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Bringing Rigour and Evidence to Economic Policy Making in Africa

A Comprehensive Analysis of the Kenyan VAT System

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1. Introduction

Value-Added Tax (VAT) is a cornerstone of Kenya's Medium-Term Revenue Strategy (MTRS) and the Government of Kenya's (GoK) domestic revenue goals. It plays a pivotal role, not only in raising domestic revenues, but also in developing a broader economic landscape that stimulates growth and diversification (The National Treasury and Economic Planning, 2023). However, despite a growing Gross Domestic Product (GDP) and broadening of the VAT base, the performance of the tax has not reached its potential. This paper provides a comprehensive analysis of the VAT architecture, identifies the VAT gap, and provides detailed policy recommendations to close the existing VAT gap.

Kenya's adoption of VAT in the early 1990s marked a regional departure from the traditional sales tax architecture and thrust the country into an era of tax modernization. The implementation of VAT was motivated by the need to generate higher domestic revenues while not hindering the development of new and emerging industries. However, despite numerous reforms to the VAT system, it has consistently fallen behind its potential and expected performance. In general, the low VAT-GDP ratio in Kenya aligns with the broader low Tax-GDP revenue that is identified as a chief hinderance to development across low- and middle-income countries (Mascagni, 2014; OECD, 2022). However, as Cnossen (2019) notes, VAT implementation across East Africa can be conducive to growth and the recency of its implementation means there is still room for improvement.

This paper scrutinizes the key components of Kenya's VAT system, examining rates, exemptions, and administrative mechanisms, drawing from a rich array of empirical evidence and data from official tax records, government reports, and academic studies. We begin with a brief literature review on VAT architecture in Kenya. Next, we present our data and methodology, followed by an analysis of the VAT gap in Kenya. We take inspiration from the International Monetary Fund's (IMF) Revenue Administration Gap Analysis Program (RA-GAP) methodology for calculating potential VAT revenues and comparing these with actual performance (Hutton, 2017). We then analyze and provide recommendations for three key components of VAT in Kenya: the registration threshold, compliance gap, and expenditure gap. Additionally, we develop a simulation model to understand how different mixes of policy changes would impact revenue from VAT. Finally, we summarize our findings and make several policy recommendations for VAT enhancement. Our findings provide a nuanced understanding of VAT performance and offer valuable and specific policy recommendations that are applicable beyond domestically and

internationally. Our analysis moves beyond a simple overview of revenue statistics and instead helps to unravel the intricate linkages between VAT policies and broader economic indicators such as GDP growth and sector-level performance. By shedding light on these challenges and connections, this paper contributes to policy making and VAT implementation and performance in East Africa.

2. Background

Value-Added Tax is based on principles of fiscal neutrality, tax-base expansion, and revenue maximization (Cnossen, 2019; Cnossen, 1998; Feria, 2015). Although VAT structures are administratively demanding, it has become a generally effective manner of levying a tax on consumers that divides the initial tax burdens throughout value chains (Chandel et al., 2006; Cnossen, 2019). Efforts to quantify and define the specific costs of VAT have proven to be varied; a comprehensive literature review by Barbone et al. (2012) identified numerous costs scattered throughout the VAT architecture, making it an inherently difficult tax to analyze. Such distribution of costs also makes it a tax that can be prone to issues of misreporting and evasion, an issue that has beset VAT in Kenya since its inception.

When VAT was introduced in Kenya in 1990, it replaced the sales tax, which had a standard rate of 17% and other rates, the highest of which was 210%. Immediately, the VAT system proved difficult to understand, comply with, and enforce. The complexity of the rates and exemptions exposed administrative deficiencies and led to widespread misreporting. In the 30 years since its introduction, VAT architecture has changed significantly; today it consists of three rates with a standard rate of 16%. The current iteration of VAT policy is pursuant to the 2023 Finance Act, a modification of the 2013 Tax Act.

Compounding the difficulties in analysis, compliance, and enforcement of VAT are the almost constant changes in rates and exemptions over the past 30 years. The introduction of the KSh. 5 million thresholds whereby any firm with a turnover higher than KSh. 5 million is required to register and comply with VAT policies that simplifies compliance by businesses but compounds the difficulties of analysis and enforcement. Instead of filing VAT, those firms with a turnover above KSh. 1 million but below the threshold can opt to pay VAT voluntarily or pay a 3% turnover tax. While this reduces administrative burdens, it also leaves many small and medium-sized firms outside of the VAT architecture with no real incentive to register voluntarily. Additionally, businesses dealing solely with exempt goods are not required to register for VAT, further limiting analysis and enforcement activities. While registering

voluntarily could mean filing refunds for VAT, most are not so inclined as refunds are issued on credit and are generally slow to be processed and issued.

The 16% standard rate comes with a multitude of zero-ratings and exemptions. With zero-ratings, a firm does not charge VAT on sales but can claim VAT on purchases related to the production of that good, while exempt goods fall wholly outside the VAT architecture. Importantly, fuel was taxed at a rate of 8% prior to the 2023 Finance Act but is now subject to the standard rate of 16%. Exemptions and zero-ratings are essential parts of VAT as they can keep prices of certain goods lower and give the government more control of final tax rates and prices (Gottfried & Wiegard, 1991; Shoup, 1988; Tamaoka, 1994). However, exemptions and zero-ratings are lost revenue when applied to goods or services that need not fall into this category for the public good.

In practice, there are three justifications for introducing exemptions and zero-ratings: 1) improving the progressivity of VAT; 2) reducing taxes on essential goods and services; 3) removing the liability on goods and services that are too difficult to tax or assess their value added (Tait, 1988). Agriculture is an example of a sector that fits all three criteria and where goods are typically exempt from VAT. Other sectors, such as financial services, do not meet the first or second justification but present challenges when calculating their value-added, so are also traditionally exempt from VAT (but may be subject to other types of taxes). Since exemptions and zero-ratings result in foregone tax revenue and can introduce administrative loopholes and complexity, it is best practice to keep them to a minimum.

With exemptions, traders do not charge VAT on the value added to their goods and services but are still liable to pay VAT on their inputs. The main benefit of exemptions, as opposed to zero-ratings, is to simplify the administrative burden on firms and on sectors where value added is difficult to assess. Common sectors where exemptions are deployed include agriculture, education, health, and public services, though careful consideration is needed when setting the policy to ensure it has the intended effect. There are three scenarios with exemptions that affect the final price of goods. First, if an entire value chain of goods is exempt, from production to final sale, then no VAT is ever levied and thus no tax is collected or passed onto the consumer. Second, if exemption occurs at the beginning or end of the value chain, then the value added in those stages is not subject to VAT and the final tax on a consumer is less than it would be if there were regular ratings. Third, if exemption occurs at an intermediate stage, then there is a cascading effect where the value added prior to the exempt stage is taxed more than once. This is due to an increase in the price charged by downstream firms using the exempt inputs, since they cannot claim refunds on their input (Ebrill et al., 2001). This last

scenario should be avoided since it ultimately leads to higher costs for the consumer.

When exemptions are deployed effectively (and the third scenario above is avoided), end-consumers will likely pay some VAT on their goods, though at a lower rate than if there were no exemptions. Since exemptions do not fully eliminate VAT passed onto consumers, it is often more effective to apply zero-ratings on goods and services for which the goal is to fully eliminate the taxes and reduce prices. Contrary to exemptions, traders that sell zero-rated goods can claim refunds on vatable inputs but charge a VAT rate of 0% on their outputs, which guarantees that no tax is passed onto the consumer and generally leads to lower consumer prices. Zero-ratings are most effective when applied at the end of the value chain, as opposed to intermediate goods, to ensure that end-consumers are not subject to the tax. Apart from standard zero-ratings on exports, international airfare, and tourism services, Kenya's current policy defines very few zero-rated goods. A few notable exceptions include zero-ratings on ordinary bread, milk, flour, and the transportation of sugarcane. While these may represent strategic efforts to improve the progressivity of VAT and reduce the prices of essential goods, careful consideration and justification is needed to ensure that it is achieving the desired effect. Thus, it would be beneficial to have guiding policy objectives that the National Treasury and KRA employ when introducing or eliminating exemptions and zero-ratings to VAT.

3. Methodology

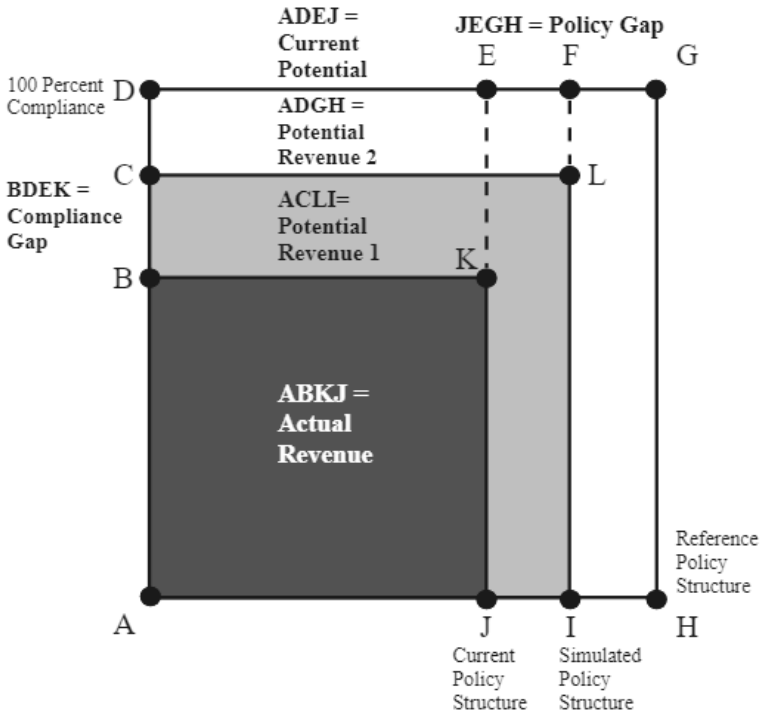
RA-GAP Analysis

In simple terms, VAT performance is the relationship between its actual revenue generation and the potential revenue it could generate given specific rates and exemptions. In Kenya, this is difficult to measure due to compliance levels, changing tax structures, informality, and the relatively recent implementation of VAT. However, we are able, through the extensive use of primary source data obtained through the KRA, the Kenya National Bureau of Statistics (KNBS), and other official government documents, to calculate potential VAT figures and compare them with the most accurate data on VAT revenues.

