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Does the Remittance Generate Economic Growth in the South East European Countries?

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Abstract

This paper aims to examine the causal relationships between remittances and economic growth in 10 Southeast European developing countries, including Greece as a developed country. The research uses various econometric techniques, such as OLS, fixed-effects model, random-effects model, and Hausman-Taylor IV estimators. The regression results have shown up that there is a positive link between remittances and economic growth in 10 Southeastern European countries. Findings support the hypothesis that the remittance inflows generate economic growth in 10 Southeast European countries. Despite this, a positive relationship is also revealed between foreign direct investment, final consumption expenditure, gross capital formation, exports, and economic growth. The only exchange rate does not have a causal link on economic growth, meaning that the exchange rate does not affect economic growth. Since the remittances have a positive effect on the economic growth, and they represent a large source of external financing in Southeast European countries, the government should implement the right policies to reflect on encouraging and channelizing the remittance inflows for investment purposes, which in turn lead to a reduction of migration and unemployment. The study is original and makes effort to promote the role and significance of remittance inflows in the Southeast European developing countries, including Greece. The findings of the study might be valuable for Governments of these countries and other policymakers to channels remittances for investment purposes.

Keywords: economic growth; remittances; panel data; Southeast European countries.

JEL classification: O11; F24.

1. INTRODUCTION

Remittances are the part of income that migrant workers transfer their money to the country of origin from the country of employment. In addition, the International Monetary Fund (IMF) defines remittances as the monetary transfers that are sent from the workers working abroad for more than 1 year to the home country. Therefore, there is a bulk of empirical research that examined the causal link between the remittances and economic

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growth of different countries, which triggered debate among researchers. A significant number of studies (Bajra, 2021; Goschin, 2014; Meyer & Shera, 2017; Pradhan, Upadhyay, & Upadhyaya, 2008; Rausser, Strielkowski, Bilan, & Tsevukh, 2018; Topxhiu & Krasniqi, 2017) have concluded that remittances have a positive impact on economic growth. They explained that through remittances, families are enabled to develop their skills and abilities by investing in education, generating income through investments in various sectors of the economy, etc. Thus, as household incomes increase, their consumption also increases, which indirectly affects the economic growth of countries.

Despite this, some other authors, for instance, Jongwanich and Kohpaiboon (2019); Jawaid and Ali Raza (2014) and Craigwell, Jackman, and Moore (2010) reject the idea that remittances positively affect the economic growth of countries, noting a negative correlation between these variables, as will be discussed further. Their studies show that the impact of remittances on economic growth varies from country to country, implying that in some developing countries, remittances over the years have negatively impacted economic growth due to voluntary unemployment, where people use remittances as a personal income, which are considered as a sufficient financial source to cover basic monthly expenses and they do not engage in active jobs. Since the empirical evidence is still inconclusive and debatable as for causal link between remittances and economic growth, it is worth noting that the link between remittances and economic growth of countries is an empirical question that needs to be studied in different countries. Furthermore, currently, remittances have become a significant and reliable source of external funding and capital accumulation in the Southeast European developing countries, including Greece as a developed country. The recent remittance volume is around 10% of the GDP in Southeast European developing countries, including Greece as a developed country. This money has helped to boost investments in health, education, and small businesses in various countries (World Bank Group, 2020).

Therefore, the main aim of this study is to investigate whether remittance inflows generate economic growth in the Southeast European developing countries, such as Kosovo, Albania, North Macedonia, Montenegro, Serbia, Bosnia and Herzegovina, Croatia, Bulgaria, Rumania, and Greece as a developed country. We have decided to study these countries because their political, social, and economic situation is more or less similar, which makes these countries very attractive for investigation. According to a World Bank (WB) report, most of these countries aim to integrate into both NATO and the EU in the future. In the past, these countries have been the protagonists of various wars that have happened in the Balkans, which has further complicated the economic, social, and political situation. During these crises, remittances played a major role in the economic development of war-torn countries and it is still considered an important factor of economic development. Also, most of these countries are either emerging from or entering the election cycle, whereas as a result, the risks are remaining high for new foreign investments, and with the weak domestic business, high unemployment, and inconvenienced government policies, also the economic growth continues to remain low. However, it is worth noting here that most of these countries are characterized by a young population, which turns into an active workforce and a valuable source to contribute to their countries' economic development.

