*Dubravko Mihaljek**

UDK 339.923
JEL Classification O11, O40, O52, P27
Izvorni znanstveni rad

EU ENTRANTS, CANDIDATES AND ASPIRANTS: HOW LARGE ARE THE DIFFERENCES AND HOW QUICKLY COULD THEY BE REDUCED?

This paper attempts to answer three questions on the status of real economic convergence in central and eastern Europe. First, how large are the differences, measured by key macroeconomic indicators, between the new member states that joined the EU in 2004, the four EU candidates (Bulgaria, Croatia, Romania and Turkey) and the EU "aspirants" from southeast Europe (Albania, Bosnia and Herzegovina, Macedonia and Serbia and Montenegro). Second, how long could it take the EU candidates and aspirants to overcome these differences and catch up with the new member states? And third, how long could it take the 16 countries in central and eastern Europe to catch up with living standards in Greece, Italy, Portugal and Spain?

Due to the complexity of cross-country comparisons, answers to these questions are only illustrative. It is shown that differences in terms of macroeconomic indicators between the EU candidates and the new member states are not as large as is often thought. However, the starting position of countries in southeast Europe is considerably less favourable. Second, at the average speed of reforms exhibited by the new member states over the past 15 years, it would take between 1½ and 7½ years for the EU candidates and aspirants to reach the level of transition observed in the new member states at the time

* D. Mihaljek, Ph. D., Senior Economist, Bank for International Settlements, Centralbahnplatz 2, CH-4002 Basel, Switzerland. E-mail: Dubravko.Mihaljek@bis.org. The views expressed in this paper are those of the author and do not necessarily represent those of the BIS. Useful comments by anonymous referee are gratefully acknowledged. First draft: 20 June 2005, Revised draft: 3 November 2005. Rad primljen u uredništvo: 27. 6. 2005.

they joined the EU. Converging to real per capita incomes of four southern members of EU-15 would take considerable longer: between 25 and 50 years for the new member states (with the exception of Slovenia) and EU candidates; and 65 years or longer for the southeast European countries.

Keywords: convergence; EU enlargement; growth; transition economies; EU candidates; central and eastern Europe; southeast Europe.

1. Introduction

Since the eight countries from central and eastern Europe had joined EU in 2004, attention of many analysts has turned towards remaining countries in the region. One issue that immediately arises in this context is how far behind the new member states are current EU candidates – Bulgaria, Croatia, Romania and Turkey – as well as aspirants from southeast Europe – Albania, Bosnia and Herzegovina, Macedonia and Serbia and Montenegro. A related issue is how long it might take these countries to catch up with the new member states in terms of economic development. Finally, how far behind the "old" EU members are the eight newcomers as well as the candidates and aspirants?

Economic convergence may be divided into micro and macro categories. Micro convergence refers to a tendency towards the equalisation of income of identical factors across economies and its theoretical underpinnings are provided by seminal papers of Heckscher, Ohlin and Samuelson.[1] This paper will deal with macro convergence, which explains how aggregate variables such as per capita income or output per worker may converge or diverge across economies. More specifically, the paper will try to assess the speed of convergence among different European economies but without discussing specific determinants of convergence.[2]

Section 2 compares some standard macroeconomic and structural indicators for countries in central and eastern Europe and EU-15. The purpose of these comparisons is to assess differences in initial positions among new member states, EU candidates and countries in southeast Europe, vis-à-vis the less wealthy southern members of EU-15 such as Greece, Italy, Portugal and Spain. It is shown that, in terms of macroeconomic indicators, the differences between the new member states and EU candidates are not as large as is often thought. However, countries in southeast Europe are starting from a much worse position of.

---

[1] For an overview of the factor-price equalisation theory see any standard textbook in international trade theory (eg, Bhagwati and Srinivasan, 1983).

[2] For an overview of the macro convergence hypothesis in economic literature see Rassekh (1998).

Section 3 discusses the speed of convergence between the new member states and EU candidates and aspirants. It is shown that, at the average speed of reforms exhibited by the new member states over the past 15 years, it would take between 1½ and 7½ years for EU candidates and aspirants to reach the level of transition observed in the new member states at the time they joined EU.

Section 4 addresses the same question, but this time from the point of view of all European transition economies vis-à-vis the less wealthy members of EU-15 from southern Europe. Converging to real per capita incomes of Greece, Italy, Portugal and Spain would take between 25 and 50 years for the new member states (with the exception of Slovenia) and EU candidates; but 65 years or longer for southeast European countries.

To conclude, Section 5 discusses possible downward biases to the estimated speed of convergence.

2. How large are the differences among central and eastern European economies?

Sixteen countries from central and eastern Europe range in population from just 1.4 million (Estonia) to 71 million (Turkey), and in GDP from under $5 billion (Macedonia) to $300 billion (Turkey) (Table 1). Only Poland, Romania and Turkey have relatively large population (20 million inhabitants or more), while half of the countries in the region have less than 5 million inhabitants. In terms of GDP virtually all economies in central and eastern Europe are small. For instance, with a 10% larger population, Spain had in 2004 almost four times larger GDP than Poland, the second largest economy in central and eastern Europe.

The relative size of economies is important when considering the speed of convergence. Small economies can catch up faster with the more developed ones in the medium term because of potentially greater institutional flexibility. Examples in central and eastern Europe include the Baltic states and in particular Estonia. The best examples in other parts of the world are city-states such as Hong Kong and Singapore. But in the long term, small economies have lower growth potential because of smaller population, and would therefore have to sustain growth mainly through productivity-enhancing investment.

