



MAKERERE UNIVERSITY
COLLEGE OF BUSINESS & MANAGEMENT SCIENCES
SCHOOL OF ECONOMICS

**IMPACT OF VALUE ADDED TAX POLICY REFORMS ON
REVENUE, POVERTY AND INEQUALITY IN UGANDA**

BY

TINA KAIDU

REGISTRATION NUMBER: 2017/HD06/718U

**A RESEARCH REPORT SUBMITTED TO THE COLLEGE OF BUSINESS AND
MANAGEMENT SCIENCES IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF A MASTER OF ARTS DEGREE IN
ECONOMIC POLICY MANAGEMENT OF MAKERERE UNIVERSITY**

JULY 2026

DECLARATION

I, Tina Kaidu, declare that this is my original research work and has never been presented to any university or academic institution for any award.

Signed..........Date.....30.07.2026.....

Tina Kaidu

APPROVAL

This is to certify that this research has been submitted for examination with my approval.

Signed..........Date.....15/07/26.....

Prof. Edward Bbaale

Supervisor

DEDICATION

I dedicate this thesis to my family, whose unwavering love, encouragement, and steadfast support have been a constant source of strength and inspiration throughout my academic journey. Their belief in me has made this achievement possible.

ACKNOWLEDGEMENT

The completion of this report could not have been possible without the support and contributions of many individuals whose names may not all be mentioned here. Their assistance is sincerely appreciated and gratefully acknowledged.

I wish to express my profound gratitude and indebtedness to the following individuals and organisations who were instrumental in the successful completion of my studies. I am especially thankful to my supervisor, Prof. Edward Bbaale, for his unwavering dedication, guidance, and constructive feedback, as well as for consistently pointing out areas for improvement throughout the course of my work.

I also gratefully acknowledge the Joint Japan/World Bank Graduate Scholarship Program (JJ/WBGSP) for the financial support that made my studies possible.

My sincere appreciation goes to my family, friends and colleagues who, in one way or another, provided moral, financial, and practical support throughout the duration of my studies.

Above all, I give thanks to the Almighty God, the source of knowledge and wisdom, for his boundless love, strength, and guidance.

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT.....	vi
CHAPTER ONE	1
INTRODUCTION	1
1.0 Background to the Study	1
1.1 Problem Statement	4
1.2 Research Objectives	5
1.3 Research Questions	5
1.4 Scope of the Study.....	5
1.5 Significance of the Study	6
CHAPTER TWO	8
LITERATURE REVIEW	8
2.0 Introduction	8
2.1 Theoretical Literature Review.....	8
2.2 Empirical Literature Review	12
2.2.1. Tax Efficiency and Effectiveness	13
2.2.2. Determinants of VAT Performance.....	14
2.2.3 Performance of VAT in Developing Countries	15
2.2.4 Revenue Impact of VAT Policy Reforms.....	18
2.3 Prediction Models for VAT Performance	21
CHAPTER THREE	25
METHODOLOGY	25
3.0 Introduction	25
3.1 Data and Source	25
3.3 The Modelling Framework.....	25
3.2 Analysing the distributional effect of VAT by expenditure deciles.....	27
3.4 Analysing implications of the VAT rate on revenue, poverty and inequality	28
3.5 Estimating the impact of VAT rate changes	29
CHAPTER FOUR.....	31

PRESENTATION, INTERPRETATIONS AND DISCUSSION OF FINDINGS.....	31
4.0 Introduction	31
4.1 Distributional effects of VAT in Uganda.....	31
4.2.1 Revenue	35
4.2.2 Poverty.....	36
4.2.3 Inequality	38
4.3 Impact of Changes in VAT Rate on Revenue, Poverty, Inequality and Consumption..	38
4.3.1 Impact of change in VAT at 19 percent (Reform 1).....	38
4.3.2 Impact of change in VAT at 20 percent (Reform 2).....	41
CHAPTER FIVE	46
SUMMARY, CONCLUSIONS, AND POLICY RECOMMENDATIONS	46
5.0 Introduction	46
5.1 Summary	46
5.2 Conclusions	47
5.3 Recommendations	48
5.4 Areas for Further Research	49
REFERENCES	50
APPENDICES	55

ABSTRACT

This study analyses the impact of Value Added Tax (VAT) policy reforms on government revenue, poverty, income inequality, and household consumption in Uganda. VAT is a central component of domestic revenue mobilisation, yet persistent concerns remain regarding its distributional and welfare implications. Using the Uganda tax–benefit microsimulation model (UGAMOD) and data from the Uganda National Household Survey (UNHS) 2016/17 and Uganda Revenue Authority, the study examines the incidence of VAT across consumption deciles and simulates alternative VAT policy scenarios while holding the existing tax base, exemptions, and zero-rated items constant.

