




EXPLORING THE LINKAGES BETWEEN REMITTANCES, ECONOMIC GROWTH AND POVERTY: EMPIRICAL EVIDENCE FROM PAKISTAN

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ABSTRACT

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This research mainly focuses on the impacts and implications of foreign remittances and how they affect the growth and poverty reduction in an economy. It further highlights the importance that remittances have on the improvement of the living conditions and standards in Pakistani. In order to achieve this target, we retrieved time-series data from the WDI, from the year 1980 till 2017. The econometric technique ARDL is applied which shows that there is a favorable relation among the variables. Our empirical findings suggest that the recipient country shows a positive trend in economic growth as an aftermath of increased remittances. Moreover, it proves that remittances have a notable influence on the reduction of poverty and boosting living standards in Pakistan economy. This ultimately leads to improving the socio-economic condition of the country in question. Results and findings, if used efficiently, have great potential policy implications for policymakers in the field of remittances.

Contribution/Originality: The fundamental objective of our research is to find the impact of remittances on poverty, growth, and development. The positive trends and inflows of remittances help improve the economic conditions of the country by lessening poverty and increasing positive growth levels.

1. INTRODUCTION

For many years, the sources of economic growth in the developing nations are being debated upon. In Pakistan, Remittances play an essential role in foreign earnings, comprise a huge part of it, and are also part of the balance of payments. To be exact, these remittances comprise 86% of the secondary income balance of the country. These earnings have a significant influence on the development of the country and also the GDP. Remittances reduce the dependency on borrowing externally and often save the country from economic and financial shocks. Despite different economic shocks, remittances have been showing positive trends in Pakistan. But according to the findings of [Abdih, Chami, Dagher, and Montiel \(2012\)](#) But according to the findings of [Abdih et al. \(2012\)](#) remittances affect the growth adversely as remittances indicate low indulgence of the labor force in the country and lead to a reduced outcome.

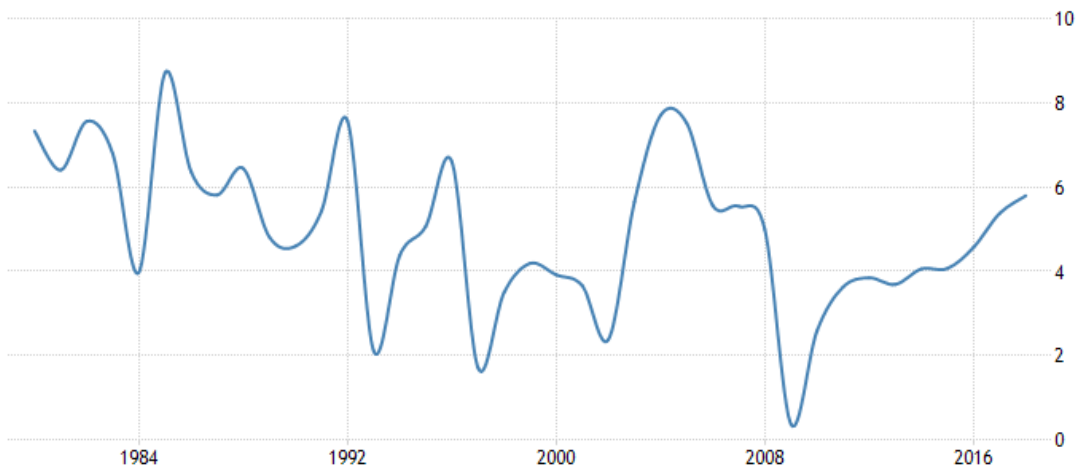


Figure-1. Historical evolution of Pakistan economic growth.

Figure 1 explains the historical perspective of economic growth of Pakistan. Many macro and micro level works have been done on the impact of remittances on the development and growth of the country, which suggests that remittances and poverty have an inverse relation since with the increase in remittances, poverty shows negative trends and this has also proved to have shown a positive impact on the economic growth of the country. In the study of Siddiqui and Kemal (2006) their analysis shows that due to the reduction in remittances, poverty in Pakistan rose significantly in the '90s. Despite the plethora of literature available on the said area of research, no serious attempt has yet been made with the perspective of Pakistan. Figure 2 explains the historical perspective of remittances of Pakistan

