

Can Remittance Boost Tax Revenue Collections: A case study of Zimbabwe

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[Cite as: Hamudi, S. (2021). Can Remittance Boost Tax Revenue Collections: A Case Study of Zimbabwe. *Diverse Journal of Multidisciplinary Research*, Vol. 3, Issue 5, Pages 1-12.]

Abstract - *The study investigates whether remittances can help developing countries increase their tax revenue collections. For the period from the second quarter of 2009 through the fourth quarter of 2017, the study used quarterly secondary time series analysis. The study used the Ordinary Least Squares (OLS) methodology to construct two basic regression models that take into account two major tax heads that are linked to remittances: income tax and value-added tax. Remittances are measured using three different methods: current period remittances, one period lagged remittances, and remittance squared. Remittances boost both income tax and VAT, according to empirical evidence derived using the OLS approach. As a result, increased remittance inflows have the potential to generate significant additional revenue for the government in the form of income and consumption taxes. The results of both models also showed that tax revenue responds to economic growth in a significant and beneficial way. According to the report, if the government can build a platform that draws more remittances, the Zimbabwe Revenue Authority can generate more revenue. This can be accomplished by lowering the expenses of sending remittances through official channels.*

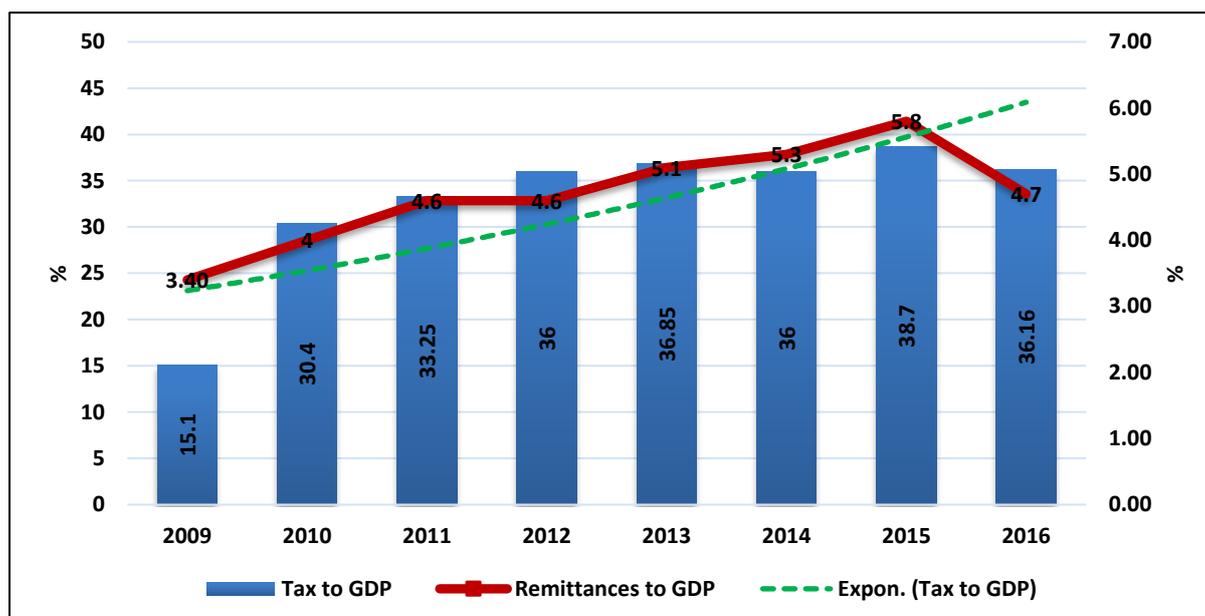
Keywords: *Remittance, Tax Revenue, Value Added Tax, Income Tax, Economic Growth*

1.1 Introduction

Remittances are important financial flow in most developing countries especially to their country of origin. Remittances have increased rapidly in many developing countries (Ratha, 2003). The article analyses if remittances can improve tax revenue collection in developing countries. Remittances are not taxed directly, but they do contribute to government taxes through increasing recipient households' spending levels (Tabasam, 2018). Because remittances are often consumptive, they are projected to contribute significantly to income tax and value-added tax collections.

Some developing countries rely on revenue collected by tax authorities. In most years since the dollarization era, Zimbabwe has struggled with fiscal space issues, as tax collection rates have consistently fallen short of targets. For example, in 2016, revenue was US\$3.5 billion, compared to a budget objective of US\$3.85 billion, resulting in a US\$347.8 million revenue shortfall (Ministry of Finance and Economic Development, 2017). Furthermore, revenue collections in 2016 were down 6.3 percentage points from income collected in 2015.

The exponential curve in Figure 1 shows that tax revenue as a percentage of GDP has been steadily increasing. This improvement does not imply that the country's fiscal situation has improved; rather, the country's GDP is undervalued, as the economy is now greatly undervalued (IMF, 2017). As a result, depending on this figure obscures several underlying reasons; the genuine reflection is that Zimbabwe is in financial distress. A detailed examination of the fiscal situation in the post-dollarization era reveals that it is fragile, as the country continues to run large deficits, as indicated in Table 1.

