Chapter 4
Economic Growth Through Financial Development: Empirical Evidences from New Member States and Western Balkan Countries

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Abstract This study provides some other pieces of evidence on the relation and the contribution of financial development to economic growth for two specific regions, such as the group of new members (NMS) of the EU and the Western Balkan countries (WBC). This study applies panel data using relevant proxies for the model. According to the study results and based on threshold regression, a non-linear association is confirmed between financial and economic growth. More specifically, the interaction effect of remittances and financial development complement the economic growth of NMS. In addition, the findings show that both, financial development and remittances, are pushing the reduction the economic growth in WBC. Although the NMS can be well-integrated with the rest of the EU countries, there is still room for improvement in governance and enterprise restructuring. To gain sustainable growth across developing countries, policymakers should target the following: (1) increasing the saving ratio to increase the productive investment; (2) narrowing interest rate margins to encourage domestic credit to the private sector.

Keywords Financial Development · Remittances · Economic Growth · New Member States · Western Balkans

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4.1 Introduction

Numerous endogenous growth models refer to financial development as the key driver of economic growth worldwide. Studies indicated that proxies of financial development such as saving and lending could accelerate investment and productivity and thus economic growth [19]. Studies suggested that financial (by reducing the lending obstacles) and the interest rate liberalization trigger the economy's growth [50]. Still, we can say that financial liberalization and its advantages are low in developing countries than in the rich world. For example, the lack of financial structure poorly developed insurance and the equity markets, and the lack of skills may result in low economic output.

The main objective of this work is to explore the tangible influence of two crucial factors, remittances, and financial development, concerning the economic prosperity in two regions of Europe. First, the non-EU members (WBC) which includes Albania, Bosnia, Macedonia, Montenegro, Kosovo, and Serbia. And WBC are looking for a membership in the common market (EU). Even though WBC are defined as polarized countries (with different ethnicities and religions within their countries), they show similarities in economic progress [33]. After the collapse of the communist system in these countries, the transition period is relatively slow in terms of transformation from a centralized economy to a more open one, basically a market-based economy. Concurrently, WBC is facing many economic challenges such as high inequality, high consumption with low saving, credit constraint, non-recovery of loans, high volatility of exchange rates, high current account deficits, high rate of unemployment, and high level of corruption thus low economic output [7, 13, 23, 32, 34, 46–48].

On the other hand, the new member states (NMS) are those countries who joined the EU from 2004 under the EU enlargement program. These countries are Bulgaria, Croatia, Czech Republic, Hungary, Poland, Latvia, Lithuania, Slovenia, Slovak and Romania. Compared to WBC, these post-communist countries have improved their banking system significantly, de-regularize the state-owned enterprises, and increased the saving and cross-border lending due to being well integrated into the EU markets [6, 41]. To date, limited quantitative papers [39, 40, 52] that used some data and specific econometric models could examine the correlation and the dimension of the influence of financial development and remittances on the economy. However, past studies ignored some comparisons among NMS and WBC about the correlation mentioned above. This study has used panel data from 2000 to 2017 and deployed threshold regression and system GMM analysis. In addition, this study considers a variety of proxies, i.e., broad money stock, remittances, saving, formal credit specific to the business sector, the interest spread, and so forth. We tested the two main research questions in this study. First, we tested the threshold effect of financial evolution on the economy, and second, the interactive effect of financial evolution along with remittances on the economy.

Our paper provides the theoretical background and then reviews the previous papers using quantitative approaches in relation to the impact of financial development associated with remittances on economic progress. The following section proceeds with the source of data, empirical strategy, graphical analysis, and then we provide the regression analysis of the hypotheses. Lastly, section five concludes with policy implications and some critical insights.

4.2 Literature Review

4.2.1 Economic Growth Through Financial Development

First, we review the literature, focusing on the empirical one, regarding the above-mentioned relation and then we review the impact of financial development and remittances on the economy in the following sub-section. Numerous studies [18, 28, 49, 57] investigated the association between financial deepening and economic development. The literature related to empirical studies stated that financial deepening promotes economic development and growth, called the "supply leading hypothesis" and the "demand leading hypothesis" suggested that economic growth promotes financial development [29]. Both hypotheses argued that there exists a positive relation among the financial and economic development/ growth. For example, the longitudinal paper of Apergis et al. [3] related to 65 countries was one of the papers confirming the positive correlation. While Colombage and Halabi [18] research work was focused on emerging economies, and they found a reverse causality of broad money stock, equity, bonds market outstanding with economic progress.