Table 1

SELECTED INDICATORS FOR CENTRAL AND EASTERN EUROPE AND EU COUNTRIES

	Population 2004 (million)	**GDP 2004** (billion USD)	**Real growth 2000–04**[1]	**Inflation 2000–04**[1]	**Unemployment rate, 2004**[2]
New member states					
Czech Republic	10.2	107	3.0	2.7	10.3
Hungary	10.1	100	3.9	7.2	6.3
Poland	38.2	242	3.1	4.4	19.1
Slovakia	5.4	41	4.1	7.7	13.1
Slovenia	2.0	32	3.4	6.8	10.1
Estonia	1.4	11	6.5	3.5	4.0
Latvia	2.3	14	7.4	3.2	8.5
Lithuania	3.5	22	6.7	0.5	6.0
EU candidates					
Bulgaria	7.8	24	4.9	6.4	12.2
Croatia	4.4	35	4.1	3.4	13.8
Romania	21.7	73	5.3	26.0	6.2
Turkey	70.7	300	4.3	37.8	10.0
EU aspirants					
Albania	3.4	8	6.0	2.7	14.4
Bosnia-Herzegovina	3.8	8	4.9	2.0	43.2
Macedonia	2.0	5	1.3	3.0	37.2
Serbia-Montenegro	8.1	22	4.8	40.6	18.5[3]
Southern EU-4					
Greece	11.0	205	4.3	3.4	8.9
Italy	57.8	1,681	1.3	2.5	8.3
Portugal	10.5	167	1.1	3.3	6.8
Spain	42.2	993	2.9	3.2	10.8

[1] Annual average percentage change. [2] Based on labour force surveys; except Bosnia and Herzegovina and Macedonia (registered unemployment). [3] Unemployment data for Serbia only.

Sources: Eurostat; IMF; UN Economic Commission for Europe; author's calculations.

The best growth performance in central and eastern Europe over the past five years has been exhibited by the Baltic states, which expanded by 6½–7½% per annum on average, followed by Albania (6%) and Romania (5¼%). Bulgaria, Bosnia and Herzegovina and Serbia and Montenegro were growing by slightly less than 5% per annum on average. Croatia, Slovakia and Turkey were growing by slightly more than 4% per annum; and "mature" transition economies (the

Czech Republic, Hungary, Poland and Slovenia) by 3–4%. The slowest growing – indeed, stagnating – economy in the region is Macedonia; even excluding the years of civil conflict (2001 and 2002), Macedonia's average growth amounted to just 3¼%, much less than any of its neighbours'. One should note that the period from 2000–04 is suitable for cross-country comparisons because of the absence of economic crises (with the exception of Turkey in 2001) and civil conflict (except in Macedonia). Moreover, the initial transformation recessions had been completed by 2000, with the exception of Serbia and Montenegro, where the transition only just started in 2000.

Table 2 compares macroeconomic indicators for different groups of countries in Europe. The difference in initial positions can be seen already from the GDP data: with a 50% smaller population, four "old" EU members from southern Europe produced three times greater GDP than all 16 countries from central and eastern Europe taken together. Another point to note is that, over the past five years, average growth in central and eastern Europe was more than twice as fast as the EU-15 average. Real growth was on average highest in the new member states, followed closely by the four candidate countries. The EU aspirants – which should, other things equal, grow more rapidly – actually underperformed. The four southern EU members were growing even more slowly, mainly because of the poor economic performance of Italy; however, their growth was still faster than the average for EU-15.

Table 2

A COMPARISION OF CENTRAL AND EASTERN EUROPE AND EU COUNTRIES, 2004[1]

	Population (million)	**GDP** (billion USD)	**Real growth 2000–04**[2]	**Inflation 2000–04**[2]	**Unemployment rate**[3]
New member states	73	569	4.8	4.5	9.7
EU candidates	105	432	4.7	18.4	10.6
EU aspirants	17	45	4.3	12.1	29.5
Total central and eastern Europe	195	1,044	4.6	9.9	14.6
Southern EU 4	122	3,046	2.4	3.1	8.7
EU 15	383	12,183	2.1	2.3	8.0

[1] For countries in different groups see Table 1. [2] Annual percentage change, unweighted average for countries in the group. [3] Based on labour force surveys, except Bosnia and Herzegovina and Macedonia.

Sources: Eurostat; IMF, *World Economic Outlook, April 2005*; UN Economic Commission for Europe; author's calculations.

Most countries in central and eastern Europe had by end-2004 cut inflation to low single digits, at or below levels recorded in Greece, Ireland, Portugal and Spain in recent years. But in Hungary, Latvia, Romania, Serbia and Montenegro, Slovakia and Turkey average inflation rates in 2004 were still lying between 6–12%, far too high for sustainable long-term growth. A major part of the challenge to sustain faster economic growth for both EU candidates and aspirants would therefore seem to lie in achieving a durable reduction in inflation.

Regarding unemployment, average rates in the new member states and EU candidates look similar. But from the data in Table 1 one can clearly distinguish three groups of countries. In the Baltic states, the Czech Republic, Hungary, Slovenia, Romania and Turkey, the unemployment rates are similar to those in Greece and Spain. In Albania, Bulgaria, Croatia, Poland, Serbia and Slovakia, unemployment is significantly higher, ranging from 12–19%. For Bosnia and Herzegovina and Macedonia, no labour force survey data are available. Their rates of registered unemployment of 37% and 43% in 2004 appear at first sight truly catastrophic. However, both economies have extensive informal sectors, and registering as unemployed provides individuals access to health care benefits. The rates of unemployment based on labour force surveys are therefore likely to be significantly lower than 35–45%. Nonetheless, the registered unemployment figures highlight enormous structural challenges facing these countries. With a large proportion of labour force unemployed, growth that is actually achieved is bound to be well below potential. At the same time, the potential for faster catch-up should be greater.

