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NEXUS BETWEEN REMITTANCES, CORRUPTION AND POVERTY: A CASE OF PAKISTAN

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Abstract

The study's primary objective is to explore the impact of remittances, corruption, and governance on the poverty of Pakistan. For this purpose, the study uses data period 1996-2019. The study applies the Autoregressive Distributed Lag (ARDL) approach for estimation. The error correction model (ECM) can be derived using a simple linear transformation that integrates short-term adjustments with long-run equilibrium without falling long-run association. The results indicate that personal remittances, governance, and control of corruption have a significantly negative effect on poverty. The sign of a negative error correction term indicates that considered variables in the model have a long-run and stable relationship. The results proposed that personal remittances, good governance, and corruption affect poverty. Therefore, the study recommends the policymakers encourage overseas Pakistanis to send their earnings to Pakistan through legal transfer. The government should strengthen the institutions to increase their effectiveness and control of corruption.

Keywords: *Remittances, Economic Development, Poverty, Corruption*

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INTRODUCTION

Remittances are becoming a significant part of total financial inflows in most developing nations (Capasso, Neanidis, 2019). Remittances are essential for the country's growth since they impact the supply and demand for foreign money. According to Sander and Maimbo (2003), remittances allow individuals to stabilize unequal income and enhance personal and social capital. Individuals in Pakistan rely heavily on remittances as their primary source of income. Mainly, the consumption of remittances is generally on food and healthcare (Lipton,1980, Sofranko & Idris 1999, Imran et al. (2018) and Kangmennaang et al., 2017). Arru & Ramella (2000) reported that a portion of remittance improves investment and saving. Osili, (2004), Gyimah-Brempong & Asiedu (2015) elaborate that acquiring education and purchasing more assets like housing and land purchases are done through remittances. In a nutshell, remittances improve spending on education, healthcare, and housing facilities.

The primary goal of this research is to determine the influence of remittances and corruption on Pakistan's human development. According to Pakistan's economic assessment (2020), remittances were $ 18.8 billion in 2019. Pakistan's IT and IT-enabled services exports have surpassed $4.1 billion, including $1 billion in export remittances. The drop in remittance growth in 2020 is primarily due to a pandemic in which the government was busy building up foreign reserves and maintaining a steady currency rate. COVID-19 has a two-pronged impact: one through commerce and the other through remittances. The drop in remittances primarily indicates that many Pakistani employees lay off globally.

Pakistan was rated 124th out of 180 nations (Transparency International, 2020). Corruption has become a big issue for Pakistan's economy. Corruption in a country has an impact on human development as well. Corruption contributes significantly to poor GDP growth, withholding investment, preventing public services, and increasing disparities (Majeed, 2016). On the other hand, corruption has emerged as one of the most significant impediments to economic and social growth (World Bank, 2001). However, corruption has become the norm (Majeed, 2016), which many people dislike because of its negative impact on human development. The goal of public policy is to eliminate pervasive corruption and enhance market fairness. Shamim et al. (2015) investigate the influence of remittances on Pakistani exports. They demonstrated the negative effect of remittances on Pakistans' exports.

Many studies show the association between remittances and growth of an economy (Azam 2015; Chami et al. 2005; Cooray 2012; Shera and Meyer 2013) demonstrate a favorable association between remittances and economic development. According to De Vaal and Ebben (2011), Mauro 2004, Mendez and Sepulveda 2006, Economic growth suffers due to corruption. Aside from that, literature is scarce on the influence of human development, remittances, and corruption in Pakistan. Few studies (Azam and Raza 2016; Borja 2020) have looked at the impact of remittances and institutional quality on poverty and health. The study hypothesizes that corruption diminishes the effect of remittances on human development. That is, corrupt governments hinder foreign capital from being used. For this, we utilized data from

Pakistan spanning over 25 years and two-millennium development metrics, the poverty headcount ratio, and the poverty gap index (Borja, 2020). The Millennium Development Targets include eight goals and over 60 indicators.
The research is structured as follows: Section 2 covers a review of the research on the relationship between remittances and human development. It also examines the link between corruption and poverty. This study explains data and techniques in Section 3. The (ARDL) Autoregressive approach is used in the study to determine the short-run and long-run link between remittances, corruption, and human capital. Section 4 explains the findings, and the final section includes crucial closing remarks and policy implications.

