ECONOMIC GROWTH AND DEVELOPMENT IN POST YUGOSLAV COUNTRIES

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Summary

At the time of collapse in 1991, former SFR Yugoslavia was among less developed European countries with unsustainable economic and social differences among its federal units. In last twenty years, after proclamation of independence economic and social differences among Post Yugoslav countries increased even further, partly due to different impact of military activities and different degree of approximation to the EU.

Despite the changes in status (independence), economic system (transition to private market economies) and in economic environment (global financial crisis) growth rates in Post Yugoslav countries in last 40 years remain 3.3% on average. This differs from the world, where average yearly GDP growth declined from 3.7% in first twenty years (1971-1990) to 2.6% in next twenty years (1991-2010), with even lower 2.1% average growth within second sub-period during global financial crisis 2005-2010.

Growth of independent Post Yugoslav countries in past 20 years was slightly above world and the EU average, insufficient to significantly narrow their gap to advanced economies. Extrapolation of average 2005-2010 growth would increase GDP of Post Yugoslav countries by one third by 2022. Improvements in utilization of existing factor endowments and creation of new factor endowments could accelerate growth of Post Yugoslav countries by 2022 (by two thirds compared to 2009), but not enough to enable their true real convergence, a precondition for the EU membership.

Key words: economic development, economic history, growth and fluctuations,

JEL: O1, N10, O52

Introduction

This study does not pretend for institutional resurrection of former Yugoslavia or for the return to former socialist economic system. It investigates what has happened in economic and social terms with former federal units after the collapse of ex-SFR Yugoslavia in 1991, when they became independent. In addition, simulation exercise is made for prediction of economic growth in next decade until 2022. The goal is to find out how Post Yugoslav countries could accelerate the past insufficient economic growth to be able to speed-up growth in next decade and thus to achieve a real conversion to advanced economies, which is required for their accession to the EU. GDP growth rate is used as the main indicator for economic growth, complemented by other indicators of economic and social development.

Three parts of study encompass 30 years:
The level of development of ex-Yugoslav federal units in 1990, before the country's collapse
Development of Post Yugoslav countries after their independence until today, with the special analysis of developments during the period of global financial crisis,
Prediction of economic growth of Post Yugoslav countries in next decade until 2022.

After dissolution of SFR Yugoslavia in 1991 its federal units (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia and Kosovo) became gradually independent states. Not in an easy way but with a lot of military conflicts. At the time of collapse in 1991 ex-Yugoslavia was significantly lagging behind the advanced economies and the EU. With the economic growth rates only slightly above the world and the EU average in last 20 years the lag of Post-Yugoslav seven countries increased further. The question is what kind of economic system and policy reforms could accelerate their growth and thus narrow the gap.

1. Development levels and disparities of federal units on the eve of collapse of Ex-Yugoslavia, 1990

In ex-SFR Yugoslavia[1], in addition to the cultural differences, there were enormous differences in economic performance and social standard. The success of the country's development policy was already that these differences did not widen in post World War II period.

1 Seven of listed eight federal units became independent countries; Vojvodina remains in Serbia, while independence of Kosovo is not fully recognized around the world so that it is not UN member.

Table 1.1: Differences among ex-SFR Yugoslavia's federal units in 1989-1990

Indicator	B&H	MON	CRO	MAC	SLO	SERt	SEBp	KOS	VOI
% social product of YU	12.4	1.8	25.6	5.4	19.6	35.2	22.5	1.9	10.9
Export, in million $	2157	640	6533	652	4904	5344	3864	220	1260
Export / social product	.33	.67	.48	.23	.47	.29	.32	.22	.22
Ext. debt, million $	1677	597	2994	761	1788	4869	3302	726	841
Sales to other units, %	37.4	48.5	34.0	41.9	36.8	42.4	41.2	34.6	46.8
Population, in million	4.5	0.6	4.7	2.1	1.9	9.8	5.8	2.0	2.0
Natural growth rate, %o	7.7	8.9	0.5	9.9	2.5	5.1	1.4	23.1	-1.6
Unemployment rate,%	21.1	22.2	9.0	23.0	5.2	19.5	16.7	38.8	17.1
Nom. wages, YU=100	80	74	114	76	136	93	96	53	97
GNP pc, YU =100	65	71	123	65	200	88	100	24	118
GNP growth, 1970-89	3.5	3.4	3.1	3.6	3.6	3.4	3.5	3.6	3.1
Employment growth,%	4.1	4.2	2.7	4.0	2.3	3.0	3.1	4.9	2.4
Capital/worker YU=100	93	137	110	74	137	87	82	89	101
People per doctor	572	542	383	398	373	400	335	868	405

Legend: SERBIA total = SERB proper + Kosovo + Voivodina
Source: author (1997), page 76

According to Table 1.1 the economic differences within ex-SFRJ were huge despite special attention paid to the financing of a faster development of the less developed federal units. Thus, the differences in the two extreme values were as follows: in the openness of the economy three fold, in share of trade with other parts of ex-SFR Yugoslavia 50%, in the natural rate of population growth between -1.6 per thousand (Vojvodina) and 23.1 per thousand (Kosovo), in unemployment rate between 5.2% (Slovenia) and 38.8% (Kosovo).

Several numbers indicate the strong presence of redistribution (correction) policies. Thus, for instance, in terms of nominal wages the difference between the extreme values was only 2.5-fold while in the production GNP per capita this difference was 8.5-fold (in both cases between Slovenia and Kosovo). A similar indication is the relatively small difference in the value of the social capital available to the worker (technical coefficient), between the extremes of Slovenia or Croatia and Kosovo only 50% or 0.5-times. While the average annual GDP growth rate did not differ significantly (extreme values were 3.1% and 3.6%), the average annual growth of employment was more differentiated (between 2.3% and 4.9%), in favor of the less developed Kosovo and other less developed units. Finally, the difference in the availability of doctors as indicator of social development was less than threefold (extremes again, in Slovenia and Kosovo). Differences in geography, surface and climate, culture, religion among entities within Ex-SFR influenced different way of life and indirectly contributed to upcoming military conflicts.

2. Post Yugoslav economies in past twenty years, 1991-2010

The question is what has happened to Post-Yugoslav countries after proclamation of independence regarding economic growth and welfare, stability and inequalities, in past 20 years and especially during global financial crisis 2005-2011. First, methodology of empirical analysis is described, followed by presentation of results.

2.1. Methodology

The dynamics of growth and its stability

a) Growth dynamics

For period 1991-2010 we calculated:
- geometric mean of GDP growth rates G = Ga, GDP measured in current USD;
- standard deviation of growth rates, based on geometric mean SD
- Coefficient of variation KV = SD/Ga.