Specifically, the analysis assesses the distribution of VAT burdens across households, evaluates the welfare effects of the current VAT system, and estimates the revenue, poverty, inequality, and consumption impacts of increasing the standard VAT rate from the baseline of 18 percent to 19 percent and 20 percent. The results indicate that VAT in Uganda exhibits mild but non-linear progressivity. Middle-income households bear the highest VAT burden relative to their consumption, while poorer households are partially protected through exemptions and zero-rated essential goods.

The findings show that increases in the VAT rate generate substantial additional government revenue; however, these gains are accompanied by modest increases in consumption-based poverty, particularly among households living near the poverty line, male-headed households, and households with children, due to higher consumer prices. Inequality declines slightly following VAT rate increases, reflecting the larger absolute VAT contributions of higher-income households, though the magnitude of this effect is small.

The study concludes that while VAT remains an efficient instrument for domestic revenue mobilisation in Uganda, VAT reforms involve clear trade-offs between revenue generation, poverty outcomes, and household welfare. It emphasises the importance of using microsimulation tools such as UGAMOD to inform evidence-based tax policy and recommends that any VAT rate increases be accompanied by well-targeted compensatory measures, including social protection interventions, to mitigate adverse welfare effects on poor and vulnerable households.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Value Added Tax (VAT) is internationally recognised as one of the most efficient and reliable instruments for domestic revenue mobilisation, accounting for approximately one-fifth of total tax revenues worldwide (OECD, 2016; IMF, 2019). Since its introduction in Europe in the mid-twentieth century, VAT has been widely adopted due to its broad tax base, credit-invoice mechanism, and relative neutrality in production and consumption decisions (Ebrill et al., 2001). These characteristics have made VAT particularly attractive to governments seeking to raise stable revenues while minimising economic distortions. By 2018, more than 160 countries had implemented VAT systems, including the majority of countries in Sub-Saharan Africa, where VAT typically contributes about one-quarter of total tax revenue (Keen, 2016; Keen & Lockwood, 2010).

In developing economies, VAT has assumed an increasingly central role in fiscal policy due to declining trade tax revenues, expanding public expenditure needs, and growing pressure to finance development domestically (World Bank, 2017; IMF, 2021). Many Sub-Saharan African countries have adopted VAT as part of comprehensive tax reform programmes aimed at broadening the tax base, improving compliance, and strengthening fiscal sustainability (Keen & Mansour, 2010). However, empirical evidence suggests that VAT performance in the region varies considerably, reflecting differences in administrative capacity, compliance behaviour, exemption structures, and the size of the informal sector (Bird & Gendron, 2007; Moore, Prichard & Fjeldstad, 2018).

Uganda introduced VAT on 1st July 1996, replacing the sales tax and the Commercial Transaction Levy (CTL), both of which had demonstrated limited revenue-raising capacity and

were characterised by cascading effects and narrow coverage. Prior to this reform, Uganda had experienced persistently low tax revenue since the 1960s, constraining public investment and contributing to recurrent fiscal imbalances (Therkildsen, 2004; Ayoki et al., 2008). The adoption of VAT was therefore intended to modernise the tax system, improve revenue productivity, and enhance equity by eliminating the problem of “tax on tax,” which disproportionately burdened consumers under the previous regime (Ayoki et al., 2008; Ebrill et al., 2001).

The introduction of VAT formed part of a broader tax modernisation agenda linked to structural adjustment programmes and public financial management reforms aimed at restoring macroeconomic stability and strengthening domestic resource mobilisation (IMF, 1999; World Bank, 2015). Since its inception, VAT policy in Uganda has evolved through a series of reforms intended to balance revenue objectives with administrative feasibility and equity considerations. Key reforms include increases in the VAT registration threshold from 20 million to 50 million Uganda shillings in 1996 and subsequently to 150 million Uganda shillings in 2015, as well as an upward revision of the standard VAT rate from 17 percent to 18 percent in 2005. In addition, successive amendments to exemption and zero-rated schedules have been implemented to support priority sectors, address distributional concerns, and reduce compliance costs, alongside administrative reforms aimed at improving enforcement and taxpayer compliance (Khadka, 2015; URA, 2018).

