Does remittance spur economic growth? Evidence from post-socialist Armenia and Georgia

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Worker remittances are the second largest source of external finance for developing countries after FDIs, which has increased interest in measuring their effect on economic growth in underdeveloped economies. In this study, I analyze the causal relationship between remittances and economic growth in two post-socialist countries - Armenia and Georgia, which experienced significant emigration after the collapse of socialism. To minimize endogeneity problems, I employ POLS (pooled ordinary least squares) and FE (fixed effects) estimations in assessing the effects of remittance on economic growth. Data set covers the 1997-2019 period. Results show that remittances have a positive effect on economic growth in these small post-socialist economies.

Key words: Armenia, Georgia, remittance, economic growth, POLS, fixed-effect

1. Introduction

The rise of neoliberalism eased factor movements across borders, which resulted in an unprecedented hike in worker remittances. It increased from $68.44 billion in 1990 to $656 billion in 2019 of which $551 billion was received by developing countries (WB 2019). Regarding the significant amount of remittances via informal channels, official statistics underestimate their real volume. Nonetheless, remittances are the second largest source of foreign capital after FDI for developing countries and their volume is significantly higher than foreign aid (Ratha 2005). FDIs are sensitive to the macroeconomic environment and cease when there is deterioration in the host economy. In contrast, remittances are a stable and more reliable source of foreign capital. Low-income countries such as Lesotho, Kyrgyzstan, and Tajikistan are heavily dependent on remittances and their share in GDP ranges between 20–40 percent. In general, the majority of developing countries receive remittances at more than 5 percent of their GDP (Salahuddin–Gow 2015).

Armenia and Georgia, two small, post-socialist economies, can also be considered as reliant on remittances. The dismantling of the USSR resulted in collapse of production, trade, and financial links among member states and badly hurt these underdeveloped small economies. In contrast to the guaranteed employment of the socialist period, employment and decent income is extremely scarce in the new era. As a result, massive labor migration began in the mid-90s. Despite all of this, their economic performance revived after the transition shock, although labor migration persisted due to lack of job opportunity. Logically, labor migration is accompanied by remittances. Figures 1A and B illustrate that remittances are the main source of foreign currency for these countries despite it sometimes being replaced by FDI in Georgia.

Figure 1A Inflows to Armenia (% of GDP) 1997-2019
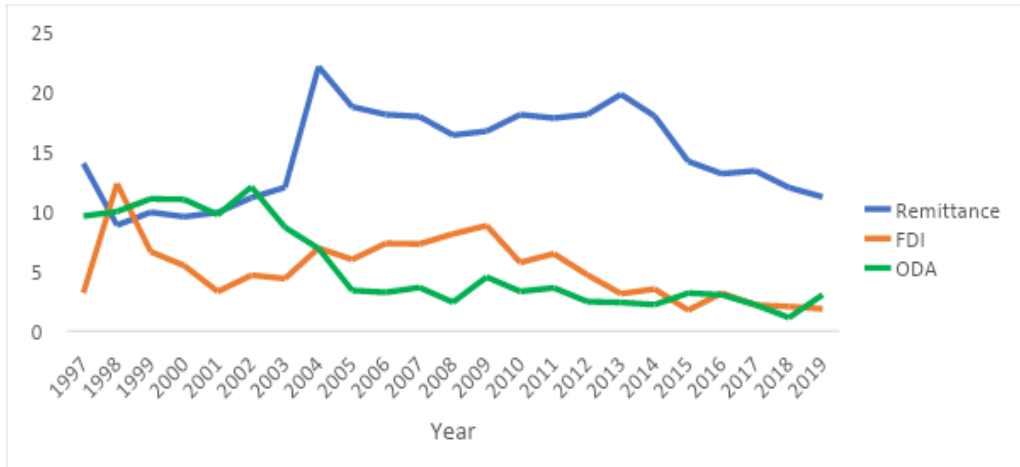
Source: World Bank Development Indicators

