Cash Incentive on Remittance Inflow and its Impact on Economic Growth in Bangladesh

Md. Nurnabi Miah¹
Assistant Director, Research Department
Bangladesh Bank
Motijheel, Dhaka-1000

Puja Bhattacharjee²
Assistant Director, Research Department
Bangladesh Bank
Motijheel, Dhaka-1000

Abstract:- Remittances are crucial for driving economic growth in developing countries like Bangladesh, as they effectively influencenearly all macroeconomic indicators within the financial ecosystem.

This study examines the impact of remittance inflow on economic growth in Bangladesh considering the cash incentive policy of the government. The ARDL Bound testing approach is employed for the analysis using a monthly dataset covering the period from January 2015 to April 2023. The evidence from the results provides a substantial and favorable influence of remittances on the economic growth of Bangladesh, both in the short term and the long term. According to the expected error correction term, it is projected that the economy will undergo a correction of its imbalances at an annual rate of 58%. Consequently, a strategic blend of short-term policy adjustments and long-term initiatives has the potential to enhance the influence of remittances in fostering sustainable economic growth and elevating the the quality of life for both expatriates and the nation as a whole.

Keywords:- Cash Incentive, Remittance, Economic Growth.

I. INTRODUCTION

Remittance is one of the most crucial factors for Bangladesh's economic health. Remittances from Bangladeshi workers abroad are a vital source of foreign exchange, significantly influencing the economic growth of Bangladesh. Not merely a transfer of funds, remittances represent a vital economic variable that resonates across multiple dimensions of Bangladesh's economic landscape. They bolster the balance of payments, augment foreign exchange reserves, spur national savings, and invigorate the velocity of money within the economy. The pivotal role of remittances is reflected in their positive impact on nearly all macroeconomic indicators, exemplifying their centrality in the nation's financial ecosystem. Remittances increase the demand for money and expand the supply of funds in the recipient countries' banking system (Kim, J. (2019). This contributes to the financial development of remittance-receiving economies leading to higher economic growth. For almost two decades, remittances have consistently contributed approximately 35% Bangladesh's export earnings, overshadowing even foreign aid, thereby diminishing dependence on external financial assistance. Moreover, remittances play a crucial role in improving the well-being of families left behind and fueling economic growth in the receiving countries. Remittances thrives economic growth by alleviating poverty, creating opportunities for employment, and so on in developing countries like Bangladesh (Majumder, S. C., & Donghui, Z. (2016). Along with that, remittances also plays an important role in accumulating human capital through financing in acquiring education nutrition, and better health condition which further leads to an increase in total factor productivity and subsequent growth (Jayaraman, T. K., Choong, C. K., & Kumar, R. R. (2012). Like many other developing countries, remittance from citizens working abroad provides an important source of much-needed funds. In addition, remittances play a supportive role in strengthening the current account balance. Remittance is the second largest source of foreign exchange earnings after the garment sector. However, if the cost of imported raw materials is subtracted from the foreign exchange earnings of the garment sector, remittance will become the largest sector

In the economic tapestry of Bangladesh, remittances constitute a substantial portion of the Gross Domestic Product (GDP). As the number of Bangladeshi migrants escalates, so does the inflow of remittances, although at a rate lower than the surge in outbound migration. The surge is primarily attributed to an increasing proportion of unskilled or semiskilled laborers compared to professionals in international migration. Moreover, the illegal transfer of funds significantly affects the proportion of remittances relative to the migrant worker population. Acknowledging the pivotal role of remittances in bolstering the national economy, the Government of Bangladesh implemented a strategic policy measure in 2019 to incentivize remittance inflow. This policy offered a 2% cash incentive to incentivize and facilitate the repatriation of earnings by expatriates to their homeland from July 2019. The decision to provide such cash incentives stemmed from a comprehensive understanding of the positive implications of remittance inflow on various aspects of the country's economy. It not only contributes to individual and household welfare, but it also has far-reaching effects on the national economy, including investments in infrastructure, education, and healthcare. The cash incentive policy aimed to amplify these benefits and stimulate a more robust remittance inflow. Following the success and positive impact of the initial 2% cash incentive, the Government of Bangladesh further augmented the rate to 2.5% starting in January 2022. This increase in the incentive rate reflected a strategic effort to

https://doi.org/10.38124/ijisrt/IJISRT24AUG1260

sustain and enhance the inflow of remittances, thereby promoting economic growth and stability.