Figure 1: Annual changes in tax revenue and remittances as a percentage of GDP (2009 to 2016)

ZIMRA (2017) and Reserve Bank of Zimbabwe (RBZ, 2017)

Table 1: Trends in Budget Balance in Zimbabwe from 2009 to 2017

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
Budget Balance (US\$ millions)	36	196	22	(10)	(246)	(184)	(393)	(1,421)	(1,707)
Budget Balance to GDP (%)	0.4	2.0	0.2	-0.4	0.0	-1.0	-2.2	-8.2	-9.5

National Budget Budgets (2009 to 2018)

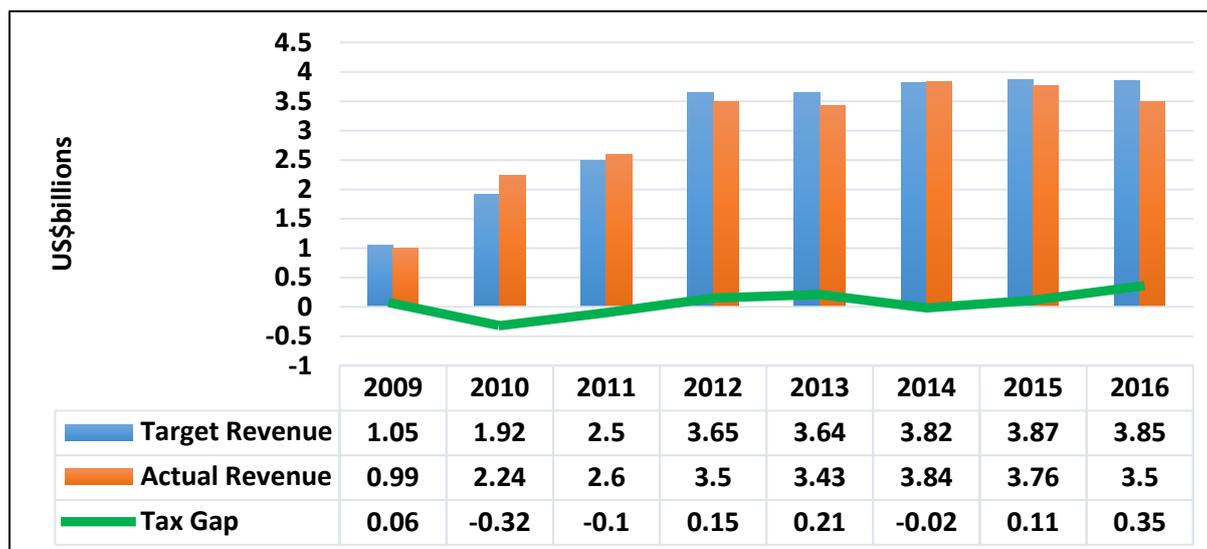
Table 1 illustrates that the budget deficit grew from US\$53 million in 2012 to US\$1.71 billion by the end of 2017. The budget deficit has increased from 0.4 percent of GDP in 2012 to a startling (9.5 percent) in 2017. Worse for the economy, the deficits have been sustained primarily through domestic borrowings, resulting in domestic debt of nearly US\$2.37 billion by the end of 2017. This accounts for 27 percent of GDP and 67.7% of total revenue. The high likelihood of government default, which might erode confidence in the financial sector and damage the government's future borrowing plans, is one potential concern stemming from the expanding domestic debt. If current trends continue, the proportion of domestic debt to government revenue is likely to exceed the 70 percent barrier set by the Public Finance Management (PFM) Act soon.

The revenue projection for 2013 has to be reduced by 12.2%, from US\$4.1 billion to US\$3.64 billion. (ZIMRA, 2017). This was done to account for the economic issues that had a negative impact on collectability during that fiscal year. This tax imbalance has stifled key investments in human and capital infrastructure, both of which are critical for long-term development. If the current revenue gap persists, the government's capacity to fund the Sustainable Development Goals will be severely hampered (Machingura & Lally, 2017). As a result, it's critical to figure out how to expand the Treasury's revenue base. In this context, it is critical to determine empirically if remittances can help the government increase its revenue-generating potential.

Between 2009 and 2016, a total of \$5.24 billion in remittance inflows was received. Table 2 shows that this equates to an annual average of US\$655 million, or 4.8 percent of GDP, with the largest inflows in 2015. Although remittances are not taxed directly, they do contribute to taxes indirectly through consumption taxes.

Figure 2: Revenue Performance against Revenue Targets from 2009 to 2016

Figure 2 illustrates recent tax revenue performance in the post-dollarization era. According to ZIMRA (2017).



Source: Zimbabwe Revenue Authority (ZIMRA, 2017)

Table 2: Trends in Remittance Inflows in Zimbabwe in US\$ millions (2009 to 2016)

Year	2009	2010	2011	2012	2013	2014	2015	2016	Total	Average
Remittances (US\$ millions)	294	403	552	649	788	837	939	779	5,241	655
% of GDP	3.4	4.0	4.6	4.6	5.1	5.3	5.8	4.7	4.8	4.8

Authors' compilation using data from Reserve Bank of Zimbabwe (RBZ, 2017)

The link between remittances and tax income is undeniably important in terms of practicality. The impact of remittance inflows on government budgetary behavior is a research gap. The literature on the link between remittances and tax revenue is reviewed in the next section.