Regarding the methodology, apart from the variable of remittance inflows, this study also included the variables of FDI, gross capital formation, export, exchange rate, final consumption expenditure, and their influence on the GDP growth of these states.

The contribution of this research is twofold. First, the causal relationship between remittances and economic growth has been part of many studies, but a large number of these studies (Meyer & Shera, 2017; Topxhiu & Krasniqi, 2017) and others have applied econometric models such as linear regression, fixed and random effects, which have been criticized for lack of robustness of the results without considering the problem of endogeneity, or only the pooled OLS, for instance, the study by Comes, Bunduchi, Vasile, and Stefan (2018) and Mehedintu, Soava, and Sterpu (2020). For this reason, we employ different techniques: pooled OLS, fixed and random effects, and the Hausman-Taylor model with instrumental variables (IV) to address the problem of endogeneity. Second, in the recent studies, for example, Sutradhar (2020) and other authors, that have analyzed the causal link between remittances and economic growth, have included GDP per capita growth as a dependent variable, remittance growth expressed as capital formation, FDI growth, gross capital formation growth, exports growth, and exchange rate growth as explanatory variables. However, we differ from them because we included the final consumption expenditure, which is a sum between government final consumption expenditure and household's final consumption expenditure as an independent variable. The datasets of these countries are gathered from the World Bank Open Data (The World Bank, 2020a) and World Development Indicators (The World Bank, 2020b) of the World Bank.

To sum up, regression analysis shows the positive impact of remittance inflows on GDP growth, also other variables, for example, FDI, gross capital formation, exports, final consumption expenditure have a positive effect on GDP growth. Nevertheless, only the exchange rate as an independent variable is not correlated with GDP growth.

The organization of the paper is organized into four sections: first, the literature will be reviewed, followed by methodology and data analysis, then discussion and interpretation of the results, and finally, conclusion and areas for further research.

2. LITERATURE REVIEW

In this section, we highlighted the empirical evidence relating to the causal link between remittances and economic growth, both in developed and developing countries. There is no still unique and conclusive answer relating to the causal link between remittances and economic growth. Goschin (2014), Meyer and Shera (2017), Goschin (2014), Pradhan et al. (2008), Bajra (2021), Comes et al. (2018) and others have found a positive relationship between remittances and economic growth. On the other hand, Jongwanich and Kohpaiboon (2019), Jawaid and Ali Raza (2014), Craigwell et al. (2010), Qutb (2021) and others have found a negative effect of the remittances on economic growth.

The study by Meyer and Shera (2017) examined the causal link between remittances and economic growth in Albania, Moldova, Romania, Bulgaria, Macedonia, Bosnia, and Herzegovina, using fixed and random balanced panel data during the years 1999-2013. They found out that the workers' remittances have a significant effect on economic growth. The research study by Goschin (2014), the *'Remittances as factors of economic development'*, analyzed the former communist countries during the years 1996 - 2011, which have now become parts of the EU, such as Lithuania, Hungary, Slovak Republic, Poland, Romania, Bulgaria, Slovenia, Estonia, Czech Republic, and Latvia, belonging to Central and Eastern Europe. The results of this research, using the same methodology as the above-mentioned study by Meyer and Shera (2017), and the result showed a positive correlation between remittances and real

GDP growth. Remittances are considered a very important financing source and a very good opportunity for families to invest, which directly affects economic growth.

