

# Regional Policies and EU Enlargement

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Revised: November 2002

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# 1 Introduction

The European Union is moving toward the sixth enlargement of its history. The process started in 1988 when the first Trade and Cooperation Agreement was signed with Hungary, took its main turn with the 1993 European Council of Copenhagen and is supposed to come to its first completion with the Intergovernmental Conference of 2004. Candidates to enter the EU are ten Eastern European countries ruled by socialist regimes until about 1990 - Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. To this group (which we will refer to, collectively, as CEEC10 or just CEEC countries) one should also add Cyprus, and Malta for a total of twelve candidates. In 2000, the European Council of Nice established that negotiations with a first group of candidate countries about the exact timing of their accession should be completed by the end of the current year (2002). Recent political signals from Bruxelles suggest that, roughly, the planned admission schedule should be followed with Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, and Slovenia gaining full admission in 2004, while Bulgaria and Romania should join about four years later. Given the very small size of Cyprus and Malta, our analysis concentrates on the CEEC10 and the term “enlargement” refers to the entrance in the EU of the ten CEEC countries listed above.

We are interested in the following broad policy question:

- *Taking both the enlargement process, as currently defined by the EU, and the structural funds as a given, what is the best way for candidate countries to fuel real convergence at the national and regional level?*

To put it differently: assume that the ongoing admission process is completed by 2004. Which changes, if any, in the principles and methodologies underlying current EU structural policies should be recommended to foster fast and homogenous growth among the new members, at both the national and regional levels? Which role should national and supranational policies play in this process? The word “regional”, here, means NUTS2 territorial units or lower, as this is the level at which EU structural policies are designed and evaluated. We pointed out elsewhere (e.g., Boldrin and Canova (2001)) that the NUTS2 regions are highly heterogeneous, and that pursuing economic convergence at such a territorial level makes little sense. We argue later that this is even less sensible for most CEEC countries. Nevertheless, taking this policy objective at face value we ask how Structural and Cohesion Funds and their allocation should be modified to reach it, and what kind of national policies may create an environment conducive to growth. Our attention concentrates on the twin issues of economic run growth and convergence, for the CEEC10 after joining the EU. We proceed through the following steps, which define the structure of this report.

In Section 2, we quantify the extent to which enlargement countries are economically backward respect to the EU15. We document the evolution of the main macroeconomic

indicators since the transition from socialism started, and find that, despite the fact that the transition has started to show its fruits since the middle 1990s, the average CEEC country is still where it was ten years ago relative to the average EU15 country. Heterogeneity across CEEC countries, measured either in levels or in rates of change, is probably more substantial than the regional differences within each country. Some countries (Slovenia, Hungary, and depending on the indicators Poland or the Czech Republic) appear to be ahead of the rest. We document that, with the current investment rates in physical capital, it will take a considerable amount of time for CEEC countries to reach the capital-output ratio existing in the EU. Whether this will be a problem or not depend on the dynamics of technological acquisition in these countries. Foreign direct investments are growing, but still too small to forthcome dramatic changes in productivity. We also examine, very briefly, the labor market conditions of CEEC countries. Much has been written on this issue and our contribution here is to point out that most of the imbalances noted by commentators are endemic also to the labor markets of current EU members. In this sense, sweeping reforms affecting incentives and eliminating deadweight losses should be advocated for both groups of countries. We complement our descriptive analysis by reporting a simple growth accounting exercise. Consistent with studies of this type we find that, from the viewpoint of growth accounting, productivity gains, as measured by the growth rate of TFP, constitute the most important engine of long term growth. We examine possible sources of TFP growth in the CEEC: FDI, shrinkage of the public, or of the agricultural sectors, changing institutions. All appear to be important, but it is impossible to find a single cause of TFP growth. Finally, we examine the sectoral composition of employment and VA across CEEC countries and relative to the EU. In CEEC countries more people are employed and more VA comes from agriculture and low productivity sectors than in the EU. However, when we compare the CEEC10 with the poorer Mediterranean countries of the EU, many similarities emerge, both in terms of snapshot conditions in 2000 and of dynamic evolution over the transition. Given current conditions, convergence should therefore be expected to occur, if any, toward these countries and not toward the EU average.

In Section 3, we ask how CEEC regional/national disparities compare with those currently existing and, more crucially, with those that existed in the middle 1980s, within the EU. Economic disparities between EU15 and CEEC10 are not different from those the EU has already learned to manage during previous enlargement episodes. Regional inequalities within the CEEC10 are also comparable, if not lower, than those within current EU15 countries. There are historical differences between the enlargement process of the 1980s and the one of today but they seem to be playing in favor of CEEC countries, not against them. We perform a simple econometric exercise trying to quantify the most likely changes that accession should cause on the growth rates of the CEEC countries. With some important qualifications, we estimate this change to be relatively small. We conclude that the new enlargement is not substantially different from previous ones and, as in those cases, holding internal policies constant, the economic gains from accession will be positive but not dramat-

ically large - accession (and EU funds) will not be the act of magic getting rid of economic backwardness. National policies could dramatically alter these conclusions, and we detail at the end of this report a set of advises which, in our opinion, could make a difference.

In Section 4, we look at other studies of economic convergence in Europe to gather some lessons about policies that may increase the growth rate of the CEEC10 relative to the EU. The provisional conclusions we reach are that, (i) barring particularly dramatic circumstances and/or changes in institutional settings, economic divergence is not a likely outcome of a process of trade liberalization; (ii) countries belonging to common trade areas with a reasonable degree of factor mobility, seem to grow at a fairly common rate in the long run, and some degree of catching up should be expected in the intermediate period; (iii) policies of extensive privatization, reduction in the fiscal burden, openness to FDI and product/labor markets liberalization seem to be the main engines behind "robust" growth experiences observed so far; (iv) technologically and economically backward countries that enter into a free trade arrangement with more advanced ones undergo a fairly rapid and dramatic process of structural change which leads to the destruction of employment in the agricultural and other backward sectors. Such transition process, already under way in the CEEC10 since the early 1990s, is the key threat to long run prosperity. This is because, (v) the regional patterns of long term unemployment it induces may persist over time. Elimination of structural unemployment requires strong and clearly targeted mobility and training policies. Such policies have seldom been implemented because, in the face of growing unemployment, political pressure for the adoption of grossly inefficient transfer policies is usually victorious. The likelihood of such mistaken policy choices is enhanced by the availability of external aid. Economic theory aside, historical evidence shows that subsidies and transfer policies make regional imbalances more, not less persistent. We discuss several historical episodes within the EU15. We look in particular at Greece, Ireland, Spain and Portugal and relate their different performances to national and EU policies. We also look at the regions of the Italian Mezzogiorno, which have been the objects of almost fifty years of national and European structural policies. Finally, we compare the Länder of former East Germany with some of the most dynamic CEEC countries. While they shared almost fifty years of communist ruling, they have been exposed to very different policies since the transition started. East Germany, which had an advantage as far as initial conditions were concerned, has been the privileged target of a large amount of external funding and support, coming both from the EU structural funds programs and from the German government. Poland, Hungary and other CEEC countries have received practically no external aid, and have been exposed to a fast transition from socialism to the free markets.

We take stock in Section 5, which looks at Structural Funds directly. We are interested in ascertaining if and how the allocation and use of structural funds is likely to affect the growth path of the EU-accession economies, and regions. Our analysis here proceeds in two stages. In the first, we argue why economic theory and empirical evidence suggest that structural funds (and the common agricultural policy) should be terminated as they

amount to nothing more than pork barrel spending to favor one lobby after the next. As net transfers add up roughly to zero for most countries, all one is left with is the deadweight loss of taxation, and the cost of maintaining an expensive and unproductive bureaucracy both in Bruxelles and at the national and regional levels. In the second step we recognize that, political games being what they are, structural policies are unlikely to be terminated anytime soon. It is therefore worth asking how could those funds be spent more efficiently. First, there is the need to redefine the convergence objective at a territorial level less inappropriate than the NUTS2 regions. Second, external transfers seem to yield their highest payoff in extremely poor regions, when appropriate national policies are also in place to take advantage of such external funding. This suggests concentrating structural funding only in regions which are below 50 percent of the EU average, and making conditionality stronger than it currently is. Third, the focus of the support should be shifted away from funding hundreds of small investment projects in the most disparate areas. While theory is quite ambiguous on this point, historical experience suggests that investments in transport and communication infrastructures, public utilities and productive human capital are almost invariably among the preconditions of episodes of extraordinary economic growth. The paper by Frank Barry, in this same volume, detailing some important aspect of the Irish miracle provides further support to this claim, We recommend therefore that structural funds be concentrated only in these areas and that the objectives of European structural policies be redefined accordingly.

Section 6 concludes with a summary of our findings and a list of policy advises.

## **2 Initial conditions in the enlargement countries**

The purpose of this section is to describe the current macroeconomic conditions of CEEC accession countries, to assess the extent of their backwardness with respect to the EU15, to highlight the heterogeneities existing both within and across candidate countries and to evaluate the stance of those variables which theory or empirical practice found important in favoring long run economic convergence. We concentrate discussion on those macroeconomic indicators which are more relevant from a growth perspective, leaving aside variables such as inflation, debt, and government deficit, which are outside the scope of our analysis. It should go without saying that a stable and, especially, predictable fiscal and monetary environment constitutes a key precondition for economic development. Sustained economic growth is impossible while facing high and uncertain inflation and tax rates. All this, we insist, is so obvious it should not even be mentioned. Necessary conditions are, nevertheless, just necessary: low and stable inflation is not enough. Low and undistortionary taxation is not necessarily a consequence of a stable fiscal policy. A variety of other structural policies may provide the wrong set of incentives. In particular, historical experience shows that distortionary and wasteful industrial, labor market, and welfare policies may be very detrimental to long-rung growth. It is on this second set of policies we concentrate.

Unless otherwise noticed, data for the year 2000 is used to provide a snapshot characterization of initial conditions, while the evolution over the decade 1990-2000 is used to gauge the underlying tendencies. We divide our discussion in several subsections. The first deals with synthetic measures of the wealth of a nation: GDP per capita and labor productivity. The second with investment, savings and foreign direct investment (FDI). The third discusses labor market conditions. The fourth reports the results of a growth accounting exercise. In the fifth we look at sectoral composition of output and employment. In the sixth we look at regional disparities.

## 2.1 Per capita income and labor productivity

CEEC accession countries are poor according to GDP per capita, measured in Purchasing Power Standards (PPS). Figure 1 graphs this indicator relative to the EU15 average for the years from 1991 to 2000. The GDP per capita of the mean CEEC country has oscillated between about 36 and 42 percent of the EU average, the oscillations reflecting to a large extent changing business cycle conditions. The most recent estimates put it at about 40 percent. The beginning and ending points of the time series are roughly the same, indicating that growth rates in the two economic areas have been, on average, similar. While a minor degree of catching up is noticeable, in some countries in the second half of the 1990s, this is far from appearing as an established and uniform trend. We refrain, therefore, from making bold predictions on the basis of eye-ball econometrics, and hope.

Focusing the discussion on averages is somewhat misleading since the last ten years have witnessed substantial cross country differences in the growth performances of CEEC countries and, from this point of view, the heterogeneities are stronger than those present among current EU members. For example, while over the decade the income per capita of Rumania and Bulgaria has fallen from 28 and 31 percent to 24 and 26 percent of the EU average, respectively, during the same period the per capita income of Slovenia and Poland increased, relative to the EU, by about one percentage point per year. As of 2000, Slovenia is the richest of the group, with income per-capita above 70 per cent of the EU average, higher than Greece and approximately at the level of Portugal; the Czech Republic, Hungary, and the Slovak Republic all have per capita income in excess of 50 per cent of the EU15 average; Poland and Estonia lag behind at about 40 percent but appear to be growing faster than average; the rest (Bulgaria, Latvia, Lithuania and Romania) is around or below the 30 percent level.

There are at least two reasons for why GDP per-capita may not be a good indicator of the wealth of the CEEC nations. First, underground and unrecorded activities may be large relative to total market production: recent estimates obtained using electricity consumption (see IMF Staff papers (2001, p.75)) put this number at around 40 – 45 percent of current GDP. Consumption of electricity may be a distorted measure of economic activity because of differential subsidies to electricity prices in different countries. Still a reasonable estimate

is that official GDP values are downward biased by about 20 percent. Second, because of the transition process, many non-tradable activities are likely to be mismeasured. Although it is hard to quantify, this source of mismeasurement could add up to 10 per cent of current estimates.

An alternative indicator is labor productivity (LP), here measured by gross value added per employed person, in thousand of PPS. We report the time series for labor productivity in the 10 CEEC countries relative to the EU also in Figure 1. Roughly speaking, there is little difference between relative labor productivity and relative GDP per-capita. For example, the level of labor productivity of the average CEEC country oscillates between 36 and 41 per cent of the EU average and despite some differential growth in LP in favor of CEEC countries during the first five years, the average value has not changed much over the whole decade. In fact, factoring out the cyclical tendencies and excluding the first two years of the transition when labor productivity gains were obtained through massive labor shredding, the EU/CEEC labor productivity differential in 2000 is approximately the same as it was in 1992-1993. Hungary, Poland, Slovenia and Latvia stand out relative to the others. The first three display a clear upward trend up to 1998, apparently reversed in the last two years, and are responsible for the majority of the productivity gains in the regions in the late 90s. Latvia's relative labor productivity has doubled in the last five years, but its level is still among the lowest in the group.

A word of warning about reading too much out of the productivity measures is also necessary because of some automatic aspects that characterize transition periods. CEEC countries experienced huge job losses in the industrial (state) sector during the past decade, not yet completely compensated by the growth of new jobs in the service and advanced industrial (private) sectors. The expulsion of workers from inefficient sectors generates mass unemployment and labor productivity gains, somewhat independently of the speed at which the rest of the economy modernizes. This is because most of the people expelled from traditional state-managed activities are unemployable in the new ones. Demography, then, plays a role in the adjustment process, with older workers entering long-term unemployment, which is terminated only by retirement. To give a concrete example: because of significantly different employment rates and demographics, Greece appears to be richer than Portugal when labor productivity is considered (more than 15 per cent so, relative to EU average) while in terms of GDP per-capita the picture is reversed, with Portugal overtaking Greece by more than 10 percentage points.

In any case, since both the absolute levels and the relative ranking obtained with the two measures coincide, we may want to attribute a certain degree of reliability to our findings. This leads to the conclusion that, on average, CEEC countries are at about 40 percent of EU15 in per-capita income, with Poland and Slovenia displaying above average growth performances while the rest grows, more or less, at the same rate as the EU.

## 2.2 Saving and Investment Rates

High investment rates have been, by and large, a critical ingredient of the most successful growth experiences in the last 40 years. Singapore, Hong-Kong, Korea, China and a number of other “miracle” countries have had investment rates well above the developed world average (rates as high as 35 percent are not unusual) either right before or at the time when their growth boom occurred. At the opposite end, countries which have either stagnated or have displayed negative long term growth feature very low levels of investment (and saving) rates (e.g., most Latin American countries). Over the last forty years, the empirical literature on economic growth has consistently reported strong correlations between the rate of investment (in equipment and machinery in particular), the growth rates of labor and total factor productivity, and subsequent growth in per capita income (Miles and Scott (2002) is a recent reference). While the theoretical reasons for this correlation are far from obvious, and abundant evidence shows that capital accumulation per-se is not to be looked upon as the main cause of high labor productivity, it is important to recognize that a high investment rate provides a reliable signal of both short and long term potentials for growth.

Capital comes in two forms, human and physical. The first is much harder to measure than the second, so economists are usually satisfied with some weighted measure of the numbers of years of formal schooling accumulated by the average member of the labor force. This is, obviously, a very imprecise measure, as not all school systems are born identical from the point of view of productive human capital. This may easily be the case in the CEEC countries, where the school system had historically been used as an instrument of ideological control. We are insisting on these caveats because, when one looks at a pure measure of the average number of years of schooling attended, the CEEC10, with 9.8 years of schooling on average, come on top of the EU15 mean, which was only 9.5 in 1999 (OECD, check reference). Controlling for content and for quality of schooling, the average CEEC country may be somewhat below the EU15 average human capital stock, but this adjustment is unlikely to make a major difference. This is an important aspect: the quality of the labor force of the CEEC countries is already comparable to the one of the EU: it is highly educated and potentially capable of adapting to new economic circumstances. Frank Barry’s contribution to this volume stresses the key role played by the high quality Irish human capital in that country successful growth experience, hence this positive initial condition should be properly taken into consideration when evaluating policies: most CEEC countries have a highly educated work force which could prove a huge asset if the proper kind of high-tech investment were attracted.

The picture is less rosy when one looks at machines, equipment, plants, infrastructures and so forth. There are two problems in this respect: bad initial conditions (obsolete factories and infrastructures) and relative low investment rates since the transition started. In the EU over the last 10 years, the investment rate has been 17.6 percent on average, with little variations around that level. The four Cohesion countries all had investment rates in excess



of 20 percent during the 1990s. Assuming similar depreciation rates of about 10 per cent a year, a steady state EU level of capital/output ratio of 1.7 and an initial capital/output ratio of 1.3 for the Cohesion countries, it will take them approximately other 10 years to match the EU capital/output ratio.

A similar calculation can be performed for the CEEC10. Figure 2 plots saving and investment rates for the CEEC countries over the last decade. The average rate of gross capital formation was 24.5 percent in 2000, and above 20 percent for most part of the last decade, but there are remarkable differences across countries and time. For example, the Czech and the Slovak republics have investment rates exceeding 30 percent on average while Latvia, Romania and Bulgaria average is only 14 percent. Furthermore, the volatility of investment is large in all countries. More importantly, those countries which show or have shown the strongest potentials for catching up (Hungary, Slovenia and, to a lesser extent, Poland) are those with a more consistently upward trending investment rate. This fits with the received wisdom: it is not high investment per-se that causes growth. Instead, when policy determines conditions which are appropriate for growth, investment flows become significant.

It is important to stress that for the CEEC10 even an investment rate of 30 percent is not especially high once we take into account that depreciation and obsolescence of old capital is significantly larger than in EU countries. As we will see, the estimated depreciation rate of capital over the decade is very high and about half of gross investments is used to replace depreciated capacity. Clearly, these numbers overestimate the depreciation rate we should expect in the future but a more optimistic view of the future does not eliminate the fact that net investment rates in CEEC countries are currently too low to guarantee a fast convergence to the EU capital/output and capital/labor ratios. Under the reasonable assumption that the current capital/output ratio of CEEC countries is about half that of the EU, and taking a depreciation rate twice as large as the one in the EU, we estimate that it will take more than 20 years for the thriftiest CEEC country to reach the 1.7 level - the steady state level consistent with the current investment and depreciation rate in the EU. Politically, twenty years may not be too long a period for convergence to obtain (Greece, Portugal and Spain have been in the EU for sixteen or more years, and are still away from the average) and depreciation rates may drop substantially in the near future. Nevertheless, this simple calculation indicates that hopes of miraculous convergence should not be too easily harbored either.

