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Article

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GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

The effect of financial development and remittances on economic growth

Naqeeb Ur Rehman^{1*} and Eglantina Hysa²

Abstract: The purpose of this study is to examine the effect of financial development and remittances on economic growth across six Western Balkan countries (WBC) using panel data from 2000 to 2017. Previous studies have neglected the effect of financial development and remittances on economic growth with regard to WBC. Based on system GMM analysis, we found that financial development (broad money stock ratio) and remittances shows positive impact on economic growth across WBC. However, the interaction of financial development and remittances provide a significant and negative effect on economic growth. The results imply that remittances together with financial development substitutes the economic growth of WBC. In order to expand the financial system in the WBC, policies targeted to develop the non-deposit financial institutions and using the narrow interest rate margin policy to encourage investment and thus high economic growth.

Subjects: Economics; Macroeconomics; Industrial Economics; Labour Economics

Keywords: financial development; remittances; economic growth

1. Introduction

Numerous endogenous growth models stated that financial development is a primary driver of economic growth. Previous studies (Creel et al., 2015; Samargandi et al., 2015) measured financial

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PUBLIC INTEREST STATEMENT

The purpose of this study is to examine effect of financial development and remittances on economic growth across Western Balkan countries. Numerous studies shows that countries with high and deeper financial system tend to grow faster than countries with low and shallow financial system. In the past, ex Yugoslavian countries (Bosnia, Kosovo, Montenegro, North Macedonia and Serbia) and Albania are aspiring to be the member of European Union. However, these countries are facing several obstacles such as low saving rate, high interest rate margin and high volume of non-performing loans result in low output. This empirical study focuses the financial development across these six countries using multiple indicators such as broad money stock, domestic credit to the private sector, interest margin and remittances effect on growth. Overall, this study found that these countries have shallow financial system due to under-develop non-bank institutions which result in low growth.

development by using multiple proxies such as saving ratio, domestic credit to the private sector, market capitalization and the ratio of quasi-money (M2/GDP). In the case of rich countries, there is a somewhat consensus in the empirical literature that financial liberalization (the removal of cross border lending barriers) and the interest rate liberalization (more autonomy to commercial banks for pricing their loans and deposits) trigger economic growth by way of an effective banking system (Inklaar et al., 2012). However, the benefits of financial liberalization are imprecise and insignificant across developing countries due to shallow financial system (less developed non-deposit taking institutions) and the shortage of skills generally (Odhiambo, 2009; Stiglits et al., 2006). Our empirical paper provides a step forward to examine the effect of financial development and remittances on economic growth across the Western Balkan countries (WBC). These countries are Albania, Bosnia, Macedonia, Montenegro, Kosovo and Serbia and these six countries are aspiring to be the member of European Union (EU).

After a decade of conflict, WBC experienced robust economic growth by transforming into market based economies and prioritized the stability of macroeconomic indicators (unemployment and inflation) in their economic agenda. Nevertheless, the financial system of WBC are facing numerous challenges, for example, the financial system is shallow (mostly bank-based), the financial intermediation remains low and the depth of the financial sector is predominantly measured by the private credit which is nearly 45% of the GDP and it is even lower for Kosovo and Albania. On the other hand, the presence of foreign banks across WBC enhance the efficiency of the financial sector, but it also increases the risk of external shocks. For banking institutions, short-term deposits are the major source of funding which is nearly 24% of the total deposits and the long-term financing represents approximately 75% of total loans (see the report of World Bank, 2016). Regarding the capital markets, the stock markets across WBC (except Kosovo and Albania) are shallow in terms of trading and few companies are listed on the stock markets. Concerning debt financing, the corporate bonds market is low in size compared to government bonds. Further, WBC are dependent on remittances. These remittances finance domestic investment and drive economic growth. For example, this region had received remittances nearly of US\$ 8.6 billion in 2015 and such an external source of capital is a backbone to the economies of WBC.

Not surprisingly, this region of Europe is facing several economic challenges. High-income inequality and low saving rate, the lack of access to credit and soaring volume of non-performing loans, large current account deficits and high unemployment rate result in sluggish economic growth (Andersen et al., 2016; Osbild and Barlett, 2018; Bolle & Meyer, 2004; Josef & Ali, 2002; Murgasova & Miniane et al., 2015; Valle et al., 2018; Will. & Prica, 2016). Concurrently, these countries are striving for EU membership. Although the EU demanded further economic, judicial and political reforms and controlling the organized crimes. Concerning the contribution of this study, countless studies (Cojocar et al., 2016; Kalaitzoglou & Durgheu, 2016, 2016; Petkovski & Kjosovski, 2014) investigated the financial performance of European countries. To date, very few studies have assessed the effect of financial development and remittances on growth related to this part of Europe (WBC). Take for example, the empirical study of Petkovski and Kjosovski (2014) somewhat failed to examine the interactive effect of financial development and remittances on economic growth across WBC. Another study by Jushi et al. (2021) on WBC found an insignificant effect of remittances on growth. To the best of our knowledge, previous studies (e.g., Cojocar et al., 2016; Jushi et al., 2021) have provided narrow empirical analysis regarding the effect of financial development and remittances on economic growth across WBC. This study is one-step forward to examine the effect of financial development and remittances on economic growth and examine their interactive effect on growth.