Among the several studies conducted in the countries of Central and Southeast Europe, Comes et al. (2018) and Topxhiu and Krasniqi (2017) investigated the impact of remittances on the economic growth of these countries, and their results showed a positive causal link between remittances and economic growth in Central and Southeast European countries. Comes et al. (2018) examined the impact of the remittances on the economic growth of seven Central and Eastern European countries over the years 2010-2016. They employed different econometric models, such as pooled OLS, fixed and random effects models, and found out that remittances had a positive impact on economic growth in these countries. In addition, Topxhiu and Krasniqi (2017) have investigated 6 Western Balkan countries in the period 2005-2015, and applied the OLS, fixed, and random approaches. They concluded that remittances generate positive economic growth in these countries. The investigation of the Western Balkan countries was also the sample of the study by Bajra (2021) where using the instrumental variables (IV) is determined that the remittances affect the economic growth of these countries. As a result, their inflows have supported the encouragement of a high level of migration.

The study by Pradhan et al. (2008) was conducted in 39 developing countries, and their result highlighted a positive relationship between remittances and economic growth. They applied fixed and random approaches to panel data from 1980 to 2004. A similar conclusion, using regression analysis, was also highlighted in the article by Rausser et al. (2018), which included Baltic countries in their analysis.

Unlike the aforementioned studies that underlined a positive influence of remittances on the economic growth of nations, several investigations, for instance, Jongwanich and Kohpaiboon (2019), Jawaid and Ali Raza (2014) and Craigwell et al. (2010) came to different conclusions, pointing out a negative impact of remittances on the economic growth. An analysis by Jongwanich and Kohpaiboon (2019) conducted in Asia and Pacific countries over the years 1993-2013, utilizing the GMM method, revealed a negative link between remittances and economic growth. A similar conclusion was also emphasized by Jawaid and Ali Raza (2014), who investigated five South Asian countries in the 1975-2009 period. Regression analysis noted that in Pakistan the link remittance – economic growth is negative and it is recommended for government to improve policies by encouraging people to work, instead of not choosing voluntary unemployment. Craigwell et al. (2010) stated that remittances negatively impacted the economic growth of 95 developing countries in the world for the period 1970-2005, by using panel regression analysis. A causal relationship between remittances and economic growth was part of the study of Qutb (2021), wherein addition to remittances, other variables were the inflation rate and imports. In this study, it was concluded that remittances have a negative effect, or a negative causal link with economic growth, because these means of financing affect households to increase their level of consumption, so without orienting this income to proper investment in an economy.

To summarize, there is yet no consensus among the authors relating to the effect of remittances on economic growth, particularly in developing countries. Such a conclusion, which still does not have a consensus of authors regarding the effect of remittances on economic growth has also been derived from the study of Cazachevici, Havranek, and Horvath (2020). In their study the authors collected 95 articles containing 538 regression equations, noting that 40% of the studies concluded a significant positive effect of remittances, 20% of them a significant negative effect, and the rest had no statistical

significance. Therefore, this study is yet another attempt to determine whether remittances may accelerate economic growth. Regarding econometrics methodology, the majority of studies have used pooled OLS and only a few of them employed fixed and random approaches. These studies are criticized for the issues of heterogeneity among the countries and endogeneity problem. To address these issues, we differ from previous studies by including pooled OLS, fixed and random effects, and Hausman-Taylor with IVs.

3. RESEARCH METHODOLOGY AND DATA

In this section, we develop an empirical model to assess the causal link between remittance inflows and GDP. For this purpose, we employ pooled OLS, fixed and random effects, Hausman-Taylor instrumentals IV model. Additionally, the Hausman test is employed to choose between fixed random effects and the Hausman – Taylor IV.

The result from the Hausman test showed that the Hausman – Taylor instrumental IV is more consistent and efficient than the fixed effects and random effects to investigate the causal link between remittances and economic growth of Southeast European countries during the period 2009 - 2019. Moreover, we differ from the previous empirical evidence as we apply the Hausman-Taylor instrumental IV in order to find the solution to the problem of endogeneity. The endogeneity issues are important because some variables can be defined as endogenous, for example, the determinates of growth could be determined by the growth itself.

It is worth noting here that the three variables included in the model, for instance, exports, final consumption expenditure, and gross capital formation, are interpolated due to missing variables over the years. Interpolation is a method used to fill time-series gaps as discussed in the article by Lepot, Aubin, and Clemens (2017).