While the above macroeconomic indicators provide some essential information on different starting positions in central and eastern Europe, they are far from sufficient to characterise the initial positions more completely, let alone to assess potential speed of convergence. A useful set of indicators for this purpose are transition indicators compiled by the European Bank for Reconstruction and Development (EBRD) since 1994. These indicators rank economies on a scale from 1 (incipient development of a market economy) to 4 (developed market economy) according to five groups of criteria: market, enterprises, financial institutions, infrastructure (which covers energy, road and rail transportation, telecommunications and water supply) and the legal system.[3] One should note that compiling these indicators involves a fair amount of judgment, so they should only be regarded as illustrative of the degree of development of market institutions. With this caveat in mind, the indicators for 15 central and eastern European countries in 2004 are shown in Table 3. No indicators are available for Turkey as it is not considered a transition economy.

[3] The classification used in this paper differs slightly from that used by the EBRD, which considers, under "liberalisation", price, trade and foreign exchange liberalisation; under "enterprises and markets", enterprise reform and competition policy; and under "privatisation", small-scale and large-scale privatisation. Legal environment indices used in this paper were discontinued in 2002, when a new index was developed.

Table 3

EBRD TRANSITION INDICATOR, 2004

	CZ	HU	PL	SK	SI	EE	LV	LT	BG	HR	RO	AL	BH	MK	SCG
Markets															
Price liberalisation	4.3	4.3	4.3	4.3	4.0	4.0	4.3	4.3	4.3	4.0	4.3	4.3	4.0	4.0	4.0
Trade and foreign exchange system	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.7	4.3	3.3
Competition policy	3.0	3.0	3.0	3.0	2.7	2.7	2.7	3.0	2.3	2.3	2.3	2.0	1.0	2.0	1.0
Enterprises															
Small-scale privatisation	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.7	4.3	3.7	4.0	3.0	4.0	3.3
Large-scale privatisation	4.0	4.0	3.3	4.0	3.0	4.0	3.7	3.7	4.0	3.3	3.7	2.3	2.3	3.3	2.3
Enterprise reform	3.3	3.3	3.3	3.0	3.0	3.3	3.0	3.0	2.7	3.0	2.0	2.0	2.0	2.3	2.0
Financial institutions															
Banking reform	3.7	4.0	3.3	3.3	3.3	4.0	3.7	3.0	3.7	4.0	3.0	2.7	2.7	2.7	2.3
Non-bank financial institutions	3.0	3.7	3.7	2.7	2.7	3.3	3.0	3.0	2.3	2.7	2.0	1.7	1.7	2.0	2.0
Infrastructure	**3.3**	**3.7**	**3.3**	**2.7**	**3.0**	**3.3**	**3.0**	**2.7**	**3.0**	**3.0**	**3.3**	**2.0**	**2.3**	**2.0**	**2.0**
Legal environment[1]															
Commercial law	3.7	3.7	3.3	3.3	3.3	3.7	3.3	3.7	3.7	3.3	3.7	3.0	3.0	3.3	3.0
Financial regulations	3.0	3.3	3.3	2.7	3.0	3.7	3.7	3.3	3.0	2.0	3.3	1.3	1.0	2.7	1.7
Overall score[2]	**3.7**	**3.8**	**3.6**	**3.5**	**3.4**	**3.7**	**3.6**	**3.6**	**3.4**	**3.3**	**3.2**	**2.8**	**2.4**	**3.1**	**2.5**
Private sector share of GDP (%)	80	80	75	80	65	80	70	75	75	60	70	75	50	65	50

Note: CZ = Czech Republic; HU = Hungary; PL = Poland; SK = Slovakia; SI = Slovenia; EE = Estonia; LV =Latvia;
LT = Lithuania; BG = Bulgaria; HR = Croatia; RO = Romania; AL = Albania; BH = Bosnia and Herzegovina; MK = Macedonia; SCG = Serbia and Montenegro.

[1] Indicators for 2002. [2] Simple average of all indicators.

Sources: EBRD (2002, 2004); author's calculations.

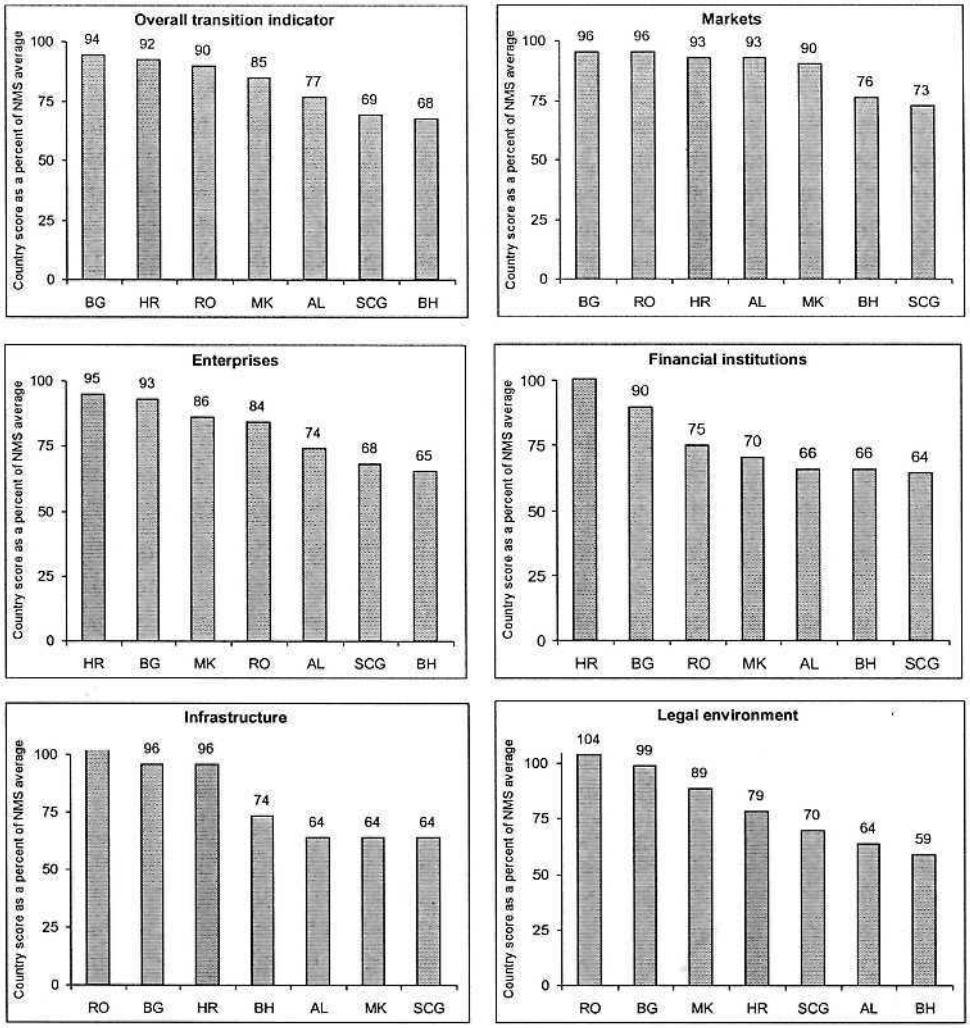
As can be seen from overall transition scores (defined as simple means of 11 individual transition indicators), EU candidates do not lag significantly behind the new member states. The average overall score for the candidate countries (3.3) is only 9% lower than the average overall score for the new member states (3.6). However, EU aspirants lag considerably behind the new member states and candidate countries – their average transition score (2.7) is 18% lower than the average score for the candidate countries and 25% lower than the average score for the new member states.