1.2 Problem Statement

Insufficient tax revenues to finance growing public spending needs in Zimbabwe.

1.3 Research Objectives

1. To investigate whether remittances boost tax revenue.
2. To investigate the impact of remittance on tax revenue.
3. To investigate legislative changes that are required for remittance to boost revenue.

1.4 Research Questions

1. What is the effect of remittances on tax revenues?
2. What is the impact of remittance on tax revenue?
3. What legislative changes are required for remittance to boost revenue?

1.5 Significance of the Study

1. Revenue Authorities – It will be used to determine whether to tax remittances or not.

2. Tax policymakers – They need to know if tax revenue performance positively responded to remittance inflows and come up with policies that promote remittances.
3. Ministry of Finance – this will help the ministry when they are coming up with a country fiscal budget.

1.6 Justification of the Study

While there have been more than a few studies both in academic and policy-oriented papers evaluating the impact of remittances and remittance-related issues, there exist few reviews of literature in the area of remittances and tax revenue. It is believed that a comprehensive review of prior research in this regard would provide an overview and an understanding of what is conceived to be remittance and revenue according to the literature, to know whether remittances boost tax revenue, and what legislative changes are needed to promote remittances to boost tax revenue. It also will provide an insight into the various stance of researchers concerning the impact and effect of remittances on tax revenue.

2.0 Literature Review

2.1 Definition of Relevant Terms

Remittances.

The link between remittances and tax income is undeniably important in terms of practicality. The impact of remittance inflows on government budgetary behavior is a research gap. The literature on the link between remittances and tax revenue is reviewed in the next section. (Lubambu, 2014). The study employs remittances received every quarter expressed as a proportion of manufacturing index volume for its analysis (VMI). Although remittances are not taxed directly, they can help the government raise money through consumption-based and, to a lesser extent, income taxation.

Economic Growth.

Economic growth is defined as a gradual rise in the economy's productive capacity over time, resulting in higher levels of national output and income. (Todaro & Smith, 2012). The quarterly growth rate of the volume of manufacturing index (VMI) is used to measure economic growth in this study. Income tax and VAT revenue collected by ZIMRA are likely to rise in tandem with rising per capita incomes as people move into higher income tax levels (Mahmood & Chaudhary, 2013).

Tax Revenue.

Tax revenue is widely seen as an alternative source of long-term financing in a stable and predictable fiscal environment to stimulate growth and allow governments to fund social and infrastructure demands (Egbunike, Emudainohwo, & Gunardi, 2018). The amount collected by the Zimbabwe Revenue Authority (ZIMRA) in direct or indirect taxes in a given fiscal quarter is referred to as total tax revenue in this article¹.

2.2 Remittances and Tax Revenue

Because remittances are a source of cash for any country, the government is likely to tap into them to boost tax collection. As evidence of this by, (Ebeke, 2010) remittances, VAT, and tax income in poor nations were researched, and it was discovered that remittances greatly enhance government tax collection. The presence of a value-added tax (VAT) system in the remittance-dependent countries is required for these positive benefits on fiscal performance. (Tabasam, 2018) who looked at the influence of financial capital inflows, such as remittances, on Pakistan's tax income from 1975 to 2012. The findings demonstrated that remittances increase recipient households' per capita earnings using co-integration approaches. As a result, the recipients are taxed at a higher rate, increasing the amount of income tax received by the Pakistani government.

(Abdih, Barajas, Chami, & Ebeke, 2012) employing longitudinal data from 1990 to 2009 in the Middle East, North Africa, and Central Asia the results confirmed that remittances are positively linked with sales tax revenues using Three-Stage Least Squares (3SLS) and Ordinary Least Squares-Fixed Effects (OLS-FE) models. This is in line with the fact that remittances are very constant and closely linked to household consumption, which has a considerable impact on sales tax collection. The study found that included

¹ The Zimbabwe Revenue Authority (ZIMRA) is the government agent mandated to oversee the collection of taxes. These taxes come in the form of direct (PAYE, Property Tax and Corporate Tax) and Indirect (VAT, Customs and Excise Duties).

remittances in typical debt sustainability analyses change the amount of fiscal adjustment needed to get debt on a more sustainable track. They suggested that, even if remittances are not taxed directly, they may indirectly contribute to debt sustainability by expanding the tax base, raising government revenue, and stimulating demand. (Chami, et al., 2008) working on the Chilean scenario, researchers discovered that when the government applies consumption taxation, a rise in remittances leads to an increase in tax collection from private spending.

The study found that Ethiopia's tax revenue performance positively responded to remittance inflows, particularly through the consumption channel, using data from 1961 to 2010. Using a two-step procedure developed by Engle and Granger (1987), the study found that Ethiopia's tax revenue performance positively responded to remittance inflows (Mascagni & Timmis, 2017). As a result of this research, developing countries like Zimbabwe may be able to expand their fiscal flexibility as a result of remittance inflows. To the degree that remittances help underdeveloped countries increase their tax collections, Zimbabwe can profit even more by establishing legitimate routes for remittances to flow through.