The structure of the paper as follows: Section 2 reviews the empirical literature. Section 3 presented the methodology (source of data) and the regression analysis. Lastly, Section 4 concludes with policy implications.

2. Literature review

2.1. Financial development and economic growth

Numerous studies (Caporale et al., 2015; Colombage & Halabi, 2012; Goldsmith, 1969; Kattel, 2010; Nyasha & Odhiambo, 2018; Shaw, 1973; De Gregorio et al., 1995) explored the link between financial development and economic growth. The empirical literature distinguished the relationship between financial development and economic growth using two major propositions such as supply-leading and demand-following hypotheses. If financial development promote economic growth known as supply leading hypothesis and if economic growth accelerate the financial development called demand-following hypothesis (e.g., Demetriades & Hussein, 1996; Greenwood & Smith, 1997). Alternatively, these two hypotheses suggested that both variables have reverse causality. The panel study of Apergis et al. (2007) on 65 OECD and non-OECD countries; Colombage and Halabi (2012) panel study on emerging economies (Korea, Indonesia, Thailand, etc.); Sethi and Acharya (2018) study on 31 developed and developing countries; and other time-series studies (e.g., Agbetsiafa, 2004; Khalifa Al-Yousif, 2000) assessed the reverse causality between financial development and economic growth. Further, Adu et al. (2013) stressed financial development positively affects economic growth. They found that domestic credit to the private sector accelerate economic growth, however, the broad money stock ration (M2/GDP) showed no association with economic growth. However, our study is beyond the scope of a bi-directional link due to lack of data across WBC.

The study of Koivu (2002) on 25 transition economies identified that financial development (domestic credit to the private sector) has no effect on economic growth. While, Antoshin et al. (2017) panel study on 55 countries showed that increase in the flow of bank credit to the private sector accelerates the economic growth by using system GMM estimation. The time series study of Hassan et al. (2011) showed that countries with a high level of income are more likely to benefits from financial development and thus economic growth compared to low-income countries. A similar finding is provided by Calderon and Liu (2002) and Ruiz (2018), they argued that financial development positively effects economic growth across rich and industrialized countries. Another study by Christopoulos and Tsionas (2004) used co-integration analysis and found the co-integration between financial development (bank deposits/GDP) and economic growth across developing countries. In addition, Thornton (1994) study on Asian economies found a positive link between financial development and economic growth in the short run, and this link disappears in the long-run. Concerning transition economies from Europe, the panel study of Caporale et al. (2015) on 10 Central and Eastern and European (CEE) countries showed that financial development (market capitalization) has a positive and significant effect on economic growth. Based on system GMM analysis,¹ Petkovski and Kjosevski (2014) found that banking sector development is a necessary condition for the financial development of a country to accelerate economic growth across Central and Southern Eastern European countries (Albania, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Slovak Republic, Slovenia and Ukraine). Similarly, the study of Cojocaru et al. (2016) related to transition countries from CEE (1990–2008) found that financial development (domestic credit to the private sector) has a positive and significant association to economic growth. Overall, studies on European transition economies neglected the empirical analysis of WBC.

On the other hand, the study of Creel et al. (2015) examined the negative effect of financial development on economic growth. They argued that a high level of financial depth through intense banking competition and high lending to the private sector with few services available to the borrowers might result in an adverse effect on the economic growth. In support of Creel et al. (2015) also found the inverted U-shaped relationship between financial development and economic growth across 52 middle-income countries from 1980 to 2008. Based on threshold analysis, Law and Singh (2014) investigated the relationship between financial development and economic growth across 87 developed and developing countries. They stressed that a high level of financial development is not sufficient condition for increasing economic growth because if a country crossed a certain level of financial development then it would negatively affect economic growth. Strictly speaking, the study of Arcand et al. (2015) argued that once the credit to the private sector

reaches a threshold of 80% or more (% of GDP), further lending would negatively affect the economic growth. Another study based on threshold regression analysis, Deidda and Fattouh (2002) split the data in terms of high- and low-income countries and found that financial development is less significant for low-income countries than for high-income countries.