Figure 1B Inflows to Georgia (% of GDP) 1997-2019
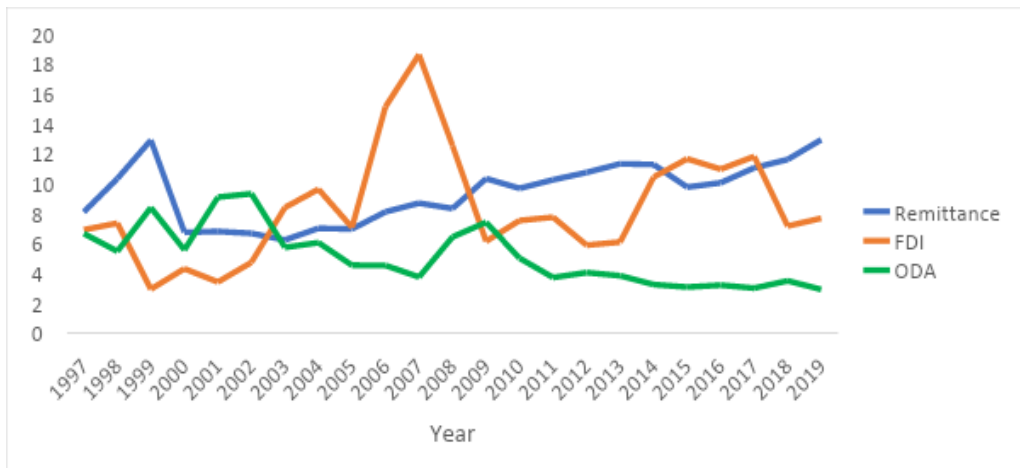
ODA-Official development Assistance
Source: World Bank Development Indicators

Continuous inflows of remittances raise scholarly and policy-maker interest on the impact of remittances on the economy of receiving countries. There is no unanimity among scholars on the impact of remittance on receiving economies. One line emphasizes that remittances can provide macroeconomic stability, have a multiplier effect on aggregate demand via higher consumption, provide capital in a dearth of savings, and finance spending on human capital (Barajas et al. (2009)). Others highlight that remittances may discourage labor force participation, and hamper the export sector via appreciation of domestic currency (Chami et al. 2008). Studies on the influence of remittances on the economic performance of the two South Caucasian countries are scarce while there is voluminous research on this topic. In this paper, I aim to evaluate

the effects of remittances on the economic growth of Armenia and Georgia and seek answer to the question of the effect of remittances on the economic performance of these Caucasian countries. I hypothesize that remittances positively contribute to economic growth in Armenia and Georgia. I test this hypothesis by employing panel regression analysis.

In the next section, I review existing literature on remittance and economic performance relationships. Section 3 presents data and methodology. I discuss the results in the 4th section and draw conclusions in the last section.

2. Literature review

Studies on the effect of remittances on economic growth deduce both positive and negative effects. The optimistic view claims remittances can reduce country risk, enhance creditworthiness of a country for external borrowing (Chami et al. 2008), reduce macroeconomic instability (Barajas et al. 2009), increase capital stock, promote financial stability by reducing risk of current account reversal (Bugamelli 2009), and improve balance of payments (Acosta et al. 2007). Durand et al. (1996) investigate the effect of remittance on the economic development of Mexico and summarize that remittance-led consumption can employ idle production factors and resources and have a multiplier effect on the domestic economy. Barajas et al. (2009) and Azizi (2018) claim that remittance has a positive effect on human capital accumulation. Furthermore, remittances allow receivers to stay in education longer.

Mossey et al. (1998) conclude that remittance is a source of start-up capital in West-Central Mexico. Woodruf and Zenteno (2001) come to a similar conclusion that remittances are responsible for 20 percent of capital in micro-business in urban Mexico. In contrast, remittances are mainly consumed in MENA countries and don't impact on investment (Mi and Ali 2012). Chami et al. (2003) indicate that remittances mainly go to consumption, a small portion is invested in unproductive housing, land, and jewelry. In countries with primitive financial systems, remittances can contribute to economic development by providing alternative channels to finance investment and overcome liquidity constraints for small business (Giuliano–Ruiz-Arranz 2009). Similarly, a developed financial market has the potential to allocate remittance to productive investment through sophisticated financial systems. Contrastingly, intermediate level of financial development is not effective to channel remittance to investment (Catrinescu 2009).