Over time, VAT has become a central pillar of Uganda’s domestic revenue system, contributing significantly to indirect tax revenue and overall government financing. Domestic revenue in Uganda is primarily derived from income taxes, VAT, excise duties, and trade taxes, which together account for over 70 percent of total government revenue (URA, 2018; [MoFPED],

2020). VAT plays a particularly important role given the limited reach of direct taxation in an economy characterised by a large informal sector and widespread self-employment (UBOS, 2022). Nevertheless, Uganda's Tax to Gross Domestic Product (GDP) ratio (the percentage of a country's GDP that the government collects as tax revenue) remains relatively low compared to regional and Sub-Saharan African averages. Recent estimates indicate that Uganda's tax revenue amounts to roughly 13–14% of GDP, which is below the Sub-Saharan African average of about 16–18% of GDP and also below the East African Community (EAC) average of approximately 15–17%. This gap reflects persistent structural challenges such as a narrow tax base, high levels of informality, and compliance constraints that limit the government capacity to mobilise domestic revenue (IMF, 2022; World Bank, 2023).

Beyond its contribution to revenue mobilisation, VAT has significant welfare and distributional implications. As a consumption-based tax, VAT affects household welfare through changes in consumer prices and purchasing power, with potential consequences for poverty and income inequality (Atkinson & Stiglitz, 1980; Bird & Zolt, 2005). While VAT is often perceived as regressive, empirical studies suggest that its actual distributional impact depends on household consumption patterns, the design of exemptions and zero-rated goods, and the extent to which poor households consume taxable commodities (Younger et al., 1999; Jenkins, Jenkins & Kuo, 2006). Consequently, policymakers face the complex task of designing VAT policies that enhance revenue performance while minimising adverse welfare effects, particularly for low-income and vulnerable households. Understanding how VAT reforms affect different population groups is therefore essential for informing inclusive, evidence-based, and sustainable fiscal policy in Uganda (IMF, 2017; Lustig, 2018).

1.1 Problem Statement

Despite more than two decades of VAT implementation and successive policy reforms, Uganda's VAT system has not fully achieved its potential as an effective and equitable instrument for domestic revenue mobilization. Over the decade leading to the 2017/18 financial year, VAT contributed an average of about 4 percent of GDP and approximately 31 percent of net tax revenue. However, Uganda's overall tax-to-GDP ratio has remained below national targets and regional benchmarks, limiting the government's capacity to finance development priorities without excessive reliance on external financing.

At the same time, VAT reforms in Uganda have often been driven primarily by revenue considerations, with limited empirical assessment of their distributional consequences. Public discourse frequently raises concerns that VAT disproportionately burdens poor and vulnerable households due to its indirect nature and its effect on consumer prices. However, there is limited country-specific empirical evidence quantifying how VAT policy reforms affect household welfare, poverty levels, and income inequality in Uganda.

In the absence of rigorous evidence, VAT policy debates risk being guided by assumptions rather than analysis, potentially leading to reforms that either underperform in revenue generation or exacerbate socio-economic disparities. This gap is particularly critical given Uganda's commitment to inclusive growth, poverty reduction, and domestic revenue mobilization under its national development frameworks.

This study therefore addresses the need for an evidence-based assessment of VAT policy reforms in Uganda by analyzing their impact on revenue, poverty, and inequality using a tax-benefit microsimulation approach. By quantifying both fiscal and welfare effects, the study seeks to inform more balanced and effective VAT policy design.

1.2 Research Objectives

1.2.1 General Objective

Overall, this study seeks to assess the impact of VAT policy reforms on revenue, poverty and inequality in Uganda.

1.2.2 Specific Objectives

Specifically, the study seeks to;

1. Analyse the distributional effects of VAT by expenditure deciles in Uganda
2. Examine the implications of the current VAT rate on revenue, poverty and inequality
3. Estimate the impact of changes in VAT rate on revenue, poverty, inequality and consumption.

1.3 Research Questions

This research seeks to find answers to the following questions:

1. What is the distributional effects of VAT by expenditure deciles in Uganda?
2. What are the implications of the current VAT rate revenue, poverty and inequality?
3. What is the impact of changes in VAT tax rate on revenue, poverty, inequality and consumption?

1.4 Scope of the Study

The study assesses the effect of VAT policy reforms on revenue, poverty and inequality in Uganda. The assessment covers the distributional effects of VAT in Uganda, implications of the current VAT rate and changes in VAT tax rate on revenue, poverty, inequality and consumption using the year 2018 as the baseline. The choice of this study period was guided by consistent data availability.

