Diaspora Remittances and Economic Growth nexus in Zimbabwe: (1990-2022)

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Abstract - The study examines the nexus between diaspora remittances and economic growth in Zimbabwe. Yearly time series data from 1990 up to 2022 was used to ascertain whether there is any association between emigrants expatriated funds and economic growth. Over the years, diaspora remittances to Zimbabwe have been on an upward trend surpassing a billion mark. Gross Domestic Product (GDP) was used as the dependent variable whilst diaspora remittances were used as an explanatory variable together with other control variables. Using the Autoregressive Distributed Lags (ARDL) technique, the results indicate that emigrant funds from the diaspora have a positive bearing on the growth of the economy both in the short run and in the long run. Stated differently, an increase in diaspora remittances to Zimbabwe increases the rate of economic growth. Therefore, remittances are a potential source of economic expansion in Zimbabwe and the government should harness on this. The study acclaims that the government should improve the inflows of remittances to Zimbabwe by reducing the associated transactional costs. The government should also provide financial literacy training to the migrant workers and their families so that they appreciate the role played by remittances. In addition, the government should provide sustained monetary incentives in local currency for all the diaspora remittance inflows that are received through formal channels to encourage more remittances.

Keywords: Diaspora Remittances, Economic Growth, Gross Domestic Product (GDP)

1. INTRODUCTION

Zimbabwe has been a source of labor and scholarship recipients to South Africa and abroad since the colonial era. The economic crisis in Zimbabwe, which worsened in the 21st century, together with political and social instability, triggered the emigration of professional and skilled labor force into neighboring countries and abroad. These emigrants send part of their earnings back home, which are called remittances. According to World Remit (2022), a remittance is defined as a sum of money transferred from one party to another, mostly abroad. Generally, the term is used to refer to money sent by someone working in a foreign country or abroad to family back home. Remittances are divided into two types which are inward and outward remittances (International Money Express, 2022).

Although numerous studies have investigated how remittances impact on economic growth, most findings are still controversial. A quantitative analysis of 538 estimates from 98 studies conducted by Cazachevici et al. (2020) had 40% of these studies revealing a direct association between diaspora remittances and the growth of the economy, with 40% showing no effect and 20% revealing an inverse relationship. Adding on to the conflicting results of real-world studies on the influence of foreign transfers from the diaspora on economic expansion in under-industrialized countries, Zimbabwe is one of the countries where literature on the topic is scant. As a result, this study is an investigation of the econometric relationship existing between diaspora remittances and economic growth in Zimbabwe from 1990 to 2022.

1.2 BACKGROUND TO THE STUDY

Over the years, remittances have played a critical role in providing income to households and contributed towards economic upturn in under-developed countries. Globally, remittances increased by 7.3% in 2022. The growth in 2022 has seen a surge in Caribbean and Latin America by 9.3% and 3.5% respectively, Central Asia by 10.3%, Sub Saharan Africa by 5.2% with a noted growth first time for an Asian country, India receiving more than United States Dollars (USD) \$100 billion (World Bank, 2022).

Diaspora remittances have become a substantial share of the national output (GDP) in smaller economies (Migration and Development Brief, 2023). This includes Tonga (50%), Samao (34%) and Lebanon (38%) (Migration and Development Brief, 2023) in 2022. In the same vein, Zimbabwe has not been spared and this has seen remittances reaching a maximum of 13.6% in 2011 and 5.3% of GDP in 2022 (World Bank, 2023). While several studies were conducted on the study topic, it is worth mentioning that results remain largely inconclusive.

Although Zimbabwe is one of the countries with a dearth in literature and statistics about the link between the inflow of funds from nationals working in the diaspora and economic growth, remittances enhance economic expansion through the multiplier effect as evidenced by Adams and Page, (2005) and Giuliano and Ruiz-Arranz, (2009). The Migration in Zimbabwe Report (2010-2016) assets that remittances enhance economic expansion through improving household consumption. Moreover, it highlights that remittances increase foreign exchange reserves. The increase in remittances in the country boosts domestic consumption and preserves the consumers buying power since most of the transactions are conducted in the United States (US) dollar. Also, investment and the acquisition of government utilities such as medicines from other countries and construction of roads are financed by foreign currency.