This study endeavors to explore the dynamics of cash incentives on remittance inflow and their consequential impact on the economic growth of Bangladesh. It seeks to provide a comprehensive analysis of the policy's effectiveness, its implications on the economy, and the potential for further improvements. By examining the relationship between cash incentive, remittance inflow, and economic growth, this study aims to contribute to informed policy decisions, fostering sustainable economic growth for Bangladesh. The rest of the paper is organized as follows: Section 2 presents the empirical studies related to the paper; Section 3 provides a description of the sample and data; Section 4 contains model specification and methodology; Section 5 includes result analysis and discussion. Finally, section 6 provides concluding remarks and outlines policy implications.

II. LITERATURE REVIEW

Remittances have emerged as a crucial source of financing for developing countries like Bangladesh considering both their substantial volume and the significant impact they can have on the economy. In recent years, there has been an increasing focus within the academic literature on studying the economic effects of remittances. These studies highlight the growing importance of remittances sent by migrant workers from developing countries who work abroad emphasizing their substantial contributions to the economy.

Begum, M. N., & Sutradhar, R. R. (2012) investigated the behavior of remittance inflows and its determinants in Bangladesh. Their study revealed a short-term positive link between domestic exchange rates and remittances, attributed to government efforts to channel remittances formally. The study also found a positive relationship between domestic inflation and remittances, suggesting that it encouraged higher remittance sending as it reduced purchasing power.

Goschin, Z. (2014) viewed remittances as potential capital flows with macroeconomic growth potential. Two growth models were developed and tested using aggregate data from 1995 to 2011 from ten Central and Eastern European (CEE) countries. Panel estimation methods were applied to accommodate potential cross-section heterogeneity. The findings demonstrated a significant and positive influence of remittances on both absolute and relative GDP growth across the CEE countries.

Masuduzzaman, M. (2014) explored the impact of remittances on economic growth and development in Bangladesh using time series data from 1981 to 2013. Employing the Johansen co-integration test and vector error correction models, the study revealed a long-term positive relationship between remittance inflows and gross domestic product (GDP), suggesting that remittances contribute to Bangladesh's long-term growth. Additionally, the study found that remittances significantly influence financial development, particularly in a growing economy with a developing financial

sector like Bangladesh. The study highlighted the importance of remittances for the country's economic development and offered policy considerations regarding migration management, skilled migrant development, and their economic impact, emphasizing the need to further investigate remittances' direct effect on poverty reduction and household welfare.

Chowdhury, M. S. R. (2015) analyzed the impact of remittances and other growth determinants on low-income, lower-middle-income, and upper-middle-income economies from 1981 to 2010. The study found no association between remittances and economic growth in low-income economies. However, remittances were positively linked to economic growth in lower-middle-income and upper-middle-income economies.

Majumder, S. C., & Donghui, Z. (2016) focused on analyzing the long-term impact of remittances on economic growth in Bangladesh. The study utilized Autoregressive Distributed Lag (ARDL) models and highlighted that remittances contributed significantly to Bangladesh's GDP, constituting 8.2% in 2014 and 6.7% in 2006.

Utilizing time series econometric techniques, Kaphle, R. R. (2018) conducted a study examining the causal relationship between remittances, trade, and economic growth. The study revealed a long-term relationship between remittances, trade, and economic growth. However, it found no short-term causal relationship between remittances and economic growth, whereas trade had a significant influence even in the short term on GDP during the analyzed period.

Sarkar, M. S. K., Rahman, et al. (2018) examined the relationship between remittances and economic growth in Bangladesh using time series data from 1995-2016. The study found a positive relationship between remittances and GDP, gross capital formation, domestic savings, and household final consumption expenditure. On average, Bangladesh experienced a 10.85% increase in remittances during this period, surpassing GDP growth. The study recommended the importance of initiatives to maintain consistent remittance growth for the country's socio-economic development.

Ekanayake, E. M.et al. (2020) investigated the influence of workers' remittances on economic growth and poverty reduction in 21 Latin American countries. The study utilized data from 1980 to 2018 and employed various econometric methods, including panel least squares, fully-modified least squares, and Autoregressive Distributed Lag (ARDL-ECM) analysis, and explored the hypotheses that remittances positively affect economic growth and help reduce poverty. The findings revealed a positive long-term effect of remittances on economic growth in most countries, with varied short-term effects. Additionally, remittances were associated with lower poverty rates in the region.