Other studies, for example, Koivu [42] on 25 transition economies as a proxy for financial deepening used domestic credit to the private sector and failed to find the impact on economic development. In addition, Antoshin et al. [2] paper on 55 economies examined that bank financing to the business sector enhances the economic development using SYS-GMM. The study of Hassan et al. [31] used time-series and implied that income economies benefit from financial development more than developing countries. Likewise, Calderon and Liu [9] and Ruiz [55] also supported the findings of Hassan et al. [31]. Using cointegration analysis, Christopoulos and Tsionas [16] study found cointegration of deposits/nominal GDP and economic growth for the case of developing economies. Results across transition economies in EU, Caporale et al. [10] panel study (1994–2007) in 10 CEE economies identified that market capitalization (a proxy for financial development) has a significant and positive impact. By deploying SYS-GMM estimation, Petkovski and Kjosevski [52] asserted that the development of financial institutions (banks and non-bank) is significant to hasten the economic development in CEE and SEE countries. A study on transition economies (CEE) by Cojocaru et al. [17] from 1990 to 2008 showed that domestic credit to businesses accelerated economic growth.

On non-linear relationships, Creel et al. [19] postulated that excessive financial development negatively affects economic growth. For instance, a deeper financial system with extensive bank lending and competition may pose an adverse selection problem and low economic growth. Similarly, Samargandi et al. [56] identified that financial development and economic growth have inverted -shaped association in 52 middle-income countries from 1980–2008. Using threshold panel regression estimation, Law and Singh [43] claimed that a high degree of financial deepening may negatively influence economic progress if financial development exceeds a certain threshold in terms of financing to the private sector in 87 developed and developing economies. Strictly speaking, if the level of financing (domestic credit) passed the threshold of 80% (of GDP) then it would harm the economic progress (see, Arcand et al. [4]). While Deidda and Fattouh [20] used threshold (based on per capita) and argued that the above-mentioned relationship is relatively weak in developing countries than in rich countries. This study investigates the threshold effect between financial deepening and economic progress.

4.2.2 Link Between Remittances and Financial Development

In recent decades, expatriate workers' remittances have increased dramatically over US$ 600 billion (in 2018). Migrant transfers are the potential source of government financing, spurring investment in the private sector through external financing using banking channels. Strictly speaking, remittances in developing countries reduce poverty due to increased disposable income. On remittances and growth link, a panel study conducted by Fayissa and Nsiah [22] using SYS-GMM from 1980 to 2004 related to 36 African countries, explored that remittances had a significant and a positive influence on the economy. In another study, Jawaid and Raza [36] asserted that remittances positively impact growth in the case of study of South Asian countries, while it is negative for Pakistan. In addition, the volatility of these remittances is extremely important and negatively impacts economic development. In fact, two outcomes are listed with regard to the effect of remittances on economic development: The first group argued about the positive effect [11, 21, 37], while the second group of researchers ([15] showed the negative and insignificant impact.

Based on the conceptual framework of Acosta et al. [1], three aspects were discussed. First, "remittances are considered exogenous in economic development and at the same time they are countercyclical, and source of capital to the economy." Based on these three conditions, Acosta et al. [1] argued that remittances in developing countries generally contribute to high consumption and leisure. In comparison, other studies [27] argued that a large volume of remittances contributes to uncertainty in output growth. For example, in the case of Egypt, Jordan, and Morocco, the large flow of remittances reduces the growth of these economies due to non-productive investment (see Glytsos [27]).

In contrast, several studies [12, 58] discussed the interactive link of both remittances and financial deepening on the economy. The empirical literature discussed the two sides of the role of financial deepening on economic progress. First, the domestic financial enhancement strengthens (positive) the effect of remittances on host countries' economic progress, while the second argument favors the negative effect on economic growth. A quantitative study by Sobiech [58] on 61 emerging and developing countries from 1970–2010 Sobiech [58] postulated that remittances decrease poverty. However, it benefits the country's financial development in the long run.

Moreover, Giuliano and Ruiz-Arranz [26] discussed that "remittances substitute financial deepening when credit constraints exist." This is the case of the countries having an underdeveloped financial system. Accordingly, the money coming from remittances enhances capital and significant economic growth.

In sum, the influence of remittances on economic progress is related to the degree of financial deepening in the host economy. For example, if a country has a developed financial sector, the financing constraints are removed and such migrant transfers increase bank deposits, which can be used for productive projects. In comparison, such transfer may lead to adverse effects on the economy. Remittances could reduce the labor supply or mainly used in consumption (low saving) and such transfers are not invested in the financial markets [14]. To conclude, we estimate the substitution and/or complementary effect of remittances and financial development on growth.