Remittances can also be used to fund development projects, social safety nets, and diaspora bonds. However, more research is needed to further understand the association amid diaspora remittances and economic growth and to deduce the most effective ways to use remittances to promote development in Zimbabwe.

DIASPORA REMITTANCES TO ZIMBABWE TREND

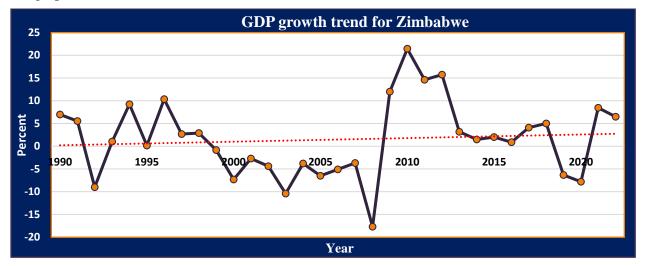


Source: Own computation with data from World Bank

The above graph shows that between 1990 and 2008, diaspora remittances to Zimbabwe were stochastic in nature hoovering below a billion mark. From 2009 to 2022, they surpassed the one billion mark, reaching a peak of US\$2.114 billion in 2012. This was due to the adoption of a multicurrency regime and the strong attachment of Zimbabwean migrants to their home country. However, remittances declined in 2016 and remained below US\$2 billion up to 2022. Among other reasons, this decline could be attributed to the increasing transactional charges of sending funds home through formally recognized means. Thus, the future of remittances on Zimbabwe is uncertain, but it is likely that they will continuously contribute positively to the economy.

GROSS DOMESTIC PRODUCT (GDP) TREND FOR ZIMBABWE

Gross Domestic Product (GDP) denotes the aggregate value of goods and services produced within a geographical boundary regardless of one's nationality. An increase in real GDP (increase in constant GDP growth rate) signifies economic growth in an economy. The growth in real GDP for Zimbabwe is shown on the graph below.



Source: Own computation with data from World Bank

The graph above depicts that Zimbabwe's GDP growth rate is characterized by booms and slumps. In 1990, Zimbabwe recorded a GDP growth rate of 7% and -9% in 1992 respectively. From 1993 to 1998, the country witnessed positive growth rates in GDP whilst negative growth rates were recorded from 1999 up to 2008. The year 2008 had the highest negative growth rate in the history of Zimbabwe with an economic contraction of -17.7%. GDP rebounded in 2009 with 2010 recording the highest ever GDP growth rate of 21.5%. The positive growth rate trajectory was maintained up to 2018, of which negative growth rates of 6.3% and 7.8% were recorded in 2019 and 2020 respectively. However, GDP positive growth rates of 8.5% and 6.5% were recorded in in 2021 and 2022 respectively.

Using the two graphs above, the association between diaspora transfers and economic growth can be observed. Periods of low diaspora remittances of less than one billion (1990-2008) are characterized by many years of negative GDP growth rates. However, during the same period, a few years recorded positive growth rates for instance during the years 1993 up to 1998. Periods of high diaspora remittances of more than one billion dollars (2009-2022) are characterized by positive GDP growth rates. Nevertheless, only two periods that is 2019 and 2020 recorded negative growth rates. In that respect, it is observed that the link between the two observed variables is not straight forward.

According to ZIMSTAT (2023), Zimbabwe's 2022 real GDP was estimated to be ZWL 225.99 billion Zimbabwean dollars. In the same vein, the 2022 GDP estimate by expenditure approach has established that private household consumption stood at 74.4% (ZIMSTAT, 2023). In this regard, remittances could also be attributed to have greater contribution towards private household consumption which anchors aggregate demand fostering economic growth in Zimbabwe. Therefore, this study seeks to explore the econometric nexus between diaspora remittances and economic growth in Zimbabwe.