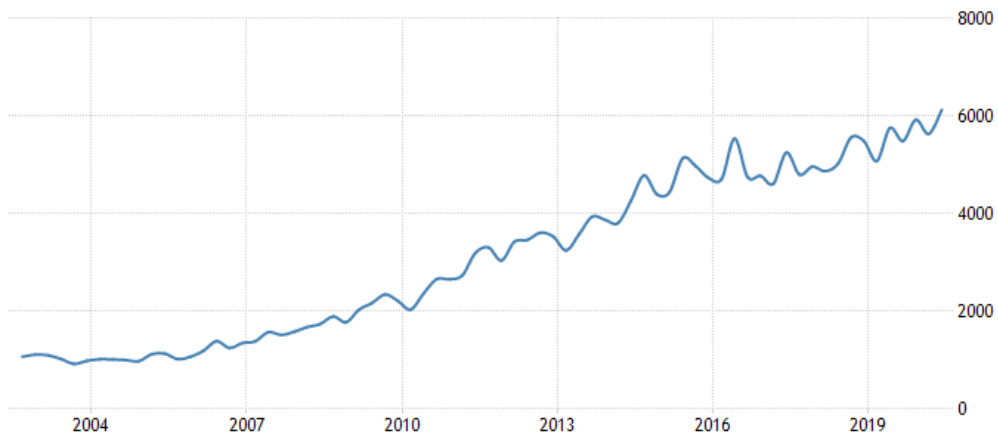
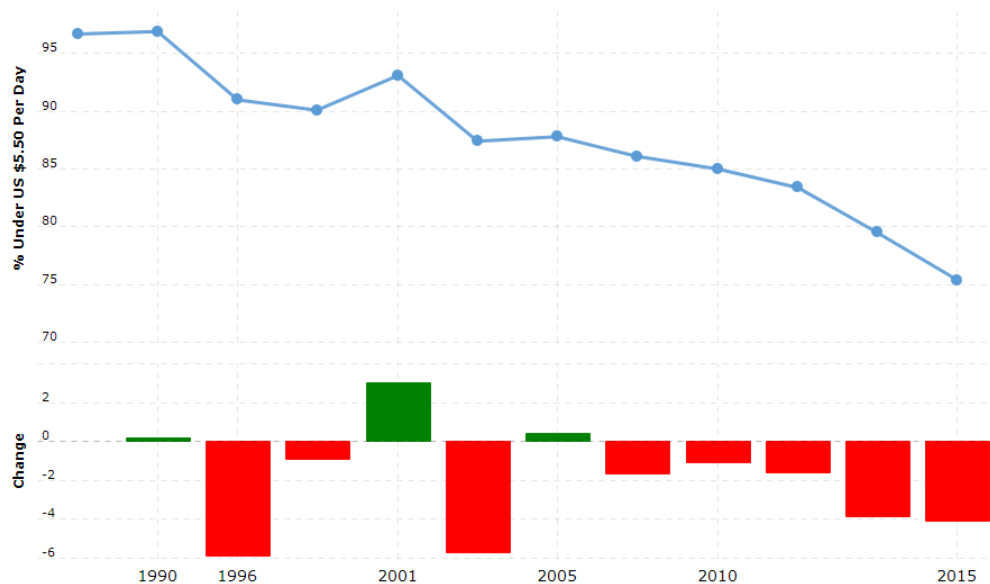


Figure-2. Historical evolution of Pakistan remittance.

Source: State Bank of Pakistan.

The fundamental objective of our research is to find the impact of remittances on poverty, growth, and development. In other words, what we are trying to find out is that how remittances affect the economy of Pakistan and this shall be the main focus of this paper. This subject has significant importance in the literature as several pieces of research have been made on the topic. Remittances improve the living standards of the people and are said to alleviate the people from the poverty levels. The positive trends and inflows of remittances help improve the economic conditions of the country by lessening poverty and increasing positive growth levels. Figure 3 explains the historical perspective of poverty rate of Pakistan.



Source: World Bank.

The order of this research paper is as follows; section 2 consists of the literature review. Section 3 is the methodology of the paper. Section 4 includes the results and analysis. Section 4 consists of Discussion and Findings. And then in the end, in section 6 we conclude and recommend policies accordingly.

2. LITERATURE REVIEW

There is a plethora of literature available on remittances from the perspective of developing and developed economies. We included some of the important studies in this chapter. The long-run relationship between remittances and their impact on the growth factor needs to be discussed thoroughly. This relationship is country-specific and varies from country to country, especially developing countries. If understood properly, this relationship can aid policymakers to create an efficient economic policy. Remittances help the developing countries fund development in their way. But, to efficiently do that, the country needs to understand how they can use that resource effectively. According to the findings of [Fayissa and Nsiah \(2010\)](#) for developing countries, the financial settings are not that advance and stable so remittances aid in increasing economic growth by supporting in investment and liquidity limitations.