At the same time, we present GDP per capita (in current USD), for each country for the starting year 1991, the final year in the sample 2010 as well as the absolute difference between the two VG and the ratio of the two KG:
- GDP pc1991
- GDP pc 2010
- VG = GDP pc 2010 – GDP pc 1991
- KG = GDP pc 2010 / GDP pc 1991.

The idea is to test the hypothesis, that lower starting position (GDP per capita as indicator of standard of living) enables faster GDP growth in the process of catching-up with developed countries due to effect of introduction of already available technology and general knowledge.

b) Variability of growth

Variability of growth (or its stability) was measured with standard deviation SD as absolute, and the coefficient of variation KV as relative measure of variability of growth rates. Methodological dilemma is which variability indicators is better, the absolute (SD, difference in GDP pc) or relative (KV, ratio in GDP pc). In theory, relative indicators are preferred over absolute, but in this special case of GDP growth rates and GDP pc, absolute indicators can have more sense in interpretation. For instance, if average growth rate Ga is close to zero, the relative deviation KV = SD/Ga could be large despite the very low absolute variation of growth rates SD.

Resistance to the global financial crisis

c) Resilience to crisis

The question to be tested is whether countries that differ more from average growth rates during creation of bubble sometimes during 2005-2008 period, did have larger bursting (negative difference to average growth) when the global financial crisis materialized after 2008. Smaller the deviation from the long term average growth in individual country indicates stronger resistance to the global crisis. Symmetry of positive and negative differences from the average growth is important. Large difference between divergences above and below average indicates that additional country specific factors with positive or negative impact were present in country in times of global crisis.

The highest growth rate Gmax and lowest growth rate Gmin as well as the highest positive difference to the average growth rate Gmax-Ga and the highest negative difference Gmin-Ga in period 2005-2010 are calculated for each country.

Economic and social developments in times of global crisis

d) For each country synthetic indicators of misery (social situation), macro imbalances and aggregate macroeconomic performance are introduced. Aggregates of individual macroeconomic indicators are calculated to present better the overall situation in individual country and trends in period including onset, presence and way out (of consequences) of global financial crisis 2005-2010/2011. Advantage of such aggregation is to get better overall picture of situation, weakness is that summing up individual indicators is sometimes questionable. But, for better general overview sacrifice of some correctness in methodology was made. Indicators are:

- misery index: sum of unemployment rate and inflation rate (introduced by L.R. Klein and other authors before him),
- disequilibrium index: sum of current account deficit and budget deficit, both relative to GDP,
- aggregate economic performance indicator: GDP growth – inflation rate – unemployment rate – current account/GDP – budget/GDP.

Country's Vulnerability: fiscal and financial (banking) position

e) The most recent **fiscal vulnerability** indicators are presented, based on EBRD and country statistics and statistics from the EU, IMF, World Bank and OECD.
They include indicators of country's indebtedness in 2010 (the most recent data available):

- public, external (total and private) debt,
- foreign exchange reserves (total, related to short term debt and to months of import),

- difference external debt- reserves, and
- net foreign direct investment inflow (as one of the sources to finance debt servicing).

f) Situation in **banking sector** of analyzed countries is illustrated by the following indicators based on data obtained from the EBRD Transition Report and some other sources:

- bank assets to GDP ("bankization" of the economy, narrower term than "financialization" or monetization of the economy),
- the structure of bank ownership: private domestic, state and foreign,
- deposits, loans and loan-to-deposit ratio as indicator measuring leverage in banking sector,
- structure of banking loans: the share of non-performing loans, and the share of foreign exchange loans in GDP and in total loans.

Integration to the world

g) Countries are evaluated by the degree of **approximation to the EU**, ranked from full membership plus Euro zone membership to no formal relation. This rank is positively correlated with the level of economic development, as measured by GDP per capita. In addition, degree of transformation to market capitalist economy of post-socialist countries among Post-Yugoslavs is calculated by aggregation of twelve indicators of transformation as presented by the EBRD Transformation Report 2011.

h) The amount of the **EU financial support** to the EU candidate and potential candidate Post Yugoslav countries for financial perspective 2006-2013 is presented and then calculated in relation to GDP and population of receiver countries.

i) The degree of **economic exposure** of Post-Yugoslav countries to the Euro zone and to PIIGS relative to their GDP is measured by three indicators: value of export, external debt and FDI. Intention is to evaluate the possibility of economic epidemic spreading from the most crisis affected countries to the Post Yugoslav countries.

Statistical Data Sources

Statistical data are obtained from the World bank data as basic source and from the EU, EBRD, IMF and country statistics. Problem are some missing data for Kosovo

2.2. Results

2.2.1 Economic Growth of Post-Yugoslav Countries, 1991-2010

In table 2.1 some average GDP growth rates are unusual, but this can be partly explained by the fact that these are geometric averages and that some data are missing due to statistical problems:
a) for **B&H** data are available only from 1995: B&H had a large decline of GDP in period before 1995 during war activities and before Dayton, decreasing GDP to 15% of pre-war level, but after Dayton agreement in 1995, GDP started to grow quickly, by double digit figures; decline by 85% is recovered only by much higher increases afterwards. The result is very large average GDP growth rate for the whole available observation period.

Table 2.1: GDP Growth and Its Variability, Post Yugoslav Countries, 1991-2010

COUNTRY	GDP 2009	Tran Sit 88	GDPpc 1991/2010	GDP pc 10-91	GDP pc 10/91	Ga 91-10	Ga 7089	SD	KV= SD/Ga
World	58260					2.70		1.43	0.53
BiH	17.0	55.0	2057/4409	2352	2.1	11.97*	3.5	16.65	1.39
Croatia	63.0	73.5	4026/13754	9728	3.4	0.54	3.1	7.83	14.52
Kosovo	5.4	...	760/3059	2299	4.0	6.15*	3.6	6.52	1.06
Macedonia	9.2	62.0	2442/4460	2018	1.8	0.61	3.6	4.15	6.84
Montenegro	4.1	58.5	2247/6510	4263	2.9	2.50	3.4	5.31	2.12
Serbia	43.0	59.0	3355/5269	1914	1.6	-0.90*	3.3	13.10	-14.5
Slovenia	48.5	74.0	6331/22851	16520	3.6	2.26	3.6	4.46	1.97
Benchmarks									
OECD	41214					2.04		1.60	0.78
LDC	5454					4.78		2.08	0.43
BRICS 5	9473		1817/6866	5049	3.8	4.75		3.29	0.69

Legend: Ga = geometric mean of GDP growth rate for 1991-2010
DS = standard deviation of GDP growth rate for 1991-2010
Sources: The World Bank Data, EBRD Transition Report 2011, own calculations
b) data for Serbia are specific, because of very slow growth, but large negative growth in some years (NATO bombardment) so that geometric average remains even negative for the whole period;
c) data for Kosovo are also starting later in observation period, when starting position was very low and, in addition, large positive GDP growth rates are result of direct financial support from international community and not produced at home.