2.0 REVIEW OF RELATED LITERATURE

2.1 Theoretical review

2.1.1 Neo Classical Views/ Development Optimism View (1950-1973)

According to this view, migration generally benefits both the countries that send and receive migrants. Through industrialization and the transfer of human capital, developing countries can expand their economies as a result of migration. This was referred to as the "North-South" flow of investment money and knowledge by development economists. Labor shortages result from the free movement of labor and unrestricted market circumstances. Capital will flow from labor-scarce countries to capital-scarce emerging countries if this trend

continues together with the rise in marginal labor productivity in the migrant sending countries. This procedure, commonly referred to as factor price equalization ends when the wages in the sending and receiving countries are equal. The information, fresh perspectives and entrepreneurial mindsets that immigrants bring foster the much-needed innovation (Black et al., 2006).

According to Ratha (2003), remittances from the diaspora also have consumption multiplier effects, which are more important in improving the economy's overall demand and fostering economic growth. Furthermore, unlike private money flows that can be withdrawn at any time by investors, diaspora remittances are a reliable source of foreign investment. Additionally, they improve the receiving country's foreign exchange reserves, which help to make up for the lost tax receipts and productivity due to emigration. Remittances aid in the transfer of purchasing power, the eradication of poverty, the easing of consumption, the promotion of gender equality, and a multiplier effect on the economy.

2.1.2 The Structuralist View: Development Pessimism Theory

This theory opposes the classical views on remittances and economic development. Adenutsi (2010), highlighted that outmigration of labor force creates the depended syndrome on the people left behind who become unproductive thereby creating unstable communities. Remittances increase the purchasing power in the home country leading to inflationary pressures which counter the developmental aspirations of nations. The majority of the transfers from nationals in the diaspora are spent on consumption (houses) and are rarely invested on productive capacities. As a result, the remittances will not ignite economic growth at the desired levels.

Remittances, according to De Haas (2007), are an unstable source of outside income for individuals, groups, and governments. They swiftly drop with the settlement or return of migrants, which is why this is the case. Remittances may also decrease as a result of worldwide pandemics like COVID-19, which had an unpredicted impact on the world economy as a whole. Due to the pandemic, migrants in other countries lost their employment and were unable to send money to their loved ones back home. A dependency syndrome on foreign funds is produced by the scenario of relying on remittances because it gives rise to the hypothesis of remittance decay, which causes an unnatural and result in people's livelihoods better off.

2.1.3 Pluralist perspectives: New economics of labor migration and livelihood approaches

The Neoclassical theory and the structuralist theory, which appeared excessively inflexible and deterministic in dealing with the complexity of migration and development interactions, were replaced by this theory. The theory provides a far less clear-cut understanding of migration and development, more directly connecting migration's causes and effects, and allowing for both favorable and unfavorable development outcomes.

The theory acknowledges that the household, not the individual, is the primary unit of decision-making and it models migration as the behavior of the households' sharing risks. Households appear to be more competent than individuals as they diversify resources like labor to reduce income risks. This strategy incorporates factors that influence migration decisions outside personal income maximization. Migration remittances act as insurance for households of origin because migration is a household's response to income threats. People can move for continuous income sources even when there are no significant economic disparities.

Given the unreliable capital and insurance markets which are dominant in most of developing nations, migration is crucial in supplying a possible investment capital source. These markets are frequently underdeveloped and closed to non-elite people. As a result, migration is viewed as a livelihood option to get around numerous market limitations, possibly allowing households to invest in profitable ventures and enhance their standard of living. One of the key components of techniques used to diversify, secure, and enhance livelihoods is migration. It overcomes barriers to institutional, social, and economic expansion in the locations of origin

2.2 Empirical Literature Review

Wadood and Hossain (2015) found a one-way causal connection between remittances and economic development. After further data analysis, they concluded that a number of factors, including the multiplier effect which indirectly results from consumption expenditure, may be responsible for the causality of funds from the nationals in the diaspora to economic progress. In contrast, Chami, Fullenkamp, and Jahjah, (2003), used a theoretic hypothesis on economics of family and a panel data on foreign transfers from diaspora. The

study revealed a large inverse correlation concerning remittances and national output growth. It was indicated that remittances from the diaspora may not be aimed at funding economic development.