In this section, the author must provide the necessary background literature for explaining the state-of-the-art in the domain of the present research. The author should consider all significant references and make a synthesis of the different viewpoints expressed by different authors. Also, the author should provide the working definitions of the basic concepts used in the paper, and the main ideas, models or theories found in the literature related to the present research. The literature review should reveal the gap between the extant literature and the new perspective or model presented in the paper.

4.3 Methodology

4.3.1 Source of Data

We obtained macro-level data from 2000–2017 related to NMS and WBC which examines the effect of financial deepening and remittances on the economy. According to the International Monetary Fund (IMF), there are 11 countries that have joined the EU since 2004 under the EU enlargement and we name as NMS. On the other hand, Western Balkan countries are non-EU members. Concerning the accession of WBC in EU, on 18 October 2019, the countries of EU discussed the membership of Albania, and Northern Macedonia held a meeting in the EU. However, other nations, including France and Netherland, emphasized more reforms before entering the EU. While on 25 March 2020, the EU gave positive signal for discussion on Albania and North Macedonia related to their membership.

Table 4.1 Definitions of the variables and the summary statistics

Proxies and variables	N	Interpretation	$\overline{X}$	∂
GDP per capita	306	GDP per capita (log)	8.870	6.784
Broad money stock	306	[log(Broadmoney/GDP)]	−0.550	0.47
Remittances	306	Personal remit. Received	−4.186	2.214
Domestic credit	258	Domestic credit to the private sector (log)	23.438	1.805
Saving	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 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

Source: Authors' own research

For estimation, we collected variables such as (1) real GDP/capita, (2) quasi-money (M2/GDP), (3) saving ratio (saving/GDP), (4) domestic loans to the business sector, (5) remittances, (6) interest spread, (7) inflation rate, (8) gross fixed capital formation, and (9) dependency ratio. The proxy for the financial development is the broad money stock ratio, the domestic credit, and the third one, the interest rate margin. At the same time, the dependency ratio variable measures the size of a family and its effect on financial performance. In sum, we presumed that the dependency ratio negatively impacts economic growth.

We converted all financial information (variables in US dollar) into Euro currency due to proximity of these countries (WBC and NMS) to the single currency area. To adjust with inflation, we deflated all variables using annual GDP deflator. Further, to capture the economic crisis of 2008 (see [24]), we used a dummy variable coded 1 when an economy faced crisis in 2007–08, otherwise 0. This dummy variable is used to investigate the impact of economic crisis across NMS and WBC. Table 4.1 shows the specification of each variable and the features of the summary statistics.

4.3.2 Empirical Strategies

We deployed the following empirical strategies to assess the influence of (1) financial development and (2) remittances on the economy. The graphical analysis compares the various financial indicators, including remittances across NMS and WBC. Then we proceed with the stationary check using panel unit root test. We used threshold regression analysis to investigate the threshold effects as well. Lastly, we used SYS-GMM analysis to estimate the combined effect of (1) financial development and (2) remittances on economy for the group of New Member States and Western Balkan Countries.

4.3.3 Graphical Analysis Across NMS and WBC

Figure 4.1 provides information related to the cumulative frequency distribution of broad money stock across NMS and WBC. By looking into the curves, we observed that relatively NMS have high volume of broad money stock compared to WBC. This indicates that NMS has a deeper financial system than WBC due to its financial integration with the EU. Figure 4.2 presents a visual analysis of broad money stock and GDP per capita (economic growth). WBC has lagged regions compared to NMS on financial development and economic growth link. This shows that WBC have a shallow financial system compared to NMS. Specifically, weak non-bank financial institutions, non-performing loans, and high-interest margins reduce WBC financial development. In addition, Figs. 4.2 and 4.4 show the plot between saving ratio and

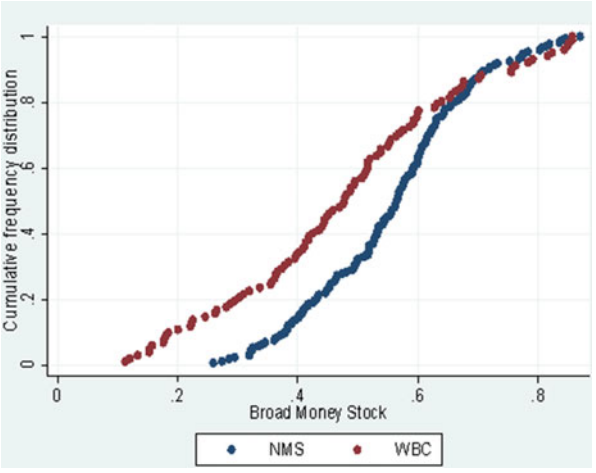

Fig. 4.1 Broad money stock–NMS versus WBC. (Source: Authors own elaborations)