When determining how much debt low-income countries can safely bear, the International Monetary Fund (IMF) and the World Bank (2009) recognize the benefits of remittances as a reliable and countercyclical source of external funding. States may use the extra borrowing capacity to fund investments, which could enhance national economic growth if they were able to borrow more when receiving a large number of remittances. In reality, the World Bank–IMF Debt Sustainability Framework, which was released in 2009, allows recipient countries to carry more debt if remittances account for more than 10% of domestic income and 20% of exported goods and services (Lubambu, 2014)

In conclusion, even though remittances are not directly taxed by the government, they may raise government tax collection. Because remittances are received through familial transfers, they have an indirect impact on fiscal policy and debt sustainability through the behaviors of remittance-receiving households, particularly their spending and saving decisions.

3.0 Material and Methods

3.1 Introduction

This chapter describes the econometric approach utilized, as well as the applicable model, which includes remittances as the primary independent variable in the tax revenue equation. For the period 2009Q2² to 2017Q4, an econometric technique was used to determine the nature of the relationship between remittances and tax income in Zimbabwe.

3.2 Model Specification

The proposed model is based on the previously mentioned theory on the fiscal impact of remittance inflows, which is backed up by empirical evidence. Theoretically, tax revenue is viewed as a factor in foreign capital inflows, resulting in the following theoretical model specification:

$$\text{Tax Revenue} = f(\text{Remittances}) \dots \dots \dots (3.1)$$

The study uses two basic regression models and takes into account two major tax heads that have a relationship with remittances: income tax and VAT revenue. Remittances are measured using three different methods: current period remittances, one period lagged remittances, and remittance squared. The empirical literature, particularly the work of (Tabasam, 2018), other tax-related control variables were included, such as economic development and trade openness. As a result, the empirical models listed below were developed.

$$INCTAX_t = \alpha_0 + \alpha_1 REMT_t + \alpha_2 REMT_{t-1} + \alpha_3 REMT_t^2 + \alpha_4 TOPEN_t + \alpha_5 VMIG_t + \mu_t (2)$$

$$VAT_t = \alpha_0 + \alpha_1 REMT_t + \alpha_2 REMT_{t-1} + \alpha_3 REMT_t^2 + \alpha_4 TOPEN_t + \alpha_5 VMIG_t + \mu_t \dots (3)$$

² The letter Q is used in this study as a short-hand for Quarter, hence Q2 means quarter 2. There are four quarters in a fiscal year in Zimbabwe, which run from Q1 (January to March), Q2 (April to June), Q3 (July to September) and Q4 (October to December).

Where, $INCTAX_t$ is the share of income tax revenue to total taxes, VAT_t is the share of VAT revenue to total tax revenue, $REMT_t$ is the share of remittances to VMI, $REMT_{t-1}$ is the share of one period lagged remittances to VMI, $REMT_t^2$ are remittances squared, $VMIG_t$ is the growth rate of the volume of manufacturing index (VMI), which measures economic growth every quarter, $TOPEN_t$ is Trade Openness, μ_{1t} and μ_{2t} are the error terms [assumed to be normally distributed and Independent and Identically Distributed (IID)], α_0 is a constant and $\alpha_1, \alpha_2, \dots, \alpha_5$ are linear slope coefficients

4.0 Results

4.1 Introduction

The empirical results produced from the estimations stated in Chapter 3 are presented and interpreted in this chapter. Pre-estimation tests, diagnostics tests, and regression findings are presented first, followed by descriptive statistics.

4.2 Data Presentation and Analysis

Table 1 presents a summary of the descriptive statistics for the variables used in this study.

Table 1: Descriptive Statistics (T=35)

	VAT	INCTAX	REMT	REMT(-1)	TOPEN	VMIG
Mean	23.75	16.87	7.16	7.71	67.09	4.42
Median	24.00	12.70	6.80	5.70	69.48	4.13
Maximum	27.60	19.60	13.30	19.00	109.52	11.45
Minimum	22.90	13.40	2.70	0.90	35.92	0.67
Std. Dev.	7.98	5.56	2.16	4.97	18.96	8.02
Skewness	-0.02	0.69	1.11	1.11	19	0.50
Kurtosis	3.09	2.52	4.87	3.13	2.36	3.20
JB	0.02	3.25	13.05	7.63	0.84	1.91
Prob	0.99	0.20	0.00	0.02	0.66	0.39
Obs.	35	35	35	35	35	35

Source: E-views 9 Output

For the period 2009Q2 to 2017Q4, thirty-five (35) time-series observations were used in the analysis. Table 1 shows that VAT accounted for 23.75 percent of overall tax collection on average, ranging from 22.9 percent to 27.6 percent. Income tax's portion of overall tax revenue, on the other hand, averaged 16.87 percent, with the greatest at 19.6 percent and the lowest at 13.4 percent. According to the quarterly change in the volume of the manufacturing index, the average rate of remittances to the volume of the manufacturing index (VMI) was 7.16 percent, while the economy grew at an average rate of 4.42 percent (VMIG). The average level of trade openness was 67.09 percent, with 109.52 percent being the greatest and 35.92 percent being the lowest. This results in a 73.6 percent range and an 18.96 standard deviation. Except for VMI growth (VMIG), which had a greater standard deviation of 8.02 compared to a mean of 4.42, the data showed a tolerable degree of variation, with standard deviations below respective averages. VAT, Remittance Squared, and VMI Growth are all negatively skewed, whereas remittances and their lagged value trade openness are positively skewed, according to the descriptive statistics.