High investment rates can be financed either by local or by foreign savings. The openness of capital markets and the security of the legal system play an important role in determining the extent to which investment is financed by foreign savings. In all countries, domestic savings are the major source of funds for investment and only in the Czech republic a sustained flow of foreign saving allows investment rates to exceed domestic savings by about 3-4 percent in every year of the sample. In fact, direct portfolio investments have been relatively small in the area, and their magnitude is completely dwarfed by the magnitude of

Foreign Direct Investments (see Eurostat (2002c)).

The role of Foreign Direct Investments (FDI) in bringing backward countries' capital stock and labor productivity in line with the ones of the developed world is well understood, and confirmed by a number of positive growth experiences in Europe and elsewhere (see Barry in this volume, and Martin et al. (2001)). We do not feel comfortable to take a stand on the direction of causality and, in particular, if technological spillovers from FDI are high or low, relative to the productivity gains internalized by firms.

The proportion of FDI in the total investment of CEEC countries displays an increasing trend, in particular after 1995-96. The ratio of FDI to GDP is, on average, more than twice as large as the corresponding number for the EU (5 as compared to 2 percent). For some CEEC countries the net FDI inflow as a percentage of GDP has reached fairly high levels (11 percent in Slovakia, 8 in the Czech republic, 8 in Estonia). For others, it is still around 2 or 3 percent of GDP. A five percent average, however, is substantially better than the one recorded in, e.g., Russia, where in the 1990s the FDI rate was smaller than 1.0 percent. It is also about ten times better than the rate recorded by Greece, Portugal and Spain in the early 1980s. Over two-thirds of the FDI in CEEC countries come from the EU; Germany, the Netherlands and Austria are providing the largest amounts, while Poland, the Czech republic and Hungary are the largest recipients, taking about 70 percent of the total flow to the region (see Eurostat 2000a, 2003c). Except for the Baltic states, FDI are concentrated in the private manufacturing sector (between 36 and 50 percent of the total) while the service sectors (trade, repairs and financial intermediation) account for 23 to 40 per cent of the total.

A distinct possibility is that, although an increase in the capital/labor ratio per-se (driven either by domestic or foreign direct investment) is insufficient to insure fast convergence of labor-productivity, FDI help to boost total factor productivity (TFP) of CEEC countries by bringing in new technologies, expertise and methods of production. Later we provide a detailed discussion of the role of TFP in the convergence process. Here we only note that, FDI rates positively correlate with TFP in many countries (figure 3). This seems to be particularly evident in Hungary and Poland, two of the three largest recipients of FDI, while the surprising counterexample is the Czech Republic. This however is coherent with the results of our growth accounting exercise: in the Czech republic capital accumulation and not TFP changes account for most of the growth in per-capita GDP.

### **2.3 Labor Market Conditions**

Labor markets in CEEC countries displayed complex trends in the last decade. Activity rates in the 15-64 age group oscillated without a precise trend and are currently comparable to EU15 averages (slightly below 70 percent) with Hungary and Bulgaria being, from an historical perspective, the worst (at about 60 percent) and Romania the best (at about 75 percent). Employment rates in the same age group are not worse than those registered, on average, in the EU15 (about 64 percent). In comparison, with the EU15 laggards (Greece,

Italy and Spain, all traveling around a 55 percent employment rate) only Bulgaria (51 percent) scores lower, while Romania, with a 69 percent employment rate, still stands out at the top. These snapshot figures have to be contrasted with differing tendencies during the decade. In figure 4, we plot unemployment rates together with the participation rate (defined as the number of employed and unemployed over total population) in each country. Two clear trends emerge. First, the unemployment rate has dramatically increased in most countries except, perhaps, Hungary and Slovenia, long term unemployment rates being the reason for the strong upward trend. As of 2000 in fact, long-term unemployed accounts for about 10-15 percent of the active labor force. The exception is Poland where about one-third of the unemployed are long term. A large and fairly rapid increase in long (and short) term unemployment is a well known consequence of transition processes. Similar trends were displayed by Portugal and Spain after their transition began. Labor shredding from inefficient sectors generates mass unemployment, both because new sectors are unable to grow at the rate needed to absorb those who are displaced and because workers expelled from decaying sectors have skills which are not usable in the new sectors. This phenomenon has important social implications, which affect the transition generations, and requires appropriate welfare and labor market policies to be kept within politically acceptable bounds, an issue to which we return later.

Second, even if now equal to those in the EU15, participation rates have declined substantially over the decade and are currently about 5 percent lower than in 1991. The largest decline was experienced by Bulgaria, whereas the best performer is probably the Czech republic. In general, the declining participation rates in the CEEC10 is the product of two phenomena. The first, common to the EU15, is the aging of the population accompanied by a tendency to early retirement for old workers displaced by industrial restructuring. Significantly, the country with the strongest decline in labor force participation rate, Bulgaria, is also the one in which population aging is most pronounced. A second factor, also present in some EU countries, but exacerbated in the CEEC10 by the transition process, is the exit of many workers from the legal labor markets and toward underground activities. Overall, the dynamics of labor market indicators in the CEEC10 and EU15 are similar. This is true for averages, degree of variability and overall trends.

The large increase in unemployment and the fall in participation rates contrast dramatically with the dynamics of unit labor costs (defined as real wages divided by productivity) (ULC). We plot ULC indices for eight of the 10 CEEC countries in figure 5, where we normalize them to one in 1995 for all countries: the growth rate of average compensation greatly surpassed the growth rate of labor productivity over the whole period. This is an alarming signal for these countries and an important source of difference with the EU15 (see Eurostat (2002c)). According to the ULC metric only Slovenia and, to a lesser extent, the Slovak republic have managed to keep the growth rate of real wages roughly in line with labor productivity gains. At the opposite extreme is Romania where, because of the long stagnation in labor productivity, unit labor costs have more than doubled over the period. One should

stress, though, that, as of 2000, unit labor costs are still 50 percent lower in the average CEEC country than in the EU (see Eurostat (2001a)). To the extent that the quality of the human capital is about the same, this difference should make the CEEC countries attractive for EU FDIs, especially after the enlargement is completed.

One may wonder as to why wage growth has exceeded labor productivity growth so much in the presence of high and rising unemployment rates. It should be noted, though, that along these dimensions the CEEC countries are not so different from their EU15 counterparts. Slowly, probably too slowly, the non-competitive features of national labor markets are being dismantled. In general, we share the view of the specialized literature, according to which, while some non-competitive aspects still remain in the CEEC labor markets, high unemployment compensations and the high level of labor income (or payroll) taxation are the main culprits for the current situation, making the switch from unemployment to employment unattractive for certain types of workers (see e.g. World Bank (2001b and 2001c)). The level and the duration of unemployment compensations in transition countries with high unemployment rates clearly reflects political and social pressures, and does not require further discussion here (detailed examination of these issues appear in the above publications, and in Vaitilingam (2001)). From our growth perspective, we stress that payroll taxes in CEEC countries are very high, even relative to EU or OECD standards, which are already high when compared to the US. For example, payroll taxes in EU are 23.5 percent and only Italy exceeds 30 percent; in Anglo-Saxon countries they vary between 15 and 20 percent but in the CEEC countries they exceed 40 percent except in Estonia (33 percent) and Slovenia (38 per cent). One may want to ask what is the rationale for keeping such high tax rates in labor markets facing tough transition problems: increasing unemployment forced governments to continuously increase spending on labor insurance policies. The recession of the middle 1990s exacerbated this tendency, since other sources of revenue declined and governments heavily relied on payroll (and inflation) taxes to finance current expenditure. Payroll taxes are slowing decreasing in some countries, e.g. Hungary, but this is far from being a generalized process. Furthermore, the tax burden on labor exceeds the amount of payroll taxes as consumption and income taxes also take away important parts of the worker's compensation. Garibaldi et al. (2001) estimated that, on average in CEEC countries, total tax rate on labor is around 74.7 percent, about 50 percent higher than in the EU (the level here is 53 percent), with Poland (80 percent) and the Slovak republic (81 percent) being the extreme.

Since 1999 the unemployment level has began to slowly decrease in the majority of the CEEC countries, Bulgaria being again the most serious exception to this trend. This also appears to follow a tendency common to the EU15, even if there are no examples of employment miracles which could be compared to e.g., the Netherlands, the UK or Ireland. But then, again, there are no examples among the CEEC countries of courageous and competition-oriented labor market reforms either. Therefore, the appropriate comparison to be made is with those EU economies in which unemployment is still high and labor markets are still

heavily regulated, e.g. Germany, France, Italy and Spain. When this comparison is made, recent movements in labor markets in the CEEC resemble very much those in the countries of the EU.

## 2.4 Growth Accounting, Once Again

A growth accounting exercise requires several assumptions, most of which are somewhat heroic when applied to CEEC countries. Nevertheless, we believe the exercise sheds useful light upon three questions; (i) whether the same factors account for growth across CEEC countries; (ii) whether those factors are the same as those fuelling economic growth in more developed countries; (iii) whether there is any evidence that FDI and technological spillovers have so far contributed to economic growth in the CEEC.

We make the following set of assumptions:

- The share of labor in national income is 70 percent. This roughly corresponds to the estimate obtained using data for the Czech Republic, Hungary and Poland.
- The capital stock increments are computed summing up investment over the period and subtracting yearly depreciation. Data for depreciation is available only for the three Baltic States, in which the depreciation rate is estimated to be 40, 47 and 52 percent of the gross investment rate. These estimates seem to be on the high end of the distribution, hence we use a value of 40 percent for the remaining countries.
- Since no information about part-time vs. full time labor is available, the increments of the labor input are computed using bodies. Data for Hungary indicates that the accounting discrepancy between using bodies and hours is small. We expect the same to hold for the remaining nine countries.
- The increment in the domestic stock of capital is calculated as a residual, subtracting FDI increments from total increments. The same depreciation rate is applied to domestic capital and FDI. Since the technological content of FDI is higher and its depreciation is probably lower, this procedure biases FDI's contribution downward .
- Since reliable data on FDI flows are available only for a subset of the 10 years we consider, we make the assumption that FDI were zero in all the non-available years. Again, this assumption biases downward the estimated contribution of FDI to growth.
- We calculate the contribution to growth of the shrinking of the agricultural sector by multiplying the average labor share by the decrement in the population employed in agriculture.

Table 1 reports the results of our exercise. Since the first (and, at times, the last) year of the sample period differ across countries, the first column reports the range of years for each country. Average growth rates of GDP vary substantially, from a value of -4.0 percent per year in Bulgaria to a 7.7 percent per year in Latvia. Apart from Latvia, success stories appear to be Slovenia, with an average growth rate of 5.0 percent, and Lithuania with 4.9 percent. After Bulgaria, the worst performers are Romania (-0.4) Estonia (2.0) and the Czech republic (2.0).

The relative contributions of labor and capital follow analogous patterns across countries: the capital stock has a small influence while the contribution of labor to growth is negative. To be precise, the contribution of capital to aggregate growth is fairly constant and centered at around 1.4 percent on average. Exceptions are Bulgaria (0.6) and Latvia (0.8) on the negative side, and the Slovak (2.2) and the Czech (2.0) republics on the positive one. In the latter two countries, growth in capital accounts almost entirely for the growth in aggregate output, with variations in the labor inputs or TFP playing a secondary role. As already mentioned, labor dismissals were intense during the decade of the 1990s. This is reflected in the uniformly negative contribution of the labor input, which averages at about 1.1 percent. The fall is extremely large for Bulgaria (-4.0 percent) and quite small for Romania (-0.001 percent) with all the other countries in between.

Qualitatively speaking, these patterns are not dissimilar from those observed in Spain and Portugal post 1975 (see Marimon et al. (1997)). Quantitatively, the difference is one of speed and magnitude, both of which appear to be higher in the CEEC countries, making their transition process even more remarkable when compared to the one which took place in the Iberian Peninsula. On average, the seriously downward phase of the transition process lasted about seven years in the CEEC countries: this is about half the time it took to either Spain or Portugal to start growing faster than the EU average after their transition began. The relative size of the sectors affected by the transition is also much larger in CEEC countries. The Spanish and Portuguese economies were heavily protected from foreign competition, had a strong presence of the state in all sectors, but, nevertheless, they were market economies. State controlled firms never accounted for more than 20 or 25 percent of GVA added in the tradeable sector. On the contrary, and excluding perhaps Hungary, private enterprises never came to control more than 20 percent of tradeable economic activity in the CEEC before the socialist system collapsed. An alternative measure of the relative size of the two transitions can be gathered by looking at the drop in total employment during the first decade. From 1975 to 1985 Spain, which suffered more than Portugal, shredded 2 million workers out of an initial labor force of 12, that is about 16 percent. Among CEEC countries the one with the smallest percentage drop in employment, during the decade of 1990-2000, is Poland (-11 percent) followed by Latvia (-14.5 percent), the Czech (-15) and the Slovak (-16) republics. All other have larger percentage drops, with Bulgaria the worst affected (-33 percent loss in total employment).

We move next to the contribution of Total Factor Productivity. Averaging over the whole

CEEC10, TFP changes have contributed to growth for about 2.2 percent per year out of a total of 2.5 percent per year (roughly 88 percent). This result is not unusual. With few exceptions, TFP invariably accounts for most of the growth in per-capita output. However, this average masks substantial cross country differences. For example, in Lithuania, Latvia, Slovenia and Poland, TFP growth would have implied GDP growth in excess of 4.0 percent, had the two production inputs remained constant, while in Bulgaria, Romania and the Czech republic the contribution of TFP changes to growth has been either negative or negligible. For Hungary and Poland, the two largest recipients of FDI in the group, TFP contribution is positive but not large. While this heterogeneous behavior may require further country-by-country investigation, what we collect from this exercise is that the transition process in the CEEC10 constitutes no exception to the growth accounting rule: GDP increases because TFP does, whatever the cause of the latter may be.

As mentioned, a natural candidate behind the (positive) change in TFP is Foreign Direct Investment. One would expect this to be particularly true for countries that had been sealed from the rest of the world for almost 50 years and which, at the start of the transition, were using obsolete and highly inefficient production techniques. In particular, we would expect the FDI contribution to growth to be highly correlated, across countries, with the TFP contribution. It turns out that, for the sample under consideration, this is not much the case. The overall contribution of FDI to growth has been small, approximately 0.2-0.3 percentage points per year. Further, its cross-country correlation with TFP growth is not significantly different from zero. As pointed out, some of the assumptions we adopted may have biased the estimated FDI contribution downward. Still, even if we double the value of our estimate, the contribution of FDI remains quite small. It is more so when compared with the values estimated in very fast growing countries, such as Ireland in the EU or China, to look far away.

Maybe we should not be surprised by this negative result. After all, the CEEC10 have *not* been growing very fast during the past decade, not even during the last half of it. Some of them may be starting to display fast growth patterns, but this is way too soon to be called. CEEC countries have come close to completing the transition: shutting down inefficient factories and farms, displacing a large fraction of the labor force from its old occupation and starting to adopt advanced and efficient production techniques. This is clearly reflected in our growth accounting results. FDI have started to come in, but not yet at a very high rate. Apart from Estonia, CEEC countries have not yet established conditions as favorable to FDIs as those found, for example, in Ireland. Hence, it would have been surprising if the FDIs contribution to growth in the CEEC10 was comparable to the one in Ireland.

One last possibility is that the shredding of labor in the inefficient sectors is the key force driving TFP changes. This conjecture seems to receive mixed support from our estimates. On the one hand, it seems to be rejected by the aggregate employment data: positive changes in TFP are uncorrelated, across countries, with the magnitude of the decrease in total employment. On the other hand the correlation between TFP changes and the magnitude

of the drop in agricultural employment appears to be statistically significant. Given the nature of agricultural production in the CEEC countries, treating the drop of employment in that sector as a proxy for the amount of labor displacement out of inefficient sectors, does not look as an unreasonable assumption. Lacking better data on labor reallocation from protected to market oriented activities, we must satisfy ourselves with this weak evidence.

In an attempt to find some evidence on the sources of cross-country variability in TFP changes, we look at where CEEC10 stand as far as trade liberalization, capital flows, privatization of firms, banking and legal systems reforms in relation to the EU. Table 2 summarizes the relevant information. We report three indices: a capital flow restriction index, an index of institutional reforms and an index of legal proxies. The capital flow index refers to data for 1997 and ranges from -0.2 to 6, with 6 indicating the most restrictive institutions and negative numbers indicating the presence of positive incentives to capital (in)flows. The reform index refers to 1999 and weighs price liberalization and competition policies (0.3), trade and exchange rate liberalization (0.3) and privatization and banking reform (0.4). A value of 1 corresponds to a market economy. The index of legal proxies refers to the conditions present in 1997 and equally weighs the predictability of law and policies, the political stability and the security of properties, government/business interface, red tape and the efficiencies of government infrastructures. The index ranges from 0 to 6, with 6 being the worst performer.

In general, there appear to be limited differences along institutional lines. For example, the legal proxies index varies from 3.30 (Hungary) to 3.78 (Slovak republic) while the average is at 3.68. By comparison, Russia and the other CIS countries are at about the 4.0 level. The index of structural reforms also indicates that all ten countries are close to the EU, except Bulgaria (0.79), Romania (0.82) and Latvia (0.82). Top performers in this category are Estonia and Hungary (both 0.93). Capital flows restrictions are now relatively low in all countries: the least restrictive is Estonia - which actually provides incentives to FDI's - with the Czech republic a close second (0.05). Worst performers are Romania (1.90), Lithuania (1.40) and Slovenia (1.35). Once again, by way of comparison, Russia scored 1.81 in this scale and the other CIS countries 1.33.

Changes in the quality of institutions may have effects on TFP growth. Theory tells us that more efficient and more open countries may boost their wealth by pushing their production possibility frontier outward. Empirically, and apart from few anecdotal cases, the relevance of institutional factors is largely to be proved. In the last column of figure 3 we confirm this fact by plotting the time series of the reform index. The relationship between the trend in the index and the trend in TFP is weak: most of the changes in the index across countries took place in the early 1990s, while TFP moves over time and displays trends, if any, only in the last five years.