To calculate potential VAT revenues and find a VAT gap, we take inspiration from Hutton's RA-GAP methodology (2017), which is used in VAT analysis by the International Monetary Fund. The foundations of the methodology are simple, as the gap is potential VAT revenues less the actual revenues. However, the potential revenues can be adjusted by changing policy measures such as

rates and exemptions. Figure 3.1-1, which is inspired by Hutton's work, shows that actual revenues are inherently constrained by their policy measures (box JEGH) and by compliance levels (box BDEK).

FIGURE 3.1-1: RA-GAP METHODOLOGY VISUALIZATION



Source: *Hutton, RA-GAP Methodology (2017)*

To calculate potential VAT revenues, we first find the potential when all goods are taxed at the current rate of 16% with no exemptions or zero-ratings. Although this potential is fictional, it serves as a reference to which we can compare other rates and exemptions.

Equation 1:

$$AR = \sum_{s} (Vo_s + Vm_s - Vc_s)$$

The actual revenue from VAT is found by summing up VAT revenues from outputs in all sectors and VAT from imports less the VAT that is creditable. This can be seen in Equation 1 where AR is actual VAT Revenue, Vo_s is VAT on outputs within a given sector, Vm_s is VAT on imports and Vc_s is VAT credited.

This approach mirrors that of Hutton (2017) and is used to verify the figures obtained from official KRA documents

To test exemptions and rates to find potential revenue, we modify Equation 1 to incorporate different rates and exemptions. That is, we adjust, on a product-level basis, the rates and exemptions to fit our model. This is represented in Equations 2 and 3 where Equation 2 represents box ADGH, where there are no exemptions or zero-rates. Note that there is no need to assess this by sector as all goods, in this fictional scenario, are taxed the same. Equation 3 is more nuanced, where exemptions and different rates are represented by the variable P_s which is the factor by which the VAT would change within a sector when rates and exemptions are altered. Z_s and G_s are revenues from goods that are zero-rate and exempt respectively but are not in the simulation. *Ps* is found by altering actual revenues by the changes in rates and exemptions as seen in Equation 4. The sum of these potential revenues below the potential credits equal *PR,* or the potential VAT revenue with a given reference policy. Comparing the results from Equation 3 to those of Equation 2 allows us to see how much potential revenue is lost or gained with each change in policy.

Equation 2:

$$ADGH = \sum (Vo_s + Vm_s - Vc_s)$$

Equation 3:

$$PR = [Z_s + G_s] + \left[\sum_s (P_s Vo_s + P_s Vm_s - P_s Vc_s)\right]$$

Equation 4:

$$P_s = Vo_s R + Vm_s R - Vc_s$$

We apply this methodology on the whole of VAT revenues rather than on each sector as changing exemptions and policies, coupled with varying levels of compliance in different sectors merit a different approach. By focusing on total VAT revenues, the RA-GAP methodology provides a valuable overview of VAT performance and sets the groundwork for further investigation on a sector-by-sector basis.

Although a dynamic model could account for behavioral changes because of VAT reforms, the static model is best for the purposes of this research as VAT compliance has seen little change because of past policy reforms. The static model offers insight into potential revenues lost due to current policies,

regardless of firm behavior, which is most relevant in the context of VAT optimization in line with the goals of the MTRS.

By taking a broad approach to VAT analysis in Kenya, we can draw informed conclusions contextualized by empirical data. Thus, we offer a nuanced view of VAT utilizing domestic and regional data that makes this paper applicable to future policy discussions in Kenya and the broader East African context. Furthermore, we can identify areas where more research is necessary to understand and refine the Kenyan VAT system. Combining a gap analysis, international benchmarks, and sector-level analyses enhances the relevance and applicability of our findings for policymakers and practitioners seeking to refine VAT policies in Kenya and beyond.

Threshold

We use the following methodology to determine the expenditure due to the threshold, currently set to KSh. 5 million. Simply put, we calculate the amount of VAT that the KRA could collect on firms making under KSh. 5 million. This methodology is deployed, and the results are analyzed in Section 4.3.

Variable Definitions:

- **F**: total number of firms in a sector
    - From national statistics data (KNBS)
- **Percent$_{Range1}$**: the percentage of firms in a given sector with turnover KSh. 0-2.5m
    - From national statistics data (KNBS)
- **Percent$_{Range2}$**: the percentage of firms in a given sector with turnover KSh. 2.5-5m
    - From national statistics data (KNBS)
- **VAT_Rate**: current VAT rate
    - From current policy (16% in Kenya) (GoK)
- **Percent_Normal_Rate**: the portion of value-added goods sold at the normal VAT rate
    - Estimated value of goods sold at the normal VAT rate
- **Compliance_Rate**: current compliance rate
    - Estimated VAT compliance rate based on Hutton methodology or other calculations. Current best estimate puts compliance for VAT in Kenya at around 55%

With these variables, we calculate a threshold effect with the following steps:

I. Calculate the turnover of firms under the KSh. 5m threshold by sector (*Turnover$_{sector}$*):
    a. For each sector, calculate the number of firms in the 0-2.5m range as:

$$Firms_{Range1} = F * Percent_{Range1}$$

    b. For each sector, calculate the number of firms in the 2.5-5m range as:

$$Firms_{Range2} = F * Percent_{Range2}$$

    c. Estimate the average turnover for firms in each income range. We use the halfway point as our estimates. Although there may be skewness within these groups, current data does not facilitate the estimation of the exact meaning. It is likely that firms will concentrate at the lower end of these ranges, making our calculations conservative in relation to the average turnover per firm:
        i. *Turnover$_{Range1}$ = 1.25m*
        ii. *Turnover$_{Range2}$ = 3.75m*
    d. Calculate the total turnover of firms by sector under the 5m threshold:

$$Turnover_{Sector} = Firms_{Range1} * Turnover_{Range1} + Firms_{Range2} * Turnover_{Range2}$$

II. Calculate the percentage of turnover that is Gross Value Added (GVA) by sector, referred to as GVA_Rate$_{Sector}$, which can be calculated in two ways:
    a. Method 1 (simple): Assign a fixed value for each sector (i.e. 50%) to denote that 50% of turnover is value added. We opt to use the more complex method 2 in our analysis
    b. Method 2 (advanced): Using VAT administrative data, subtract a firm's purchases from sales, divide that value by its total sales, and take the average of this value across firms in a sector:

$$GVA\_Rate_{Sector} = \frac{1}{\#\ Firms\ in\ Sector} \sum_{Firm \in Sector} \frac{(Firm_{Sales} - Firm_{Purchases})}{Firm_{Sales}}$$

III. Calculate the total GVA of firms under the threshold as:

$$GVA_{Total} = \sum_{Sector \in Sectors} Turnover_{Sector} * GVA\_Rate_{Sector}$$

IV. Calculate the tax expenditure due to the threshold:

$$Expenditure_{Threshold} = GVA_{Total} * VAT\_Rate$$

V. To incorporate realism, factor in any estimates on compliance rate and the rate of exempt and zero-rated goods that will lower the amount that would be collected without a threshold:

$$Collectible_{Threshold} = Expenditure_{Threshold} * Percent\_Normal\_Rate * Compliance\_Rate$$

Simulation

In this section, we describe the methodology used to calculate the impact on revenue when changes are made to the VAT rate, expenditure level, and compliance rate. It provides a novel tool for economists and policymakers to understand the relative impact of those three variables, and aids them in determining revenue goals, policy changes, and how to best allocate resources. For example, if a policymaker wanted to lower the VAT rate (which would lower collectible revenue), they could use this tool to simulate how much they would need to reduce expenditure levels (by removing exemptions and zero-ratings) or raise compliance, to offset the lost revenue from the lower VAT rate. Similarly, if policymakers wanted to evaluate the revenue gained from higher compliance, they could use this tool to calculate revenue projection for different scenarios. This methodology is deployed, and the results are analyzed, in Section 4.7.