Aggarwal et al. (2011) find positive association between remittances and bank deposits and credit development. By analyzing the effect of remittances on financial development in post-socialist Central Eastern Europe (CEE), Former Soviet Union (FSU) and Mongolia, Kakhkhorov and Rohde (2020) show that remittances have positive effects especially via credit-related indicators. Remittances help to improve the creditworthiness of borrowers. Chami et al. (2003) assert that by relaxing capital constraint on borrowers, remittances hinder capital market development through reducing demand for its products.

Catrinescu et al. (2009) point out that better economic and political institutions allow the exploitation of the potential benefits of remittances on economic growth. By analyzing 116 countries for 1990-2014, Matuzeviciute and Butkus (2016) conclude that

remittances are effective in promoting economic growth in relatively developed countries compared to underdeveloped ones, while the growth effect of remittances diminishes as their abundance increases.

Acosta et al. (2007) analyze the effect of remittances on the tradable sector of emerging economies in the context of El-Salvador. They claim that remittances result in a fall in labor supply and increase in consumption of non-tradables at the cost of the tradable sector. Regarding labor intensity of the non-tradable sector, increased demand leads to a rise in price of non-tradables. Higher non-tradable prices incentivize its further expansion, which reallocates labor resources from the tradable sector. Losing the competitiveness of the tradable sector via exogenous expansion of the non-tradable sector is called the "Dutch disease" phenomena (Corden 1984). Chami et al. (2008) and Guha (2013) come to a similar conclusion that remittance can hamper the competitiveness of the tradable sector by allocation resources from this sector to non-tradable production. Amuedo-Dorantes and Pozo (2004) assert that remittances appreciate real exchange rates in 13 Latin American Caribbean countries. Considering the persistence of high unemployment rates in developing countries, demand for non-tradables may not undermine the effectiveness of exports by shifting its labor resources (McKinley 2005). Acosto et al. (2009) propose that sophisticated financial markets can channel remittances to productive investment, and therefore, mitigate their negative effect on the appreciation of domestic currency.

Remittances have the potential to create incentives which are detrimental to economic growth. Mansoor and Quillin (2006) indicate that remittance can make receivers rely on it as a source of income. At the same time, it can raise receivers' reservation wages. Both together can reduce labor supply in the domestic economy. According to Shera and Meyer (2013), as remittances provide an income source for citizens, society is not eager to pressure the government to implement economic reforms. Inflows of remittance as foreign currency may make the government overoptimistic and weaken its fiscal discipline (Barajas et al. (2009), Barajas et al. (2012)).

After the collapse of the communist bloc, the economic situation in individual countries, especially in the FSU countries triggered considerable labor migration, which was accompanied by cross-border remittances. In this regard, considerable research has been done on the effect of remittances on economic growth in post-socialist countries. Leon-Ledesma and Piracha (2004) analyze the effects of remittances on economies of CEE countries and conclude that remittances have positive effects both on employment and productivity via increase in investment. Meyer and Shera (2017) investigate the impact of remittances on the 6 top remittance-receiving countries of transition economies in Europe, and indicate the positive effect of remittances on economic growth of these countries. Bayar (2015) examines the influence of remittances on economic growth in EU transition economies in tandem with FDIs. He concludes that remittances positively contribute to economic growth by increasing national savings and foreign exchange reserves. According to Abduvaliev and Bustillo (2019), remittances have a positive and significant effect on economic growth in CIS countries. Martin et al. (2002) relate the success of Albanian economy in the mid-90s to significant inflows of remittances.

Regarding the specificity of small developing economies and the relatively high share of remittances in many of these countries, it is important to present studies on the

impact of remittances on these countries. Ahortor and Adenutsi (2008) investigate the effect of remittance on the long-run economic growth of small-open developing economies in Latin America (LA), the Caribbean, and Sub-Saharan Africa (SSA), and conclude that the effect is strong especially in LA. Feeny and Iamsiraroj (2014) analyze the influence of remittances on the economic growth of small island developing countries (SIDC) in comparison with other developing countries. They conclude that influence is strong in SIDCs, while it is negligible in other developing economies. Their findings contradict those of Ahortor and Adenutsi` (2008), that the effect of remittance is weak in LA but strong in SSA. Benhamou and Cassin (2021) come to the conclusion that remittances increase expenditure on education in small economies.