The model, Hausman - Taylor, is defined as follows:

$$Y_{it} = c + \beta_1(y_{it-1}) + \beta_2(rem_{it}) + \beta_3(fdi_{it}) + \beta_4(exp_interpolate_{it}) + \beta_5(fcexpend_ipolate_{it}) + \beta_6(grosscf_ipolate_{it}) + \beta_6(exchrates_{it}) + u_{it} \quad (1)$$

where y_{it} is the dependable variable, which in this case is GDP growth (annual %), $i = 1\ldots.10$ (countries), $t = 2009\ldots2019$ (years); c is constant; the explanatory variables include: y_{it-1}, which is the first lagged of dependent variable, rem_{it} (personal remittances, received as percentage of GDP); fdi_{it} (foreign direct investments, net inflows as a percentage of GDP); $exp_interpolate_{it}$ exports of goods and services (annual percentage growth) - interpolated; $fcexpend_ipolate_{it}$ final consumption expenditure (annual percentage growth) – interpolated; $grosscf_ipolate_{it}$ gross capital formation (annual percentage growth) - interpolated; $exchrates_{it}$ exchange rates (national currency per U.S dollar, end of period) and u_{it} is the exogenous disturbance.

3.1 Descriptive statistics

The empirical research of this study covers balanced panel data from 2009 to 2019, analyzing Southeast European countries, such as Albania, Kosovo, North Macedonia, Montenegro, Bosnia and Herzegovina, Greece, Croatia, Bulgaria, Serbia, and Romania. The datasets of these countries are gathered from the World Bank Open Data (The World Bank, 2020a) and World Development Indicators (The World Bank, 2020b) of the World Bank.

Since the study used balanced panel data, there were problems finding data before 2009 in some countries of the South East European countries, for instance, in the Republic of Kosovo. Therefore, we decided to apply balanced panel data with the timeframe from 2009 to 2019. The dependent variable: GDP growth as an annual percentage and the independent variables, such as personal remittances received as a percentage of GDP, foreign direct investments as a percentage of GDP, exports – annual percentage growth, gross capital formation – annual percentage growth, exchange rates, and final consumption expenditure, which is as a sum between government final consumption expenditure and households' final consumption expenditure.

The table below (Table no. 1) represents the descriptive statistics for the Southeastern European countries (Table no. A1) and the research variables (Table no. A2).

Table no. 1 – Descriptive statistics

Variables	Observation	Mean	SD	Minimum	Maximum
gdp growth	110	1.595932	2.952563	-9.132494	7.319448
Rem	110	7.091182	4.898895	.2	18.68
Fdi	110	4.898182	4.734801	.11	37.27
Exp_interpolate	110	4.935596	5.145046	-7.397	13.279
Fcexpend_ipolate	110	1.174111	2.08502	-3.553	3.705556
Grosscf_ipolate	110	.4696086	.4696086	-17.653	8.945
Exchrates	110	26.967	40.89412	.68	128.17

Source: World Bank Open Data (WB) and World Development Indicators (WDI)

4. EMPIRICAL RESULTS

In this section, we present the results from pooled OLS, fixed and random effects model, and the Hausman-Taylor with IV instrumental variables. In the Appendix section Table no. A3 is presented with the results of the Hausman test. The result of the Hausman test is 18.94, which means the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. In this case, the random-effects model is rejected because the fixed effects model is more efficient. In addition, the Hausman-Taylor IVs are calculated to deal with the problem of endogeneity. The results of this model are also presented in Table no. 2. The Hausman test was again applied to compare Hausman-Taylor IVs and fixed effects and which of these two models is more efficient for use in this research. The result shown in Table no. A3 is 6.19, meaning that the null hypothesis is not rejected. Therefore, Hausman-Taylor is a more appropriate model than fixed effects. Moreover, this model also eliminates the problem with endogeneity. In applying Hausman – Taylor IV, the exogenous variable is the exchange rate, which is used as its own instrument. Although, endogenous variables which are used and are instruments by the deviation of the individual mean are GDP growth, first lag of GDP growth, remittances, foreign direct investments, exports, final consumption expenditure, and gross capital formation.

