



## VALUE ADDED TAX ADMINISTRATION AND ECONOMIC DEVELOPMENT: EVIDENCE FROM TANZANIA

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### **Abstract**

*Despite the major reforms that have been undertaken by the country's VAT administration, there is still a need for further analysis to determine whether the nation was able to achieve its full revenue potential from this tax or whether there were performance differences with other countries within the region. Thus, this study examines the extent to which the VAT administration enhance economic development in Tanzania. The data for this study was obtained from secondary sources including the statistics published by the country's revenue authority, the national statistical office, and its central bank. The methods used included the descriptive analysis of the data, performance ratios for the country, as well as an OLS analysis to determine the relationship between VAT and GDP. During the period between 2010/11 and 2021/22, the country experienced an increase in its VAT receipts, growing from a total of TZS 1.73 trillion to TZS 6.29 trillion. Furthermore, the results of the regression model indicated that there was a statistically reliable relationship between the country's VAT receipts and its real GDP, with an R-squared value of 0.9798 indicating a relationship between the two variables. Additionally, the model indicated that should the country experience a one-unit rise in its VAT tax receipts, its real GDP would experience an increase of 1.26 units. However, C-efficiency fluctuated between 17.2% and 23.4%, remaining substantially below the EAC regional average. The cross-country comparison further places Tanzania at the bottom of the selected group in VAT productivity (0.20), below Rwanda (0.29) and Kenya (0.28). The evidence therefore points to a revenue system that is growing in nominal terms but still loses efficiency through informality, evasion and weak voluntary compliance. The study recommends widening the taxable base, reinforcing enforcement, reviewing exemptions and deepening digital administration of VAT administration processes.*

**Keywords:** VAT revenue, VAT administration, Economic development.

**JEL Classification:** H21, H25, H26, O23

### **1. Introduction**

VAT is now one of the main instruments used internationally to mobilise public revenue (Gerard & Naritomi, 2018; OECD, 2020). Because it is imposed across successive stages of production and distribution, it permits registered firms to offset eligible input tax, thereby reducing cascading effects (James, 2015; Koirala, 2020). The tax is now used in more than 170 jurisdictions, including many developing economies, now implement VAT as a core component of their tax structures (Thaçi, 2018). Despite the widespread adoption of VAT systems in Africa, many countries barely collect the amount of revenue that their system can yield. According to the Africa Tax Administration Forum (ATAF, 2018), the average C-efficiency of African tax administrations was 45% in 2017. There are vast differences between the efficiency of various African countries. For example, the implementation of reforms in Morocco led to the country's VAT C-efficiency increasing from 35% to 56% (Mohamed, 2018).

However, even at 56%, the country only collects half of the potential revenue that the country can generate from VAT. The Southern African Development Community (SADC) countries of South Africa, Botswana, and Zambia have higher rates of VAT collection efficiency than their neighbors within the region (ATAF, 2018). Tanzania was not included in this assessment.

Tanzania implemented VAT in 1998, under the VAT Act, 1997, as a means of replacing the retail sales tax that was then in place (UNECA, 2019). This law was later replaced by the VAT Act, 2014, which aimed to reduce the number of exemptions to the VAT Act and improve the clarity of the tax base that was subject to taxation (Nguvava & Athanas, 2022; Kim & Kim, 2019). Currently, Tanzania operates under the Value Added Tax Act, Cap. 148 R.E. 2019 (Ebrill, 2022; Schoeman et al., 2022; OECD, 2020). However, there are a variety of challenges within the Tanzanian VAT administration. The Tanzania tax authority has trouble collecting taxes from a portion of the economy that is largely informal and evades paying taxes on goods and services that cross over that threshold. In January 2022, there were 4,575 VAT taxpayers outside of the taxpayer register in Tanzania, generating TZS 23,350.09 billion in potential revenue that the country did not collect (Nguvava & Athanas, 2022). Furthermore, Tanzania's ratio of VAT revenue to the GDP of the country was 3.6%, which is lower than the 6% that the Tanzanian government targets from the VAT revenue and the Economic Community of Central Africa (ECC) regional average of 4.4% (Nguvava & Athanas, 2022). The 18% tax rate for most goods in the country is thought by some economists to be high relative to neighboring Kenya, which levied a standard 16% rate on most goods (Nguvava & Athanas, 2022).

