Real Convergence in Central and Eastern Europe

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1. Introductory remarks

The most important factor behind the decision of Central and Eastern European (CEE) countries to pursue the market-oriented reforms during the last decade, and to apply for the EU membership, putting apart the political and social considerations, was the hope for the long-term acceleration of the GDP growth. The countries of the region suffered a tremendous setback due to the long period of the central planning. As the result of blocking the natural, market-led real convergence mechanisms, the relative gap in the GDP per capita between the Western and Central Europe (according to the estimates) increased significantly between 1950 and 1990. For example, according to the estimates, the 1950 per capita GDP level of Poland matched this of Spain, and was equal to a third of the West Germany. In 1993, after the adjustment to the market economy conditions, it was less than 40% of the Spanish level and 25% of the western länder of Germany (Orłowski, 1998). A similar relative downgrading in the economic development level has been observed in all the CEE-4 countries (Poland, Hungary, Czech Republic, Slovakia). The gap was not only in real income but also in the institutions, legal framework, technology, human capital development, and ability to compete on the world market. Obviously, there was some success in industrialization, social development, literacy, health, or urbanization. The progress, however, was insufficient to secure the convergence towards the West European standards.

The successful economic transformation of CEE-4 should have led to the emergence of the real convergence trend. With a relatively big initial development gap observed in 1993, and the transitionary recession over, one should expect relatively high GDP growth rates in the region. In this paper we argue, however, that the actual economic performance observed in the period 1993-2002 was generally worse than one could expect because of the real convergence pressure. That was due to – at least – two major reasons. The first one was the low level of saving and investment in the economy, much lower than generally perceived. The second one was the lack of financial stability, leading to painful adjustment policies experienced by all the CEE-4 countries.

To the contrary, we expect the economic performance of CEE-4 to improve during the years to come and to match the real convergence expectations based on theoretical consideration. The EU accession will play a major role in this improvement. The full real convergence effects, however, will appear only after the adoption of the euro.

2. Growth performance of CEE-4: disappointing outcome

The concept of the real convergence is in a very core of the modern growth theory. Independently either based on exogenous, or endogenous growth models, the theory expects – in the long run - the poorer countries to grow faster than the richer ones, either under any conditions (absolute convergence) or under the assumption of the correct economic system and policy (conditional convergence). The main factors behind the real convergence process are: (a) high return on capital in a country with a relative shortage of capital; (b) high saving and investment rates; and (c) imports of capital, know-how and technology from the "rich" countries. Both factors (a) and (b) can be derived from the neoclassical growth theory, while the factor (c) is rooted in the endogenous growth model.

The experience of the relatively poor EU-15 countries as far as long-term convergence process is concerned is rather encouraging. Out of 4 relatively poor economies that joined the EU over the last 30 years with the GDP per capita at 55-70% of the EU-15 average, one (Ireland) experienced the full convergence, two (Spain and Portugal) significantly reduced the development gap, and only in one case (Greece) the progress was disappointingly slower. Altogether, 3 Mediterranean countries (Med-3) were experiencing during their EU membership the reduction of the gap in GDP per capita at the average yearly rate of 3.1% (parameter calculated for the period 1986-2002). As the worldwide experience show, the "natural" (market-led) rate of this fall was observed at the level of 2% (so-called beta-convergence parameter, Barro, Sala-I-Martin, 1995). Therefore, the speed of convergence observed in Med-3 countries was faster than the "natural" one, suggesting the positive impact of both participating in the internal market and of the EU development policies. The real convergence observed in the Ireland since the mid-1980s was much faster; however, Ireland must be seen as a very special case.