Variable Definitions:

- **Expenditure**: current tax expenditure
  - From official reports on VAT expenditure (KRA)
- **VAT_Rate$_{Current}$**: current VAT rate
  - From current policy (16% in Kenya) (GoK)
- **VAT_Rate$_{New}$**: new VAT rate
  - Variable that can be set to any VAT rate for the simulation (0 – 1)
- **R**: percent reduction in tax expenditure
  - Variable that can be set to any percent reduction in VAT expenditure for the simulation (0 – 100)

- **C:** current collected revenue from VAT
    - Derived from official reports on VAT revenue (KRA)
- **$\text{Compliance}_{\text{Current}}$**: current compliance rate
    - Estimated VAT compliance rate based on Hutton methodology or other calculations (0 - 1). Current best estimate puts compliance for VAT in Kenya at around 55% or 0.55
- **$\text{Compliance}_{\text{New}}$**: new compliance rate
    - Variable that can be set to a new compliance rate for the simulation (0 – 1)

With these variables, we generate the simulation with the following steps:

1. Calculate the baseline value of exempt and zero-rated sales:

$$Baseline_{Exempt} = \frac{Expenditure}{VAT\_Rate_{Current}}$$

2. Calculate the new value of exempt and zero-rated sales with the reduction in expenditure:

$$New_{Exempt} = Baseline_{Exempt} * \left(1 - \frac{R}{100}\right)$$

3. Calculate the new value of collected VAT:

$$New_C = \frac{C}{VAT\_Rate_{Current}} * VAT\_Rate_{New} + \left(Baseline_{Exempt} - New_{Exempt}\right) * VAT\_Rate_{New}$$

    a. The first line of the equation calculates the amount of revenue collected when adjusting for the new VAT rate. It will be lower when the VAT rate is lowered
    b. The second line of the equation calculates the additional VAT collected with the changes to expenditure and the new VAT rate
4. To incorporate changes in compliance rates, calculate the total VAT collected with new compliance:

$$Total_C = \frac{New_c}{Compliance_{Current}} * Compliance_{New}$$

    a. This step calculates the total possible VAT collected at current compliance rates by dividing out the current compliance rate to get total potential VAT, and then multiplies that by the new compliance rate

5. Calculate the difference between simulated VAT and current collected VAT as:

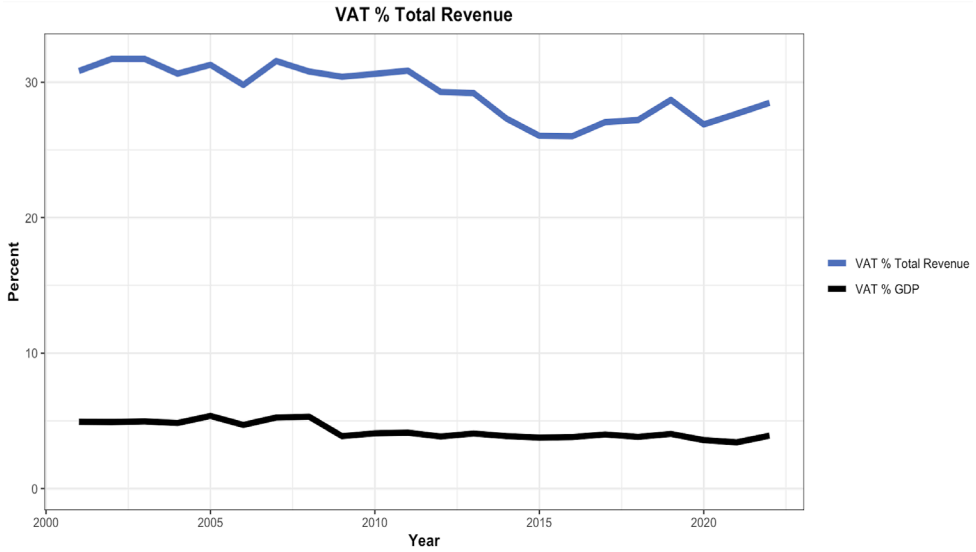
$$\Delta C = Total_C - C$$

4. VAT Performance

Overview

The performance of VAT is presented in Figure 4.1-1, which shows two distinct periods. From 2001 to 2011, revenue from VAT constituted on average 4.8% of GDP and 30.9% of total revenue but thereafter dropped to an average of 3.8% of GDP and 27.6% of revenue from 2011 to 2022. Since 2011, VAT as a percentage of total revenue has fluctuated, reaching a low of 26% in 2016 before rebounding to 28.5% in 2022. The fluctuation is partly due to changes in other tax structures such as PIT, which has shown a strong performance over the same period and has grown as a percentage of overall revenues. It is also important to note that the potential base for VAT is private final consumption, which has accounted for approximately 75% of GDP each year over the last two decades, signaling a stable base for VAT that would not affect its performance (KNBS Economic Survey, 2023). Given that the base for VAT has remained constant relative to GDP, and VAT collected has remained at around 3.8% of GDP since 2009, the data suggests that policy and compliance changes have had a minimal impact on the overall performance of VAT in recent years.

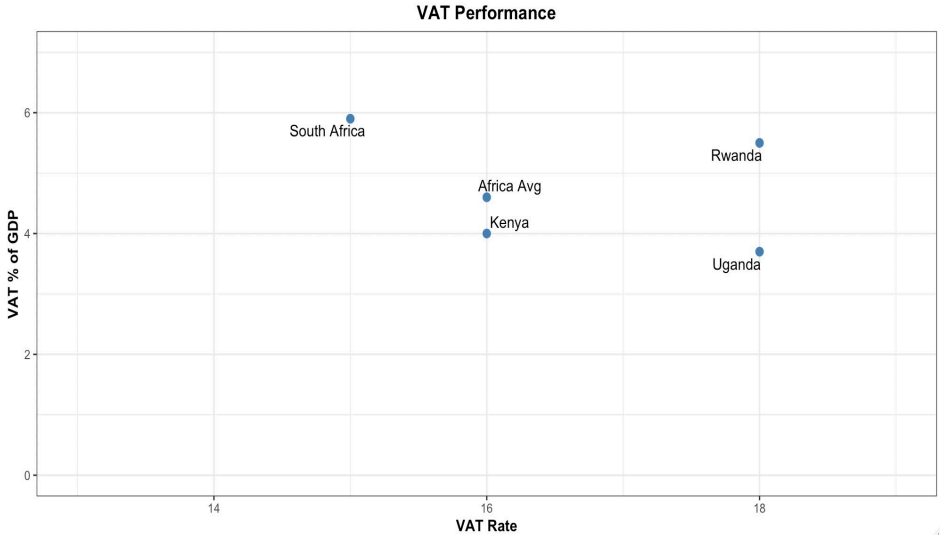
FIGURE 4.1-1: VAT PERCENT OF TOTAL REVENUE



Source: *KRA*

A comparison of VAT in Kenya with nearby countries sheds additional light on its performance. For the regional comparison, we use data from the OECD, which at the time of this report contained data through 2021. We use 2019 data to avoid the shocks to performance due to the COVID-19 pandemic. The data show that South Africa, with a standard VAT rate of 15%, collected VAT at 5.9% of GDP, while Rwanda and Uganda both have a standard rate set at 18% and VAT collection at 5.5% and 3.7% of GDP respectively. With VAT composing around 4% of GDP, Kenya's VAT collection falls below the Africa Average of 4.6%. (Figure 4.1-2). While the VAT architectures vary significantly across countries, the regional comparison suggests that Kenya could be collecting more than it currently does from VAT given that the average VAT rate in African countries is roughly the same as in Kenya (16%) but Kenya collects about 0.6% of GDP less.

FIGURE 4.1-2: VAT PERFORMANCE IN SELECTED COUNTRIES



Source: *Revenue Statistics in Africa 2022, OECD*

VAT Gap

We apply the RA-Gap model to estimate the three gaps: overall, policy, and compliance. We obtained value-added data at the product level from supply and use tables provided by KNBS. In collaboration with the KRA policy team, we then identified the applicable VAT rate for each good and service in the supply and use tables. This step was necessary as KNBS and KRA currently identify and track different products using different coding. The difference between the value of all goods and services subject to 16%, and the value of goods and services subject to the applicable VAT rates (also known as the policy potential) gives the policy gap. The difference between the policy

potential and collected VAT results in the compliance gap. The results from 2022 are presented in Table 4.2-1.

TABLE 4.2-1: KENYA VAT GAP (2022)

	(KSh. millions)
(i) Potential VAT (16% of final consumption)	1,902,093
(ii) Potential VAT (using applicable sector rates)	906,020
(iii) Collected VAT	502,830*
(iv) Overall Gap	1,399,263
(v) Policy Gap	996,074
(vi) Compliance Gap	403,189
GDP at Market prices	*10,237,727*
% of GDP	
(i) VAT Potential (16% of final consumption)	*14.23%*
(ii) Potential VAT (using applicable sector rates)	*6.78%*
(iii) Collected VAT	*3.76%*
(iv) Overall GAP	*10.47%*
(v) Policy GAP	*7.45%*
(vi) Compliance GAP	*3.02%*

* This figure is for the calendar year 2022 and may differ from officially reported figures for fiscal year 2022

Source: *Authors Computation from Various Data (KRA, National Treasury, KNBS)*

Notably, the policy gap at 7.45% of GDP is larger than the compliance gap at 3.02%. Most of the policy gaps, however, is part of the non-taxable gap such as subsistence farming, exports, and international flights. Therefore, the expenditure gap, which KRA estimated at KSh. 248 billion, accounting for approximately 25% of the policy gap[1], should be the focus of any policy changes. Conversely, the entirety of the compliance gap is due to the assessment gap, or those VAT taxes that have been assessed but never reported (Thackray, Hutton, and Ahmed, 2017). This gap includes issues such as informality, as the consumption data indicates there are goods and services that never enter the KRA system when they should. At KSh. 403 billion, the compliance gap is largest opportunity to raise revenue within the VAT system.