Data in Table 2.1 indicate that all countries except Kosovo grew faster in twenty year period before independence 1970-1989 than in new twenty years after independence 1991-2010. Numbers for B&H, Serbia and Kosovo are statistically questionable. Post Yugoslav countries' economic growth was in past 20 years slower than for LDCs on general or for BRICS specifically. Economic divergence within the group increased significantly,

For most Post-Yugoslavs variability of economic growth was huge in observation period, larger than in benchmark OECD, LDCs or BRICS countries, to a large extent due to military conflict and intra-military activities (war) after separation. Among Post-Yugoslav countries the relative variability of growth was the largest in Macedonia, Croatia and Serbia.

2.2.2 Present level of development of Post Yugoslav countries and resilience to global crisis

Tables 2.2 – 2.9 illustrate the effect of global financial crisis on Post Yugoslav countries, first, by measuring creation and bursting the bubble in GDP growth between 2005 and 2010, and second, by aggregate indicators: misery index (unemployment rate plus inflation rate), imbalance index (current account plus budget deficit), macro-economic aggregate indicator (GDP growth – unemployment rate – inflation rate- budget deficit – current account deficit), as well as by the indicators of fiscal vulnerability and performance of banking sector.

Bubble in GDP growth

Table 2.2: Creation and bursting of bubble

COUNTRY	GDP 2009	GDPpc 2010	Ga avge	Gmax year	Gmin year	VG = Gmax-Gmin	Gmax-Ga	Gmin-Ga
World	58260	10000	2.70	4.05 6	-2.32 9	6.37	1.35	-5.02
BaH	17.0	4409	11.97	6.83 7	-2.91 9	9.74	-4.86	-14.88
Croatia	63.0	13754	0.54	5.06 7	-5.99 9	11.05	4.52	-6.53
Kosovo	5.4	3059	6.15	6.90 8	2.90 9	4.00	0.75	-3.25
Macedonia	9.2	4460	0.61	6.15 7	-0.92 9	7.07	5.56	-1.53
Montenegro	4.1	6510	2.50	10.2 7	-1.27 9	11.52	7.25	-3.77
Serbia	43.0	5269	-0.90	5.40 7	-3.50 9	8.90	6.30	-2.60
Slovenia	48.5	22851	2.26	6.87 7	-7.80 9	14.67	4.61	-10.06
Benchmarks								
OECD	41214		2.04	2.95 7	-4.04 9	6.99	0.91	-6.08
LDC	5454		4.78	7.96 7	4.48 9	3.48	3.18	-0.30
BRICS 5	9473	6866	4.75	8.04	0.97	7.07	3.29	-3.78

Sources: The World Bank, IMF, EBRD, EU, own calculations

According to Table 2.2, in period 2005-2010 the largest maximum yearly growth rate 10.2% was achieved by Montenegro in 2007. The lowest minimum was experienced Slovenia with -7.8% in 2009. Absolute deviation above average rate was smaller than below it only for some (Slovenia, Kosovo, Croatia, B&H). For them bursting of bubble was more intensive indicating presence of additional weaknesses in times of outbreak of global financial crisis. The variability of growth rates was much higher in Post Yugoslav countries than the world, OECD, LDC or BRIC average.

Additional three synthetic indicators illustrate situation in time dynamics 2005-2011 and cross country.

Social situation is worsening after 2009

According to Table 2.3 overall social situation was improving (misery index declining) in Post Yugoslav countries until 2009 inclusive(!), the year when developed countries already achieved the lowest point. Declining inflation was more significant for Post Yugoslav countries than increased unemployment during 2008-2009. But, situation began to deteriorate after 2009. Lag to developed world in entering the crisis is followed by Post Yugoslav countries with the lag to get out of it. Crucial finding is that social situation for most Post-Yugoslav countries today is much worse than in mid-2000s.

Table 2.3: Misery Index: Unemployment rate + inflation rate

COUNTRY	GDP 2009	GDPpc 2010 %	2005	2006	2007	2008	2009	2010	2011
World	58260	100							
B&H	17.0	44	46.9	37.2	30.5	36.4	23.7m	29.3	47.1M
Croatia	63.0	137	15.6	14.3	12.5	14.4	11.5 m	12.9	19.9M
Kosovo	5.4	31	42.8	45.5	48.0	56.9	47.8 m	48.6	52.3
Macedonia	9.2	45	37.3	39.3	37.8	41.0	31.9m	33.6	35.9
Montenegro	4.1	65	33.7	32.6	23.6	25.8	22.9	20.3m	24.0
Serbia	43.0	53	37.2	32.8	24.4	26.0	24.2m	25.5	30.2
Slovenia	48.5	229	9.0	8.5	8.4	10.0	6.7m	9.2	10.5M

Legend: m = minimum, M = maximum
Sources: The World Bank, IMF, EBRD, EU, own calculations

The level of misery differs significantly among individual analyzed countries. The worst situation is in Kosovo and B&H, which started with much worse situation than other, with Kosovo situation deteriorating even further during observation period 2005-2011. Second group is formed by Macedonia, Serbia and Montenegro, where starting position improved in Montenegro, while stagnated in other two. Croatia is in better situation regarding social sustainability, although with quickly deteriorating social situation in recent years. Slovenia is in best position regarding social situation but, again, the situation deteriorates recently.

Increasing macro imbalances until 2008 with only slight improvement afterwards

Optimal development and welfare is sum of growth and stability. Large **macro economic imbalances** cause uncertainty leading to decline in welfare. At the same time, if measured as the autonomously produced domestic product should have external deficit subtracted from GDP growth. Imbalances are a sign of domestic weaknesses of the economy and its

economic policy and, at the same time, they can indicate economic problems imported from abroad.