1.5 Significance of the Study

This study contributes to both academic research and tax policy formulation by addressing an important gap in the literature on indirect taxation in Uganda. While previous microsimulation studies have examined the distributional effects of consumption taxes in Uganda, they have primarily focused on excise duties rather than Value Added Tax (VAT). Kavuma et al. (2020) analysed the welfare and revenue effects of excise duty reforms using the UGAMOD tax-benefit microsimulation model but did not assess the implications of VAT reforms.

Similarly, international studies have used microsimulation techniques to assess the effects of VAT exemptions and reduced rates on revenue, poverty, and inequality in developing countries. However, evidence on the distributional impacts of VAT reforms in Uganda remains limited. This study addresses this gap by using the UGAMOD microsimulation model to evaluate the revenue and welfare effects of VAT reforms in Uganda, extending the work of Kavuma et al. (2020) from excise taxation to VAT policy and contributing country-specific evidence to the VAT microsimulation literature.

Methodologically, the study applies the UGAMOD tax-benefit microsimulation model to evaluate VAT reforms in Uganda, contributing to the growing use of microsimulation techniques in assessing tax and welfare policy reforms and providing evidence for future fiscal policy research in Uganda and similar developing countries.

From a policy perspective, the findings provide evidence that can assist the Uganda Revenue Authority (URA) and the Ministry of Finance, Planning and Economic Development in designing VAT reforms that strengthen domestic revenue mobilisation while minimising adverse effects on household welfare, poverty, and income distribution. Given the importance

of VAT as a major source of government revenue, the study offers empirical insights that can support the design of equitable and efficient tax policies aligned with Uganda's development objectives.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review presents empirical evidence on the performance of VAT in developed and developing countries, as well as analyses tax policy reforms and their impact on revenue performance and income distribution.

2.1 Theoretical Literature Review

This study's theoretical underpinning is derived from Keynesian Economic Theory, which is based on his 1936 work, *The General Theory of Employment, Interest, and Money*, in which he makes a case for fiscal and monetary policy as complementary instruments for economic management (Blinder, 2008). The idea regards taxation as a crucial tool of fiscal policy that meets the government's revenue demands (Neumark, 2013; Chilibasi, 2014; Abhay 2016).

The introduction of different forms of tax worldwide has rekindled the research in the domain of public finance. The introduction of Value Added Tax has attracted a lot of research in the recent past. The comprehensive review of indirect taxation particularly VAT reveals that Value Added Tax had been mostly studied at national level. While the Value Added Tax has been implemented at both national and sub national level, worldwide research on sub national level is limited (Abhay, 2016).

As acknowledged by previous authors, the literature on the VAT is surprisingly sparse, given that it has now become a core part of the most countries' tax systems. On theoretical aspects, while there is of course a large literature on the optimal design of taxes on final consumption, few contributions focus on the crediting and refund mechanisms (and their potential imperfections) that make the critical difference between a VAT and, for example, a retail sales

tax and which are therefore the distinctive source of any efficiency gain or loss associated with the VAT (IMF, 2007). The literature establishing conditions under which uniform commodity taxation is optimal (Bahl, 1971; Tanzi, 1992; Alesina and Wacziarg, 1998; and Rodrik, (1998), for instance, is just as applicable to any other form of consumption tax as it is to the VAT. Specific studies such as Keen and Lockwood (2006) using a panel of OECD countries find a positive association between the presence of a VAT and total revenue. They refer to this notion as the ‘weak’ money machine hypothesis.

The essence of VAT is that it is assessed on all transactions but eventually comes to bear—if the crediting chain is unbroken and tax appropriately charged on imports and remitted on exports only on final consumption (Eberill et al 2001). The best fiscal device is the Value Added Tax. The main point made by VAT supporters is that, if properly constructed, this structure makes it a highly efficient tax (IMF, 2007).

The emergence of the VAT as a highly buoyant and elastic source of revenue in a period of about the last fifty years is unprecedented in the history of taxation. The history of taxation reveals no other tax that has swept the world in some thirty years, from theory to practice, and has carried along with it academics who once rejected it (Tait, 1988). By any standards, the rise of the VAT has been the most significant development in tax policy and administration of recent decades. Yet until recently the causes and consequences of the rise of the VAT had received virtually no attention, either theoretical or empirical (IMF, 2007). Because the Value Added Tax can take many forms, a country has to make a number of choices. According to Shoup, “there are as many as 576 nominally possible combinations (Shoup (ed), 1990), all claiming to be VAT”.