4.2.1 Stationarity Tests Results

The study used time-series data, which is typically non-stationary, it was required to check for stationarity before doing regressions. Following the null hypothesis that there is a unit root against the alternative of no unit root, the study evaluated the probability value of the ADF test statistic to the significance level of 5% to decide on stationarity. The variables were first tested for stationarity in their levels, and then, if not, they were divided as shown in Table 2.

Table 2: Stationarity tests results

Variable	ADF p-value Level	Variable	ADF p-value First Difference	Order of Integration
VAT	0.0503	DVAT	0.0000*** ³	One
INCTAX	0.1826	DINCTAX	0.0000***	One
REMT	0.3480	DREMT	0.0002***	One
REMT(-1)	0.1630	DREMT(-1)	0.0000***	One
TOPEN	0.5360	DTOPEN	0.0000***	One
REMTSQ	0.4634	DREMTSQ	0.0000***	One
VMIG	0.0334**			Zero

Source: E-views 9 Output

Only VMI Growth (VMIG) is stationary in levels and statistically significant at the 5% level, indicating that it is integrated of order zero. Note that if a variable is stationary without difference, that is, in levels, it is said to be integrated of order zero, however, if it obtains stationarity after first differencing, it is said to be integrated of order one. In general, if a variable stays steady after differencing k times, it is integrated of order k. Stationarity testing is critical for eliminating spurious regressions in time-series regressions, where a high R² (in excess of 0.9) is commonly obtained despite the absence of a real association (Gujarati, 2004: 792). After initial differencing, all additional variables are stationary and statistically significant at the 1% level and are thus integrated into the first order, as indicated in the last column of Table 2.

4.2.2 Multicollinearity Test Results

Table 3 shows the results of using the pairwise correlation matrix to find substantial multicollinearity among the explanatory factors. To avoid erroneous regressions, multicollinearity was evaluated on the stationary data.

Table 3: Pairwise Correlation matrix⁴

	DREMT	DREMT (-1)	DTOPEN	DREMTSQ	VMIG
DREMT	1				
DREMT(-1)	0.2652	1			
DTOPEN	0.4573	0.5439	1		
DREMTSQ	0.1095	-0.1418	-0.1184	1	
VMIG	0.1716	0.0839	0.1565	-0.193	1

Source: E-views 9 Regression Output

³ The asterisks ***, ** means significance at 1% and 5% respectively, while D means First Difference. Also note that a trend and an intercept option is used for levels (to account for the impact of the trend on the series) whilst no trend and intercept option is used for first differencing.

⁴ The pair-wise correlation matrix is symmetrical and thus only values on the lower diagonal are presented

Table 3 shows that all pairwise correlation coefficients are less than absolute 0.8, implying that there is no substantial multicollinearity. These findings suggest that the explanatory factors are not moving systematically, and so their individual effects on the independent variable are significant.

Pre-estimation tests are required to clean the data before doing regressions. Before the regression findings, diagnostic tests are presented to see if the error terms follow the conventional linear regression assumptions (CLRM). The diagnostic tests also aid in determining the model's suitability for anticipating tax revenues in Zimbabwe.

4.2.3 Diagnostic Test Results

The diagnostic tests are used to check for normality, heteroskedasticity, and autocorrelation, all of which are error term-specific tests. In addition, the model misspecification tests described in Chapter 3 aid in establishing the explanatory variables' predictive power on tax revenue. Table 4 shows the outcomes of the testing.

Table 4: Diagnostic test results⁵

Test for	Test statistic	p-value (Model 1)	p-value (Model 2)
Heteroskedasticity	Breusch-Pagan-Godfrey	0.7103	0.2536
Autocorrelation	Breusch Godfrey	0.6672	0.2509
Normality	Jarque-Bera	0.7032	0.9291
Model misspecification	Ramsey RESET	0.5570	0.1591

Source: E-views 9 Regression Output

The error terms are homoscedastic, free of autocorrelation, and normally distributed, the diagnostic test results in Table 4 show that both models satisfy the traditional linear regression assumptions. Both models are accurately described, and so fit to anticipate VAT and income tax performance in Zimbabwe, according to the findings.

4.2.4 Heteroskedasticity Tests Results

The results of the diagnostic tests demonstrate that the variances of the error terms differ, indicating that the error terms are not heteroscedastic. The mistake terms are homoscedastic, to put it another way. The probability values of the Breusch-Pagan-Godfrey test statistic, which are 0.7103 for Model 1 and 0.2536 for Model 2, demonstrate this. Both probability values are greater than the standard significance level of 0.05, implying that the error term specifications are not heteroscedastic.