Table 2.4: Disequilibrium – Imbalances: balance of payments/GDP + balance of budget/GDP

COUNTRY	GDP 2009	GDPpc 2010 %	2005	2006	2007	2008	2009	2010	2011
World	58260	100							
BaH	17.0	44	-14.7	-5.1	-9.5	-16.5M	-10.7	-10.1	-9.7
Croatia	63.0	137	-9.3	-9.6	-9.7	-10.2M	-9.3	-6.1	-7.5
Kosovo	5.4	31	-9.3	-5.4	-1.7	-15.4	-17.8	-18.9	-27.9M
Macedonia	9.2	45	-2.3	-1.5	-6.4	-13.0M	-9.4	-5.3	-8.0
Montenegro	4.1	65	-10.5	-20.7	-32.9	-50.1M	-34.7	-30.6	-27.9
Serbia	43.0	53	-7.7	-11.8	-18.0	-24.2M	-11.6	-11.9	-12.3
Slovenia	48.5	229	-3.2	-3.7	-4.9	-7.0	-7.2	-6.3	-7.3M

Legend: M = maximum
Sources: The World Bank, IMF, EBRD, EU, own calculations

For Post-Yugoslav countries macro imbalances grew from 2005 to reach maximum sometimes between 2008 and 2011, after global crisis exploded. Kosovo and Slovenia are exceptions with maximum aggregate deficit in 2011. Other countries made some improvements in 2009 and in 2010, but then stalled, so that 2011 is worse than 2010. Without such budget and external support, the so called "self-sustained" growth of Post Yugoslav countries would be significantly lower during observation period 1991-2011. Among analyzed countries Montenegro and Kosovo experience unsustainable level of both deficits, internal and external, even in 2011 so that further "consolidation" is required. Other countries will need to decrease deficit too.

Worsening of macroeconomic situation until 2008, small improvement afterwards

Table 2.5: Macroeconomic performance index:
GDP growth – unemployment rate – inflation – BoP/GDP – BoG/GDP

COUNTRY	GDP 2009	GDPpc 2010 %	2005	2006	2007	2008	2009	2010	2011
World	58260	100							
BaH	17.0	44	-46.6	-36.1	-33.2	-47.5	-37.3	-38.6	-54.9m
Croatia	63.0	137	-20.7	-19.0	-17.1	-22.4	-26.8m	-20.2	-26.6
Kosovo	5.4	31	-47.3	-44.9	-43.4	-65.4	-62.7	-63.5	-75.2m
Macedonia	9.2	45	-35.3	-35.8	-38.1	-49.0	-42.2m	-37.1	-40.9
Montenegro	4.1	65	-40.0	-44.7	-45.8	-69.0m	-63.3	-48.4	-49.6
Serbia	43.0	53	-39.5	-41.0	-37.0	-46.4m	-39.3	-36.5	-39.0
Slovenia	48.5	229	-8.2	-6.4	-6.4	-13.5	-21.5m	-14.1	-18.0

Legend: m = minimum, most negative situation
Sources: The World Bank, IMF, EBRD, EU, own calculations

Total macroeconomic performance of Post Yugoslav countries deteriorated in period from 2005 to reach the low point in 2008 for Montenegro and Serbia, in 2009 for Croatia, Macedonia and Slovenia, and in 2011 for two weakest economies, B&H and Kosovo. Differences in macro economic performance among seven analyzed countries are huge, more than 5-times in extremes, where Slovenia leads and Kosovo lags the most. To put that in perspective with regard to declining quality of life, the development level of each country (GDPpc) should be taken into account. In that sense, Slovenia has at the same time the highest GDP per capita and the best macro-economic situation; Kosovo is the negative extreme.

For most Post Yugoslav countries their external debt is huge, but foreign exchange reserves suffice for now

Table 2.6 gives information on debt burden of Post Yugoslavs at the end of 2010 (last available data). Data on Kosovo are not available. At the end of 2010, public debt was not too large, but external total debt was unsustainable for most. Public debt was less than 50% of GDP for all, which satisfies the Maastricht criteria as benchmark. Gross external debt, which includes private plus public external debt, was much higher exceeding 100% for Croatia, Slovenia and Montenegro. For debt servicing, crucial is net debt obtained by subtracting claims from gross debt, for which, unfortunately, data are not available. Calculation of the stock of debt minus foreign exchange reserves gives some additional information.

Table 2.6: Vulnerability: FISCUS, in % BDP, 2010 – INDEBTEDNESS

COUNTRY	GDP (IMF)	Debt public	Gross Debt Exter Total	Private	Reserves	Res/ Debt short term	Res/ Months of import	External Debt - Reserves	Net FDI
BaH	16.6	39.7	56.9	30.9	20.5	196.5	3.5	36.4	0.1
Croatia	60.7	40.6	102.1	73.5	24.7	71.5		77.4	0.7
Kosovo									
Macedonia	9.1	24.6	59.0	42.8	21.0	97.3	3.2	38.0	3.2
Montenegro	4.1	44.1	100.2		14.8		2.6	85.4	17.9
Serbia	38.1	44.9	83.1	59.1	35.7	184.1	6.8	47.4	3.0
Slovenia	43.0	38.0	115.2	65.7	2.3	8.5	0.3	112.9	

Source: EBRD Transition Report 2011

Foreign exchange reserves were sufficient for most countries, if measured in relation to short term debt and in months of imports. Reserves were smaller than short term debt only for Croatia, Macedonia and Slovenia with later having debt in "domestic currency €". They satisfy desired minimum of 3 months of imports for all countries with data available, except Montenegro and Slovenia. In 2010 net inflows of FDI were significant only in Montenegro.

Banking sector in foreign hands - sensitive to outflows in global financial crisis

Table 2.7: Banking in Post Yugoslav countries

COUNTRY	GDP 2009	Assets/ GDP, %	Owners State %	Domestic Private %	Foreign %	Deposits/ GDP, %
B&H	17.0	86.7	0.8	4.7	94.5	35.8
Croatia	63.0	116.8	4.3	5.4	90.3	62.1
Kosovo	5.4	47.0*				
Macedonia	9.2	65.4	1.4	5.3	93.3	50.6
Montenegro	4.1	97.4	0	11.6	88.4	52.5
Serbia	43.0	65.3	16.0	8.7	75.3	
Slovenia	48.5	139.9	18.9	52.4	28.7	52.5

*in 2006, Source: EBRD Transition Report 2011

The impact of global financial crisis on Post Yugoslav countries was mostly felt in their banking sector. Situation is described in Tables 2.7 and 2.8. For most indicators, data for Kosovo is not available. These countries have lower than 100% banking assets/GDP ratio, except Slovenia and Croatia. According to EBRD all countries except Slovenia had majority foreign ownership in 2010. That can pose a problem if foreign banks would like to pull out of Post Yugoslav countries in the process of self-rehabilitation at home (Spence, 2012).

Creation of financial bubble is indicated for most Post Yugoslav countries by banking loan/deposit ratio over 100, exceptions being probable Kosovo (table 2.8; no data available for Serbia). In 2010 the share of nonperforming loans in total loans extended by banks was more than 10%, which is close to critical, of all banking loan portfolio except for Slovenia (2.2%) and Macedonia (9.5%). After 2010, the quality of loan portfolio is definitely deteriorating further. In addition, problem with loans in foreign exchange, (carry trade) is evident for most Balkan countries, as they have more than half of all loans extended in foreign currency. Exception is, again, Slovenia with its EU and Eurozone membership.