CEE-4 countries started the crucial economic reforms in the years 1990-91. During the first 2-3 years the measured output was shrinking, partly due to the unavoidable adjustment to the market that eliminated the economically irrational activities, partly due to the macroeconomic adjustment policies, and – last but not least – partly due to the statistical measurement problems. However, by the year 1994, GDP started to grow in all the CEE-4, and the real convergence process finally started to take place (compare figure 1). The process was pretty weak: between 1996 and 2002 the average GDP per capita of the region, measured at the Purchasing Power Parity (PPP) increased from 43 to 46% of the EU-15 average[2]. The process was, actually, slower than in the Med-3 countries that increased in the same period their average GDP per capita from 76 to over 80% of the EU-15 average.
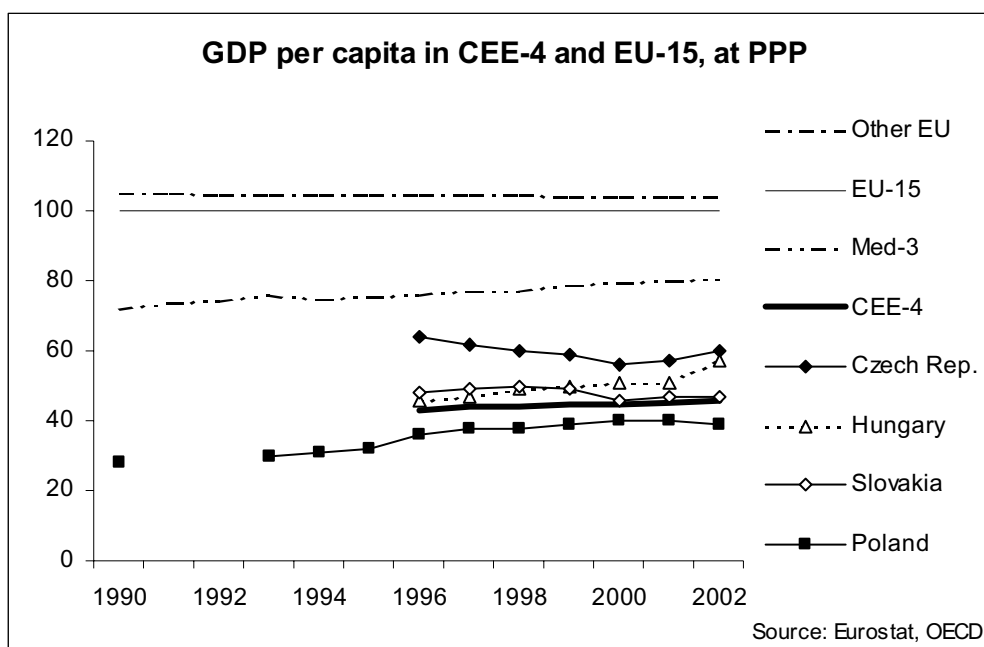
Figure 1

Similar conclusions may be reached while analyzing the observed growth rates of GDP. The growth did take place, but was it as fast as the theoretical models would suggest? Table 1 shows the calculation of the yearly average growth rates one could expect in the CEE-4, given the theoretical model of the real convergence.

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[2] Reasonably coherent GDP per capita series for the EU candidate countries, at PPP, are available since 1996. Longer series are available only for Poland, as the country fully participated in the Eurostat comparisons since early 1990s. Nevertheless, even the 1996-2002 series should be treated cautiously due to the methodological problems experienced in the international comparisons.

Table 1. Theoretical and observed growth of GDP in CEE-4

	GDP p.c. (EU-15=100)	Yearly growth rate of GDP			
		Theoretical 1997-02*		Observed	
	1996 level	Natural**	Med-3***	1994-02	1997-02
Poland	36	5.3	6.7	4.4	3.6
Hungary	46	4.3	5.3	3.5	4.3
Czech Rep.	64	3.2	3.7	2.3	1.3
Slovakia	48	4.2	5.1	4.1	3.4
		Theoretical 2003-12*			
	2002 level	Natural**	Med-3***		
Poland	39	4.7	5.8		
Hungary	57	3.4	4.0		
Czech Rep.	60	3.3	3.8		
Slovakia	47	4.0	4.9		

*Calculated with the EU-15 growth rate of 2.1% (observed 1993-02)

**Calculated with 2% "natural" beta-convergence parameter (Barro, Sala-I-Martin, 1995)

***Calculated with 3.1% beta-convergence parameter observed in Med-3 countries, 1986-2002

Source: Calculations based on Eurostat data

In theory, per capita GDP in the CEE-4 should have grown in the period 1997-2002 at a rate that would allow for the real convergence – either with the "natural" 2% speed of closing the development gap, or – if we assume that the process of the pre-accession EU integration already was taking place – nearer to the "Med-3" speed of closing the gap. That would imply the region's GDP growth of between 4.7 and 5.9% yearly. In reality, the region's GDP was growing at 3.3%, only slightly higher than in the Med-3 countries (2.7%). Out of 4 countries only Hungary reached the lower band of the expected growth. However, in the 2 years prior to the period Hungary experienced a major slowdown, and the GDP growth for the period 1994-2002 was only 3.1%[3]. The growth performance of the whole region was only slightly better in the period 1994-2002 than the growth performance of Med-3, despite much lower initial GDP level (compare figure 2). One should add, that the growth performance of the (much poorer) Balkan candidate countries was by far more disappointing than in the case of CEE-4.