At the macroeconomic level, remittances help in improving the balance of payments of the country. It is also pretty beneficial at the household level; it improves the standard of living by funding better health and education facilities. And on a community level, these foreign resources boost the local economy by financing domestic and local projects ([Gazi Mainul & Shakur, 2017](#)). According to the study of, [Catrinescu, Leon-Ledesma, Piracha, and Quillin \(2009\)](#) remittances have a positive impact on increasing school enrollment and also on the reduction of child labor. Furthermore, the results also indicate that remittances aid in the financing of school expenses when the household is going through a crisis. In addition to this, [Stark and Lucas \(1988\)](#) conducted a study that supported that remittances reduce poverty levels by bettering the living conditions of the recipient families.

[Jongwanich \(2007\)](#) stated in his research that, despite remittances having a notable positive impact on reducing poverty by increased income levels of the poor, they, unfortunately, have only marginal effects on the growth levels by working on human capital development and domestic investment, respectively. The study of [Acosta, Calderon, Fajnzylber, and Lopez \(2008\)](#) further suggested that remittances have adverse and small effects on the reduction of poverty in the recipient countries. According to [Javid, Arif, and Qayyum \(2012\)](#) remittances proved to have shown positive impacts on poverty reduction not in the short-run, but the long-run.

In the case of developing nations, their remittances tend to exceed any other source of foreign investment and play a positive role in their economies. And they have recently become as large as the foreign direct investment (Gapen, Chami, Montiel, Barajas, & Fullenkamp, 2009). According to Lucas (2005) remittances played a part in alleviating poverty and, hence, highlighting the positive part. Furthermore, Catrinescu et al. (2009) stated that the impact of remittances is weak and works in the long-run with the presence of stable economic and political conditions. The study of Adams Jr and Page (2005) supported the idea that remittances do in fact, reduce the poverty level severity in developing countries. Furthermore, according to Nasim (2019) an important source of foreign earning is international labor migration which brings remittances. Even though several wide and extensive discussions and works are done on the impact of remittances on economies, to further pass clear judgments, more research is required. Based on the available studies and literature, we can summarize the impact on remittance by stating that it can be agreed that remittances do have a positive impact by alleviating an economy from poverty and improving living standards.

3. RESEARCH METHODOLOGY

$$\ln pov_t = \alpha + \beta \ln rem_t + \gamma \ln Gini_t + \delta \ln RGDP_t + \varepsilon_t \quad (1)$$

Equation 1 model is adopted from the analysis of Ahmad and Younas (2020). The $\ln pov$ represents the log of poverty in the country, $\ln rem$ shows the log of personal remittances, $\ln RGDP$ shows the log of Gross Domestic Product of Pakistan and $\ln Gini$ shows the log of Gini Index. The data of the variables were obtained mainly from sources like the World Development Indicators (WDI) and we have taken poverty as our dependent variable and GDP, Gini Index, and Remittances as the independent variables. The annual data retrieved from the WDI is annual and is in the currency US dollars (\$). The ARDL formulation is shown by the equation below:

$$\Delta Y = \alpha + \beta Y_{t-1} + \gamma Z_{t-1} + \sum_{i=1}^k \delta \Delta Y_{t-i} + \sum_{i=1}^k \theta Z_{t-i} + \varepsilon$$

Where Y represents the dependent variable of the model, while Z shows the explanatory variable vector. The ARDL, which is the Autoregressive Distributed Lag, is used to find out the short and long-run relationship between the variables in the above equation. This model is a good fit for our model as it can be used to assess the different levels of integration for the variables. For instance, some variables are stationary at the level and some are stationary at 1st difference. Using ARDL can also be beneficial to small data researchers.

We have performed several tests on our variables, in order to find out the relationship between the variables in our econometric model. The ARDL technique helped us integrate our variables differently, so it was a suitable technique and is in accordance with our econometric model. We have taken Gini-Index as our independent variable in this model to get further more accurate results and to avoid any miscalculations. Only if we take all the possible important variables, then we can assess our results very easily. This will further help us deeply understand the impact that remittances have on the reduction of poverty.

Then in the next step, we performed the Unit root test to check the stationarity of the variables at the level and at first difference. In order to check the short and long-run relationship between the variables, we used the ARDL technique and applied Long-run and Co-integration tests, which further provided a clear picture of the model. Then furthermore, we applied the Bounds Test and CUSUM test for the recursive estimates, to actually find out that whether or not our model is accurate and whether or not applying the ARDL technique was the right way to assess this model. This also helped us learn whether the data we used was stable to run or not.

