miscellaneous manufactured articles, incl. furniture) and the medium complexity export products by 6.5 percentage points between 1993 and 2002 (Figure B.3.4). The trend is similar as regards medium complexity import products, but an inverse trend is recorded in the high complexity imports (-4.2 percentage points). This is translated into the much higher increase in medium complexity imports than in the high and low technology complexity groups. David and Loewy (1998) consider that free trade leads poorer countries to specialize in technologically stagnant products. Their point of view holds that comparative advantage in tradable goods leads to specialization, and to the extent that countries produce different goods, there is no *a priori* reason to expect technologies to converge. The departure from low and medium skilled labour-intensive products cannot be easy: clothing, footwear and furniture still account for more than half of Romania's exports to the EU (Table B.3.4). However, the share of technology-intensive products in the Romania's exports to EU (23% in 2000–2002) increased by 10 percentage points from 1993, and decreased in imports (43–45% in 2000–2003) by almost 3 percentage points (according to the Kraus classification) (Figure B.3.5). But Astrov (2001), applying the WIFO taxonomy to 1999 data, finds that only 5% of exports are technology-intensive (compared to a CEEC average of 26%). This would indicate that, even within the technology-intensive groups, Romania actually exports intermediate goods that are labour-intensive.

The more significant increase in the share of technology-intensive products in total Romanian exports to the EU after 1997 is highly correlated with a surge in FDI. At the end of 1996, the stock of FDI did not exceed 1 billion USD, but increased in the next six years to 9 billions USD. The machines and equipment sector, and vehicles and other transportation equipment sector, are now dominated by foreign capital, and productivity has grown considerably. Yet these sectors were still facing negative revealed comparative advantages in 2002, and the share of the former product group in exports stagnated during 2000–2002, but decreased in imports

³⁷ The Finger similarity index shows the similarity of trade structures at different times: $FSI = S_{min}(X_{it1}, X_{it2})$, where: X_i – exports of group i , t_1 and t_2 – two different years. The same index can be applied to imports. FSI can take values from 0 to 1: the closer to 0, the more different the trade structures; and conversely the closer to 1, the more similar the trade structures.

³⁸ For comparison, the FSI for exports in the case of Hungary, in the period 1992–2000, was 0.4 (Elteto, 2000).

³⁹ Moreover, the related figures for export and import structure similarities support the remark that most exports to the EU depend on imported inputs from the EU (Voinea, 2002).

(-2.5 percentage points); in the meantime the latter product group increased its share in exports (+1 percentage points), and to a greater extent in imports (+2.3 percentage points). However, the relatively constant annual FDI inflows during 2000-2002 (1 bn USD) were associated with a stagnant share of technology-intensive exports to the EU. We will also see later that this is highly reflected in the relatively stagnant share of intra-industry trade (adjusted IGL: 66% during 2000-2002), meaning that the structural change derived from the trade expansion increased significantly until 1999, but afterwards it was relatively stagnant. This is in line with the change in the similarity of trade structures (FSI index) within Romania and the EU, which indeed increased by almost a quarter in exports until 2000, but during 2000 and 2002 it stayed perfectly constant. Regarding imports, the one-fifth change in the similarity of trade structure between 1993 and 2002 was the result of an relatively constant annual change, which was the result of domestic demand change as well.

Trade structural change. In 2002, high shares in Romania's exports to the EU were held by the following sectors: textiles, clothing and other textile articles (34.5%), machines and equipment (16%), footwear, headgear, umbrellas and other similar products (12%), base metals and articles thereof (7%), mineral products (5.4%), vehicles and associated transport equipment (5%). The main structural changes, estimated by the gains in the share of exports to the EU in 2002 relative to 1993, are recorded in Table B.3.4 as:

- Ø *machines and equipment* – relative increase of 10 percentage points;
- Ø *footwear, headgear, umbrellas and other similar products* - relative increase of almost 6 percentage points;
- Ø *textiles and clothing* - relative increase of almost 3.5 percentage points;
- Ø *vehicles and associated transport equipment* - relative increase of 2.5 percentage points;

while the losses were:

- Ø *mineral products* - relative decrease of 5 percentage points;
- Ø *chemical products* - relative decrease of more than 2 percentage points;
- Ø *articles of stone, plastics, glass, cement, ceramics* - relative decrease of more than 1.5 percentage points.

The overall exports of agricultural products doubled between 1993 and 2002, in the meanwhile imports were relatively stagnant; so that their share reached 2.5% in exports and 4.3% in imports. These trade asymmetries are smaller than the development asymmetries revealed by the much higher share of agricultural sector in Romania's GDP (11%) than in the EU (2%). This negative correlation leads us to the view that the agricultural sector has not raised exports significantly in terms of reaping the potential gains from the gradual asymmetric trade liberalization.