The results of Pradhan (2016)'s analysis of the BRICS nations were inconsistent across the board. However, the study results indicated that the flow of remittances from the diaspora had a negative long run effect on everything that affects economic development for these countries. A further analysis of the long-term effects by Pradhan (2016) exposed that the correlation of diaspora remittance inflows and GDP was driven by the exchange rate movements on GDP per capita in all of these BRICS nations.

In Tropical Africa, Olayungbo and Quadri (2019) discovered a positive association between remittances and financial sector development, which positively influences the growth of the economy. Their study did not establish a nexus between the two aspects under study. Anetor (2019) discovered that remittances and financial development were relatively complementary, but he got to the opposite conclusion, believing that both had negative impact on Nigeria's economic growth. In contrast to Anetor (2019), Sibindi (2014) provides an indication that remittances can boost the growth of the economy in Lesotho. He also confirms the complementary role that financial development and the flow of migration funds has in boosting economic growth.

Kadozi (2019) postulated that emigrant remittances begot a desirable and substantial impact on Rwanda's economy. The study exposed a good relationship between the institutional environment and development components. It was further highlighted that structural advancements in governance, economic growth, and human capital development actively strengthen the channels via which transfers from the diaspora can improve the performance of the economy. This study together with El Hamma (2019) drew the same results from their respective studies, arguing that one method for directing remittances toward economic growth is a strong institutional structure.

The theoretical literature on the impact of fund transfers from migration on economic growth is mostly inconclusive. Both the direct and inverse outcomes of these remittances on the growth of economy are supported by evidence. Also, there is conflicting evidence in the empirical literature regarding the topic. To fully comprehend the intricate link between these two variables, further research is required. As a result, this study goes a step further by adding to the body of knowledge in Zimbabwe using time series data and the ARDL model to investigate the effect of funds remitted from abroad on economic performance from 1990 to 2022.

3.0 METHODOLOGY

To investigate how remittances, affect economic growth in Zimbabwe, the Autoregressive Distributed Lags (ARDL) technique was used. According to Maune and Matanda (2022), the ARDL model is one of the ordinary least square (OLS) models that can be used with non-stationary time series data. In addition, the model can be used to time series with mixed order of integration. The model was chosen as a result of its capability to examine long-run correlations between time series economic variables. Additionally, the ARDL is more reliable and works better with small data sets, making it appropriate for this investigation.

The explanatory variables to be utilized are, personal remittances, lagged remittance variable, interest rate, exports, and inflation. The growth rate of real GDP was used as the outcome variable and used in place of economic growth. The analysis was limited to the period 1990 to 2022 due to data availability. Data for the study period was obtained from the World Bank and ZIMSTAT. The study adopts a model used by Khan, Teng and Khan (2019) in analysis of the effects of migration transfer inflows on the economy of Pakistani. They modelled national output (current price \$US) as a function of selected macroeconomic variables, the model they used is shown below.

$$gdp_t = \beta o + \beta 1 f di_t + \beta 2 exc_t + \beta 3 inf_t + \beta 4 remit_t + \beta 5 g ds_t + \beta 6 cons_t + \mu \dots i$$

From the above model adopted from Khan, Teng and Khan (2019) GDP (gdpt) is the dependent variable while foreign direct investment (fdi_t), exchange rate (exc_t), inflation (inf_t), remittance inflows (remit_t), gross domestic saving (gds_t) and consumption (cons_t) are control variables. Therefore, the model in this study is estimated as shown below:

 $lngdpr_t = \beta 0 + \beta 1 ln(remit_t) + \beta 2 ln(inflat_t) + \beta 3 ln(unemp_t) + \beta 4 ln(inter_t) + \beta 5 ln(fdi_t) + \epsilon_t \dots ii$

where gdprt denotes real GDP growth rate; remit denotes personal remittance; inflat_t denotes inflation; unempt represents employment level; inter_t denotes interest rate; fdi_t denotes foreign direct investment; ϵ_t shows error term and t is an indicator for time period. Therefore, since this study applies the orthodox ARDL model, it is however expressed as follows:

$$\Delta \mathbf{gdp_t} = \delta_0 + \sum_{i=0}^{n} \delta_{1i} \Delta \mathbf{gdp_{t-i}} + \sum_{i=0}^{n} \delta_{2i} \Delta \mathbf{remit_{t-i}} + \sum_{i=0}^{n} \delta_{3i} \Delta \mathbf{inflat_{t-i}} + \sum_{i=0}^{n} \delta_{4i} \Delta \mathbf{unemp_{t-i}}$$

$$+ \sum_{i=0}^{n} \delta_{5i} \Delta \mathbf{inter_{t-i}} + \sum_{i=0}^{n} \delta_{6i} \Delta \mathbf{fdi_{t-i}} + \beta_1 \mathbf{remit_{t}} + \beta_2 \mathbf{inflat_{t}} + \beta_3 \mathbf{unemp_{t}} + \beta_4 \mathbf{inter_{t}} + \beta_5 \mathbf{fdi_{t}} + \mu_t \dots iii$$

where the first difference operator, Δ , was used to transform the variables into stationary form. This was necessary because the ARDL bounds testing can only be used with stationary variables. The maximum lag length, n, is the size of lags included in the model. The lag length was chosen using a statistical criterion, such as the Akaike information criterion (AIC). The short-run coefficients, δ_1 - δ_4 , represent the relationship between the variables in the short run. The long-run coefficients, β_1 to β_5 , represent the nexus between the variables in the long run. The white noise residual, μ_t , is the error term in the model. The ARDL bound testing is a statistical technique that evaluates the relevance of lagged variables in a univariate error correcting system using F and t-statistics. When there is uncertainty regarding the long-term link between variables, this strategy is employed. The ARDL bounds test null hypothesis states the absence of a long term relationship between the variables.

3.1 EMPERICAL RESULTS

Table1: Stationarity test of Variable

| Variable | Order of integration | ADF Statistic | 1% | 5% | 10% | ADF Probability | status |
|---------------------------|----------------------|------------------|-----------|-----------|-----------|--------------------|--------------|
| GDPgr _t | I(0) | -3.595714 | -3.653730 | -2.957110 | -2.617434 | 0.0115 | Stationarity |
| REM _t | I(1) | -4.946799 | -3.661661 | -2.960411 | -2.619160 | 0.0004 | Stationarity |
| EXPt | I(1) | -8.311673 | -3.661661 | -2.960411 | -2.619160 | 0.0000 | Stationarity |
| FDI _t | I(1) | -9.315907 | -3.661661 | -2.960411 | -2.619160 | 0.0000 | Stationarity |
| INFLt | I(0) | -5.656281 | -3.653730 | -2.957110 | -2.617434 | 0.0000 | Stationarity |
| IRt | I(0) | -3.960446 | -3.653730 | -2.957110 | -2.617434 | 0.0046 | Stationarity |
| UNEMt | I(1) | -7.149936 | -3.661661 | -2.960411 | -2.619160 | 0.0000 | Stationarity |

As shown on table 1 above, remittances (REM_t), exports (EXP_t), foreign direct investment (FDI_t), and unemployment ($UNEM_t$) are stationary at first difference at 5% level of significance, in contrast to the other variables, which are stationary at level with I (0) order of integration. The variables are stationary because all of the variables' ADF test statistics are greater than the crucial values at all levels.

Table 2: ARDL Bound test

| | F- statistics | 4.0997276 | | |
|--------------|------------------|------------------|--|--|
| | Critical values | | | |
| Significance | lower bound I(0) | Upper bound 1(1) | | |
| 10% | 1.99 | 2.94 | | |
| 5% | 2.27 | 3.28 | | |
| 2.5% | 2.55 | 3.61 | | |
| 1% | 2.88 | 3.99 | | |

Table 2 below shows the outcomes from the ARDL bounds test. The conclusion of the ARDL bound tests is supported by a comparison of the F statistics' findings to the stated critical value. Since the F statistics value exceeds the upper limits value I(1), it confirms that cointegration exists among the study variables. Cointegration implies that a long-run link exists amongst the variables.