Another important point to note is that even the new member states have yet to move to standards and performance norms of mature market economies in areas of enterprise reform, non-bank financial institutions, infrastructure and financial regulation, areas in which their transition scores are on average much lower scores than for price liberalisation, trade and foreign exchange system, small scale privatisation and commercial law. In other words, even for the countries that joined EU in 2004, it would be premature to argue – as some of these countries' officials have done in the past – that the transition to a market economy was over. In particular, Slovenia's overall transition score is lowest among the new member states and only marginally higher than scores for Bulgaria and Croatia.

Figure 1 shows average values of the transition indicators in each category for non-acceding countries (EU candidates and aspirants) as compared with the average for the new member states. A value lower than 100 indicates a gap vis-à-vis the new member states' average; a value of 100 indicates equal starting positions; a value greater than 100 indicates an advantage vis-à-vis the new member states.

Figure 1

TRANSITION INDICATORS FOR NON-ACCEDING COUNTRIES RELATIVE TO NEW MEMBER STATES' AVERAGE, 2004[1]



[1] EBRD transition indicator for a country relative to the average value of indicator for eight new member states (NMS). 2004 (except legal environment, 2002).

Sources: EBRD; author's calculations

According to the overall transition score, Bulgaria and Croatia lag about 8–10% behind the new member states' average; Romania and Macedonia about 12–15%. The overall scores for Albania, Serbia and Montenegro and Bosnia and Herzegovina are up to one third lower than the average for the new member states.

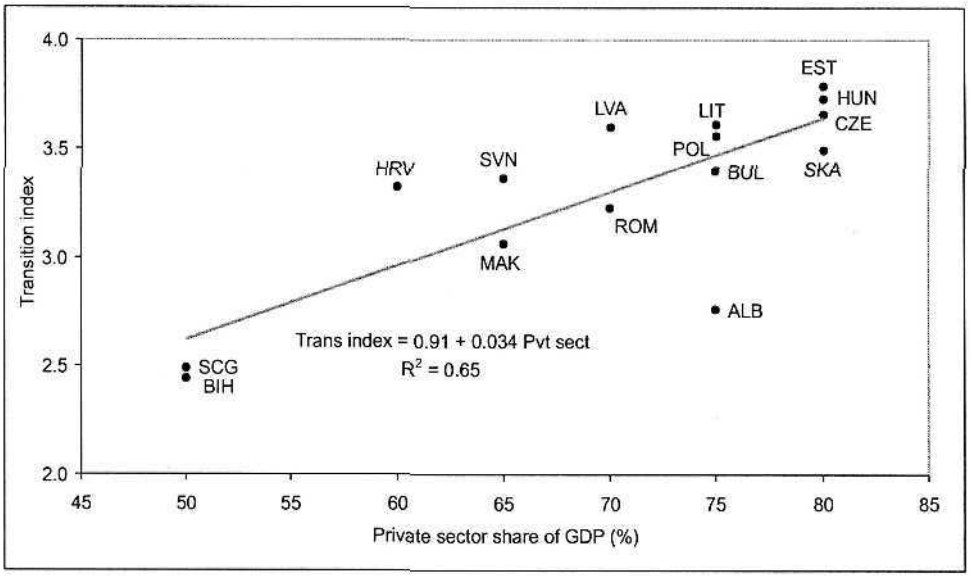
Like the new member states, candidate and aspirant countries have made greatest progress in price liberalisation and trade and foreign exchange system; the smallest in competition policy, non-bank financial institutions and financial regulation. The low scores in these three areas reflect several factors, including: (i) high obstacles to the entry of new firms to the market and inadequate implementation of the legislation and policy of market competition with respect to firms that have a dominant market position; (ii) the existence of a shallow securities market, the low level of activity of brokers and other non-bank financial intermediaries, and the rudimentary legislative framework for the issuance of and trade in shares and bonds; and (iii) the inadequate and inconsistent application of the financial system laws and regulations, in particular inadequate protection of the interests of creditors and owners and problems with bankruptcy laws and procedures, because of which legal uncertainty prevails (EBRD, 2004).

