Nexus Amongst Remittances and Inequality in Western Balkan Countries: Global Pandemic Crisis vs. Financial Crisis

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Abstract This paper examines the impact of remittances on income inequality measured through Gini index, particularly, during the adverse external shocks, global financial crisis of 2008 and global pandemic crisis of Covid -19, in Western Balkan countries. Data highlight the fragile economic progress of these countries through fostering the income inequality during the long transition. However, migrants' remittances sustained to remain a significant source of foreign income in Western Balkan countries. The empirical results demonstrated a U-shape relationship between remittances and inequality related to Western Balkan countries, thus remittances have contributed on increased inequality. Meanwhile, the linear relationship amongst remittances and inequality demonstrated the negative impact of remittances towards inequality. Additionally, we found that remittances reduced significantly the inequality during pandemic crisis of Covid-19, serving as a shock absorber during adverse shock, but the remittances demonstrated the non – significant and positive impact on inequality during recent global financial crisis. We suggest that the policy makers should adopt regarding effective income distribution to reduce income inequality.

Keywords:
remittances, inequality, adverse global shocks, global financial crises, global pandemic crises

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1 Introduction

Globally, the remittances reached $689 billion during 2019 (World Bank, 2019) demonstrating the principal source of income related to numerous developing countries. Ratha and Plaza (2011) emphasized that the remittance flows incline to be steadier and more countercyclical flow compare to the capital flow. In addition, remittances confirmed to be more resilient during the financial crisis of 2008.

Blanchet et al. (2019) investigated the development of income inequality for 38 European countries during 1980 – 2017 through the harmonized methodology. He confirmed that inequalities enhanced at most of European countries both at the top and bottom of distribution, particularly among 1980 and 2000. His results highlighted the inequality's gap among Europe and USA, but it was lower and raised much less in Europe compare to the USA. Meanwhile it will be continued the significant income disparity among European countries and it was associated with fragile improvement of European-wide income redistribution.

Elouardighi and Somun-Kapetanovic (2009) analyzed the convergence process of income inequality amongst five Balkan countries during 1989-2008 through the comparison of the situation in the European Union of 27 countries. Their results demonstrated the real convergence process amongst Balkan countries. Meanwhile, the income and inequality convergence were higher during 2000s according to EU-27, but the greater part of convergence demonstrated during the second half of the 1990s according to Balkan countries. They highlighted the continuous and comprehensive development gap amongst Balkan and European Union countries.

This paper examines the relationship amongst income's inequality and remittances through comparative analysis among four Western Balkan countries (Albania, Kosovo, Montenegro, Serbia) during diverse shocks, particularly, financial crisis of 2008 and global pandemic crisis of Covid-19. The paper is organized into five sections. Second section presents related literature review on the link between remittances and income inequality. Third section give on overview on data and applied methodology. Then fourth section continues with empirical results and discussion referring to the panel regressions. The last section present some concluding remarks.

2 Literature Review

Diverse theoretical and empirical emphasized the significance of external and internal negative shocks related to their effects on the income inequality, particularly in developing countries.

Tokhirov (2021) examined the effect of international remittances on income inequality according to the post-communist region using the static and dynamic panel models related to 27 countries during 1991 – 2014. They found the U-shaped amongst the international remittances and income inequality referring to most of these countries. Meanwhile, they emphasized when remittances calculate more than 20% of GDP, they intensified the economic inequality.

Bajra (2021) examined the influence of remittances towards the economic growth and inequality within the Western Balkans. He found that the remittances have contributed to the income inequalities despite of converging to decline the share of remittances in a country's economy over the years. His empirical results related to the effect of remittances demonstrated no strong support towards the economic growth and inequality through testing the endogeneity of remittances.

Kóczán and Loyola (2018) investigated the remittances' effect according to the inequality in Mexico using the household-level data. They examined the remittances' effect during the 1994 Mexican Peso crisis and the Global Financial Crisis. They found that remittances can contribute to decrease the income inequality in the home country and to absorb shocks hitting the poorest.

Petreski and Jovanovic (2013) examined the impact of remittances on poverty and inequality in North Macedonia using two household surveys, particularly 2008 and 2012, after global financial crisis. They found the simultaneous effect of remittances to reduce the poverty and inequality before and after the crisis, meanwhile the inequality-reducing effect has demonstrated mainly in 2012, despite of increasing inequality during 2008.

Koechlin and León (2006) examined the inclusive empirical results related to the relationship amongst the international remittances and income inequality for 133 diverse countries during 1960 - 2003. They found a non-monotonic linkage amongst

them through simple cross-country regressions using ordinary least squares, instrumental variables and using dynamic panel data approach. They examined an inequality-increasing effect related to the remittances towards the income inequality, but they demonstrated the U curve shape amongst these variables referring to diverse stage of migration.

3 Data and Methodology

As we mentioned above our aim is to investigate the impact of international remittances on inequality 5 countries of Western Balkan region such as Albania, Kosovo, Montenegro, North Macedonia and Serbia during 2008-2020 period. Also, we have explored the effect of recent global financial crisis and pandemic crisis of COVID-19 according to the inequality. The main source of data refers to World Bank and Table 1 demonstrates the description of main variables and their statistics for all five Western Balkan countries during the period of 2008-2020.

Meanwhile, Table 2 demonstrates the dynamics according to the dependent and independent variables related to each country during 2008 until 2020. Data confirm the differences amongst countries in terms of their economic performances and development. Referring to the data, we observe that remittances account on average 10% of GDP for all countries in Western Balkan region, except North Macedonia. It proves the lowest percentage of remittances to GDP, less than 4.2%.

To explore the relationship amongst inequality and international remittances in Western Balkans we have followed the approach proposed by Koechlin and León (2006) and Tokrihov (2021). Both authors have considered the nonlinear link between remittances and inequality, thus we estimated the following regression referring to their approach:

$$logGini_{it} = \beta_0 + \beta_1 Rem_{it} + \beta_2 Rem_{it}^2 + \beta_3 logGDP\_cap_{it} + \beta_4 logGDP\_cap\_int_{it} + \beta_5 M3_{it} + +\beta_6 logDemocracy_{it} + \delta_1 dummy_1 + \delta_2 dummy_2 + \varepsilon_{it} \quad (1)$$

where the error component is $\varepsilon_{it} = \alpha_i + u_{it}$ and $u_{it} \sim iidN(0, \sigma^2)$, for each country, i=1,..,5 and t=1,2,…n.

Table 1: Description of main variables

Variable	Description	Mean	St. dev	Source
Gini index	The Gini index measures the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.	34.86	4.72	WB
Rem_GDP	Remittances as a percentage of GDP, where remittances comprise personal transfers and compensation of employees.	10.11	4.60	WB
Rem_GDP^2	Remittances as a percentage of GDP squared	123.25	99.87	WB
GDP growth	Annual percentage growth rate of real GDP.	2.20	3.63	WB
GDP per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2015 U.S. dollars.	4846.33	1227.23	WB
M3 as % of GDP	M3 as % of GDP, where broad money is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper.	55.92	14.32	WB
Democracy Index	Composite index measured as the sum of civil and political rights.	6.12	1.39	FIW

Source: Word Bank (2023), average of all countries.