Table 2.8: Banking, continued

COUNTRY	GDP 2009	Loans/ GDP %	Non Performing Loans, %	Loans/ Deposits %	Domestic Forex Loans/ GDP, %	Forex L/ Total Loans, %
World	58260					
BaH	17.0	56.7	11.4	158.3	2.7	73.2
Croatia	63.0	72.8	11.2	117.3	55.4	76.0
Kosovo	5.4	27.0		82.0*		
Macedonia	9.2	48.0	9.0	94.8	25.2	52.2
Montenegro	4.1	61.2	21.0	116.6		
Serbia	43.0		16.9		36.6	71.3
Slovenia	48.5	83.1	2.2	158.3	4.2	5.0

* 2006; Source: EBRD Transition Report 2011, author (2009)

2.2.3. Integration to the world

Approximation to the EU is at various stages

Table 2.9: The approximation of Post-Yugoslavs to the EU

COUNTRY	GDP 2009	GDPpc 2010 %	EU + EMU	EU Only	EU Access	EU candidate	EU potential candidate	0
World	58260	100						
BaH	17.0	44					X	
Croatia	63.0	137			X			
Kosovo	5.4	31						X
Macedonia	9.2	45				X		
Montenegro	4.1	65				X		
Serbia	43.0	53				X		
Slovenia	48.5	229	X					

Source: EU data

Table 2.9 gives evidence for the status of Post-Yugoslav seven countries in approximation to the EU. It differs to a great extend, from a full EU plus Eurozone membership (Slovenia) to lack of any formal institutional relationship (Kosovo). Rank correlation between Post Yugoslav approximation to the European integrations and GDP per capita is close to perfectly positive. Higher degree of economic approximation to the EU is thus a consequence, not the cause of higher level country's economic development.

Financial support for EU candidates and potential candidates among Post Yugoslav countries is very important. It contributes significantly to real (and also nominal) convergence, which is crucial for enabling further steps in approximation to the EU. Slovenia not included as EU member from 2004.

From the point of view of EU as donor, results in Table 2.10 show that in period 2007-2013 financial support did not substantially improve from the previous EU six-year financial perspective 2000-2006: Instead of one, now they sacrifice two coffees per EU inhabitant per year. More needs to be given in 2014-2020 financial perspective.

Financial support from the EU to Balkans remains insufficient

Table 2.10: IPA support for candidates and potential candidates from the EU, in Million €

COUNTRY	Per % GDP 2010	Popul 2010 Mio	Per Cap. €	All 7-13 Mio €	2007	2008	2009	2010	2011	2012	2013
BaH	3.88	3844	171	659	62	75	89	105	107	109	112
Croatia	1.55m	4426	225	998	141	146	151	153	156	156	95*
Kosovo	11.8M	2208	289	638	68	185	106	67	69	69	74
Macedonia	6.72	2053	301	618	58	70	82	92	98	101	117
Monteneg.	5.78	619	383	237	31	33	35	34	34	35	35
Serbia	3.24	7307	191	1393	190	191	195	198	202	202	215

Source: EU Enlargement, 2012, IPA Revised perspective, Brussels 2012

Regarding receivers among Post Yugoslav countries, distribution of IPA funds is uneven. With regard to their GDP Kosovo receives the most, while Croatia the least (almost eight times less than Kosovo). With respect to population, each citizen of Montenegro received from 2007-2013 IPA program the most (383 €), while citizen of B&H the least (171 €).

Higher degree of approximation leads to higher exposure to the EU and PIIGS

Following the EBRD Transition Report we define exposure as sum of shares of EU (PIIGS) in country's own export, external debt and FDI inflow. More exposed countries to the crisis contaminated EU and especially to PIIGS are more vulnerable in times for its spreading

over. Exposure of Post-Yugoslav countries to the ailing Euro zone countries and even more ailing members of PIIGS could negatively impact their domestic economies.

Despite the fact that Slovenia is already member of the EU for eight years and Croatia becomes member only in July 2013, Croatia is more exposed to the EU than Slovenia. Table 2.11 clearly shows large differences in exposure of individual Post-Yugoslav economies to the Euro zone (moderately ailing economies) and to the PIIGS (heavily ailing economies). Macedonia is the most exposed to PIIGS (Greece). In aggregate exposure to both groups Croatia leads before Slovenia, while B&H is the least exposed.

Table 2.11: Exposure of Post Yugoslav countries to the Euro zone and to PIIGS, 2010-2011 (% of GDP)

		EU				PIIGS				
COUNTRY	GDP 2009	Exp	Ext Debt	FDI	Index	Exp	Ext Debt	FDI	Index	Index Double
BaH	17.0	8	3	...	11	3	3	...	6	17
Croatia	63.0	9	31	42	82	4	0	5	9	91
Kosovo	5.4	4								
Macedonia	9.2	18	25	...	43	8	19	6	33	76
Montenegro	4.1	1								
Serbia	43.0	8	18	...	25	3	5	...	8	33
Slovenia*	48.5	33	22	21	76	9	0	0	9	85

* Eurozone member
Source: EBRD Transition Report 2011

2.2.4. Comparing situation in Post Yugoslav countries in 1990 with situation in 2010

Table 2.12: Comparison of differences among Post Yugoslav countries between 1989/90 and 2009/10 - in GDP, GDP pc, unemployment

COUNTRY	GDP 2009	GDPpc 2010	Ga	GNP Pc, 90 Slo=100	GDP Pc, 10 Slo=100	GSP 90 %Yu	GDP 10, %sum	Δ % share	Un 90 %	Un 10 %
World	58260	10000	2.70							
BaH	17.0	4409	11.97	33	19	12.4	8.9	-3.5	21	28
Croatia	63.0	13754	0.54	62	60	25.6	33.1	7.5	9	13
Kosovo	5.4	3059	6.15	20	13	1.9	2.8	0.9	39	37
Macedonia	9.2	4460	0.61	33	20	5.4	4.8	-0.6	23	33
Montenegro	4.1	6510	2.50	36	28	1.8	2.1	0.3	22	18
Serbia	43.0	5269	-0.90	55	23	33.3	22.6	-10	17	18
Slovenia	48.5	22851	2.26	100	100	19.6	25.5	5.9	5	8
Benchmarks						100	100	0	19	22
OECD	41214		2.04							
LDC	5454		4.78							
BRICS 5	9473	6866	4.75							

Sources: The World Bank, IMF, EBRD, EU, own calculations

If measured in current USD, GDP in 2010 of Post Yugoslavs (190.2 billion USD) is approximately three times larger than in 1990 (around 60 billion USD). Devaluation of USD, "marketization" of these economies and changes in population probable decrease this growth by half. Among Post Yugoslav countries, regarding the size of GDP Slovenia improved its share from 1990 to 2010 together with Croatia, Kosovo and Montenegro, while the other three worsened their share. Regarding unemployment level, situation is in 2010 slightly better than in 1990 only for Kosovo and Montenegro, worse for other five. On aggregate level of unemployment is higher in 2010 than what it was in 1990, but the misery is presently much smaller, as inflation rate does not exceed 5% on average, while in 1990 it was 587%.