Table3: Long run elasticity coefficients for ARDL

| Variable | Coefficient | Standard Error | t-Static | Probability |
|-------------|-------------|----------------|----------|-------------|
| LNINFLATION | -0.1560 | 0.2538 | -0.6148 | 0.5757 |
| LNFDI | 0.7018 | 0.3313 | 3.8163 | 0.0320 |
| LNEXP | 0.1610 | 0.07830 | 2.2510 | 0.0318 |
| LNREM | 0.1061 | 0.1572 | 3.4001 | 0.0134 |
| LNIR | -1.1565 | 0.2431 | -3.6256 | 0.0210 |
| LNUNEM | -0.2207 | 1.8571 | 0.1188 | 0.9111 |
| С | 3.0054 | 6.4866 | 1.4175 | 0.0050 |

The above results indicate a positive coefficient of 0.1061 for diaspora remittances meaning that remittances and economic growth are positively related. Increasing diaspora remittances by 1% increases economic growth by about 0.1061% in the long run. Some of reasons that could explain the positive impact could be that remittances improve the balance of payments and relieve pressure on the exchange rate hence contribute towards economic growth as well as providing a secondary source of capital for investment. In this regard, the balance of payment is improved by an increase in the supply of foreign currency. The money sent home by migrant workers is essentially converted into local currency and this can aid in offsetting the demand for foreign currency that is created by imports as well as stabilize the exchange rate which is critical for economic growth. In addition, remittances can also help to finance education and healthcare, which can improve human capital and productivity. Therefore, this further boosts economic growth in the long run in Zimbabwe.

Table 3 displays a -0.1560 inflation coefficient (p-value = 0.5757). This implies that over time, a 1% increase in inflation is correlated with a 0.156% decline in economic growth. However, there is confidence that this association exists even when the coefficient is not statistically significant at the 5% level. Investment from abroad shows a coefficient of 0.7018 (p-value: 0.0320). In the long run, the Zimbabwean economy will grow

by 0.701% more if foreign direct investment increases by 1%, according to this data. The coefficient shows that this association exists and is statistically significant at the 5% level. The outcome supports Khan, Teng and Khan's (2019) research, which revealed a direct link on foreign direct investment and Pakistan's economic growth. A positive correlation on exports and economic growth was also revealed, with a coefficient of 0.1610 (p-value = 0.0318). This implies that over time, increasing exports by 1% raises the economy by 0.161%. This coefficient shows the existence of an association at 5% level of statistical significance.

The parameter coefficient for interest rate is -1.1565 (p-value = 0.0210). Accordingly, in the long run, a 1% increase in interest rates is linked to a 1.156% decline in economic output. The relationship is statistically significant at the 5% level, providing further evidence that high costs of capital from conventional sources deter borrowing for productivity-related reasons and, as a result, slow down economic growth.

Overall, the ARDL model's findings indicate that emigrant remittances, exports, and foreign investor's funds contribute to the growth of the economy in Zimbabwe over time. Long run economic growth is negatively impacted by both inflation and interest rates. Long run economic growth is not much impacted by unemployment. It is vital to remember that these are only the outcomes of one specific model. Other models might have different findings. The connection of emigrant money inflows and economic growth may also change in future because these conclusions are based on historical data.

Table 4: Short run elasticity coefficients for ARDL

| Variable | Coefficient | Std. Error | t-statistic | Prob. |
|-----------|-------------|------------|-------------|--------|
| D(LNINFL) | 0.0797 | 0.0943 | 0.8456 | 0.4454 |
| D(FDI) | 2.0608 | 0.715 | 2.7223 | 0.0201 |
| D(LNEXP) | 0.2110 | 0.0840 | 2.1610 | 0.0429 |
| D(LNREM) | 0.3443 | 1.1417 | 3.3016 | 0.0102 |
| D(LNIR) | -1.6788 | 0.3543 | -4.7386 | 0.0090 |
| D(LNUNEM) | 0.3443 | 1.1417 | 0.3016 | 0.7780 |
| ECM (-1) | -1.3363 | 0.1407 | -9.4970 | 0.0007 |