Studies on relations between remittance and economic growth are scarce for Armenia and Georgia. Dilanchiev and Sekreter (2016) measure the effect of remittances on economic growth in Georgia by employing the Johansen Cointegration test and find positive impact. Kakulia (2007) claims that remittances are mainly spent on consumption and boost the trade sector in Georgia. Gerber and Torosyan (2013) propose that remittances do not contribute to unemployment in Georgia. Remittances have a positive effect on human capital accumulation and ease access to loans for small businesses. Horojan (2015) concludes that remittances have a positive impact on the Armenian economy in interaction with financial deepening and improvement of institutional quality.

3. Data

This section gives the description of data on remittances, economic growth, and control variables deployed in growth regression. Remittance is an explanatory variable of my regression. There are various sources for personal remittances. One frequently used one is the IMF Balance of Payment Statistics Yearbook, which indicates remittances in workers' remittances, migrant transfer, and compensation of employee items. The World Bank (WB) aggregates them under the heading of remittances. I use the remittance per capita indicator. I divide annual personal remittances received (current USD) by the population for Armenia and Georgia in respective years. The dependent variable of regression is economic growth, which is expressed as GDP per capita in current USD

The following are control variables of my regression. *Investment* (*inv*) is calculated as the share of gross capital formation in GDP. *Foreign Direct Investment* (*fdi*) is defined as the ratio of FDI inflows to GDP. I use two indicators for assessing financial development. First is *Broad Money (bm)* to GDP ratio defined as the proportion of M2 to GDP. The second indicator is the ratio of loans for the private sector to GDP. *School enrollment* (**se**) ratio measures tertiary enrollment and stands for human capital. *Trade openness (to)* is defined as the ratio of sum of exports and imports to GDP. I conducted differentiated logarithmic of all independent, dependent, and control data to account for stationarity and other estimation issues. I use annual data, and data sources for all variables are from WB Development Indicators for the period of 1997 and 2019.

4. Model estimation

The following equation estimates the effect of remittances on economic growth in Armenia and Georgia.

$$GDP_{it} = \sum \beta_0 + \beta_1 R_{i,t} + \beta_i X_{it} + \eta_i + \varepsilon_{it}$$

GDP_{it} is GDP per capita, R_{it} is remittance per capita, X_{it} are control variables mentioned in the previous section, η_i is unobserved country-specific effect, and ε_{it} is error term. β_0 is constant, β_1 is the elasticity of GDP per capita to remittances per capita, and β_i stands for i^{th} control variable.

Regarding the possibility of both positive and negative effects of remittances on domestic economy as mentioned in Section 2, the expected sign of coefficient correlated with remittances is equivocal. Considering control variables, investment has an estimated positive effect on economic growth (Long–Summers 1991). FDI inflows can spur economic growth via transfer of technology; however, the host country must have absorptive capacity (Borenzstein et al. 1998). Therefore, its estimated sign is unclear. The effect of financial development in the expression of enlargement of money supply and commercial loans on economic growth in developing countries is ambiguous. From one side they can provide liquidity and capital, from another side they can increase exposure to financial crises (Miller 1998, Dawson 2008). The expected sign of tertiary school enrollment as a measure of human capital development is positive (Barro 2001). Trade openness in remark of trade volume has a positive effect on economic growth (Yanikkaya 2003).

5. Empirical results

Before presenting the results of the regression model, I will introduce descriptive statistics and a diagnostic test to check OLS assumptions. Table 2 exhibits descriptive statistics. In order to test stationarity of the dataset, I applied the Unit Root Test (Table 3). Considering the shortness of my time series, the most appropriate tests are the Dickey-Fuller and Phillips-Perron tests (Arltova–Federova 2016). Excepting minor violation of stationarity criterion ($p < 0.05$) in trended probability of GDP and private loans, all data satisfy the requirement of stationarity.