2.2. Financial development and remittances link

According to the World Bank estimates, the expatriate workers remittances increased from 600 USDbn to 714 USDbn between 2018 and 2019. Remittances from migrant workers (living abroad) increase the consumption and investment in home country. In developing countries, the remittances received by the families of migrant workers, they mostly spend on education, health, household consumption, buying livestock (in rural areas) and invest in the real estate sector. Nonetheless, the major proportion of remittances spent on consumption and a small proportion goes in the productive investment due to lack of banking facilities in the rural areas (see Mallick, 2008). Further, Mallick argued that if these remittances are mainly spend on private consumption then such transfers present low impact on growth. In addition, William (2017) postulate that remittances positive effect on growth is conditional depending upon the level of democracy across developing countries. His study based on 109 developing countries identified that countries with a high level of democracy are more likely to benefit from the inflows of remittances than a country with a low level of democracy. Concerning the effect of remittances on the economic growth channel, first, remittances increase the marginal propensity to consume and invest in the country and increase entrepreneurial activities thus job creation. Further, the inflow of remittances provides exchange rate stability for the host economy. Based on system GMM estimation, Fayissa and Nsiah (2010) panel study on 36 African countries found that remittances positively influence economic growth. While, Jawaid and Raza (2016) study on South Asian countries found a positive relationship between remittances and economic growth and a negative for Pakistan. Precisely speaking, in the empirical literature studies on remittances and economic growth link divided into three groups. In the first category, researchers (Catrinescu et al., 2005; Jongwanich, 2007; Yang, 2004) identified the positive effect of remittances on economic growth, others (e.g., Chami et al., 2009) found a negative and significant effect of remittances on growth, and while the last group (Faini, 2001) showed non-significant relationship.

In the theoretical model of Acosta et al. (2009), they consider three specific cases of remittances: remittances are exogenously determined, remittances are countercyclical, and remittances act like capital inflows. In all these cases, the empirical results show that remittance inflows generally contribute to higher consumption and leisure. The findings for El Salvador case endorse the evidences of the implication of remittances to an expansion of the non-tradable sector at the expense of the tradable sector. Some other studies have theorized the fact that the impact of remittances on output varies over time and across countries, for example, Glytsos (2005) in his study considered Egypt, Greece, Jordan, Morocco, and Portugal for the period 1969–1998. Large fluctuations in the remittances amount contribute to large instability and uncertainty in output growth and the economy as a whole. For Egypt, Jordan, and Morocco the growth-generating capacity of rising remittances characteristic is smaller than the growth destroying the capacity of falling remittances (Glytsos, 2005).

Concerning the interaction between remittances and financial development, several studies (e.g., Alina. et al., 2019; Sobiech, 2019) explored the interaction between remittances and financial development on economic growth. Sobiech (2019) conducted an empirical study on 61 emerging and developing countries using data from 1970 to 2010. In this study, Sobiech identified the negative effect of interactive variables of financial development and remittances on economic growth. Furthermore, Giuliano and Ruiz-Arranz (2009) investigated that remittances substitutes the financial development in developing countries due to credit constraints. Karagöz (2009) studied the case of Turkey using time series data from 1970 to 2005 found that remittances negatively affect the economic growth due to weak financial system and the lack of investment in human capital. The study of Bangake and Eggoh (2020) referring 60 countries for 1985 to 2015 period by using system GMM estimation and panel threshold models. They found that beyond a given threshold of financial development, there is

a positive relationship between remittances and economic growth (and insignificant under this threshold), and remittances do contribute to the economy in countries experiencing a well-functioning financial sector. Another study by Chami et al. (2003) argued that remittances might reduce the labor supply due to moral hazard problem and such transfer mainly goes in consumption instead in the financial markets would substitute the economic growth. In short, we identified that the interaction of financial development and remittance could have a substitution or complementary effect on economic growth.

3. Data source and methodology

3.1. Data source and variables

To estimate the effect of financial development and remittances on economic growth across WBC. We obtained macro level data mainly from World Development Financial Indicators from 2000 to 2017. In the sample size, we included six countries including Albania, Bosnia, Kosovo, North Macedonia, Montenegro and Serbia (for detail see Appendices A1–A6). After the political crisis of 1990, the objective of each country of Western Balkans was to consolidate and develop their economy by promoting inter and intra trade relationships, development of finance and political dialogue, as well as the prospect of negotiating with the EU. Throughout this 16-year period (2000–2016), some events made these countries deviate from the path that was actually projected. This global financial crisis of 2007–2009 hit the Western Balkans later than the rest of Europe. The crisis started in Europe by mid of 2007 in Western Balkans and the consequences showed effects at the end of 2008. The global financial crisis caused the macroeconomic indicators of WBC to deteriorate, where only a little of them managed to turn the level of this macroeconomic indicator to those of pre-crisis. Regarding the WBC accession to the EU, on 18 October 2019, the EU28 member states held a meeting concerning the status of Albania and North Macedonia for their membership to the EU. However, the leaders from France, Netherland and Denmark stressed for further reforms in Albania and North Macedonia related to economic policy, human rights, corruption and tackling illegal migration and organized crimes. However, on 25 March 2020, the EU gave the green signal for opening the accession talks with Albania and North Macedonia. In short, this study focuses on the impact of financial development and remittances on economic growth across WBC.