Compared with the average for the new member states, Croatia is in a relatively advanced stage of enterprise, financial institutions and infrastructure reforms. But as indicated in Figure 1, market reforms (in particular, competition policy) and legal reforms are still at a fairly early stage compared with the new member states.

Low values of transition indicators are statistically highly correlated (coefficient of 0.8) with the private sector share of GDP. The average private sector share of GDP in the eight acceding countries was 76% in 2004; in Bulgaria, Croatia and Romania it was 68%; and in four southeast European countries 60%. A simple regression shows that for each 10 percentage-point increase of the private sector share in GDP, the aggregate transition indicator rises by 0.34 points, i.e., by a tenth of the average value of this indicator in 2004 (Figure 2). In other words, a country such as Croatia, with a 60% share of private sector in GDP (the second lowest in central and eastern Europe, after Bosnia and Herzegovina and Serbia and Montenegro), might be expected to catch up in overall transition score with Poland by increasing the private sector share in GDP to 70%, and with Hungary by increasing that share to 75%. It is interesting to note that that these private sector shares are not particularly high relative to those in new member states, nor should it be particularly difficult for Croatia to achieve them.

Figure 2

EBRD TRANSITION INDEX AND PRIVATE SECTOR SHARE OF GDP



Sources: EBRD; author's calculations

3. How long would it take to catch up with the new member states?

How long would it take EU candidates and aspirants to close the "transition gap" vis-à-vis the new member states? This question is answered in two steps. First, for each new member state, total improvement in the overall transition score is calculated, and then divided by the number of years it took to achieve this improvement (left-hand half of Table 4). Second, for each non-acceding country, the difference in transition score relative to the acceding country average is calculated, and then divided by different "transition speeds" (last three columns in Table 4).

Table 4

PROGRESS IN TRANSITION, 1991-2004[1]

New member states				EU candidates and aspirants			
	Total improvement in transition score since 1991	**Years to achieve total improvement in score**	**Improvement in score per year**		**Difference in transition score relative to new member states' average**	**Years behind new member states' average in 2004**	
						At average speed of transition[2]	**At low speed of transition[3]**
Czech R.	1.6	13	0.12	Bulgaria	–0.20	1.3	1.7
Hungary	1.6	12	0.13	Croatia	–0.28	1.8	2.4
Poland	1.3	9	0.14	Romania	–0.37	2.4	3.2
Slovakia	1.4	12	0.12	Albania	–0.84	5.4	7.3
Slovenia	1.5	12	0.12	Bosnia and Herzegovina	–1.16	7.5	10.0
Estonia	2.5	13	0.19				
Latvia	2.4	12	0.20	Macedonia	–0.54	3.5	4.7
Lithuania	2.4	11	0.21	Serbia and Montenegro	–1.11	7.1	9.6
Average	1.8	12	0.16				

[1] Measured by the overall EBRD transition score (average of 11 individual transition indicators).

[2] Average for eight new member states (0.16 points per year).

[3] Average for the Czech Republic, Slovakia and Slovenia (0.12 points per year).

Sources: EBRD, *Transition reports* (1999, 2002, 2004); BIS calculations.

The new member states have on average improved their overall transition score by 0.16 points per year since 1991, or 1.8 points in total. Thus, if the non-acceding countries made progress in their transition at the same speed, it would take them between 1.3 years (Bulgaria) and 7.5 years (Bosnia and Herzegovina) to close the "transition gap" vis-à-vis the average position of the new member states in 2004. In the case of Croatia, it would take slightly less than 2 years to reach the same position in terms of the overall transition score that the new member states had in 2004.

One should note, however, considerable differences in the speed of transition among the new member states. The Baltic states had improved their transition score

on average 60% faster than the Czech Republic, Slovakia and Slovenia. If the non-acceding countries were to advance in their transition at the speed of the Czech Republic, Slovakia and Slovenia, it would take them from 1.7 years (Bulgaria) to 10 years (Bosnia and Herzegovina) to close the "transition gap". In the case of Croatia, the difference would not be that large, about six months.

4. How long could it take to catch up with southern EU countries?

This section discusses when and how central and eastern European countries might reach levels of per capita GDP in less wealthy EU members from southern Europe – Greece, Italy, Portugal and Spain.[4] Specifically, it looks at convergence to 50% and 75% of the average per capita GDP in those four countries.

Real convergence has been an issue of intense debate, with some economists arguing that, rather than narrowing, income gaps would widen over time, and others believing it would take at least a generation to close the income gap between eastern and western Europe (see survey in Morita, 1999). Some historical comparisons might be useful to put these predictions into perspective. When Portugal joined the EU in 1985, it had the same level of per capita GDP relative to the EU average (about 25%) as Croatia, Hungary and Poland in 2001. Within 15 years, Portugal's per capita GDP had grown to about 50% of the EU average, even though its growth performance was on average considerably weaker than that of central and eastern European countries. Likewise, Slovenia is roughly at the same level of development as Greece, Ireland and Spain at the time they joined EU.[5] Thus, from a historical perspective, several central and eastern European countries are not significantly less developed than the less wealthy members of the EU from southern Europe.

Table 5 shows estimates of growth rates of potential GDP, population and real per capita GDP for 16 countries in central and eastern Europe and four southern European members of EU. Potential growth rates are taken from several different sources:

- For the Czech Republic, Hungary, Poland and Slovenia, a study by Huizinga et al (2002), prepared by the Netherlands Bureau for Economic Policy Analysis. This is one of the most detailed recent studies of the growth potential of European economies;

---

[4] These economies are less wealthy in the sense that their per capita income ranged from 50% (Portugal) to 91% (Italy) of the EU average in 2004.

[5] The relatively high per capita income of Greece in 1981 largely reflected the overvalued exchange rate of the drachma. After devaluation in 1982, Greek per capita income fell from 63% to 40% of the EU average.