Using balanced panel data from 1977 to 2016, Sutradhar (2020) analyzed the impact of workers' remittances on economic growth in Bangladesh, India, Pakistan, and Sri Lanka. The study applied multiple statistical models including

https://doi.org/10.38124/ijisrt/IJISRT24AUG1260

Pooled OLS, fixed effects, random effects, and dummy variable interaction models to estimate the impact of remittances and found that remittances negatively affected economic growth in Bangladesh, Pakistan, and Sri Lanka, but had a positive impact in India. Overall, the relationship between remittances and economic growth across the four countries was found to be significantly negative.

Utilizing advanced panel econometric methods, Adjei et al. (2020) focused on investigating the relationship between remittances and economic growth in West Africa. The study found a significant positive impact of remittances on economic growth in West Africa. The study emphasized the importance of managing remittance funds prudently and recommended creating an attractive investment climate for diasporas Africans to maximize the benefits of improved remittances. Additionally, the study emphasized the necessity for West African economies to prioritize domestic investment over foreign capital inflows for sustainable economic growth

Saha, S. K. (2021) examined the impact of remittances on the economic progress of Bangladesh through a time series analysis covering the period from 1995 to 2016. Using various time series techniques including the Johansen–Juseliues test and the Granger causality test, the study highlighted a notable positive influence of overseas remittances on long-term economic growth (per capita GDP), with a unidirectional causality observed between foreign remittances and domestic investment.

Ibne Afzal et al. (2022) examined the impact of the government's two percent remittance incentive policy in Bangladesh, designed to encourage legal money transfers and curb illegal transactions from overseas. The analysis demonstrated a strong link between Bangladesh's reserves and remittances, especially in comparison to Bhutan, Pakistan, and Sri Lanka, but the correlation between Pakistan and Sri Lanka was statistically insignificant. This suggests that the policy has had a noticeable effect on remittance flows and is contributing to the growth of reserves through legal channels in Bangladesh.

Abdulai, A. M. (2023) analyzed the impact of remittance on GDP growth from 1990 to 2020 using the ARDL technique. Results revealed a long-term association between GDP growth, remittance inflows, foreign direct investment, unemployment, inflation, trade, population growth, and official development assistance. Additionally, the study found that unemployment mediates remittances' negative effect on

GDP growth. The study recommended improving reliable transfer means and reducing transfer costs to leverage remittances for sustained GDP growth in Ghana.

However, a good number of studies attempted to investigate the relationship between the remittance inflow and economic growth. Almost all the studies reveal that the remittance inflow promotes economic growth, especially in developing countries. Despite the fact that a good number of studies have broadly attempted to examine the relationship between remittance inflow and economic growth, there seems to be a space for more research in this area. Almost all the studies have concluded a long-run positive relationship between remittance inflow and economic growth. Some studies found bi-directional causation whereas others found unidirectional causation between the two. Besides, some studies also found a short-run relationship between remittance inflow and economic growth, whereas others did not. Most of the researchers used yearly data. This study stands apart from its predecessors by aiming to investigate the impact of government cash incentive policies on remittance inflow and their subsequent effects on the economy of Bangladesh using monthly data.

III. DATA AND SAMPLE DESCRIPTION

Economic growth models make a theoretical connection between the accumulation of capital and the process of economic growth. The foundation of the advanced growth theory is rooted in the neoclassical growth model developed by Solow and Swan (Solow, R. M., 1956 Swan, T. W., 1956). The objective of this model is to show a correlation between economic growth and the accumulation of capital (Dohtani, 2010).

In order to test the influence of remittances on economic growth, capital accumulation is presented in the form of remittance earnings where remittance is the main explanatory variable and the Industrial Production Index is used as a proxy of GDP growth which is the dependent variable. Control variables are chosen based on related empirical growth literature. Foreign Exchange reserve, Inflation (point topoint), and exchange rate are the control variables considered for this analysis. Data have been collected from the various issues of Monthly Economic Trends and Macroeconomic and Financial Data published on the Bangladesh Bank website. A monthly time series of data covering the period from January 2015 to April 2023 was used in the study. The description of the variables is explained in the following table.