LITERATURE REVIEW

Many families, towns, and economies rely on remittances for their economic stability. Private transfers assist in alleviating poverty and improving household health and education (Acosta et al. 2008, Borja, 2020). Transfer payments aid in reducing balance-of-payments deficits and increasing GDP growth at the national level (World Bank 2006). In actuality, the influence of remittances on human development metrics such as poverty revealed bias and endogeneity (Borja, 2020). Acosta et al. (2008) addressed the measuring issue and reported that remittances improve human development and alleviate poverty. They utilized data from eleven Latin American nations to discover that transfers cut poverty and enhance health and education. Similarly, Adams (2004) researched Guatemala and found that remittances lower poverty rates and severity of poverty. The study used poverty headcount, squared gap, and poverty gap as dependent variables to assess the severity.

The influence of foreign transfers on economic development is a contentious subject; Most of the researches found a positive effect on economic development, although methodology and literature are still developing. The scarcity of data is the biggest hurdle to verifying the association between foreign remittances and GDP growth (Borja,2020). Adams and Page (2005) have researched the impact of remittances on poverty. They utilized data from 71 developing nations to compensate for causation bias by measuring the distance between sending and receiving remittances. They discovered that a 10% improves in remittances reduced poverty by 3.5 percent on average. Acosta et al. (2008) expanded on the analysis and demonstrated the slight influence of Latin American remittances on poverty reduction using two-stage least square (2SLS) estimates. Jongwanich (2007) utilizes statistics from the Asia-Pacific area to suggest that increased remittances alleviate poverty. Imai et al. (2014) indicate that a 10% rise in remittances reduces poverty by 2.8 percent on average in Asian economies.

Economic progress is hampered by corruption due to the underutilization of resources and lower capital investment (Lambsdorff, 2003). Some remittance support may lead to corruption; for example, if the labor market is less equipped and only those who acquire a job can bribe the system, households may not invest in education. Borja (2014) shows that when institutional quality is higher, remittances help economic development. The study included data from 88 nations and 25 indices of

institutional quality. Borja (2017) confirms the results. Compared to other sources of finance, the analysis found that remittances and foreign direct investment have a significant and favorable influence on economic growth. It is possible to achieve this provided corruption is managed.

Similarly, Mundaca (2009) believes that there is a positive link between GDP growth, remittances, and investment and that the quality of institutions promotes remittances to use effectively. Chami et al. (2008) give evidence in the same line of study by utilizing a subset of quality of institutions indicators and only focusing on economic growth..There is a substantial influence of institutional quality on remittances. The vast literature exists on the association between remittances and poverty but there is a little evidence on the interaction between remittances, corruption, and Poverty.The current study seeks to explore the link between remmitances, corruption, and poverty in case of pakistan.

DATA AND METHODOLOGY

This research investigates the effects of corruption control, government performance, and remittances on poverty. Annual time-series data from the World Bank database have collected from 1996 to 2019. The poverty index is the dependent variable, whereas corruption control, government effectiveness, and remittances are independent factors. For the estimate, the research applies the Autoregressive Distributed Lag (ARDL) method. The ARDL technique employs regardless of whether the series of integration level I(0), I(1), or partly integrated (Pesaran and Pesaran, 1997; Bahmani-Oskooee, 2002). It employs appropriate lags to follow general to explicit processes in the data (Laurenceson, 2003). The error correction model (ECM) shows the movement of short-run corrections to long-run equilibrium without disturbing long-run association.