The size and the efficiency of the financial system may constitute an important bottleneck for future growth in the area. Financial and banking systems are still somewhat underdeveloped: for example, the combined size of CEEC stock markets is about the size of the Irish stock market and the turnover per year in the most developed one (Poland) is



about as big as the turnover of two regular days of trading in Frankfurt. Similarly, the size of the total banking system in the whole CEEC is equal to one large EU bank and many banks are too small to enjoy any positive scale effect. These features of the banking system are not however different from those existing, at the time of accession, in the most backward regions of the EU.<sup>1</sup> Compared with ten years ago, capital markets are different in terms of efficiency and functioning. Nevertheless, the development of an appropriate financial system is the area where CEEC countries may benefit most by accession to the EU.

In sum, the examination of liberalization indices indicates that the majority of the CEEC countries are already similar to current EU members. Since the data is slightly outdated, we expect the divergences to have been further reduced in the last few years. Although institutional reforms may still be sought in the future, they do not appear to constitute a fundamental stumbling block in harmonizing EU and CEEC economies.

#### 2.4.1 Sectoral breakdown

Economic theory and previous transition processes suggest that the sectoral composition of value added (VA) and employment play a role in determining the impact of the trade-opening shock and that they are useful indicators of the stage of economic development at which a country finds itself. Differences between EU and CEEC countries in the sectoral composition of VA may provide information useful to predict the shape of things to come.

Table 3 presents this information. Three important features of the table deserve comments. First, the agricultural sector in the CEEC is much more important than in the EU. On average, it contributes to 2.6 per cent of total VA and employees 4.6 percent of the active EU15 labor force while in the CEEC countries agriculture represents 10.6 percent of the total VA and employs about 30 percent of the active labor force. Such percentages also suggest that the agricultural sector of the CEEC10 is about 50 percent less productive (relative to average productivity) than the, already inefficient, agricultural sector of the EU15. This is of tantamount importance in light of EU agricultural policies. In spite of its relatively minor weight in total value added, the agricultural sector is a political giant in CEEC countries *because* of its low productivity: lots of unproductive people are tied to the agricultural sector as the only source of income in the forthcoming future. Second, the service sector is much more developed in the EU than in CEEC countries. Private and public services produce about 62 percent of total VA and employ 65 percent of the active population in the EU15, while in the CEEC10 the share of VA added produced by the service sector is about 52 percent and only 36 percent of the active population is employed there. Again, these numbers also suggest that the service sector, relative to average, is fairly efficient in the CEEC10. Third, the sectoral distribution of VA added looks very similar to that of the most backward

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<sup>1</sup>Spain would make a positive exception in this case. Since the beginning of the transition, and thanks mostly to the presence of four or five large private banks, the Spanish banking system has been much more advanced and its banks much larger than that of Spain's Mediterranean counterparts.

countries in Europe, but the distribution of employment is still screwed toward agriculture and the industrial sector.

Within the CEEC block several important facts need discussion. First, the service sector is already the largest contributor to GVA in all countries. Percentages vary from a low 48 percent for Romania to a surprisingly high 70 percent for Latvia. Agriculture is still an important source of GVA in the poor members of the region - Bulgaria and Romania score around 15 percent - while in other countries the share of GVA produced in agriculture is around 4-8 percent. The share of manufacturing and mining is roughly constant across countries and of the order of 22-25 percent; construction is important primarily in Romania and Estonia while the utility sector is everywhere a small contributor to GVA.

Second, the growth rates of sectoral GVA have differed substantially across countries. For example, over the period 1995-2000, growth of GVA in agriculture has been significantly positive in the Czech republic (around 4.0 percent a year), in Lithuania (around 2.4 percent a year) and negative in Bulgaria (-2.0 percent a year) and in Romania (-3.0 percent a year). In manufacturing and mining, Lithuania experienced the largest growth rate in VA (an astonishing 15 percent a year), while Romania and the Czech republic are the ones with the smallest growth rate. The utility sector has not shown much GVA growth, except in Bulgaria, and the construction sector displayed significant VA growth in Latvia, Estonia, Poland and Slovenia (between 7-10 percent per year). Finally, VA in services has grown at a significantly positive rate in all countries but Romania and the Czech republic. Such large variations in the growth rate of VA and, especially, labor productivity, across sectors point to different institutional and political constraints across countries and sectors. Data is too short to establish an explicit correlation but economic theory suggests that the largest productivity (and VA) gains should take place in those sectors in which competition and market forces have been allowed to exercise their discipline. It would be a worthwhile investment to look carefully into the industrial organization aspects of such large differentials to uncover the linkage between labor market and competition policies on the one hand and sectoral growth and labor productivity performances on the other. Given the regional concentration of some sectors, particularly frequent in small countries, looking at which policies help or hamper the development of a specific sector in one country may be extremely useful to design growth oriented regional policies.

Third, the sectoral pattern of employment also varies across countries. Agriculture is the main reason for cross country differences. There are two polar extremes - the Czech republic (5 percent) and Romania (41 percent) - while in Bulgaria, Poland, Lithuania employment in agriculture is still around 20 percent. Employment in manufacturing and mining varies between 17 and 28 percent, while construction employs between 4 and 9 percent of the active population, depending on the country. Finally, the service sector employs more than 50 percent of the population in all but Poland, Romania, Bulgaria.

Fourth, employment growth in the last five years displays the typical pattern of transition countries: employment growth in agriculture was negative in all countries, but Romania;

employment in manufacturing and mining declined on average by 15-20 percent; construction and services have been the sectors where job creation has been most intense. Employment in construction increased in two of the three Baltic States and in Slovenia (3-4 percent a year) and the growth in the service sector was significant in every country, except Romania and Bulgaria, with Poland being the best (3 percent a year).

It is important to look at the relationship between labor productivity and wage by sector both in relationship with the EU and within each country to identify the sectors for which employment growth is more probable. Table 4 presents this information. On average, labor productivity and wages in the CEEC countries are around 41-42 percent of the EU level. However, sectoral heterogeneities are important. For example, wages in agriculture are more than twice the productivity level while the opposite is true in all other sectors, with construction being the sector where unit labor costs are the lowest. In substance, the agricultural sector is a highly subsidized sector. Productivity is highest in the private service sector - primarily because international competition is most effective in this sector - and lowest, as expected, in agriculture. If one excludes agriculture, value added produced by each employed worker exceeds gross labor income by about 20 percent.

Within each sector enormous cross country differences exist: for example, in Slovenia, productivity and wages in agriculture are at the EU level, while in Latvia productivity is 12 percent of EU level and wages 32 percent. Similar disparities exist in the construction sector (compare e.g. Bulgaria with the Czech republic). The private service sector also shows differences, but on average it is the one whose features are most similar to those of the EU. For example in Hungary, Slovak republic and Slovenia, labor productivity and remuneration in the private service sector are slightly above 75 percent of the EU average.

In sum, on the one hand the sectoral composition of employment and VA in the CEEC10 is substantially different from that of the EU15 and resembles the one of the most backward countries of the EU, on the other, its dynamics is the one that always characterizes the development process of backward countries. Within the group similarities and heterogeneities coexist. In all countries, the service sector contributes most to GVA creation, followed by manufacturing and agriculture. Growth patterns reflect national idiosyncrasies but, to a large extent, growth in VA is driven by growth in the service sector. Around, 50 percent of the population in every country is already employed in the service sector and this share is increasing over time. Manufacturing, mining and, especially, agriculture are shrinking as a result of the scrapping of old enterprises, The speed at which this sectoral adjustment takes place is different across countries because of both comparative advantages and policy choices. Most importantly employment in agriculture is still very important in four (Latvia, Lithuania, Poland and Romania) of the ten states. The evolution of the agricultural sector presents some worrying features from the viewpoint of enlargement and economic growth. The generalized presence of a large wedge between labor productivity and labor income is important in the light of current EU15 policies. This is both cause and effect of the slow expulsion rate from agriculture and the parallel slow productivity gains. Unless local and

EU support programs perpetuate this anomaly, in the years to come a substantial amount of labor force should be expelled from farming. The construction sector has been an important (temporary) source of job creation in some countries and its low unit labor costs indicates it may be able to absorb redundant agricultural employees also in the near future. This sectoral shift is however unlikely to boost average labor productivity, given the low productivity of this sector. Hungary, Slovenia and the Slovak republic appear to be the countries where increments in service employment are more likely to occur in the future. Since these are also the countries in which the private service sector is more productive, we should expect sectoral reallocation of labor in these countries to be more conducive to labor productivity convergence than in the rest of the CEEC.

## 2.5 Regional Inequalities in the CEEC countries

Regional inequalities are not very large in the CEEC group and, to some extent, they are smaller or at most comparable to those already present in the EU15. There are two reasons for this: most CEEC countries are small, in size and population, and this fact limits heterogeneity among reasonably sized internal territorial units; the high level of inequality among countries (one to three in per-capita GDP) dwarfs the within country differences. This is a crucial fact to be kept in mind when thinking about economic growth and convergence in the CEEC countries: regional and national economic convergence are, to a first approximation, the same problem.

The basis for our statement is simple: eight of the ten CEEC accession countries can be treated in the same way as moderately large NUTS2 units of the EU. For example, the size of the Lithuanian republic, which is the median among these eight, is only 65300 square kilometers, and the population is less than 4 million people, smaller than Catalonia (Spain) and roughly equal to Veneto (Italy). The largest of these eight is the Czech republic, which is equal in population (10 million) to the Lander of Bayern (Germany) or the Regione Lombardia (Italy) and a lot smaller than Nordrhein-Westfalen (Germany). Obviously, one can try to find large differences within these countries by looking at smaller territorial units. There is no doubt that, with enough effort, one may succeed. Nevertheless, one needs to try hard to find differences larger than those characterizing Italian and Spanish provinces, for which both unemployment and per-capita GDP ratios between highest and lowest reach levels equal to 6 or even 7. In Hungary and the Czech republic, for example, the ratio between the maximum and minimum unemployment rate at the regional level is about 4. Notice also that there are seven such regions in Hungary and nine in the Czech republic, both countries having populations of about ten million people. The contribution of Igor Strmsnik to this volume confirms this fact for the case of Slovenia, another CEEC country comparable to an average NUTS 2 region. Slovenia is divided in three areas, the ratio in per-capita income between the first and the second is 1.38, while that between the second and the third is 1.10. No matter how one twists it, these are small differences especially

if one takes into account that the largest share of the population lives in the richest area around Ljubljana.

The remaining two countries, Poland and Romania, are fairly large. In Poland there are 38.5 million people on a land which is approximately the size of Italy. Romania is less densely populated, only 22 million people live there, but the size of the country is roughly similar to the UK. For these countries comparison with NUTS2 units is inappropriate and care should be exercised in interpreting the relative numbers. Nevertheless, while regional disparities in these two countries exist they are small relative to those present in several of the EU countries. For example, the unemployment rates in the Voivodship of Poland average at 16 percent (using 2001 data), ranging from a maximum of 25 percent in Warmińsko-Mazurskie to a minimum of 12 percent in the metropolitan Warsaw area of Mazowieckie. This range is smaller than the one we encounter among Spanish Autonomias or Italian Regioni. Internal labor migration is low but it is already substantially higher than the one we observe within EU countries with similar or worse employment and income per-capita differences.

Hence, the extent to which regional disparities are a problem for the CEEC countries is smaller than that for some of the current EU15 members. Further, regional disparities are relevant only in countries (such as Poland and Romania) which are large enough for regional comparisons to make sense. For the rest, concentrating on regional income inequalities would be tantamount to asking if provincial or intercity inequalities in, say, Lombardia or Andalucia are important for aggregate economic growth and require intervention from Bruxelles via some specific structural policies. For example, the city-region of Prague in the Czech Republic has a population of about 1.5 million people (about 15 per cent of the country total), enjoys an income per-capita of 122 percent of EU average and an unemployment rate of 3.4 percent. The other eight Czech regions, host the remaining 8.9 million people, score around 49-56 percent of the EU average in term of income and display unemployment rates between 5 and 15 per cent. These are significant variations, although not much different from those existing between any capital city in EU and its countryside. Should this inequality be a cause of major concern for growth-oriented policymakers? If this is the case, then every EU15 country, with the exception maybe of Luxembourg and the Netherlands, is a problem.

## 2.6 Summary

We would like to highlight a few summary points of this general overview. First, despite extremely different initial conditions, we do not observe dramatically different growth rates in GDP per-capita or labor productivity between CEEC countries and the EU. This is particularly true for the last five years, after the end of the first transition period and in the face of an already very high degree of openness to trade with the EU (as documented in the next section). Barring dramatic changes in fiscal and labor market policies, it is hard to forecast a very rapid convergence toward the EU average levels of per-capita income and labor productivity. Second, the group of CEEC countries is not homogeneous. Vastly

different current levels and potentials can be observed. Treating the ten countries as if they were one single unit is likely to produce tensions as well as contradictory policy prescriptions. Third, investment rates are not especially high and this may prevent a rapid convergence of the capital/output ratio of these countries to the EU average. FDIs do not appear to have played a big role in this respect, at least so far. Nevertheless, their upward trends during the last five years may lead to pleasant surprises should enlargement proceed along its course. Fourth, labor market incentives are grossly distorted, probably as a consequence of the harsh transition period. Still, comparatively speaking labor markets in CEEC countries are not much worse than the labor markets of many EU countries. Fifth, TFP growth seems to be the main driving force behind output growth, with the only exception of the Czech and the Slovak republics. Sources of TFP growth are, here like elsewhere, mysterious. The data show a weak relation to FDI flows and to the rate of employment reduction in agriculture, but not to recent changes in institutions, a factor often considered to be important. The amount of time expired since such changes took place and the dubious quantitative nature of some indices may be the reason for this irrelevance. Sixth, the sectoral composition of value added and employment in the CEEC10 resembles that of the backward countries in the EU and is still far away from the average one. This is not surprising. More attention should be paid to other, distinctive features of the CEEC10. The important role of agriculture in four of the ten countries, its relative inefficiency and the inability of more advanced sectors to employ the excess labor expelled by the former appear as key features, at least from a social point of view. Substantial heterogeneity, both within and across CEEC countries in sectoral productivity suggests that a fairly large process of intersectoral and international adjustment, following comparative advantage lines, still needs to take place. In this and many other respects, CEEC countries are not different from the poor regions in the South of Italy, Spain or Greece, and a number of common insights apply to both groups. Seventh, regional income disparities exist but their relevance should be played down respect to the cross-country differences, which appear to be much more substantial. Further, and with the sole exceptions of Poland and Romania, one should look at the CEEC countries as territorial and economic units altogether equivalent to the current NUTS2 units of the EU15. Finally, nominal and Maastricht indicators are already in line with those of the EU but, except in extreme cases, we do not expect such factors to play a major role in determining the path of future income inequality between EU and CEEC countries.

### **3 Initial conditions, old newcomers, new steady states**

The EU has experienced several enlargements since its creation. During the period 1981-86 three countries, all poorer than the EU average, were admitted: Greece in 1980-81 and Portugal and Spain in 1985-86. We use this experience to learn two things: (i) how the CEEC countries compare, in relation to EU averages, to the three earlier entrants; (ii) if the

experience of Greece, Portugal and Spain (GR,P,E from now on) can teach us something about the future of the CEEC10 in the EU. The punch line is: although the historical circumstances were different, macroeconomic conditions in CEEC countries resemble very much those of GR, P, E at the time of accession. On the ground of similar initial conditions, accession to the same free trade area, and under the assumption of similar national and supranational policies, we find that the differential effect of joining the EU will be small (both in terms of levels and growth rates) so that current inequalities are likely to persist for a few decades more.

### 3.1 Basic statistics

Our claim is that the economic systems of the CEEC10, and in particular those of the first group, are comparable to those of GR, P, E at the time of their accession to the EU. One major difference is the number of people involved: less than sixty million in the 1980s, more than 100 million this time. A second one is the sheer number of countries involved, ten versus three, and their much smaller average size, which generates procedural and administrative complexities probably not encountered with GR, P, E. Similarities, on the other hand, abound. Like the earlier three, the CEEC10 have been part of “cultural Europe” since at least the XVIII century, and are currently emerging from a long period of political dictatorship, autarchy, and state control of the economy. Also, in both cases (with Greece as an exception) about a decade or so has elapsed since the previous regime collapsed, and a fair number of changes have already been implemented in the accession countries.

Structural and socio-economic features are also very similar and very widely documented (see, e.g., Martin et al. (2002), World Bank (2001a, 2002) for public expenditure and its composition, education, demographic evolution, road and transportation systems, public pension expenditure, R&D investment, size of the IT sector). We will therefore concentrate upon a restricted number of aggregate statistics, which can provide a parsimonious measure of the “distance” between CEEC countries and GR, P, E at the time of accession. Ideally, we would like a single number. Because we do not have a rationale for choosing particular weights, we have decided to present the various components of our index separately in table 5. The factors we use to measure similarities and differences are GDP per-capita relative to the EU average, labor productivity relative to the EU average, share of employment in agriculture and openness of the economy, the last one measured by exports plus imports over GDP. For CEEC countries we take 2000 as our benchmark, for Spain and Portugal we average conditions existing in 1985 and 1986 and for Greece we average the conditions existing in 1980 and 1981. There are many other indicators one could consider, but we believe these four provide a reasonably good synthesis of the kind of information we are looking for. Further: they are highly coherent with the information contained in the quoted studies, as well as that reported earlier in Section 2.

A few aspects of the table need to be commented upon. First, the share of employment

in agriculture (our favorite measure of backwardness) is comparable between the two groups of countries. Portugal and Spain had shares of 22 and 15 per cent respectively while the average of CEEC countries (excluding Romania) is about 20 percent <sup>2</sup>. Similar results would have obtained had we used other sectorial indices of the two groups of economies - e.g. the share of manufacturing in total VA of Greece, Portugal and Spain was 15, 29 and 26 per cent, respectively, and in CEEC countries it averages 26.5 currently.

Second, the range of GDP per-capita values is also very similar: Spain was at the same level as Slovenia at the time of accession, Portugal and Greece approximately at the current level of Hungary and the Czech republic. Only Romania, Latvia and Lithuania fall below the range of relative per capita GDP determined by the last three entrants. Again, the picture would have not changed if, instead of levels, we had been using growth rates of per capita GDP to carry out our comparison. The growth rate of GDP was a meager 0.1 per cent in Greece at the time of admission, while Portugal and Spain displayed healthier values at 4.1 and 3.2 percent. The range for the annualized average growth rate of GDP in the CEEC10 over the period 1996-2000 was -1.5 (Romania) to 5.1 (Estonia), with seven countries out of ten growing at 3.4 percent or more per year. Furthermore, the absolute values of GDP per-capita at PPS also match. For example, in year 2000 all CEEC countries, with the sole exception of Bulgaria and Romania, were richer than Greece, Portugal and Spain at the time of their admission; Bulgaria and Romania matched Greece and Portugal and were no more than 10 percent below Spain.