Table 1 Description of the Variables

	Tuble 1 Description of the variables					
Variables	Description	Expected sign	Source			
GDP	Industrial Production Index (as a proxy of GDP)	-	BB (Macroeconomic and Financial Data)			
REM	Remittances (USD Million)	+	Monthly Economic Trends, BB			
INFP2P	Inflation (point to point)	+/-	Monthly Economic Trends, BB			
Forex	Foreign exchange reserve (USD Billion)	+	Monthly Economic Trends, BB			
EXC	Exchange rate (end period)	+/-	Monthly Economic Trends, BB			

Base year 2005-06

IV. MODEL SPECIFICATION AND METHODOLOGY

The primary goal of this study is to analyze the effect of remittances in the economic growth of Bangladesh. So, the empirical model can be written as,

The econometric specification of this model is as follows,

$$GDP = \beta_0 + \beta_1 \ (REM)_t + \beta_2 \ (FXR)_t + \beta_3 \ (EXC)_t + \beta_4 \ (INFp2p)_t + \mu_t. \tag{1}$$

However, the monthly time series data from January 2015 to April 2023 is represented by the t in the equation. Here, in this equation we have incorporated a dummy variable as there is a structural break in the series. Generally, dummy variable is incorporated in an equation to capture the effect of two or more variables on the outcome. One of the main advantages of using interaction term in dummy is that, they are easy to interpret, although there is a disadvantage using dummy that these variables can increase the complexity of the regression model.

The Government of Bangladesh implemented a 2 percent cash incentive in July 2019, which was subsequently

enhanced to 2.5 percent in January 2021, resulting in significant impacts on the flows of remittances. The monthly data provides a comprehensive overview of the dynamics of remittances and other related controls during the pandemic. This impact is demonstrated through the utilization of a dummy variable in the present study. The period spanning from July 2019 to April 2023 is denoted by the presence of a cash incentive as 1, while the absence of such an incentive is denoted by 0. In order to provide a more precise specification of the impact of the incentive, we have employed an interaction between a dummy variable and the remittance.

The augmented form of equation (1) is now as follows

$$GDP = \beta_0 + \beta_1 (REM)_t + \beta_2 (FXR)_t + \beta_3 (EXC)_t + \beta_4 (INFp2p)_t + \beta_5 (dummy)_t + \beta_6 (rem*dummy)_t + \mu_t....(2)$$

The coefficients of β_1 , β_2 , β_3 and β_4 show the elasticity of remittances, foreign exchange reserve exchange rate and inflation respectively. $\beta 0$ and ut represent the intercept and stochastic disturbance term respectively.

V. METHODOLOGY

Regression analysis with non-stationary series produces erroneous results that are unsuitable for analysis, forecasting, or policymaking, as indicated by Bashar (2015) and Emeka and Aham (2016). Subsequently, in the initial stages of the estimating procedure, this study utilized the Augmented Dickey Fuller test (ADF) and Philips-Perron test (PP) to assess the stationarity of the collected data.

Following the verification of the absence of unit roots within the data, our subsequent step involved examining the existence of cointegration in the series through the utilization of the bound cointegration test. The ARDL bound test was initially proposed by Pesaran and Shin in 1999 and further expanded upon by Pesaran, Shin, and Smith in 2001. This approach enables the differentiation between the model's long-term relationship and short-term dynamics within the theoretical framework.

For the ARDL approach equation 2 can be written as the model used by Pesaran, Shin, and Smith (1999) and Pesaran et al (2001) as follows;

$$\Delta \text{GDPt} = \beta_0 + \sum_{k=1}^n \beta_1 \Delta \left(REM\right)_{t\cdot k} + \sum_{k=1}^n \beta_2 \Delta \left(FXR\right)_{t\cdot k} + \sum_{k=1}^n \beta_3 \Delta \left(EXC\right)_{t\cdot k} + \sum_{k=1}^n \beta_4 \Delta \left(INFp2p\right)_{t\cdot k} + \sum_{k=1}^n \beta_5 \Delta \left(dummy\right)_{t\cdot k} + \sum_{k=1}^n \beta_6 \Delta \left(rem*dummy\right)_{t\cdot k} + \lambda_1 \Delta \text{REMt} + \lambda_2 \Delta FXRt + \lambda_3 \Delta \ln EXC_t + \lambda_4 \Delta \ln INFp2p_t + \lambda_5 \Delta dummy_t + \lambda_6 \Delta \left(rem*dummy\right)_t + \epsilon_t - \dots (3)$$

Where n represents the maximum lag order, $\beta 0$ represents the drift component which Δ shows the first difference and ϵt is the white noise. Here, β_1 - β_6 and λ_1 - λ_6 represent the long-run dynamics, and the short-run dynamics of the model respectively.