Trade developments within European networks (production fragmentation) vs. developments in trade in components (trade fragmentation). Romania has to face and take advantage of the globally unprecedented scale of internationalization of production processes, which have resulted mainly in the integration of trade and disintegration of production, with deep implications for the division of labour. Distinguishing the guidelines of trade developments within networks sheds further light on *assembly operations* carried out in Romania (vertical intra-industry trade: exchange of similar goods of different quality), while those related to developments in trade in components are essential for identifying Romania's involvement in *intra-production specialization* (horizontal intra-industry trade: exchange of similar goods that are not differentiated in terms of quality). The main finding of the empirical research reveals that intra-industry trade in total trade of the CEECs with the EU is predominant, and within it, the vertical structures are overwhelming (80-90%), with strong quality advantages for the EU and shrinking quality advantages for CEECs (Aturupane, Djinakov and Hoekman, 1997; Kaminski and Ng, 2001; Gabrisch and Segnana, 2002).

The broad pattern of Romania's trade competitiveness picture relative to the EU may be first traced using the revealed comparative advantage index⁴⁰ and its dynamics (Table B.3.5). Although economists accept that international specialization along lines of comparative advantage is a positive-sum game it is acknowledged that high changes in specialization will entail transitional adjustment costs. One empirical method to assess the adjustment implications of trade expansion is to analyze the dynamics of intra-industry trade indices measured by the well-known Grubel-Lloyd index.⁴¹ The widely held '*smooth-adjustment hypothesis*' states that a high share of the IGL will be associated with relatively low labour-market disruption, since, with intra-industry adjustment, workers move within industries rather than between them (Egger, Egger and Greenaway, 2004). Hence, measures of the IGL are frequently employed to estimate the intensity of structural adjustment pressures from trade expansion (Table B.3.6). Along with the increase of trade with the EU, the intensity of these pressures increased until 2000 (according to the balanced IGL two-way flow a rise from 0.55 in 1993 to 0.66 in 2000, but from 0.81 to 0.94 in the unbalanced IGL). Afterwards no structural adjustments derived from trade expansion occurred, the IGL being relatively stagnant between 2000 and 2002 (0.66 in 2002, or 0.94 in the unbalanced IGL).

A low value of the latter index usually implies low intra-industry exchange and rather significant inter-industry trade, meaning that the country exports mainly those goods for which its economy has a real comparative advantage and imports those commodities that are too expensive to be produced domestically (Table B.3.6; Figure B.3.7). This means that one-way flow will

⁴⁰ The revealed comparative advantage index is calculated as follows:

$$RCA_{it} = \ln \left[\frac{x_{it} / m_{it}}{X_t / M_t} \right] * 100$$

where: x_{it} = exports of group of products i in the year t ;
 X_t = total exports in the year t ;
 m_{it} = imports of group of products i in the year t ;
 M_t = total imports in the year t ;

A high RCA induces the idea of existence of comparative advantages in terms of costs in the production of the respective group of products. A negative value of RCA induces the idea of comparative disadvantages. But this index is based on volum indices and does not reveal the implications of other factors of production, such as: technology intensity or energy intensity, labour force consumption, local endowments with raw material, investments efforts etc.

⁴¹ The balanced two-way trade Grubel-Lloyd index between two partners is calculated as follows:

$$IGL_{it} = 1 - \frac{\sum |Xi - Mi|}{\sum (Xi + Mi)}$$

where: X and M are exports of a country and imports by a partner correspondingly of product i . This index estimates the growth of trade due to fragmentation. It suffers from two main problems: aggregation and aggregate trade imbalances. Meanwhile, besides clearly including fragmentation-related trade, it also captures a large proportion of trade that has little to do with production sharing or fragmentation. It also helps little in distinguishing the vertical from the horizontal intra-industry trade. At the sectoral level we use a modified version of Grubel-Lloyd index, which is also the unbalanced two-way trade at the overall level:

$$IGL_{it} = 1 - \frac{|Xi - Mi|}{Xi + Mi}$$

The value of the index may vary from 0 to 1. If all trade between Romania and EU in goods from industry i consists of exports from Romania to EU ($X(r)_i^B > 0$, $M(r)_i^B = 0$), the index will be equal to 0. The same applies if all trade in goods from industry i consists of imports to Romania from EU. If exports from Romania to EU of goods from industry i equal imports the other way ($X(r)_i^B = M(r)_i^B$), the index is 1.

Similar indices can be calculated for Romania's trade with other countries. A total Grubel-Lloyd index may then be calculated by summing up these indices weighted by Romania's trade distributed on the different countries and industries. The total index gives a measure of Romania's intra-industry trade, as an index closer to 1 is equivalent to a higher degree of intra-industry trade with other countries. The value of the total Grubel-Lloyd index depends on the detail level of the specified industries. The more detailed the specification, the lower the calculated index.

predominate over the two-way flow trade. The reason for such transactions however is based on the enlargement of the range of commodity supplies in domestic markets. Similarly, if the index takes high values, the economy displays high *intra-industry trade*, which is carried out on product diversification based on trade in similar goods. This is associated with a prevalence of two-way flow over one-flow trade. In the former case, the inter-industry trade is mainly characterized by a high export complementarity of imports, while in the latter case exports are therefore good substitutes for imports. As for the total Romanian trade with the EU, intra-industry trade was prevalent, and increased from 0.55 to 0.66 estimated using the balanced two-way trade IGL.

However, these estimations have several shortcomings: the high aggregation level, on the one hand (which should be addressed in the further research), and the empirical relevance of these statistical methodologies used for the measurement of intra-industry trade, on the other hand. These are derived from its main implications:

- ∅ the majority of flows between imports and exports consist of both intra- and inter-industry trade (an individual flow cannot simultaneously be of both types);
- ∅ intra-industry trade is balanced in every sector, while inter-industry trade balances only across industries and is the only cause of an overall trade surplus or deficit.