Third, except for Spain, relative labor productivity is also comparable. To explain the Spanish outlier it is useful to remember that at the time of accession, unemployment rate had reached 23 per cent of the population, with falling participation rates and that its labor productivity index decreased, relative to EU average, after accession. As a further element to evaluate relative labor productivity potentials, it may be worth pointing out that schooling rates are uniformly higher in the CEEC countries relative to where they were in Greece, Portugal and Spain in the early 1980s.

The two set of countries differ very much in terms of openness, but the difference is all in favor of the CEEC group. CEEC countries are much more open than previous poor newcomers. The average index of openness is two to three times as large in the CEEC than it was in Spain, Portugal and Greece when they joined. For small economies (Estonia, the Czech and Slovak republic) the numbers are larger. In fact, even when we compare the *current* degree of trade openness of GR, P, E with that of the CEEC countries, the latter come out ahead on average. More importantly, between 40 and 70 percent of the CEEC trade takes place with the EU already; all these percentages have been growing steadily over the last five years. Capital flows are also larger than those for GR, P, E at the time of accession, even adjusting for the fact that gross flows are much larger today. As we have

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<sup>2</sup>Romania is a clear outlier in this sector, see the chapter by Giurescu in Funck and Pizzati (2002) detailing the circumstance of this phenomenon.



seen, on average FDIs to CEECs have been above 4.0 percent of GDP during the last few years. FDIs as percentage of GDP in GR, P, E in 1986 were at 1.2, 0.7 and 1.3, respectively (World Bank (1998)).

The post 1990 labor market dynamics in the CEEC10 strongly resembles those of Spain and Portugal after their transitions began. Rapid expulsion of workers from agriculture and from traditional industrial sectors (total employment in Spain dropped from 12.6 to 10.6 millions between 1975 and 1985), equally fast increase in unemployment (from 6 to 20+ percent in Spain, to around 16 percent in Portugal), reduction in the labor force participation rates (especially among young and old individuals), creation of a substantial and lasting stock of long-term unemployed people at around 40-50 percent of total unemployment are important common features of the first ten years of both transition processes. Similarly, productivity per employed person increased while income per capita decreased initially to rebound only after 1986. In fact, relative to the EU average, it took until 1991-1992 for Spanish per-capita GDP to go back where it was before 1975. It has taken less time in the best CEEC countries to achieve the same result.

These facts, together with those illustrated in section 2, strongly suggest that initial conditions are similar to those of previous entrants and that the costs and the gains from joining the EU will be probably comparable to those experienced by the previous three newcomers.

### **3.2 Different historical circumstances**

History matters. Having spent time to stress similarities and analogies between the socio-economic conditions of the CEEC countries and those of earlier entrants in the EU, we should elaborate further on the differences briefly mentioned above. As our goal is to evaluate the extent to which the performances of earlier entrants can be taken as reliable predictors for those of the new candidates, we should limit ourselves only to those factors that may influence, in one direction or another, the process of economic integration of the CEEC10 into the EU. Overall, CEEC10 will have some advantage relative to old newcomers. Paradoxically, while these advantages may ease the adaptation to the EU market conditions, they may also reduce the size of the gains the CEEC countries should expect from accession.

The first important thing to notice is that the CEEC countries will enter a larger and richer market than the early entrants did. This should facilitate the accession process, at least in the presence of a reasonable degree of flexibility on the part of the CEEC firms.

The second crucial difference is that the current level of economic integration within the EU is much higher than it was in 1980s. A startling measure of such difference is the amount of European FDI already flowing to the CEEC10, as a percentage of their GDP, in comparison with the amount of EU-originated FDI entering, say, Spain before 1986. For the latter it was, at most, half a percentage point a year while for the best CEEC countries we are observing ratios exceeding five percentage points. Similar results one would obtain

by looking at total capital or trade flows. This feature should benefit CEEC countries and should facilitate their integration into the EU. On the other hand, and unless accession brings along dramatic policy changes, this fact should also make the post-accession increment in FDI to CEEC smaller than the one observed after previous enlargements.

A similar argument applies to trade: trade openness of CEEC countries is remarkably higher than that of earlier entrants. Therefore, comparatively speaking, CEEC countries have less to gain from the general tariff and barrier reduction that accession brings along. However, there is a plethora of tariff and trade restrictions which are still in place. Given their sectoral heterogeneity, one could expect certain sectoral gains to be comparable to those of earlier entrants even if the aggregate effect may be smaller.

Finally, one may want to remember that exchange rate risk is now gone, at least within the EU15 area. If CEEC entrants manage to satisfy the Maastricht criteria, they would join the EU and (possibly) adopt the Euro. Given that the share of EU-trade in total CEEC trade oscillates between 45 (Bulgaria and Lithuania) and 68 percent (Estonia, Hungary), the absence of exchange rate risk provides the CEEC10 with a huge advantage relative to earlier entrants.

### **3.3 Relative Steady States: old and new ones**

Since initial conditions in the CEEC countries are approximately the same as those of the old newcomers, and since, at current policies, we find it likely that joining the EU will have on these countries the same effect it had on Spain, Portugal and Greece, we can hypothetically estimate where CEEC countries will be in their post-accession steady state relative to the EU average. As all reduced form econometric exercises, this one also suffers of obvious limitations. First and foremost is the assumption of policy and behavioral invariance post admission. What this means is that we assume that none among the CEEC countries will have the ability of replicating, for example, the policies that Ireland has adopted in the last sixteen years. Rather, we assume that CEEC countries will behave, more or less, like Greece, Portugal and Spain did during the last 16 years, that the EU structural policies toward poorer regions will remain more or less unaltered and that the overall degree of trade liberalization within the EU and between the EU and the rest of the world will not change. Dull as this may sound it should not be taken as guaranteed: Spain and Portugal have progressively modernized and liberalized their own internal product and labor markets, slightly reduced labor taxation, improved capital mobility and implemented a fairly large, albeit not overwhelming, privatization process. Further, inflation rates have declined, budget deficits brought under control, public debt restrained and the Euro has been adopted. Making a *ceteris paribus* assumption implies that something similar, at least in relative terms, will be accomplished by the CEEC10 countries in the next ten to fifteen years. While feasible, this requires keeping up the pace of market oriented reforms.

With these caveats in mind we proceed to illustrate our econometric procedure. We plan

to draw from the information we have available to infer something about the (asymptotic) distribution of growth rates for CEEC countries and regions post accession. We construct three scenarios. The first one, the *no-change scenario*, assumes that the current historical conditions (including current cross-country heterogeneities) will perpetuate indefinitely in the future. In other words, this scenario assumes that entering the EU will not change anything in the underlying trend behavior of the CEEC10. Rather than taking this literally, we consider it as a benchmark against which to evaluate the long-run gains that these countries may enjoy once they are in the EU. For this scenario, we estimate a simple AR(1) model for relative (to EU average) income per-capita/labor productivity for each country and, given parameter estimates, we project past behavior far in the future. Since the data set is short, estimates of the steady states are biased. Therefore these numbers should be taken as indicating more qualitative than quantitative tendencies.<sup>3</sup>

In the second scenario, the *level-effect scenario*, we assume that after joining the EU, CEEC countries will settle in a steady state position which is similar (in terms of the parameters regulating the asymptotic distribution of relative growth rates) to the one of Spain, Portugal and Greece since they entered the EU. Theoretically one can justify this scenario by using either endogenous or exogenous growth models in which countries that are similar in terms of economic fundamentals face the same distribution of long run growth rates. Notice that, because of the normalization by the unknown EU growth rate, this reduced form statistical model makes absolutely no assumption as to what the source of growth is. It is consistent with old, new and even post-modern (or was it post-mortem?) growth theoretical models as long as they satisfy a probabilistic version of the tertium non datur assumption: countries that are identical at the beginning will draw their final outcomes from the same probability distribution. EU accession would therefore mean, for the CEEC10, a transition to the same distribution of growth rates faced, since 1986, by our trio of earlier entrants.

To implement this idea we estimate steady states for NUTS2 regions of Spain, Portugal and Greece using data after their EU accession. We then use this information as a prior for the AR model we estimate for the CEEC10. The prior takes a simple form: we assume that, post accession, the distribution of balanced growth rates of the CEEC-10 countries (scaled by the EU average) will have the same mean and variance as the distribution of poor EU territorial units after they joined the EU. Clearly, we do not prevent miracles (or busts) from happening; we simply require similarities in the support of the two distributions. It does imply, though, that CEEC miracles will not be larger or more frequent than those experienced by poor EU regions, and similarly for busts. We examined whether taking Spain, Portugal and Greece as a whole or (to have exactly comparable GDP per-capita) the poorest

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<sup>3</sup>What we call “steady state” here and in what follows is, in reality, a growth path. It can be treated as a steady state, i.e. as a fixed point of a stationary dynamical system, because we are normalizing everything by the (unknown) average long run growth rate of the EU. It is relative to this unknown growth rate, whatever it may turn out to be, that the position we compute is a steady state.

22 regions in these countries<sup>4</sup> makes a difference for our calculations. We also examined if the choice of the short sample made a difference - by concentrating totally on data for Greece, for which almost 20 years of data exist. None of these two variations made a sizeable difference. The mean steady states we obtain oscillate, depending on the assumptions made, between 60 and 75 percent of the EU average and the dispersion of regional steady state ranges from 45 to about 90 percent. We capture these tendencies by assuming a normal distribution, centered at 65 percent of the EU average with a standard error equal to 15 percent.

In the third scenario, the *growth-effect scenario*, we assume that joining the EU will proportionally boost the growth rate of CEEC countries by the same factor it boosted the growth rates of Spain, Portugal and Greece after their accession. This scenario assumes a linear production function in which the asymptotic growth rate is country-specific<sup>5</sup>. The scenario assumes that when two countries are exposed to the same change in their fundamentals a common proportionality factor affects country-specific growth rates. As a trivial example, think of an  $A_iK$  model in which  $A_1 \neq A_2$  are the production function parameters for the two countries. Joining the trade area implies that a common proportionality factor, say  $\beta > 0$ , multiplies the  $A_i$ , so that  $\beta A_i K$  is the aggregate production function for country  $i$  after accession. Obviously, this is just an example: a more complicated model in which the parameter  $A_i$  is endogenized by means of external effects, public capital, agglomeration effects, rate of technological innovation, etcetera, would also be consistent with our statistical procedure. For the case at hand, joining the EU will make the country-specific growth rates in the CEEC10 jump, so that for a given initial condition, output will grow at a permanently higher (or lower if  $\beta < 1$ ) rate. To implement the idea behind this scenario we estimate average and dispersion of growth rates using regional data for Spain, Portugal and Greece before and after accession. We use these two distributions to estimate the common proportionality factors  $\beta_\mu$  (for the mean) and  $\beta_\sigma$  (for the standard deviation). As before, we use this information as a prior for the AR model we estimate using CEEC10 data. Since we have very few data points before accession, estimates of the jump are very imprecise. The mean effect is however very small (1.009), probably because most the growth gains in GR, P, E predated EU accession. We take into account the uncertainty present in the data by letting the dispersion of the potential jump to be relatively large (maximum range we allow is [1.0, 1.03]).

Table 6 provides a summary of the results. For each scenario, the first column refers to relative GDP per-capita and the second to relative labor productivity. There are two results we would like to emphasize. First, in the absence of any structural change (no-change scenario), we should not observe significant variations either in the ranking or in the

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<sup>4</sup>These are all fourteen Greek regions, four of the five Portuguese regions (Lisbon is excluded), all four southern Spanish regions (Extremadura, Andalucia, Murcia and Canarias).

<sup>5</sup>We recall here that the asymptotic growth rate depends on the production function parameters, the discount factor and the intertemporal elasticity of substitution in consumption. Hence we are assuming that at least one of these parameters may vary across countries.

level of GDP per-capita of the 10 CEEC countries relative to the one observed in 2000. In other words, CEEC countries are already close to their steady state. The only two countries which, at the steady state, seem able to reduce significantly their distance from the EU are Poland (currently at 41 percent) and Slovenia (currently at 73 percent). The result is not surprising in light of the fact that growth rates of GDP per capita in CEEC and EU countries have been roughly similar over the sample period.

Second, adding the information contained in the behavior of the poor EU regions after accession does not radically alter the estimates of the relative steady states. The distribution of relative steady states in either the level or in the growth-effect scenarios is only marginally different from the one estimated for the case of no change. This follows from the fact that the growth patterns experienced by CEEC countries during the 1990s was not so different from the growth patterns experienced by Mediterranean regions after they joined the EU. Our estimated gain for the average CEEC country is about 3-4 percent (GDP per-capita would go from 38 to 41-42 percent of the EU average) but this is not statistically different from zero. There are some sizable gains for the poorest of the 10 CEEC countries, for example, the steady state levels for Bulgaria and Romania will be about 50 percent higher if they join the EU and they are predicted to do slightly better in the growth scenario. Conversely, the richest among the CEEC 10 are predicted to do worse after accession than they would do otherwise; see, for example, Slovenia. The reason behind this reversal of fortunes should be kept in mind when discussing policy implications. Greece, Portugal and Spain have performed well but far from spectacularly after accession and only marginally better than they had done in earlier decades. The best among the CEEC10 have done well in the last half of the 1990s, in fact they have done better than the earlier entrants did, on average, after accession. The opposite is true for the weakest five among the CEEC10. Hence, applying to the CEEC countries the distribution of growth rates experienced by Greece, Portugal and Spain induces a “reversion to the mean” effect in which the currently fast growers grow more slowly and the laggards accelerates. Closeness to the steady state, lack of measurable effects from joining the EU and, absent changes in national policies, relative similar “engines of growth” lead us to predict that EU and CEEC countries will grow at fairly similar rates in the next couple of decades. Similar steady state growth implies constant ranking in the distribution of GDP per-capita and persistence of current inequalities. Integration and extension of the current EU regional policies to CEEC countries will not sweep away income inequalities. National policies, if anything, must do the job.

This sobering picture should not take our attention away from the fact that there are differences in the dynamics of per capita GDP within CEEC countries and that these difference may be relevant in projecting current conditions far ahead. For example, the regions of Prague, in the Czech republic, and Bratislav, in the Slovak republic, have enjoyed sustained growth during the past five years, which pushed their regional GDP per capita respectively at 122 percent and 99 percent of the EU average. Nevertheless, if we exclude some dynamic region, typically centered around the capitals (Prague, Bratislav, Ljubliana and Budapest),

growing at a reasonable pace relative to the average of the EU, the majority of the CEEC inhabitants are expected to live in the future with an income per-capita which is about 55 or 65 percent of the EU average.

Finally, since the dynamics of labor productivity in CEEC countries is comparable to the one of the GDP per-capita, steady state calculations are unaffected if we substitute one for the other. Projecting current labor productivity into the future implies that the Czech republic, Poland and Slovenia look more dynamic in terms of GDP per-capita than in terms of labor productivity, but the uncertainty in the estimates does not permit us to make statistical statements one way or another. Bringing in information from the previous newcomers in the EU does not change the pattern we have described. If anything, the larger relative productivity level recorded for Spain at the time of accession implies a distribution of steady states which is more spread than the one of GDP per-capita in the second scenario.

## 4 Old useful lessons

Probably the most important lesson from previous studies of economic growth in trade-integrated areas is that the predictions of “new growth” or “new trade” theory models are rejected hands down by the data. This kind of models almost unanimously predict that trade openness combined with increasing returns and a variety of external effects will produce agglomeration phenomena, poverty traps, economic divergence and increased inequality. Hence, when differently endowed countries start trading with each other, the richer or more advanced one “wins” while the other loses. Victory and loss take the form either of a higher growth rate of income (because of faster capital accumulation or faster rate of innovation) or of a concentration of productive factors in the rich country, or both. Agglomeration theories, which seem to be particularly popular among policy makers and technocrats involved with regional and structural policies, predict that capital and labor move toward where their complementary factor of production is more abundant, thereby leading to a concentration of economic activity in a few privileged areas and leaving the rest far behind. Hence the need for active public intervention to prevent factors (especially labor) from moving around too much and for subsidizing economic activity in poorer areas where it would not, otherwise, take place.

We are not aware of any historical experience of trade integration showing support for this kind of predictions. In fact, all recorded episodes of increased trade openness, at the national or international level, have generated the opposite outcome: poorer areas have either strictly gained (in both absolute and relative terms) on the leader or have kept distances roughly constant. What we have in mind here are the increasing trade and factor mobility among the fifty states of the United States since the end of the Civil War, the increasing trade and economic integration among the initial six members of the EEC since the 1950s and then, since the end of the 1980s, among the current fifteen; the recent successful integration of

Canada, the USA and Mexico in the NAFTA; the almost fifty years of progressive and still increasing trade integration of Japan and South East Asian countries among themselves and with Europe and the USA. One is hard pressed to find a single “looser” in any of these episodes. It is quite important to stress that, in all but one case (the post 1980s EU), trade integration and increased factor mobility took place without any kind of regional, structural or transfer policy meant to compensate the poor countries or areas from the losses of trade integration with the richer ones. While the extent to which trade openness and integration have generated convergence varies greatly from one situation to the other, divergence has *never* been observed at any reasonable level of spatial disaggregation. The latter is not a minor point. The EC integrated trade first among six and then among a higher number of countries for about thirty years, practicing very few “compensatory” or “structural” policies (aside from the Common Agricultural Policy, the consequences of which are well known) and income differences sharply decreased both across and within the EC countries. During the last twenty years the EU has increased dramatically the amount of funds invested in structural and regional policies, without any visible impact on the rate of economic convergence within countries. Empirical estimates suggest in fact that regional convergence has come close to a halt just at the time structural and cohesion policies have been introduced. East Asian countries have practiced near zero compensation or structural policies. Still, their convergence to the average income of their trading partners (i.e. Europe, USA, Canada and Japan) seems out of question. The list may be continued at libitum, but it would become redundant. The message is clear: opening up trade among regions that are economically heterogeneous does not lead to divergence, not spontaneously at least.