For empirical analysis, the following variables have been gathered such as broad money stock ratio ($M2/GDP$), domestic credit to the private sector, interest rate margin, remittances, real GDP per capita, saving (private saving), gross fixed capital formation, and dependency ratio (total population minus workforce divided by the total population). Specifically, we emphasized using the broad money stock as the proxy of financial development across WBC along with other variables such as domestic credit to the private sector and the interest rate margin. Broad money stock measures the “financial depth” and “size” of an economy. A country with a high broad money stock ($M2$) has a deeper financial system than a country with narrow money stock ($M1$). In short, a financially liberalized economy has a high money supply. Such openness would attract capital inflows and result in high economic growth. Based on appendices A1 to A6, we postulate that high credit activity (domestic credit to the private sector) across WBC from 2000 to 2016 contribute significantly to the expansion of broad money stock. Therefore, it is a commonly used indicator to measure the financial development of a country (Samargandi et al., 2015). The dependency ratio is a proxy to measure the number of dependents in a family. The bigger is the family, the more likely to have high consumption and low saving. In sum, we expect a negative outcome between dependency ratio and economic growth (GDP per capita). All the financial variables converted from US dollar to Euro currency due to their geographical proximity to the EU. In order to deflate the variables (GDP per capita and remittances), we adjusted all these variables with inflation using yearly GDP deflator data. Based on the data from 2000 to 2017, it is evident from the empirical literature (e.g., Filippetti & Archibugi, 2011) that economic crisis of 2007–2008 hit almost every European country. Therefore, we introduced time dummy variables to (D) to remove the time variant effect from our analysis. Table 1 provides the summary statistics of all variables.

Table 1. Summary statistics of all variables and their definitions

Variables	N	Definition	\bar{X}	σ
GDP per capita	306	GDP per capita (log)	8.870	6.784
Broad money stock ratio	306	[log(M2/GDP)]	−0.550	0.47
Remittances	306	Personal remittances received	−4.186	2.214
Domestic credit	258	Domestic credit to the private sector (log)	23.438	1.805
Saving ratio	306	[log (Gross domestic saving/GDP)]	−7.487	2.085
Interest margin	260	Interest on loan—Interest rate on deposit	4.997	5.0173
Inflation	290	Inflation rate (annual)	4.756	8.492
Gross fixed capital	306	Gross fixed capital formation (log)	−1.462	0.633
Dependency ratio	306	Total population—labor force divided by total population	0.507	0.132
Crisis	306	Dummy coded 1 if crisis = = 2007/08 otherwise 0	0.555	0.497

3.2. Fixed effect model

In order to investigate the effect of financial development (broad money stock ratio) and remittances on economic growth, first we used the fixed effect model. According to this model, we assumed that our variables are constant over time. However, this assumption is relaxed in the system GMM analysis. The dependent variable (y_{it}) is GDP per capita and the x_{it} represents the independent variables, while α_i is fixed over time. In addition, we added year dummies (γt) in our model to remove the time variant effect from the analysis (see Equation (1)).

$$\ln y_{it} = \beta_1 x_{it} + \alpha_i + \gamma t + u_{it} \quad (1)$$

Table 2 reports the results of fixed effect estimation. The proxy of financial development (M2/GDP) show a positive impact on economic growth. This outcome indicates that increasing the broad money stock would accelerate the economic growth of WBC. In other words, our result has supported the supply-leading hypothesis. The expatriate worker remittances present a positive and significant impact on economic growth across WBC. This finding suggests that migrant transfers are the important source of financing to trigger economic growth across WBC. This result is in line with the previous findings of Faini (2001) and Jawaid and Raza (2016). Interestingly, the interaction of financial development and remittances report a negative and significant impact on the economic growth across WBC. This outcome apparently suggests that WBC have a shallow financial system. Alternatively, remittances and financial development substitute the economic growth of WBC. For example, in developing countries, the financial system is not very well developed and the remittances mainly spend on consumption and result in low productive (Bangake & Eggoh, 2020). One percent increase in gross fixed capital; the economic growth increased by 16%. This outcome shows that investment in physical capital increases the economic growth of WBC.