Based on the empirical evidence that is shown in Table no. 2 the coefficient of remittance inflows is positive 0.617 (s.e. 0.184) and it is statistically significant at a 1% level. Remittances have a positive influence on GDP growth in the Southeast European countries *(Kosovo, Albania, Montenegro, North Macedonia, Serbia, Bulgaria, Bosna and Herzegovina, Greece, Croatia, and Romania).* This means that a 1% increase in remittance inflows will impact the increase per 0.62% of GDP growth, which is a significant value. This result supports the previously discussed papers by Meyer and Shera (2017), Goschin (2014), Pradhan et al. (2008), Comes et al. (2018)

and others, who through their studies supported the fact that remittances have a positive impact on GDP growth. Otherwise, the claims of some authors, such as Jongwanich and Kohpaiboon (2019), Jawaid and Ali Raza (2014), Craigwell et al. (2010) and others were contradicted, who stated that remittance inflows have a negative impact on GDP growth.

Table no. 2 – Regression results

VARIABLES	OLS gdpgrowth	Fixed-effects gdpgrowth	Random-effects gdpgrowth	Hausman-Taylor gdpgrowth
Gdpgrowth_L1				0.118
				(0.08)
Rem	0.00631	0.792***	0.243**	0.617***
s.e.	(0.0485)	(0.174)	(0.101)	(0.184)
Fdi	0.157***	0.253***	0.169***	0.214***
s.e.	(0.0518)	(0.0603)	(0.0580)	(0.062)
Exp_interpolate	0.0696	0.0748**	0.0704*	0.122**
s.e.	(0.0499)	(0.0365)	(0.0390)	(0.045)
Fcexpend_ipolate	0.460*	0.439**	0.452**	0.369*
s.e.	(0.267)	(0.198)	(0.209)	(0.200)
Grosscf_ipolate	0.105	0.138***	0.115**	0.128**
s.e.	(0.0702)	(0.0516)	(0.0549)	(0.0514)
Exchrates	0.00293	-0.0321	-0.00985	-0.017
s.e.	(0.00547)	(0.0315)	(0.0135)	(0.02)
Observations	110	110	110	109
R-squared	0.450	0.639		
Number of country1		10	10	10

Notes: ***Statistically significant at 1% level, **statistically significant at 5% level, *statistically significant at 10% level

Source: author's calculation

Table no. 2 shows that Foreign Direct Investment has a positive coefficient of 0.214 (s.e. 0.062) and it is statistically significant. This means that foreign direct investment plays an important role and has a positive effect on GDP growth in the Southeast European countries. A link with the positive effect of FDI on GDP growth is also witnessed in the article by Sokang (2018). In their empirical research on the impact of FDI on GDP growth in the state of Cambodia, they have concluded that FDI has a positive effect on economic growth. Similar results, where the positive effect of FDI on GDP was emphasized, are also concluded in the articles by Alvarado, Iñiguez, and Ponce (2017) and Rafat (2018). Some other authors in their research came to contradictory outcomes. They pointed out that FDI has a negative effect on economic growth except in some specific cases when countries have higher incomes per capita. Among the articles that concluded a negative link between FDI and GDP growth were Siddique, Ansar, Naeem, Yaqoob, and Yaqoob (2017), Saqip, Masnoon, and Rafique (2013) and Rehman, Ali, and Rehman (2015).

The results in Table no. 2 show that the coefficient of export is 0.122 (s.e. 0.045) and statistically significant, which means that the export has a positive effect on GDP growth. In other words, a 1% increase in exports will impact the GDP growth to go higher by 0.12%. This relationship between export and GDP growth is also discussed in the research of others, such as Nguyen (2016), a research conducted in Vietnam and through regression analysis pointed out that export plays a significant role in the economic growth of the country by

accelerating industrialization and modernization. An inverse relationship between GDP and export is discussed in the article by Fetai and Morina (2019), highlighting that a 1% increase in GDP will affect the decline in export growth by 0.16%.