Unfortunately, when looking at convergence data there is a strong tendency to see what our personal prejudices would like them to show. It is for this reason, we believe, that in spite of all the evidence to the contrary, the “agglomeration” hypothesis seem to be more popular than ever. Research produced at or around the European Commission, especially the Directorate for Regional Policies, is an excellent example of this phenomenon. NUTS2 and even NUTS3 regions are often used to measure inequality. At a fine enough level one can certainly succeed in finding fairly large inequalities in per-capita income or other measures of economic well being. What is less obvious is that public policy aimed at eliminating economic differences at such a fine territorial level should, on the one hand, be carried out centrally by the European Union (violating the most elementary interpretation of subsidiarity) and, on the other, that income transfers and subsidies are the appropriate instruments to make the poor regions grow faster than average.

The second lesson we have learned is that trade integration facilitates economic growth but is far from guaranteeing it, especially if appropriate internal economic policies are not adopted. Large regional aids may temporarily increase the income of recipient regions but there is no evidence that they generate higher growth rates in the long-run. Empirical evidence has consistently shown that when reasonably large territorial units are chosen for the analysis, opening up trade and allowing internal markets to work lead to a certain

degree of convergence. How fast this “spontaneous” or “automatic” convergence takes place is still an open topic of debate. In fact, on average and across very many political systems and fiscal and monetary policies, the most likely result seems to be that convergence takes place in growth rates but not in levels: countries that start ahead tend to stay ahead, even if distances are somewhat reduced. Somehow, a combination of initial conditions, factor endowments and, most important, national policies seem to determine country-specific steady states (or balanced growth paths) to which individual countries converge. Such steady states are different across countries and are affected by trade policies, but trade integration *alone* improves the relative performances of the poorer countries by a handful of percentage points, relative to the richer ones, not much more. In certain circumstances, convergence in levels do seem to take place but such circumstances are rare. For example, Western European countries and Japan came very close to the per-capita income levels of the USA in a period of roughly thirty years between the end of World War II and the oil crisis of the 1970s. However, convergence was not, and is still not, complete; in fact, since about the middle 1970s, the three groups of countries (USA, EU and Japan) have kept their relative positions approximately unchanged. For the “miracles” of South East Asia a large amount of convergence toward the US level has taken place but one has the impression that this group of countries converge to some relative steady-state position which is strongly determined by national characteristics. Spain, Portugal and, to a much lesser extent, Greece have reduced their distances from the EU average income level since 1986, while Ireland has managed to overtake the EU average income level in a period of less than twenty years.

One may legitimately wonder whether structural and regional policies are behind miracles or, at least, the growth convergence we observed. We doubt that this is the case for several reasons. First, as mentioned, no regional policies was ever implemented e.g. among South East Asian countries. Second, one may think of the Marshall Plan - the historical analogous to the current European transfer policies - as key to the European convergence to the USA. However, both the financial size and the time length of the Marshall Plan are order of magnitude smaller than those of the European Structural policies or, at the national level, of the German transfers to the East Länder and the Italian transfers to the Southern Regions. If what it takes for convergence is a Marshall Plan, then Sicily and Calabria have already received plenty of them since the 1950s. Furthermore, in Boldrin and Canova (2001), we have shown econometrically that, at least in the EU15, the conjecture that regional transfer policies are behind the partial convergence episodes, is not supported by the data. Regional policies, at least in the form implemented by the EU since the middle 1980s, made little difference on long run growth at the regional level. This does not mean that the transfers involved with the structural policies made no difference for the countries and regions on the receiving end. They certainly did and still do: receiving a nice yearly check of an amount in between two and five percent of national income is valuable. Net of transfers, health and social insurance payments, public expenditure in the EU is never above twenty-five percent of GDP. European transfers increase the funds for public expenditure available by ten and



twenty percentage points and by much more when we look only at public investments. No wonder that transfers are most welcome by receiving countries, and members of the EU, old and new, make no exception to this rule. But to claim that they have made a difference for growth is an entirely different matter.

The valuable contribution by Angel de la Fuente to the present volume should be interpreted in the light of these observations. He shows that the structural funds flowing to Spain were mostly used for productive investments and that such productive investments are, indeed, productive. That is: they contribute to GNP, proportionally to their estimated share in the aggregate production function. This is certainly correct: transfer of funds from the EU to Spain has helped the accumulation of productive infrastructures in that country. It would be really dramatic if it were otherwise. But the crucial claim is not that Structural Funds are wasted. The crucial claim is that they do not alter the long-run growth rate of the recipients regions in any significant way. In our statistical work we looked long and hard for such effect, and could not find it. Pedro Arevalo (2002) has carried out a painstaking and meticulous investigation of Spanish regional development since the late 1950s, using a high quality data set of both provincial and regional human, public, and private capital stocks, and sectoral value added. Once again he shows that TFP growth accounts for the lionshare of economic growth and convergence across Spanish regions, with little left for public and private capital and a somewhat larger share for human capital. More importantly, he shows once again that, even at this very detailed and disaggregated level, one cannot find any signe of a positive impact of Structural Funds on provincial and regional TFP growth rates. While speaking against current EU regional policy is a political tabu, other people have also started looking at it. A recent paper by Ederveen, de Groot and Nahuis (2002) is a prime example. It is relevant here also because, in our view erroneously, de la Fuente quotes it as a piece of statistical evidence contradicting our earlier analysis. It does not do so; in fact: it reinforces it. They use a statistical methodology which is quite different from Boldrin and Canova (2001), but reach the same conclusions. They show that Structural Funds, on average, are ineffective. To be precise: their estimates show a statistically significant *negative* effect of Structural Funds on regional growth rates and convergence. They find a small, and barely significant positive effect of Structural Funds only for countries with the “right policies”, where the latter has to be selected carefully though. Conditioning on the most obvious “right policies” does not work in Ederveen et al. either: low inflation, low budget deficit, and a cohesive social policy are not able to make Structural Funds effective, according to their estimates. Only high institutional quality and low corruption do. This is interesting, but even more interesting is their country-by-country breakdown of this conditional effect (Table 4.2 of the quoted paper). The table shows that in *all Cohesion countries but Ireland* the impact of Structural Funds is strongly negative even when one conditions for the variables measuring corruption and institutional quality. In fact, the impact is also negative (surprise, surprise) in Italy and, in two cases out of three, France! As Ederveen et al. (2002) conclude “the current allocation of the ERDF is largely focussed on the countries with negative elas-

ticities” (page 9). They apply their methodology to the EU accession countries and show that, also in these countries and even after conditioning for institutional variables, the likely impact of Structural Funds on convergence is negative. Only openness, not surprising in the light of our earlier discussion, may help making the impact somewhat positive for some of the accession countries. Hence, contrary to de la Fuente assertion, Ederveen and al. (2002) reach conclusions quite supportive of our analysis.<sup>6</sup> In summary: neither de la Fuente nor any other paper we aware of, either in this volume or elsewhere, shows that the growth rate of TFP is significantly affected by structural policies. Overwhelming evidence shows that long-run growth is the product of increasing TFP, not just of capital accumulation. TFP growth is, indeed, a fairly mysterious object. Nevertheless: it is there in the data and, again, no piece of data shows that regional TFP growth has been affected by structural funds.

A second, not less relevant, point should be made, which is unfortunately almost always forgotten. Structural funds are transfers supported by distorting taxation, which implies a deadweight loss. The deadweight loss could be justified, on public policy grounds, if the social rate of return from the investments financed via structural funds was large enough to compensate both for this deadweight loss and for the opportunity cost of the funds. The latter, after all, could have been used by private agents in other productive activities. To decide what a reasonable social rate of return on public investment should be is a hard task, and we are not going to try it here. The Congressional Budget Office of the US Congress, for example, recommends a 10 percent real annual return as an absolute minimum for any public investment project. Can any one claim that such a minimum rate of return has been obtained by the investments financed by the EU Structural Funds? Even without capitalization, the cumulated investment financed by Structural and Cohesion Funds in Spain amounts to at least 40 percent of Spanish GDP. This is a benevolent choice, first because we are not capitalizing and second because the number would have been 70 percent for Portugal and more than a 100 percent for Greece. Can anyone show that Structural Funds have increased Spanish GDP of at least 4 percentage points each year?,

Some times *some* poorer countries grow faster than richer ones. The debate is still open as to which is the magical mix of policy and circumstances that makes miracles happen. We do not have an answer to such question, but we can come up with an incomplete list of factors that help, that hurt, and that are more or less irrelevant. To illustrate the point, look again at the four Cohesion countries of the EU, Greece, Ireland, Portugal and Spain and at the Italian Southern regions of Basilicata, Calabria, Campania, Molise, Puglia, Sardegna and Sicilia (Mezzogiorno, from now on). We can break the group into two, based on initial

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<sup>6</sup>We refrain here from getting into the methodological, but unsubstantiated, other point advanced by de la Fuente according to which, if one conditions by regional fixed effects Structural Funds may turn out to have a positive impact. On the one hand, there is no evidence supporting the claim. On the other, at a more technical level, assume this did happen: regional fixed effects are catch-all variables which may well hide the true determinants of convergence and no conclusion could be reached without an explicit model and measurement of such regional fixed effects.

conditions. Back in 1960 Ireland and Spain were both at about 60 percent of the EU average, in terms of per-capita GDP, while Greece, Portugal and the Mezzogiorno stood below 50 percent.

During the 1960s and until 1974 Spain liberalized trade unilaterally and adopted internal policies that, relatively to the previous situation, were market oriented. By 1974 its income per-capita stood at almost 80 percent of the European average, which is where it still stands now, after twenty five years of oscillations, in both growth rates and internal policies. Irish relative per-capita income stagnated for more than twenty years, without apparent effect from neither the 1973 EU accession nor having become beneficiary of EU structural funds: by the middle 1980s its income per capita was around 65 percent of the EU average. Since then the government fully embraced free trade, low taxes, low public spending<sup>7</sup> and well known competition oriented policies. Its income per capita now exceeds 110 percent of the EU average. Look next at Greece, Portugal and the Mezzogiorno. The first one stands now at about 65 percent of the EU average. This is exactly where it was twenty one years ago, when it first joined the EU and began receiving transfers: all the catch-up that Greece managed to do since 1960 took place before it started to receive structural funds. It is also a fact that, since accession, Greece has also been the one country in Europe that least has indulged in market friendly internal policies, reduction of public expenditure and taxes, privatization and liberalization of its markets. Portugal seems to have done almost the opposite: it followed its neighbor Spain in unilaterally liberalizing trade in 1960, shifted to a regime of high public spending and taxation coupled with heavy state intervention in labor and product markets right after the 1974 revolution and resumed liberalization, privatization and labor market reform in the late 1980s. Its per-capita GDP, relative to EU15, followed a similar sequence: from 45 to 60 percent between 1960 and 1974, unchanged between 1974 and 1988 and from 60 to 78 percent between 1988 and 2000. The Mezzogiorno's itinerary is slightly more complex, as it has been the object of Italian and EU transfers at the same time. In any case, during the 1960s the flow of external funds to the Mezzogiorno was relatively low: this and the earlier one were the decades of the labor migration to Northern Italy and Northern Europe. By the time of the oil crisis, 1974, the Mezzogiorno per-capita GDP was about 63 percent of the EU average. Since then, the Mezzogiorno has become one of the privileged targets of EU structural funds and the Italian Government has stepped up its subsidy and transfer policies. Migration flows came to an end and official unemployment started rising. By the year 2000, the Mezzogiorno per-capita income is around 68 percent of the EU average.

Historical experience and economic analysis have also taught us something important about the short-run effects of trade integration policies. Technologically and economically backward countries that enter into a free trade arrangement with more advanced ones un-

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<sup>7</sup>Ireland public expenditure and taxes are slightly below 30 percent of GDP, while the EU average is at about 42 percent.

dergo a fairly rapid and dramatic process of structural change which leads to the destruction of employment in the agricultural and other backward sectors. The adjustment is very costly and the job destruction it generates is the key threat to long run prosperity since the unemployment wave induced by the transition tends to be persistent over time. Elimination of structural unemployment requires strong and clearly targeted mobility and training policies. Such policies have seldom been implemented because, in the face of growing unemployment, political pressure for the adoption of grossly inefficient transfer policies is usually victorious. The likelihood of such erroneous policy choices is enhanced by the availability of external aid funds. Economic theory aside, historical evidence shows that subsidies and transfer policies make regional imbalances more persistent.

To summarize the points: (1) while structural transfers carried out at the European level leave growth rates roughly unaffected, national policies do make a huge difference; (2) national policies that reduce taxes and public spending, liberalize labor markets and foster job search and retraining, attract FDIs and minimize income support transfers seem to lead to sustained period of above average growth.

To lend support to our claims we look at the recent East German experience as another emblematic case of badly conceived and highly perverse transfer policies.

#### **4.1 The Big Brother Effect**

Contrary to CEEC countries, East Germany has enjoyed the protection of its big Western brother during the transition. From an economic point of view this has meant that (i) a number of domestic income support policies, financed with taxation from the West, have shielded East German residents from the most unpleasant costs of the transition, (ii) that firms operating or installing themselves in the East received abundant public subsidies, and (iii) that the Länder of the East have been classified as Objective 1 regions, receiving structural funds from the EU. The total amount of transfers involved is enormous. For example, during the period 1991-97 the German government alone transferred to the East Länder a total of Euro 571 billion, corresponding to about 50 percent of their GDP over the same period. To get an idea of the magnitude involved, total lending and transfers from the World Bank to CEEC and central Asia transition countries has equaled approximately 3 percent of this quantity (see World Bank (2001)). Beside these nice windfalls, firms of the East Länder had immediate access to the EU15 markets, and did not face the restrictions, tariffs and other administrative obstacles which apply to products and services coming from outside the EU. Given that the initial conditions in East Germany were substantially better than those of other CEEC countries when transition started and the plenitude of public support, how did the East Länder economy perform relative to the less fortunate CEEC10?

It is well known that the growth performance of East Germany has been quite mediocre. After a spurt of rapid growth, right after unification, the Länder of the East have slowed down and during the last six years they have grown slower than the rest of the EU. Over the 6

years going from 1995 to 2000, growth in GDP per capita has averaged less than 2.0 percent, much lower than every CEEC country but Bulgaria and Romania. Labor productivity, which started at about one third of the West in 1991 grew to reach 65 percent in 1995 to stagnate around that level ever since. Over the 1995-2000 period, growth in East Germany labor productivity has been only 1.5 percent a year, the lowest of all Europe, with manufacturing and the business service sectors performing particularly poorly.

The observed slowdown is long enough to rule out any “cyclical” interpretation of this phenomenon: in spite of the enormous transfers the economy of East Germany is not converging to either the EU or the German averages. While it may be a bit too early to classify the East Länder as the “Mezzogiorno” of Germany, we are certainly facing another example of persistent backwardness, lower productivity, low labor force participation rates, higher unemployment and high subsidies. The analogies with the regions of the Italian Mezzogiorno go further. Particularly, the “backwardness” or “poverty” of the East German Länder is, like the one of Southern Italy, quite relative. After all, GDP per capita in East Germany has reached 76 percent of EU average, approximately the level of Portugal and several points above the level of Greece. However, to the extent that half of this amount is financed by West Germany, it is clear that in comparing East Germany with CEEC countries, a much lower level, say 45 or 50 percent of the EU average, should be taken as a true value. This places the East German Länder just below the Czech republic, Hungary and Slovenia, both in terms of labor productivity and per capita GDP. In other words, once the large income transfers from the West are factored in, the East German Länder are, in terms of domestic productive capacity and produced income, a few percentage points below where they started twelve years ago. Since the best CEEC countries appear to have done better and are projected to do significantly better in the near future, one should seriously ask why the extraordinary amount of resources poured into the East German economy have provided income support but failed to deliver sustained growth incentives.

There may be several reasons for why this has happened, a number of hypothesis have been analyzed in the existing literature (see, e.g., Canova and Ravn (2000), Sinn (2000), Franz and Steiner (2000) or Ragnitz (2001) for some of the most insightful examples). A highly counterfactual but nevertheless popular point of view, paralleling earlier literature on the failures of state aids to the Italian Mezzogiorno or the poor growth performances of Objective 1 regions, has reached the panglossian conclusion that while the amount of aids transferred was large it was evidently not enough and/or it was not well spent. This refrain, heard also at the Barcelona conference, reminds one of the old story according to which socialism had not been implemented correctly in the USSR, but it will and will produce wonders in, say, Albania.

In our opinion, the most coherent explanation has to do with the perverse effects that income support policies generate on the incentives to work, produce and invest of East German citizens. Since 1990 total employment in East Germany has fallen by 30 percent from 9 to 6 million, roughly the fall observed in Bulgaria, and the largest among all CEEC

countries. As in most transition countries, the manufacturing sector has experienced the largest decline in employment and job creation has occurred only in the construction sector. The expansion of the latter has been particularly abnormal in East Germany because West German funds for reconstruction have led to an oversized construction sector with poor or negative efficiency gains in the sector itself, which had low TFP and a low technological content to start with. Obsolete and unproductive firms have been scrapped and despite an initial boom (1990-91) in the creation of new firms, the entrepreneurial process has stopped right after the first enthusiasm for reunification waned. The registration of new enterprises in the East which was almost twice as large as that in the West in 1991, fell to only one-tenth of the one in the West in 2000. Interestingly, over the period 1995-2000 German FDI flow to CEEC countries was larger than the one into East Germany (see Eurostat (2002c) ). This may not be altogether surprising. In 1990 gross nominal wages in East Germany were 46.7 percent of the West German level, while in 1999 they had reached 73.9 percent of the West German level. In comparison, average labor productivity was only 31 percent of the West German level in 1990 (implying unit labor costs 50 percent higher in East Germany) and was 59.4 percent in 1999 (implying unit labor costs which are still 24 percent higher in East Germany than in the West). As we have seen unit labor costs in the CEEC10 as a whole are substantially lower than in the average of the EU, where in turn they are lower than the unit labor costs of West Germany.