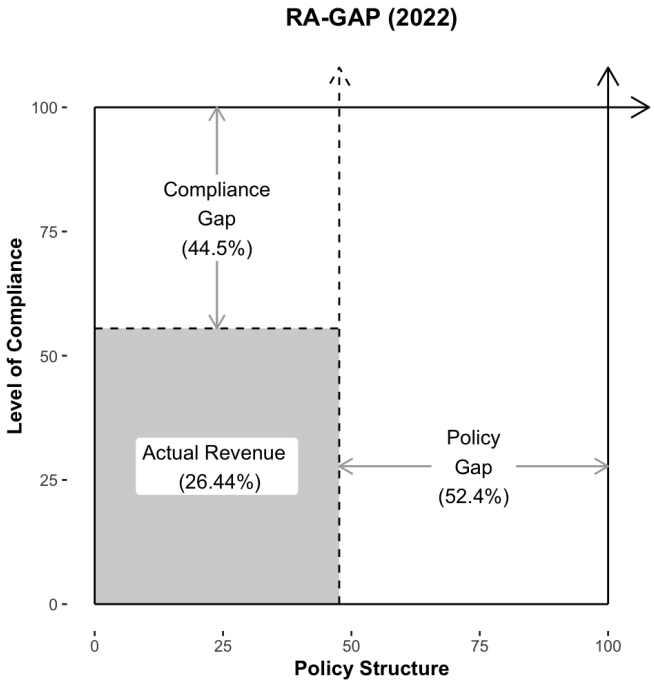
[1] This statistic uses the officially reported expenditure amount in 2022, at KSh. 248,293 billion and calculates it as a percentage of the policy gap from our estimation.

The visualization below shows the results of the RA-GAP analysis, with policy structure along the x-axis and compliance level along the y-axis. Because the compliance gap only applies to the establishments that fall within the VAT base according to the policy structure, we calculate the compliance gap percentage as:

$$\left(\frac{\boldsymbol{compliance\ gap}}{\boldsymbol{reference\ potential\ vat}}\right) * \mathbf{100}$$

The calculation results in an estimated compliance gap at 44.5% of the reference potential VAT in 2022, up from 40% in 2017.

FIGURE 4.2-1: RA-GAP 2022



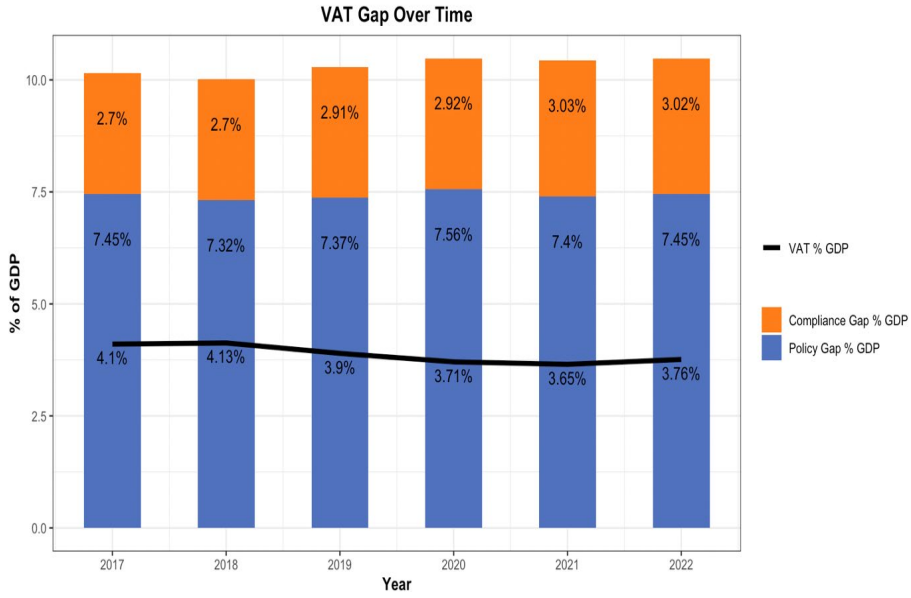
Source: *Author's Computation*

Our results differ from previous estimates by the IMF in terms of the individual components of the overall gap. Using the RA-Gap model, Thackray, Hutton, and Ahmed (2017) estimated an overall gap of 10.2% of GDP, a compliance gap of 4.0% of GDP and a policy gap of 6.1% of GDP in 2017. We calculate a similar overall gap of 10.16%, but a compliance gap of 2.7% of GDP and a policy gap of 7.45% in the same year. This suggests a discrepancy in the data used by the research teams, or in the methodology used to apply the applicable VAT rates. Such discrepancies underline the need to create an efficient and unified data

management system where the KRA, KNBS, and National Treasury can ensure their figures are accurate and reproducible.

Because the RA-GAP methodology relies on national statistical estimates of gross value added which contain uncertainty in the margins of error, it is best practice to analyze the gap over time as opposed to a particular year (Hutton, 2017). This also helps to account for the data discrepancies detailed above, as the trendline analysis should be less sensitive to such issues. To perform this analysis, we calculate the VAT gap from 2017-2022. We find that the policy gap has remained relatively constant at around 7.4% of GDP, while the compliance gap has increased from 2.7% of GDP in 2017 to 3.02% in 2022. As seen in the following figure, the increase in the compliance gap in terms of GDP from 2017-2022 (0.32%) largely mirrors the decline in VAT as a portion of GDP (-0.34%) over the same period. Understanding the causes of the rising compliance gap is imperative to improving VAT performance and is further analyzed in Section 4.4.

FIGURE 4.2-2: VAT GAP



Source: *Author's Computation*

In addition to the compliance gap, the policy gap at 7.45% of GDP represents a sizeable opportunity for reform. Few sectors contribute to most of the policy gap, most of which are benchmark goods and do not represent opportunities to increase VAT revenue. In other words, these are goods and services that are usually exempt or zero-rated to keep their cost to consumers low for various reasons. Specifically, exemptions and zero-ratings on agriculture and basic food items, education, and financial services constitute roughly 70% of the

policy gap. Generally, these do not constitute viable opportunities to significantly increase revenues without placing undue economic pressure on Kenyans. Combining those sectors with exemptions on dwellings and passenger road transport, which are also typically VAT exempt, constitutes roughly 98% of the policy gap. Thus, the Government of Kenya (GoK) must look deeper within these sectors to identify those goods and services that are not essential goods and are not often consumed or used by the poorest Kenyans.

When disaggregating at the product level, the agricultural sector (which in this analysis includes basic food items) does have some sizeable opportunities for reform. To reduce the policy gap, it is imperative for the GoK to consider whether certain exemptions and zero-ratings on agriculture and basic food items, which constitute roughly 44% of the policy gap, could be removed, or if they are achieving the desired effect to subsidize basic goods. Future analyses regarding formally produced agricultural products and their primary consumers could reveal opportunities for revenue growth. It is also important to note that a large part of the policy gap due to agriculture is from subsistence farming and other small enterprises that do not represent revenue-mobilization opportunities.

Also meriting further investigation are VAT rates within the financial services sector as it contributes roughly 15% of the policy gap. Even though financial services are typically exempt from VAT because the value-added is difficult to measure, other avenues for taxation in that sector, aside from VAT, could be explored to boost revenue. However, the introduction of such taxes must account for the importance of certain financial services for the poorest Kenyans. Table 4.2-2 below shows the breakdown of the policy gap. The expenditure gap, which is the portion of the policy gap that can reasonably targeted through the removal of exemptions and zero-ratings, is further explored in Section 4.6.

TABLE 4.2-2: POLICY GAP BY SECTOR (% OF OVERALL POLICY GAP)

Year	Agriculture and Food Expenditure	Education	Financial Services	Dwellings	Passenger Road Transport	Sum of Policy Gap
2017	44	13	15	15	11	98
2018	43	14	13	15	13	98
2019	44	13	13	13	13	97
2020	46	12	12	13	12	96
2021	44	13	14	14	12	99
2022	43	13	15	14	14	98

Source: *Author's Computation*

Threshold Analysis

Besides the VAT rate, the registration threshold is a critical determinant of the VAT base in the design of the VAT system. The purpose of the threshold is to reduce the costs and administrative burden for both the KRA and for smaller firms who are less able to track and file detailed sales receipts. In this section, we analyze the current threshold and how it impacts VAT revenue.

The threshold was most recently revised in 2007, when it was raised from KSh. 3 million to KSh. 5 million. A review of literature and comparisons with neighboring countries show that Kenya's current threshold level is consistent with regional norms. In the region, Burundi, has set a very high threshold of USD 82,000 and a high general rate at 18%, followed by South Africa with a threshold of USD 55,000 but a lower standard rate of 15%. At the lower end, Uganda has set a low threshold at USD 15,500 followed by Tanzania at USD 17,000. Kenya's threshold lies in the middle, at around USD 40,000.

Furthermore, an analysis of tax expenditure due to the threshold reveals that only a small amount of revenue is foregone by exempting firms with turnover under KSh. 5 million. We use the most recent Census of Establishments (CoE) data, from 2016, in the analysis (see Annex Table A-1), and the methodology laid out in Section 3.2. Considering that there were 138,190 firms in total, we estimate the total turnover for firms under the threshold at KSh. 203.7 billion and the gross value added (GVA) at KES 55.36 billion. We then apply the 16% tax that would be levied on that amount to get a threshold effect of KSh. 8.86 billion at 100% compliance and without factoring in exemptions and zero-ratings. Compliance alone, which we estimate at roughly 55%, would lower this figure to KSh. 4.8 billion, and the exemptions and zero-ratings would further reduce this number. This foregone revenue, compared to forgone revenue in the top firms, is not significant, and further indicates that the current threshold is reasonable and may be beneficial to the KRA and Micro, Small, and Medium Enterprises (MSMEs). This estimate is for 2016 but can be updated for more recent years with the next publication of the Census of Establishments.

Only a nominal amount of revenue is foregone due to the threshold. Thus, it can then be considered whether the threshold can be raised to increase compliance. Inflation has eroded the threshold in real terms by about 50% since it was last set in 2007. In other words, the threshold is about half of what it was in 2007 in real terms. While raising the threshold would reduce the vatable base (and likely decrease revenue), it would also reduce the administrative burden on those firms over KSh. 5m that were previously subject to VAT as well as the administrative costs to KRA monitor those firms.