Table 2 Descriptive Statistics

	DIF_GDP	DIF_REMP	DIF_INV	DIF_FDI	DIF_SE	DIF_BM	DIF_TO
Mean	0.089554	0.095126	0.005384	–0.009907	0.027713	0.079153	0.020861
Median	0.083289	0.101530	0.014724	0.031993	0.044249	0.071215	0.036842
Maximum	0.374722	0.857293	0.325573	1.350276	0.390387	0.282706	0.136419
Minimum	–0.292181	–0.542883	–0.338108	–0.918336	–0.297073	–0.105764	–0.139128
Std. Dev.	0.139837	0.226793	0.137737	0.430409	0.103200	0.091957	0.065276
Skewness	–0.538537	0.015271	–0.111225	0.478765	–0.025660	0.106300	–0.551294
Kurtosis	3.579649	5.717171	3.232616	3.993412	6.845203	2.989681	2.627952
Jarque-Bera	2.742819	13.53724	0.189923	3.490172	27.11174	0.083060	2.482556
Probability	0.253749	0.001149	0.909408	0.174630	0.000001	0.959320	0.289015
Sum	3.940357	4.185540	0.236900	–0.435900	1.219353	3.482732	0.917894
Sum Sq. Dev.	0.840843	2.211708	0.815769	7.965833	0.457961	0.363611	0.183224
Observations	44	44	44	44	44	44	44

Source: Author's calculations

Table 3A Unit Root Test (Dickey-Fuller)

	At level	dif_gdp	dif_remp	dif_inv	dif_bm	dif_pl	dif_se	dif_to
With Constant	t-Statistics	12.8262	15.3257	20.0712	40.3464	11.5107	33.6294	18.1409
	Probability	0.0122	0.0041	0.0005	0.0000	0.0214	0.0000	0.0012
With Constant &Trend	t-Statistics	8.37234	12.1892	16.9136	38.3436	6.71784	26.7942	13.1544
	Probability	0.0789	0.0160	0.0020	0.0000	0.1516	0.0000	0.0105
Without Constant &Trend	t-Statistics	17.3253	22.1455	32.0030	14.4100	16.7622	44.8469	22.0874
	Probability	0.0017	0.0002	0.0000	0.0061	0.0021	0.0000	0.0002

Source: Author's calculations

Table 3B Unit Root Test (Phillips-Perron)

		dif_gdp	dif_remp	dif_inv	dif_bm	dif_pl	dif_se	dif_to
With Constant	t-Statistics	12.8838	15.3257	20.4057	42.9792	11.4198	33.2752	18.1207
	Probability	0.0119	0.0041	0.0004	0.0000	0.0222	0.0000	0.0012
With Constant &Trend	t-Statistics	8.04256	12.5226	17.3606	143.374	6.64041	25.7535	13.2212
	Probability	0.0900	0.0139	0.0016	0.0000	0.1562	0.0000	0.0102
Without Constant &Trend	t-Statistics	17.2552	22.2458	32.3988	27.5352	16.5454	43.5489	22.3310
	Probability	0.0017	0.0002	0.0000	0.0000	0.0024	0.0000	0.0002

Source: Author's calculations

The similarity of the level of the economic development and structure of the Armenian and Georgian economies justifies the employment of Panel regression. I employ both Pooled Ordinary Least Squares (POLS) and Fixed Effect (FE) estimation models and use E-views 10 as a software package. The POLS estimation does not take country specific features into account, which can have relations with explanatory variables. It pools all variables and recognizes them as data for a single "united" country. The FE model estimates the explanatory variable as non-random. Fixed effect estimation "clears" regressor from unobservable country-specific effects. In other words, it neutralizes correlation between country-specific error terms and explanatory variables.

I ran residual diagnostics for testing the validity of the model. The Serial Correlation test shows the p-value to be higher than 5 percent, and therefore, residuals are not serially correlated. Therefore, the model is valid to explain relations among interested variables.

Table 4 presents results of equation by using POLS and FE estimation. Results of both estimations are similar. The result shows that the relationship between GDP growth and remittances is positive, a one percent increase in remittances can raise GDP per capita in Armenia and Georgia by 0.36 percent on average. Remittance is only statistically significant among independent variables.