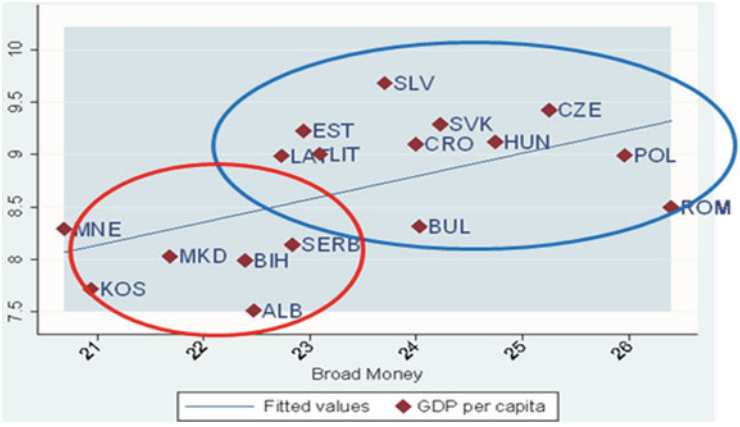

Fig. 4.2 Broad money stock and GDP per capita (logged). (Source: Authors own elaborations)

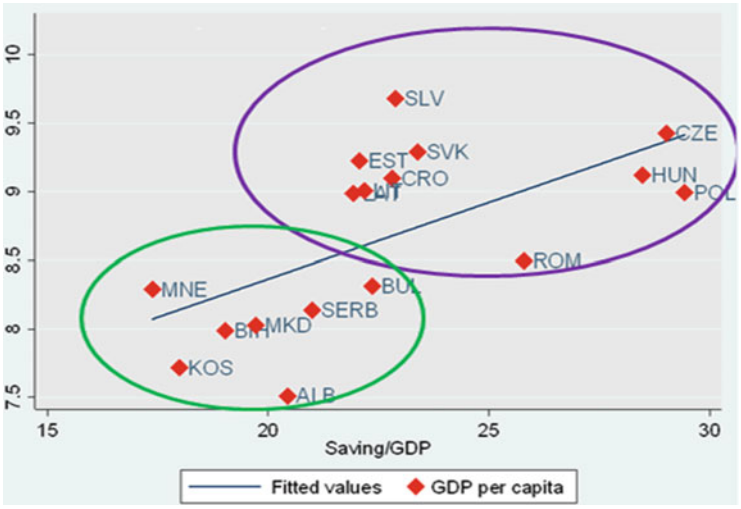

Fig. 4.3 Saving ratio and GDP per capita. (Source: Authors own elaborations)

economic growth, domestic credit to private sector and growth. Balkan countries experienced low saving ratio and low domestic credit to the private sector caused sluggish growth than for NMS.

Figure 4.5 presents the comparison of remittances and economic growth. In the first quadrant, mostly NMS with a high volume of remittances boosts high growth than WBC. While WBC has a high volume of remittances (on average) for Albania, Bosnia, Serbia, Kosovo, and Bulgaria (an exceptional), they experienced low economic growth. This outcome shows that in Balkan countries, the remittances are mainly used for consumption and less channelized through the financial system and resulting in low productive investment (Fig. 4.3).

4.3.4 Panel Unit Root Test

For testing the stationarity of the variables, we used Fisher's test [25], which is based on Maddala and Wu [45] method. This test uses a non-parametric method and it has certain advantages over Im et al. [35], the one of unit root test. For example, this test can be used for unbalanced panel-data (in our case), the test is conducted for any unit test and it is also possible to use multiple lag lengths in the Augmented Dickey-Fuller analysis. However, this test like other panel root tests such as Levin et al. [44] assumed that the individual time series have independent cross-sectional distribution. While in our dataset, it is assumed that several variables may have co-movements in the datasets, for example, broad money stock and GDP per capita or fixed capital formation and GDP per capita. To reduce the cross-sectional dependence, we used the de-mean unit root test, which subtracts the averages of

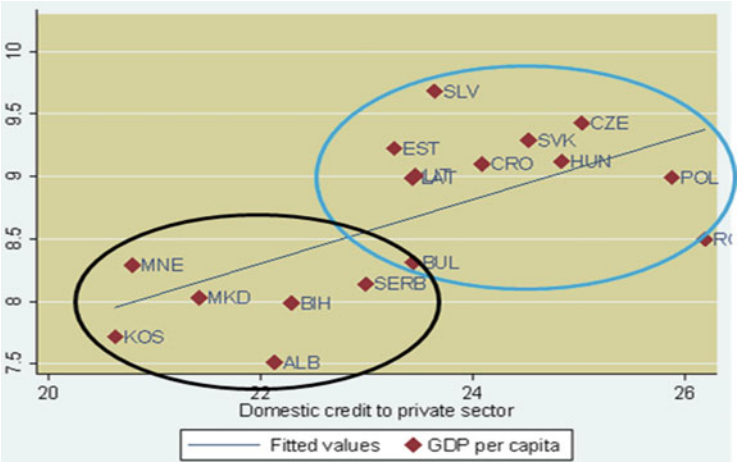

Fig. 4.4 Domestic credit to private sector and GDP per capita (logged). (Source: Authors own elaborations)