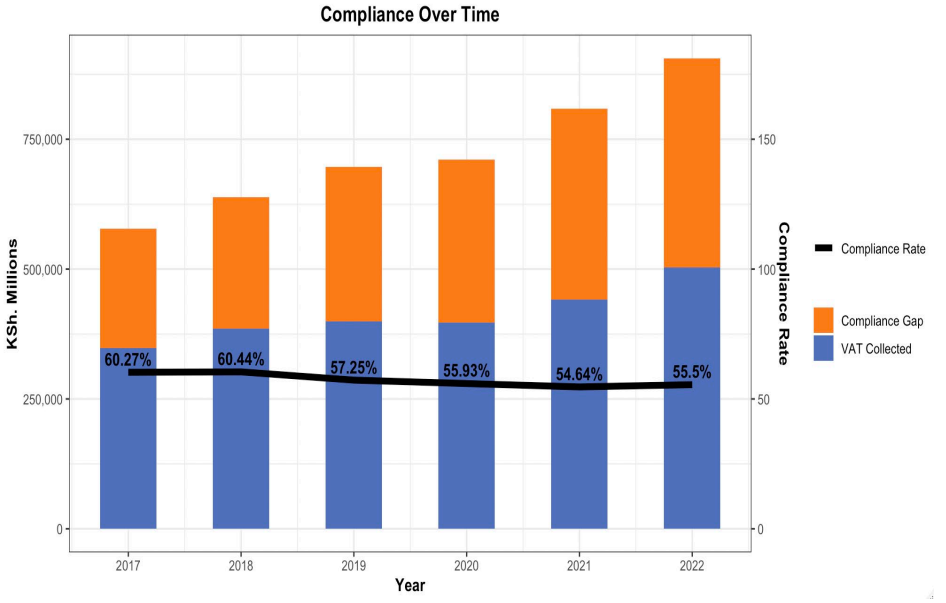
To counteract the effect of inflation on the threshold, it could be beneficial to make periodic adjustments to it or index it to inflation to ensure that the efficacy of the threshold is not eroded by inflation.

In summary, we find that the KSh. The Ksh. 5 million threshold is at the minimum range of what is conducive to the current capacity levels at the KRA and businesses. Lowering the threshold would add significant administrative overhead to both small firms and the KRA without raising significant revenues. Conversely, raising the threshold could reduce administrative costs and offset inflationary effects, which may be advisable given that the threshold was last adjusted in 2007. It should also be noted that making threshold adjustments too frequently can cause confusion, decrease compliance, and increase the cost of collection, but nonetheless it should be periodically revisited to adjust for the inflationary effects. Ultimately, the GOK should aim to build business capacity and encourage formalization through the simplification of the filing process and enhanced data management. With these measures, the VAT base can grow organically through the opt-in process and eventually the optimal threshold level can be revisited.

Compliance Analysis

The compliance gap represents the largest opportunity to raise revenue from VAT. We find that the gap has increased along with the noncompliance rate. Figure 4.4-1 shows the amount of VAT collected, the compliance gap, and the compliance rate, which is calculated by dividing the VAT collected by the potential revenue given the current policy framework. The trend line shows that in 2017, the GoK was collecting 60.27% of potential revenue, which declined to 55.5% in 2022. In other words, in 2022, the GoK lost out on 45.5% of potential revenue from VAT due to non-compliance, which corresponds to approximately KSh. 403 billion. The negative trend in compliance rate signals that a coordinated effort outside of normal policymaking is needed.

FIGURE 4.4-1: TRENDS IN COMPLIANCE



Source: *Author's Computation*

Non-compliance can take various forms with the most common forms being: (i) failure to register for VAT; (ii) traders understate output tax and inflate input tax; (iii) misclassification of vatable sales. We address these three forms independently in our analysis.

To identify where firms are failing to register for VAT, we conduct a sector analysis using the most recent Census of Establishments (2016) and compare that with KRA VAT registration data. We find that the main disparity between VAT eligible firms and those that are registered exists in the Wholesale and Retail sector, where there could be as many as 13,000 fewer registered firms than identified in the CoE (KRA, 2016 & KNBS, 2016). Thus, compliance efforts to enhance registration should target this sector.

The other two most common forms of non-compliance occur during the claims and refunds process. Historically, a lack of digitized data and risk-modeling has made it difficult to identify where fraudulent claims occur. As a result, there is a growing number of VAT refund claims that are lodged but not issued. Many of these claims may be legitimate and warrant VAT refunds while others are fraudulent, either due to misreported numbers or misclassified vatable sales. It is difficult for the KRA to distinguish between the legitimate and fraudulent claims, which has led to an expanding gap between the VAT refunds lodged and paid. The lack of timely refunds discourages firms from paying VAT and can lead to low tax compliance and morale. Implementing a risk-based model to identify which claims can be refunded automatically and which necessitate

review would greatly enhance the efficiency of the refund process and aid the KRA in their ability to identify non-compliance.

The compliance gap can be targeted through two main efforts by the KRA. First, an emphasis on accurate and prompt refunds to businesses will build trust and increase the incentives for firms to participate in the VAT structure. Second, increased digitization and the rollout of the electronic Tax Invoice Management System (eTIMS) will lower the administrative burden and increase the firm's capacity to file for VAT. [2] This will also facilitate better analyses and more efficient and effective audits on VAT-paying firms. The ability to efficiently audit firms, especially large firms, could result in increased revenues and compliance without increasing costs within the KRA. These two short-term efforts constitute the bulk of changes that can increase VAT revenues, but long-term efforts to simplify the VAT structure and to build trust can be effective ways to boost compliance and raise VAT revenues.

The KRA reports that, as March 2024, it has achieved a 100% rollout of eTIMS to VAT-registered taxpayers. This rollout includes a 'VAT special table mechanism' in its iTax system aimed at simplifying the filing process. This mechanism restricts VAT-registered taxpayers from filing a return if they fall into certain categories such as if they have previously been involved in fraud or that they have not filed returns for over six months amongst other categories. This mechanism can reduce cases of abuse of traders' PINs by fraudulent persons and identify erroneously added VAT obligations or VAT obligations that are no longer required.

The early benefits of the special table mechanism and eTIMS are already showing that simplifying and clarifying the filing process can lead to revenue gains and the reduction of costs for the KRA. Building trust with filers, clarifying policies, and ensuring correctly filed refunds are dealt with quickly can help to increase compliance. Moreover, the continued rollout of eTIMS and enhanced data collection will facilitate more in-depth analysis about the VAT landscape and increase the KRA's ability to identify and address non-compliance among both registered and non-registered businesses.

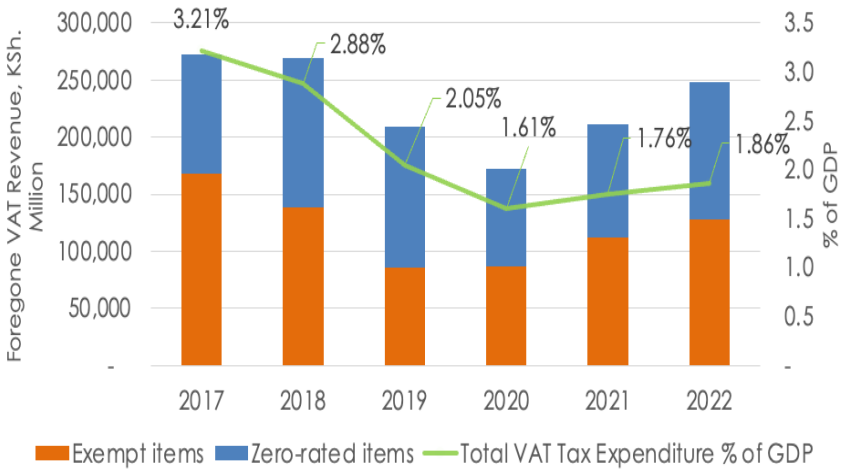
Expenditure Analysis

One of the primary areas where the gap analysis indicates there can be improvements in policy is in relation to the numerous exemptions and zero-rates currently found in the VAT architecture. While it is common practice to employ zero-ratings and exemptions on essential goods to help keep these

[2] eTIMS is a software solution that allows taxpayers to issue electronic tax invoices and access various solutions for a simple, convenient, and flexible approach to invoicing.

costs low, a review of current rate setting in Kenya reveals some areas where there is lost revenue. Figure 4.5-1 shows recent trends in VAT expenditure levels.[3] The trend shows a decrease from 3.21% of GDP in 2017 to 1.61% in 2020, and then a slight increase to 1.86% in 2022. This signals that the GOK has been effectively reducing non-essential expenditure through the elimination of certain zero-ratings and exemptions. Official data on expenditure by sector is available in Annex tables A-1 and A-2 of this paper.