4. RESULTS AND ANALYSIS

Table-1. Data sources.

Variable Name	Data Source
Personal Remittances	World Development Indicators, 2018
Real GDP	World Development Indicators, 2018
Poverty Level	Social Policy and Development Centre of Pakistan
Gini Index	WDI and Economic Surveys of Pakistan

The first econometric model can be presented in the following Equation 2 form;

$$lnpov_t = \alpha + \beta lnrem_t + \gamma lnGini_t + \delta lnRGDP_t + \varepsilon_t \tag{2}$$

The time-series property of the data has been examined, before estimation, for finding out their order of integration using the ADF (Augmented Dickey-Fuller) unit root test. The results are shown in the Table 2:

Table-2. ADF test results.

At Level	P-Value	At First Difference	P-Value	Decision
Remittances	0.4781	Remittances	0.00001	I(1)
Poverty	1.0000	Poverty	0.0032	I(1)
Real GDP	0.7048	Real GDP	0.0107	I(1)
Gini Coefficient	0.0147	Gini Coefficient	0.0000	I(0)

As shown in the table above, GDP, poverty, and remittances are non-stationary at the level and after taking the first difference, they become stationary. This hints at the fact that these series are to be integrated of order one, i.e. I (1). Whereas the Gini coefficient is stationary at level, i.e. I (0). Table 1 represents how the order of integration of all the variables differs from one another, and therefore these mentioned mixed results obtained by the unit root test, simply justify the use of the ARDL method to estimate the short and long-run relationship between the variables mentioned.

The ARDL Bounds test is basically a method of Cointegration introduced by Pesaran, Shin, and Smith (2001) to find out the long-run relationship between the variables chosen for the model. The null hypothesis of this test states that the variables in question have no long-term relationship between one and other, whereas, the alternate hypothesis states that there is a long-term relationship between the variables of the model. If the F-statistics is greater than the lower and upper bound of the test, this indicates that the null hypothesis is to be rejected stating that there is a long-run relationship among the variables. See Table 3 for details.

Table-3. ARDL bounds test results.

Null Hypothesis: No Long-Run Relationships Exist				
Test Statistic	Value	k		
F-statistic	4.499402	3		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	2.37	3.2		
5%	2.79	3.67		
2.5%	3.15	4.08		
1%	3.65	4.66		

The null hypothesis being rejected clearly states that there is a long-run relationship between the variables. The table above represents the coefficients of ARDL, with poverty being the dependent variable, GDP, Gini Index, and Remittances being the independent variables. The values of all these variables are in log form, to smooth out the results.

Table-4. Coefficients of estimated ARDL model.

Dependent Variable is (Poverty)				
Variable	Coefficient	Standard Error	T-Statistic	P-Value
Ln (Remittance)	-0.506056	0.113394	-4.462811	0.0001
Ln (Gini Index)	-1.157585	0.729521	-1.586912	0.1238
Ln (RGDP)	-0.989453	0.177098	-5.587034	0.0000
Constant	14.619083	2.755035	5.306315	0.0000

The Long-run coefficients Table 4 indicate that there is a significant and negative relation between remittances and the poverty variables of our data. In simple words, this means that if the flow of remittances in Pakistan increases, this will help reduce the poverty level. Also, the GDP has a positive relationship with remittances.

Table-5. Error correction representation of the ARDL model.

Dependent Variable is (Poverty)				
Variable	Coefficient	Standard Error	T-Statistic	P-Value
$\Delta LGDP_t$	0.481861	0.237907	2.025414	0.0525
$\Delta GINI_t$	-0.232365	0.100025	-2.323081	0.0277
$\Delta LREM_t$	0.007489	0.029613	0.252905	0.8022
$\Delta LREM_{t-1}$	0.058967	0.032886	1.793074	0.0838
$ECM_t(-1)$	-0.184371	0.034921	-5.279664	0.0000

The Table 5 above shows the short-run relationship between the variables. The error correction refers to the speed of adjustment of our model and defines how much amount of time it is going to take to move towards the equilibrium. Furthermore, the short-run variables are significant at 10 and 5% level of significance, and some being insignificant. We conducted the CUSUM test and the graph below represents the findings. We applied the CUSUM Test to estimate the recursive estimates. If the cumulative sums remain within the red lines, it means that the model is fit for the data. Since, our graph shows that our cumulative sums stays within the red line and hence, our data is a fit for this model (see Figure 4).