The majority of the literature that exists on Tanzania's VAT reforms does not provide information on the efficiency or trend analyses of the VAT administration of the country. As such, there is a gap in the literature that calls for further investigation into the efficiency of Tanzania's VAT administration and reforms. Against this background, the study assesses VAT administration in Tanzania for the period 2010/11-2021/22. The specific objectives are:

- i. To trace VAT collection trends and the changing shares of domestic and import VAT.
- ii. To estimate the association between VAT revenue and real GDP.
- iii. To evaluate VAT performance through efficiency and C-efficiency measures.
- iv. To benchmark Tanzania's VAT productivity and C-efficiency against selected EAC member states.

## **2. Literature Review**

### ***Theoretical Framework***

The study uses Optimal Tax Theory and Tax Compliance Theory as the two analytical lenses.

#### ***Optimal Tax Theory***

The optimal tax theory, as developed by Ramsey (1927) and later Mirrlees (1971), proposes methods of revenue raising that minimise the economic distortions caused by taxation. In the case of the VAT, the theory suggests that the structure of the tax should minimise the impact on economic activity, achieved through a broad tax base and uniform tax rates (Mirrlees et al., 2011). The efficiency of the Tanzanian VAT can be assessed by calculating the C-efficiency ratio. A low C-efficiency ratio indicates that the tax base is narrow and that the VAT is inefficient. The optimal tax theory will be employed in this research to gain an understanding of the relationship between the base and productivity of the Tanzanian VAT.

#### ***Tax Compliance Theory***

Tax compliance theory suggests that individuals and entities are most likely to comply with tax laws when the consequences of non-compliance are high (Allingham and Sandmo, 1972). Factors such as trust in the government and in the fairness of the tax system also affect tax compliance (Wicksell, 1896; Kirchler, 2007). The theory predicts that if Tanzania's VAT

administration office is weak in enforcing the tax laws, few businesses will comply with tax laws, resulting in low VAT collections and low values of the C-efficiency and VAT-to-GDP ratios. Additionally, increasing compliance with the tax laws will increase the base of the tax. Tax compliance theory will be used to explain the relatively low ratios of productivity and efficiency for the Tanzanian VAT.

The two economic theories will be used to frame the analysis to be performed in this paper. The optimal tax theory and tax compliance theory will help to explain the results in terms of efficiency and productivity of Tanzania’s VAT. More specifically, the predictions of the theories are that taxes with narrow bases and many exemptions will have lower values of both efficiency and productivity indicators, and that weak enforcement of taxes will lead to low tax collection ratios and taxes productivity indicators.

### 3. Methodology

The research study employed a descriptive quantitative research methodology. The collected data was organised into tables, figures and statistical measures that described the data set. The deductive method and the longitudinal research design was used to review the data set over time. The secondary data was collected from the Tanzania Revenue Authority (National Tax Statistics reports), the National Bureau of Statistics reports, the revenue performance reports from Bank of Tanzania and other relevant data on country’s revenue collection performance from the World bank and IMF. The methods that were used in the data analysis included both descriptive statistics as well as inferential statistics. For instance, the descriptive statistics helped to provide an overview of the data set and the VAT revenue over time. Additionally, regression analysis was performed to examine the relationship between VAT revenue and the real GDP of Tanzania. These analyses were performed in MS Excel and STATA version 15. Finally, indicators of the efficiency of the Tanzanian VAT and the C-efficiency of the VAT were calculated using formulas as provided below:

$$ER = \frac{R}{Y.r} \cdot 100 \dots\dots\dots(1)$$

Where R is actual VAT revenue collected  
Y is nominal GDP and,  
r is the standard VAT rate

The C-efficiency ratio is given by;

$$CER = \frac{R}{FC.r} \cdot 100 \dots\dots\dots(2)$$

Where R is the actual VAT revenue collected  
FC is final consumption expenditure and,  
r is the standard VAT rate

#### **Model Estimation**

For the VAT revenue- GDP relationship, the model that will be used is a modification of the model proposed by Makame (2015) and Kavishe and Mwakalinga (2023) who analysed the relationship between VAT and GDP in Tanzania using ordinary least squares. The link between this model and Optimal Tax Theory is that implementing a broad-based VAT will increase tax revenue for the government. The use of this model is due to the focus of this paper remaining on the relationship between VAT and GDP alone.