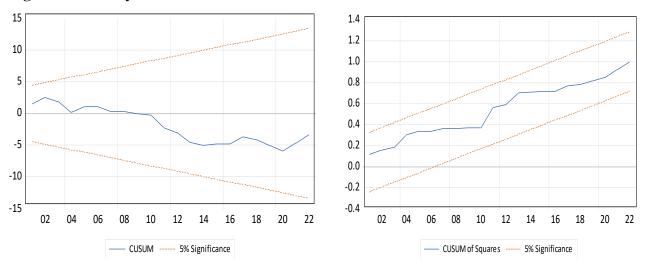
The ARDL model's findings indicate that only remittances and interest rates have a statistically meaningful short-term influence on economic growth in Zimbabwe. The remittances coefficient is positive, meaning that a 1% rise in remittances is linked to a 0.3443% increase in economic growth. The negative interest rate coefficient infers that for every 1% increase in interest rates, there is a 1.6788% decline in economic growth. This is a negative effect and shows that Zimbabwe's economic growth is being constrained in the long run by high interest rates. The error correction term coefficient is -1.3363 which shows a speed of adjustment of 1.34% from the disequilibrium to long run equilibrium fairly fast. This means that the system will respond quite fast to reach its equilibrium in long run when facing shocks in the short run.

Remittances highly influence economic growth in Zimbabwe in the short run, according to the overall discoveries of the ARDL model. However, short run economic growth is negatively impacted by interest rates. Other factors including unemployment, foreign direct investment, inflation, and exports do not portray a worthy short run impact on Zimbabwe's economy.

Stability test

A diagnostic test is required in order to determine a model's stability. The findings of the study's recursive model estimate utilizing the CUSUM and CUMSUM tests are displayed in the figure below.

Figure 2: Stability test results



Since both the CUM and the CUM of squares are within the 5% level of significance, Figure 2 demonstrates clearly that the regression model is stable. As a result, the model's instability null hypothesis is rejected.

Table 5: Residuals Diagnostic test

| Test | Null hypothesis | Probability value | Conclusion |
|--------------------|------------------------------------|-------------------|------------------------------------|
| White test | No heteroskedasticity | 0.9830 | No presence of heteroskedasticity |
| Brusch- Godfrey | No autocorrelation | 0.626 | No presence of autocorrelation |
| Ramsy reset test | No specification errors | 0.9042 | No specification in the model |
| Jaque-bera | Residuals are distributed normally | 0.599 | Residuals are normally distributed |

Source: Eviews authors' computation

The White test is used to determine whether the error terms' variances are heteroskedastic. The White test's p-value is 0.9830, higher than the 0.05 threshold for significance. As a result, it may be concluded that the model has no heteroskedasticity and the null hypothesis is true. The p-value for the Breusch-Godfrey test is higher above the 0.05 level of significance at 0.626. As a result, the null hypothesis can be accepted, and a conclusion is drawn that there is no autocorrelation in the model. The Ramsey reset test is used to check for specification errors in the model specification. The Ramsey reset test's null hypothesis is that there are no specification errors. The Ramsey reset test has a p-value of 0.9042, which outnumbers the 0.05 criterion of significance also confiming that the null hypothesis is true and that the model does not contain any specification errors.

The Jaque-bera test is used to determine whether the residuals are normal. The null hypothesis is that the residuals have a normal distribution. The Jaque-Bera test's p-value is 0.599, higher than the threshold for significance of 0.05. Therefore, the null hypothesis cannot be excluded and it can be ruled that the residuals are normally distributed. Overall, the findings of the diagnostic tests on the residuals point to a properly

specified ARDL model and normally distributed residuals. This implies that the model is reliable and that its predictions can be believed.

CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS

The results from the empirical investigation revealed that diaspora remittances should be targeted as a policy instrument in order to promote economic progress in Zimbabwe. Study findings indicate that diaspora remittances have a constructive and substantial bearing on the growth of the economy. This means that a growth in diaspora remittances improves the rate of economic growth. In line with the findings, the government is recommended to create an enabling environment for more remittances to flow into the country. This is achievable through reducing the transactional costs associated with remittances, simplifying the remittance process, and providing financial literacy training to migrant workers and their families.