FIGURE 4.5-1: TREND ON VAT EXPENDITURE



Source: *2023 Tax Expenditure Report*

Exemptions and zero-ratings on VAT are generally common in sectors such as *Agriculture, Education, and Health*. An analysis of Kenya's VAT policies on exemptions and zero-ratings reveals a standard structure with itemized exemptions at a granular level. Kenya's exemptions and zero-ratings apply primarily to basic foods, livestock and agricultural inputs, medical supplies, tourism, finance, exports, and public administration. Kenya's VAT policy also contains some exemptions and zero-ratings which may not constitute essential goods and could result unnecessary foregone revenue. In this section, we analyze exemptions and zero-ratings by sector to identify opportunities to reduce tax expenditure. For example, some VAT exemptions apply to helicopters, airplanes, other aircraft, and parts thereof. The full tax expenditure on these items was not available to us but based on VAT import

[3] The figure on tax expenditure excludes certain goods and services that are zero-rated and exempt in the VAT Act 2013 that are considered benchmark, which are not typically subject to VAT. Some of these products include unprocessed agricultural inputs, specified financial and insurance services, education services, medical supplies, and international air travel. The full list of benchmark goods can be found in Annex III of the 2023 Tax Expenditure Report.

data for Fiscal Year 2022/23, the tax remissions for aircraft spares and accessories totaled nearly KSh. 3 billion. The aircraft industry thus represents a large opportunity for VAT reform if the government wishes to remove exemptions for the industry.

Although the level of data needed to review all exemptions and zero-ratings is currently not available, a thorough literature review and investigation of current policies can reveal some areas where immediate improvements are possible. There are clear opportunities to improve this system. The following are some specific exemptions and zero-ratings that should be reviewed by the GoK and considered for normal rating:

i. Exemptions for consideration:
    a. Aeroplanes and other Aircrafts of unladen weight exceeding 2,000 kgs but not exceeding 15,000 kgs [Act No. 7 of 2014, s.28(a)(i)]
    b. Aeroplanes and other Aircrafts of unladen weight exceeding 2,000 kgs but not exceeding 15,000 kgs [Act No. 7 of 2014, s.28(a)(i)]
    c. Aeroplanes and other Aircrafts of unladen weight exceeding 15,000 kgs [Act No. 7 of 2014, s.28(a)(i)]
    d. Aircraft parts of heading 8803, excluding parts of goods of heading 8801
    e. Hiring, leasing, and chartering of aircraft, excluding helicopters of tariff numbers 8802.11.00 and 8802.12.00 [Act No. 8 of 2020, s.13 (d)]

ii. Zero-ratings for consideration:
    a. Transportation of sugarcane from farms to milling factories [Act No. 8 of 2021 s.28(b)]

Furthermore, the IMF estimates that the exemptions and zero-ratings of basic foods amounts to approximately 70% of the expenditure gap in Kenya (Thackray, et al., 2017). Much of this expenditure occurs during the manufacturing and transport of basic food items, in addition to the agricultural inputs and outputs. Accordingly, if the goal is to lower expenditure levels significantly, the GoK must consider removing such exemptions and zero-ratings, though care is required in the actual reform process to avoid introducing shocks from removing exemptions and zero-ratings that are effective in keeping the price of essential goods and services low, especially for poorer demographics.

Other exemptions and zero-ratings should be investigated upon collection of sales data through new filing systems. With the current VAT administrative data, it is not possible to parse out the expenditure due to each specific policy, but this type of analysis would be beneficial when trying to understand the specific expenditure due to each exemption and zero-rating. With improved data collection and filing systems, this analysis will become possible.

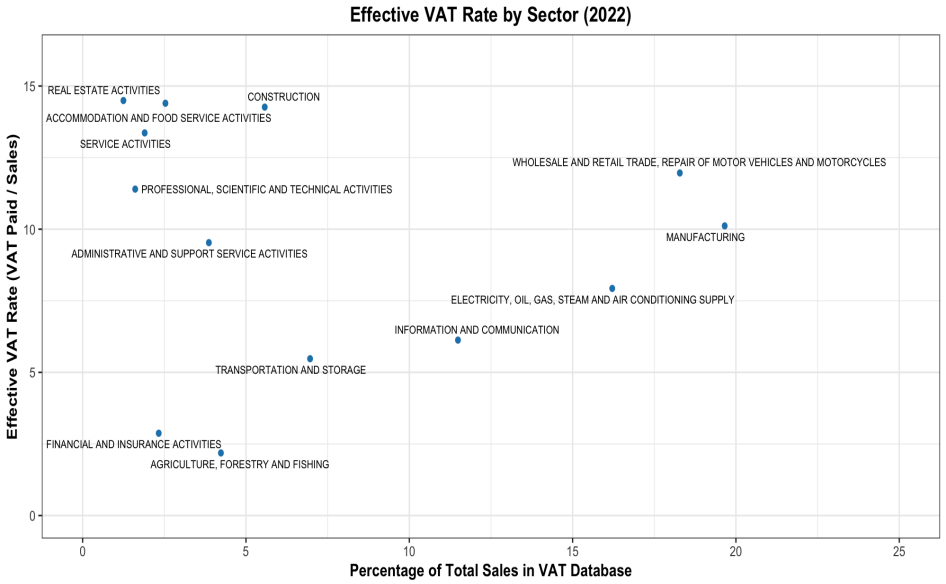
While a precise analysis of zero-ratings and exemptions employed by firms is not currently possible, analyzing VAT filings by sector provides additional insight into VAT performance. We analyze the data at the sector level and size of firm to show that larger firms claim a higher portion of exemptions and zero-ratings to total sales compared to smaller firms. It is important to note that this analysis includes only firms registered and filing for VAT, and therefore excludes firms that are not registered due to either non-compliance, firms below threshold, or firms that are exempt from VAT. Thus, the analysis in this section thus focuses on the expenditure gap among firms already within VAT and does not pertain to the informal sector.

Figure 4.5-2 utilizes firm-level VAT data from the KRA to show the effective VAT rate by sector. The y-axis is calculated by taking the sum of output VAT from firms in each sector and dividing it by the total sales in each sector. If there were no zero-ratings, exemptions, or other ratings, then we would expect the effective VAT rate to be close to 16% if compliance of those firms with a turnover over KSh. 5 million was very high. The x-axis shows the relative size of the sector in terms of sales reported to VAT. For example, *Manufacturing* sits at around 19% on the x-axis, meaning that 19% of sales reported to VAT are from the manufacturing sector. It is important to note that because exempt firms do not need to register for VAT, there may be little correlation between the x-axis shown here and actual industry sizes in terms of GDP. *Agriculture, Forestry, and Fishing*, for instance, constitute only 4% of sales reported to VAT, as seen in the figure, but official estimates put it at roughly 21.2% of GDP (KNBS Economic Survey, 2023). This is because most firms in this sector either deal exclusively with exempt goods and services, are in the informal sector, or have a turnover under 5 million, and are not captured in KRA VAT data.

For sectors with higher effective VAT rates such as *Accommodation and Food Service Activities, Real Estate Activities, and Construction*, the effective VAT rate is close to 15% which signifies that there are few exemptions and zero-ratings for firms registered in that category. Sectors with low effective VAT rates such as *Financial and Insurance Activities* (3%), *Transportation and Storage* (5.5%), and *Information and Communication* (6.5%) represent significant opportunities for revising the policy structure to raise more revenue from sales and services in these industries. Furthermore, sectors in the upper right

quadrant, such as *Electricity*, *Manufacturing*, and *Wholesale and Trade*, compose over 50% of sales in the VAT database, meaning that raising their effective VAT rates would have an outsize impact on the overall VAT revenue. Additionally, removing VAT exemptions and zero-ratings for *Electricity, Oil, Gas, Steam and Air Conditioning Supply* with an effective VAT rate of 8%, *Manufacturing* at 10%, and *Wholesale and Retail* at 12.5% are significant revenue-mobilization opportunities because of their large market size.

FIGURE 4.5-2: EFFECTIVE VAT RATE BY SECTOR

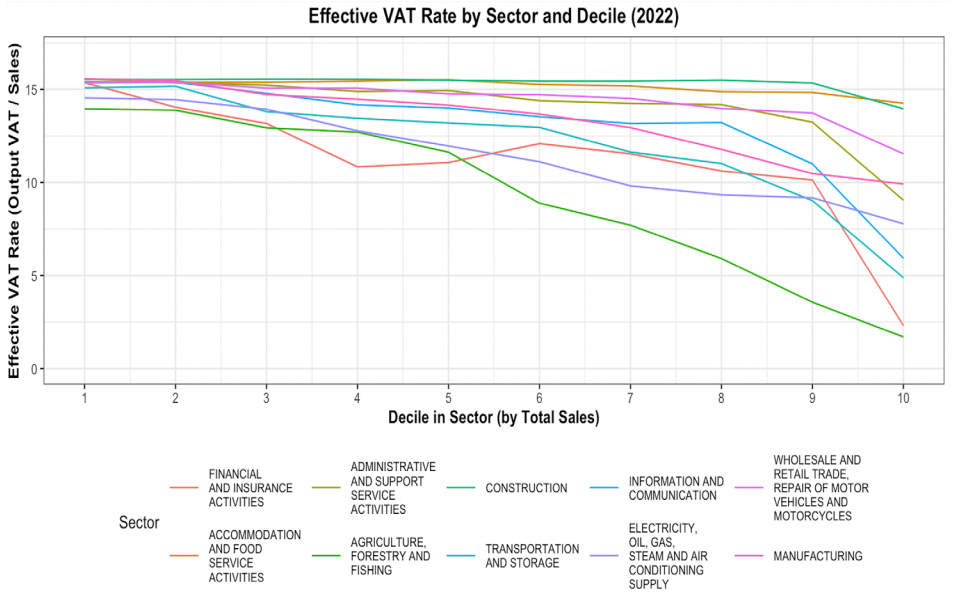


Source: *Author's computation from KRA data*

Figure 4.5-3 uses the same data as above but splits it up into decile by firm size (i.e. 1st decile is the smallest 10% of firms in the sector by total sales, 2nd decile is the next 10% of firms in the sector by total sales, and 10th decile is the largest 10% of firms by total sales). The data show a general trend that as firms get larger, the effective VAT rate goes down. This is especially true for the *Agriculture, Electricity, Oil, and Gas,* and *Transportation* sectors, which show a gradual decline from about 16% each in the 1st decile to 3%, 5%, and 5% respectively for the 10th decile of firms. The *Manufacturing* and *Administrative and Support* sectors show a different type of downward trend, where the effective VAT rate declines slightly across the bottom 90% of firms (16% to 13%) but then drops significantly for the top 10% of firms to 4% and 6% respectively. Both types of decreasing trends warrant further investigation into why the largest firms in these sectors charge less VAT per sales than smaller ones.