- For Slovakia, a long-term forecast by Consensus Economics (2003);
- For the Baltic States, projections by the European Commission (2002);
- For Croatia, estimates by Mihaljek (2000), revised and updated in Mihaljek (2003);
- For Albania, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania, Serbia and Montenegro and Turkey, estimates based on real growth rates for 2000–04 (excluding years of economic crisis or severe recession) and World Economic Outlook projections for 2005–06 (see IMF, 2005);
- For Greece, Italy, Portugal and Spain, estimates by Huizinga et al (2002) and the European Commission (2005).

Estimates from these sources were assumed to hold for the period 2003–10. For each subsequent decade, potential growth rates were assumed to decline by 0.25 percentage points, in line with an observed tendency of growth rates in OECD countries to fall over time. For Croatia, for instance, it is assumed that potential GDP is 5% from 2003–10; 4.75% from 2011–20; 4.5% from 2021–30; etc. Figures shown in the first column of Table 5 are average growth rates for the nearest two decades, 2003–10 and 2011–20.

Estimates of population growth are taken from the latest UN population projections (United Nations, 2005). They are also differentiated by decades, with figures shown in the second column of Table 5 representing averages for 2003–10 and 2011–20.

Data on the growth rates of potential GDP and population are then used to project growth rates of real per capita GDP, which are shown in the third column of Table 5. For comparison, the fourth column shows the actual growth rates of per capita GDP during 1995–2003, excluding years of economic crisis or severe recession. Such "cleaned-up" growth rates are better indicators of the potential for long-term growth of per capita income than the actual historical averages, given that most crises or recessions in central and eastern Europe between 1995 and 2003 reflected continuation of structural transformation started in the early 1990s.

Table 5

GROWTH RATES OF POTENTIAL GDP, POPULATION AND PER CAPITA GDP, 2003-20

Countries	Potential GDP[1,2]	Population[2,3]	Real per capita GDP	
			Projected[2]	Actual 1995–2003[4]
Czech R.	3.4	–0.2	3.5	3.3
Hungary	4.6	–0.5	4.9	4.6
Poland	4.7	–0.1	4.8	5.1
Slovakia	5.1	–0.1	5.1	4.8
Slovenia	4.7	–0.3	4.8	3.8
Estonia	5.7	–0.9	6.1	8.2
Latvia	5.6	–0.7	6.1	6.9
Lithuania	5.4	–0.4	5.8	7.1
Bulgaria	4.9	–0.6	5.7	5.3
Croatia	4.9	–0.5	5.0	5.3
Romania	5.3	–0.3	5.7	5.7
Turkey	6.7	1.6	5.4	5.2
Albania	6.2	0.5	5.6	6.4
Bosnia and Herzegovina	5.4	0.4	5.4	4.6
Macedonia	3.4	0.3	3.3	3.3
Serbia and Montenegro	4.7	–0.3	4.8	4.4
Southern EU-4	2.5	–0.3	2.9	1.4

[1] For data sources, see the main text. [2] Average for 2003–20. [3] Based on United Nations, *World Population Prospects 2004*. [4] Excluding years of crisis or severe recession.

Sources: Author's calculations based on European Commission, Huizinga et al (2002), IMF, United Nations and national data.

For consistency, projected growth rates of per capita GDP from Table 5 were also compared to the estimates derived by Morita (1999), who used two different growth models – a Barro model with government consumption equal to 10% of GDP, and a Levine-Renelt model with investment share of 30% of GDP – to study convergence in central and eastern Europe. Estimates given in Table 5 were for the most part similar to Morita's, which is encouraging given that different approaches were used to obtain them.[6]

[6] The following estimates of per capita GDP growth (average annual percentage changes) were obtained by Morita from his two models: Albania 7.1 and 6.3; Bulgaria 4.9 and 5.0; Croatia 5.4 and 5.5; Czech Republic 5.4 and 4.4; Estonia 5.2 and 4.9; Hungary 5.3 and 5.0; Latvia 5.5 and 5.8; Lithuania 6.1 and 6.2; Macedonia 6.1 and 6.0; Poland 5.4 and 4.8; Romania 5.5 and 5.6; Slovakia 5.9 and 5.0; and Slovenia 5.3 and 4.6.

A comparison of the growth rates of real per capita GDP projected until 2020 with actual growth rates during 1995–2003 does not reveal major discrepancies, either. For Albania, the Baltic states, Croatia and Poland, projected growth of GDP per capita is somewhat slower, reflecting the fact that a lot of catching up in these countries – in particular the Baltic states – has already taken place to date. In other countries, projected growth of GDP per capita is the same or somewhat faster than the average over 1995–2003.

Several interesting points emerge from the data in Table 5. First, potential growth rates in central and eastern Europe are fairly high – the average for the 16 countries is 4.7%, almost double the average for Greece, Italy, Portugal and Spain. Second, potential growth rates are generally higher for the Baltic states and candidate countries (around 5½% per annum) than for the five central European states (4½% per annum). This is not surprising given that the Czech Republic, Hungary, Poland, Slovakia and Slovenia are economically more developed.

What is surprising, however, is that the estimates for the four southeast European countries – in particular Macedonia – are not higher. This may simply reflect the fact that no adequate estimates of potential growth for these countries are available. As noted above, potential growth rates shown in Table 5 were obtained on the basis of recent historical data and projections. Estimates for Albania and Macedonia based on growth models (as in Morita, 1999) imply higher potential growth rates.

The second point to note is that, with the exception of Albania, Bosnia and Herzegovina, Macedonia and Turkey, all countries in central and eastern Europe face declining population growth rates, which are in some cases – Bulgaria, Croatia, Estonia, Hungary and Latvia – significantly negative. This implies that future growth potential is lower for these countries, justifying the assumption that potential growth declines by quarter of a percentage point each decade. On the other hand, GDP per capita in these countries should grow faster, ceteris paribus, than in countries with positive growth of population.