Table 2.13: Comparison of GDP growth rates of former Yugoslav Federal units

COUNTRY	Growth 70-89 Ga 3.45 Gaw 3.70	Growth 91-10 Ga 3.28 Gaw 2.59	Growth 05-10 Ga 3.34 Gaw 2.14	GDP2022	Pop 1990 Mio	Pop 2010 Mio	Δ Pop
B&H	3.5	11.97	3.55	21.5	4.5	3.8	-0.7
Croatia	3.1	0.54	1.53	68	4.7	4.4	-0.3
Kosovo	3.6	6.15	4.98	11.7	2.0	2.2	0.2
Macedonia	3.6	0.61	3.53	10.0	2.1	2,.1	0
Montenegro	3.4	2.50	4.53	5.7	0.6	0.6	0
Serbia	3.4	-0.90	2.61	47.8	7.8	7.3	-0.5
Slovenia	3.6	2.26	2.28	64.8	1.9	2.1	0.2
OECD		2.04	1.1	53578			
LDC		4.78	6.6	10297			
World		2.70	2.5				
EU			1.0				
EMU			1.0				

Legend: Ga = average GDP growth of PostYugoslav countries, in 1970-2010: 3.35%
Gaw = average world GDP growth, in 1970-2010: 3.15%

Surprisingly, the average GDP growth rates for the Post Yugoslav countries are similar for period of 20 years before the collapse of SFR Yugoslavia, 20 years after its collapse and within the later for the period around global financial crisis (2005-2010). The world growth rates, however, decreased continually for these three periods. In comparison to average world GDP growth rates, Post Yugoslavs were growing only slightly faster in last 40 years (3.45% to 3.70%) with some lagging in first twenty years still being in ex-Yugoslavia (3.45% to 3.70%) and some exceeding in period of their independence 1991-2010 (3.28% to 2.59%). During period 2005-2010 of global financial crisis Post Yugoslav countries were growing on average significantly faster than world on average (3.34% to 2.14%).

Intra-group, growth was much more stable in times of ex-Yugoslavia, followed in variability by period 2005-2010 and with huge differences in growth rates in period 1991-2010, due to the effect of war activities and international intervention.

In twenty years from 1990 to 2010 total population on territory of ex-Yugoslavia has declined by 4.7%, from 23.6 to 22.5 Million, with positive population growth experienced only by Kosovo and Slovenia, and with the largest contraction in B&H and Serbia.

3. The future economic growth of Post Yugoslav countries – simulation experiment

3.1 Introduction

In contemplating about the future regional cooperation/integration for Post-Yugoslav countries the following order could be observed:

Vision → strategy (system reform) → policy (measures)

For Post-Yugoslav countries **vision** could include the following elements[2]:

- intensification of intra-regional cooperation in all fields of social life,
- overall improvement of economic, social and political development level in these countries,
- further integration to the EU and other alliances to the West and East of global community.

Economic development consists of economic growth (measured by GDP and GDP per capita growth) and growth of supra-structure (social, demographic, ecologic, political life, equality, education, etc.), which both constitute growth of welfare of people as the ultimate goal of country (society) system and policies. While elements of country's supra-structure are difficult to measure and analyze, and also matter of other sciences, the goal of this study is to predict the economic growth of Post Yugoslav countries up to 2022. The goal is to achieve as high growth and level of development as possible so that by catching up Post Yugoslav countries will narrow the gap in economic development to advanced countries.

Question is what kind of **strategy and policy** should be applied to achieve this catching-up goal. The existed economic system and experienced economic policy measures will only extrapolate the dynamics of past growth rates into the future. But, if they are not enough to catch-up, the system reforms and policy improvements will be needed to accelerate the economic growth.

Economic growth is measured by GDP as output, which is determined by production factors (of growth) as inputs. Many growth factors are listed in theory and literature, all centered around capital, labor, natural resources and technology. Here, the most recent relevant common reference study[3] is used for their identification. It lists 11 principal ingredients of sustained high growth for emerging economies. They are: macroeconomic stability, openness, inbound knowledge, export diversification, capital deepening, public investment, employment and education, policy setting, energy consumption, urban density and transportation modes.[4]

2 These elements of vision are proposed in author's 2007 book "The Balkan Conflict and Its Solutions", Manet, Pf, Ljubljana..
3 UN Commission on Growth and Development under leadership of Nobel Price winner Michael Spence: "The Growth Report: Strategies for Sustained Growth and Inclusive Development", Washington DC, December 2010
4 In addition, for advanced economies the ultimate limiting factors of potential economic growth are population growth and technological progress (Spence, 2012).

Some of these are given by nature, other are acquired by human efforts (created). Some are related to supply (production), other to demand and some deal with infrastructure improvements, which help both supply of GDP and demand for it. In accelerating growth, first, the capacity of already existing factor endowment should be fully utilized (full capacity utilization), and second, endowments should be increased and/or new factors should be created (new capacity creation).

3.2. Prediction of economic growth of Post Yugoslav countries until 2022

In empirical part, first, the economic growth of Post Yugoslav countries is predicted by simple extrapolation of growth rates from recent past 20 years using so called "naïve models or castle in the clouds". Prediction, which could be labeled only as the best "questimate" in present uncertain world, shows significant growth of GDP and GDP per capita in the next decade, which may be good per se (in absolute terms), but in comparative sense predictions indicate that in the future the lag of Post Yugoslav countries behind advanced countries (EU) will in fact increase. Second, if such development is not acceptable, system reforms and new policy measures are needed to accelerate economic growth of Post Yugoslav countries. For that purpose 11 factors of economic development are identified from reference study (Spence, 2011) and the present level of their accomplishment (fulfillment, development) for each Post Yugoslav country and region as a whole is evaluated. Third, based on the size of identified lags for each country and each factor, specific system reforms and policy changes are proposed, which are needed for Post Yugoslav countries to narrow the gap to the world frontier of each factor/country and thus accelerate their GDP growth.