Pesaran et al (2001) devised two distinct sets of critical values for the F-test. There are two sets, one representing the lower bound and the other representing the upper bound. If the value of the F-test is smaller than the lower critical bound, it can be concluded that the model does not exhibit a long-run relationship. Conversely, the existence of a long-term link among the variables might be inferred when the F-test score

exceeds the upper critical bound. However, if the value falls within the range of the upper and lower critical bounds, the outcome will be deemed inconclusive. Once evidence of cointegration is shown, the subsequent stage involves estimating the long-run connection using the Autoregressive Distributed Lag (ARDL) model. However, it is essential to employ a suitable model order selection criterion in order to identify the optimal lag time for selecting the appropriate model of the long-run underlying problem.

The Long-run association among the variables can be written as following

Here, n is the optimum lag length.

Lastly, to find out the short-run dynamics the error correction model can be formulated below in the equation 5

International Journal of Innovative Science and Research Technology

$$\Delta \text{GDPt} = \beta_0 + \sum_{k=1}^{n} \beta_1 \Delta (REM)_{t-k} + \sum_{k=1}^{n} \beta_2 \Delta (FXR)_{t-k} + \sum_{k=1}^{n} \beta_3 \Delta (EXC)_{t-k} + \sum_{k=1}^{n} \beta_4 \Delta (INFp2p)_{t-k} + \sum_{k=1}^{n} \beta_5 \Delta (dummy)_{t-k} + \sum_{k=1}^{n} \beta_6 \Delta (rem * dummy)_{t-k} + \phi \text{ECM}_{t-1} + \epsilon_t - \dots (5)$$

Where, Δ represents the first difference as before while ϕ is the coefficients of the error correction term for short run dynamics. ECMt-1 describes the speed of adjustment that is how much disequilibrium will be corrected. The coefficient of the ECM is expected to be between -1 to 0. The negative sign indicates the degree of correction.

However, this approach will not be applicable if the variables are integrated in order two i.e I(2). To forestall the effort in futility, at the very beginning of the analysis we will check the stationarity of the variables.

VI. RESULT ANALYSIS AND DISCUSSION

> Stationarity Test

Table 2 shows that in the ADF test, none of the variables except the industrial production index (IPI) and foreign exchange reserves is stationary at levels, while in the PP test, only IPI and remittances are stationary. However, remittances, the exchange rate, and inflation are stationary at first differences in the ADF test, while the foreign exchange reserve, exchange rate, and inflation are stationary at I(1) in the PP test. This confirms the absence of I(2) series and the presence of only I(0) and I(1) series, making the ARDL bound testing approach suitable for this study.

Table 2 Unit Root Test Results

Variables	ADF		PP		
variables	Level	1 st difference	Level	1st difference	
IPI	-6.64*	-	-6.64*	-	
REM	-3.44	-14.94*	-5.06*	-	
FOREX	-3.92**	-	0.13	-13.39*	
EXC	-1.04	-5.41*	-1.39	5.29*	
INFp2p	-0.29	-12.58*	-0.50	-12.72*	

Note: * p<0.01, ** p<0.05, *** p<0.1

➤ Bound Test for Cointegration

Following this we are conducting the bound test of cointegration using maximum lag length of 2 obtained from

the lag selection criteria (Table1 Appendix-1) as required by the ARDL model estimation process. The result of the cointegration in the bound test is represented in the Table 3.

Table 3 F-Bound Test result

${ m H_0}$: No levels of relationship						
F statistics Value Significance I(0) I(1)						
F-Stat	5.35	10%	1.99	2.94		
K	6	5%	2.27	3.28		
		2.5%	2.55	3.61		
		1%	2.88	3.99		

The F-statistic value of 5.35, as shown in the table, exceeds the upper bound value (I(1)) at the 5% significance level. Therefore, we accept the alternative hypothesis, concluding that there is long-run cointegration among the variables. With the long-run relationship between the industrial production index and other covariates confirmed through the bound test for cointegration, the ARDL framework was applied to estimate the long-run association.