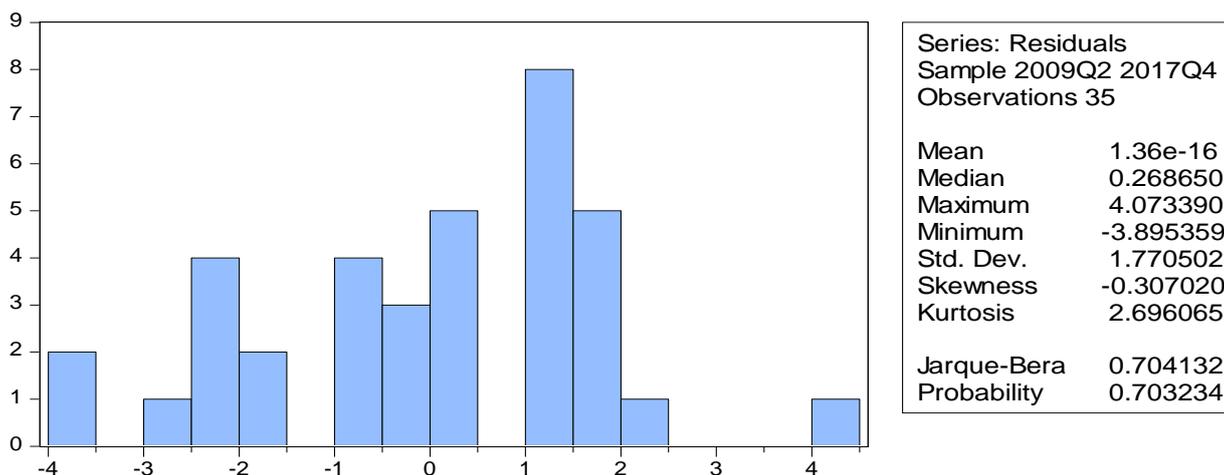
4.2.5 Autocorrelation Tests Results

The autocorrelation test results are similar to those of the heteroscedasticity test in that the probability values of the Breusch-Godfrey test statistic are greater than 0.05 for Model 1 and 0.2509 for Model 2. This means that the subsequent error terms are uncorrelated or autocorrelation-free.

4.2.6 Normality Test Results

The results of the normality tests show that the error terms are normally distributed. The probability values of the Jacque-Bera test statistic are 0.7032 for Model 1 and 0.9291 for Model 2, both greater than 0.05, indicating this. As a result, the error terms are normally distributed, and the significance testing and confidence intervals derived from the results are extremely trustworthy. Figure 1 shows the outcome of the normality tests for Model 1 and Figure 2 shows the output of the normality tests for Model 2.

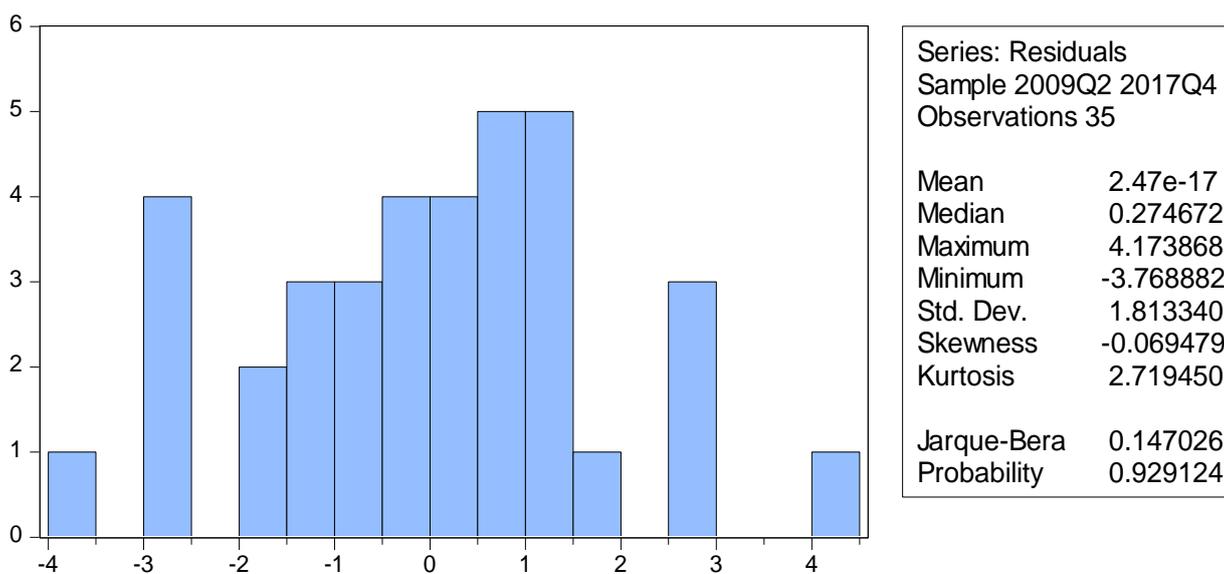
⁵ The detailed results on each of the diagnostic tests results are presented in the Appendices.

Figure 1: Normality test results for Model 1

views 9 Regression Output

Source: E-

Figure 2 displays the results of the normality tests for model 2, which reveal that the Jarque-Bera test statistic has a probability value of 0.9291, which is greater than 0.05. As a result, the error term in Model 2 is normally distributed, implying that the findings of hypothesis testing and confidence intervals are trustworthy.

Figure 2: Normality Test Results for Model 2

views 9 Regression Output

Source: E-

4.2.7 Model Misspecification Tests Results

Based on the Ramsey RESET test statistic, the model misspecification results show that both models are appropriately described. This is because the F-statistics probability values of 0.557 for Model 1 and 0.1591 for Model 2 are both more than 0.05.