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[3] Year 1996 was chosen as a base year only due to the lack of comparable data on PPP adjusted GDP for CEE-4. In fact, in the period 1995-2002 one should expect even higher growth rates of GDP in CEE-4, as the starting GDP level in 1994 would be even lower than in 1996.
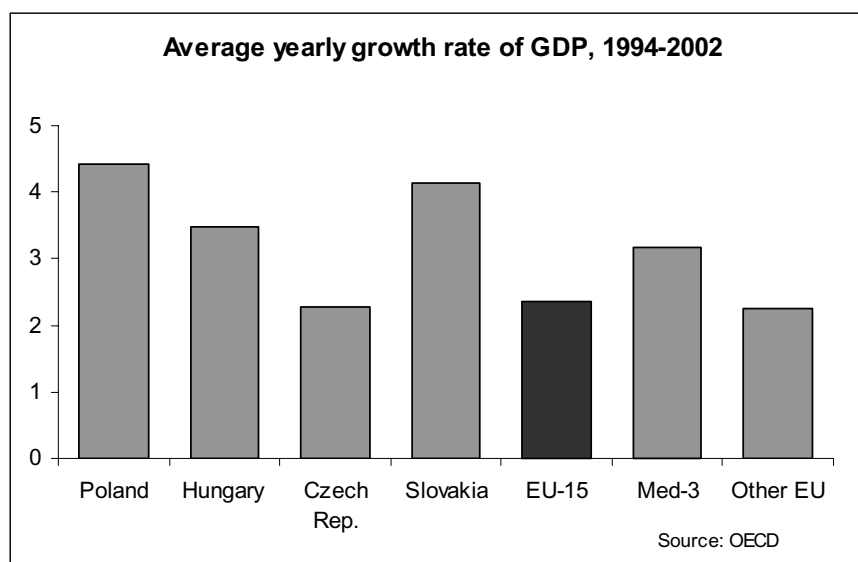
Figure 2

The theoretical growth rates over the next decade, both in the case of the beta-convergence parameter on the "natural" level (observed within US states and European regions), as well as in the case of the beta-convergence parameter on the "Med-3" level (observed in Med-3 countries) are, except for Hungary, generally higher than growth rates achieved in the past years, despite the higher starting point of the year 2002.

Altogether, we are tempted to assess that the real convergence process observed in Central and Eastern Europe was, until now, relatively weak. In the next part of this paper we will try to answer the question why it was the case.

3. Saving and investment levels in CEE-4: a statistical illusion?

Independently of what theoretical model we use, the ratio of saving and investment to GDP is a key variable that may influence the speed at which the real convergence takes place. In particular, countries with the low saving/investment ratio are expected to converge at a slower path than countries closer to "normal" investment levels.

Seemingly, CEE-4 countries invest a similar share of GDP that comparable West European economies. The average investment to GDP ratio of the region fluctuated between 20 and 26%, with some countries – namely the Czech Republic and Slovakia – reaching, in some sub-periods, rates in excess of 30%, generally considered as very high (compare table 2).

Table 2. Ratio of fixed investment to GDP measured with different price systems

|	1994		1998		2001	
	Domestic prices	EU average prices	Domestic prices	EU average prices	Domestic prices	EU average prices
Poland	18.2	12.1	25.3	20.0	20.9	15.3
Hungary	20.0	..	23.9	..	23.7	17.1
Czech Republic	25.3	..	32.0	..	28.3	20.0
Slovakia	25.2	..	30.3	..	31.3	18.9
EU-15	19.8	21.1	19.9	22.7	20.2	22.7
Med-3	21.7	21.2	23.2	24.5	25.2	25.3
Other EU	19.6	18.5	19.5	21.0	19.6	19.9