To avoid some of the latter shortcomings when used for the measurement of intra-industry trade, we use the overlap index for individual trade flows (OI).⁴² Its high values give us a view of the magnitude of the two-way flow trade, which when associated with high IGL is mainly intra-industry trade; and conversely, the one-way flows associated with low IGL are mainly vertical trade.

Prevalence of two-way flows suggests a lower relevance of comparative advantages at the sectoral level, as an explanation of trade (e.g. clothing and textiles, vegetal products and base metals and articles show relatively low positive comparative advantages and high intra-industry trade indices). In this case, Romania and the EU produce and exchange similar but differentiated goods. A high degree of similarity in the quality of traded goods (horizontal intra-industry trade and intra-production specialization) implies they are competitors in the markets and this may raise concerns related to competitive pressures. But the prevalence of vertical flows,⁴³ in the case of Romania, reduces the degree of similarity implied by weight of two-way flows and hence competitive concerns, because individual products – of different quality – are not true competitors. In 2002, this is the case for:

- ∅ I. live animals and animal products (low disadvantage),
- ∅ II. vegetal products (positive, but low RCA),
- ∅ XI. textiles and clothing (positive, but low RCA),
- ∅ XIII. articles of stone, plastics, glass, cement, ceramics (low disadvantage),
- ∅ XV. base metals and articles (positive, but low RCA),
- ∅ XVI. machines and equipment (low disadvantage),
- ∅ XVII. vehicles and associated transport equipment (low disadvantage),

Nonetheless, as Romania is positioned at the lower end of the quality spectrum, it can be adversely affected by competition coming from other countries producing low-quality low-price

⁴² The overlap index methodology was developed by Abd-El-Rahman (1986) and Freudenberg and Müller (1992):

$$OI = \min(Xit; Mit) / \max(Xit; Mit)$$

If the overlap is sufficiently big, it is considered structural and taken as evidence for intra-industry trade. Freudenberg suggests an exogenous threshold equal to 0.1. If the OI is greater than 0.1, he classifies the flow as intra-industry as it consists of differentiated products. In this way he classifies every individual flow as either two-way or one-way, without imposing balanced trade on any of them. The 0.1 exogenous threshold is irrelevant for our high degree of aggregation, as all have higher OI, except for group III, animal and vegetable fats and oil (Table B.3.7).

⁴³ For a more precise decomposition of two-way flows into vertical and horizontal trade we need the unit value rate for exports and imports with EU, but we lack the data. This issue will be addressed in a forthcoming paper.

goods (e.g. clothing and textiles from China).

Prevalence of one-way flows implies relevant comparative advantages, with Romania exporting or importing individual products and the EU having a different specialization. This is the case of specialization and a *high revealed comparative advantage for Romania* (relative to the EU), in the following sectors in 2002 (accounting for 26.9% of total exports to the EU, and 4.8% of imports):

- Ø V. mineral products,
- Ø IX. wood and wood products, other than furniture,
- Ø XII. footwear, headgear, umbrellas and other similar products,
- Ø XX. miscellaneous manufactured articles, incl. furniture,

all having higher RCA than +1.5, and IGL equal to or lower than 0.4.

On the other hand, *Romania has significant comparative disadvantages*, Europe being highly specialized in trade in the following product groups in 2002 (accounting for 6.9% of total exports to the EU and 30.5% of imports):

- Ø IV. food, beverages, tobacco,
- Ø VI. chemical products,
- Ø VII. plastics, rubber and articles thereof,
- Ø VIII. raw hides and skins, leather, furs and articles thereof,
- Ø X. pulp of wood, paper, paperboard,
- Ø XVIII. optical, photographic, cinematographic, medical or surgical instruments, clocks and musical instruments and components,
- Ø XXII. products not elsewhere,

all having lower RCA than -1.1, and IGL between 0.2 and 0.45.

As for the total Romanian trade with the EU, intra-industry trade is prevalent, with a percentage of 66% of two-flow in balanced trade, and almost 95% in unbalanced during 2000–2002 (Table B.3.7). One-way flows predominate in exports of the traditional sectors with very important positive comparative advantages. The positive RCA explains 25% of total export flows to the EU. The negative RCA instead explains 30% of total imports from the EU (Table B.3.8).

Consequently, Romania trades a large share of the same type of goods, which implies a high level of specialization in assembly operations, based on a labour-intensive comparative advantage within the context of international trade. Romania exports high quality goods in traditional sectors (clothing, footwear, wood products, miscellaneous manufactured articles and furniture, base metals, vegetal products) and relatively low quality goods in others (e.g. machines and equipment, vehicles and associated transport equipment). Romanian exporters can still be adversely hit by competition from emerging producers able to supply the same low quality at a lower cost. A significant increase in specialization in the technology-intensive products (machines and equipment, vehicles and associated transportation equipment) is revealed during 1993–2002, but once again in rather labour-intensive production phases (Figure B.3.6). This scenario is however positively evolving over time, because in those sectors Romania is moving towards a higher quality positioning.