Both investment and FDI indicate positive association with GDP per capita, despite this coefficient being tiny. One of the possible explanations for the negligible effect of FDIs on economic growth lies in features of FDIs. The effects of market-seeking and partially resource-seeking FDIs on host economies are limited and exhaust rapidly (Dunning 2015). Considering the underdeveloped structure of the Armenian and Georgian economy, these strategies probably dominate the choice of foreign capital.

Broad money supply has a negative association with GDP per capita, while loan to private sector displays a small positive correlation. Qualitative evaluation of financial development such as the effectiveness of the financial system to allocate resources to

productive investment can present a better understanding of their effect on economic growth in Georgia and Armenia.

The GDP per capita and tertiary school enrollment show positive relations, which is congruent with theory. Contrary to expectation, trade openness negatively contributes to economic growth. As Ulasan (2015) suggests, trade openness by itself cannot promote economic growth. The specialization of a country in international trade and the role of the government to upgrade its position in international specialization are decisive factors for benefiting from trade openness. Considering the underdeveloped structure of the Armenian and Georgian economies, trade openness cannot alone boost their economy.

The answer to the question of through which channels remittances can affect economic growth in Armenia and Georgia is ambiguous. Nevertheless, the first possible direct effect can be a rise in domestic demand via remittance-supported consumption. The increased demand for consumed goods and services can lead to deployment of idle production factors. Considering the massive job loss after transition shock, this channel can involve some part of the idle labor force in employment.

By enabling acquiring education for young members of receiving families, remittances can contribute to economic growth via enhancement of human capital of Armenia and Georgia. Nonetheless, insufficiency of demand for skilled labor force and low level of payment for their work in labor markets can result in more emigration and prolonged dependence of the domestic economy on remittances in these countries.

Lastly, the positive effect of remittance on the economies of Armenia and Georgia can apply by supporting macroeconomic stability which is necessary for investment. Excepting output contraction corresponding to the global financial crisis (additionally, the Russian military attack on Georgia), these countries haven't experienced macroeconomic instability after the transition shock of early 90s. It is obvious that remittances are not the sole reason for macroeconomic stability in the above-mentioned period but their contributions are undeniable.

Table 4 Dependent variable GDP per capita

Ind. variables	OLS	Fixed Effect
Constant	0.048573	0.048104
diff_remp	0.363672	0.362787
diff_inv	0.066477	0.078226
diff_fdi	0.065803	0.068932
diff_bm	–0.119800	–0.120136
diff_pl	0.087325	0.090436
diff_se	0.275359	0.252682
diff_to	–0.057304	–0.017551

R-squared	0.506466	Mean dependent var	0.089554
Adjusted R-squared	0.410502	S.D. dependent var	0.139837
S.E. of regression	0.107365	Akaike info criterion	–1.462191
Sum squared resid	0.414984	Schwarz criterion	–1.137792
Log likelihood	40.16819	Hannan-Quinn criter.	–1.341888
F-statistic	5.277625	Durbin-Watson stat	1.900051
Prob(F-statistic)	0.000326		

Source: Author's calculations

Table 5 Diagnostic Test (Cross-sectional Dependence Test)

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	1.556113	1	0.2122
Pesaran scaled LM	0.393231		0.6941
Bias-corrected scaled LM	0.345612		0.7296
Pesaran CD	1.247442		0.2122

Source: Author's calculations

6. CONCLUSION

In this study, I measured the effect of remittances on the economic growth of Armenia and Georgia. The study revealed a positive and significant effect of remittances on economic growth in these countries. Despite the fact that remittances have a significant effect on the overall economy, they should not be accepted as a determinant of economic development. Firstly, remittances can increase domestic demand but cannot in themselves upgrade production capacity, which is necessary for long-run economic growth. Secondly, reliance on remittances can result in neglecting necessary institutional reforms and implication of government policies which are necessary for the investment environment. The Armenian and Georgian governments should have a development strategy and find more effective ways of channeling remittances into human and physical capital accumulation.

This paper analyzed the effect remittances have on economic growth in post-socialist Armenia and Georgia. Nonetheless, it remains necessary to investigate the channels by which remittances affect economic growth.

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