Source: Eurostat, GUS

The problem is, however, at what prices we measure the value of investment and GDP. All the above-mentioned ratios are calculated with the domestic price system recorded in CEE-4 countries. Compared to the EU average, the prices of consumption goods in these countries are much lower (ranging from 35% of the EU average price level in Slovakia to 56% in Poland), while the prices of investment goods closer (ranging from 64% of the EU average price level in Slovakia and Czech Republic to 74% in Poland). As a result, the *relative prices* of consumption are depressed in CEE-4, while the *relative prices* of investment overstated. Obviously, such a systematic bias does not make a big difference while comparing changes of the investment and saving ratio in one country in a relatively short period of time. However, we argue that while trying to make the international comparison of saving/investment rates, one should use the same price system for various countries. The point is that while making such exercise we compare the relative volumes of resources that a given country spends for consumption and investment.

Consider, for example, two countries A and B that spend exactly the same real amounts of goods for consumption and production. Common sense tells that the investment to GDP ratio in both countries is identical. If, however, the price levels of investment goods are equal in both countries, but the price level of consumer goods is lower by half in country B, the relative prices of investment in this country is higher than in country A. As a consequence, while using the domestic price structure we would obtain the investment to GDP ratio much higher in country B than in the country A.

Therefore, we suggest that the actual measurement of the investment and saving to GDP ratios in CEE-4 should be done using the international rather than domestic price structure. Only such ratios, based on the PPP-adjusted numbers, can be compared with the ratios observed in Western Europe[4]. If such an adjustment is made, the ratios observed in CEE-4 seriously fall (compare figure 3). As the investment to GDP ratios in CEE-4 in 2001 range from 15.3% in Poland to

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[4] The methodology for calculating the PPP-adjusted national accounts figures valuates all the groups of goods and services in the international – EU average – prices.

20% in the Czech Republic, all the countries of the region should be considered as relatively low-investment economies. The region as a whole invests 16.6% of GDP, and the domestic saving ratios are even smaller due to persistent current account deficits (domestic saving ratios range between 12 and 15%). Please note, that the investment to GDP ratios are not only significantly lower than those ones observed in the Med-3 countries, but – with the exception of the Czech Republic – they do not match the rates of the rich EU countries.
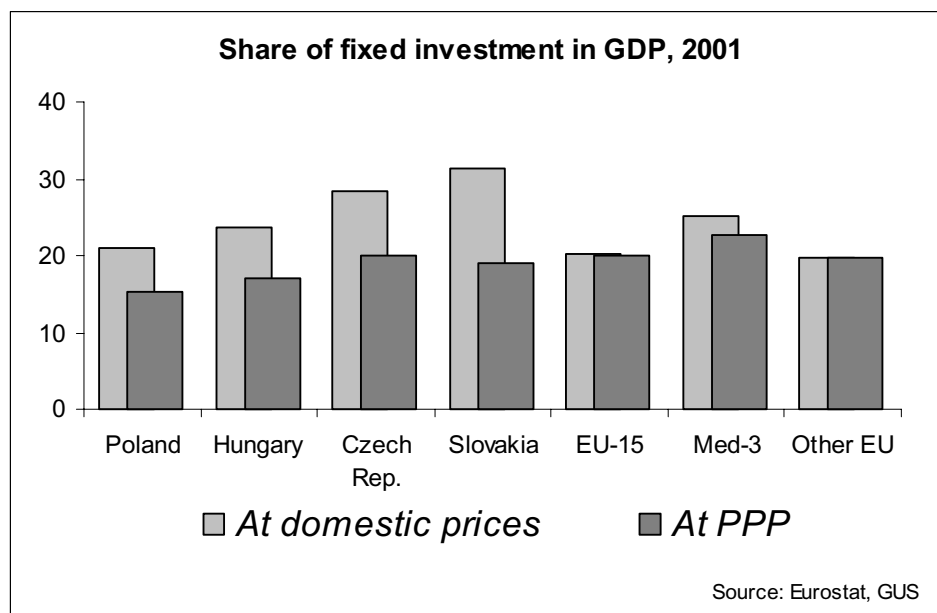
Figure 3

Obviously, if the PPP adjusted numbers are used, the total ratio of the fixed capital to GDP, both average and incremental, becomes smaller than with the domestic prices. Therefore the return on capital seriously grows, in line with the neoclassical theory. The aggregated return on capital calculated for Poland in the period 1992-2001 with PPP-adjusted numbers appears to be more than two times higher than in Spain and five times higher than in Germany[5]. However, with the low investment rates, the high return was not enough to make CEE-4 grow at the satisfactory speed during the past decade.