Table 2. Fixed effect model (GDP per capita as dependent)

Variables	Coefficients
Financial development [log(M2/GDP)]	0.0457*** (0.0116)
Remittances	2.4411*** (0.5058)
[Financial development * Remittances]	-2.3155*** (0.4441)
Domestic credit to the private sector	0.0030 (0.0031)
Saving ratio	0.0054 (0.0031)
Net interest margin	0.0048 (0.0051)
Gross fixed capital formation	0.1678* (0.1505)
Dependency ratio	1.9830 (2.2433)
Year dummies	[YES]***
Observations	83
Number of groups	6
Rho	0.9718
R-square (overall)	0.2814

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$. Robust standard errors are in parentheses ().

3.3. Generalized Method of Moments (GMM)

Next, we use dynamic panel model or system GMM estimation (Arrelano & Bond, 1991). There are three reasons for using the system GMM for empirical analysis. First, our econometric model may suffer from endogeneity issue. Take for example, in our case GDP per capita financial development (M2/GDP) are endogenous (correlation with the error term). Using fixed effect model result in biased estimates. Second, the use of two-stage-least square (2SLS) is inappropriate for our empirical analysis due to weak instruments in the datasets and the system GMM estimation provide efficient estimates than 2SLS (see Giuliano & Ruiz-Arranz, 2009). The third reason to use system GMM is to deal with endogeneity issue, numerous researchers (Caporale et al., 2015; Jongwanich & Kohpaiboon, 2019; Kalaitzoglou & Durgheu, 2016; Petkovski & Kjosovski, 2014) used the system GMM while estimating the effect of financial development and remittances on economic growth. The proposed econometric model reported in Equation (2)

$$\ln.y_{it} = \rho \ln y_{i,t-1} + \beta_1 BM_{it} + \beta_2 \ln Remitt_{it} + \beta_3 (BM * \ln Remitt_{it}) + \beta_4 pvt.credit_{it} + \beta_5 X_{it} + \gamma D + u_{it} \quad (2)$$

The dependent variable (y) is GDP per capita (logged) and used the lagged of the dependent variable for one period. BM represent the broad money stock ratio (proxy of financial development) and the log of remittances is used. In order to examine the complementary or substitution effect of financial development and remittances, also we used an interactive variable in the model. If the parameter of interactive variable is positive and significant, we postulate that the financial development together with remittances complements the economic growth and vice versa. The variable (private credit) shows the domestic credit to the private sector, and variable X includes saving ration, net interest margin (NIM) and the dependency ratio in the model. The subscripts i represent the observation in time t . In order to remove the time variant effect in our model we introduced time dummies (γD) in the model.

Table 3 provides information related to the effect of financial development and remittances on economic growth using system GMM estimation. We used xtabond2 command to extract the diagnostic statistics regarding the serial correlation of error terms (AR statistics), over-identifying restrictions or exogeneity of instruments. Based on diagnostic statistics, we conclude that our model does not suffer from the serial correlation (failed to reject the null hypothesis) and the instruments are strictly exogenous in the model. Overall, the diagnostic tests shows that our model does not suffer from serial correlation, endogeneity and the instruments are exogenous. The lagged variable of GDP per capita shows that past economic growth tends to increase the current economic growth. In other words, past economic growth is pro-cyclical to current year economic growth.

he financial development shows a positive association with economic growth. This outcome suggests that expansion in the broad money stock ratio will increase the economic growth of WBC. Our outcome is consistent with the findings of Nyasha and Odhiambo (2018), Caporale et al. (2015), and Kattel (2010). One percent increase in remittances the economic growth is likely to increase by 92%. This result indicates that the inflow of remittances is a major source of financing for accelerating the economic growth of WBC. The combined effect of financial development and remittances on economic growth is negative and shows that the interaction of these two variables substitutes the economic growth of WBC.

Table 3. Dynamic panel data estimation (GDP per capita as dependent)

Variables	Coefficients
GDP per capita (t-1)	0.6863*** (0.0657)
Financial development	0.0173** (0.0070)
Remittances	0.9218** (0.3374)
[Financial development * Remittances]	-0.8993* (0.4158)
Domestic credit to the private sector	-0.0011 (0.0008)
Saving ratio	0.0033** (0.0013)
Net interest margin	-0.0073*** (0.0018)
Gross fixed capital formation	0.2389*** (0.0223)
Dependency ratio	2.0905*** (0.3603)
Year dummies	[YES]**
Observations	83
Number of groups	6
Diagnostic tests	z-test
AR (1) in first differences	-1.76
AR(2) in first differences	0.33
Sargan test (over-identification restriction)	Chi-square
Not robust	74.00
Robust	0.31
Hansen test of exogeneity of instruments	Chi-square
Hansen test excluding groups	0.00
Difference [null H = exogenous]	0.00

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$. Robust standard errors are in parentheses ().