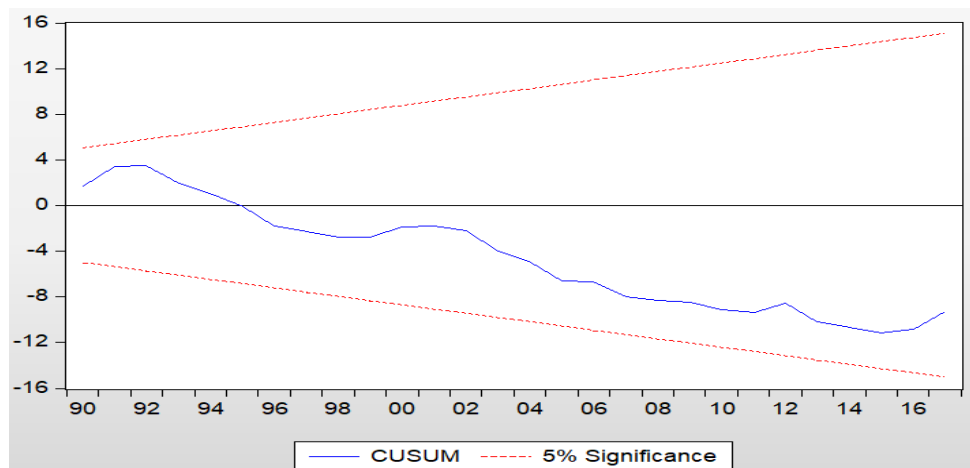


Figure-4. Plot of ARDL CUSUM Test.

5. DISCUSSIONS AND FINDINGS

This study has been undertaken to simply find out a method or way to eliminate poverty from the country under study. Several pieces of research have been done on this issue in different countries. But no serious has yet been made in the context of Pakistan. To improve our economic conditions and in an attempt to reduce poverty, more remittances inflow need to be encouraged. Our empirical findings suggest that remittances impact economic

growth in a significant way and have a positive impact on the economy of Pakistan overall. Furthermore, the results also suggest that poverty reduction has a closer, positive link to the inflow of worker's remittances in Pakistan. This indicates that more inflow of remittances could mean better living standards, smoother consumption, and reduction of poverty levels for the recipient households and overall in Pakistan's economy.

There have been similar results like ours in other studies like Jongwanich (2007) its empirical evidence supports the argument that remittances affect poverty reduction and economic growth positively. According to Iqbal and Sattar (2010) the Gross Domestic Product (GDP) growth has a positive relationship with the remittance inflow of the country. Moreover, the study also states that remittances are a significant source of capital in Pakistan. In the study conducted by Lucas (2005) he also supported the idea that remittances do contribute a lot to Pakistan's economy to reduce poverty levels and improve living standards. After reviewing certain other studies conducted in this field, we can conclude that remittances are in fact a significant source of capital and aids in reducing poverty side by side. In the long-run, remittances can improve the economic growth levels and can help Pakistan attain sustainable growth in the economy.

6. CONCLUSION AND POLICY RECOMMENDATIONS

This study aims to focus on the impact and implications of the inflow of remittances in the economy of Pakistan and how it is related to the poverty reduction in Pakistan. For this, we retrieved the data from sources like World Development Indicators. To empirically analyze the relationships among the variables chosen i.e. remittances, poverty, and economic growth of the economy, for this model, we applied the ARDL technique. From our results and findings, we came to the conclusion that remittances do significantly and positively impact the economic growth of Pakistan. After further analysis, we came to realize that remittances also have great implications on the poverty reduction in Pakistan and this can be easily proved by our statistical evidence above. More researchers need to work on this area of study and try different methods such as taking panel data or applying different empirical techniques to further confirm our results.

As the empirical results show, remittances have a significant impact and affect the economic growth of the country positively. Pakistan can benefit from this even more than before if some much-needed steps and policies are implemented. The government of Pakistan can turn this situation into the country's favor by introducing certain policies that will increase the inflow of remittances in Pakistan's economy. This can be certainly done by making the process of sending money easier for foreign workers and by reducing the transaction cost. This will encourage more workers to send money more frequently and in larger amounts than earlier. The transfer of remittances directly will smoothen out the process of the inflows and further make the consumption easier for the recipients. To summarize, it can be easily said that the government needs to focus on making the remittances process easier and transactions smoother, by producing some policies following these goals.

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