Together with the significant fall in the employment, labor force participation has also dramatically declined as a consequence of generous early retirement programs and of the large number of females exiting the labor market. Overall, labor force participation shrunk by about 7-8 percent in the last 10 years, fifty percent more than in the average CEEC. Income support to unemployed has become substantial: to give but just an example, one-fifth of the East German population received income support in the form of benefits or state assistance in 1999. The level of support is high both in absolute (about 1000 Euros per capita in the first case and about 750 Euro in the second case) and relative terms. So-called active labor market retraining programs provide extremely generous support for participants, in some cases higher than the monthly wage earned by a low skilled worker. Not surprisingly, they have a remarkably poor record at increasing participants employment. Overall, more than 60 percent of total transfers to East Germany are for purposes of social protection. In this situation, we should expect to see stagnating growth performance, little downward pressure on wages, rent seeking activities by non-participants and unemployed and a strong incentives to maintain the status quo - a picture which duplicates to a large extent the experience of the southern part of Italy and of a number other provinces of Southern Spain. Subsidized income support has become a *modus vivendi* and has created incentives for its perpetuation. Ragnitz (2001) has also suggested that the abundance of assistance programs has produced a very inefficient allocation of new capital. Funds have been used to maintain alive an inefficient and unproductive manufacturing sector and new enterprises have been established mostly in sectors with low level of competition, low level of R&D intensity and

low technological content.

In comparison, new investments in CEEC countries have been typically directed to the most productive sectors and, at least in the most successful countries (Hungary, Slovenia and Poland to a lesser extent) direct income support has been low and indirect income support via high minimum wage negligible enough to prevent the creation of wrong incentives and grossly malfunctioning of labor markets. The case of Poland is, from this point of view, almost paradigmatic since the economy is a large and heterogeneous and its per-capita income levels were, and still are, lower than those in East Germany. Poland initially followed a well established EU policy of promoting interregional labor immobility, subsidizing or incentivating workers not to leave areas where unemployment rates were higher, ignored their poor housing situation and increased minimum wages to the point of making them binding especially in the less developed areas. Facing rising unemployment and a sharp drop in employment level, Polish authorities have started reversing these tendencies in recent years. Maybe it is not a case that Poland seems to be a much better growth prospect than East Germany for West German businessmen.

## **5 Assessing regional policies in the enlargement process**

We begin with a very short summary of what regional policies are about, the amounts of funds currently involved in the EU regional policies and their distribution. The EU budget was, in 2000, equal to about 1.05 percent of aggregate GDP, of which 46 percent was taken by the Common Agricultural Policy and 36.5 percent by the Structural and Cohesion Funds. Greece, Ireland, Portugal and Spain are the big net receivers, while all the other are net contributors. Relative to national GDP, the Netherlands are the largest contributor. The Irish position as a large net receiver of funds (about 4 percent of GDP) still reflects the recent past when Irish per-capita GDP was below 90 percent of the EU average. From the point of view of gross flows, Germany and Italy (with 1999 Euro 30 billion each, over the 2000-2006 cycle) and France and the United Kingdom (with Euro 15 and 16 billion respectively) should also be added to the list of great beneficiaries of regional funds. For the sake of comparison, over the same budget cycle Spain is set to receive Euro 56 billion, Greece 25 billion, Portugal 23 billion and Ireland 4 billion (all figures in 1999 Euro).

The Structural Funds (ERDF, ESF, EAGGF and FIFG) are supposed to finance projects pursuing at least one among six (three as of 2001) policy objectives. Each of them corresponds to a different subset of regions of the EU, even if the Commission makes a distinction between “regional objectives” which concentrate about 85 percent of the budget, and “non-regional objectives”. Objective regions are designated at NUTS2 level.

The Structural Funds co-finance multi-annual programs in the Member States. In contrast with the expenditure of the CAP, where payments from the fund are largely determined

by formula, there is a substantial discretionary element in the spending of the Structural Funds. Taking full advantage of the Structural Funds is a labor-intensive exercise for Member States, both for the technocratic standards projects are expected to match and because of the extensive co-ordination required to satisfy the partnership principle.

The Cohesion Fund, introduced by the December 1992 European Council (Edinburgh) is the second pillar of the current EU Regional policy. The Fund aims specifically at improving the European transport networks and overall environmental conditions. Interventions do not have a regional but a national basis and eligibility requires a national GDP per capita below 90 percent of the EU average. This has de facto limited the Fund to the four poorer countries (Greece, Ireland, Portugal and Spain). Ireland, which has been effectively well above since the late 1990s, is still receiving funds during the 2000-2006 budget cycle.

A number of suggestions contained in a European Commission communication of March 1998, titled "Reform of the Structural Funds", aims at reducing the number of regions covered by the Funds. The proposals, which were not incorporated in the deliberation of the European Council of Berlin and which, as far as we know, have not yet been implemented, envision a reduction in the number of objectives from 6 to 3 and a stricter enforcement of the 75 percent threshold for the NUTS2 regions which are covered under objective 1.

Should the current criteria for eligibility to Structural Funds be maintained after accession of the CEEC10, current recipients would see their transfers evaporate almost entirely. For example, in the financing cycle which is supposed to start in 2007, only two Spanish regions (Andalucía and Extremadura) are likely to qualify for Objective 1 funds. In Italy, only one (Calabria) may remain. At the same time, Spain and Portugal income per capita would most likely move above the threshold (90 percent) for admission to Cohesion Fund transfers and the latter would also disappear. Other likely losers of funds are the Länders of former East Germany. At the same time, pretty much every administrative division of the new countries (exception made for the cities of Prague, Bratislava, Ljubljana and possibly Warsaw) would qualify for Structural Funds support.

Preaccession aid to the CEECs, a form of preaccession to the Structural Funds, has been operating since the 1994-1999 budget cycle. The Commission suggested policy for the post-accession system, so far, implies an effective cap at 4 percent of GDP for the receipts of any country and an overall target of spending on structural funds equal to 0.46 percent of total EU GDP. Such limits are effective until the end of the current budget cycle (2006), after which they are open to modification. A crucial policy issue which is actively debated concerns the new levels (if any) at which such spending limits should be set.

As far as the Cohesion Fund is concerned the issue is more blurred. The latter having been created in order to facilitate the respect of the so-called "stability pact" by the poorest countries of the EU15 in the wake of the Euro adoption, it is not obvious it should be maintained now that (i) the Euro has been successfully adopted and, (ii) only Greece is still below the 75 percent threshold and it is not clear it will remain if CEEC10 countries are admitted in 2004 and 2008. Taking planned admission as given, two options seem possible:



keep the Cohesion Fund, and divert its resources almost entirely to the newcomers, or abolish it.

## 5.1 Reforming EU Regional Policies. Suggestions

Our main suggestion is that European regional policies should be terminated after the current budget cycle is over in 2006. This is, we believe, the best choice of policy because current regional policies are ineffective, based on incorrect or at least unsubstantiated economic theory, badly designed, poorly carried out and, in most cases, a source of wrong incentives. Their presence generates two sets of serious problems for the growth prospects of CEEC countries.

On the one hand, they create a clear *political obstacle to the enlargement process*: all current beneficiaries of the regional transfers are trying to avoid losing them, while the current contributors are trying to avoid paying for a much larger bill. Under current policies both events are very likely, especially when one adds the Structural Funds and the CAP together. Barring the courageous choice of shutting down regional policies altogether, the two opposite camps are likely to find a murky compromise, with exemptions and suspension provisions, compensatory transfers, etc.. If the arrival of Finland and Sweden in the EU has led to the creation of Objective 6 to compensate the two countries for what they contributed to Bruxelles, the arrival of the CEEC countries is likely to create a whole set of new objectives, special clauses, exemptions and “temporary” compensatory transfers.

On the other hand, making the vast resources of the EU regional policy available to the CEEC countries may provide them with a substantial incentive to insist in the wrong policies. Practically, they may postpone the elimination of state subsidies to obsolete and inefficient enterprises, the creation of new or the reinforcement of already existent “income maintenance programs”, thereby reducing labor mobility and providing incorrect incentives to entrepreneurial capital. The availability of such funds, and their tendency to focus on large projects of public utility may also provide a further reason to delay adjustments in the utilities sector, with negative implications for overall efficiency. As we argue in the next section, the sequence of policy choices is not only crucial to foster growth but also are key preconditions to a much needed reduction in labor income taxation. The cumulated evidence of the Italian Mezzogiorno, Greece, Southern Spain and East Germany suggests that the risk of falling in the “Big Brother trap” when large external subsidies are available is very high.

Since our preferred option will not find many supporters in Bruxelles, it is worth looking at which reforms are advisable which keep structural funds alive, but limit their damaging effects and enhance their positive impact on economic growth in the CEEC10.

The theoretical principles underlying the EU regional and structural policies are, *prima facie*, commendable and hard to dispute. The Commission calls for (i) concentration of funding where it is most needed, on the base of explicit and certified (ii) planning of such intervention in (iii) cooperation with local and national authorities whose funding the EU

transfer are suppose to (iv) complement (with co-funding going from 50 to 80 percent of the value of the project). As it is often the case, reality is quite different. We have already insisted on the lack of both common and economic sense behind the choice of NUTS2 and NUTS3 regions as the territorial levels at which economic convergence should be measured. We will not harp further on this point, but list it as the first natural step in a long-due reform of European regional policies: elect territorial units that are both homogenous and large enough to make convergence in per-capita GDP a reasonable target and coordination at the European level justifiable. Common sense suggests choosing areas with a population of about ten million people. In the light of the CEEC accession this would imply that convergence should be measured at a country level, exception made for Poland and Romania.

The choice of appropriate territorial units for measuring convergence brings together the issue of the level at which resources are funneled. Currently various sub-national administrative levels are involved, sometimes particularly small ones. Theoretically the choice of subnational units is meant to stimulate decentralization. However, the restrictions imposed make the approach resemble a degenerate form of fiscal federalism. First, the administrative entities involved are very unequal and since the Commission imposes homogenous technical requirements on planning, financing and implementing the projects, this places a huge burden on small regions or administrative units. All but a handful of very large local administrations use the services of consulting companies located in Bruxelles to handle Structural Funds projects. Alternatively, they let their central governments elaborate, present, bargain and manage those projects in their behalf - not much decentralization and/or federalism. Italy, where Structural Funds for the Mezzogiorno are de-facto handled, coordinated and almost dished out by a dedicated "Direzione Generale" at the Italian Treasury is the most egregious example.

Second, while EU funding is not supposed to replace local spending, it obviously does because of the aggregate budget constraint at the level at which resources are funnelled. Furthermore, as central governments are active partners in the funding process and are allocating national resources to the same regional entities to which European funds go, it is at the level of central governments budgeting that substitution takes place. With the sole exception of Germany, the administrative units involved have little or no autonomous fiscal power: their resources flow from central governments which, obviously, count European Structural Funds provisions as part of total financing. Finally, the desired territorial concentration of funding is, to say the least, long gone: not a single country of the EU15 goes without receiving some regional subsidy. Counting in a map of Europe, the number of NUTS2 regions receiving some transfer under some objective one reaches more than ninety percent of the total. In fact, as we learn from another contribution to this volume, at most 70 percent of the total amount of funding goes to areas with an income per-capita lower than the EU average. One way or another, almost all regions of Europe need to converge to the average European income!

These arguments reinforce the urgency for a radical reform of both criteria and methods

for funding. Concentration of funding where most needed should be re-established as a relevant criteria by setting a much lower threshold in the definition of disadvantaged region. Cooperation and complementarity should also be made into reality by funding only regions which are true federal units, with autonomous taxing/financing power and which are able to handle their budgeting process in cooperation with the European Commission independently from their central governments. Where such entities are not present, then one should elect between financing central governments directly (as it should be the case with most CEEC countries) or not providing funds at all. If realpolitik implies that some side payments going from the richest to the poorest members of the EU have to be maintained as a polite form of “bribing” and political “consensus building”, then such side payments should be handled at the country level with the exception of those subnational units which have achieved some form of true federal autonomy. This is similar to the views expressed by de la Fuente’s contribution to this volume and, for different but complementary reasons, by Guido Tabellini, who argues that “More likely, the main goal of structural and cohesion funds was redistributive: not to increase economic efficiency, but to redistribute the benefits of integration among countries, providing side payments so as to facilitate compromise in bargaining situations. The question then is whether the same goal could have been achieved in less distorting ways. Participants at the bargaining table are countries, not regions. Side payments are thus needed among countries, not among regions or groups of individuals.” (Tabellini (2002, p. 19)

We are convinced that the recognition that structural and cohesion funds are just transfer payments across countries used to facilitate political bargaining and coalition building is not forthcoming. Hence, the figment of the “convergence goal” and of “growth and efficiency enhancing” objectives is likely to be maintained, scientific evidence to the contrary notwithstanding. In this case, two reforms should still be advocated. One is a drastic lowering of the maximum income for admission to funding. A level equal to 50 percent of the EU average would, in our view, be a good choice, allowing funds to really be concentrated where they are most needed. Such cutoff would not only exclude all current EU members from funding but, among the CEEC10, would also let Slovenia, the Czech republic and possibly Hungary out. Of the first entrants, only Poland (minus the metropolitan area of Warsaw) would clearly be a potential beneficiary of structural funds. It seems most likely that (by 2008) Romania, Bulgaria, Latvia and Lithuania would still be below fifty percent of EU average income per capita and therefore qualify for this target. Secondly, a drastic reduction of the number of objectives to be pursued is to be recommended (as proposed by the Commission in 1998 and being implemented currently). In our view objective 1, properly rephrased to focus on structural deficiencies (especially large public goods, transportation and communication infrastructures and environmental protection), is the only one that should be retained on a permanent basis. In the light of the CEEC10 accession, it appears that objective 2 (recovery from industrial restructuring) and objective 5 (agriculture structural transformation) should also be maintained during the first budgeting cycle following admission (2007-2013) because of the relevance of both industrial and agricultural restructuring in these countries.

From a practical point of view, the tough part consists in effectively financing large scale projects that favor recovery from industrial crisis and agricultural restructuring. There are a couple of criteria we feel worth suggesting. First we would, contrary to much common wisdom, de-emphasize the support for small and medium enterprises. Policies of support to small and medium size firms should be the task of national governments via properly designed fiscal and labor market legislation and by granting to small firms easier access to financial markets. It is our view that such national policies are by far more effective (when properly implemented) and relevant than some general subsidies coming from Bruxelles, linked to complicated business plans the elaboration of which is often too demanding for truly small companies. Anecdotal evidence and common sense all coincide in suggesting that supporting small and medium enterprises via structural funds reduces to supporting those firms that look small, have good political connections and a comparative advantage in rent-seeking (rather than value-added) activities. Second, we would also recommend insisting quite strictly on the “public good” nature of the projects to be financed. We would recommend concentrating funds to provide productive infrastructures: transport, communication, power and water distribution, educational infrastructures. This we advocate for three simple reasons. First, both theory and empirical evidence suggest that if there is anything like a poverty trap this is determined by the shortage of the kind of productive public goods we have just listed. Second, beside a favorable fiscal and labor market environment, this is the kind of public goods that generate the “absolute advantage” (in the sense of Jones (2000)) which is crucial to attract mobile factors of production, FDIs in particular. Third, no matter how corrupt the allocational system for the production of such large public good may be, it allows more control from the EU and engender less damaging collusion between the private sector and the political system than the subsidization of a large number of small private enterprises.

There is also a number of actions we would very much recommend not to undertake. One is lifting current spending limits on Structural Funds (as suggested in Vaitilingam (2002)). The subtle plan behind such advise seems to be that of achieving the consensus of the old beneficiaries to the admission of the new members without having to give up the sacred cow of the “structural policies”. Such commentators have often insisted on the existence of “enormous income gaps” between current and future members. This is incorrect: current differences between EU15 and CEEC10 are similar, or even smaller, than those that the EU managed to overcome quite successfully during previous enlargements.

Second, various commentators have insisted on the opportunity and necessity for enlargement countries to forge ahead with deep labor market reforms, such as relaxing minimum wage requirements and lowering labor income taxes. These recommendations are most welcome. Nevertheless, it is hard to see the rationale to pontify in favor of labor market reforms in these countries when labor markets in many EU countries are less flexible and when labor market policies, both at national and supranational level, in the EU do not meet the standards. The labor market in, say, Hungary are more open and liberalized, although maybe functioning less efficiently, than that of in several of the members of the EU15. Similarly,

the structure, the composition and the dynamic of the labor market structure in Slovenia are not dissimilar from those of its largest EU neighbor, Italy, and if one looks at growth rates of labor productivity and employment, they actually look significantly better.

Third, mixing good intentions with bad economics, other commentators have recommended the creation of minimum guaranteed income schemes similar to those in place in most current EU members, as a condition for accession, and even a EU coordination of the level of these minimum guaranteed income schemes. The long-term plan seems to be that of building up a pan-European social safety net as one of the pillar institutions of the EU. We find such proposals dangerous, especially for the future growth perspectives of the CEEC10 and other poorer areas. The rationale is simple: the big brother effect kills labor mobility and entrepreneurial efforts and prices flexibility, all of which are key ingredient of successful growth experiences. Furthermore, minimum guaranteed income schemes needs financing, and financing can come either from additional transfers from richer countries (increasing their fiscal burden and reinforcing the subsidization culture on the receiving side) or from labor income taxation at home. Surely, CEEC countries do not need an increase in their labor income taxes. Nevertheless, given that we do not expect income support to poor countries to stop with accession, we would like to suggest two general principles to minimize the induced distortions. First, income support policies should target job seekers (as it is done right now in the Netherlands). Second, structural funds directed to the creation of employment opportunities - as opposed to those directed to create high productivity levels via provision of public goods - should aim at the enlargement of labor force participation as the latter plays a crucial role (as the Irish experience shows) in fostering income convergence.

This leads us to another theme, which is also stressed in the next section: labor income taxation. Theory tells us that, especially when unemployment is high and sectoral reallocation of labor an important priority, the optimal tax rate on labor should be low. When total taxation on labor is too high two types of distortions are created: potential searchers are discouraged; the productive side of the population is heavily penalized to subsidize the income of those who are unproductive. These distortions may perpetuate a vicious circle, which is particularly vicious in countries (like the CEEC10) facing major restructuring, destruction of a large number of firms, entrance of new firms from abroad, and a rapidly changing distribution of skills in the labor force. If a labor market reform is needed in the CEEC10 it consists in reducing unemployment subsidies and income maintenance programs (together with enterprise subsidies) in order to free labor income of the gigantic fiscal burden it carries.

Labor market reforms should probably be coupled with policies which favor the efficient reallocation of labor across not only sectors but also regions. "Labor migration" seems to be a well guarded taboo among both current EU members and CEEC countries: right wing politicians use the potential size of migration from the East as a magnet to coagulate fears of loosing jobs and current benefits for EU citizens. On the other side, CEEC countries worry that labor mobility may exacerbate the drain of high skilled workers therefore rendering national disparities even larger. Overall, we believe these fears have been overstated and

regional misallocation of labor and persistent poverty to be greatly amplified by the equity-without-efficiency approach upon which many EU policies have been forged. This regional misallocation is going to be even larger if the existing policies are mechanically extended to CEEC accession countries: effective removal of Objectives 3 and 4 of the Structural Funds should be seek. By creating incentives against labor mobility across regions these objectives perpetuates income inequalities across regions.