IARC, 2002 vs. 1993

<i>Increase</i>	<i>Decrease</i>
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IGL 2002 vs. 1993

<i>Increase</i>	II. Vegetal products X. Pulp of wood, paper, paperboard XVI. Machines and equipment XVII. Vehicles and associated transport equipment XVIII. Optical, photographic, cinematographic, medical or surgical instruments, clocks and musical instruments and components	IV. Food, beverages, tobacco XIII. Articles of stone, plastics, glass, cement, ceramics XV. Base metals and articles XX. Miscellaneous manufactured articles, incl. furniture
<i>Decrease</i>	V. Mineral products IX. Wood and wood products, other than furniture	I. Live animals and animal products III. Animal or vegetal fats and oil VI. Chemical products VII. Plastics, rubber and articles thereof VIII. Raw hides and skins, leather, furs and articles thereof XI. Textiles and textile articles XII. Footwear, headgear, umbrellas and other similar products XXII. Products not elsewhere (furniture included)

From a dynamic perspective: the strong and weak sectors are grouped into four main groups according to the increase/decrease of intra-industry trade and revealed comparative advantages (data computed from Tables B.3.4, B.3.5, B.3.6 and Figures B.3.6 and B.3.7 computed here):

Ø product groups that witnessed a double increase in RCA and IGL account for 23.2% of total exports to the EU and 36.5% of imports in 2002:

	II. Vegetal products	X. Pulp of wood, paper, paperboard	XVI. Machines and equipment	XVII. Vehicles and associated transport equipment	XVIII. Optical, photographic, cinematographic, medical or surgical instruments, clocks and musical instruments and components
RCA change 2002 vs. 1993	2.17 - → +	0.12 - → -	1.04 - → -	0.50 - → -	0.69 - → -
IGL change 2002 vs. 1993	0.58	0.09	0.47	0.32	0.19
Change in the share of the sector i in total exports to the EU 2002 vs. 1993	-0.8	0.3	9.6	2.5	0.2
Change in the share of the sector i in total imports from the EU, 2002 vs. 1993	-8.8	1.0	-3.4	1.2	-0.8
Share in exports in 2002	1	0.6	16.1	5	0.5
Share in imports in 2002	0.6	2.6	23.8	7.2	2.3

The fact that both RCA and IGL show positive evolutions between 1993 and 2002 might be interpreted as a production stages development, revealing a reallocation of production units by the foreign suppliers to Romania, facilitating vertical integration. This is especially the case for machines and equipment and vehicles and associated transport equipment,⁴⁴ that despite the magnitude of the increase they are still facing negative RCA (however the relevance of RCA in explaining the trade in these two sectors is very low). But it is not the case for optical,

⁴⁴ The case of Renault is relevant, as after acquiring the local car producer Dacia Pitesti in 1999, Renault was followed by more than ten large suppliers of car components.

photographic, cinematographic, medical or surgical instruments, clocks and musical instruments and components, where even if it was driven by a 14% outward processing trade production index⁴⁵ in 1999 (Turlea and Mereuta, 2004), the one-way flow trade (2.3% of total imports from the EU) still prevails over the two-way flows (0.5% of total exports to the EU). The decrease of negative RCA however explains the trade in the latter product group, as its share in total exports to the EU increased in 2002 relative to 1993, and decreased in imports. A different pattern is revealed in the pulp, paper and paperboard products group, where the low decrease of negative RCA does not explain the higher increase in its share in imports than in exports.

∅ product groups that witnessed an increase in RCA and decrease in IGL account for 8.3% of total exports to the EU and 1.8% of imports in 2002:

	V. Mineral products	IX. Wood and wood products, other than furniture
RCA change 2002 vs. 1993	0.62	0.34
	+ → +	+ → +
IGL change 2002 vs. 1993	-0.36	-0.22
Change in the share of the sector i in total exports to the EU, 2002 vs. 1993	-5.3	0.8
Change in the share of the sector i in total imports from the EU, 2002 vs. 1993	-3.3	0.0
Share in exports in 2002	5.4	2.9
Share in imports in 2002	1.2	0.6

These may be interpreted as a decrease of intra-industry trade, that is trade of similar products with the EU; the one-way flows prevailed and increased in these two sectors. The high positive comparative advantages explain the 4 times higher shares of these products in Romanian exports than in imports from the EU.

∅ product groups that witnessed a decrease in RCA and increase in IGL account for 15.6% of total exports to the EU and 10.8% of imports in 2002:

	IV. Food, beverages, tobacco	XIII. Articles of stone, plastics, glass, cement, ceramics	XV. Base metals and articles	XX. Miscellaneous manufactured articles, incl. furniture
RCA change 2002 vs. 1993	-0.09	-1.02	-0.74	-0.31
	- → -	+ → -	+ → +	+ → +
IGL change 2002 vs. 1993	0.06	0.14	0.16	0.01
Change in the share of the sector i in total exports to the EU 2002 vs. 1993	-0.9	-1.5	-3.2	-7.8
Change in the share of the sector i in total imports from the EU, 2002 vs. 1993	-2.9	0.3	2.1	-1.2
Share in exports in 2002	0.5	1.4	7.2	6.5
Share in imports in 2002	1.7	1.5	6.9	0.7