Table 2: Stylized fact related to Western Balkan countries during 2008-2020

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Gini index												
AL	30.00	30.00	30.00	30.00	29.00	29.00	34.60	32.80	33.70	33.10	30.10	30.80	30.80
KS	31.80	31.80	33.30	27.80	29.00	26.30	27.30	26.50	26.70	29.00	29.00	29.00	29.00
MN	41.20	41.20	41.20	41.20	41.20	39.00	38.80	39.00	38.50	36.90	36.80	36.80	36.80
NM	42.80	42.80	40.20	39.40	38.10	36.20	35.20	35.60	34.50	34.20	33.00	33.00	33.00
SB	39.90	39.90	39.90	39.90	39.90	39.50	40.50	40.50	38.80	36.20	35.00	34.50	34.50
	Remittances as % of GDP												
AL	14.48	14.26	13.30	12.04	11.52	10.03	10.74	11.34	11.01	10.08	9.62	9.56	9.69
KS	20.20	21.06	18.84	15.66	15.34	15.71	15.53	15.43	14.75	15.49	15.68	15.81	18.61
MN	6.56	7.29	10.04	11.21	12.42	12.21	11.83	11.58	10.99	10.77	10.69	10.54	12.59
NM	4.10	4.05	4.12	4.14	4.04	3.48	3.23	3.05	2.73	2.78	2.72	2.52	3.34
SB	6.79	10.30	9.85	8.04	8.19	8.32	7.85	8.50	7.88	8.13	8.78	8.23	7.25
	GDP per capita (constant 2015 US$)												
AL	3,298.48	3,432.17	3,577.11	3,678.05	3,736.34	3,780.70	3,855.76	3,952.80	4,090.37	4,249.80	4,431.54	4,543.39	4,410.46
KS	2,621.42	2,731.38	2,843.38	2,997.22	3,021.37	3,163.46	3,279.04	3,520.77	3,739.18	3,890.20	4,009.11	4,219.08	3,990.97
MN	6,205.79	5,833.63	5,982.17	6,168.82	5,995.75	6,202.48	6,306.99	6,517.16	6,707.82	7,023.40	7,381.77	7,684.15	6,515.51
NM	4,230.73	4,207.80	4,339.96	4,433.89	4,408.30	4,530.68	4,687.30	4,861.55	4,994.56	5,043.69	5,184.69	5,386.20	5,067.21
SB	5,270.96	5,147.57	5,206.09	5,354.20	5,343.58	5,524.97	5,462.74	5,588.98	5,805.90	5,959.52	6,261.53	6,567.91	6,552.09

Source: Word Bank (2023)

As explanatory variables we have included remittances, level of GDP per capita, and ratio of M3 as % of GDP as a measure of financial development and democracy index as a measure of political and civil right. We included two dummy variables in regression referring to recent global financial crisis and pandemic crisis of COVID-19 due to examine the impact of two core external shocks related to the inequality. The dummy variables take the value of 1 according to year 2008 and 2020 and zero value others.

4 Results and Discussion

We decided to exclude North Macedonia from the sample due to the lower percentage of remittances referring to GDP, approximately 3.4%. The estimated results related to the rest of Western Balkan countries are demonstrating in Table 3. We have presented the diverse specification based on panel least square regression. Estimated results confirm a U-shape relationship amongst inequality and remittances, therefore an increase of remittances beyond a threshold will significantly reduce income inequality measured through Gini index (column1). Meanwhile, we have included the economic performance indicator measured through real GDP per capital and level of GDP per capita at begin of 2008. Also, we have included financial development indicator measured through ratio of M3 to GDP. Estimated results (table 3, column 2&3) show a positive and significant results of initial GDP per capital on inequality, while we did not find a significant results according to the economic development. In addition, we found a positive impact of financial development on inequality, which it demonstrates that higher financial development of these countries has contributed on the deepening of inequality. However, we found a negative and significant impact of the democracy index on inequality, which show that improved political and civil rights contributed to the reduction of inequality. Otherwise, the estimated results according to the interaction amongst dummy crisis variables and remittances demonstrated that remittances have significantly reduced inequality and have served as a shock absorber during pandemic crisis of Covid-19 (table 3, column 4-6). Meanwhile, we did not find any significant results about the interaction term between remittances and financial crises dummy. These results display the divergence amongst two external shocks.

Table 3: Estimated results based on different specifications

	1	2	3	4	5	6	GMM
Rem_{it}	-0.084	-0.071	-0.059	-0.053	-0.065	-0.061	-0.132
	(0.004)	(0.003)	(0.000)	(0.002)	(0.000)	(0.001)	(0.048)
Rem_{it}^2	0.002	0.002	0.002	0.002	0.002	0.002	0.004
	(0.042)	(0.030)	(0.001)	(0.004)	(0.000)	(0.001)	(0.087)
$GDP\_cap\_int_{it}$		0.240	0.350	0.331	0.340	0.328	0.624
		(0.016)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP_cap_{it}		0.009	-0.145	-0.113	-0.098	-0.081	-0.450
		(0.946)	(0.123)	(0.253)	(0.298)	(0.405)	(0.018)
M_{3it}		0.002	0.005	0.004	0.005	0.005	0.009
		(0.204)	(0.000)	(0.001)	(0.000)	(0.000)	(0.004)
$Democracy\_index_{it}$				-0.369	-0.378	-0.368	-0.378
				(0.000)	(0.000)	(0.000)	(0.000)
Dummy_Fin_crises*Rem				0.002		0.001	
				(0.307)		(0.527)	
Dummy_Covid Rem					-0.005	-0.004	
					(0.058)	(0.090)	
Constant	4.182	1.970	2.774	2.610	2.458	2.381	
	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	
Obs.	52	52	52	52	52	52	44
Adj-R^2	0.427	0.700	0.866	0.866	0.873	0.872	P-Jstat (0.11)

Source: Authors' calculations by Eviews 7 (Note: Values in bracket present p-value)

To overcome the problem of endogeneity amongst our variables, we have presented the estimated results (column 7) based on GMM[1] approach. Whereas as instrumental variables we have used the lagged value of depend and independent variables. The estimated results demonstrate the nonlinearity effect of remittances on inequality. Thus, we confirm a U-shape relationship amongst inequality and remittances, so higher remittances above a threshold will significantly reduce income inequality measured through Gini index. Due to the impact of other control variables, we

[1] The dynamic models with panel data have two main assumptions: the error terms are uncorrelated and the dependent variables are completely exogenous. If the error terms are correlated, the estimates obtained may be inconsistent, for its elimination we use the Generalized Method of Moments (GMM) to evaluate the models, referring to Arellano and Bond (1991).

found that higher economic development and higher democracy index have contributed on the reduction of inequality. While higher financial development has contributed on deepening of inequality of these countries.

5 Conclusion

We have explored the nexus between income inequality measured through Gini index and international remittances within Western Balkan countries, except North Macedonia. We have investigated particularly the non-linear relationship amongst inequality and remittances through incorporation the interaction effects of remittances towards inequality during recent global financial crisis and pandemic crisis of Covid - 19. Empirical data on inequality of particular countries approve that their fragile economic progress has fostered the income inequality converging to the macroeconomic circumstances of them during 2008-2020. However, remittances have continued to be an important foreign income, an average at 10 % of GDP.

Estimated results based on OLS and GMM estimations confirm a U-shape relationship amongst inequality and remittances as ratio of GDP. These results highlight that remittances have significantly reduce inequality in Western Balkan countries. Our results show that economic development and democracy have negatively affected inequality. Also, additional enhancement of economic performance and political and civil rights reduced inequality in Albania, Kosovo, Bosnia-Herzegovina and Serbia. While we found that financial development demonstrates an opposite effect, through increasing inequality. Results demonstrate that remittances have contributed on reducing inequality and might have served as an absorber mostly for vulnerable households, particularly during the pandemic crisis of Covid-19. Referring to these results we suggest that the policy makers should enact the appropriate policies related to the effective income distribution in order to reduce income inequality during the external shocks. Due to this crucial consequence, the income redistribution policies should be monitored in the future within Western Balkan countries.

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