Furthermore, as in Vaitilingam (2002), we also believe the fears of mass migration from the CEEC10 are overstated. We should remind here a basic fact: most of those who wanted and were capable to migrate from the CEEC10 to the EU15 countries have already done so since 1990. This may sound surprising, given the current fears of migration from the CEEC countries to the EU and the relatively small number of workers proceeding from those countries who have made it inside the EU so far. Available estimates place the stock of CEEC immigrants residing in the EU at around 800 thousands, 60 percent of which concentrated in Austria and Germany. After an initial surge, the flows from the CEEC countries to the EU have subsided, with minor spurges from one country or the other, all clearly associated to cyclical fluctuations in the home country. There is no evidence that current restrictions on labor migration from the CEEC area to the EU are holding, like an unstable dam, a gigantic mass of potential migrants. Just to cite an example, while before unification a net 300.000 East Germans migrated to West Germany in 1990, in the period 1992-2000 the net flow is reduced to about 50.000 a year. Because of the natural linguistic and cultural links we think of this an extreme case not be used as a reference point to forecast what will happen in the case of accession but only as a very high upper bound. Furthermore, although non-negligible in size the percentage of people potentially migrating toward the EU represents only 0.2-0.5 percent of the total labor force in the EU, an amount potentially absorbable with little difficulties by a large labor market like the EU. This number is substantially smaller, for example, than the annual flow of immigrants which find employment in the USA. Historical experience shows that when the migrant masses want to come in, they do. Medium term economic perspectives in the home country relative to those in the host country, count a lot more than absolute levels in determining the intensity of migration. To the extent that growth rates in the CEEC10 equal or exceed those of the EU, the migration flow will be kept within very reasonable limits. Finally, to go back to the comparison with early enlargements, the flow of emigrants from Spain, Portugal and Greece after their admission to the EU was quantitatively irrelevant: We see no reason to fear that the flow will come in from Poland or Slovenia after 2004 will be much larger.

## 6 Conclusions

Overall, experience from earlier EU enlargements and current economic conditions within the CEEC10 suggest that placing too high expectations on enlargement per se would be

misplaced. It will help politicians, but it will not lead to convergence. Further, regional transfers taking place under the structural and cohesion policies are unlikely to become the growth engines of the CEEC10. They may increase income in the receiving countries by an amount equal to the one transferred, but there is no evidence they will have an impact on long-run growth rates. To achieve long run growth at rates higher than average an appropriate mix of European and national policies is needed. This includes further fostering of trade integration within the EU, restructuring public spending, creation of supply side incentives by proper reforms of fiscal and social insurance policies, free movement of capital and labor, together with a competitive level of labor income taxation. Based on historical experience two types of policies appear to be particularly relevant; First, public programs for long-term income support, corporate subsidies and other forms of income transfer have negative effect on economic growth. We believe they should be terminated as soon as possible. Second, labor and capital mobility are good for growth and economic convergence. In particular, the adoption or continuation of various transfer and/or regulation policies aimed at eliminating labor migration from the CEEC is wrong and damaging. The fear of migrations have been magnified by skillful politicians: migrations in past enlargements has been small. There is no reason to expect it to be large in this case.

A more detailed list of findings and policy implications follows.

(a) Although theoretically possible under fairly special circumstances, there is no reason to believe that trade integration, per se, would lead economies to diverge. On the contrary, all past experiences of trade integration, especially those that have been taking place in Europe since the 1950s, have lead to sizeable improvements in the factor endowments of the poorest partner and in the efficiency with which such factors were allocated in production. This has reduced income inequalities and enhance production possibilities across participating countries. Hence, as a principle, further trade integration should be pursued among European countries and between the EU15 and the CEEC10 in particular.

(b) Pure trade integration generates a level more than a growth effect on participating countries. In particular, there is no hard evidence supporting the idea that trade integration alone may increase the long run growth rates of participating countries in a stable form. This implies that, when absolute convergence is the objective, other national policies beside liberalization of international trade play an important role. The experience of various European countries show that reduction in fiscal pressure, accompanied by parallel reduction in public spending are among such policies. Free movement of capital and labor, together with a competitive level of labor income taxation also play a role in fostering real convergence.

(c) While a fairly stable macroeconomic environment is certainly a necessary condition for growth, there is no evidence that, by themselves, a low inflation rate, low public deficit and debt will foster economic convergence. In fact, the experience of many regions within the EU prove that, while facing the same monetary, fiscal and exchange rate policy, poor regions need not grow faster than rich ones.

(d) Both evidence and economic theory suggest that, given a stable macroeconomic en-

vironment, the presence or lack of supply side incentives play a crucial role in determining long run regional performances. The half-century experience with Southern Italy, more than two decades long experience with Southern Spain show that the availability of large and permanent income support transfer programs has a negative impact on economic efficiency and long run growth. The relatively more recent experience of the East German Länder leads to the very same conclusion: public programs for long-term income support, corporate subsidies and other forms of income transfer have negative effect on economic growth: they hamper instead of fostering economic convergence.

(e) The experiences of Ireland, Portugal and the Italian North-East in the EU15 and of Poland and Estonia in the CEEC10 show that sustained above average economic growth is the consequence of an attractive environment for FDIs and new small firm creation, risk-taking entrepreneurial behavior, exploitation of local comparative advantages via enhanced labor and capital mobility. Low marginal taxes, efficient transportation and communication infrastructures, good financial facilities, a relatively flexible supply of high level human capital appear as the key ingredients for the establishment of a growth friendly environment.

(f) Labor and capital mobility are good for growth and economic convergence. Free capital movements across national borders seem now to have become an obvious and accepted policy stance in the EU. Things are different with respect to labor movements. In particular, a number of researchers are recommending the adoption or continuation of various transfer and/or regulation policies aimed at reducing or even altogether eliminating labor migration from poorer to richer European regions. We consider this policy prescriptions wrong and damaging. While the social and political costs of mass migration are certainly large and cannot be underestimated, one must also clearly say that a certain amount of free labor migration is necessary to a well functioning labor market. Further, labor migration from one EU country or region to another has often been temporary and has been associated with episodes of rapid economic growth and convergence. Evidence shows that movements of labor within Europe and the USA have been among the major forces behind economic convergence. Labor migration is one of the most important channels through which precious productive skills are acquired in advanced regions and brought into poorer regions to be applied. Finally, a variety of arguments and considerations suggest that the size of the post-admission migration flows from the CEEC to the EU countries will be much smaller than envisaged by catastrophic politicians and will cause very little impact on the labor markets of the current members of the EU15. In essence, we find no reason to adopt direct or indirect policies to restrain free movement of labor from the CEEC to the EU. The best policy, in this case, should allow free movement of labor without creating particular incentives or disincentives in either direction.

(g) Experience from earlier EU enlargements and current economic conditions within the CEEC10 suggest that placing too high expectations on the economic consequences of the enlargement would be misplaced. Hopes that EU regional and structural policies will be the key to foster rapid economic growth and convergence are likely to be disappointed. Regional



transfers taking place under the structural and cohesion policies are just that, transfers. To achieve long run growth at rates higher than average an appropriate mix of the policies described in (b), (c), (e) and (f) seems to be needed.

(h) In the light of their very secondary effect on long run growth and of the particularly acute political tensions their availability and allocation creates among current members, one should re-consider the very same existence of regional structural funds within the enlarged EU. This applies, with stronger force, to the funding of the Common Agricultural Policy. Theory and evidence show that structural funds are pure income transfers with little long-run effects. The availability of such transfers generates two very negative effects. First, it leads to rent-seeking behavior on the part of poorer regions seeking such funds. It also creates rent-seeking coalitions of the “half poor” against the “even poorer” or the “very rich”, giving rise to spurious coalitions whose only objective is to increase the amount of transfers accruing to one particular region or country. Both activities cloud the political discourse and, as in the case of the current enlargement, create artificial and purely redistributive obstacles to otherwise valuable and efficiency enhancing political decisions. Second, it determines inefficient allocation of resources within those regions that are the beneficiaries of such transfers. All the microeconomic and anecdotal evidence available show that a large share of structural funds resources are wasted in the lobbying-advocacy of projects effort. Many projects, either public or private, which would have not been financed under normal competitive conditions, are financed by structural funds simply because the latter are tied to a certain area. This leads to a suboptimal allocation of regional labor, capital and entrepreneurial resources and to a self-perpetuating system of expectations in which below average income levels are almost “sought” by the regional administrations as a conduit for additional structural funding. In the long run, both of these effects lead to the misallocation of resources, corruption, underground activities and lack of sustained growth that characterize and distinguish the Mezzogiorno of Italy. This is bad for growth and, most definitely, it does not help economic convergence. Structural Funds should be phased out over the next EU budget cycle (2006-2012). The Cohesion Funds, whose objective has been achieved with the successful establishment of the Euro, should be terminated with the end of the current spending cycle (2006). Short of this, the recommendations listed in the second part of Section 5 should be followed.

## 7 Data Appendix

The majority of the data used in this study comes from IMF-IFS statistics. For example, data for investments, savings, FDI, depreciation, government deficits, employment, unemployment, population, CPI price index, nominal wages and nominal GDP are all taken from that data base. Discrepancy and incoherences are checked against the OECD Main Economic Indicator data bank and integrated when needed.

Data for GDP in PPS relative to the EU comes from Funck and Pizzati (2001, p.31). Regional data on GDP for CEEC countries is obtained from Eurostat (2000b, 2001b, 2002b).

Data for labor productivity is reconstructed by the authors using data on a labor productivity index provided in Martin, Velasquez and Funck (2001) and labor productivity data contained in a number of Eurostat publications (2001a, 2002a)

Important information about FDI in candidate countries is obtained from Eurostat (2000a,2002c).

Data for the EU is also obtained from a number of Eurostat publications. In particular, data on the investment rate comes from Eurostat (2001d), those on employment from Eurostat (2002d) while unemployment rates are from Eurostat (2002e) and the labor force participation rates are from Eurostat (2001e)

Gross value added and employment by branch are constructed by the authors using the information contained in Eurostat (2001a, 2002a).

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Table 1  
Growth Accounting

	Time period	$\Delta y/y$	$\Delta k/k$	$\Delta n/n$	$\Delta tfp$	$\Delta fdi/fdi$	AGR. $\Delta n/n$
Bulgaria	1991-2001	-0.040	0.006	-0.040	-0.006	0.001	-0.0008
Czech	1993-2000	0.020	0.020	-0.002	0.002	0.003	-0.0006
Estonia	1992-2001	0.020	0.015	-0.015	0.020	0.004	-0.0055
Hungary	1992-2001	0.023	0.014	-0.004	0.013	0.003	-0.0008
Latvia	1991-2000	0.077	0.008	-0.013	0.082	0.002	-0.0027
Lithuania	1991-2000	0.049	0.018	-0.014	0.044	0.002	-0.0026
Poland	1991-2001	0.032	0.012	-0.006	0.040	0.001	0.0002
Romania	1991-2001	-0.004	0.010	-0.000	-0.015	0.001	0.0000
Slovak	1993-2000	0.030	0.022	-0.010	0.017	0.003	-0.0017
Slovenia	1992-2000	0.050	0.017	-0.010	0.042	0.001	-0.0016
CEEC average		0.025	0.014	-0.011	0.022	0.002	-0.0016

Notes: AGR.  $\Delta n/n$  stands for the contribution of agricultural employment. The increment in capital stock are computed summing up investment over the period and subtracting yearly depreciation. Data for depreciation is available only for the three Baltic States: the depreciation rate is estimated to be around 40-50% of the investment rate. We apply a value of 45% to the other seven countries. The increments on the labor input are computed using bodies and not hours which are not available in many countries. Data for Hungary indicate that the difference is small. The domestic increment in the capital stock is calculated as residual. The same depreciation rate is applied to domestic capital and FDI, therefore biasing downward the contribution of FDI to growth. The contribution of agriculture to growth is calculated multiplying  $\delta n/n$  by the decrement in the population employed in agriculture.

**Table 2**  
**Institutional indeces**

	Capital Flows Rest.	Structural Reforms	Legal Proxies
Bulgaria	1.01	0.79	NA
Czech	0.05	0.90	3.40
Estonia	0.00	0.93	3.33
Hungary	0.62	0.93	3.30
Latvia	0.50	0.86	3.77
Lithuania	1.40	0.82	3.76
Poland	1.03	0.86	3.66
Romania	1.90	0.82	NA
Slovak	0.75	0.90	3.78
Slovenia	1.35	NA	NA
CEEC average	NA	NA	3.66
EU		1.0	

Notes: The capital flow index varies from -0.2 to 6, 6 is most restrictive. Source Garibaldi et al (2001). The Reform index weights price liberalization and competition policies (0.3), trade and exchnage rate liberalization (0.3) and privatization and banking reform (0.4). A value of 1 is a market economy. Source Aslund, Boone, Johnson (2001). The index of legal proxies weights predictability of law and policies, political stability and security of properties, Government/business interface, red tape and efficiency of government infrastructure. The scale goes from 0 to 6 with 6 being the worst performer. Source Garibaldi et al. (2001).

Table 3  
GVA and employment by branch, percentage share

	Agriculture	M&M	Utilities	Construction	Services Private	Services Public
Gross value added						
Bulgaria	14.5	19.1	5	3.6	42.9	13.1
Czech	3.9	27.8	4	7.4	41.1	12.7
Estonia	6.1	19	3.3	5.8	46.6	14.3
Hungary	4.1	25.5	3.8	4.6	42.6	16.5
Latvia	4.1	14.6	3.9	6.8	50.8	15
Lituania	7.5	22.1	4.1	6.1	39.7	17.3
Polonia	3.9	23.7	3.4	8.8	42.7	13.4
Romania	15.8	27.4	2.9	5.5	36.9	9.1
Slovak	4	25	4.1	5.2	45.9	
Slovenia	3.2	28.2	3.2	6	38.5	17.
CEEC average	10.6	26.5	3.5	6.7	37.5	15.1
EU	2.6	23.8	5	5.4	41.0	21.1
Employment						
Bulgaria	27.6	21.1	2	4.1	27.4	15.4
Czech	5	28.6	1.6	9.3	31.9	17.6
Estonia	6.9	23.9	2.6	7.0	35.5	18.8
Hungary	7.5	28	2	6.2	28.8	27.7
Latvia	14.7	17.9	1.7	6.3	34.6	20.6
Lithuania	19.6	16.4	2.4	6.1	27.0	21.7
Poland	25.7	20.7	1.7	6	28	15.4
Romania	41.4	21.2	2	4.1	19	10.8
Slovak	8.3	30.1	1.9	9.3	25.8	24.6
Slovenia	10.2	28.7	1.3	7.5	31.4	17.1
CEEC average	29.3	22.9	2.0	6.0	20.0	16.9
EU	4.8	20.3	3	5.4	38.1	27.0

Notes: Shares are computed using data for 2000, except for employment in Hungary and the Slovak republic where data for 1998 is used.



**Table 4**  
**Sectorial productivity and wages by branch, relative to EU**

	Agriculture	M&M	Construction	Private Services	Total economy
Bulgaria	37/36	20/21	29/27	48/29	25/24
Czech	88/81	53/46	72/74	59/82	58/60
Estonia	46/47	26/26	41/32	49/45	37/33
Hungary	77/75	49/41	54/43	83/75	58/50
Latvia	12/36	29/26	39/30	36/33	27/27
Lithuania	26/32	30/24	45/39	46/33	30/28
Poland	13/64	38/38	68/47	52/46	38/44
Romania	24/	31/	53/	68/	32/
Slovak	54/56	42/32	51/40	90/69	53/40
Slovenia	94/121	58/56	72/61	81/74	71/70
CEEC average	28/63	41/34	58/41	68/53	41/42

Notes: Productivity and wages are computed using data for 1998.

**Table 5**  
**Indeces of similarity**

	Openness	Employm. in Agr.	GDP per capita	Labor Productivity
Spain 85-86	0.29	0.15	0.62	0.95
Portugal 85-86	0.56	0.22	0.49	0.44
Greece 80-81	0.42	NA	0.55	0.52
Bulgaria	1.28	0.27	0.25	0.28
Czech	1.44	0.05	0.59	0.47
Estonia	0.87	0.07	0.41	0.34
Hungary	1.23	0.07	0.53	0.47
Latvia	1.02	0.14	0.3	0.3
Lithuania	1.06	0.19	0.3	0.26
Poland	0.63	0.25	0.41	0.34
Romania	0.75	0.41	0.27	0.15
Slovak	1.60	0.08	0.49	0.47
Slovenia	1.20	0.10	0.73	0.50

Notes: Openness is measured by export plus import over GDP. For Spain, Portugal and Greece we average over the two years. For CEEC the values refer to 2000. The employment share and labour productivity for Spain, Portugal and Greece are computed using the OECD Structural Statistics for industry and Services database and the OECD STAN database for Industrial Analysis. Values for the CEEC countries come from previous tables. GDP per capita is computed using Eurostat Regio data set.

**Table 6**  
**Estimated Steady States**

	No-change scenario		EU level effect		EU growth effect	
	GDP	LP	GDP	LP	GDP	LP
Bulgaria	0.23	0.26	0.34	0.35	0.37	0.37
Czech	0.61	0.50	0.50	0.56	0.51	0.53
Estonia	0.33	0.33	0.39	0.38	0.40	0.39
Hungary	0.48	0.46	0.45	0.49	0.45	0.45
Latvia	0.26	0.25	0.35	0.36	0.37	0.36
Lithuania	0.28	0.26	0.37	0.35	0.36	0.37
Poland	0.48	0.34	0.46	0.39	0.47	0.37
Romania	0.27	0.23	0.42	0.31	0.38	0.33
Slovak	0.49	0.48	0.45	0.49	0.46	0.48
Slovenia	0.80	0.61	0.76	0.68	0.74	0.60
CEEC average	0.38	0.38	0.41	0.45	0.42	0.41

Notes: Estimates obtained in the columns "EU effect 1" and "EU effect 2" are computed using a Bayesian procedure that weighs information contained in domestic data and information in the time series of poor EU regions after they joined the EU. In the first case, it is assumed that the distribution of steady states to which CEEC will belong is the same as the one of poor EU units. In the second, it is assumed that joining the EU has a level effect on the growth pattern which is the same for CEEC countries as it was for poor Spanish and Portuguese regions.