3.2.1 Prediction of economic growth of Post Yugoslav countries - by extrapolation

a) Making credible 10 year **GDP forecast** is almost impossible task. Structural models can not be used as predicted values of explanatory production factors are not known. The naïve models use extrapolation of long-term growth from the last 20 or 6 years for next 10 years.

Here such extrapolation of growth rates and growth coefficients is applied. Obtained forecasts are thus more "guestimates" than credible predictions. Nevertheless, it is better than nothing and good quantitative foundation for further elaboration.

In Table 3.1 in version a) the GDP growth rate between 1991 and 2010 is extrapolated to obtain the predicted GDP in 2022. GDP growth among Post Yugoslav countries will differ in period until 2022, if average growth in period 1991-2010 is simply extrapolated, as indicated by growth coefficients Ka in Table 3.1. The fastest growth is predicted for Kosovo, the slowest for Macedonia (modifications of past GDP average growth rates are made for Bosnia and Herzegovina and Serbia).

Table 3.1: Forecast of GDP Growth in Post Yugoslav countries until 2022, in billion $ - extrapolation of GDP growth rates

COUNTRY	GDP 2009	Growth 91-10 Ga	Ka 2022/2009	GDPa 2022	Gb 05-10	Kb 2022/2009	GDPb 2022
B&H	17.0	11.97	1.264	21.5	3.55	1.574	26.8
Croatia	63.0	0.54	1.073	68	1.53	1.218	76.7
Kosovo	5.4	6.15	2.173	11.7	4.98	1.881	10.2
Macedonia	9.2	0.61	1.082	10.0	3.53	1.570	14.4
Montenegro	4.1	2.50	1.379	5.7	4.53	1.779	7.3
Serbia	43.0	-0.90	1.111	47.8	2.61	1.398	60.1
Slovenia	48.5	2.26	1.337	64.8	2.28	1.341	65.0
-Benchmark							
OECD	41214	2.04	1.300	53578	1.1		
LDC	5454	4.78	1.888	10297			
EU	16000				1.1	1.152	18432
EMU					1.0	1.138	
World	58260				2.5	1.379	80341

Legend: Ga = average GDP growth rate for period 1991-2010; Gb = average GDP growth
Ka = (1 + Ga/100) exp13; Kb = (1 + Gb/100) exp 13
GDPa 2022 = GDP2009 x Ka; GDPb 2022 = GDP 2009 x Kb
Sources: The World Bank Data, EBRD Transition Report 2011, own calculations

However, extrapolating past 20 years average growth rates seems inappropriate and unrealistic, because the war activities and unequal time span in data set cause deformation (for instance almost 12% yearly growth for B&H, or negative growth for Serbia), which could not be expected to remain in future growth. Therefore in b) version the average GDP growth rates of only last six years (2005-2010) are extrapolated until 2022. This period includes both pre-crisis boom and crisis drought. The aggregate GDP for all Post Yugoslav countries will under this scenario increase in next 13 years by 37%, from 190 Billion $ in 2009 to 260 Billion USD in 2022.Taking into account predicted growth of population in the EU by 0.77% per year and extrapolation of past decline in population in Post Yugoslav countries by 0.24% per year the average GDP per capita will increase in EU from 32653 current $ in 2009 to 36864 $ in 2022, while the average for Post Yugoslav countries will increase from 8444 $ to 11841 $. Gap in GDP per capita between the two will absolutely increase by over 800 $, although the share will increase from 26% to 32%. But, it is still not sufficient real convergence for to prepare Post Yugoslav countries for the EU accession. Conclusion is that an active system reforms and “industrial policy” measures are required to accelerate predicted growth and thus more significantly narrow the gap of Post Yugoslav countries to the EU in level of economic development as measured by the GDP per capita.

3.2.2 Identification of development factors and their quantification

Next, the present degree of fulfillment of 11 principal ingredients of sustained high GDP growth is evaluated for each of seven Post Yugoslav countries.

Table 3.2: Fulfillment of principal ingredients for sustained high GDP growth among Post Yugoslav countries, 2012

COUNTRIES	BH	CRO	KOS	MAC	MON	SER	SLO	No	Capac Utiliz.
FACTORS									
1.Macro-econ. Stability	-	-	-	0	-	-	0	2	
2.Openness	-	0	-	-	-	-	+	3	
3.Inbound knowledge	-	0	-	-	-	-	0	2	
4.Export diversification	0	0	-	-	0	0	0	5	
5.Capital deepening	-	0	-	-	0	-	-	2	
6.Public investment	-	0	-	0	0	-	-	3	
7.Employment, education	-	0	-	0	0	0	+	6	
8.Policy setting	-	0	0	0	-	0	0	5	
9.Energy consumption	0	-	-	-	-	0	-	2	
10.Urban density	0	0	0	0	0	0	+	8	
11.Transportation modes	0	+	-	0	0	0	+	8	
Total out of maximum 22	4	10	2	6	6	6	12	46	46/154 30%
Present capacity + 50%	6	15	3	9	9	9	18	69	45%
Present capacity + 66%	6.6	16.6	3.3	9.9	9.9	9.9	19.9	76	50%
Present capacity + 100%	8	20	4	12	12	12	22*	90*	60%

Legend: + = high =2, 0=average =1, - = low=0 fulfillment of capacity utilization of factors
*only 82% for Slovenia possible
Source: Spence (in Blanchard O. et all, 2012), EBRD Transition Report, 2011; data from the World Bank, EBRD, EU, IMF, own estimates

According to our subjective evaluation in Table 3.2, based in official resources from the EBRD (Transition report), the World Bank (Doing Business), EU (country reports for candidate countries) and specific country statistics, none among Post Yugoslav countries is over half of the world's achieved frontier in capacity utilization of their factor endowments. Slovenia leads with 12/22[5] degree of capacity utilization, followed by Croatia with 10/22, Macedonia, Montenegro and Serbia with 6/22, while B&H (4/22) and Kosovo (2/22) lag further behind. There is a lot of space for improvement factor utilization to accelerate economic growth.

Based on estimated lags between present value of each growth ingredient and its possible maximum value (2) system changes and policy measures are proposed for each Balkan

5 Maximum 22 is obtained as 11 factors times 2 (maximum achieved utilization of each at the world frontier).

country, such improvements which will enable acceleration of their economic growth. Linear homogeneous production function of first degree is assumed to enable direct transposition of the growth of production factors linearly to the growth of GDP.

a) **For Post Yugoslavs as a group** aggregate factor endowments utilization is 46 out of 7 x 22 = 154 which is less than 30%, so that there is a lot of room for improvement, table 3.2.