The basic decisions that need to be kept in view while designing VAT are: (1). Types of VAT: Consumption, Income and Gross Product. (2). Principles of VAT: The Origin Principle and the Destination Principle. (3). Methods of calculation: Subtraction, Tax credit or Invoice and Addition Method. (4). Exemption and zero rating. (5). A single rate VAT or a VAT with two or more rates. Moreover, the countries that have introduced the comprehensive VAT have shown a remarkable degree of unity in selecting among the possible combinations. Virtually all have adopted the Consumption type of VAT based on destination principle with tax credit method and with multiple rate and tax exclusive method.

A commonly cited disadvantage of VAT is that it can be regressive in nature, a problem, which can arise with most types of indirect taxes. A single rate VAT applied to the broadest possible base becomes essentially a proportional tax on consumption and therefore regressive (Ebrill, Keen, Bodin, & Summers, 2001). Often to address this problem of regressivity, multiple rates of VAT are offered along with a range of exemptions even though such provisions have a negative impact on the effectiveness and efficiency of VAT. Exemptions inevitably make the VAT narrower and for this reason are commonly limited to basic foods, health and education services. Exemptions, however, increase cascading by breaking the VAT chain can make effective enforcement more difficult.

According to Tait ‘exemption’ means that the ‘exempt’ trader has to pay VAT on his inputs without being able to claim any credit for this tax paid on his inputs. On the other hand, zero-rating means that a trader is fully compensated for any VAT he pays on inputs and, therefore, genuinely is exempt from VAT (Tait, 1998)”. If a firm’s sales are subject to a “zero” or “nil” rate, then not only are sales free from tax liability, but the firm also is entitled to a refund of taxes listed on the invoices of purchased inputs. Exports are typically subject to a zero rate in

VAT laws and proposals. The zero rate means that exporters do not pay tax on their sales abroad and receive refunds for taxes paid on purchases.

Many VAT systems can be described as having a basic rate, special rates for some goods and services, and exemption status for certain economic activities or specific goods and services (Tax policy, 1972). These features influence the nation's aggregate effective tax base (Ruebling, 1973). VAT can operate either with a single rate or with multiple rates. The higher the number of rates, the more complicated the operation of VAT. The introduction of several rates complicates the administration of VAT. So, the easiest form of VAT to administer would be one with a single rate. But for various socio-economic reasons governments have found it necessary to introduce multiple rate.

There is no uniformity across countries with regard to the rate structure. There have been significant changes both in the levels of tax rate and number of rates in most of countries. Most of the countries have gone for multiple rates ranging from two to four. Often, the use of multiple rates is justified on the grounds of enhancing progressivity. For example, the zero rating of food is thought to make the tax less regressive. "The arguments are overwhelmingly in favor of using a single rate with zero rates for exports and very few exemptions. Should multiple rates be necessary the fewer, the better (Rao Hemalata, 2002)".

"From an economist point of view, a properly implemented Value Added Tax is equivalent to a corresponding single stage tax. Unlike the expenditure tax, the Value Added Tax is not a genuinely new form of taxation but merely a sales tax administered in a different form (Srivastava, 2005)". Value Added Tax is universally acclaimed as the most effective remedy for all sorts of tax created problems in developing as well-developed economies. Before

introduction, domestic indirect taxes were typically limited to narrowly defined products. The distortions created by the sales tax, combined with rising revenue requirements, provided an incentive to seek alternative less distortionary taxes.

VAT has become the most common type of consumption tax for a variety of reasons. Unlike income taxes, VAT does not distort consumption-savings/investment decisions (Le, 2003). Because sellers can claim a credit for VAT paid on their inputs, there is no cascading of taxes as can occur with other consumption taxes. The tax is often regarded as “self-policing” as it is imposed on every transaction throughout the production process reducing revenue losses should one party fail to collect VAT. It is also neutral between the domestic production and imported goods when compared to an import tariff (Bird & Gendron, 2006). It has been widely recognized that a well-designed VAT can raise significant amounts of revenue on a stable and sustainable basis and the decision to introduce a VAT has often been made for these reasons (Hossian, 1995).

2.2 Empirical Literature Review

Empirical work on the VAT is also scant. A few papers have sought to model the revenue raised by, and compliance with, the VAT, often with a view to estimating a revenue maximizing rate. Desai and Hines (2005) consider the impact of the VAT on international trade finding that particularly for other than high income countries both openness and export performance are negatively related to both the presence of the VAT and the extent of revenue reliance upon it. There has previously been no work, however, modeling the take-up of the VAT (IMF, 2007).