Results from the Table-4 revealed that IPI has a long run relationship with REM. The coefficient of remittances is positive and statistically significant at 1% level indicating that remittances positively affect the IPI (proxy of GDP) in

the long-run. Holding the ceteris paribus assumption, a unit increase in remittances will increase the GDP growth by 9 units. This result is expected as the part of the remittances is invested in the development projects of the country which are expected to promote economic growth of the country. This finding aligns with those of Depken et al. (2021), Islam (2022), Adnan et al. (2020), Oteng-Abayie et al. (2020), Nyeadi and Atiga (2014), Imai et al. (2014), Ratha (2013), and Cooray (2012). However, it contrasts with the results of Ustarz and Issahaku (2017), Sutradhar (2020), and Singh et al. (2010). Moreover, the interaction dummy with the remittance also showed a negative but significant result.

Table 4 Long-Run Relationship

Dependent variable GDP						
Variables	coefficients	Standard error	Prob.			
Rem	0.09*	0.03	0.01			
FOREX	7.19*	1.13	0.00			
EXC	10.92*	1.65	0.00			
INFp2p	-9.40	7.92	0.24			
dummy	88.69	58.26	0.13			
Rem*dummy	-0.07***	0.04	0.07			

Note: * p<0.01, ** p<0.05, *** p<0.1

Also, control variables namely Forex and EXC also showed a positive and significant impact on economic growth of a country while inflation showed a negative and an insignificant result. Moreover, we used an interaction dummy with the remittance to show more prominent relation of

remittance and the economic growth of a country that showed a significant result.

➤ Short Run Dynamics

The short run dynamics of the ARDL framework is explained in table 5.

Table 5 Short-Run Relationship

Dependent variable GDP					
Variables	coefficients	Standard error	Prob.		
D(REM)	0.10*	0.01	0.00		
D(EXC)	-11.79*	4.52	0.01		
D(DUMMY)	90.06*	23.31	0.00		
cointEq(-1)*	-0.58*	0.09	0.00		
R^2	0.60				
Adjusted R ²	0.58				

Note: * p<0.01, ** p<0.05, *** p<0.1

Results show that remittances have significant and positive influence on GDP growth in the short run. 1 percent increase in remittance will increase the GDP by 0.10 percent. On the contrary, the exchange rate has a negative but significant impact on the economic growth in the short run because depreciation of a currency helps in inward remittances.

The error correction term is significant at the 1% level, and its highly significant negative sign confirms the presence of a long-run relationship among the variables, as indicated by the bound test. The error correction coefficient shows that GDP growth adjusts at a speed of 0.58 to return to equilibrium. This means that 58% of the previous year's disequilibrium in GDP is corrected in the current year to restore balance.

Table 6 Diagnostic Tests

Name of the test	F-statistics	Obs* R-squared	P- value
Serial Correlation LM Test	0.29	0.66	0.75
Heteroscedasticity Test: Breusch-Pagan-Godfrey	1.73	17.77	0.08

The P- value of Breusch-Godfrey serial Correlation LM Test, and Heteroscedasticity test: Breusch-Pagan-Godfrey is greater than 5 percent which is desirable. So, this model is free from autocorrelation and heteroscedasticity.

The stability of the parameters was confirmed using the CUSUM and CUSUMSQ tests. As shown in the figure, all the blue lines remain within the boundaries of the red lines, indicating that the models are stable at the 5% significance level. (Figure 1, Appendix).

VII. CONCLUSION AND POLICY RECOMMENDATION

Remittances play a vital role in promoting economic growth by serving as a key source of foreign exchange reserves and positively influence the balance of payments, national savings, and velocity of money within the economy of Bangladesh. The cash incentive policy introduced by the Government of Bangladesh has effectively encouraged remittance inflows, contributing to economic stability. This study has shed light on the dynamics of cash incentives and their influence on remittance inflow, allowing us to better understand their consequential impact on economic growth. In this study, the ARDL bound test approach has been applied to analyze the linkage between the remittance inflow and economic growth of Bangladesh using monthly data covering the period from January 2015 to April 2023. This approach allows for a detailed analysis of the short-term dynamics and the influence of government policies on economic growth within Bangladesh. The findings from the empirical results indicate a positive and significant relationship between remittances and the economic growth of Bangladesh. The findings imply that economic growth in Bangladesh can be achieved by raising remittance inflow and in this case, government policy of cash incentive plays a very crucial role in raising remittance inflow.