The estimation equation is:

$$\text{Thus; } \ln(GDP_t) = \beta_0 + \beta_1 \ln(VAT_t) + \epsilon_t$$

where:

- $\ln(GDP_t)$  is the natural logarithm of real GDP,
- $\ln(VAT_t)$  is the natural logarithm of total VAT collections,

- $\beta_0$  is the intercept,
- $\beta_1$  is the elasticity coefficient,
- $\epsilon_t$  is the error term.

Three reasons justify the model choice. First, the two variables are continuous and logged to improve distributional behaviour and permit elasticity interpretation. Second, ADF testing was conducted before estimation to assess stationarity. Third,  $R^2$  and residual diagnostics were reviewed as indicators of model adequacy. This parsimonious specification therefore offers a theoretically defensible estimate of the VAT revenue-GDP association.

#### 4. Results and Discussion

##### *The Trend of VAT Collection Performance*

Table 1 reports VAT collection performance for the twelve financial years from 2010/11 to 2021/22, separating domestic VAT from import VAT. In 2010/11, domestic VAT accounted for 47.7% of total VAT, while import VAT contributed 52.3%. Import VAT remained ahead of domestic VAT up to 2013/14.

**Table:1 VAT Collections**

Year	Domestic VAT	VAT on Imports	Total VAT	Domestic Share (%)	Imports Share (%)
2010/11	825,835.3	905,610.8	1,731,446	47.7	52.3
2011/12	979,796.2	1,082,917.7	2,062,714	47.5	52.5
2012/13	1,155,299.0	1,213,436.8	2,368,736	48.8	51.2
2013/14	1,316,820.7	1,329,477.4	2,646,298	49.8	50.2
2014/15	1,511,889	1,542,963	3,054,852	49.5	50.5
2015/16	1,840,677	1,727,172	3,567,850	51.6	48.4
2016/17	2,158,526	1,803,667	3,962,193	54.5	45.5
2017/18	2,426,294	2,054,675	4,480,969	54.1	45.9
2018/19	2,505,440	2,259,827	4,765,267	52.6	47.4
2019/20	2,762,924	2,421,370	5,184,294	53.3	46.7
2020/21	2,633,436	2,584,454	5,217,889	50.5	49.5
2021/22	2,952,924.1	3,344,798.5	6,297,722.6	46.90	53.10

**Source:** Author (2026)

The tables above indicate that the domestic VAT was more than the import VAT within the period from 2015/16 until 2020/21, as well as that the total VAT collected within the period from 2015/16 until 2021/22 reached approximately TZS 6.2 trillion during the year 2021/22 alone. During this period, the Tanzanian government was focusing upon the development of both domestic and export manufacturing industries within the nation. Furthermore, during the year 2021/22 alone, import VAT began to become more prominent within the taxes that were being collected within Tanzania. Thus, the fact that these two values moved in opposition of one another indicates that a balance exists between these two types of taxes.

##### *Influence of VAT Revenue on Real GDP of Tanzania*

Prior to the estimation of the regression equation that helps to model the relationship between the VAT revenues and the GDP of Tanzania, it was first important to determine the reliability of the data that would be used within the construction of that model. The reliability of the data was determined through the calculation of a measure known as Cronbach's alpha value. Cronbach's alpha is a statistical measurement that helps to determine the extent of the variation between the data items within a data set. The closer the calculated value of Cronbach's alpha is to 1, the more reliable the data set is understood to be. The results of this calculation are presented in the table below:

**Table: 2 Cronbach Alpha test**

Item	Value
Average interitem covariance	.212161
Number of items in the scale	2
Scale reliability coefficient	0.9802

Source: Author (2026)

Table 2 reports a scale reliability coefficient of 0.9802, which suggests strong internal consistency for the variables included. The regression output is then reported below:

**Table 3: Model Summary and Regression Results**

Source	SS	df	MS	Number of obs	=	12
Model	2.93645455	1	2.93645455	F(1, 10)	=	485.00
Residual	.060544968	10	.006054497	Prob > F	=	0.0000
Total	2.99699952	11	.272454502	R-squared	=	0.9798
				Adj R-squared	=	0.9778
				Root MSE	=	.07781

log_GDP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
log_vat	1.258245	.0571337	22.02	0.000	1.130943	1.385546
_cons	-.6506185	.8613895	-0.76	0.467	-2.569914	1.268677