As a result, both the VAT and Income Tax models passed the diagnostic tests, and the results can be termed frugal⁶.

4.2.8 Regression Results

Equations 2 and 3 in chapter three were used to perform two basic regressions. The results for the influence of remittances on income tax are shown in Table 5, while the results for the VAT regression are presented in Table 6.

⁶According to Martin S. Feldstein (1982), the applied Econometrician, a useful model is not one that is 'true' or 'realistic' but one that is **parsimonious** which means plausible and informative (See, Martin S. Feldstein, 1982).

Table 5 shows that income tax revenue in Zimbabwe responds to remittance inflows in a large and beneficial way. The amount of the influence, however, diminishes over time, as evidenced by the coefficient of remitted squared term (0.1087). The estimated model is statistically fit to predict tax revenue in Zimbabwe, as evidenced by the F-statistic (36.35) and probability value (0.0000). The R-squared result demonstrates that the explanatory factors account for 86.24 percent of changes in income tax revenue.

Table 5: Regression Results for Model 1

Dependant Variable: Income Tax to Total Tax Revenue (DINCTAX)

Variable	Coefficient	Std. Error	t-statistic	p-value
C	-0.4195	0.4368	-0.9603	0.3448
DREMT	1.0825	0.2557	4.2726	0.0000*** ⁷
DREMT(-1)	0.0511	0.0139	3.6670	0.0010***
DREMTSQ	0.1087	0.0410	2.6536	0.0128**
DTOPEN	0.7774	0.4348	1.7878	0.0843
VMIG	0.0842	0.0555	1.5160	0.0414**

R-squared = 0.8624 *F-statistic* = 36.3462 *Prob (F-statistic)* = 0.0000
Adjusted R-squared = 0.8387 *DW-statistic* = 1.6817

Source: E-views 9 Regression Output

Table 6: Regression Results for Model 2

Dependant Variable: VAT to Total Tax Revenue (DVAT)

Variable	Coefficient	Std. Error	t-statistic	p-value
C	-0.2234	0.3420	-0.6534	0.5185
DREMT	2.0854	0.2028	10.2824	0.0000***
DREMT(-1)	0.1005	0.0330	3.0464	0.0048**
DREMTSQ	1.0081	0.1697	5.9405	0.0000***
VMIG	0.0911	0.0442	2.0625	0.0479**
DTOPEN	0.4421	0.3440	1.2851	0.2086

R-squared = 0.9078 *F-statistic* = 59.1350 *Prob (F-statistic)* = 0.0000
Adjusted R-squared = 0.8925 *DW-statistic* = 1.9942

When VAT is employed as the dependent variable, Table 6 demonstrates that the fiscal effect of current period remittances is roughly double that of income tax. The findings also suggest that continuous remittance inflows (represented by the squared term) and economic expansion (measured by the rise in the volume of the manufacturing index) in Zimbabwe boost tax income. Table 6 also shows that when VAT is employed as the dependent variable, the model fitness, as measured by the R-squared, climbs to 90.79 percent, implying that remittances have a greater impact on VAT than income tax. The fact that remittances increase VAT more than income tax confirms theoretical predictions.

4.3 Discussion and Interpretation

Economic growth (as measured by the growth in the volume of the manufacturing index) boosts both income and VAT tax collections in Zimbabwe, according to the results of both models. In Model 1 and Model 2, a unit increase in economic growth (VMIG) boosts tax collections by 0.08 units and 0.09 units, respectively.

⁷ Note: The asterisks ***, ** means significance at 1% and 5% respectively. The definition of asterisks also applies to Table 6.

This shows that regardless of how taxes are measured, economic expansion promotes tax revenue. The effect is consistent in terms of significance levels, as the coefficient of economic growth is significant at the 5% level in both models. The outcome of the influence of a growing economy on tax revenues was as expected and in line with prior findings (Alabede, 2016). As a result, as the economy grows, the tax base expands, as do per capita earnings, benefiting the fiscus through higher consumption taxes.

The findings revealed that remittance inflows significantly improve tax collection in Zimbabwe, with a unit increase in remittances increasing income taxes by roughly 1.08 units and VAT revenue by about two-folds (2.08 units). At the 1% level, the budgetary impact of remittances is statistically significant. In addition, prior remittances [REMT (-1)] enhance both income tax and VAT revenue in Zimbabwe, according to the findings. However, the fiscal impact is minor, as evidenced by modest coefficients of 0.05 units (Model 1) and 0.10 units (Model 2). (Model 2). This indicates that for every unit rise in past remittances, income tax and VAT revenue increase by 0.05 and 0.10 units, respectively. With a significance of 1%, this finding is significant. The findings also suggest that ongoing remittance inflows (as measured by the remittance squared term, REMTSQ) result in increased income tax and VAT revenue in Zimbabwe. Remittance squared boosts income tax and VAT revenue by 0.10 and 1.0 units, respectively, for every unit increase in remittance. As evidenced by the relatively tiny coefficients, the beneficial fiscal impact of remittances fades over time (0.10 for income tax regression and 1.0 for VAT regression). As a result, the size of the fiscal impact caused by remittances diminishes with time. This could be explained by the fact that when remittance receivers are certain of getting more remittances, they are more likely to channel remittance money towards productive enterprises rather than consumptive ones.