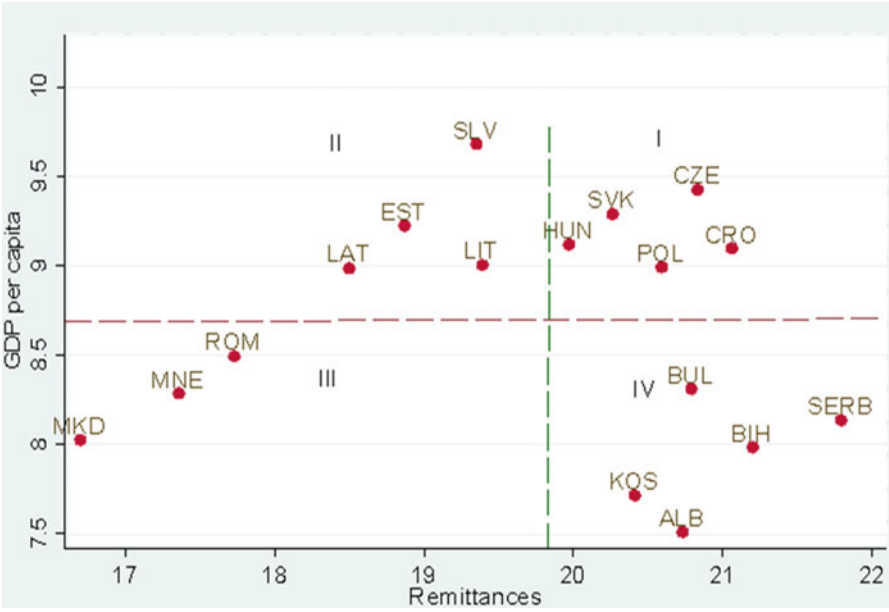

Fig. 4.5 GDP per capita and remittances. (Source: Authors own elaborations)

cross-sectional apart of the series. Furthermore, the Fisher test is a good choice when errors in cross-sectional units have cross-correlation because Monte Carlo evidence proposed that this issues of cross-correlation in errors is low observed with the Fisher test.

Table 4.2 Stationarity test (Fisher test)

Variables	p-values
GDP per capita	0.00*
Broad money stock	0.00*
Saving ratio	0.00*
Domestic credit	0.00*
Remittances	0.00*
Interest rate margin	0.00*
Gross fixed capital formation	0.00*
Inflation rate	0.00*
Dependency ratio	0.00*

Source: Authors' own research
*p<0.01

The use of Fisher test with drift model as follows:

$$\text{Drift model} : \Delta y_{i,t-1} = \rho_i y_{i,t-1} + \sum\nolimits_{j=1}^{\rho} \gamma_{i,j} \Delta y_{i,t-j} + \text{error} \qquad (4.1)$$

$$H_0 : \rho_i = 0 \quad H_a : \rho_i < 0.$$

Equation 4.1 shows the list of variables for the stationarity test. Our hypothesis indicates the non-stationary of all series or contain panel unit root. In the meantime, the opposite hypothesis suggests the stationary of the series or at least one panel is stationary. Based on Fisher test and the probability value, we rejected the null hypothesis at 1% significance level and concluded that our variables are stationary (see Table 4.2).

4.4 Results and Discussions

4.4.1 Panel Threshold Regression

On second hypothesis, we analyzed the threshold effect of financial development on economic growth. Initially, Hansen [30] proposed a fixed effect threshold panel model and we expect that there is a threshold in financial development and then regress on economic growth[1].

The test findings in Table 4.3 show that two (double) thresholds include a lower threshold at −1.4910 and a higher threshold at the level of −0.1402.

[1]Countries with high financial deepening and advancement tend to have high economic development and progress than shallow financial development and vice versa. We used broad money stock (M2/GDP) as a threshold variable and using GDP per capita as regime dependent variable.

Table 4.3 Threshold Estimator (Level = 95)

Model	Threshold	Lower	Upper
TH-1	−0.1402	−0.1740	−0.0071
TH-2	−0.1402	−0.1721	−0.0071
TH-22	−1.4910	−5.2825	−0.4033

Source: Authors' own research

Table 4.4 Threshold effect test (Bootstrap = 200)

Threshold	RSS	MSE	F-stat	P-value	Crit10	Crit5	Crit1
Single	9.968	0.0346	279.44	0.000	40.37	44.37	69.60
Double	5.530	0.0192	231.12	0.000	31.29	33.37	38.64

Source: Authors' own research

Further in Table 4.4, the F-test results provide the significance in double threshold at p-value equals to 0.00.