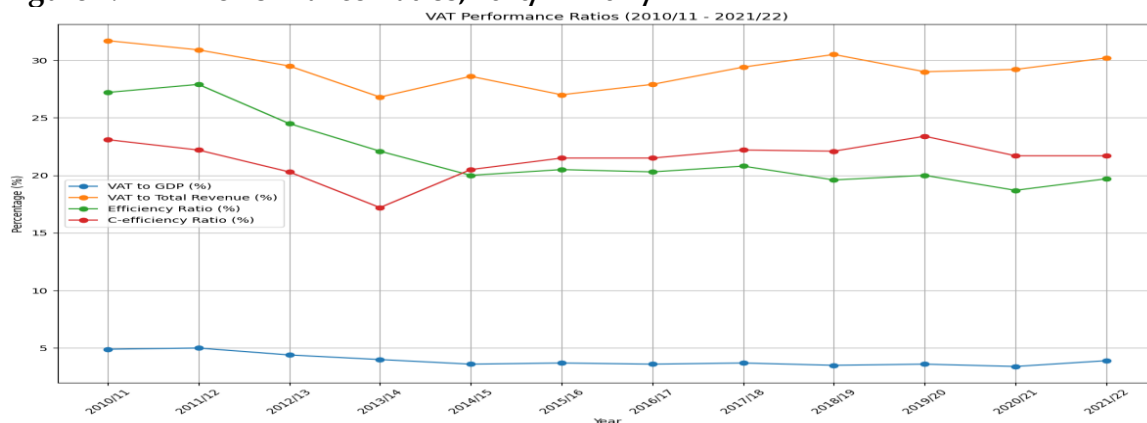
Source: Author (2026)

Table 3 presents the results of the regression model's significance test. The p-value of the test is less than 0.05, which indicates that the model is statistically significant. The model's R-squared statistic is 97.98%, which means that the VAT revenue accounts for a large part of the variation in real GDP. Furthermore, the model's coefficient shows that a one-unit rise in the VAT revenue will result in a 1.258245-unit rise in the real GDP of Tanzania. Thus, there is a positive and statistically significant association between the VAT and the real GDP of Tanzania.

### Performance Ratios

The performance of the VAT in Tanzania can be gauged through the efficiency ratio and the C-efficiency ratio. The results of these two performance ratios are presented in Figure 1;

**Figure 1: VAT Performance Ratios, 2010/11 -2021/22**



Source: Author (2026)

Figure 1 shows the performance of VAT from 2010/11 to 2021/22. The efficiency ratio ranged between 18.7% and 27.9%, while the C-efficiency ratio ranged between 17.2% and 23.4%. Both values indicate that the VAT generated considerable revenue for the government of Tanzania but collected less than the total potential revenue from the consumption of goods and services. The VAT to GDP ratio between 3.4% and 5.0% shows that the VAT contributes relatively stable to the economy. Lastly, the VAT revenue accounted for between 26.8% and 31.7% of total government tax revenue.

### *Comparative Analysis of VAT Performance Measures in Selected EAC Countries*

**Table 4:** VAT Performance Ratio in East Africa

Country	VAT Rate	VAT Productivity Ratio	C-efficiency Ratio
Burundi	18%	0.22	36.2
Kenya	16% (12% for electricity/fuel)	0.28	32.2
Rwanda	18%	0.29	29.2
Tanzania	18%	0.20	22.4
Uganda	18%	0.24	25.1

**Source:** Author (2026)

The study used three indicators: the VAT rate, VAT productivity, and C-efficiency to compare the performance of Tanzania, Rwanda, Burundi, Kenya and Uganda. Except for Kenya, the five countries use an 18% standard tax rate. However, Kenya uses a 16% tax rate for most taxable goods and services, with a 12% rate for specific items such as fuel. Rwanda and Kenya have the highest productivity rates at 0.29 and 0.28, respectively. Uganda, Burundi and Tanzania have relatively lower productivity rates at 0.24, 0.22 and 0.20, respectively. Tanzania scores the lowest C-efficiency rate relative to the other four countries at 22.4%, with Burundi having the highest rate at 36.2%. However, Kenya lies in the middle of the scale at 32.2%. Rwanda's rate is relatively lower at 29.2%. Overall, then, Tanzania performs worse relative to the other East African countries in terms of VAT administration.