The increase of IGL, but at the expense of decreasing RCA (the high share of this product group's RCA being basically positive) might be explained by the use of transfer pricing in intra-firm trade, especially in the case of articles of stone, plastics, glass, cement and ceramics. Boscaiu et al. (2000) find that 46% of the export oriented foreign firms operating in Romania make losses from

⁴⁵ The OPT production index is estimated as the share of foreign client expenditure in total production costs.

their export operations. Moreover, the cement industry is the perfect candidate for transfer pricing, where all firms are foreign-owned: the local market is split between three foreign-owned companies, and the same companies share the other markets in the region, contributing extensively to the low share of the XIII product group in Romanian foreign trade with the EU. A special case is the mainly domestic market oriented foodstuff sector, which faces higher shares in imports from than in exports to the EU and also high negative revealed comparative advantages. These are explained by an increase in demand and market-oriented FDI, since Romanian agriculture is a good supplier to the food industry. However in miscellaneous manufactured articles and furniture, the high positive RCA decreased during this decade, though it is still the most competitive product group relative to the EU (highest positive RCA in 2002 and exports are prevalent over imports).

Ø product groups that witnessed a double decrease in RCA and IGL account for 52.9% of total exports to the EU and 50.7% of imports in 2002:

	I. Live animals and animal products	III. Animal or vegetal fats and oil	VI. Chemical products	VII. Plastics, rubber and articles thereof	VIII. Raw hides and skins, leather, furs and articles thereof	XI. Textiles and textile articles	XII. Footwear, headgear, umbrellas and other similar products	XXII. Products not elsewhere
RCA change 2002 vs. 1993	-1.09 + → -	-5.55 + → -	-1.04 - → -	-0.42 - → -	-0.49 - → -	-0.19 + → +	-0.15 + → +	-2.70 + → -
IGL change 2002 vs. 1993	-0.24	-0.95	-0.21	-0.06	-0.08	-0.03	-0.04	-0.21
Change in the share of the sector i in total exports to the EU 2002 vs. 1993	-0.6	-0.7	-2.4	0.4	0.3	3.4	5.7	0.1
Change in the share of the sector i in total imports from the EU, 2002 vs. 1993	0.7	0.0	0.3	2.9	2.9	5.9	1.3	1.4
Share in exports in 2002	1	0.0	1.3	2.2	1.6	34.4	12.1	0.3
Share in imports in 2002	1.6	0.4	9.8	6.4	5.6	23.1	2.3	1.5

More than half of the Romanian trade with EU (exports and imports as well) faces decreasing comparative advantages and arises in intra-industry trade. Not surprisingly, we find here most of the low-skilled labour-intensive sectors. However, the pattern of this last category is quite heterogenous. Textiles and clothing and footwear still have positive revealed comparative advantages and increased their share in total exports to the EU. But the positive RCA is significant and explains only the increase in the footwear products group, dominated by one-way flow trade, where the increase in export share is much higher than in imports. As regards the sector of textile and clothing products, a highly important vehicle for trade integration is the outward processing trade (the OPT production index in 1999 was 86.3%), which leads to one of the highest shares of intra-industry trade. On the contrary, the increasing and high negative RCA in the chemical, plastics, rubber, leather and articles thereof product group explains the prevalence and increase of one-way trade flows: imports over exports in 2002. These are the main uncompetitive sectors in Romanian foreign trade. Instead, the other two remaining sectors: live animals and animal

products and products not included elsewhere, lost their initial positive RCA. RCA is however irrelevant in the former case, with two-way flows dominating over one-way flow (the share in imports is higher than in exports in 2002), but the increase of the high negative RCA explains the prevalence of one-way flow and the higher increase in its share in imports than in exports.

We may conclude that the positive RCAs in trade with the EU were still located in 2002 in the *labour-intensive industries* (Figure B.3.6): miscellaneous manufactured articles (furniture included), footwear, headgear, umbrellas and other similar products, wood and wood products, textiles and clothing, vegetal products, and in the *natural resource-intensive industries*: mineral products and base metal and articles. All these account for **70.5% of total exports to the EU and 35.4% of imports**, in 2002.

These conclusions are consistent with the international specialization approach, according to the Balassa revealed comparative advantage (BRCA) index, developed at a higher level of disaggregation. The latter compares the share of a given sector in national exports with the share of this sector in world exports. According to the ITC (2004) evaluations, Romania was specialized in 2002 in the following sectors: leather products (ranking in 8th place in world export share, BRCA = 6.51), clothing (ranking 22nd, BRCA = 6.77), basic manufactures (ranking 26th, BRCA = 1.73).

Romania is a weak competitor in the technology-intensive industries, which generate more than half of the trade deficit (Figure B.3.7). The highest sectoral trade deficit with the EU, in 2002, was still accounted for by the machines and equipment products group (almost 1 m. USD), followed by the chemical products (0.9 m. USD). The international specialization index ranks Romania in 35th place in world export share in IT and consumer electronics (BRCA = 0.35); 36th in non-electronic machinery (BRCA = 0.59); 37th in electronic components (BRCA = 0.65); 39th in transport equipment (BRCA 0.45); 40th in miscellaneous manufacturing (BRCA = 0.77) (ITC, 2004).

