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Economies of federal units of ex-Yugoslavia after independence

Abstract. *In present article the author's aim is to find out how Post Yugoslav countries could accelerate the past insufficient economic growth in order 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. At the time of collapse in 1991, former Yugoslavia was among less developed European countries with unsustainable economic and social differences among its federal units. In the last twenty years, the economic and social differences among Post Yugoslav countries increased even further, partly due to different impact of military activities and partly due different degree of approximation to the EU. 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 2005), but not enough to enable their true real convergence, a precondition for the EU membership. Despite changes in status (independence), economic system (transition to private market economies) and economic environment (global financial crisis), growth rates in Post Yugoslav countries in the last 40 years remain at 3.3% on average. The author deeply scrutinizes the development level and disparities of federal units on the eve of collapse of Ex-Yugoslavia in 1990; analyses development of Post Yugoslav countries after their independence until today; gives reasons for a prediction of economic growth of Post Yugoslav countries in next decade until 2022.*

Key words: *Yugoslavia, economic, global financial crisis, banking sector, EU financial support, economic exposure, macro economic imbalances, insufficient, strategy, policy.*

Summarized conclusions

At the time of collapse in 1991, the former SFR Yugoslavia was among the less developed European countries, with an unsustainable economy and social differences among its federal units. In the last twenty years, after proclamation of independence, the economic

and social differences among Post Yugoslav countries have increased even further, partly due to the different impact of military activities and partly due to a different degree of approximation to the EU.

Growth of independent Post Yugoslav countries in the past 20 years of independence has been slightly above the world and the EU average, but insufficient to sig-

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nificantly narrow the gap between them and 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 2005), but not enough to enable their real convergence, a precondition for EU membership.

Despite 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 the last 40 years remain 3.3% on average. This differs from the world, where the average yearly GDP growth declined from 3.7% in the first twenty years (1971-1990) to 2.6% in the next twenty years, 1991-2010, with an even lower 2.1% average growth within the second sub-period during the global financial crisis of 2005-2010.

Introduction

This study does not aim for institutional resurrection of former Yugoslavia or for a return to the former socialist economic system. It investigates what happened in economic and social terms with former federal units after the collapse of ex-SFR Yugoslavia in 1991, when it became independent. In addition, a simulation exercise is made for prediction of economic growth in the 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 the next decade and thus 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 of economic growth, complemented by other indicators of economic and social development.

Three parts of the study encompass 30 years:

1. The level of development of ex-Yugoslav federal units in 1990, before the country's collapse,

2. Development of Post Yugoslav countries after their independence until today, with special analysis of developments during the period of global financial crisis,
3. Prediction of economic growth of Post Yugoslav countries in the next decade until 2022.

After the dissolution of SFR Yugoslavia in 1991 its federal units (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia and Kosovo) gradually became independent states. This was not easy and involved a number 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 EU average in the last 20 years, this lag of the Post-Yugoslav seven countries has increased further. The question is what kind of economic system and policy reforms could accelerate their growth and thus narrow the gap.

1. The start — Development level and disparities of federal units on the eve of collapse of Ex-Yugoslavia, 1990

In ex-SFR Yugoslavia¹, in addition to the cultural differences, there were enormous differences in economic performance and social standard. The success of the country's development policy already depended on these differences not widening in the post World War II period.

According to Table 1.1 the economic differences within ex-SFRJ were huge despite special attention being 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 promile (Vojvodina) and 23.1 promile (Kosovo), in unemployment rate: between 5.2% (Slovenia) and 38.8% (Kosovo).

¹ Seven of the listed eight federal units became independent countries; Voivodina remains in Serbia, while independence of Kosovo is not fully recognized around the world so it is not a 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

Several numbers indicate the strong presence of redistribution (correction) policies. So, for instance, in terms of nominal wages, the difference between the extreme values was only times 2.5, while in the production GNP per capita this difference was times 8.5 (in both cases between Slovenia and Kosovo). A similar indication is in 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 times 0.5. 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 an indicator of social development was less than three-fold (extremes again, in Slovenia and Kosovo). Differences in geography, surface and climate, culture and religion among

entities within Ex-SFR, influenced different ways of life and indirectly contributed to upcoming military conflicts.

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

But what we want to consider is what happened to Post-Yugoslav countries after the proclamation of independence in terms of economic growth and welfare, stability and inequality, in the past 20 years and especially during global financial crisis 2005-2011. First, methodology of empirical analysis will be described, followed by presentation of results.