This approach uses suitable lags to check general to a specific process in data generation (Laurenceson, 2003). Finally, it gives a linear transformation of dynamic ECM without disturbing the results of long-run elasticities (Banerjee et al., 1993). Another relevance is that ARDL error correction becomes comparatively more efficient when the sample size is modest ($n \leq 30$) or finite (Nakaro, 2016). This study investigates two fundamental econometric models.

MODEL 1

$$\Delta DI_i = \chi_0 + \sum_{i=0}^{q} \chi_1 \Delta LREM_{t-1} + \sum_{i=0}^{q} \chi_2 GE_{t-1} + \infty_1 REM_{t-1} + \infty_2 GE_{t-1} + \varepsilon_i \text{-------(1)}$$

MODEL 2

$$\Delta DI_i = \chi_0 + \sum_{i=0}^{P} \chi_1 \Delta CC_{t-1} + \sum_{i=0}^{q} \chi_2 \Delta LREM_{t-1} + \sum_{i=0}^{q} \chi_3 GE_{t-1} + \infty_1 CC + \infty_2 REM_{t-1} + \infty_3 GE_{t-1} + \varepsilon_i \text{ -------(2)}$$

Where DI represents poverty index, CC, Rem, and GE are control of corruption, remittances, and government Effectiveness as governance, respectively. In the above ARDL equation, χ's denote the short-run parameters whereas represents

long-run parameters. However, the null hypothesis for the ARDL approach is H0: = means no co-integration exists in the long run, but the alternative hypothesis is H1; means there is a co-integration exit in the long run among considered variables. This hypothesis computes F- value and compares it with tabulated values presented in Pesaran and Pesaran (1997) and Pesaran et al. (2001). Firstly, the study applies the ADF approach for the unit root test (Dickey and Fuller, 1979). Secondly, determine the parameters of long-run variables mentioned in the first step. Schwartz Bayesian Criteria (SBC) determines the lag length and, lastly, the short-run coefficients.

Results

We are employing time series analysis in this study. According to the fundamental concept of time series analysis, all variables in a time series should be stationary. The study finds the stationarity of the variables through Augmented Dickey-Fuller (ADF), and Phillip-Perron (PP) (Phillips & Perron, 1988). The ADF's null hypothesis indicates a unit root in a series (non-stationary) while the series has not a unit root (stationary) is an alternative hypothesis. DI is stationary at I(0) in the ADF and Phillip-Perron tests, but CC, GE, and REM are stationary at I(1).

After confirming that the non-existence of unit roots indicates that variables under consideration are stationary, we examine the variables' long-run relationship. Because the integration sequence differs for each variable, the ARDL model is used to achieve the goal. Table 3 displays the ARDL Bound test result. To assess the evidence of a long connection among considered variables, the F-calculated compares to the tabulated value at a 5 percent significance level. The F-calculated greater than the F- tabulated denotes that considered variables have a long-run relation. The value of F calculated (5.87935) is bigger than the value of F-tabulated at a 10 percent significance level, showing that considered variables have a long-run association.

A negative sign of ECT infers the long-run link between considered variables. The ECM term signifies the convergence of the short-run equilibrium into a steady long-run equilibrium. The ECM signifies the speed of short-run adjustment, which is how rapidly the short-run disequilibrium steers to the long-run equilibrium. The ECM result concluded that 34.7 percent short-run equilibrium variation adjusts in the current year. The study used different Diagnostics tests. Breusch-Godfrey (BG) has been used to detect Autocorrelation and found no Autocorrelation exists. The value of the Breusch-Pagan-Godfrey (BPG) test (p-value > 0.05) confirms no heteroscedasticity. Similarly, The study applies Jarque-Bera (JB) and Ramsey reset tests to check normality and stability.

The long-run outcomes coefficient of co-integration shows that the personal remittances have a negative and significantly determine the poverty index. The results indicate that a one percent decline in personal remittances will increase poverty by 0.87 percent.