Remittances remain the key driver of the economic progress of Bangladesh and strategic policies can amplify their impact, ultimately steering the nation towards sustained prosperity. Some initiatives must be undertaken in this regard. To optimize the impact of remittances and deter illegal channels such as hundi, policy adjustments are essential. Increasing the cash incentive on remittance from the current 2.5% can act as a deterrent to the illegal hundi system, encouraging expatriates to use formal channels. Additionally, simplifying the cash withdrawal process for inward remittances in expatriates' home countries and providing proactive assistance to customers by bank employees can encourage the use of formal channels for remittance transfers. In this regard, establishing remittance dedicated desks within bank branches can facilitate easier transactions and offer guidance to expatriates, especially in areas with a high concentration of migrant workers. Concurrently, stringent governmental measures to prohibit illegal money transfer mechanisms like hundi are crucial for the success of any policy aimed at promoting legal channels. Looking to the long term, the government may consider implementing policies to encourage proper remittance channels. Initiatives such as a gratuity or pension scheme for expatriates who send money to Bangladesh through formal channels could provide an added incentive for compliance. Combining short-term policy adjustments with long-term strategic initiatives will strengthen the remittance ecosystem, leading to sustainable economic growth and improved welfare for both expatriates and the nation.

REFERENCES

- [1]. Adjei, M., Bo, Y., Nketiah, E., Adu-Gyamfi, G., & Obuobi, B. (2020). The effects of remittances on economic growth in West Africa. Journal of Human Resource and Sustainability Studies, 8(3), 312-329.
- [2]. Abdulai, A. M. (2023). The impact of remittances on economic growth in Ghana: An ARDL bound test approach. Cogent Economics & Finance, 11(2), 2243189.
- [3]. Adnan, K., Yin, K., Adrian, C. C., Cristina, G. Z., Sun, Q., & Duan, W. (2020). Is the relationship between remittances and economic growth influenced by the governance and development of the financial sector? New evidence from the developing countries. Romanian Journal of Economic Forecasting, 23(1), 37–56.
- [4]. Bashar, J. V. (2015). Testing for Granger causality between BSE Sensex and forex reserves: An empirical study. International Journal of Current Research, 7 (11), 23381–23385.
- [5]. Begum, M. N., & Sutradhar, R. R. (2012). Behavior of remittance inflows and its determinants in Bangladesh (No. id: 4951).

- [6]. Chowdhury, M. S. R. (2015). Remittances and Economic Growth Determinants in Low, Lower Middle, and Upper Middle Income Countries: A Comparative Study.
- [7]. Cooray, A. V. (2012). The impact of migrant remittances on economic growth: Evidence from South Asia.Rev. Review of International Economics, 20(5), 985–998. https://doi.org/10.1111/roie.12008.
- [8]. Depken, C. A.,II, Niksic Radic, M., & Paleka, H. (2021). Causality between Foreign Remittance and Economic Growth: Empirical Evidence from Croatia. Sustainability, 202(13), 12201. https://doi.org/10.3390/su132112201.
- [9]. Dohtani, A. (2010). A growth-cycle model of Solow-Swan type, I. Journal of Economic Behavior & Organization, 76(2), 428–444.
- [10]. Ekanayake, E. M., & Moslares, C. (2020). Do remittances promote economic growth and reduce poverty? Evidence from Latin American countries. Economies, 8(2), 35.
- [11]. Emeka, N., & Aham, K. U. (2016). Autoregressive Distributed Lag (ARDL) Cointegration technique: Application and interpretation. Journal of Statistical and Econometric Methods, SCIEPRESS Ltd, 5(4), 1–3.
- [12]. Goschin, Z. (2014). Remittances as an economic development factor. Empirical evidence from the CEE countries. Procedia Economics and Finance, 10, 54-60.
- [13]. Ibne Afzal, M. N., Rokon-Uz-Zaman, M., Al Musa, M. Z., Shahinur, M. D., Rahman, S. S., & Manni, U. H. Can Government Incentive on Remittance Encourages Remitters in Bangladesh? A Policy Study.
- [14]. Imai, K. S., Gaiha, R., Ali, A., & Kaicker, N. (2014). Remittances, growth and poverty: New evidence from Asian countries. Journal of Policy Modeling, 36(3), 524–538. https://doi.org/10.1016/j.jpolmod.2014.01.009.
- [15]. Islam, M. S. (2022). Do personal remittances influence economic growth in South Asia? A panel analysis. Review of Development Economics, 26(1), 242–258. https://doi.org/10.1111/rode.12842.
- [16]. Jayaraman, T. K., Choong, C. K., & Kumar, R. R. (2012). Role of remittances in India's economic growth. Global Business and Economics Review, 14(3), 159-177.
- [17]. Kaphle, R. R. (2018). Relationship between remittance and economic growth in Nepal. Tribhuvan University Journal, 32(2), 249-266.
- [18]. Kim, J. (2019). The Impact of Remittances on Exchange Rate and Money Supply: Does "Openness" Matter in Developing Countries? Emerging Markets Finance and Trade, 55(15), 3682-3707.
- [19]. Majumder, S. C., & Donghui, Z. (2016). Relationship between remittance and economic growth in Bangladesh: An autoregressive distributed lag model (ARDL). European Researcher. Series A, (3), 156-167.