The government should provide sustained monetary incentives in local currency for all the diaspora remittance inflows that are received through formal channels. This will urge migrants to use formal channels when expatriating remittances to Zimbabwe, promote the use of local currency thereby stabilizing the exchange rate. These actions will likely boost aggregate demand and contribute towards economic growth in Zimbabwe.

The study's findings imply that remittances may be a substantial driver of economic expansion in Zimbabwe. However, the government should take efforts to enable the influx of remittances and guarantee that they are used to fund economic activity. The government may assist in maximizing the advantages of remittances for the people and economy of Zimbabwe by implementing these policy proposals

References

- Adams Jr, R. H., & Page, J. (2005). Do international migration and remittances reduce poverty in developing countries? *World development*, *33*(10), 1645-1669.
- Adenutsi, D. E. (2010). Do international remittances promote human development in poor countries? Empirical evidence from Su-Saharan Africa. *The International Journal of Applied Economics and Finance*, 4(1), 31-45
- Anetor, F. O. (2019). Remittance and economic growth nexus in Nigeria: Does financial sector development play a critical role? *International Journal of Management, Economics and Social Sciences*, 8(2), 116-135
- Black, R., Biao, X., Collyer, M., Engbersen, G., Herring, L., & Markova, E. (2006). Migration and Development: Causes and Consequences. In R. Penninx, M. Berger, & K. Kraal, The dynamics of international migration and settlement in Europe: a state of the art (pp. 41-64). *Amsterdam: Amsterdam university press*.
- Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of development economics*, 90(1), 144-152.
- Chami, R., Fullenkamp, C., & Jahjah, S. (2003). Are immigrant remittances flows a source of capital for development. IMF Working Papers (WP03/189), 52(1)
- Kadozi, E. (2019). Remittance inflows and economic growth in Rwanda. Research in Globalization, 1.
- Khan, M. K., Teng, J. Z., & Khan, M. I. (2019). The effect of migrant remittances on economic growth: An ARDL approach. Engineering Economics, 30(4), 434-441.
- International Money Express (2022). What is Remittance? Types of remittance explained. [online] available: https://imeremit.com accessed on 04/02/2023
- Pradhan, K. C. (2016). Does remittance drive economic growth in emerging economies: Evidence from FMOLS and Panel VECM. *Theoretical and Applied Economics*, XXIII (4(609)), 57-74.
- Olayungbo, D. O., & Quadri, A. (2019). Remittances, financial development and economic growth in sub-Saharan African countries: evidence from a PMG-ARDL approach. Financial Innovation, 5(9), 1-25.
- Maune, A., & Matanda, E. (2022). The Impact of Foreign Remittances on Economic Growth: Evidence from Zimbabwe. *Acta Universitatis Danubius*. Œconomica, 18(4).

- Migration in Zimbabwe: A Country Profile 2010–2016
- Ratha, D. (2003). Workers' remittances: an important and stable source of external development finance. Washington: The World Bank
- Sibindi, A. B. (2014). Remittances, financial development and economic growth: Empirical evidence from Lesotho. Journal of Governance and Regulation, 3(4), 116-124.
- The World Bank (2021a) Resilience Covid-19 crisis through migration lens. Migration and Development Brief 34, May 2021. Washington DC: The World Bank. Access at https://www.knomad.org/sites/default/files/2021-05/Migration%20and%20Development%20Brief%2034_1.pdf
- Wadood, S. N., & Hossain, A. M. (2015). Impact of Overseas Remittances on Economic Growth: Evidences from Bangladesh. Munich Personal RePEc Archive, 1-19.
- World Bank (2022) Remittances grow by 5% in 2022, Despite Global headwinds. [online] available: https://www.worldbank.org. accessed on 02/02/2023
- World Bank Group (2022). Remittances Brave Global Headwinds: migration and development brief 37.
- World Remit (2022). What are remittance? A complete guide. [online] available: https://www.worldremit.com accessed on 04/02/2023
- Zimbabwe National Statistics Agency ZIMSTAT (2023), https://www.zimstat.co.zw/