From the dynamic perspective instead, it seems that Romania is moving its production towards higher quality along the production spectrum.

The Romanian labour-intensive export gains in the European market shares are in fact partially a result of the reallocation of labour towards the technology-intensive industries in the other CEECs. In the medium run, the labour-intensive exporting industries are to lose their competitiveness, as a gradual increase of labour costs occurs according to the deeper integration with the EU. The intra-industry flows account for two thirds of Romanian exports to the EU. In the meantime the comparative advantages explain a quarter of Romanian exports to the EU in 2002. The RCA relevance will be diminishing as well, after Romania's *de jure* integration into the EU, associated with a free movement of factors of production. Indeed the margins of comparative advantage shrunk in the globalization context.

Furthermore, it is no longer clear that we can identify comparative advantages at the broad sectoral level. Rather adjustments within sectors may be of greater importance than between sectors, as the international specialization is increasingly narrowing. Also, significant comparative advantages may be found at the more disaggregated product level, and not necessarily at the sectoral level. This is one of the main shortcomings of our overall Romanian trade specialization with the EU, which will be addressed soon in more in-depth research as data become available.

This analysis however revealed the main characteristics of the competitiveness-driven forces of the Romanian business environment: labour force and natural resources. To the finding of the incidence of development on trade performances and dynamics must be added the inverse approach as well. How the liberalisation and trade expansion affected the development will be addressed in the next section.

Trade approach vs. development approach to convergence

A few remarks are worth mentioning here with respect to the complex relationship between liberalization, especially trade liberalization, and human development. Understanding their interaction requires understanding the complexity of trade policy and human development as part of broader development policy. Though the relationship between trade and development is the subject of contentious debate in the literature, there is little doubt that trade can be a powerful source of economic growth (Rodrick, 2002). But while broadly based economic growth is necessary for human development, it is not enough. Human development also requires enlarging people's choices and opportunities – especially poor people. International trade can expand markets, facilitate competition and disseminate knowledge, creating opportunities for growth and human development. Trade can also raise productivity and increase exposure to new technologies, which can also spur growth. Indeed, over the past 20 years the fastest-growing regions have also had the highest export growth (World Bank, 2002). But liberalizing trade does not ensure human development, and expanding trade does not always have a positive or neutral effect on human development. Trade expansion neither guarantees immediate economic growth nor longer-run economic or human development (WTO, 2003). Internal and external institutional and social pre-conditions largely determine whether and to what extent a country or population group benefit from trade. Trade in any case should be seen as a means to development rather than an end. Though, there is a two-way relationship between trade and human development, trade theories do not offer unequivocal conclusions about the directions or dynamics of the relationship. Moreover, trade liberalization policies should not be viewed as a reliable mechanism for generating self-sustaining growth and reducing poverty, let alone achieving other positive human development outcomes (Dollar and Kraay, 2000).

An overall significant real GDP annual growth was associated with 2 cycles of liberalization measures in Romania (foreign trade included), those performed in the first years of transition (mainly structural and institutional reforms), followed by a drastic fall of the EBRD index in 1995-1997, and those undertaken in late 1996 till 1998 (macroeconomic adjustment reforms being predominant), followed by a constant increase in the EBRD index and in GDP/head (PPC) as well (Figures C.1 and C.2). The high GDP growth rate since 2000 is indeed associated with an even higher export increase rate and with a constant augmentation of GDP per capita (EURO, PPC) (see Figure C.2).⁴⁶

The larger the scope of reforms, associated with more liberalized economies and a larger private share in GDP, the better the economic results and the higher the real GDP levels. Romania is an under-performer in terms of economic liberalization, but with a more dynamic real GDP growth in 1991–2001 than Lithuania, Latvia or Bulgaria (Figure C.3). This is in line with the conclusions of Funke and Ruhwedel (2003) that economic policy as reflected in the aggregate EBRD transition indicator has significantly contributed to productivity recovery in Eastern Europe, reflected in the higher growth of GDP. In other words, government policies in a wide range of areas are important in explaining both the time and cross-sectional dimension of output paths during the transition phase.

Poland is the best performer of the CEEC-10 in terms of real GDP growth (1989=100), despite the fact that Hungary or Czech Republic are more liberalized economies in the same period. Hungary instead is the best performer in terms of lower income inequality. The faster liberalization process was associated as well with a smaller increase in earnings inequality measured by the Gini coefficient of income per capita. Romania has a relatively close average value of EBRD liberalization to Bulgaria, but the latter experienced a much higher increase in income inequality (Figure C.4).

⁴⁶ The WIIW forecasts for the next 2 years are similar to the high growth and trade performance in 2003.

In explaining the differences in the CEEC outcomes in terms of growth rates, initial conditions, trade performances, external developments (access to markets, EU integration, etc.), geographical location (close to the EU border) and the extent and nature of market reforms, at both the macroeconomic and microeconomic levels, proved to be the main explanatory factors. In addition, the degree of competitiveness of CEECs' political regimes is highly reflected in the degree of economic liberalization. More democratic countries, like the CEEC-8 new EU members, liberalized their economies faster and to a larger extent. Romania's concentrated political regime kept the transition to a fully market economy stuck at a lower average level of liberalization index⁴⁷ in 1991–2001, in the CEEC-10 group analyzed here (Figure C.5). Hungary, Czech Republic and Poland are the best performers of the CEEC-10, but the other accession countries are concentrated in their neighbourhood, except for Bulgaria and Romania.