2.2.1. Tax Efficiency and Effectiveness

According to the IMF (2007), there are several potential sources of efficiency gain associated with adoption of a VAT. In practice, the VAT often replaces either a turnover tax (bearing on all transactions) or a single-stage sales tax (levied at retail or some other level). Turnover taxes, however, bear on intermediate transactions, and so induce production inefficiencies; sales tax often do so too (since it is hard to distinguish these from final sales) and, moreover, can be particularly vulnerable to evasion and avoidance (because revenue is lost completely if, for some reason, the tax is not properly imposed at the single point of sale), and so tend ultimately to levy high rates on narrow bases.

In other cases, the VAT has been adopted as part of a package of trade liberalization, compensating for the revenue loss from the reduction of tariffs whilst preserving the gains in production efficiency from moving producer prices closer to world prices. At a more general level—and especially in developing countries—adoption of the VAT is often seen as the central element in a program of modernizing tax administration, developing the use of methods of self-assessment whose generalization is expected ultimately to ease administration and compliance in relation to other taxes too (IMF, 2007). But it could be, on the other hand, that the VAT has actually reduced efficiency, for it clearly has potential weaknesses. When the VAT chain is broken—as, for many reasons, it commonly is, production inefficiencies may be created, through fraud, a large informal sector, which could in principle offset the benefits of greater assurance of revenue collection (ibid, 2007; Keen and Smith, 2006; Desai-Hines, 2005; Piggott and Whalley, 2001; Emran and Stiglitz, 2005, Keen, 2006).

Aizenman and Jinjara (2008), evaluate the political economy and structural factors explaining the collection efficiency of the Value Added Tax. They consider the case where the collection

efficiency is determined by the probability of audit and by the penalty on underpaying. Implementation lags imply that the present policy maker determines the efficiency of the tax system next period. Theory suggests that the collection efficiency is impacted by political economy considerations, greater polarization and political instability would reduce the efficiency of the tax collection. In addition, collection is impacted by structural factors affecting the ease of tax evasion, like the urbanization level, the share of agriculture, and trade openness. Defining the collection efficiency of the VAT as the ratio of the VAT revenue to aggregate consumption divided by the standard VAT rate, they evaluate the evidence on VAT collection efficiency in a panel of 44 countries over 1970-99. The results are consistent with the theory - a one standard deviation increase in durability of political regime, and in the ease and fluidity of political participation, increase the VAT collection efficiency by 3.1% and 3.6%, respectively. A one standard deviation increase in urbanization, trade openness, and the share of agriculture changes the VAT collection efficiency by 12.7%, 3.9%, and - 4.8%, respectively. In addition, a one standard deviation increase in GDP/Capita increases the tax efficiency by 8.1%. Qualitatively identical results apply for an alternative measure of VAT collection efficiency, defined by the ratio of VAT revenue to GDP divided by the standard VAT.

2.2.2. Determinants of VAT Performance

Michael Keen and Ben Lockwood (2007), examine the causes and consequences of the spread of VAT. Using a panel of 143 countries observed over 25 years, they estimate a recursive two-equation system characterizing both the decision to adopt a VAT and the impact of the VAT on revenue once adopted. They find a number of determinants of VAT adoption. These exclude Income per capita, but include the size of the agricultural sector. A country is less likely to adopt a VAT, (this being a hard to-tax group, and perhaps harder under the VAT than under other taxes), and the lower is its past revenue ratio (suggesting a greater need to enhance

revenues). The IMF also appears to have played an independent and significant role in the spread of the VAT: participation in a non-crisis IMF program in itself significantly increases the likelihood of adopting a VAT. Yardstick competition also seems to have been significant, with a country more likely to adopt a VAT the greater the proportion of others in the region who have already done so. The results indicate strongly that, all else equal, more open economies are less likely to adopt a VAT.

They also find the effect of the VAT on revenue performance to be significantly positive but fairly modest: adoption of the VAT is associated with a long run increase in the overall revenue-to-GDP ratio of about 4.5 percent. This implies that adoption of VAT has increased revenue and improved effectiveness in the large majority of countries that have implemented a VAT, and would do so too for most of those that have not. These results suggest, however—given clear signs of associated revenue and effectiveness gains in some countries of sub-Saharan Africa that significant work remains to be done in improving the functioning of the VAT in much of the region.