2.1. Methodology

The dynamics of growth and its stability

a) Growth dynamics

For the period 1991-2010 we calculated:

- geometric mean of GDP growth rates $G = G_a$, 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 sample 2010 and the absolute difference between the two VG and the ratio of the two KG:

- GDPpc 1991
- GDPpc 2010
- $VG = GDPpc\ 2010 - GDPpc\ 1991$
- $KG = GDPpc\ 2010 / GDPpc\ 1991$

We wish 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. The methodological dilemma is which variability indicators are better, the absolute (SD, difference in GDPpc) or relative (KV, ratio in GDPpc). In theory, relative indicators are preferred over absolute, but in this special case of GDP growth rates and GDPpc, absolute indicators can have more sense in interpretation. For instance, if average growth rate G_a is close to zero, the relative deviation $KV = SD/G_a$ 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 the bubble in the period 2005-2008, did have a larger burst (negative difference to average growth) when the global financial crisis materialized after 2008. Smaller deviation from long term average growth in an individual country indicates stronger resistance to the global crisis. Symmetry of positive and negative differences from the average growth is important. A large difference between divergences above and below average indicates that additional country specific factors with a positive or negative impact were present in the country in times of global crisis.

The highest growth rate G_{max} and lowest growth rate G_{min} as well as the highest positive difference to the average growth rate $G_{max}-G_a$ and the highest negative difference $G_{min}-G_a$ in the 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 better present the overall situation in an individual country and trends in period including onset, presence and way out (of the consequences) of the global financial crisis of 2005-2010/2011. The advantage of such aggregation is to get a better overall picture of the situation; the weakness is that summing up individual indicators is sometimes questionable. But, for better general overview, a 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.

These include indicators of countries' indebtedness in 2010 (the most recent data available):

- public, external (total and private) debt,
- foreign exchange reserves (total, related to short term debt and two 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 Eurozone 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 **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 Eurozone 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 is obtained from the World Bank data as basic source and from the EU, EBRD, IMF and country statistics. Problems occur in the fact that there is 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 is missing due to statistical problems:

a) for **B&H**, data is available only from 1995: B&H had a large decline of GDP in the period before 1995 during war activities and before Dayton, decreasing GDP to 15% of the pre-war level, but after the 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.

b) data for **Serbia** is specific, because of very slow growth, but large negative growth

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
BaH	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

in some years (NATO bombardment) so that the geometric average remains evenly negative for the whole period;

c) data for **Kosovo** also starts later in the observation period, when the starting position is very low and, in addition, large positive GDP growth rates are the result of direct financial support from the international community and not produced at home.

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

For most Post-Yugoslavs, variability of economic growth was huge in the 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 the global financial crisis on Post Yugoslav countries, first, by measuring creation and bursting the bubble in GDP growth between 2005 and 2010, and second, using 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 using the indicators of fiscal vulnerability and performance of the banking sector.

Bubble in GDP growth

According to Table 2.2, in the period 2005-2010, the largest maximum yearly growth rate of 10.2% was achieved by Montenegro in 2007. The lowest minimum was experienced Slovenia with —7.8% in 2009. Absolute deviation above the average rate was smaller than below it only for some (Slovenia, Kosovo, Croatia, B&H). For them bursting the bubble was more intensive, indicating the presence of additional weaknesses during the outbreak of the global finan-

Table 2.2

Creation and bursting of the 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

cial crisis. The variability of growth rates was much higher in Post Yugoslav countries than the world, OECD, LDC or BRIC average.

An additional three synthetic indicators illustrate the situation in time dynamics for 2005-2011 and cross country.

Social situation worsens after 2009

According to Table 2.3, the overall social situation was improving (misery index declining) in Post Yugoslav countries until 2009 inclusive(!), the year when developed countries had

already achieved their lowest point. Declining inflation was more significant for Post Yugoslav countries than increased unemployment during 2008-2009. But, the situation began to deteriorate after 2009. The lag for the developed world in entering the crisis is followed by Post Yugoslav countries lagging to get out of it. The crucial finding is that the social situation for most Post-Yugoslav countries today is much worse than in the mid-2000s.

The level of misery differs significantly among individual analyzed countries. The

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

worst situation is in Kosovo and B&H, which started in a much worse situation than others, with Kosovo's situation deteriorated even further during the observation period of 2005-2011. The second group is formed by Macedonia, Serbia and Montenegro, where the starting position improved in Montenegro, while it stagnated in other two. Croatia is in a better situation regarding social sustainability, although with a quickly deteriorating social situation in recent years. Slovenia is in the best position regarding social situation but, again, the situation deteriorated recently.

Increasing macro imbalances until 2008 with only slight improvement afterwards

Optimal development and welfare is the 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 it should have an 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.

For Post-Yugoslav countries macro imbalances grew from 2005 to reach maximum sometime between 2008 and 2011, after the global crisis exploded. Kosovo and Slovenia are exceptions with a 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 budget and external support, the so called «self-sustained» growth of Post Yugoslav countries would have been significantly lower during the observation period of 1991-2011. Among the analyzed countries, Montenegro and Kosovo experience an 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

Total macroeconomic performance of Post Yugoslav countries deteriorated over a period from 2005 to reach the lowest point in 2008 for Montenegro and Serbia, in 2009 for Croatia, Macedonia and Slovenia, and in 2011 for the two weakest economies, B&H and Kosovo. Differences in macro economic per-

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

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

formance among the seven analyzed countries are huge, greater than times 5 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 the debt burden of Post Yugoslavs at the end of 2010 (last available data). Data on Kosovo is 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 satis-

fies 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 net debt is obtained by subtracting claims from gross debt, for which, unfortunately, data is not available. Calculation of the stock of debt minus foreign exchange reserves gives some additional information.

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 who later had debt in «domestic currency €». This satisfies the 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.

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

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

The impact of the global financial crisis on Post Yugoslav countries was mostly felt in

their banking sector. The situation is described in Tables 2.7 and 2.8. For most indicators, data for Kosovo is not available. These countries all have lower than 100% banking assets/GDP ra-

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

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)

tio, except Slovenia and Croatia. According to EBRD, all countries except Slovenia had majority foreign ownership in 2010. That could pose a problem if foreign banks wanted to pull out of Post Yugoslav countries in the process of self-rehabilitation at home (Spence, 2012).

Creation of a financial bubble is indicated for most Post Yugoslav countries by a banking loan/deposit ratio over 100, most likely with Kosovo as an exception (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 the entire bank loan portfolio except for Slovenia (2.2%) and Macedonia (9.5%). After 2010, the quality of the loan portfolio definitely deteriorates further. In addition, a 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. The exception is, again, Slovenia with its EU and Eurozone membership.

2.2.3. Integration into the world

Approximation to the EU is at various stages

Table 2.9 gives evidence of the status of the seven Post-Yugoslav countries in ap-

proximation to the EU. This differs to a great extent, from a full EU plus Eurozone membership (Slovenia) to no formal institutional relationship (Kosovo). Rank correlation between Post Yugoslav approximation to the European integrations and GDP per capita is close to entirely positive. A higher degree of economic approximation to the EU is thus a consequence, not a 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 is not included as an EU member from 2004.

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

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

Financial support from the EU to Balkans remains insufficient

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 the most from the 2007-2013 IPA program (383 €), while citizens of B&H received 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 the sum of shares of EU (PIIGS) in a country's own export, external debt and FDI inflow. The more exposed countries are to the crisis contaminated EU and especially to PIIGS, the more vulnerable they are to its spreading over. Exposure of

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

Table 2.11

Exposure of Post Yugoslav countries to the Eurozone and to PIIGS, 2010-2011, (in % of GDP)

COUNTRY	GDP 2009	Exp	EU			PIIGS			Index Double	
			Ext Debt	FDI	Index	Exp	Ext Debt	FDI		Index
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

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

Despite the fact that Slovenia has been a member of the EU for eight years and Croatia will only become a member 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 Eurozone (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 ahead of Slovenia, while B&H is the least exposed.

2.2.4. Comparing the situation in Post Yugoslav countries in 1990 with that of 2010

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 probably decreases 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, the situation in 2010 is slightly better than in 1990 for Kosovo and Montenegro, and worse for the other five. On aggregate, the level of unemployment is higher in 2010 than in 1990, but misery is currently much smaller, as inflation rate does not exceed 5% on average, while in 1990 it was 587%.

Surprisingly, the average GDP growth rates for the Post Yugoslav countries are

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

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 Post Yugoslav countries, in 1970-2010: 3.35%

Gaw = average world GDP growth, in 1970-2010: 3.15%

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

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

effect of war activities and international intervention.

In the twenty years from 1990 to 2010, the total population in the 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 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 elements²:

- 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 into the EU and other alliances with the West and East of the 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 the country (society), system and policies. While elements of a country's supra-structure are difficult to measure and analyze, and also a 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 a 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.

The question is, what kind of **strategy and policy** should be applied to achieve this catching-up goal. The existing 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, system reforms and policy improvements will be needed to accelerate 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 study³ 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 modes⁴.

Some of these are given by nature, others are acquired by human efforts (created). Some are related to supply (production), others to demand, and some deal with infrastructure improvements, which help both the supply of GDP and the 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

Empirically, the economic growth of Post Yugoslav countries is predicted by simple extrapolation of growth rates from the 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 the 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 a 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 the 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.

² These elements of vision are proposed in the author's 2007 book «The Balkan Conflict and Its Solutions», Manet, Pj, 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).

3.2.1. Prediction of economic growth of Post Yugoslav countries — by extrapolation

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

Here such extrapolation of growth rates and growth coefficients is applied. Obtained forecasts are thus more «guestimates» than credible predictions. Nevertheless, if they are 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 the period 1991-2010 is simply extrapolated, as indicated by growth coefficients K_a 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).

However, extrapolating the past 20 years' average growth rates seems inappropriate and unrealistic, because the war activities and unequal time span in the 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 the last six years (2005-2010) are extrapolated.

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 G_a	K_a 2022/2009	GDPa 2022	G_b 05-10	K_b 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: G_a = average GDP growth rate for period 1991-2010; G_b = average GDP growth

$K_a = (1 + G_a/100) \exp 13$; $K_b = (1 + G_b/100) \exp 13$

$GDPa_{2022} = GDP_{2009} \times K_a$; $GDPb_{2022} = GDP_{2009} \times K_b$

Sources: The World Bank Data, EBRD Transition Report 2011, own calculations

lated 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 the next 13 years by 37%, from 190 Billion \$ in 2009 to 260 Billion USD in 2022. Taking into account the 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 the EU from 32653 current \$ in 2009 to 36864 \$ in 2022, while the average for Post Yugoslav countries will increase from 8444 \$ to 11841 \$. The gap in GDP per capita between the two will absolutely increase by over 800 \$, although the share will increase from 26% to 32%. But this is still not sufficient for real convergence to prepare Post Yugoslav countries for the EU accession. The 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.

According to our subjective evaluation in Table 3.2, based on 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 12/22⁵ degrees 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 of factor utilization to accelerate economic growth.

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

Based on the estimated lags between the present value of each growth ingredient and its possible maximum value (2), system changes and policy measures are proposed for each Balkan country and 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 endowment utilization is 46 out of $7 \times 22 = 154$ which is less than 30%, so 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 a certain degree to education, export diversification (not volume) and policy setting.

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

- Bosnia and Herzegovina is the 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 the Post Yugoslav country average (10) in utilization of development factors, with macroeconomic disequilibrium and energy consumption being the worse, while transportation modes are the best developed.
- Kosovo, with 2 out of 22 degrees of utilization, is the worst among Post Yugoslav

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 al., 2012), EBRD Transition Report, 2011; data from the World Bank, EBRD, EU, IMF, own estimates

- countries so that the potential to grow is enormous. Policy setting and urban density are a little better utilized than other factors.
- Macedonia is slightly below the Post Yugoslav average (which is 6.8) with regard to utilization of development factors, similar to Montenegro and Serbia, all with grade 6. All three lag behind in particular, with regard to openness and 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 mainly lags behind with macroeconomic stability and investments (both private and public), but also with openness, and inbound knowledge.
- Slovenia needs to invest more capital, privately and publicly, and decrease energy consumption. A better policy setting, inflow of knowledge, export diversification and macro-economic policy could contribute to acceleration of growth.

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,
 $Kb = (1 + Gb/100) \exp 13$; $GDPb\ 2022 = GDP\ 2009 \times Kb$

* K numbers in table with only one decimal number, in calculation with three.

Sources: The World Bank Data, EBRD Transition Report 2011, own calculations

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 this, is not sufficient to decrease their lag behind advanced economies.

Proper economic reforms and changes in economic policies can increase capacity utilization of existing and new production factors 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 factor utilization to only 60% of the achieved world frontier.

With them the average predicted GDP growth rate for Post Yugoslav should also increase by half, 2/3, or 100%, from the 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 the first degree is assumed.

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

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 the period 2010-2022) for multiplication of GDP in 2009 to obtain predicted GDP for 2022. Compared with the predicted 2022 GDP and under the assumption of extrapolation of base growth from 2005-2010 for the whole period until 2022, the improved GDP growth coefficient for the whole period K are adequately high.

Post Yugoslav countries with a higher starting GDP growth (from 2005-2010) will increase their GDP more until 2022 by basic scenarios (pure extrapolation) or accelerated scenarios (50%, 66%, 100% increase of basic growth rates). The resulting improvement is, for instance, an extreme 100% growth acceleration scenario in comparison to 2009 GDP: more than 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 the basic scenario or 3.4 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 the basic scenario and to 1.74% in the scenario of most acceleration. There is acceleration of GDP growth in Post Yugoslav countries, but probably still nothing sufficient to enable real convergence of these countries with the EU. This shows how difficult and almost unachievable goal of real convergence is for Post Yugoslav countries.

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

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