5.0 Implementable Policy Recommendations

Individuals who send money through formal channels should be given incentives by the government, such as a 3% remittance incentive.

Issue tax advantages to remittance-receiving organizations; this will encourage them to do more in the industry because the more the remittances, the higher the tax benefits.

In those institutions, the government should encourage good governance. This shows that to raise additional taxes, policies, governance, and institutional quality must be improved.

The government should ensure that persons who receive remittance money have easy access to favorable foreign exchange rates so that they can convert their earnings into local currency.

6.0 Conclusions

The Zimbabwean government's fiscal condition is precarious, given the country's slow economic growth and dwindling formal sector. These difficult circumstances have had a considerable impact on the nation's tax income output. However, because tax rates in Zimbabwe are already relatively high, attempts to raise total revenue by increasing tax rates are likely to have negative welfare consequences, as consumers and producers are already burdened by high tax rates. In this situation, the government should seek out financially sensible welfare-optimizing ways to raise total taxes while minimizing harm to the typical economic agent.

The study used quarterly secondary time series data for the period second quarter 2009 to fourth quarter 2017 to examine the impact of remittance on taxes such as VAT and income tax. The analytical tool employed was the Ordinary Least Squares (OLS) methodology. The study also looked into whether past remittances have helped Zimbabwe improve tax income.

The empirical results produced utilizing the OLS methodology offered useful data. First, the study found that remittances improve current tax revenue by increasing both income tax and VAT. In other words, remittance inflows increase income tax and VAT revenue in Zimbabwe. However, as time passed, this positive fiscal effect slowed, as seen by the comparatively small amount of the aid squared term. This means that, while the beneficial budgetary impact of remittances can be sustained over time, it is only a minor factor. This research suggests that remittances may have a negative impact on Zimbabwe's tax collection. The reason for this could be that in the long run, remittances are more likely to be channeled towards productive investment endeavors than consumption. The research on remittances and taxes in Zimbabwe has the consequence that remittances encourage increased tax revenue mobilization in the country.

The results of both models showed that tax revenue responds to economic growth in a significant and beneficial way. As a result, boosting the economy provides a long-term answer to Zimbabwe's tax increases. This finding is consistent with the IMF's (2017) recommendation that increasing the economy is the most sustainable approach to improve a country's budgetary flexibility. The notion is that through developing the economy, governments can raise aggregate demand and so broaden their tax base. When the economy grows, for example, more companies succeed, which means more people are employed, which raises both income tax and indirect taxes through VAT, as people with higher incomes tend to spend more, assuming all other factors are equal. Individuals tend to consume more when their earnings rise, which is consistent with basic economic principles and holds as long as the commodities and services in question are ordinary goods and services⁸.

References

- Abdih, Y., Barajas, A., Chami, R., & Ebeke, C. (2012). Remittances Channel and Fiscal Impact in the Middle East, North Africa, and Central Asia . *IMF Working Paper*.
- Alabede, J., 2016. How Does Tax Revenue Respond to Financial Inflow from FDI and Aid? Panel Evidence from West African Sub-Region. Research Gate, Federal University, Wakai, Nigeria
- Chami, R., Barajas, A., Cosimano, T., Fullenkamp, C., Gapen, M., & Montiel, P. (2008). Macroeconomic Consequences of Remittances. *International Monetary Fund* .
- Ebeke, C. H. (2010). Remittances, Value Added Tax and Tax Revenue in Developing Countries. *CERDI*.
- Egbunike, F. C., Emudainohwo, O. B., & Gunardi, A. (2018). TAX REVENUE AND ECONOMIC GROWTH: A STUDY OF NIGERIA AND GHANA. *Jurnal Ilmu Ekonomi*.
- IMF. (2017). *2017 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR ZIMBABWE*. Washington, D.C.: International Monetary Fund.
- Lubambu, K. M. (2014). *The Impact of Remittances on Developing Countries* . Brussels: European Parliament .
- Machingura, F., & Lally, S. (2017). *The Sustainable Development Goals and their trade-offs*. London: Development Progress.
- Mahmood, H., & Chaudhary, A. R. (2013). Impact of FDI on Tax Revenue in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 59-69.
- Mascagni, G., & Timmis, E. (2017). The Fiscal Effects of Aid in Ethiopia: Evidence from CVAR Applications. *The Journal of Development Studies* , 1-20.
- Ratha, D. (2003). Workers' Remittances: An Important and Stable Source of External Development Finance. *GLOBAL DEVELOPMENT FINANCE* , 157-175.
- Tabasam, F. (2018). Impact of Foreign Capital Inflows on Tax Collection: A Case Study of Pakistan. *J. Asian Dev. Stud.*, 87-96.
- Todaro, M. P., & Smith, S. C. (2012). *Economic Development, 11th Edition*. Pearson Education Inc.
- UNDP. (2011). *Towards Human Resilience : Sustaining MDG Progress in an Age of Economic Uncertainty*. New York: United Nations Development Programme .
- ZIMRA. (2017). *Revenue Report*. Harare: Zimbabwe Revenue Authority.

⁸ Note, according to Economic principles a good is considered to be normal if its consumption increases whenever individuals' incomes go up.