Overall, this result implies that WBC have a shallow financial system and our finding is in line with Giuliano and Ruiz-Arranz (2009). The parameter of saving ratio presents a positive and significant impact on economic growth. High savings are an important factor for driving investment and thus economic growth across WBC. Not surprisingly, the interest rate margin provides a negative and significant effect on economic growth. The outcome shows that a narrow interest margin between deposit and lending rate could accelerate economic growth. Gross physical capita presents a positive relationship with economic growth. While, the dependency ratio suggests that the bigger the size of the family will trigger the economic growth of WBC.

4. Conclusion

This paper investigated the effect of financial development and remittances on economic growth across six WBC using panel data from 2000 to 2017. Regarding the contribution, previous studies have somewhat neglected the effect of financial development and remittances on economic growth across WBC using multiple proxies such as broad money stock ratio, domestic credit to the private sector and the interest margin. WBC are going through a transition period and some of them are likely to join the EU in the future. Very few empirical studies have projected the impact of financial development and remittances on economic growth in this developing region of Europe. The principal findings indicated that financial development and remittances showed a positive effect on economic growth. However, the interactive effect of financial development and remittances (interaction) provided negative effect on economic growth across WBC. Overall, we found that WBC has shallow financial development.

The positive effect of remittances on growth suggest that the inflow of remittances through banking channels should be encouraged and then ensure investment in the productive sectors of the economy thus high economic growth. On the other hand, the negative effect of interactive variables of financial development and remittances on growth emphasize that WBC has overall shallow financial system that substitutes the economic growth. Studies shows that in developing countries remittances mainly spent on consumption which result in low saving and investment in the economy. Policies targeted to expand the financial system by increasing the non-deposit taking institutions such as insurance businesses, investment trusts, and pension funds across WBC. These non-deposit taking institutions would expand the financial system through high savings and investment. In addition, WBC should develop the equity markets to attract investment and accelerate the business environment through equity financing. More specifically, the non-existence of equity markets in Albania and Kosovo result in a low entrepreneurial culture. On the other hand, the central banks across WBC should devise a narrow interest rate margin policy to increase saving and encourage lending to the private sector. Currently, the low deposit and high lending rates discourage the saving and investment ratio across WBC. To promote financial efficiency, the narrow interest margin policy would expand the financial system and thus drive economic growth. Regarding the limitation, due low number of observations we failed to estimate the panel threshold effect of financial development on growth across WBC. In the future, using large sample size (large panel) would allow us to measure the threshold effect (Hansen, 1999; Wang, 2015) of financial development on economic growth.

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Note

1. They used proxies' domestic credit to the private sector, ratio of quasi money (M2) and interest rate margin. Furthermore, remittances play vital role in their economic development and we added remittances as an important indicator of external capital inflows.

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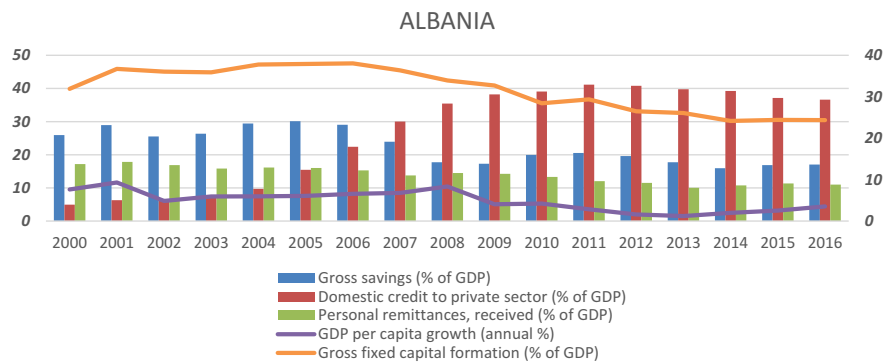
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Appendices (A1-A6)

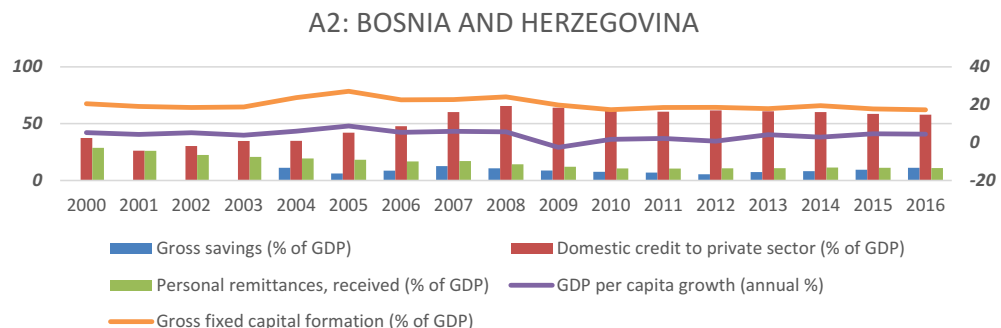
Figure A1. Selected macroeconomic Indicators for Western Balkan Countries (2000–2016)



Note: Values on Gross savings (% of GDP), Domestic credit to private sector (% of GDP), Personal Remittance, received (% of GDP) corresponds to the primary axis (on the left); GDP per capita growth (annual %), Gross fixed capital formation (% of GDP) corresponds to the secondary axis (on the right).