2.2.3 Performance of VAT in Developing Countries

Analysis of government tax with respect to Value Added Tax in France by Michel (2003) concluded that the introduction of VAT in the country has led to a continuous increase in government total domestic revenue mobilisation over the years. This made France's GDP to rise to \$1.76 trillion from \$1.42 trillion, while per capita income increased to \$29,410 in 2003 from \$29,089 in the previous year. He further observed that the government revenue target has always been achieved and VAT in particular registering substantial growth over the period.

Teffer (2004), in analysing the implementation of Value Added Tax in Ethiopia stated that VAT has become a major tax instrument worldwide and the global trend to introduce it in more

countries is continuing. VAT revenue performance and its neutrality and efficiency are also the reasons for superiority of this tax in contrast to other common tax instruments such as the turnover tax (Zeljko & Fareed, 1993). The emerging conventional wisdom, based largely on practice and numerous country case studies, suggests that a single rate of VAT (with the rate between 10 and 20%), with very few exemptions and, therefore, a broad base is superior to a VAT with multiple rates and many exemptions which reduce its base and complicate administration (Tefferu 2004).

After evaluating tax reforms in Ethiopia with particular reference to VAT performance, Alemayehu and Abebe (2004), also indicated that VAT revenue collection in Ethiopia has shown a 50% significant growth as compared with the replaced sales tax. They contended that domestic VAT collection contributed 14.9% while that of import VAT collection contributed 27.1% to total revenue collections in the country. To this end, Alemayehu and Abebe attributed the high contribution of import VAT to total VAT collection in the country to seemingly its well checked entry point. VAT is the major part of tax system raising about one-fourth of the world's tax revenue (Ebrill, Keen, Bochin and Summers 2002). This has been reiterated by Bahl and Bird (2008) as they indicated there is no question that the VAT is now properly considered central to a good tax system in raising revenue in most countries. However, Emran and Stiglitz (2005) cautioned that the welfare gains from a switch to the VAT are questionable in the presence of large informal sector. But this view has been counteracted by Aizenman and Jinjara (2005) as they indicated that a frequently cited advantage of VAT is the fact that it is collected throughout the production chain and associated with easier enforcement giving it a practical advantage.

Gupta et al (2008) also explained that rising domestic revenue not only creates additional fiscal space for supporting high-priority spending and healthy fiscal conditions, it also allows a country to maintain spending consistent with its policy priorities when aid is phased out. It is worth mentioning that tax administration has come a long way in many developing countries over the last three decades (Bird and Zolt 2007). However, there are still much more left to be done to improve tax productivity (Bird 2008). The fact therefore remains that it is not by accident that most developing countries have also adopted a modern tax system of value added tax (VAT).

Increasing the VAT rate alone cannot be seen as a panacea to improving VAT revenue especially in the developing world economies associated with low incomes, welfare of the populace will greatly be affected given the fact that VAT is regressive in nature and majority of people are poor. To mitigate the impact, most necessities like food, clothing and shelter are exempted from the VAT. Addressing the challenges of VAT collection could improve revenue better than increasing the tax rate. This is what this research seeks to find out. Aizenman & Jinjarak (2008) also indicated that the tax efficiency is determined by the probability of audit and by the penalty on underpaying.

Dasgupta (2012) examines the revenue impact of VAT at state level in India. He uses Revenue and Gross State Domestic data for 29 states in India to assess the revenue impact of Value Added Tax at the state level. The direct as well as indirect impact of VAT introduction was examined. The direct impact was examined by seeing whether the introduction of VAT across states increased the VAT or State Own Revenue to Gross State Domestic Product ratio. The indirect impact of introducing VAT on VAT base was also examined. The secondary data was collected from Reserve Bank of India and Ministry of Statistics and Programme

Implementation (MOSPI) database for the period of 1993-1994 to 2009-2010 for 29 states. The regression results showed that direct impact of VAT was observed in 2/3rd of the sample. The positive impact of VAT in terms of State's Own Revenue Receipts was observed in case of Orissa and Haryana while negative impact was observed in case of Goa and Gujarat. Gupta acknowledges the poor revenue performance to the administration problems identified by Comptroller and Auditor General audit in 2009 (Abhay, 2016).

Manukaji and Nwadiolor (2016) analyzed empirically the impact of Value Added Tax (VAT) on economic growth in Nigeria from 2005-2014 using simple regression technique. They found that VAT positively contributes to the total revenue generated by government and by extension the economic growth of Nigeria. They recommend that revenue collected from VAT needed to be boosted by not only increasing the VAT rate of 5% percent but by closing every VAT revenue leakage, sensitizing the managers of companies operating in Nigeria on the need to remit the VAT revenue collection and proper training of the Federal Inland Revenue staff in charge of VAT revenue collection.