In model 2, we introduce another variable of control of corruption to check the model's sensitivity. The study found that the model results further improved after

the inclusion of the control of corruption variable. The study applied the ARDL approach as the variables considered are stationery at the mixed order of integrating I(0) and I(1). Table 6 shows the ARDL bound test results in model 2 , which confirms the long-run relation in variables under consideration as the calculated value of F-statistics 8.289 is larger than the value of 99% UB value at 1 percent significance level.

The value of ECM was found to be 1.55, confirming 100 percent variations in short-run equilibrium adjustments in the o.645 years preceding the current year.The study used different tests for Diagnostics. Breusch-Godfrey (BG) has been used to detect Autocorrelation and found no Autocorrelation exists. The value of the Breusch-Pagan-Godfrey (BPG) test (p-value > 0.05) confirms no heteroscedasticity. Similarly, the study used Jarque-Bera (JB), and Ramsey reset tests to check normality and stability.

The long-run outcomes coefficient of co-integration shows that the remittances, governance, and corruption significantly determine the poverty index. The results indicate that a 1 percent decline in remittances will increase poverty by 0.778 percent. Similarly, governance and control of corruption decrease by one unit will increase poverty by 0.695 and 0.836 percent, respectively.

Model 2 suggests that control of corruption is an essential factor that triggers the other variables of the model. Before incorporating the corruption factor, the coefficient of governance was insignificant, while after incorporating the control of corruption, it further improves governance efficiency. Therefore it is concluded that control of corruption is a significant contributor to raising the significance of remittances and governance.

CONCLUSION

Pakistan is currently facing a high level of corruption which may be the reason for the poor use of remittances. Corruption has become a significant challenge for the economy of Pakistan. Human development is also affected by the corruption of a country. Corruption is an essential contributor to low GDP growth, withhold investment, prevent public services, and increase disparity (Majeed, 2016). On the other hand, corruption becomes one of the biggest hurdles to economic and social development (World Bank, 2001).

This study examines co-integration among the poverty index and the governance, personal remittances, and control of corruption. Using a dataset of 25 years of Pakistan, the results indicate that personal remittances and governance are significant and negatively affect poverty. Because the ECT sign is negative, corruption has a significant positive influence, showing a long-term but steady relationship between the variables in the model. The ECT predicts a strong transition from a short-term stability to a long-term, stable equilibrium.

However difficult it may have been to collect the data required; we believe that current research contributes to understand the impact of remittances on poverty in

Pakistan. Furthermore, the study finds that corruption hinders the effective use of remittances on poverty reduction.

The study's primary research questions are dual, and they are both backed up by prior research. The first question to ask is if remittances have a positive impact on poverty reduction in Pakistan. After controlling for corruption, are remittances more effective to reduce poverty? The study results confirms the finding of Borja (2020). The results indicate that a 1 percent decline in remittances will increase poverty by 0.778 percent. Similarly, governance and control of corruption decrease by one unit will increase poverty by 0.695 and 0.836 percent, respectively.

The study can draw few policy implications. The results proposed that personal remittances, good governance, and corruption affect poverty. Therefore, the study recommends that the policymakers encourage overseas Pakistanis to send their earning to Pakistan through legal transfer. Strong institutions help the government's effectiveness and control of corruption.

Authors Contribution

The first author gathered data and wrote the literature review and conclusion, the second author contributed to methodology, data analysis and wort results while third author wrote introduction and contributed in reference part.It is hereby certified that the authors have no conflict of interest.