One explanation is that exempt and zero-rated goods, as defined in the VAT policy, are sold disproportionately by larger firms. The issue may also be related to non-compliance, where larger firms can categorically misclassify their sales as exempt or zero-rated. Additionally, it could be an administrative burden on smaller firms to classify some sales as exempt and zero-rated, and thus they charge most of their goods and services at the normal VAT rate.

FIGURE 4.5-3: EFFECTIVE VAT RATES BY SIZE OF FIRM



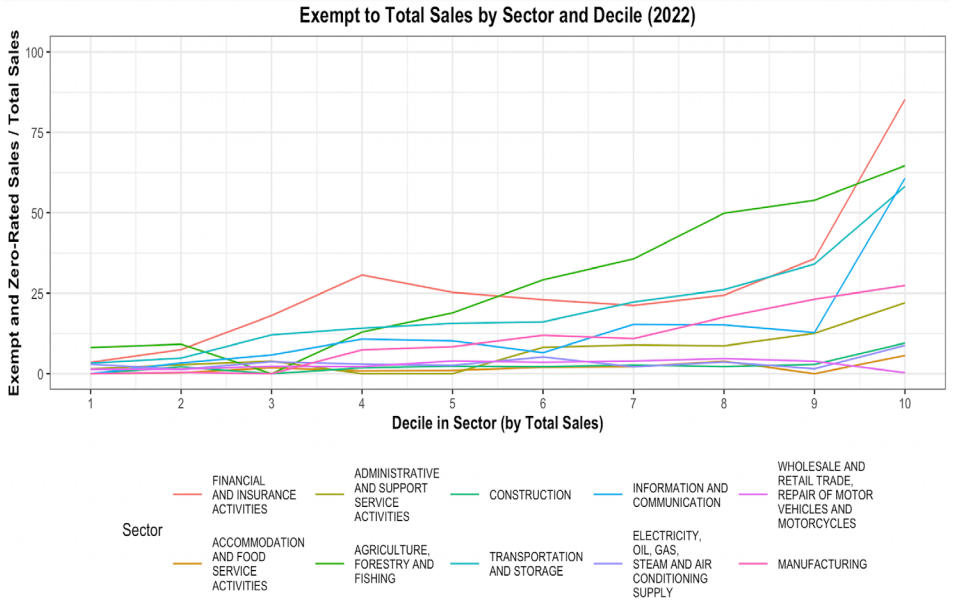
Source: *Author's computation from KRA data*

Inversely, Figure 4.5-4 shows that as firm size increases, the ratio of exempt and zero-rated sales to total sales increases. This trend can partly or wholly explain why output VAT is lower for larger firms, because it shows that larger firms are also selling more goods with exemptions and zero-ratings. *Manufacturing* again shows the most extreme change for the largest decile of firms, where the 9th decile of firms has 30% of its outputs exempt or zero-rated, and the 10th decile of firms has about 87% of its outputs exempt or zero-rated. A deeper look into the data on manufacturing firms reveals that most of these exemptions appear to be related to the manufacturing of food and other agricultural goods. The *Information and Communication* and *Transportation and Storage* sectors also show relatively high levels of exemption, at around 61% and 58% respectively in the 10th decile of firms.

It should be a priority to understand why larger firms are able to claim more exemptions and zero-ratings on their outputs, because it represents a significant opportunity to reduce tax expenditure if those firms charge more

VAT through enforced compliance or policy changes where feasible. For example, among firms reporting in the VAT system, the largest 10% of firms in the largest ten sectors account for between 80% and 95% of total sales in those sectors, as shown in Table 4.5-1. This suggests that nearly all compliance and policy efforts should be concentrated on the largest firms.

FIGURE 4.5-4: EXEMPTIONS AND ZERO-RATED SALES BY SIZE OF FIRM



Source: *Author's computation from KRA data*

TABLE 4.5-1: PERCENTAGE OF TOTAL SALES BY LARGEST 10% OF FIRMS (AVERAGE FROM 2017-2022)

Sector	Decile	Percentage of Total Sales in Sector
ACCOMMODATION AND FOOD SERVICE ACTIVITIES	10	80.75
ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	10	90.69
AGRICULTURE, FORESTRY AND FISHING	10	83.49
CONSTRUCTION	10	82.1
ELECTRICITY, OIL, GAS, STEAM AND AIR CONDITIONING SUPPLY	10	91.65
FINANCIAL AND INSURANCE ACTIVITIES	10	92.53
INFORMATION AND COMMUNICATION	10	94.69
MANUFACTURING	10	83.13
TRANSPORTATION AND STORAGE	10	89.26
WHOLESALE AND RETAIL TRADE, REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	10	82.67

Source: *Author's computation from KRA data*

Rate, Expenditure, and Compliance Simulation

Carefully targeted VAT reforms can improve tax compliance, enhance revenue collection, and promote social welfare in Kenya. The VAT rate, zero-ratings and exemptions, and rate of compliance are the main factors that affect VAT revenue and understanding how changes to these elements affect VAT is important for evaluating the impact of changes to policy. In the following

analysis, we simulate the simultaneous effects of lowering the VAT rate and reducing expenditure to understand how revenue from VAT is impacted. Specifically, we calculate the change in revenue from current levels if expenditures are reduced by 0 – 100% and for VAT rates between 10% and 15%. We use the officially published figures on tax expenditure in our analysis (see Annex Tables A-1 and A-2), which represent the realistic expenditure reduction opportunities. The simulation provides a useful benchmark in measuring the impact on revenue regarding changes in the VAT rate and expenditure levels.

High-level results from the simulation, using data from 2022, can be found in Table 4.6-1. The first column represents the simulated reduced VAT rate. The second, third, and fourth columns show the necessary reductions in expenditure levels on exemptions, zero-ratings, and overall expenditure, respectively, to maintain current revenue levels. For example, the last row shows that if the VAT rate were reduced to 15%, there would need to be either a 27% reduction in expenditure on exemptions, a 28% reduction in expenditure on zero-ratings, or a 14% reduction in overall expenditure for a revenue-neutral effect.

TABLE 4.6-1: VAT RATE AND EXPENDITURE SIMULATION AT CURRENT COMPLIANCE

VAT Rate	Reduction in Expenditure on Exemptions	Reduction in Expenditure on Zero-Ratings	Reduction in Overall Expenditure
10%	N/A	N/A	N/A
11%	N/A	N/A	93%
12%	N/A	N/A	68%
13%	91%	97%	47%
14%	56%	60%	29%
15%	27%	28%	14%

Source: *Author's computation*

We highlight that the analysis assumes that all other variables are static, including the compliance rate (estimated at 55% in our gap analysis). To add realism, we therefore proceed to incorporate compliance levels into the calculations.

As outlined in Section 4.4, it is a priority to increase compliance. Several efforts are already underway to address non-compliance, including the rollout of automated systems to reduce the administrative burden from complying with VAT (for firms and the KRA). Table 4.6-2 shows the same information as in Table 4.6-1 but combined with a moderate increase in compliance by three percentage points, from 55% to 58%. Importantly, the table shows that raising compliance has a massive impact on revenue changes compared to the VAT rate and expenditure with compliance at 58%, the policy changes required to

sustain current revenues at a lower VAT rate are minimal. For instance, at a VAT rate of 15%, the GOK need only to reduce expenditure levels by 3% overall, compared to 14% at current compliance. Moreover, we found that when keeping the VAT rate at 16%, raising the compliance rate by three percentage points has the same effect as reducing expenditure levels by 11% (both would result in an increase in revenue of KSh. 27.4 billion which amounts to a 6.3% increase over current VAT revenue).

TABLE 4.6-2: VAT RATE AND EXPENDITURE SIMULATION WITH 3 PERCENTAGE POINT INCREASE IN COMPLIANCE

VAT Rate	Reduction in Expenditure on Exemptions	Reduction in Expenditure on Zero-Ratings	Reduction in Overall Expenditure
10%	N/A	N/A	N/A
11%	N/A	N/A	77%
12%	N/A	N/A	54%
13%	66%	71%	34%
14%	33%	36%	17%
15%	5%	5%	3%

Source: *Author's computation*

5. Conclusion

In examining the performance of Value-Added Tax in Kenya, a complex picture emerges. Unraveling the intricacies of VAT sheds light on the factors that have contributed to its declining performance over the past two decades. The stability of private final consumption, constituting 75% of GDP, suggests that the decline in VAT revenue cannot be solely attributed to fluctuations in its base. Instead, attention turns to underlying policy frameworks, low compliance, and administrative loopholes.

A deep dive into VAT, conducted through the RA-GAP methodology, exposes potential gaps, with the overall VAT gap estimated at about 10.46% of GDP in 2022. The compliance gap, standing at 3.02% of GDP, or KSh. 403 billion, has been growing and represents the largest revenue-mobilization opportunity for VAT. To target non-compliance, the continued rollout of eTIMS and other automated systems will enhance registration among firms and increase the KRA's ability to conduct complex analyses and gain insight into taxpayer behavior. Furthermore, there is a growing gap between the VAT claims lodged and those paid, which leads to low tax morale and compliance. The implementation of risk-based models to identify which claims can be refunded automatically and which should be investigated will make the refund process more efficient and less burdensome. Finally, our sector-level analysis of KRA

data shows that the largest 10% of firms constitute most of sales in VAT but sell a low percentage of their goods and services at the normal rate. Understanding the factors that underly this phenomenon will help the KRA and National Treasury to implement more policy and compliance measures on these areas with high revenue-raising potential.