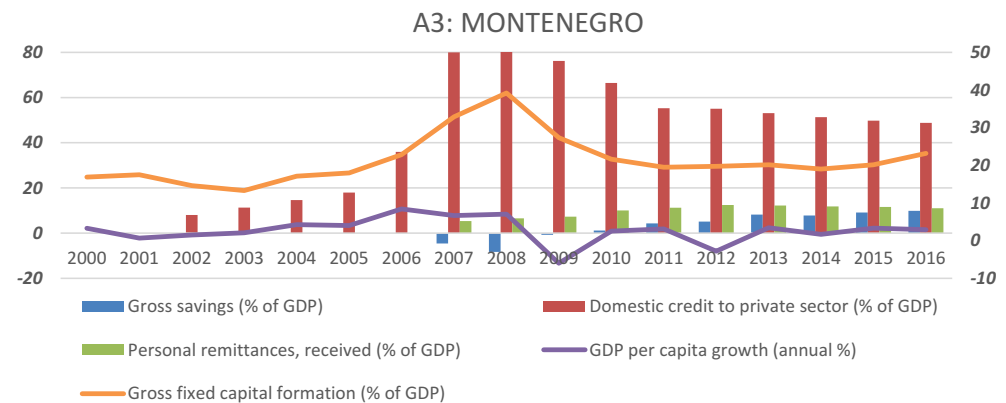
In 2000, when a major part of the Albanian population had immigrated to other European Union countries in search for better conditions, Albania received remittances and such inflow increase the well-being of the population, together with savings that reached the maximum in 2005 out of all Balkan countries. But at this early period private sector had difficulties in getting financed as policies in action were not effective enough and people/businesses found other informal ways to finance their activity (borrowing from others), without heading toward financial institutions. As the financial crisis hit Europe, so did it with the Albanian economy. All macroeconomic indicators were affected negatively, except for domestic credit to the private sector. Albania recovered slowly from the financial crisis of 2007–2008. On the other hand, the gross fixed capital formation's (percentage of GDP) reduced after the financial crisis and apparent indicates a low level of investment.

Figure A2. Bosnia and herzegovina



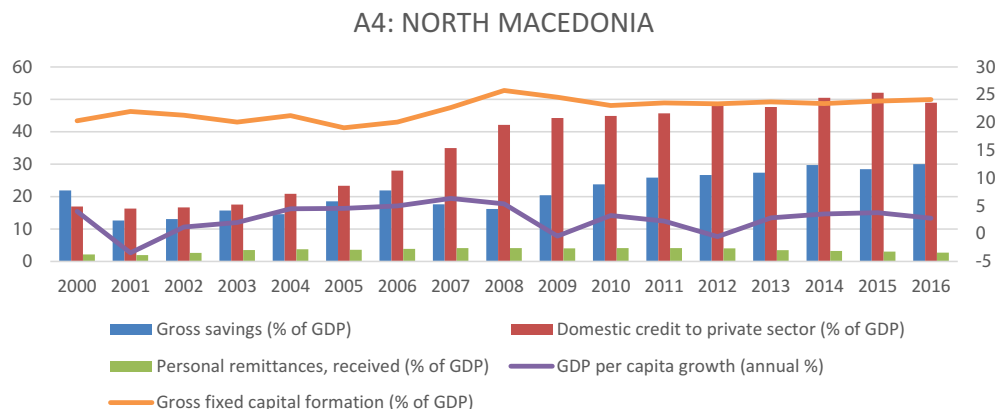
Same as Albania, Bosnia and Herzegovina did not manage quite well the ratio of savings to the GDP. The critical problem with economic growth in Bosnia and Herzegovina was in 2009, when per capita GDP fell to (−3%) and in 2012, when the growth fell to 0.8%. Through its high levels of domestic credit on the private sector, which help business move forward and lower the chance of bankruptcy BiH has tried to boost country's economic development. Gross fixed capital formation is another key factor to contribute in the economy, but since remittances and savings were not at a high level, even the gross fixed capital formation could not bring any significant progress to its economy.