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Appendix

Table 1: Definitions and Data Sources

Variable	Description	Citation	Data Source
Control of Corruption (CC)	the perception of the public power to get private gain.	Mujahid & Alam (2018) ,Borja (2019)	World Bank Governance Indicator
Government Effectiveness (GE)	Civil servant free from political pressure and make good policies	Mujahid & Alam (2018) ,Borja (2020)	World Bank Governance Indicator
Personal Remittances (REM)	Personal remittances received (% of GDP)	Borja (2020) Majeed (2016)	World bank Indicator
Poverty Index(DI)	The proportion of the population pushed below the $1.90 ($ 2011 PPP) poverty line by out-of-pocket health care expenditure.	Borja (2020)	World bank Indicator

Table 2: Unit Root Results

Variables	Augmented Dicky-Fuller		Phillip-Parron	
	Level	First Difference.	Level	First Difference
DI	-3.842999*		-3.842999*	
CC		-4.677213*		-5.146676*
GE		-3.466019*		-3.466019*
REM		-3.654630**		-3.632896***

Source: Author's estimations Note:* Significant at 1%, ** Significant at 5%, *** Significant at 10%.

MODEL1

Table 3: Bounds Test

F Value	99% Lower-Bound[a]	99% Upper-Bound[b]	95% Lower-Bound	95% Upper-Bound	90% Lower-Bound	90% Upper Bound
5.847935	5.15	6.36	3.79	4.85	3.17	4.14

Source: Author's estimations Note: a: LB stands for Lower Bound, b: UB stands for Upper Bound.

Table 4. ECM, Model Confirmed: ARDL(1, 0, 2)

Variables	**Coefficient**	**t-Value**	
	-0.304622*	-3.004740	
	0.331248	0.679071	
	0.189378	0.402415	
	-0.347478*	-2.746765	
R^2	0.977402		
Adjusted R^2	0.968363	Hetroscedasticity	0.0878
DW	1.910186	Normality test J.B Value	0.048832
Serial correlation LM test	0.6868	Ramsey reset Test	0.4162

Source: Author's estimations, * Significant at 1% level, ** Significant at 5% level , *** Significant at 10% level.

Table 5: Analysis in Long Run

Variables	Coefficients	T-Value	Prob
LREM	-0.876665*	-6.860290	0.0000
GE	-1.626216	-1.381465	0.1861
C	20.182694	8.435827	0.0000

Source: Authors Estimations, Dependent:DI

MODEL 2

Table 6: ARDL Bounds Test

F Value	99% Lower-Bound[a]	99% Upper-Bound[b]	95% Lower-Bound	95% Upper-Bound	90% Lower-Bound	90% Upper Bound
8.289667	4.29	5.61	3.23	4.35	2.72	3.77

Source: Author's estimations Note: a: LB stands for Lower Bound, b: UB stands for Upper Bound.

Table 7. Error Correction Mechanism, Model Confirmed: ARDL(1, 3, 4,3)

Variables	Coefficient	t-Value	
$\Delta LREM$	0.350219	1.526265	
$\Delta REM(-1)$	-0.070560	-0.188815	
$\Delta REM(-2)$	0.872103*	2.675803	
ΔGE	0.724172	1.362721	
$\Delta GE(-1)$	0.044564	0.062661	
ΔGE(-2)	-0.526118	-0.772394	
$\Delta GE(-3)$	1.587388*	2.548690	
ΔCC	0.687332	1.172769	
$\Delta CC(-1)$	0.084308	0.240093	
$\Delta CC(-2)$	0.880184*	2.320803	
$ECM(-1)$	-1.555057*	-5.446166	
R^2	0.996226		
Adjusted R^2	0.982073	Hetroscedasticity	0.2515
DW	3.251165	Normality test J.B Value	0.740081
Serial correlation LM test	0.1487	Ramsey reset Test	0.3105

Source: Author's estimations, * Significant at 1% level, ** Significant at 5% level , *** Significant at 10% level.

Table 8: Long Run Results

Variables	Coefficients	T-Statistics	Probability
LREM	-0.778362*	-19.832141	0.0000
GE	-0.695730*	-2.479557	0.0559
CC	-0.836768*	-2.144235	0.0849
C	17.721247	17.183451	0.0000

Source: Authors Estimations, Dependent:DI