Third, projected growth rates of real per capita GDP are also fairly high – with the exception of the Czech Republic and Macedonia, they range from 4.8% per annum to 6.1%. Clearly, this implies that the income gap vis-à-vis Greece, Italy, Portugal and Spain should continue to narrow relatively fast.

How fast the income gap might be closed depends also on initial differences in per capita GDP. As shown in Table 6, the only country in central and eastern Europe that had a favourable initial position in this respect was Slovenia, whose per capita income in 2003 was equal to 70% of the average for the four southern EU countries. Croatia, the Czech Republic, Estonia, Hungary and Slovakia had per capita GDP ranging from 31–44% of the EU-4 average; while Latvia, Lithuania and Poland were in the 10–20% range. Albania, Bosnia and Herzegovina, Bulgaria,

Macedonia, Romania, Serbia and Montenegro and Turkey were far behind, with per capita GDP equivalent to less than 20% of the EU-4 average.

Table 6 shows estimates of per capita GDP in 2015, and of the time it might take to achieve convergence with 50% and 75%, respectively, of the average real per capita GDP in Greece, Italy, Portugal and Spain. By 2015, the Czech Republic, Estonia, Hungary and Croatia might be close to or above the first benchmark. The first countries to reach the 75% benchmark – in less than 25 years – would be Hungary and Estonia. For Croatia, Latvia, Lithuania and Slovakia it might take more than 30 years to reach the 75% benchmark; for Bulgaria, the Czech Republic, Poland, Romania and Turkey between 40 and 55 years; and for Albania, Bosnia and Herzegovina and Serbia and Montenegro well over six decades.

Due to the estimated low potential growth rate, Macedonia might not converge even to the 50% benchmark within the next century. While the estimate used in this paper is, admittedly, highly uncertain, it does illustrate the importance of potential growth for the speed of convergence. Another example is the Czech Republic. Although it had the second highest per capita GDP in central and eastern Europe in 2003 (after Slovenia), it also had the second lowest growth rate of per capita GDP, so that countries such as Estonia, whose per capita income is projected to grow much faster, would catch up with the EU-4 much sooner than the Czech Republic.

Table 6

CONVERGENCE OF REAL PER CAPITA INCOMES IN CENTRAL AND EASTERN EUROPE

Countries	GDP per capita				Years of convergence to reach 50% and 75% of southern EU-4 real per capita GDP[1]	
	2003		2015			
	USD	% EU4	USD	% EU4	50%	75%
Czech Republic	8,370	44	12,700	51	10	46
Hungary	8,200	43	14,600	58	6	23
Poland	5,500	29	9,700	39	23	40
Slovakia	5,930	31	10,800	43	18	33
Slovenia	13,390	70	23,500	94	…	3
Estonia	6,200	32	16,600	50	12	24
Latvia	4,170	22	8,500	34	23	35
Lithuania	5,270	28	10,400	42	18	31
Bulgaria	2,550	13	5,000	20	42	55
Croatia	6,350	33	11,400	46	16	31
Romania	2,570	13	5,000	20	42	55
Turkey	3,450	18	6,500	26	33	45
Albania	1,640	9	3,200	13	55	67
Bosnia and Herzegovina	1,840	10	3,400	14	53	66
Macedonia	2,260	12	3,300	13	>85	>100
Serbia and Montenegro	2,480	13	4,400	17	60	79
Southern EU-4	19,110	100	25,100	100	...	...

[1] Number of years (beginning with 2003) needed to reach 50% and 75%, respectively, of average per capita GDP of Italy, Greece, Portugal and Spain (southern EU-4).

Sources: Author's calculations based on European Commission, IMF, OECD, United Nations, World Bank and national data.

5. Concluding remarks

The main purpose of analysis in this paper was to illustrate empirically propositions related to the speed of real convergence in central and eastern Europe. Clearly, the methodology used has severe limitations. The speed of convergence is considerably more complex than the simple arithmetic of EBRD transition indices, or the potential GDP and population growth. Consequently, estimates presented above

could be biased either upward or downward. In what follows, it will be argued that the likely bias is downward, ie, that countries in central and eastern Europe might catch up faster than estimated in this paper.

The first argument relates to so-called endogeneity of convergence in economic and in particular monetary unions. Recent research on economic integration by Frankel and Rose (1998) indicates, for instance, that real convergence – in particular trade and factor movements as well as output correlations – may be endogenous to participation in an economic and monetary union. This suggests that membership in EU, especially if followed by a rapid accession to the European Monetary Union, could accelerate the pace of real convergence.

The second argument is that, even if one uses standard structural indicators, it is difficult to find strong systematic differences between the countries in central and eastern Europe and the less wealthy members of EU-15. The share of agriculture in GDP is already low in most central and eastern European countries. Pelkmans et al. (2000) show that in terms of employment, the differences in economic structures are larger, particularly for Bulgaria, Poland and Romania, where a large part of labour force is still officially employed in agriculture. However, since value added in this sector is low and is bound to decline over time relative to the value added in industry and services, these differences would seem to be less relevant for the speed of real convergence. Nor is the share of industry in GDP notably different from that of many EU-15 members. Central and eastern European countries also have achieved considerable convergence in terms of trade structures and shares of intra-industry trade.

Third, an area where significant differences between central and eastern Europe and the EU-15 still exist and are likely to matter in foreseeable future, is that of institutional structures. As noted above, significant catching-up has yet to be done even in the new member states in the areas of enterprise reform, non-bank financial institutions, infrastructure and financial regulation. As these differences get reduced and countries in the region attract more foreign direct investment, they are also are likely to converge faster to their less wealthy neighbours in the EU.

Finally, one should note that the above estimates are not affected by the relative exchange rate movements over time. Because per capita growth rates are expressed in real terms – as potential growth rates divided by population growth – appreciation or depreciation of domestic currencies vis-à-vis the dollar (in which the levels of per capita GDP for 2003 are expressed) does not affect the speed of convergence. In practice, currencies of central and eastern European countries are continuously appreciating in real terms, reflecting the steady revaluation of production factors in the region. The high growth of GDP in dollar (or euro) terms rapidly reduces the GDP gap between the lower-income EU-15 countries and central and eastern Europe. Thus, the convergence period may in the end be shorter than suggested by the above calculations.

REFERENCES

1. Bhagwati, J and T Srinivasan (1983): *Lectures on International Trade*, Cambridge, MIT Press.
2. Consensus Economics (2003): *Eastern Europe Consensus Forecasts*, London, Consensus Economics, March.
3. European Commission (2005): *Economic Forecasts – Spring 2005*, European Commission, Brussels, April. http://europa.eu.int/comm./economy_finance
4. _____ (2004): *Convergence Report 2004 – Technical Annex*, Commission Services Working Paper SEC(2004)268, November.
   http://europa.eu.int/comm./economy_finance
5. _____ (2002): *Economic Forecasts – Autumn 2002*, European Commission, Brussels, October. http://europa.eu.int/comm./economy_finance
6. European Bank for Reconstruction and Development (2004): *Transition Report 2004*. London, EBRD.
7. _____ (2002): *Transition Report 2002*. London, EBRD.
8. Frankel, J and A Rose (1998): "The endogeneity of the optimum currency criteria", *Economic Journal*, vol. 108, 1009-25.
9. Huizinga, H, W Hulsman and G van Welzenis (2002): "The European Economy in the Medium Term", CPB Netherlands Bureau for Economic Policy Analysis, CPB Document No. 20, May. www.cpb.nl
10. International Monetary Fund (2005): *World Economic Outlook, April 2005*, Washington, IMF. www.imf.org/external/pubs/ft/weo/2005/01/index.htm
11. Mihaljek, D (2003): "Macroeconomic Aspects of Croatia's Accession to the European Union", in Katarina Ott (ed.), *Croatian Accession to the European Union: Economic and Legal Challenges*, Zagreb: Institute of Public Finance and Friedrich Ebert Stiftung, 25–66. www.ijf.hr
12. _____ (2000): "Toward a Long-Term Strategy of Economic Development of Croatia: Where to Begin, What to Do, and How to Do It?" *Financijska teorija i praksa*, Vol. 24, No. 4, pp. 527–602. www.ijf.hr; www.hrvatska21.hr
13. Morita, T (1999): "The Hidden Growth Potential of EU Candidates", World Bank *Transition Newsletter*, Vol. 10, No. 5, October, pp. 9–11.
   www.worldbank.org/transitionnewsletter
14. Pelkmans, J, D Gros and J Núñez Ferrer (2000): "Long-run Economic Aspects of the European Union's Eastern Enlargement", Netherlands Scientific Council for Government Policy (WRR) Working Document No. W109, September. www.wrr.nl

15. Rassekh, F (1998): The Convergence Hypothesis: History, Theory and Evidence", *Open Economies Review*, Vol. 9, pp 85–105.
16. United Nations Economic Commission for Europe (2004): Economic Survey of Europe – 2004 No. 2, United Nations, Geneva, August. www.unece.org
17. United Nations (2005): *World Population Prospects: the 2004 Revision Population Database*. http://esa.un.org/unpp

PRIDRUŽENE ČLANICE EU, KANDIDATI I «ASPIRANTI»: KOLIKE SU RAZLIKE MEĐU NJIMA I KAKO SE BRZO MOGU SMANJITI?

Sažetak

Autor u ovome radu pokušava odgovoriti na tri pitanja o statusu realne ekonomske konvergencije u srednjoj i istočnoj Europi. Prvo, kolike su razlike mjerene ključnim makroekonomskim pokazateljima između novih zemalja članica koje su se pridružile EU u 2004,.zatim kolike su razlike između četiri kandidata za EU (Bugarska, Hrvatska, Rumunjska i Turska) i na kraju kolike su razlike između «aspiranata» za EU iz jugoistočne Europe (Albanija, Bosna i Hercegovina, Makedonija i Srbija i Crna Gora). Drugo, koliko bi moglo potrajati da kandidati za EU i «aspiranti» prevladaju te razlike i dostignu nove zemlje članice? I treće, koliko bi trajalo da 16 zemalja u srednjoj i istočnoj Europi sustignu životni standard u Grčkoj, u Italiji, u Portugalu i u Španjolskoj?

Zbog složenosti usporedbi između zemalja, odgovori na ta pitanja mogu biti samo ilustrativni. Pokazalo se da razlike u makroekonomskim pokazateljima između kandidata za EU i novih zemalja članica nisu tako velike kao što se to često misli, ali je početna pozicija zemalja u jugoistočnoj Europi znatno slabija. Drugo, prosuđujući prema prosječnoj brzini reformi koju su nove zemlje članice pokazale u prošlih 15 godina, kandidatima i «aspirantima» bit će potrebno 1,5 -7,5 godina da dostignu razinu tranzicije koju su imale nove zemlje članice u vrijeme kad su se pridružile EU. Za konvergenciju pak realnog dohotka po stanovniku, za četiri će južna člana europske petnaestorice trebati znatno više vremena: između 25 i 50 godina za nove države članice (osim Slovenije) i kandidate za EU, a za jugoistočne europske zemlje to će potrajati 65 godina ili duže.

Ključne riječi: konvergencija; proširenje EU; rast; tranzicijske ekonomije; kandidati za EU; centralna i istočna Europa; jugoistočna Europa.