The coefficient of final consumption expenditure is positive 0.369 (s.e. 0.200), as shown in Table no. 2 and statistically significant (10% level), which means that a 1% increase of final consumption expenditure will affect the GDP growth of 0.37% higher. Even though these results are supported by different authors, there are also scholars, such as Bakari and Tiba (2019) who concluded that the final consumption expenditure does not have a real impact on GDP.

Table no. 2 shows that Gross capital formation has a positive coefficient of 0.128 (s.e. 0.0514) and it is statistically significant. Gross capital formation plays a positive significant role in GDP growth, highlighting that a 1% increase in Gross capital formation will realize a 0.13% higher value of GDP growth. Pasara and Garidzirai (2020) conducted research in South Africa from 1980 to 2018, where is revealed a causal link between gross capital formation, unemployment, and economic growth. The outcomes through linear regression emphasized that Gross capital formation is expected to improve economic growth and unemployment.

The other variable, exchange rates is presented in Table no. 2 has a negative coefficient of -0.017 (s.e. 0.0228). The variable is not statistically significant, which means there is no link between exchange rates and GDP growth in the Southeast European countries. A study by Adedoyin Isola, Oluwafunke, Victor, and Asaleye (2016) conducted in Nigeria discussed a causal link between exchange rate fluctuations and GDP. The results explained that the exchange rate does not impact GDP growth in the long run, even though in the short run the causal link between the exchange rate and GDP is positive.

5. CONCLUSIONS

Employing the endogenous empirical growth model and different econometric approaches, we assess the causal link between remittances and economic growth in 10 Southeast European countries, including Greece as a developed country in the period 2009-2019. The results show that remittances have a positive effect on economic growth and the coefficient is statistically significant. Furthermore, the results support the hypothesis that the remittance inflows generate economic growth in 10 Southeast European countries. Regarding other explanatory variables such as the foreign direct investments, exports, gross capital formation, and final consumption, have a positive effect on economic growth in those countries and the coefficients are statistically significant. The exchange rate has a negative effect on economic growth; however, the coefficient is not statistically significant.

The research highlighted a potential policy implication, as the results show that remittances may provide stable support to macroeconomic growth. Since the remittances from diasporas are a large source of external financing in the Southeast European countries, the productive employ of remittances may support the economy of Southeast European countries to be stable and enhance the economic growth by investing this money into consumption and investments. Thus, the research provides a recommendation to the government and policymakers to implement the right policies and to channel remittances mostly for investment purposes, which in turn will lead to a reduction in migration and unemployment. Hereby, recommending the governments to promote more favorable conditions for investments in various industries, especially in the “green industries” that belong to the future, will contribute to the reduction of the unemployment rate of the countries, by generating more job vacancies for youth.

Despite the insights gained from the current study, the lack of data in some of the countries was a major limitation. This study could be extended by including the labor market, unemployment, financial crisis, poverty, and pandemic time, i.e., COVID-19.

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ANNEXES

Table no. A1 – Southeast European countries

No.	Southeast European countries
1	Kosovo
2	Albania
3	North Macedonia
4	Montenegro
5	Greece
6	Croatia
7	Bosna and Herzegovina
8	Rumania
9	Serbia
10	Bulgaria

Table no. A2 – Description of variables

No.	Variables	Definition of variables	Code
1	Gross domestic product	GDP growth (annual %)	Gdpgrowth
2	Foreign direct investment	FDI (net inflows as % of GDP)	Fdi
3	Remittances	Personal remittances inflows as a % of GDP	Rem
4	Final consumption expenditure	Final consumption expenditure (annual % growth)	Fcexpend
5	Gross capital formation	Gross capital formation (annual % growth)	Grosscf
6	Export	Exports of goods and services (annual % growth)	Exp
7	Exchange rate	Exchange rates (National currency per U.S dollars, end of period)	Exchrates

Sources: WB; WDI

Table no. A3 – Hausman test

Test	Chi^2	Prob > Chi^2	Results
Fixed Effects vs Random Effects	18.94	0.0043	Reject Ho
Fixed Effects vs Hausman – Taylor	6.19	0.4023	Does not reject Ho

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