The situation of the CEE-4 is still quite comfortable compared with the candidate Balkan countries. The PPP-adjusted investment to GDP ratios in Bulgaria and Romania are below 13%. An effort to increase the domestic saving and investment is, therefore, a must if Central and Eastern European countries are to grow at the rate that allows for the acceptably fast real convergence.

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[5] The aggregated return on capital is calculated as an inverse of the ICOR (incremental capital-output ratio) based on the gross investment figures. The method is, obviously, questionable as the net increase of the capital stock should be used instead of the gross investment in the ideal calculation.

4. Dynamic financial instability in CEE-4

The countries of the region are generally assessed as financially stable. Such a market sentiment leads to the low financial spreads on the borrowing, as well as to the generally positive investment image of CEE-4. The real financial stability, however, should be assessed in a dynamic way, taking into account the country's ability to finance its growth without generating excessive imbalances between the financing needs and the available resources. Lack of such a dynamic financial stability may lead to the rapid increase of the current account deficit, and either to the foreign exchange crisis, or to the application of painful adjustment policies that slow down the growth.

However successful the CEE-4 countries were in managing the process of the transition, they were unable to solve in a sustainable way the problem of financing the growth. As the figure 4 shows, any acceleration of the domestic absorption was leading to the immediate shortage of the domestic saving, and the unsustainable built-up of the external disequilibria.
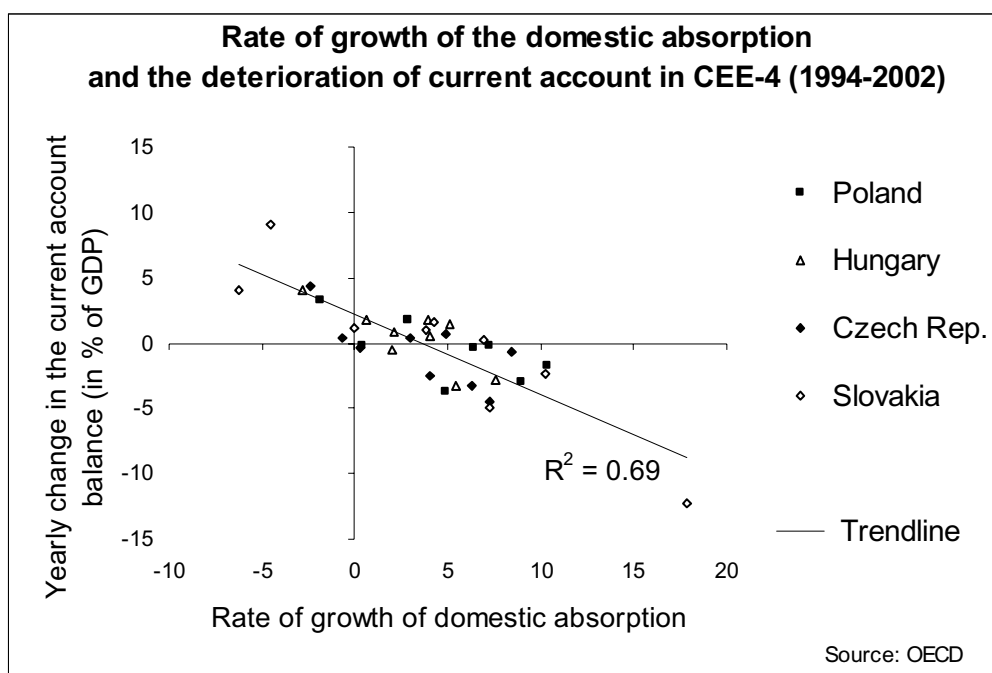
Figure 4

Table 3 gives the econometric assessment of the same phenomenon. Increase of the domestic absorption by 1 per cent point led, during the period 1994-2002, to the deterioration of the current account balance by 0.6 per cent point of GDP. Please note, that in the 5 EU countries for which we made a similar calculation, the deterioration of the current account balance was only 0.25.