Last, but not least, the rule of law and corruption are two of the most distortive instruments for economic growth and fair income distribution. The transition economies can be divided into 4 main groups with respect to the current level of taxation and corruption (Figure C.6). The moderate Romanian government outlays as percentages of GDP, but the lowest of all the CEEC-10, are associated with the weakest rule of law index⁴⁸ and the highest corruption perception index⁴⁹ among the accession countries. So the stronger rule of law is a crucial factor conducive to longer-run economic growth. This is proved by the experience of three out-performers: Slovenia, Hungary and Estonia, countries with strong to very strong rule of law and moderate corruption perception indices.

4. Growth Competitiveness Convergence Index – a new method for CEEC convergence estimation in 2003

Taking into account the vast range of explanatory variables for economic growth and development, a substantial uncertainty surrounds growth projections in the estimates of CEEC convergence to the EU (in terms of GDP per capita or hard macroeconomic data, similar to the Deutsche Bank methodology), and years needed to catch up with the EU mean; an ambiguity that is made worse by the unsolved problem of how much convergence to the EU that Romania can reasonably expect to attain. This statistical approach may lead to implausible conclusions, as convergence is a complex process of catching up in terms of macroeconomic environment, public institutions, national technology upgrading. The economic robustness of convergence analysis may be improved by quantifying all these economically important explanatory variables in the composite *growth competitiveness convergence index*. In order to do this we used the indexes estimated by the Blanke, Paua and Sala-i-Martin in the *Global Competitiveness Report 2003*.

An immediate overview of the results of the growth competitiveness convergence index

⁴⁷ The *liberalization index* is a composite index calculated by the EBRD as an arithmetic average of the 8 EBRD liberalization indices published in the Transition Reports: index of price liberalization, index of forex and trade liberalization, index of small-scale privatization, index of large-scale privatization, index of enterprise reform, index of competition policy, index of banking sector reform, index of reform of non-banking financial institutions. The EBRD Index takes a value of 1 (minimum) when there is very little (or no) progress since the fall of communism; and a value of 4.3 to show standards and performance typical of advanced industrial economies.

⁴⁸ *Rule of Law Index 2001* includes several indicators which measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts.

⁴⁹ *Corruption Perception Index 2003* relates to perceptions of the degree of corruption as seen by business people, academics and risk analysts, and ranges between 10 (highly clean) and 0 (highly corrupt).

for 2003 reveals significant differences between Romania and the EU, and Romania and the other CEECs as well (Table D.1). Romania has the lowest growth competitiveness convergence to the EU and CEEC-10 index in 2003 (66.0%, respectively 77.5%). Relative to the EU, Romania is lagging behind especially in terms of country credit rating (40.3%), government waste (44.5%), contracts and law (55.5%), innovation (57.8%) and corruption (58.8%). These analyses underline exactly the areas to address in the near future for Romania to get closer to the EU average development level. Higher convergence is registered in terms of technology transfer (97.3%, doing better than Bulgaria or Lithuania),⁵⁰ and in terms of macroeconomic stability (80.0%).

A closer analysis of the EU and CEEC-10 average reveals a slightly higher standard deviation and a much higher dispersion (σ -convergence⁵¹) in the latter, demonstrating the higher heterogeneity of the CEEC-10 countries than those of the EU (Table D.2). Estonia, Slovenia and Hungary are the out-performers in terms of growth competitiveness convergence to the EU, and Romania and Bulgaria are the laggards. The high dispersion within the CEEC-10 is caused by the different performances in terms of government waste reduction (21.0% dispersion), contracts and law enforcement (17.1%), country credit improvements (16.2%), innovation (14.2%). In the EU-15, the dispersion is instead generated mainly by the different innovation performance (20.4% dispersion) and government waste reduction (19.2%).

According to our growth competitiveness convergence indicator to the EU, but in the Deutsche Bank convergence indicators as well, Romania ranks in last place within the CEEC-10 (Table D.3), but in 9th place according to the business environment and GDP per capita convergence indicators. The ranking of the other CEEC countries shows some changes relative to the GDP/head ranking, placing Estonia first, followed by Slovenia, Hungary and Latvia (Table D.3). However, comparing the four methodologies used for CEEC convergence to the EU (Table D.3): growth competitiveness convergence indicator (IGC), business environment convergence indicator (BCI), Deutsche Bank convergence indicator (DB) and GDP per capita (GDP_c), we find strong positive correlations between the resulting rankings:

Rankings according to the following indicators:	Correlation
IGC _ BCI	0.93
DB _ GDP_c	0.85
IGC _ DB	0.70
DB _ BCI	0.70
IGC _ GDP_c	0.65

Scenarios for the CEEC-10 catch-up to the EU

Finally we compare the results of two scenarios regarding the years needed for the CEEC-10 to reach the average level of EU in terms of *GDP per capita* and *growth competitiveness*. For the former we suggest a 2.5% annual reduction of the gap between CEECs and the EU as an optimistic scenario and a 2% for the pessimistic scenario (Table D.4). These convergence speeds are close to the backward-looking estimates of EU and CEEC convergence speeds of Barro and Sala-i-Martin (1995), Kaitila (1994) and Wagner and Hlouskova (2004) (see section 2 regarding the main empirical evidence). For the latter we suggest a lower speed of annual reduction as it involves a holistic improvement of the economic environment, which is 2% for the optimistic

⁵⁰ Though in this case it is worth mentioning that the EU mean refers only to Spain and Portugal, for which data are available; even if the nominal values are not relevant to the EU average, the gap with the CEEC is robust.

⁵¹ The σ -convergence is estimated as the standard deviation relative to average of the country samples.

scenario, and 1.5% for the pessimistic scenario (Table D.5). There are no other empirical findings on the speed of convergence in GCI as there are no available long-run data.

The predictions suggest that the GDP/head catch-up to the EU average level will at the very least take more than 3 decades in the optimistic scenario, and 6 decades in the pessimistic scenario, with Slovenia arriving first and being followed by Czech Republic and Hungary. At the same time Romania needs 60 years in the optimistic scenario, or 110 years in the pessimistic scenario. If we consider the pessimistic scenario as being closer to reality, we then find that Romania will in the next 30 years reach just 60% of the EU average GDP per capita.

In terms of growth competitiveness, the predictions suggest much less time needed for the CEEC catch-up, except for Romania that lags behind. These are at least 4 years in the optimistic scenario and 2 decades in the pessimistic scenario, with Estonia coming first in this case, followed by Slovenia and Hungary (Czech Republic ranks 5th in GCI, compared to 2nd in GDP/head). Romania instead will need 75 years in the optimistic scenario, or 135 in the pessimistic scenario.

Even if these linear projections are theoretical and mechanistic, assuming a constant, unique and “uncalibrated” convergence pattern for all the CEECs, they give us a general idea of the long-run process of convergence needed for the CEECs to catch-up with the EU average level. They also give indicators to economic policy decision-makers on the speed of reform and growth they need to induce in order to catch up earlier.

5. Conclusions

This paper has covered a rather large terrain. Its main aim has been to provide more in-depth estimations of the magnitude of CEEC convergence to the EU.

Implications for theory. We combined the quantitative approach to reveal the gaps between the CEECs and the EU with the qualitative aspect in the heterogeneous pattern of the CEEC convergence process to the EU by estimating the *growth competitiveness convergence index*. We focused on the impact of initial conditions on growth and convergence and on the pressures of the market opening and integration processes, but we mainly pointed to the role of nationally specific differences in growth and business environment performances. In order to have a digestible form of these differences we found it useful and relevant to oppose the development approach and the trade approach in explaining the differences in convergence speed, as proxies for the outcomes of macroeconomic or microeconomic reforms. Explaining the interactions between the two as well, we overcame the limitations of the traditional approaches, focused on shrinking gaps in GDP/per capita or core macroeconomic data in estimating the convergence level of CEECs to the EU (Deutsche Bank methodology).

Overall the stream of literature reviewed in the first section showed that trade matters for growth and that divergence and convergence are possible outcomes of the process of economic development. But the emphasis on the vast typology of differences between Romania and the other CEECs is extremely relevant for understanding their interactions that lead to different patterns of specialization and to a lower convergence speed to the EU. Specific industries play a leading role in different waves of development. After transition, high technological opportunity was exploited unevenly by the CEEC-10 countries, also according to their specialization patterns. Romania highly specialized in the labour intensive and natural resource intensive industries, dealing still with the first stage of competitive development, that is the factor-driven economy. The dynamics towards the second stage: investment-driven economy based on efficiency, has improved in the last 3 years, but it is rather small.

Recent research on the relationship between trade and growth suggests that openness alone is not a sufficient criteria for determining high levels of growth, even though the trade

performance of individual countries tends to be a good indicator of economic performance since well performing countries tend to record higher rates of GDP growth. Many other factors taken into account as the main falling behind driven forces, gathered in the two main groups of macroeconomic and microeconomic growth competitiveness, improves the convergence methodology estimations. There is still ground for further improvements, as this qualitative approach developed as a complement to the quantitative approach for offering a relevant general profile of the convergence degree may be criticised as being limited to a small number of variables.

Implications for policy. There is no doubt that convergence cannot be taken for granted. The CEECs transition to a new stage of development, which is the innovation-driven economies (the EU being focused on it), are very difficult as it requires a complex transformation of many interdependent aspects of competition. The policy-makers are generally focused on macroeconomic qualitative aspects, but they should also highly address the microeconomic reforms, as qualitative indicators used to characterise the competitiveness of nations. They should not underestimate the fact that the wealth or standard of living of a nation is created at the microeconomic level, routed in the national business environment. Unless these capabilities improve, macroeconomic, political, legal and social reforms will not prove fully successful. The challenges are still hard to meet as they must compete with the EU countries, despite having economies at different levels of development. In the same time they are poised to join the EU institutional and legal strong systems. Currently, Romania is still lagging behind more in terms of national business environment; public institutional development: contracts and law enforcement, corruption perception; government waste than in terms of macroeconomic stability. These are the main points that should be addressed in the near future. The proposed convergence methodology estimation will help to the on-going monitoring of these policies implementation.

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