- The weakest factors are macroeconomic stability, inbound transfer of knowledge, capital deepening and energy consumption. Better decision making by macroeconomic authorities, increase in FDI inflow (not financial) or improved education, more savings transformed into investment of capital, studying abroad and energy saving programs could improve that.
- The best achievements by the group are currently related to relative low urban density and transportation modes, and to certain degree to education, export diversification (not volume) and policy setting.

b) **Country-by country overview** of Post Yugoslav countries indicates most important potentials for factor improvements. According to Table 3.2:

- Bosnia and Herzegovina is second least developed (4) with potential growth which exists for all factors; the average level of world factor utilization is achieved by country only in export diversification, energy consumption (low development), urban density and transportation.
- Croatia is above Post Yugoslav countries average (10) in utilization of development factors, with macroeconomic disequilibrium and energy consumption being the worse, while transportation modes the best developed.
- Kosovo is with the 2 out of 22 degree of utilization the worse among Post Yugoslav countries so that potential to grow is enormous. Policy setting and urban density are a little better utilized than other factors.
- Macedonia is slightly below Post Yugoslav average (which is 6.8) with regard to utilization of development factors, similar to Montenegro and Serbia, all with the grade 6. All three lag behind in particularly with regard to openness, inbound knowledge. Macedonia is weak also with capital deepening, export diversification, and energy consumption;
- Montenegro is weak with macroeconomic stability, policy setting and energy consumption, inbound knowledge and openness.
- Serbia lags behind mostly with macroeconomic stability and investments (both private and public), but also with openness, and inbound knowledge.
- Slovenia needs to invest more capital, privately and public, and decrease energy consumption. Better policy setting, inflow of knowledge, export diversification and macro-economic policy could contribute to acceleration of growth.

3.2.3 Scenarios for acceleration of economic growth in Post Yugoslav countries

At the moment Post Yugoslav economies as a whole achieve less than 30% utilization of the world frontier in production factor potentials. The predicted average 3.3% yearly GDP growth, based on them, is not sufficient to decrease their lag to advanced economies.

Proper economic reforms and changes in economic policies can increase capacity utilization of existed and new production factor closer to world frontiers and thus accelerate economic growth of Post Yugoslav countries in the future. Several alternative scenarios could be applied which differ in intensity of production factor improvements. Three scenarios are envisaged: active system reforms and policy changes could improve factor potential utilization by 50%, 66%% or 100%, that is from 46/154 to 69/154, 77/154 or 92/154. Even with these improvements a lot of space would remain for further improvements, as the highest proposed 100% growth of factor utilization in Post Yugoslav countries as a group will bring facto utilization only to 60% of achieved world frontier.

With them the average predicted GDP growth rate for Post Yugoslav should also increase by half, 2/3, or 100%, that is from ceteris paribus factor utilization situation leading to 3.3% GDP growth, to 4.9%, 5.5% or 6.6% growth rates, if homogeneous production function of first degree is assumed.

Scenario for new forecast is that the average 2005-2010 growth rates will be adopted for 2010-2012 period and after that gradually increased in three years 2013-2015 to new higher rates which will be then adopted for the remaining period 2016-2022. This gives forecast of GDP growth in Table 3.3. for next decade until 2022.

Table 3.3: Accelerated GDP growth rates for Post Yugoslav countries under different scenarios of factor utilization improvements: 50%, 66%, 100%, in Million current $

COUNTRY GDP2009	Gb 05-10	a) Gb+50%	b) Gb+ 66%	c) Gb+100%	a) GDP 2022 K* GDP	b) GDP 2022 K GDP	c) GDP 2022 K GDP	GDP 22 base K GDP
World 58260	2.70							1.3 80341
B&H 17.0	3.55	5.25	5.89	7.10	1.8 30.9	1.9 32.6	2.1 36.2	1.5 26.8
Croatia 63.0	1.53	2.30	2.54	3.06	1.3 82.2	1.3 83.9	1.4 87.2	1.2 76.7
Kosovo 5.4	4.98	7.47	8.27	9.96	2.3 12.5	2.5 13.4	2.8 15.6	1.8 10.2
Maced. 9.2	3.53	5.30	5.86	7.06	1.8 16.7	1.9 17.7	2.1 19.3	1.5 14.4
Monten. 4.1	4.53	6.80	7.52	9.06	1.9 7.9	2.2 9.4	2.6 10.7	1.7 7.3
Serbia 43.0	2.61	3.92	4.33	5.22	1.5 67.4	1.6 69.8	1.7 75.4	1.3 60.1
Sloven. 48.5	2.28	3.42	3.78	4.17	1.4 71.8	1.5 74.2	1.6 76.6	1.3 65.0
EU 16000								1.15 18432

Legend: Gb = average GDP growth rate for 2005-2010,
Kb = (1 + Gb/100) exp 13; GDPb 2022 = GDP 2009 x Kb
* K numbers in table only with one decimal number, in calculation with three.
Sources: The World Bank Data, EBRD Transition Report 2011, own calculations

In table 3.3 Gb are average GDP growth rates for 2005-2010 increased by 50%, 66% and 100% respectively, K are coefficients (based on multiplication of growth rates during 2010-2022 period) for multiplication of GDP in 2009 to obtain predicted GDP for 2022. Compared with predicted GDP 2022 under assumption of extrapolation of based growth from 2005-2010 for the whole period until 2022, the improved GDP growth coefficient for the whole period K are adequately higher.

Post Yugoslav countries with higher starting GDP growth (from 2005-2010) will more increase their GDP until 2022 by basic scenario (pure extrapolation) or accelerated scenarios (50%, 66%,100% increase of basic growth rates). The resulting improvement is, for instance, in extreme 100% growth acceleration scenario in comparison to 2009 GDP: more that doubled GDP for B&H Kosovo, Macedonia and Montenegro and still 40% to 70 % increase of GDP for Croatia, Slovenia and Serbia. The share of Post Yugoslav countries GDP in world GDP will increase from 3.1 promile in 2009 to 3.2 promile under basic scenario or 34 promile under fastest growth acceleration scenario. In comparison to the EU GDP the ration of Post Yugoslav countries will increase from 1.18% of EU GDP in 2009 to 1.41% under basic scenario and to 1.74% in scenario of most acceleration. There is acceleration of GDP growth in Post Yugoslav countries, but probable still no sufficient to enable real convergence of these countries to the EU. This shows how difficult and almost unachievable goal is real convergence for Post Yugoslav countries.

In table 3.3 for each country Post Yugoslav country simulations of future GDP grows give different results. For Slovenia, for instance, GDP would increase from 2009 to 2022 by 34% in basic scenario, and by 58% in scenario of largest GDP acceleration.

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