Table 3. Link between the domestic absorption and current account in CEE-4
**   and selected EU countries**

	CEE-4*	EU-5**
Explained variable	Yearly change in the current account balance (in % of GDP)	
Sample (years)	1994-2002	1986-2002
Number of observations***	35	85
Parameters (t-statistics in brackets)		
Intercept	2.18 *(5.0)*	0.78 *(3.5)*
Rate of growth of domestic absorption in %	-0.61 *(-8.7)*	-0.25 *(-5.0)*
Regression statistics		
R^2	0.694	0.233
Adjusted R^2	0.685	0.224
F statistic	74.9	25.3
Economic interpretation		
Growth of absorption non-accelerating C/A	3.6	3.1
Deterioration of C/A with 6% growth	-1.5	-0.7

* CEE-4: Poland, Czech Republic, Hungary, Slovakia, 1994-2002
** EU-5: Greece, Portugal, Spain, Ireland, Italy, 1986-2002
*** The sample consists of yearly data for individual countries
Source: Author's calculations

On the average, any growth rate in excess of 3.6% was leading in CEE-4 to the deterioration of the current account balance. Please note, that the expected GDP growth rate, consistent with the real convergence process, was estimated on the level of 5-6% a year in the period 1997-2002, and on the 4-5% a year in the period 2003-12 (see table 1). The current level of the dynamic financial stability of the CEE-4 countries hardly allows for such a growth: continuation of the 5% GDP growth of the region over the 10 years period would lead to the deterioration of the current account by 9 per cent points. Most likely, that would force the monetary authorities to implement adjustment policies checking the increase in the external imbalance.

In the past, the increase of the current account deficit was forcing all of the countries to squeeze the domestic demand and to cool down the economic growth (in Hungary in 1995-96, in the Czech Republic in 1997-98, in Poland in 2001-02; in the years 2002-03 we are observing the process of the resurge of the external disequilibria in the Czech Republic, and possibly, partly due to the fiscal loosening, in Hungary). In the absence of policies that sufficiently promote the saving (of households, firms, and the public sector), the CEE-4 countries are unlikely to achieve

a faster long-term path of growth than 3-4%, below the target necessary to close in a relatively short time the development gap

5. Conclusions: economic policies and the real convergence

In a nutshell, the above-mentioned factors mean that the CEE-4 countries do not seem well prepared to enter, soon after the accession, the fast track towards the real convergence. Arguably, they could reach a "tiger-type" dynamism if only structural reforms aimed at mobilization of domestic saving and reforming market institutions are deep and fast enough. However, that would require gaining a political support for the wave of reforms comparable to that of the early 1990s (or to the reforms Ireland undertook in the mid-1980s). Mobilizing such a support may be quite difficult in the short term, particularly given the widespread, excessively high expectations concerning the EU accession effects, inflows of the EU structural funds and the possible increase in consumption levels. Therefore, the hopes for a really fast, long term growth may not materialize in the short term, although generally speaking the region should expect some improvement in the economic situation, and a potential for the "tiger-type" dynamism obviously does exist.

The obstacles for the fast growth may be greatly mitigated if the CEE-4 join the euro area. Firstly, the euro will increase the long-term incentives to save and to invest, allowing for the faster increase of the investment to GDP ratios. Secondly, the enhanced security will encourage more of the foreign capital to benefit out of the high return on the capital available in the region. Thirdly, the problem of the dynamic financial instability would practically disappear. Even if the short-term built-up of the current account deficit takes place (as it was, for example, the case in Portugal in the period 2000-02), the currency crisis can not happen. Therefore, the right answer to the problem will be the adjustment that enhances the domestic saving by the increase in the public sector saving and by structural actions aimed at the increase in the profitability of the firms (e.g. privatization and restructuring). The restructuring of the firm sector is likely to take place independently on either the government undertakes any specific action, or not: growing foreign indebteness of business organizations will force them to reduce costs and increase profits.

In this paper we do not try to explain the factors behind the low saving and investment rates in Central and Eastern Europe. Obviously, a mix of macroeconomic and structural factors contributed to this outcome. A similar remark can be done about the reasons for the lack of the dynamic financial stability of the region. EU accession, and in particular the adoption of the euro may greatly help, but will not replace the genuine improvement in the domestic policy and the enhanced efforts of the societies to save and to invest.

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