### GDP per capita and labor Productivity

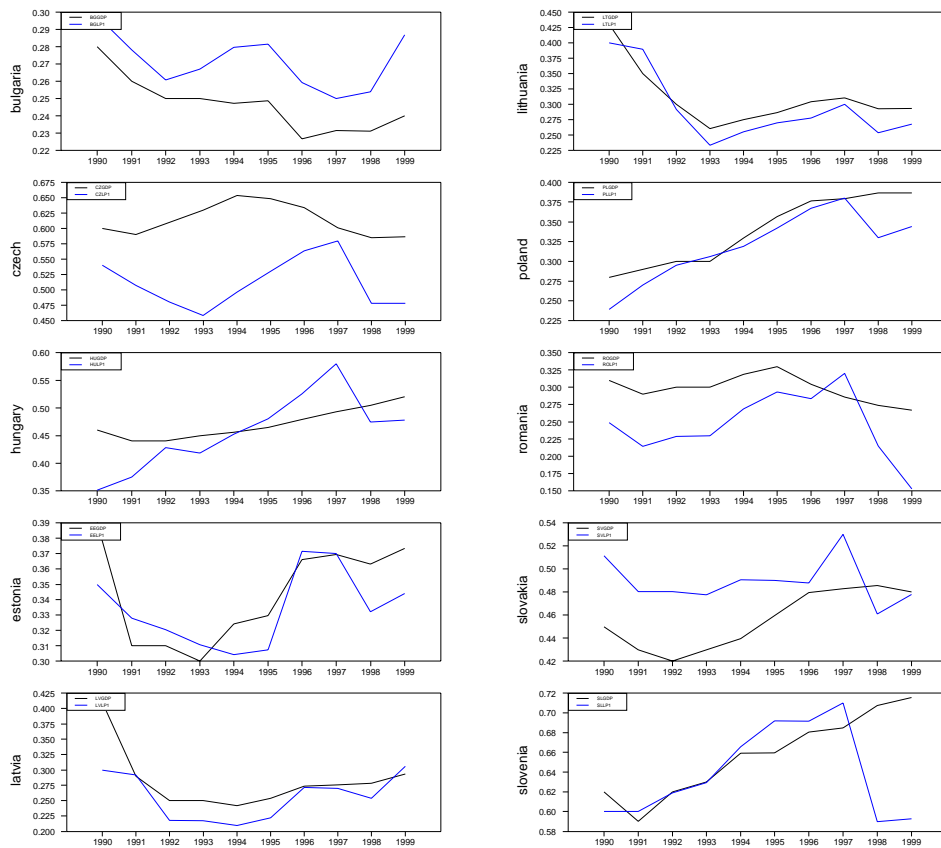


Figure 1:

### Saving and Investment rates

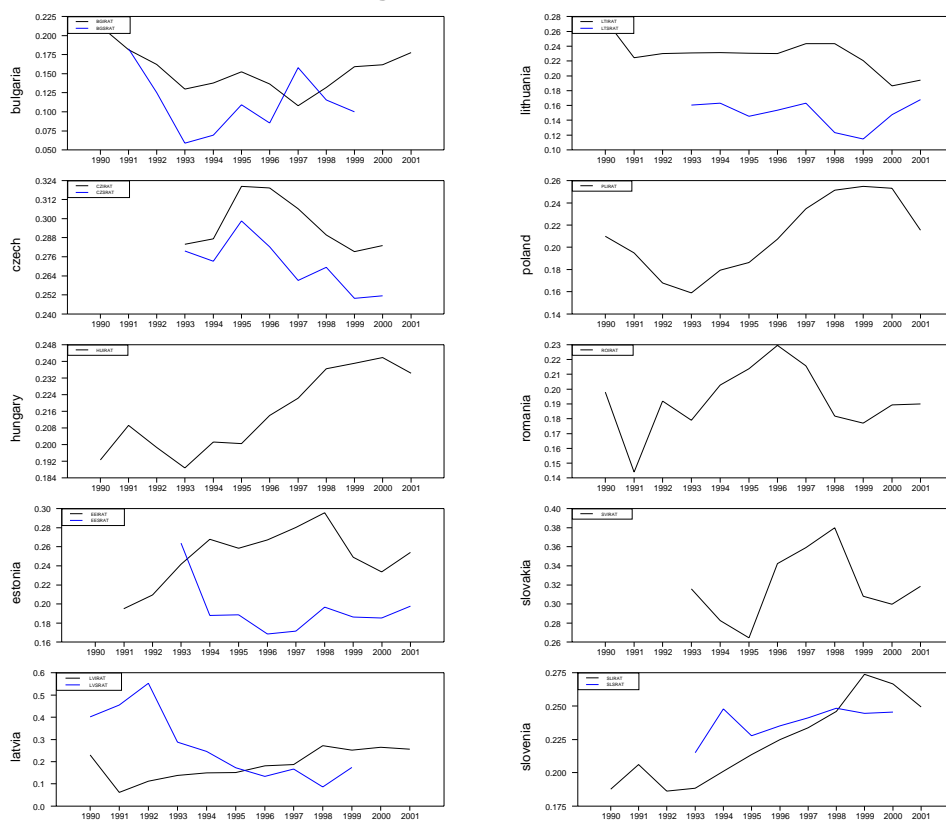


Figure 2:

### FDI rates and TFP

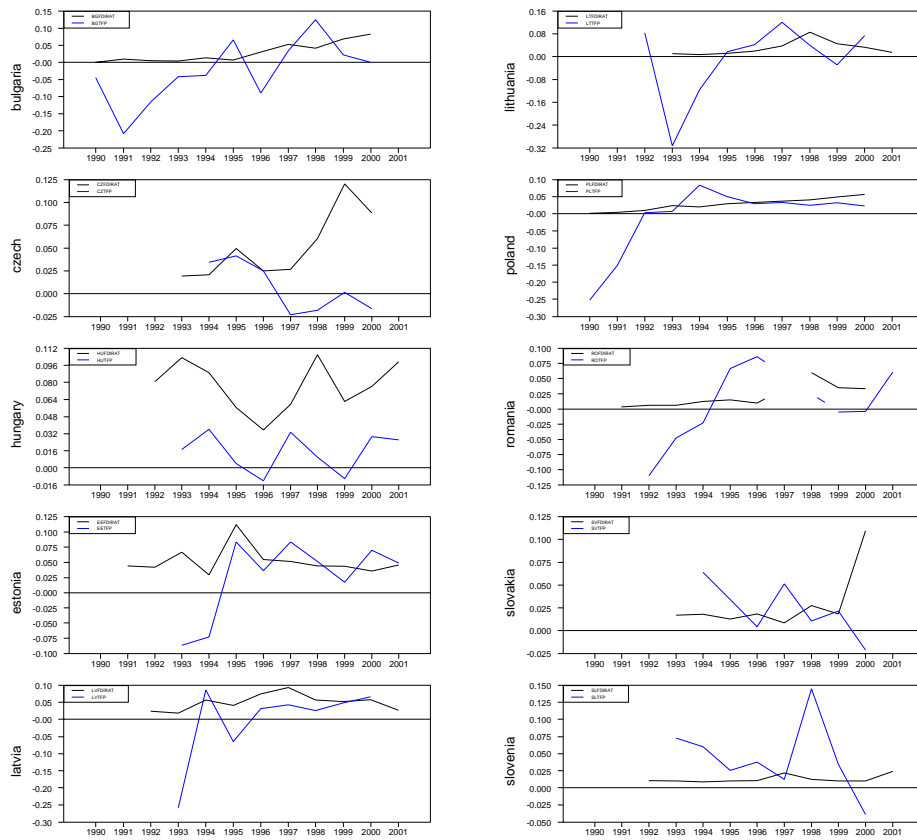


Figure 3:

### Unit labor costs

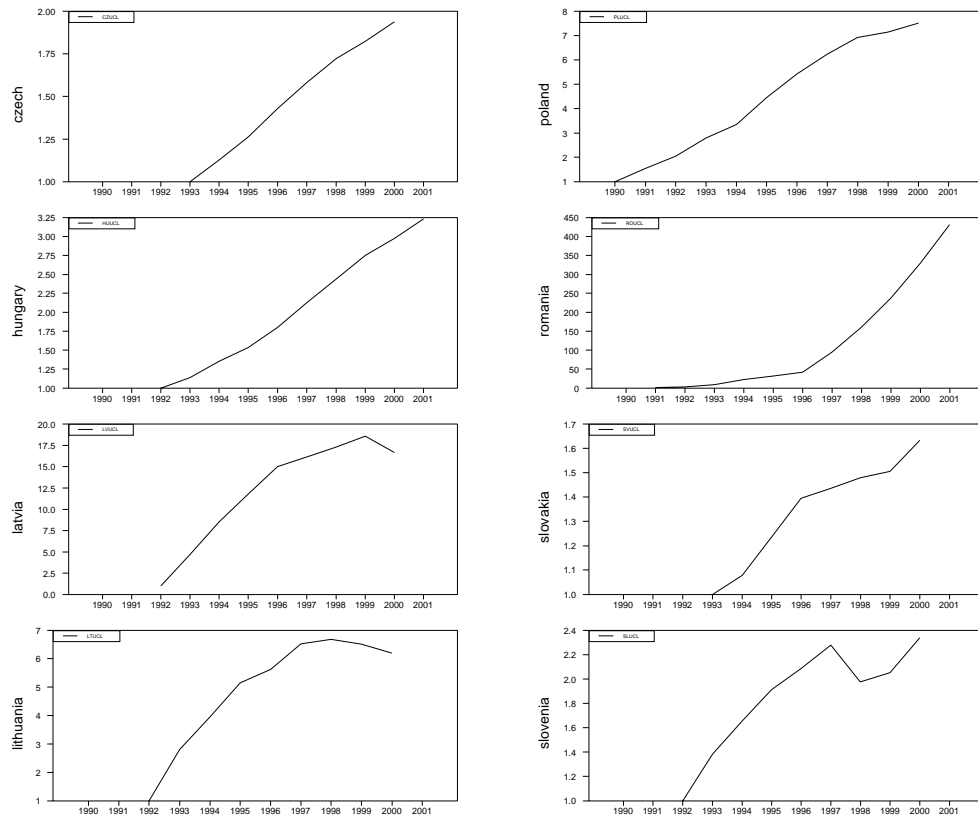


Figure 4:

## Unemployment and Participation rates

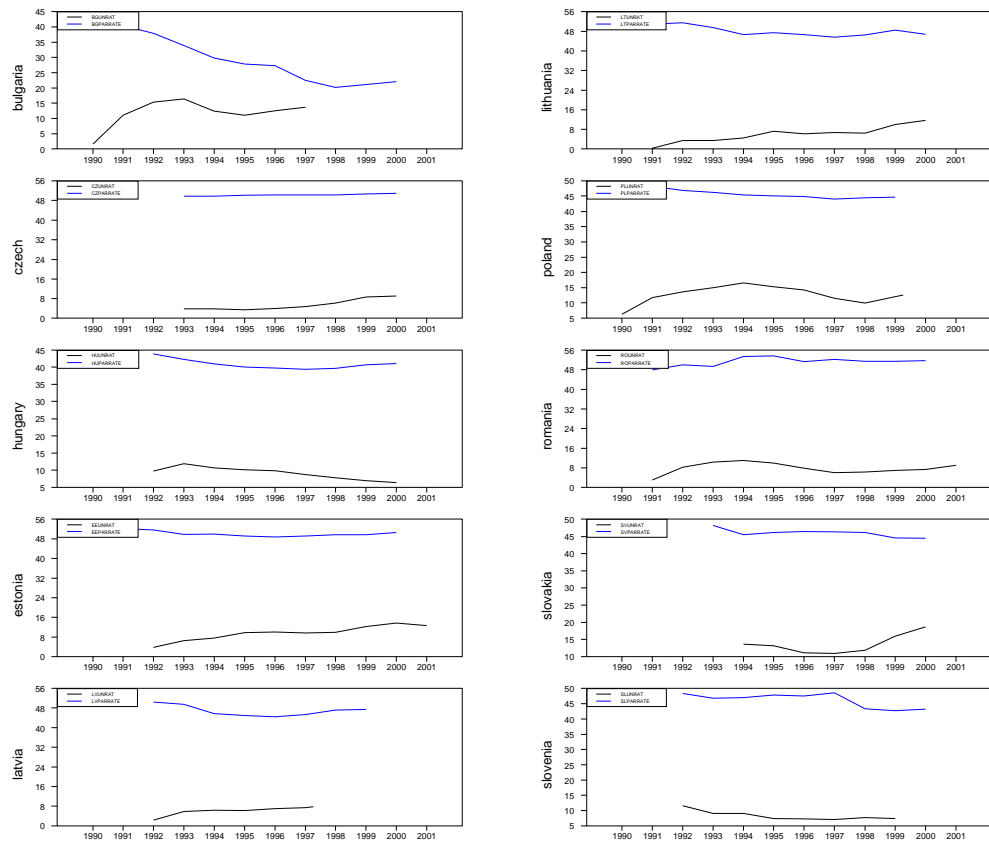


Figure 5:



### Institutions and TFP

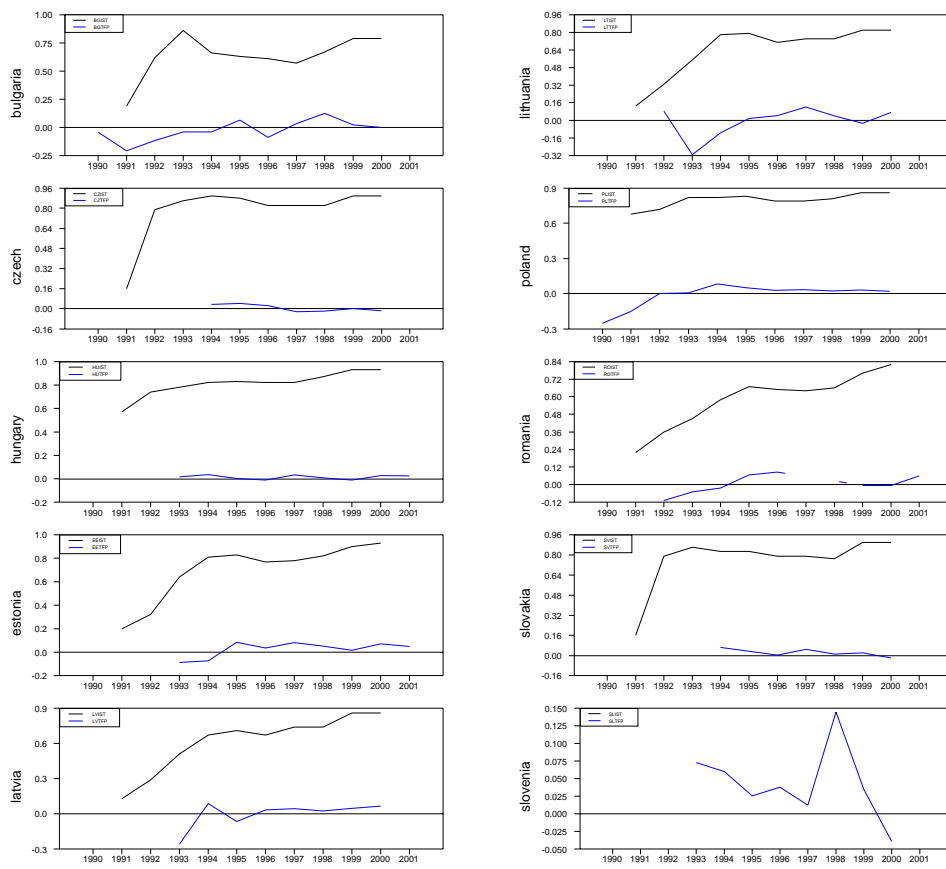


Figure 6:

### deficit to gdp and inflation

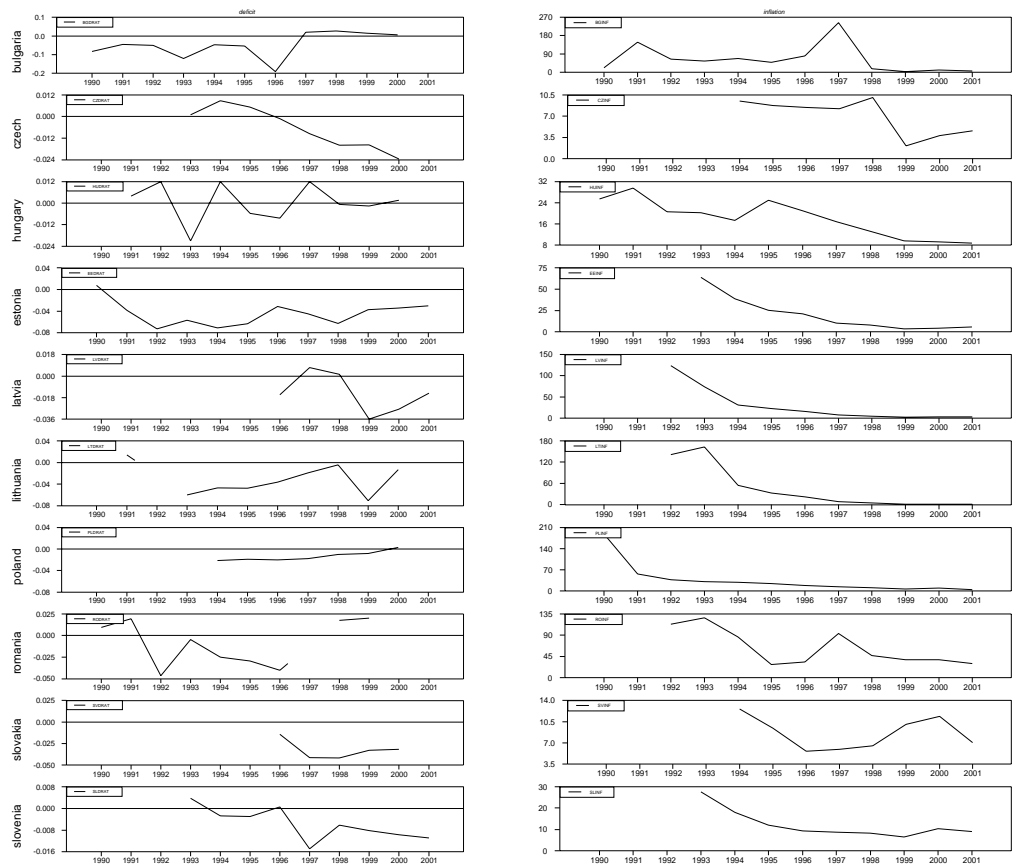


Figure 7: