Growth, competitiveness and finance: the case of West Balkan countries

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Abstract

The positive role of finance for economic growth and competitiveness is well-known in the economics literature. A major issue is restricted access to financing. The paper applies a growth diagnostic approach to identify the long- and short-run binding constraints in financing in the West Balkan countries. The long-run constraints include a low depth of financial intermediation, low specialization of banks, and a too low concentration in the banking sector in some countries, and a too high concentration in others. The actual binding constraints, however, is the high degree of and the alarming increase in non-performing loans (NPLs) throughout the region. This analysis is backed by a panel regression approach including the credit supply and credit demand sides which seeks to gain systematic evidence of the NPL problem. The paper outlines a concept for resolution and recovery of non-performing loans based on the own capabilities of banks.

JEL classification: G21, G28

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1. Introduction

All former socialist countries experienced huge losses in welfare, productive and social capital during their transition to a market economy, aggravated by regional ethnical conflicts and national independence wars in some regions. The welfare losses, unexpected by the population, politicians and most experts, were comparable to another unique event in world history, the Great Depression of 1928 to 1930. Recovery followed at a slow pace. The average GDP growth rate of the 8 transition countries, which were affiliated by the European Union (EU) in Mai 2004, amounted to merely 0.2 % between 1990 and 2002. Eastern Germany reached her former GDP level in 1997, but since then stagnation followed. The gap between West and East Germany has not closed despite huge financial transfers to the Eastern region. Russia resumed growth after the financial crisis of 1999, when revenues from recovered world oil prices eased domestic financial conditions; but it is still below the level at late Soviet times. In other regions of Europe, the transition process was even more painful, for example for Romania and most West Balkan countries. Albania, Serbia and Montenegro reached their 1989 GDP levels about ten years later, Croatia in 2003, Macedonia even two years later. However, growth turned out to be not sustainable. It was an import-led growth with the accumulation of huge current account deficits and private debt, vulnerable against international financial crises. Stagnation set in 2008 in almost all countries due to a whole complex of factors, among them not only weak foreign demand and less engagement of international investors and banks, but also fragile domestic financial systems and poor financial intermediation.

When the first signs of disappointment appeared in late 1990s, a critical review of the Washington Consensus and the new institutional view on transition followed. The Washington consensus claimed a ‘best practice’ approach (in its 10 commandments for policy reforms) to be valid for each country in resuming strong and sustainable growth (for an

overview see Gabrisch and Hölscher, 2006). Its failure to achieve the promised goal of growth and catching-up provoked a debate about the concepts of transition. The institutional Washington consensus claimed that institutions matter, and not (only) policy reforms. But its general weakness was the loss of a robust concept of which institutions matter. '*So open ended is the agenda that even the most ambitious institutional reform efforts can be faulted ex-post for having left something out*' (Rodrik 2006, p. 980). East Germany provides a striking example. Unlike other transition economies, East Germany acquired high quality and credible market and also public institutions by virtue of unification. Yet its performance was in many ways similar to that of its comparators in other transition regions (Carlin 2010). The inconclusive results of the two competing concepts with a 'hegemonic' claim (policy vs. institutions matter) led to the concept of growth diagnostics, which aims to overcome the stalemate in international policy debates. Growth diagnostics is to bring the numerous and side by side existent constraints to growth (in policy, in institutions, in geography and resources) into a diagnostic order. Identifying a constraint to be the *binding one* does not exclude other constraints, but sets the agenda for effective action.

The West Balkan transition might provide a useful comparative case study in addressing the question of what is the binding constraint for sustainable growth and productivity enhancing investment of the private sector. The remainder of this study starts with a brief overview on the economic stance of the region (section 2), followed by the methodology of the analysis and a first general result (section 3): it is the high real cost of finance that is the most important actual obstacle to growth and innovation. With its policy-oriented focus the study adds to traditional research on the nexus between finance and growth. But this study takes a specific course: it seeks to evaluate the relevance of finance and its structure against other possible obstacles to growth. In section 4, the scale of the binding constraint faced by the West Balkan countries is further investigated, with the result that the share of non-performing

loans (NPL) is crucial to a revival of credit and improvement of its quality. In section 4.3, I, an empirical examination with panel regressions provides systematic evidence of the impact of NPL and aggregate demand on credit supply and demand. Supported by the results, section 5 concludes on policies.

2. West Balkan countries: lacking catching-up, accumulation of foreign debt, low exports and innovation

Successful catching-up examples are not the usual case in world economic history, but can be thoroughly found, even in Europe. Figure 1 compares a successful and early catch-up case in Western Europe, namely Austria, with that of West Balkan countries. As far a catch-up could be observed for some of the then Yugoslav republics (Slovenia, Croatia, and Serbia), it ended in the early 1980s and discharged in a 10 years period of destruction and decay. A recovery followed after 1994, and ended again in 2008, apparently in the context of the global recession and financial crisis. The entire picture does not suggest any idea of a catching-up process; it seems to be a crisis-recovery-crisis cycle. Not surprisingly, who lives under such circumstances is disappointed with policies and reforms, and this disappointment can always culminate in social unrest.

What is more: the short-living recovery of the West Balkan region was coupled with the accumulation of debt via huge current account deficits (Figure 2). Those deficits in West Balkan countries tended to be higher than in some New Member States (NMS) of the EU, which also lived through a severe transition period. And we find a weak

export base for growth in the region, measured by the share of exports in gdp (Figure 3).

(Insert Figure 1 about here)

(Insert Figure 2 about here)

(Insert Figure3 about here)

The poor economic stance of the emerging markets in the West Balkan region is linked to low or even deteriorating competitiveness of the export industry. We find an appreciation of the real exchange rate (Figure 4) and a relative strong increase in the unit labor costs (Figure 5) and a low level of R&D expenditure in the economy (Figure 6).

(Insert Figure 4 about here)

(Insert Figure5 about here)

(Insert Figure 6 about here)

West Balkan countries, measured by the mostly used indicators, have the lowest innovation potential among former socialist countries (CASE Network Reports, 2007, pp. 76-89) Figure 7 depicts the gross domestic expenditure on R & D (GERD) as percentage of gdp. Two features are apparently striking:

- compared to high competitive Germany, the GERD share is minimal for the West Balkan countries. This might be seen as a typical feature of emerging markets and transition countries at a level of GDP per capita or the share in industry so much

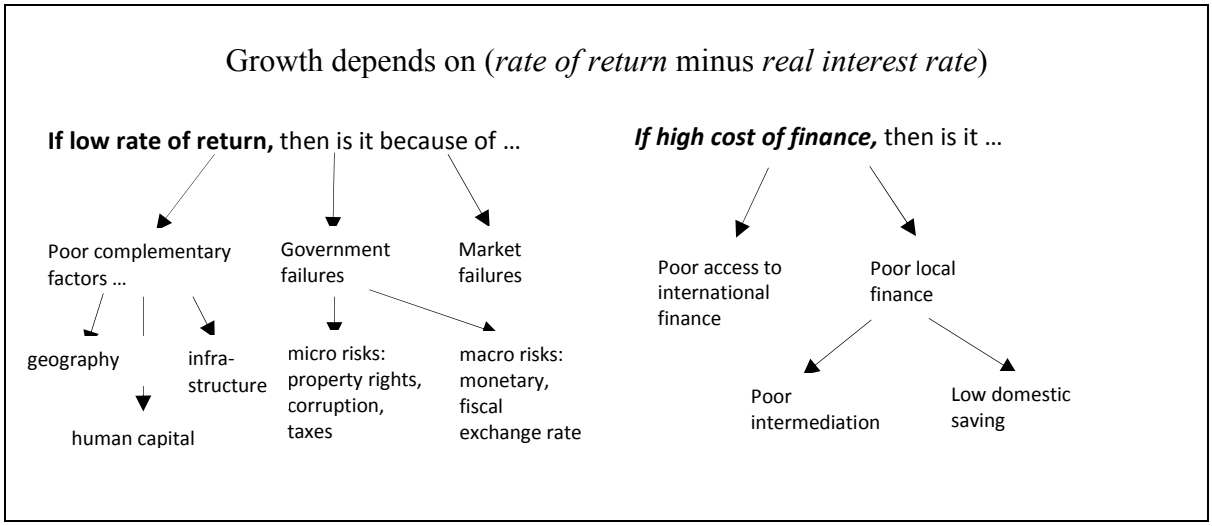
lower than Germany. However, compared with other emerging markets/transition countries, namely the new member states of the EU, and with Turkey as a regional competitor the level is even lower than for those countries in the same period.

- The second striking feature is the diverging path the West Balkan region took since the outbreak of the global financial crisis and the global recession: GERD is falling, while it is strengthening in NMS, and in Germany.

3. What is the binding constraint to growth and competitiveness?

I use the framework of growth diagnostics proposed by Hausman et al. (2006) that tries to find out why private investment in profitable projects is low. The starting point is the standard model of endogenous growth, where innovative activities of entrepreneurs and their cost and financing play a crucial role for the development of an economy. The aim of the framework is to help a policy maker identify priorities for allocating scarce financial resources and attention by pinning down the binding constraint on growth from among many possibilities (Carlin 2010). Then, the framework can be illustrated in a decision tree diagram (Figure 7), which starts with the problem that private investment is not undertaken. There are two possibilities: either the real rate of return is too low with given cost of finance, or cost of finance is too high with the given rate of return. When it is not the low real rate of return, it is finance, which cost is too high. When it is not the poor access to international finance that drives interest rates upward, it is poor local finance, and here: poor intermediation by the banking sector or low domestic savings in banks. By stepwise exclusion of possible barriers to growth, the binding constraint can be pinned down.

Figure 7: *Growth Diagnostics*: What is the binding constraint for growth when private investment is low?



Sources: according to Carlin 2010, and Hausmann et al. 2006.

Growth diagnostics has been used seldom in case of the West Balkan countries. In a study by Sen and Kirckpatrick (2011) on the Kosovo's early years with data from 2004 - 2006, authors found the binding constraints to growth to be the high costs and restricted access to finance, poor provision of public goods and weaknesses in the rule of law. This result seems inconclusive for there are too many binding constraints on the two sides of the decision tree. A related study on Moldova (Stratan and Chistruga, 2012) found the restrictive access to domestic finance responsible for too high costs (interest rates and transaction costs).

The issue of access to finance is a relevant one in recent empirical research. The recent literature uses micro models and micro data, e.g. from enterprise surveys (World Bank, 2009). Also, it centered the relevance of financing small and medium enterprises (SME) and start-ups under the strong impression of divergent competitiveness (for an overview, see Ayyagari et al., 2012). This firm segment is very often the medium of innovation, but faces disproportionately high costs of access to finance and international markets. This research possesses certainly relevance for policy design, however, does not answer the question whether policy measures address the binding

constraint in a country. Finance can be a constraint, but not necessarily the binding one. See again the example of East Germany: With almost unlimited access to public finance, and also to international capital markets, Carlin (2010) concluded that neither government failures nor high cost of finance were the binding constraint for East Germany, it is rather the problem of market failures (on the labor market and the increase in East German wage cost).

Obviously, there are also many constraints to growth and competitiveness in the West Balkan region. The basic question whether cost of finance is too high or whether returns to investment are too low, may be answered with a view at interest rates on long-run credits, which usually serve to finance investment. Generally, nominal interest rates on those loans in local currencies were by large higher (between 6 % in Croatia and 14 % in Albania) on average between 2003 and 2013 than in the Euro area (3.8 %). The interest differential provided a powerful incentive for firms to borrow in foreign currency, mainly in Euro, and contributed to the high euroization in the region's financial intermediation. At first glance, external financing – loans denominated in foreign currency (FX loans) - seemed to be cheap. However, what matters from a competitiveness perspective is the real interest rate on FX loans. Interest on those loans has to be served and re-paid in Euro; hence, the nominal interest rate on Euro loans has to be corrected by the Euro inflation rate. Real interest rates on long-term Euro credits to non-financial corporations were above the real interest rate in the Euro area (Figure 8), and show a trend to stay high after the outbreak of the financial crisis. Real returns on investment need to exceed the real cost for financing, and these returns need to be higher in the West Balkans than in highly innovative Germany. Figure 9 also depicts that – with the exception of Slovenia – real interest rates were lower in the Eastern members of the EU than in the West Balkan region, and they show rather a decrease since 2009. Without neglecting constraints in many fields – micro risks, government failure, market failure, low human capital or even a weak geographical location, the *binding* constraint is rather in the financial sphere – despite liberalization of capital markets, the arrival of

international (EU-) banking groups in the region and their overtaking of the local banking sector. The next question is how it can be that real cost of financing is so high when access to foreign financing is almost free and might even substitute for domestic savings? The probable answer reads: the binding constraint is rooted in poor local finance and its intermediation capabilities.

(Insert Figure 8 about here)

4. What is the scale of the problem faced by the West Balkan countries?

4.1 Why lending is a *systemic* constraint in the West Balkans

For the identification of the actual binding constraint, it is useful to distinguish roughly between two periods, in which both of them the binding constraint may have changed. The region recorded a credit boom until September 2008 with temporarily and exceptionally high growth rates in some countries (Montenegro). In this period, EU banking groups engaged in the region and hold now the majority of the local banking sector (see Milojevic und Dimitrijevic, 2013, for Serbia). EU banking groups started to reduce local engagement in 2009; the vertical line in Figure 9 marks the outbreak of the global financial crisis. Since then and until the second quarter of 2013, lending decreased in nominal terms, and probably diminished in real terms. Local banks raised interest rates and restricted the qualitative credit conditions (maturity, size, currency, collaterals). From the empirical point of view it is not easy to disentangle credit supply and credit demand, the latter reflecting the presence of investment projects with expected high returns. Traditional surveys reveal more evidence for a credit supply constraint than for low credit demand (Vienna Initiative, 2013); a simple approach to identify both factors is used in section 4.3.

(Insert Figure 9 about here)

Throughout the entire period, local real interest rates were quite higher than in the euro area, and we may assume the presence of severe *systemic* constraints that drive up cost of financing in both tranquil and turbulent market periods. The usual suspects for systematically excessive interest rate are: the lack of market finance, the depths of financial intermediation, and low competition among banks.

Financing in the West Balkan region is based on debt financing, while market financing is relatively low (Table 1). However, this is not a typical sign of the West Balkan countries. All European transition countries – the Eastern EU members as well as the West Balkan countries – follow the West European model of debt financing. Even in the presumably most competitive European Economy – Germany – stock market capitalization is at 44 % of GDP only, while the financial sector's assets are at about 243 %. But one can stress that the low level of financial intermediation is also low, despite the fact that debt financing dominates. Deep financial intermediation provides more liquidity to the financial sector and drives down lending rates for the corporate sector. Again, low financial intermediation is typical for emerging market economies including the NMS from Eastern Europe, and there must be another factor for higher financing cost even in Euro denominated credits in the pre-crisis period. The difference was apparently the structure of financial intermediation. Debt financing in the West Balkan region is excessively dominated by bank lending compared to the other former transition countries, and, obviously, in the euro area. Debt financing through corporate bonds and other securities, realized by funds, insurances or pension funds, is less developed.

(Insert Table 1 about here)

Another usual suspect for high financing cost – weak competition among banks – is not a feature throughout the region. The Boone Index signals even lower competition than in the euro area (Table 2). The Boone index indicates highest competition for Albania, and the weakest in Montenegro. This indicator (like the Lerner Index) might measure market power better than the Hirschman-Herfindahl Index (HHI), which does not capture direct lending of international banks. Since direct lending seems to be rather low in the West Balkans, the HHI is not necessarily less meaningful than the Boone Index With respect to the HHI, we may identify two extreme cases: with 8 commercial banks in the Kosovo, their market power is high. This coincides with a high lending-deposit spread, hence, with high cost of borrowing for corporations. On the other side, competition is strong in Serbia with 33 banks. One cannot exclude that Serbian banks did not obtain a risk adequate lending rate in the boom period until 2009, and tried to achieve profits through market shares.

(Insert Table 2 about here)

4.2 Why lending became more expensive in the recent crisis: the *NPL* problem

It is a striking feature that long-run real lending rates fell to a historical low level in the euro area, while they remained high in the West Balkan region; some countries recorded even a rise since 2011. The obvious reason – also mentioned by the local banks - is the size and

sharp increase of non-performing loans (NPL) in the banking sector – claims overdue more than 90 days.[1] The NPL share in total credits increased since 2009 drastically (Figure 10) in all West Balkan countries, and in Slovenia and Hungary. At least in Slovenia, it coincides with recently increased real interest rates. Future credit constraints expected by the banks in the West Balkan region are fueled by a further increase in NPLs due to a high share of claims overdue between 31 and 90 days, if no restructuring happened.[2] Commercial banks with high or increasing NPL raise their loan-loss reserves, suffer from higher refinancing cost, have to bear cost of depreciation, and therefore, raise their lending rates. Figure 11 shows the correlation between long-run nominal interest rates and the level of NPLs.

(Insert Figure 10 about here)

(Insert Figure 11 about here)

Obviously, the fall in economic activities in major export markets is a major culprit (Jakubik und Reiniger, 2013). However, these reasons are out of reach for the local governments and national banks. For policy action, country specific causes matter. For example, payment arrears of the public sector vis-à-vis the private corporate sector played a major role for the NPL increase in Albania between 2009 and 2012. We neglect this issue in the study, and focus on three cross-country factors, which appear to be of particular relevance.

[1] Claims overdue 90 days and more are classified as non-performing according to international standards. However, classification suffers from different definitions in countries (Barisitz 2011).

[2] This share has reached 20 % of total claims in Serbia and in Montenegro in 2012, and it reached 8.3 % in Albania in March 2013 (The Worldbank, 2013).

- The vulnerability of a loan portfolio depends on *risk analysis* prior to lending. Risk management was apparently poor throughout the region in the boom period, although international standards were implemented with the arrival of international banks in the region. But the standards were affected because credit committees have sought to gain market shares in a situation where credit registers were still underdeveloped. Consequently, loans were granted to new clients with an unknown credit history. The situation has improved since public or private registers are now present in all countries. In Serbia, high bank competition contributed to lending where the interest rate was not appropriate to the risk of projects financed. Insofar, a number of 33 banks seem too large for a relatively small economy like Serbia.

- A lack of *currency hedging* appears to have been a central local reason source on inefficient FX lending structure in Albania, Croatia and Serbia – e.g. in terms of mortgage lending to private households, which do not earn in foreign currency. According to the Albanian national bank, almost 49 % of all bank credits were not hedged against exchange rate instability. The Croatian national bank reports even a share of 93 % for the first quarter 2013. FX hedging requires forward markets, which lead to risk sharing between contract partners. Forward markets are underdeveloped in the West Balkan region.

- The lack of *markets for NPLs* is obvious. In developed countries but also in Poland, Asset Management Companies (AMCs), dealing with doubtful bank portfolios, play a major role in NPL resolution and recovery. These markets are still in a very embryonic state in the West Balkan countries due to the lack of transparency in NPL classification and the lack of rules for international AMCs.

- *Bail-out expectations:* The inactivity of the commercial banks to NPL recovery and resolution is flamboyant. Lenders prefer to wait for government bail-outs of overdebted corporations and households. This behavior is partly rooted in weak law enforcement, when lenders have to collect collaterals. However, completely irrevocable debt, which requires liquidation of the borrower's equity, involves only a part of NPLs, and a large part could be recovered with a temporary adaption of credit conditions. Governments and regulation authorities have encouraged bail-out expectations by their forbearance, and created a new wait-and-see option for banks. Governments launched enterprise restructuring programs (Serbia), and banks might expect governments rather ready to restructure weak banks at high fiscal costs like in some EU countries, rather to be hustled to own restructuring plans. Regulations authorities in some countries (Serbia) softened the classification of assets and the rules for dealing with non-performing loans.

4.3 NPL and lending. A regression analysis with panel data

Whether and how strongly increases in NPLs affected short-term lending, or quite reverse: how a reduction in NPLs might support the revival of credit, is the subject of panel data estimations and time series estimations for selected countries. The dependent variable is the annualized quarterly growth rate of lending to non-financial corporations from 18 emerging markets in Europe[3] between the first quarter 2007 and the first quarter 2013. The explanatory variable of the supply side is the share of non-performing loans in total loans in their first differences in three variations: total non-performing loans in total loans Δ(NPL), non-performing loans to financial corporations in loans to financial corporations Δ(NPLCS) and non-performing loans to private households in loans to private households Δ(NPLPH). The

[3] Bulgaria, Bosnia and Herzegowina, Czech Republic, Estonia, Croatia, Hungary, Kazachstan, Latvia, Lithuania, Mazedonia, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

real GDP rate of change stands for the economy's demand side. Variables are at least one-period lagged in all estimations to avoid endogeneity ('credit induces growth or non-performing loans'). Data were collected from national banks and partly provided by the wiiw. Panel regressions entail country dummies (fixed effects). In order to correct for possible distortions from unbalanced panel estimations, cross-section weighting is applied. Table 3 reports the results of four different estimations.

The models (I and III) cover the whole time period. Obviously, there is no significant impact of a rise in non-performing loans on the rate of change of credit to the corporate sector for even three-lagged periods, although the expected negative sign appears. But the lagged real gdp rate of change is positive and highly significant, underling the idea that at least until the end of the credit boom in 2009, the aggregate demand variable exerted the dominant influence. The Chi-sq. stat. suggests the superiority of the fixed effects model. A look at the fixed effects show that the value for Turkey is very high in Model I, and might bias the estimation results. Model II excludes Turkey, and the quality of the parameters slightly improved (a decline of the Standard error of regression). Models II and IV shorten the investigated period to the first quarter of 2010 and the fourth quarter of 2013. Assumingly, this is the period where the level and increase in NPLs should affect the credit supply. Model II includes Turkey, Model IV not. In both models, the size of the coefficient to the real GDP variable declines substantially, but remains significant. The coefficient to one of the NPLCS variables – in both cases the two-period lagged data – still is negative and now significant. What is more, the size of the coefficient exceeds the size of the credit demand variable. Estimates with Turkey show a stronger impact, excluding Turkey; the Chi-squared statistics show that a random effects model should be preferred. However, random effects estimations yield minimum R squared only. Results apparently illustrate the change of supply and demand constraints in the crisis period since 2010.

(Insert Table 3 about here)

The interplay of aggregate credit demand and supply factors in selected countries is shown in Table 4, although the number of observations is borderline for meaningful interpretations (number of observations for the other countries is even lower) Nevertheless, some differences become apparent. In the case of Poland, the inclusion of a dummy variable since the first quarter of 2010 was necessary to capture a break in the data; so, results are stable tested with CUSUM and CUSUM squared. The rate of change of credits seems to be highly path dependent. Macedonia is the only country in the West Balkan region, where 25 observations are available. We find negative and significant impact of an increase in NPLCS on credit supply throughout the entire period - stronger than on average as we seen in panel estimations. This result holds also for Poland, but not for the Czech Republic and Hungary. The models also test the possible impact of a change in NPL to private households. The idea is that an increase in NPLCS might also affect credit to the corporate sector, for banks might not discriminate between both sectors. Such an effect can be assumed for Hungary only. The problem of Euro denominated mortgage credits to the private household sectors seems to be more ardent in Hungary than in the other countries. In Macedonia, an increase in non-performing loans to the private households yields the somewhat surprising result of an increase in credit supply to the corporate sector, while an increase in NPL to the corporate sector depresses credit supply. This might be understood as some kind of redirecting: when more claims to the privat households become overdue, banks redirect credit to the corporate sector.

(Insert Table 4 about here)

5. Conclusions and policy measures

These considerations lead me to the conclusion that the actually binding constraint to investment and improvements in competitiveness is the high and still increasing share of

NPLs in the region. Obviously, there are also systemic constraints in the financial sector. They are due to the level of economic development and transition and will disappear rather in the long-run. But the main issue for growth enhancing policies in the West Balkans is the prevention of a further rise in NPLs. This study provided systematic evidence of the negative impact an increase in NPLs can have on credit. The disregard of the problem may damage the chances for innovation and long-run growth. Inaba et al. (2005) charged the authorities' forbearance against banks in their unwillingness to NPL resolution for the so-called lost decade in Japan.; Krueger und Tornell (1999) argued similarly in the case of Mexico's only slow recovery. Hence, the primary goal of local economic policy in the West Balkans ought to be the cutback of non-performing loans to the pre-crisis level during three or four years. The Turkish example (2001-2004) demonstrated that this is possible in few years only. The recent Irish example presents a decided line of action by the central bank, and the most recent example of Slovenia offers additional insights how to improve the quality of assets in the banking sector. In face of the the bail-out expectations in the banking sector the core of an appropriately tailored approach should consist of incentives and also sanctions that prompt banks to solve the NPL-problem using their own capabilities, and it seems not necessary to involve a large amount of government money. It is the regulation authority that should take the main responsibilities:

- Raise mandatory provisions to loan-loss reserves. Since reserves are non-interest bearing, banks have a disincentive to accept a further increase in their npl-portfolio.
- Set quantitative and time targets for the restructuring of their npls (Irish example). If banks do not obey the targets, penalties and other sanctions should be applied.
- Insist on the economic evaluation of npls. The classification of claims according to number of days overdue is not enough. This aims at a new classification of npls. Such

an assessment would allow a precise application of various instruments for npl-recovery like temporary interest reductions, maturity prolongations.

- Evaluate the capital need for banks vs. own capabilities (keyword: Asset Quality Review – AQR): the regulation authority should assess whether assets, securities and provisions of banks are risk appropriate. Regulation authorities should apply standards recently developed and discussed at the EU level. Stress tests in Slovenia should provide an example. Stress tests already applied in all West Balkan countries might not suffice since they mainly base on a top-down approach (a macroeconomic shock) and should include also a bottom-up approach.
- It is necessary to improve the transparency of balance sheets of the banking sector including a standardization of the npl-classification – along with the standards of the European Banking Authority (EBA) developed in 2013.

Additional measures include legislative acts, among them a reform of the regulations for derivative markets; more transparency would help that international AMC enter the market. Further legislative measures would include the implementation of a private insolvency law and out-of-court settlement.

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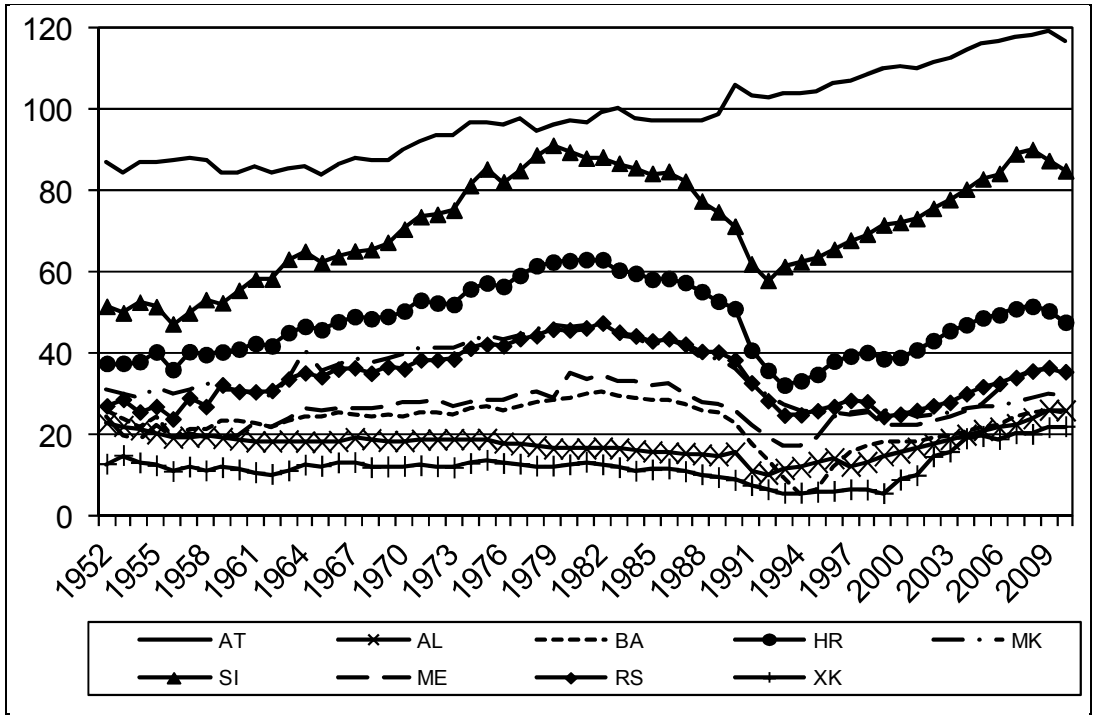
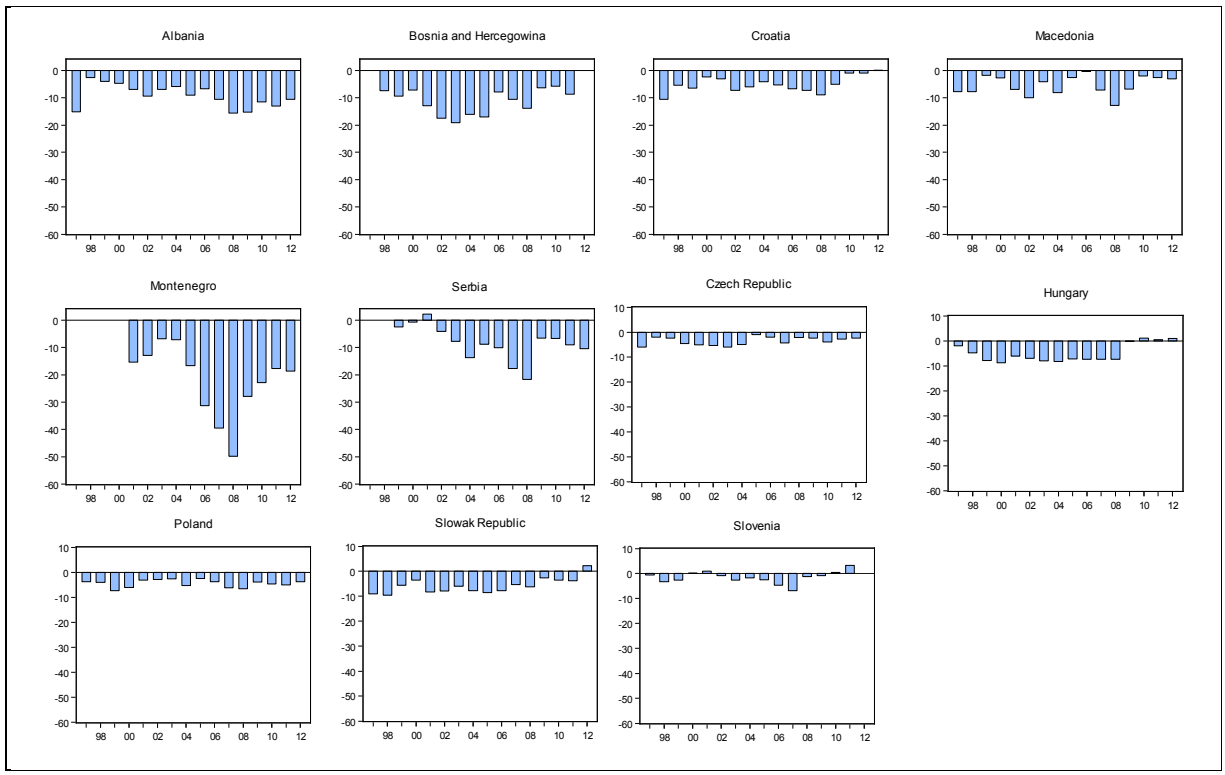
WIIW – Wiener Institut für Internationale Wirtschaftsvergleiche: http://data.wiiw.ac.at/

Figure 1: GDP per capita in PPP in % of the German level (1952-2010)



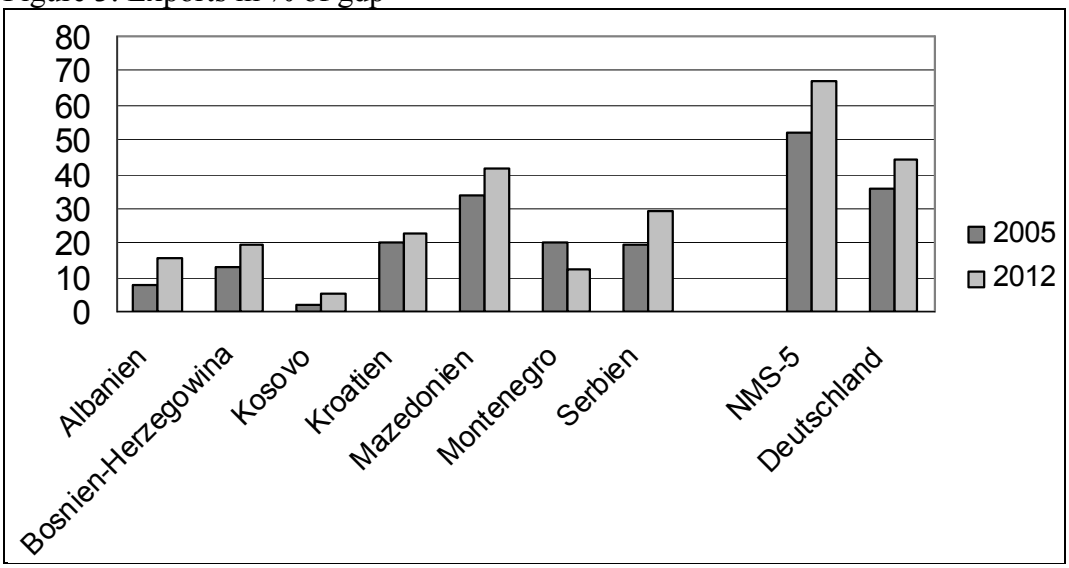
Sources: Maddison Project Database, wiiw Database, inter and extrapolation by the wiiw.

Figure 2: Current account balance in % of GDP



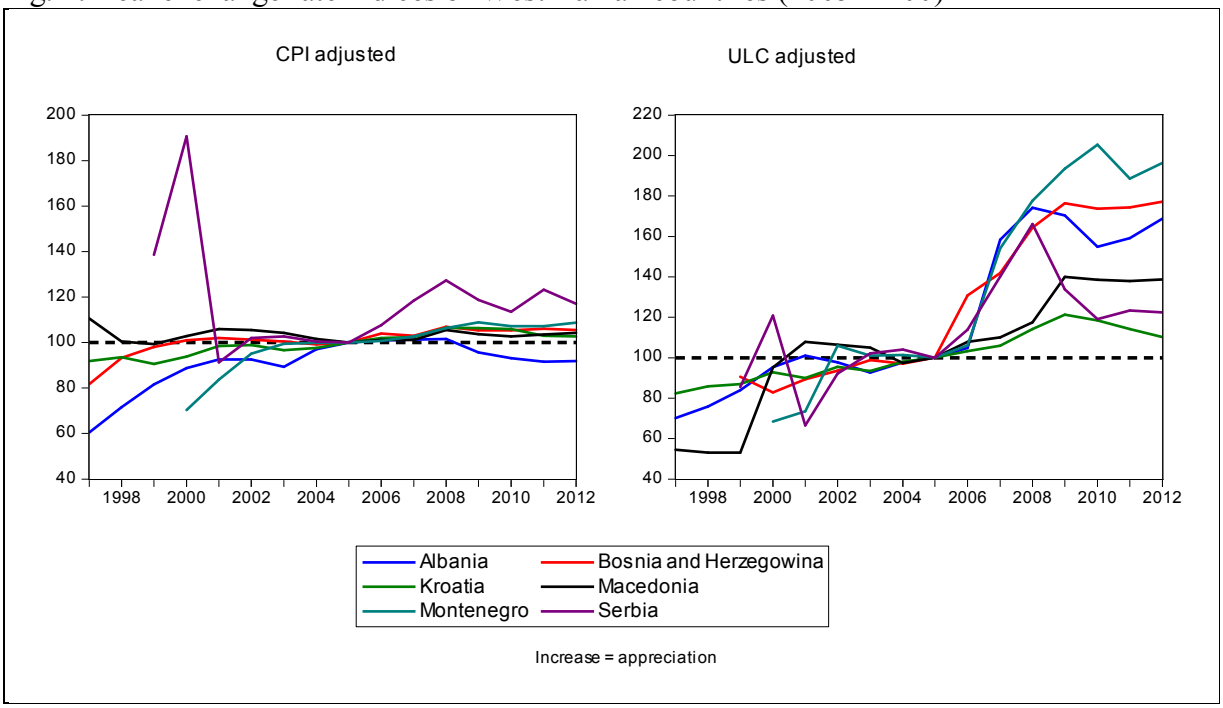
Source: wiiw-database

Figure 3: Exports in % of gdp



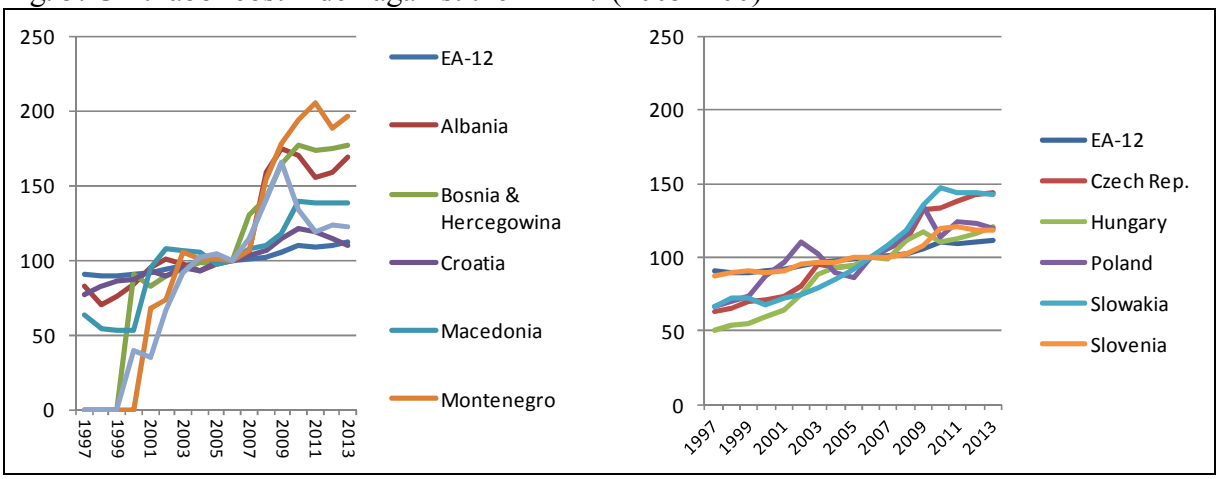
Source: wiiw-database.

Fig. 4: Real exchange rate indices of West Balkan countries (2005 = 100)



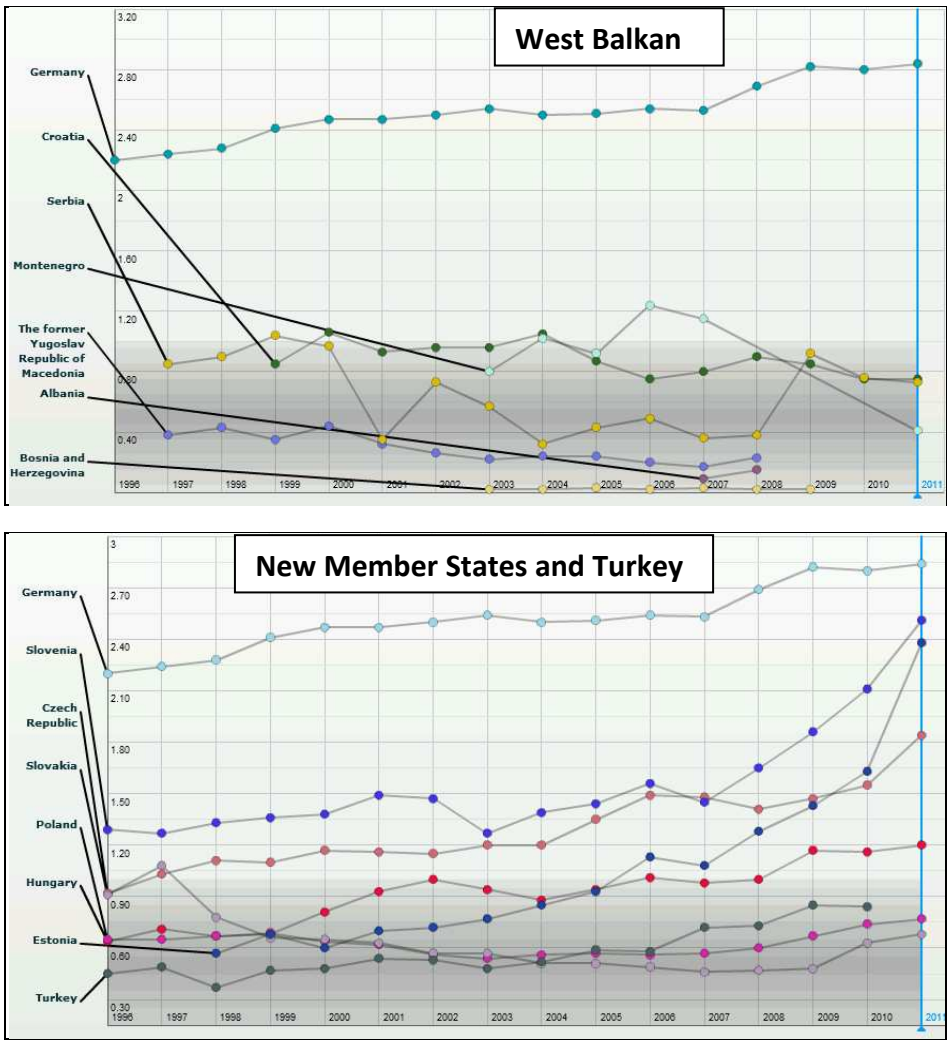
Source: wiiw;

Fig. 5: Unit labor cost index against the EA-17 (2005=100)



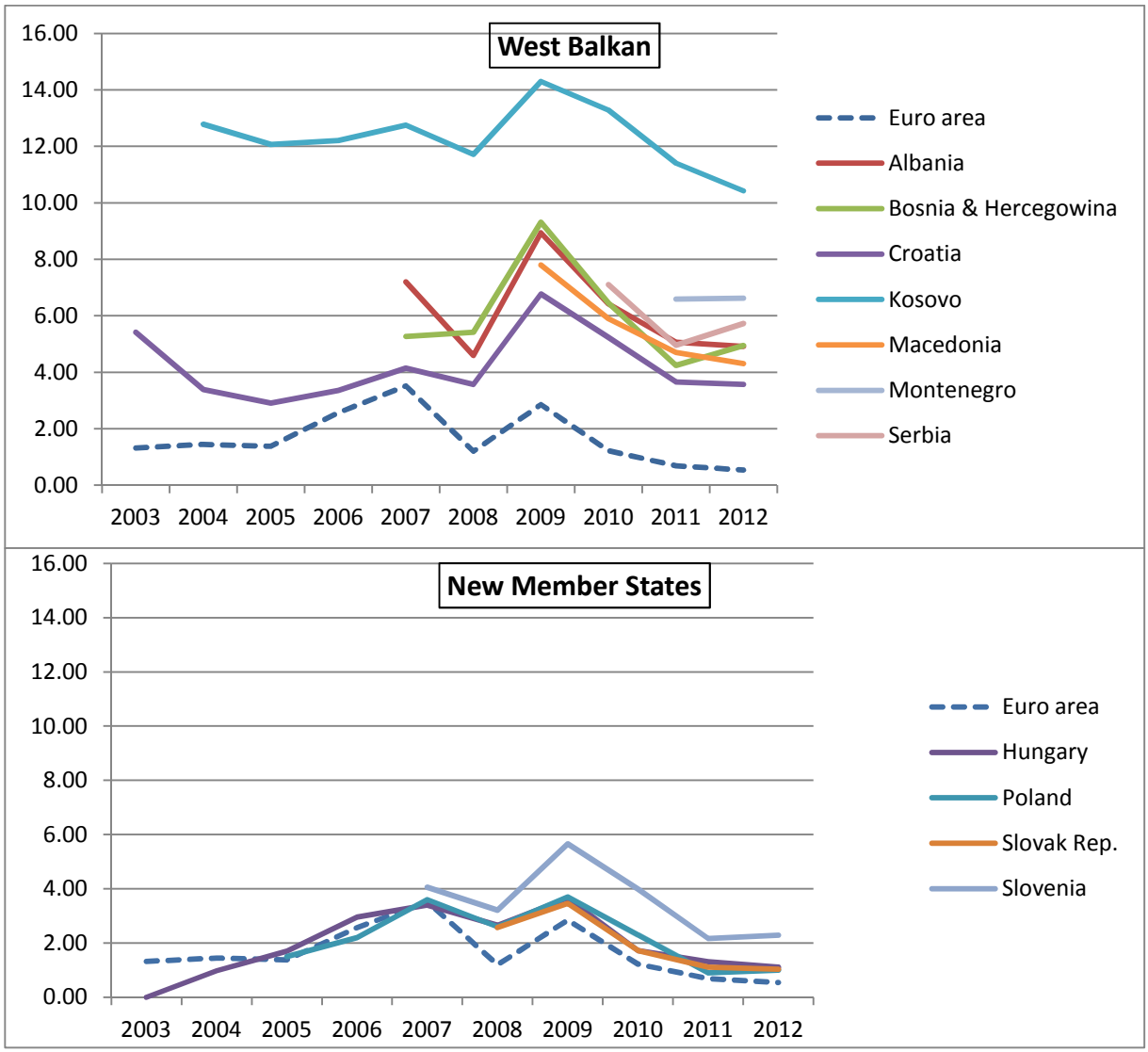
Sources: wiiw; Eurostat.

Fig. 6: GERD as a percentage of gdp compared to Germany



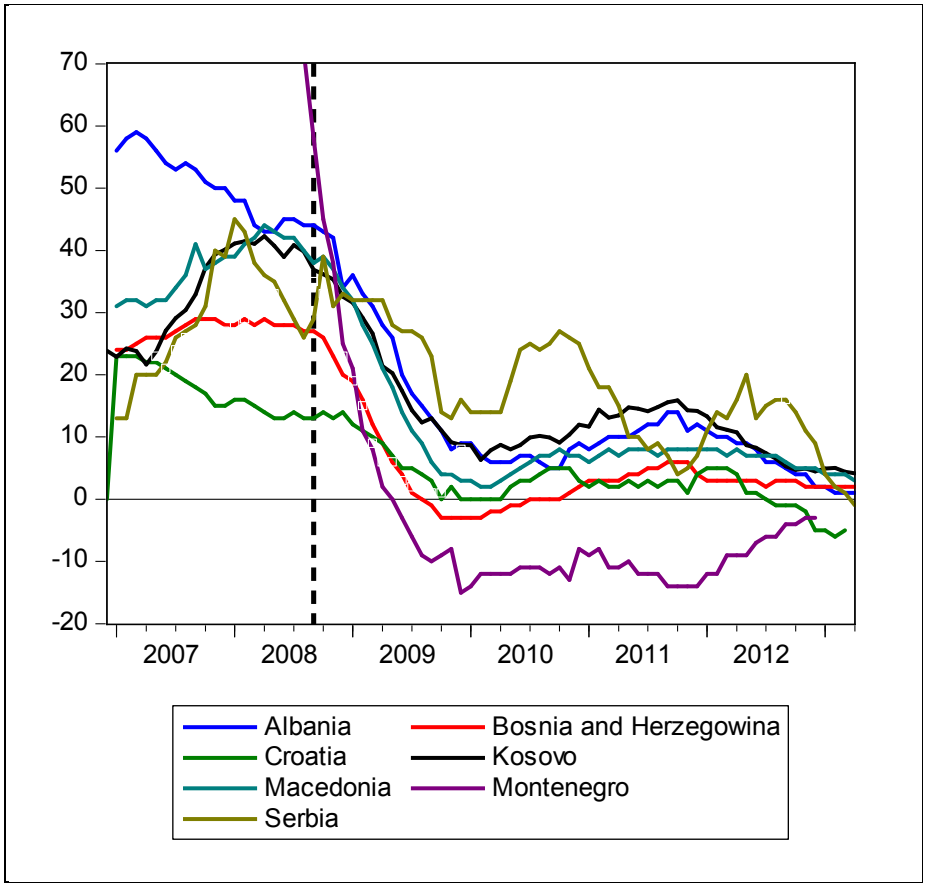
Source: Unesco Institute for Statistics (2014): online http://data.uis.unesco.org/# (21.2.2014).

Figure 8: Real interest rates[a] on long-term loans (new business)[b]



[a] Nominal interest rate of local Euro loans minus the Euro area inflation rate (HCPI). [b] In most cases from 1 to 3 or 5 years various periods for initital rate fixation; for Bosnia and Herzegowina: outstanding loans; Montenegro: outstanding loans and new business; Serbia: non-financial corporations only.
Sources: National banks, Eurostat; author's calculations.

Fig 9: Outstanding credits of the commercial bank sector to the non-financial private sector (monthly annualized rates of change)



Source: wiiw- database; author's presentation.

Table 1: Debt vs. market financing and structure of debt financing (averages 2007-2011)

	In % of GDP		Shares in % of all financial sector assets				
	Financial sector assets	Stock market capitalize-tion	Commer-cial banks	Central bank	Funds	Insurances	Pension funds
Albania	64.7	n.a.	89.5	10.5	0.0[a]	2.2[b]	0.0[c]
Bosnia and Herzegowina	60.8	k. A.	86.7	0.2	6.9	6.3	n.a.
Kosovo	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Croatia	105.6	54.8	77.7	0.2	5.1	8.0	9.0
Macedonia	49.6	19.5	85.9	2.6	1.8	6.0[b]	3.6[c]
Montenegro	73.1	81.9	100.0	0.1	0.0	0.0	0.0
Serbia	50.4	32.1	91.5	0.8	n.a.	7.1	0.6
NMS-5							
Poland	62.8	33.3	53.2	0.0[e]	9.1	16.6	21.2
Slovak Republic	80.3	5.9	76.1	0.0	5.9	10.3	7.7
Slovenia	116.2	29.9	81.2	0.3	4.9	12.0	1.5
Czech Republic	57.8	27.0	66.1	0.3[d]	5.0	18.9	9.7
Hungary	80.6	23.0	59.6	1.2	15.0	11.0	13.2
EA (11)[d]	*284.8*	*54.0*	*60.2*	*0.9*	*13.8*	*17.0*	*8.2*

[a] 2009-2010 [b] 2009, [c] 2007-2010, [d] Rounding errors due to different period accruals. [e] 2008.

Sources: Federal Reserve Bank of St, Louis data base online; access14 October 2013; author's calculations.

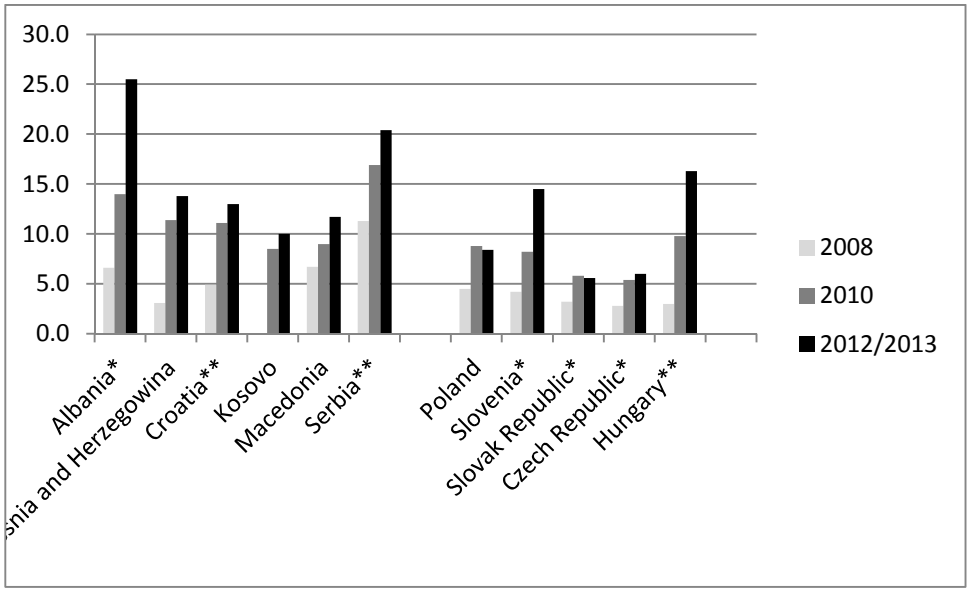
Table 2: Banking system: conzentration and profitability indicators