In addition to the compliance gap, the expenditure gap (which is a portion of the policy gap) constitutes the other revenue mobilization opportunity within VAT. Official figures put the expenditure gap at KSh. 248 billion in 2022 (1.86% of GDP), and it represents the foregone VAT due to non-benchmark exemptions and zero-ratings. It is important to note that the expenditure gap as a percentage of GDP has declined significantly from 2017, when it was 3.21%, meaning that there have already been significant reductions in exempt and zero-rated goods. We find that most of the remaining opportunities to reduce expenditure lie within the manufacture and transport of basic food items, such as bread and milk. Accordingly, the GoK would need to consider removing such exemptions and zero-ratings with a view to lowering expenditure levels significantly, though care is required in the actual reform process to avoid introducing shocks from removing subsidies that are effective in keeping the price of essential goods and services low, especially for poorer groups. Furthermore, when more granular data is available, additional analysis can be conducted to understand the expenditure due to each exemption and zero-rating, which will enable more targeted policy reforms and revenue projections.

6. Summary of Policy Recommendations:

- **Compliance:**
    - **For registered establishments:**
        - Streamline VAT reviews and auditing by focusing on the largest 10% of firms
        - Continue to roll out eTIMS and other automated systems to simplify the filing and data collection process, which are associated with higher VAT compliance levels in other jurisdictions
        - Review the existing mechanisms for issuing VAT refunds, and consider implementing a risk-based model to ensure timely and accurate issuance of valid refunds and to identify and address fraudulent claims

- **For non-registered establishments:**
    - The sector with the most non-registered establishments is *Wholesale, retail, and trade*, where there are approximately 13,000 fewer registered firms above threshold than identified in the KNBS (2016). Efforts to boost VAT registration should focus on this sector

- **Expenditure:**
    - **Consider removing the following items from the VAT exemptions:**
        - Aeroplanes and other Aircrafts of unladen weight exceeding 2,000 kgs but not exceeding 15,000 kgs [Act No. 7 of 2014, s.28(a)(i)]
        - Aeroplanes and other Aircrafts of unladen weight exceeding 15,000 kgs [Act No. 7 of 2014, s.28(a)(i)]
        - Aircraft parts of heading 8803, excluding parts of goods of heading 8801
        - Hiring, leasing, and chartering of aircraft, excluding helicopters of tariff numbers 8802.11.00 and 8802.12.00 [Act No. 8 of 2020, s.13 (d)]
    - **Consider removing the following items from the VAT zero-ratings:**
        - Transportation of sugarcane from farms to milling factories [Act No. 8 of 2021 s.28(b)]
    - Review the effect that exemptions and zero-ratings on basic food items (milk, bread, maize) have on consumer prices and whether they should be removed. These exemptions and zero-ratings are large contributors to the expenditure gap and are the primary way to raise significant revenue through policy changes.
    - Evaluate why the largest firms charge in sectors can charge a lower effective VAT rate on their outputs than smaller firms, and develop a concerted strategy to counteract this behavior

- **Threshold:**
    - Periodically revisit the VAT threshold to adjust it for inflation or index it to inflation rates.

- **General Recommendations:**

- To facilitate more in-depth analysis, configure a mechanism to identify which exemptions and zero-ratings apply to transactions at the item level.
- Standardize the process to accurately categorize firms by sector during the VAT registration process and coordinate with KNBS to standardize sector definitions across organizations. This would facilitate accurate sector-level VAT gap analysis of policy and exemptions
- Enhance the data extraction process at the KRA so that data can consistently and accurately be extracted by researchers. This includes proper documentation of KRA data systems, access management (to ensure staff have access only to the necessary data), and streamlined querying processes.
- Continue to build capacity in core tax administration functions and automation systems: registration, processing of refunds, filing and payment, debt collection, risk-based verification and audit programs, fraud detection, and processing of appeals

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8. Appendix

Table A-1: Threshold Analysis

Economic Activity	Total	Percent 0 - 2,500,000	Percent 2,500,001 - 5,000,000	Turnover	Percent Value Added	GVA	Threshold effect
Wholesale and retail trade; repair of	44,023.0	36.2	15.7	45,838,956,718	0.3	15,126,855,717.0	2,420,296,914.7
Education	29,582.0	61.5	16.6	41,155,966,596	0.3	13,581,468,976.8	2,173,035,036.3
Construction	11,846.0	23.0	17.0	10,957,551,362	0.4	4,019,590,026.8	643,134,404.3
Other service activities	8,440.0	21.8	16.8	7,617,100,920	0.6	4,484,924,948.7	717,587,991.8
Accommodation and food service ac	8,364.0	57.9	18.4	11,824,607,421	0.3	3,146,739,002.0	503,478,240.3
Manufacturing	6,038.0	42.9	9.0	5,275,703,795	0.3	1,375,317,102.1	220,050,736.3
Financial and insurance activities	4,682.0	40.4	11.7	4,418,638,446	0.7	2,911,601,050.0	465,856,168.0
Agriculture, forestry and fishing	4,189.0	20.30	28.90	5,602,787,925	0.3	1,929,758,958.0	308,761,433.3
Real estate activities	3,680.0	19.0	17.9	3,344,200,350	0.6	1,898,101,809.4	303,696,289.5
Professional, scientific and technica	3,669.0	26.7	12.0	2,875,579,240	0.6	1,804,221,485.8	288,675,437.7
Administrative and support service a	3,622.0	28.3	12.9	3,033,425,513	0.4	1,298,292,490.1	207,726,798.4
Information and communication	3,480.0	13.2	11.5	2,074,950,230	0.5	1,017,425,887.0	162,788,141.9
Human health and social work activi	2,427.0	40.5	13.7	2,475,540,491	0.4	965,473,892.2	154,475,822.8
Transportation and storage	2,241.0	25.0	24.9	2,792,846,530	0.4	1,117,352,571.2	178,776,411.4
Water supply; sewerage, waste mana	598.0	16.4	18.2	530,725,049	0.3	180,247,804.5	28,839,648.7
Arts, entertainment and recreation	575.0	49.6	13.0	636,812,643	0.4	281,751,503.5	45,080,240.6
Public administration and defence;	307.0	18.6	16.0	255,577,529	0.6	146,167,966.7	23,386,874.7
Mining and quarrying	297.0	24.9	15.8	268,413,787	0.3	68,543,914.3	10,967,026.3
Electricity, gas, steam and air condi	84.0	13.1	7.1	36,120,006	0.1	3,886,400.0	621,824.0
Activities of households as employer	46.0	6.5	8.7	18,745,001	0.3	5,009,697.8	801,551.6
Total	**138,190.0**	**54,103.4**	**22,241.3**	**208,714,229,455,511**	**N/A**	**55,362,731,204.1**	**8,858,036,992.7**

Source: *KNBS COE (2017) and Author's Calculations*

Table A-2: Exempt Tax Expenditures by Sector

Main Sectors Exempt from Domestic VAT	2021 Exempt TE (Million)	2022 Exempt TE (Million)	2021 Percent Contribution (%)	2022 Percent Contribution (%)	2021-2022 Change (%)
Financial and Insurance Activities	38,072	35,507	33.79	27.67	-6.74
Electricity, Oil, Gas, Steam and Air Conditioning Supply	-	32,534.00	-	25.35	-
Information and Communication	17,423	21,488	15.46	16.75	23.33
Transportation and Storage	6,146	10,210	5.45	7.96	66.12
Agriculture, Forestry and Fishing	7,013	6,615	6.22	5.16	-5.68
Human Health and Social Work Activities	3,355	6,491	2.98	5.06	93.47
Administrative and Support Service Activities	3,080	5,940	2.73	4.63	92.86
Construction	5,614	5,195	4.98	4.05	-7.46
Professional, Scientific and Technical Activities	3,151	3,629	2.80	2.83	15.17
Other Sectors	28,823	708	25.58	0.55	-97.54
Total	**112,677**	**128,317**	**100.00**	**100.00**	

Source: *2023 Tax Expenditure Report, The National Treasury and Economic Planning*

Table A-3: Zero-Rated Tax Expenditures by Sector

Main Sectors Zero rated from Domestic VAT	2021 Zero Rate TE (Million)	2022 Zero Rate TE (Million)	2021 Percent Contribution (%)	2022 Percent Contribution (%)	2021-2022 Change (%)
Manufacturing	26,871	46,330	27.30	38.62	72.42
Transportation and Storage	35,160	44,804	35.73	37.34	27.43
Electricity, Oil, Gas, Steam and Air Conditioning Supply	18,953	12,384	19.26	10.32	-34.66
Administrative and Support Service Activities	1,709	6,568	1.74	5.47	284.32
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	1,304	2,827	1.33	2.36	116.79
Professional, Scientific and Technical Activities	2,282	2,542	2.32	2.12	11.39
Human Health and Social Work Activities	987	1,400	1.00	1.17	41.84
Accommodation and Food Service Activities	943	1,198	0.96	1.00	27.04
Other Sectors	10,203	1,923	10.37	1.60	-81.15
Total	**98,412.33**	**119,976.00**	**100.00**	**100.00**	

Source: *2023 Tax Expenditure Report, The National Treasury and Economic Planning*

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