Figure A3. Montenegro



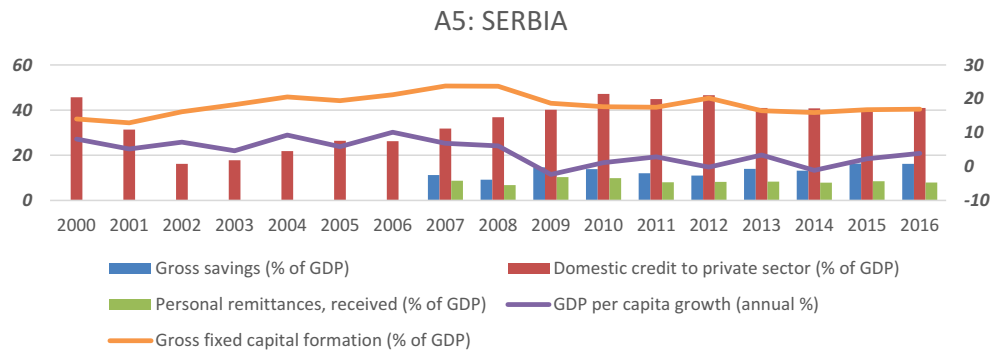
The only anxiety of the Balkan countries is the demographics. With the fluctuations that occur every day for various reasons people tend to be more skeptical about how they should save, where they should invest, and changes in the labor market or fiscal policies. There exists an explanation for all this, which is the transition. Montenegro as a low-income country with a constrained budget due to fiscal deficits, Montenegro did not have much to do. Despite the aging population and the national budget constraints that may not be in favor of the country, Montenegro has put high efforts on tourism, where investments from foreigners made Gross fixed capital formation jump in 2016, as Chinese motorway construction project has been built. This type of projects will also have a great impact on the per capita GDP and contribute in the well-being of Montenegro's population.

Figure A4. North Macedonia



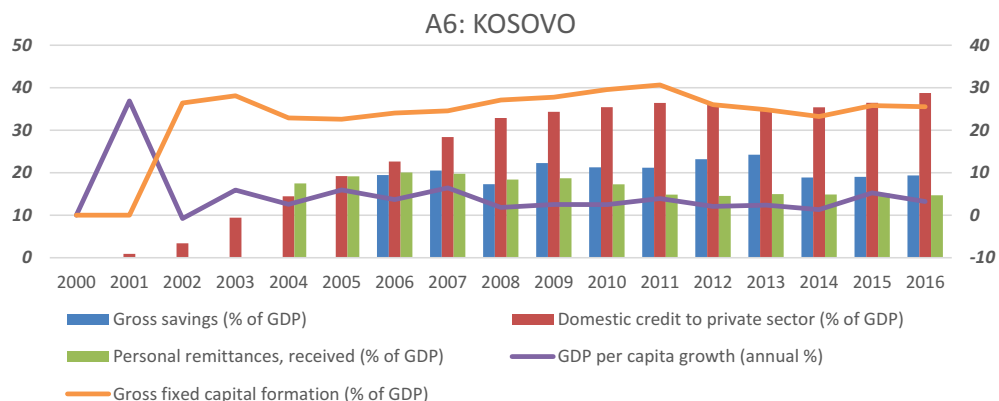
As the first country which started the negotiations or application process to be part of the European Union, North Macedonia has managed to keep the economy and per capita GDP stable, although it may not be to desired levels, savings have been increased ever since the global financial crisis of 2007. North Macedonia has tried to improve the business climate, which can derive from higher economic growth. Based on the graph above, domestic credit to the private sector increased since 2000, but with some fluctuations. The contribution of remittances in North Macedonia's GDP is low but compensated with savings, which are higher than in other Balkan countries, whereas gross fixed capital formation has higher shares due to GDP's levels.

Figure A5. Serbia



The balance of payments of Serbia in the long term is characterized as imbalanced due to the foreign trade deficits. Since the financial crisis when Serbia just recorded the first decline in per capita GDP with some fluctuations, it seems that the recovery process will take enough time until it reaches the projected progress. The deficits from the balance of payments emerge due to high amount of spending which is connected to overheated demand. Such deficits financed from sources other than loans from the financial institutions. For example, remittances, private or foreign investments provide major financing to the Serbian economy. The need to finance this spending comes from the fact that spending exceeds production in Serbia, whereas saving did not occupy any portion of Serbia's GDP until 2007.

Figure A6. Kosovo



The post-war help during 2000–2001 made the GDP of Kosovo surge in high levels. As it can be seen in the graph even the post crisis period did not affect Kosovo's economy, because it is mainly linked with remittances and foreign direct investment. To a certain extent, Kosovo's capital formation has higher shares because of its low levels of gross domestic product. In addition, the

saving ratio is higher than some other Balkan countries such as Montenegro, and Bosnia and Herzegovina. Some challenges of Kosovo and Balkans in general are switching their economy from demand to production due to the availability of natural resources. This way not only Kosovo can benefit and progress its economy, but the region as a whole.



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