	Concentration		Lending-deposit rate	Profitability	
	Boone-Index[a]	Hirschman-Herfindahl-Index[b]		Return on Equity	Return on Assets
	Ø 2007-2010	*2010*		*Ø 2007-2011*	
Albania	-0.013	1400	6,7	14,39	1,3
Bosnia and Herzegowina	-0.036	999	4,2	4,1	0,4
Kosovo	k. A.	2000	10,3[d]	22,2	1,0
Croatia	-0.057	1362	7,8	8,3	1,1
Macedonia	-0.064	1578	3,5	9,2	1,2
Montenegro	-0.090	1467	6,4[e]	-4,5	-0,5
Serbia	-0,089	629	7,2	5,8	1,2
NMS-5					
Poland	-0,078	568	k. A.	12,6	1,2
Slovak Republic	0,035	1221	k. A.	10,6	0,9
Slovenia	-0,017	1115	3,2[f]	1,9	0,2
Czech Republic	-0,074	999	4,7	18,4	1,5
Hungary	-0,062	872	2,5	11,3	1,1
EA (11)	-0,041	1099	k. A.	-5,8	-0,2

[a] Unweighted average; [b] New Member States and EA countries: 2012. [c] June 2012; [d] 2008-2011; [e] 2011-2012; [f] 2008-2010;

Sources: Boone-Index and profitability indicators: Federal Reserve Bank of St. Louis data base online, accessed: 20 January, except Kosovo (World Bank (2013); Hirschman-Herfindahl-Index: national banks, European Central Bank online, access 20 October 2013. Montenegro, lending deposite rate: Central Bank of Montenegro.

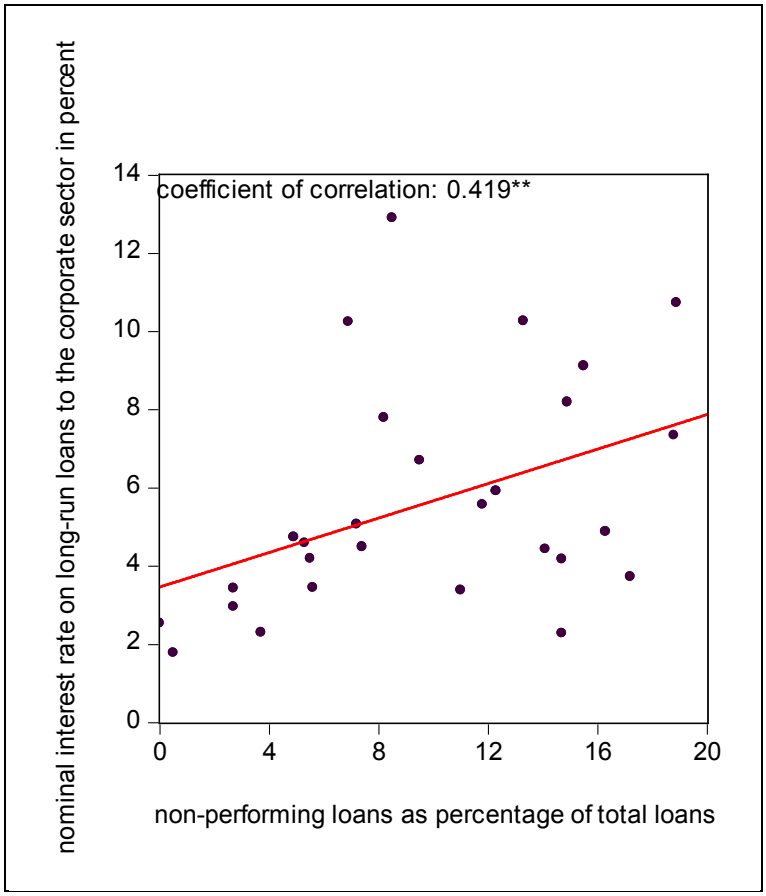
Figure 10: Non-performing loans in % of all credits of the banking sector



[*] 2008 and 2010 on 1st January; 2013: 1st March [**] March 2012. [***] 1st January 1011.

Quelle: Federal Reserve Bank of St. Louis data base online, access: 14th October 2013 (data until 2010); wiiw-database. Kosovo (20010 and 2012): World Bank, 2013.

Figure 11: Non-performing loans and nominal long-term interest rates 2011/2012[a] (28 countries of the EU and the West Balkans



Significance levels: *** 1 %, ** 5 %, * 10 %.

[a] NPLs end of 2011, nominal interest rates denominated in local currency: annually 2011 or 2012; various lending characteristics.

Sources: Author's calculation based on data from Eurostat, Ameco (Malta and Portugal) and national banks of the Westbalkan countries.

Table 3: Estimation results: NPL and credit to non-financial corporations (Panel); in brackets: lagged period

Period	2008Q1 2013Q4	2010Q1 2013Q4	2007Q4 2013Q4	2010Q1 2013Q4
Variable	Coefficient			
Δ(NPLCS(-1))	-0.018	-0.224	-0.012	-0.190
Δ(NPLCS(-2))	-0.249	-0.408**	-0.209	-0.354*
Δ(NPLCS(-3))	-0.106	-0.239	-0.092	-0.198
GDP(-1)	0.779***	0.212**	0.612***	0.120
Constant	6.516***	4.252	5.223***	2.457***
	Fixed Effects (Cross)			
_Croatia	-3.162	-1.694	-2.266	-0.194
_Macedonia	3.482	1.977	5.146	3.906
_Serbia	6.123	6.710	7.375	8.543
_Bosnia & Herzegowina	-2.567	-0.026	-1.349	1.655
_Bulgaria	7.202	-0.091	8.739	1.710
_Czech Republic	-3.266	-2.720	-1.926	-0.917
_Estonia	-6.276	-8.558	-4.983	-6.391
_Hungary	-4.909	-7.309	-3.806	-5.623
_Latvia	-7.68	-14.047	-6.612	-12.024
_Lithuania	-6.937	-10.797	-5.552	-8.806
_Poland	-0.329	-1.048	1.522	1.047
_Romania	-2.810	0.808	-1.323	2.615
_Slovak Republic	-3.473	-3.615	-1.792	-1.637
_Slovenia	-9.884	-7.454	-8.814	-5.908
_Russia	11.645	9.802	13.31	11.901
_Kazakstan	-0.033	2.427	2.053	4.721
_Ukraine	2.746	6.287	4.062	8.035
_Turkey	20.138	29.744	---	---
	Weighted Diagnostic Statistics			
R-squared	0.472	0.707	0.361	0.682
Adjusted R-squared	0.439	0.682	0.320	0.654
S.E. of regression	10.177	6.045	10.000	5.529
F-statistic	14.460***	28.311***	8.936***	24.752***
Chi-sq.stat	11.082**	9.124*	11.438**	3.281
Number of observations	362	268	338	252
Number of cross-sections	18	18	17	17

Significance levels: * 10 %, ** 5 %, *** 1 %

Table 4: Regression results for selected countries (OLS); in brackets: lagged periods

Country Variable	Macedonia	Poland	Czech Republic	Hungary
		Coefficient		
(Δ NPLCS(-1))	-5.837***	-2.140**	-0.541	-0.900
Δ(NPLCS(-2))	-4.958***	-0.916	-1.467	-0.227
Δ(NPLPH(-1))	7.200***	-1.394	-1.565	-4.766***
GDP(-1)	1.087**	1.053**	0.538***	0.240***
CSCR_PL(-1)	--	0.787***	0.712***	0.735***
DUMMY_PL	--	-0.318	--	--
Constant	10.111***	-1.946	0.884	4.576***
		Diagnostic statistics		
R-squared	0.824	0.952	0.963	0.795
Adjusted R-squared	0.789	0.935	0.953	0.738
S.E. of regression	5.228	2.869	1.643	4.339
F-statistic	23.381***	59.213***	94.996	13.953***
Durbin-Watson stat	1.293	1.679	1.933	1.914
Number of observations	25	25	24	24

Significance levels: * 10 %, ** 5 %, *** 1 %