### *Discussion of Finding*

The findings of the revenue and composition of the collected VAT in Tanzania have generally increased between 2010/11 and 2021/22. Furthermore, the ratio of import taxes to domestic taxes was higher during the first part of this series. However, the period between 2015/16 and 2020/21 indicated a higher ratio of domestic taxes relative to import taxes. However, 2021/22 indicated the return of the higher ratio of import taxes relative to domestic taxes. The findings are in line with those of Mkapa and Mwinjaka (2022) who stated that the rise in domestic taxes between 2015 and 2020 was due to government compliance measures implemented during the Magufuli administration. However, the return of import taxes in 2021 indicated that the impact of the pandemic on the nation's trade was having an impact on the government's revenue collections. This finding is generally in line with the findings of Nyangarika (2023) who also discovered that VAT collections were impacted by both domestic and foreign factors.

The findings of the regression model generally indicate an association between the two variables. The coefficient of determination (R-squared) for the model is 0.9798, which indicates that the model explains the variation in real GDP using VAT revenue. Furthermore, the model's VAT revenue coefficient is 1.26, which means that a unit increase in VAT revenue is associated with a 1.26-unit increase in the real GDP of Tanzania. These findings are in line with those of Rwegoshora and Ngowi (2022) who discovered that the efficient collection of taxes was associated with economic growth. Furthermore, the findings of Kavishe and

Mwakalinga (2023) and Makame (2015) also indicate that VAT revenue can be used to fund infrastructure projects that contribute to the country's economic growth.

The ratios of VAT collections generally show that Tanzania has a relatively lower efficiency in the collection of VAT revenue relative to the other East African nations discussed in this report. The efficiency ratio for Tanzania fluctuated between 17.2% and 23.4%. According to the East Africa Tax Research Network (EATRAN, 2022), both Rwanda and Kenya have average efficiency ratios above 30% during the same time period. Furthermore, according to the African Tax Administration Board (ATAF, 2023), not only did Rwanda, but also Uganda and Kenya, improved their VAT revenue efficiency by implementing reforms that increased the number of eligible taxpayers and increasing the use of digital VAT processes. The relatively low efficiency ratios for Tanzania suggest problems in the collection and administration of VAT revenue, such as the informal nature of the economy, the inefficiency in collecting VAT, and the high rates of VAT evasion. Mohamed (2018) also found that digitalisation, formalisation of the economy, collection of VAT and taxpayer education were all crucial factors in increasing the efficiency with which revenue was collected from taxpayers.

## 5. Conclusion and Recommendations

Based on the discussions and findings presented in the preceding sections, it is evident that despite the growth of Tanzania's VAT collections, the country's administration of VAT collections is below the potential performances of the country's VAT. Additionally, the performance of Tanzania in relation to other East African nations also indicates that the country's VAT administration is below the potential performances of those countries. The relatively low and unstable ratios of C-efficiency also indicate that there are challenges in the collection and administration of VAT within the nation of Tanzania. Additionally, the findings regarding the relationship between VAT revenue and real GDP of the country also indicate that the potential of Tanzania's VAT is limited by issues that plague the country's economy.

Based on the findings presented in this report, five recommendations can be made regarding the Tanzania VAT administration.

- i. Widen the VAT base through the formalisation of the informal sector. The productivity ratio of Tanzania's VAT collections is relatively low in comparison with other East African countries, which is generally due to a high number of informal taxpayers. Therefore, encouraging informal taxpayers to formalise their businesses will contribute to an increase in VAT collections.
- ii. Review and rationalise the existing exemptions to the VAT regime. The relatively low and unstable C-efficiency ratio for Tanzania compared to the other East African countries suggests potential VAT evasion by taxpayers. Therefore, reviewing the existing exemptions to the VAT regime will allow the government to remove those that are not essential to the functioning of the economy.
- iii. Implement digitalisation within the VAT regime. The low compliance and VAT evasion ratios indicate problems within the current VAT regime of Tanzania. Encouraging the implementation of digital systems within the regime will make it more difficult for taxpayers to evade the country's VAT regime.
- iv. Increase audits of taxpayers. The low compliance and VAT evasion ratios suggest a need for increased auditing of taxpayers by the Tanzania Revenue Authority.

Additionally, applying penalties to those identified as not complying with the VAT regime will increase the willingness of taxpayers to adhere to the tax regulations of the country.

- v. Promote the implementation of a more predictable policy on VAT. The changing ratios of efficiency generally indicate that there are shifts in VAT policy in Tanzania. The implementation of a policy on VAT that is more easily predictable and understood by taxpayers will encourage compliance with the tax regulations of the country.

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