Equation (4.2) shows the threshold model as follows:

$$y_{it} = u + X_{it}(q_{it} > \gamma)\beta_1 + X_{it}(q_{it} \leq \gamma)\beta_2 + u_i + e_{it} \tag{4.2}$$

$$H_0 : \beta_1 = \beta_2 \; H_a : \beta_1 \neq \beta_2$$

The q_{it} threshold variable γ is the parameter indication the threshold value that make possible the absorption of two equations with two separate coefficients β_1 and β_2. The slope u_i is the individual effect and e_{it} is the error-term, where under null hypothesis, there is no threshold for the panel data of the financial development. Based on the findings of threshold values, we split our dataset into two groups.

$$X_i \in \begin{cases} \text{Group 1, if } q_{it} \leq -1.4910 \\ \text{Group 2, if } q_{it} > -0.1402 \end{cases}$$

Table 4.5 reports the results of the fixed-effect regression for two groups 1 and 2. In the first group, if the threshold value is less than or equal to −1.4910, the results are reported in column 2 and if it is greater than −0.1402, the findings are presented in the column 3 which is a group 2. In the group 1 column, the parameter of financial development (ß = −1401 at 5% significance level) showed negative association to economic growth, while this relationship becomes positive and significant (ß =0.2063 at 1% significance level) for the second group. The analysis result in a non-linear relationship among financial and economic advancement. The threshold value above from −1.4910 (Table 4.3), the financial deepening complements the economic development, otherwise it substitutes the economic development.

In the case of group 1, the elasticity of saving ratio shows that high saving would likely to reduce the economic growth. This finding indicates that countries with a high saving ratio will not sustain economic growth due to low financial development. In group 2, the elasticity of remittances (β = 0.0484 significant at 1% level)

Table 4.5 Group-wise fixed-effect panel data model

Economic growth [(log (GDPpercapita)]	Group 1 $q_{it} \leq \gamma$	Group 2 $q_{it} > \gamma$
Financial development (threshold)	−0.1401** (0.0680)	0.2063*** (0.0618)
Saving ratio	−0.0340** (0.0169)	−0.0063 (0.0114)
Remittances	−0.0153 (0.0235)	0.0484*** (0.0139)
Domestic credit	0.1022*** (0.0252)	0.0487*** (0.0150)
Net interest margin	−0.0059** (0.0046)	−0.0092*** (0.0032)
Gross fixed capital formation	−0.0252 (0.0759)	0.2046*** (0.0519)
Dependency ratio	−2.6504** (1.0568)	−1.4259** (0.0720)
Inflation rate	−0.0069 (0.0083)	−0.0001 (0.0027)
Crisis [dummy coded 1 if crisis, otherwise 0]	−0.1406** (0.0611)	−0.0329 (0.0429)
R-sq. (overall)	0.3928	0.4028
F-stat	27.27***	18.46***
Rho	0.9589	0.9756
Observations	218	198
Groups	17	11

Source: Authors' own research
***p < 0.01; **p < 0.05. Standard errors are in parentheses ( )

positively linked with economic growth. This result suggests that the external flow of capital through remittances triggers economic progress. In addition, the impact of domestic credit to the private sector is positive in both groups. This outcome is similar with the findings of Hassan et al. [31]; Antoshin et al. [2]. Increasing the lending by 1% to the private sector raises the economic growth by 4.8%. In short, formal credit increases investment and thus high economic growth.

On the efficiency of the financial sector, the net interest margin showed a negative association to economic growth across both samples. Countries with less interest spread would result in high financial sector efficiency and lead to high economic growth. In other words, the low is the interest rate margin the high is the economic growth. In group 2, gross fixed capital formation reported a positive association with economic progress. This finding shows that investment in fixed assets increases the country's wealth and accelerates economic growth. Countries with high dependency ratio (number of dependents in the family) tend to experience low economic growth across both groups. The coefficient of economic crisis showed negative association with growth for group 1. This outcome suggests that global economic crisis of 2008 reduce the economic growth across our sample size.

4.4.2 System GMM Estimation

As a support for the empirical model, we used generalized method of moments (GMM) analysis [5]. The econometric model we used suffers from endogeneity issue (i.e., correlation of explanatory variables with the error term) and it is appropriate to use system GMM estimation compared to 2SLS (Two-Stage Least Squares) because 2SLS may provide weak or non-availability of instruments in the datasets (see [26]). Second, country fixed effects (e.g., geography and demographics) may correlate with independent variables. In other words, system GMM eliminates unobserved heterogeneity and endogeneity by using the first difference of the equation by using the lagged variables as instruments. In addition, we introduced the lagged of key financial variables in one period, such as the product of financial development (M2/GDP) and remittances, domestic credit/the private sector, and the saving ratio.[2] Previously, numerous researchers [10, 38, 40, 52] used the SYS-GMM for investigating the impact of both financial deepening and remittances on economy. Our econometric model as follows:

$$\begin{aligned}\Delta y_{it} = {} & \gamma_1 \Delta y_{i,t-1} + \beta_1 \Delta \text{Remitt}_{i,t-1} + \beta_2 \Delta FD * \text{Remitt}_{i,t-1} + \beta_3 \Delta DC_{i,t-1} \\ & + \beta_4 \Delta \text{Saving}_{i,t-1} + \beta_5 \Delta x_{it} + \Delta u_{it}\end{aligned} \tag{4.3}$$

$$\Delta u_{i,t} = \Delta v_i + \Delta e_{i,t} \tag{4.4}$$

$\Delta y_{i,\ t\ -\ 1}$, reports the first differenced lagged dependent variable and it is instrumented with its past period. The two parameters β1 and β2 are related to remittances (ΔRemittances) and the interaction term of financial development and remittances (ß2ΔFD $*$ $\text{Remitt}_{i,\ t\ -\ 1}$), while, ΔDC represents the domestic credit/the private sector, Δsaving indicates the saving ratio the control variables (Δx). We also estimated the Eq. (4.4) using Arellano and Bond test for checking the serial autocorrelation. Based on z-test value ($z = 0.26$) for second-order (AR2), which is failed to reject the hypothesis (at 5% level) of no autocorrelation. To conclude, the model is failed to identify the serial autocorrelation or endogeneity problems. Table 4.6 reports the system GMM estimation results. We decomposed the sample data into two regions, i.e., NMS and WBC. This strategy allows us to compare the results across two NMS and WBC. In the first column, the list of all variables is reported, and the remaining columns present the coefficient values across three sample sizes. In one period, the lagged economic growth showed a positive association to the dependent variable. This finding suggests that growth in the past tend to boost

[2] Our results are much better by using the first lagged level of endogenous variables (remittances, broad money stock, domestic credit/the private sector) as compared to the findings of Buch et al. [8], and Reed [53]. Using the first level lagged variables of remittances, financial development (M2/GDP, domestic credit, saving ratio) provide non-rejection of the Sargan-Hansen test value. Our model does not suffer from overidentification, i.e., due to the first lagged of these variables. The lagged variables would allow us to interpret the past year's effect. In addition, using lags of these variables to some extend minimize the causality problem in our model.

Table 4.6 System GMM estimation-across two regions

	All countries	NMS	WBC
GDP per capita-dependent	Coefficients	Coefficients	Coefficients
GDP per capita (t-1)	0.9568*** (0.0359)	0.7119*** (0.0398)	0.9606*** (0.0201)
Remittances (t-1)	0.0128 (0.0136)	0.0078 (0.0117)	−0.0067 (0.0090)
FD* remittances (t-1)	0.0136*** (0.0025)	0.0127*** (0.0049)	−0.0379*** (0.0096)
Domestic credit (t-1)	0.0248*** (0.0101)	0.0193** (0.0077)	0.0464** (0.0218)
Net interest margin	−0.0072*** (0.0023)	−0.0049*** (0.0017)	−0.0031 (0.0029)
Saving ratio (t-1)	0.0021 (0.0067)	0.0322 (0.0539)	−0.0001 (0.0025)
Gross fixed capital	0.0279 (0.0299)	0.1666*** (0.0547)	0.0719 (0.0547)
Crisis (dummy)	−0.0604*** (0.0143)	−0.0852*** (0.0195)	−0.0752*** (0.0266)
Dependency ratio	0.5379 (0.9648)	−0.1063 (0.7379)	−2.7989*** (1.0775)
Inflation	−0.0023 (0.0025)	−0.0057*** (0.0019)	−0.0003 (0.0007)
Intercept	1.4383*** (0.4509)	2.9154*** (0.8399)	1.7185** (0.9488)
AR1 test AR2 test	0.06 0.26	0.15 0.18	0.10 0.09
Sargan test	$x^2 = 59.10$ p-value = 0.104	$x^2 = 61.910$p-value = 0.092	$x^2 = 41.13$ p-value = 0.357
Observations Groups	170 17	100 10	77 6

Source: Authors' own research
***p < 0.01; **p < 0.05. Standard errors are in parentheses ( )

economic growth in the current period and it is consistent across NMS and WBC regressions. However, the elasticity (ß =0.9606) is found strong for WBC compared to NMS.

The parameters of remittances showed no association at all to economic growth across all three groups. The combined impact of financial development and remittances showed that, 1% increase in financial development and remittances in the past year, the current economic growth is a rise by 3.6% across all countries. In the case of NMS, the interactive variable shows a 1% increase in financial development and remittances, and the economic growth is increased by 1.2% across NMS. This outcome suggests that the impact of past financial advancement as well as remittances increases the current economic development of NMS. Alternatively, we proposed that a deeper financial system in NMS accelerates economic growth due to their effective financial integration with the European markets. In addition, the

transition process of NMS in terms of privatization, trade and the globalization has effectively transformed these economies from low financial development to high financial development (see appendix A1).

In comparison, the coefficient of the interactive variable of financial deepening and remittances negatively affects economy for the case of Western Balkan Countries. This finding implies that the effect of past financial deepening and remittances decreases the current economic development for the case of Western Balkan Countries, which is consistent with the findings of Rehman and Hysa [54]. Similarly, the study of Giuliano and Ruiz-Arranz [26], this finding suggests that while comparing WBC with NMS, the financial system is relatively fragile. In addition, the findings appear that the effects of both financial development and remittances substitute the economic development in the WBC. In short, we confirmed the findings of Osbild and Barlett [51], which states that countries with a weak financial system due to low saving ratios, high-interest margins, and high non-performing loans adversely affect economic growth. Moreover, the transition process across WBC is underdeveloped and slow, and it shows that a poor governance system with weak enterprise restructuring and the lack of competition policy results in shallow financial development (see appendix A1). Even if these countries increase the level of broad money and receive the high remittances would result in the loss of output due to weak institutional development.

The elasticities of domestic credit/the private sector show that past domestic credit enhances the current year's economic growth across NMS and WBC. This outcome is similar to some previous studies' results (e.g., [2, 31]). To capture the effect of financial efficiency, the net interest margin coefficient showed that with a 1% rise in interest spread the economic development is reduced by 0.49% and is significant at 1% level. This outcome suggests that narrow interest margin increases economic growth. Nevertheless, this relationship showed no association for WBC. The elasticity of gross fixed capital presented that 1% increase in investment in fixed assets would increase the economic growth by 16.66%. The strength of this relationship apparently implies that gross fixed capital investment boosts the economic growth of NMS. The global financial crisis of 2008 has a negative impact on economy for both regions. This outcome suggests that the economic crisis of 2008 reduced economic growth. The dependency ratio is found negative only for WBC. This finding may suggest that high number of dependents in the family reduces the economic growth across WBC. Lastly, inflation has negative impact on the economic growth across NMS.

4.5 Conclusion

This research work explored the effect of both, financial deepening and remittances on economic advancement using panel data across new member states (NMS) and Western Balkan countries (WBC). The visual analysis showed that overall WBC have low financial deepening in terms of the broad money stock, domestic credit/the private sector, and the use of remittances. The panel threshold regression findings

suggest that countries with a high level of financial development have a complementary effect on the economy, while economies with a low level of financial deepening substitute economic progress. According to the results from the GMM system estimation, the study finds that financial development and remittances complement the economic growth across NMS. On the other hand, contrary to NMS, these two factors, substitute the economic growth for the case of WBC. Overall, by splitting the data into two regions, we identified the non-linear relationship of financial deepening and remittances to the economy.

There are important policy implications of this study. In the case of NMS, financial development plays a pivotal role in their economic advancement. To strengthen the effect of financial deepening and remittances on the economy, using an effective real interest rate policy (narrow interest margin) could accelerate the economic growth of NMS. Although, the transition process of NMS is relatively fast and well-integrated with the EU markets. But there is still room for improving governance and enterprise restructuring to boost NMS's economic growth.

In comparison, the WBC has relatively shallow financial development and it negatively affects economic growth. Any further inflow of capital in remittances will not trigger economic growth until the backing of an effective financial system is not provided. There are key policy suggestions about WBC, first, the remittances and domestic savings should be appropriately channelized through the financial system using a narrow interest margin. Currently, WBC has a low saving ratio due to high-interest margin and that factor results in low deposits and less lending to the private sector. The central banks (CBs) of WBC must ensure a smooth credit line to the productive sectors of the economies. Concerning their transitional challenges, policies must improve the governance system, enterprise restructuring, and create a more competitive environment in WBC.

As a limitation of this study we mention the relationship investigation using large panel data. Additionally, another lack would be the usage of another proxy of financial development such as market capitalization.

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