- [20]. Masuduzzaman, M. (2014). Workers' remittance inflow, financial development and economic growth: A study on Bangladesh. International Journal of Economics and Finance, 6(8), 247-267.
- [21]. Nyeadi, J. D., & Atiga, O. (2014). Remittances and economic growth: Empirical evidence from Ghana. European Journal of Business and Management, 6(25), 142–149. https://doi.org/10.7176/EJBM.
- [22]. Oteng-Abayie, E. F., Awuni, P. A., & Adjei, T. K. (2020). The Impact of Inward remittances on Economic growth in Ghana. African Journal of Economic Review, 8(3), 49–65. https://doi.org/10.22004/ag.econ.308775.
- [23]. Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of applied econometrics, 16(3), 289-326. DOI: https://doi.org/10.1002/jae.616.
- [24]. Ratha, D. (2013). The impact of remittances on economic growth and poverty reduction, policy brief no.8. Migration Polity Institute.
- [25]. Saha, S. K. (2021). The Impact of Remittance on Economic Growth in Bangladesh. Sch J Arts Humanit Soc Sci, 9, 462-470.
- [26]. Sarkar, M. S. K., Rahman, M. Z., Islam, M. M., Sikdar, M. M. H., & Khan, A. B. (2018). Relationship between remittance and economic growth: Evidence from Bangladesh. American Journal of Trade and Policy, 5(1), 15-20.
- [27]. Singh, R. J., Haacker, M., Naeem, M. M., & Yaqoob, S. (2010). Determinants and macroeconomic impact of remittances in Sub-Saharan Africa. Journal of African Economies, 20(2), 312–340. https://doi.org/10.1093/jae/ejq039 Sobiech, I. (2015).
- [28]. Solow, R. M., 1956. A contribution to the theory of economic growth. The Quarterly Journal of Economics, 70(1), 65–94. 39.
- [29]. Sutradhar, S. R. (2020). The impact of remittances on economic growth in Bangladesh, India, Pakistan and Sri Lanka. International Journal of Economic Policy Studies, 14(1), 275-295.
- [30]. Swan, T. W., 1956. Economic growth and capital accumulation. Economic Record, 32(2), 334–361.
- [31]. Ustarz, Y., & Issahaku, H. (2017). International Migrant Remittance and Productivity Growth in Ghana. Ghana Journal of Development Studies, 14(2), 63–82. https://doi.org/10.4314/gjds.v14i2.4.

APPENDIX

	VAR Lag Order Selection Criteria							
	Endogenous variables: IPI REM INFP2P FXR EXC							
	Exogenous variables: C							
	Date: 09/11/23 Time: 21:58							
	Sample: 2015M01 2023M04							
	Included observations: 98							
Lag	Lag LogL LR FPE AIC SC HQ							
0	-1832.166	NA	1.32e+10	37.49318	37.62506	37.54652		
1	1 -1309.900 980.5796 517253.7 27.34491 28.13622 27.66498							
2	-1238.892	126.0767*	203072.5*	26.40595*	27.85670*	26.99275*		
	* indicates lag order selected by the criterion							

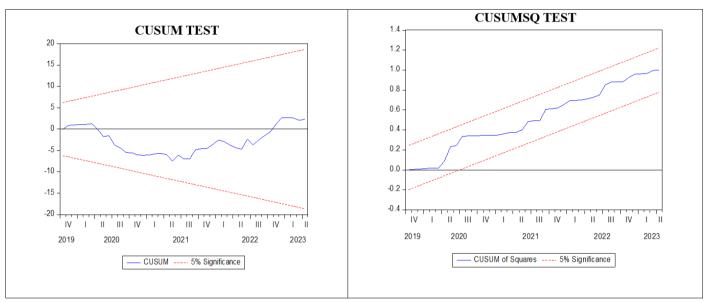


Fig 1 CUSUM and CUSUMQ Test of Stability