2.2.4 Revenue Impact of VAT Policy Reforms

Ruebling (1973) examines the effects of VAT changes and contends that the surrounding monetary conditions as well as the change in the amount of one or more of the possible uses of the revenues must be considered. The two main points she makes are: (1) the effects of a VAT substitution in the tax structure on income distribution, economic growth, and the international balance of payments are largely determined by what happens to prices; and (2) the effects on prices of imposing a VAT in place of another tax are largely determined by monetary conditions — the rate of growth of the money supply and the velocity of money — and the price-impact of an alternative tax or tax substitute. In contrast to the popularly reported

implications of a VAT, it is observed that a VAT does not have to be followed by inflation or increased economic inequality. She concludes that the effects of implementing a VAT, or any other tax adjustment, on inflation, income distribution, resource allocation, economic growth, and a country's balance of payments depend on the precise form of the tax and the conditions surrounding it.

Michael and Ben (2007) investigated the origins and repercussions of the spread of VAT. For 25 years, a panel study of 143 countries was monitored. The findings indicate that VAT has a considerable yet mixed influence. This means that while some countries would have benefited from the implementation of VAT, others would not. Allowing the impact of VAT to vary with nation specifics, on the other hand, will alter the effect to become negative, notwithstanding gains that tend to be bigger in higher income and more open countries.

Denis (2010) investigated the relationship between Value Added Tax (VAT) and Gross Domestic Product (GDP) in Nigeria. The study finds that VAT is not effective as revenue earner; this implies that significant parts of GDP which represent aggregate national income as well as aggregate national expenditure are not collected as tax.

Salti and Chabaan (2011) studied the effect of increasing rate of VAT by targeting poverty and inequality. An empirical model based on consumer theory of demand was used to study the impact. Simulation results showed that increased rate of VAT would have negative significant impact on poverty. Although the increased rate would have a negative impact on overall consumption, yet its effect on the poor is greater compared to the rich.

Nellor (1987) looked at whether the ratio of government revenue to GDP rises steadily after implementation of VAT in 11 European countries. Nellor, concluded that the implementation

of the VAT instantly increased tax ratio, which then continues growing at the higher level. Smith, Islam, and Moniruzzaman, (2011) attempted to analyze the contribution and performance of VAT in Bangladesh compared to other developing countries.

Basila (2010), in investigating the relationship between VAT and GNP in Nigeria using data from 1994 to 2008 find a strong positive correlation between VAT revenue and GNP in Nigeria. These findings are confirmed by Adereti, Sanni and Adesina (2011), who established that the ratio of VAT Revenue to GNP averaged 1.3% compared to 45% in Indonesia, though VAT Revenue accounts for as much as 75% significant variations in GNP in Nigeria and conclude that there is a positive and significant correlation that exists between VAT Revenue and GNP. Similar findings were further confirmed by Adereti, Sanni, and Adesina (2011) whose findings show that VAT revenue to total tax revenue averaged 12.4% for Nigeria which they considered low compared to other African countries such as Ivory Coast, Kenya and Senegal that had 30%. The study also observed a positive and significant correlation between VAT and GDP (Manukaji, I. J., and Nwadiolor, E. O, 2016).

Chilibasi (2014), evaluate the effects of VAT reforms on revenue financial years 2009 to 2013 in Kenya. In the VAT revenue equation, the independent variable is the revenue collected and the dependent are reforms on VAT which are online filling of returns, VAT returns and integrated management system. The analysis showed that VAT reforms have a significant effect on VAT revenue. She recommends the adoption of tax reforms in relevant tax revenue models, to estimate accurately VAT revenues within a specified period of time. She further recommends that although past studies advocated for raising rates within the existing system as the most obvious approach for increasing revenues, that decision has the effect of reducing VAT revenue.

2.3 Prediction Models for VAT Performance

The Heller (1975) and Leuthold (1991) applied tax models that generally offer a framework which accounts for the effects of economic policies (including Reverse causality occurs when a dependent variable can cause a change in one (or more) explanatory variable and vice versa (Ramcharan, 2006), policies on FDI, corruption and elements of the tax base on tax revenue (including tax performance). The Leuthold (1991) model specifically assumed that the actual tax revenue-GDP ratio is a function of the desired tax revenue-GDP ratio and the availability of certain tax bases (including FDI, tax rates and tax policy); as well as the status of economic policies and the tax level of corruption. That is: $T/Y = f \{ (T/Y)^*, B, E, C \}$ (1) Where T/Y is the actual tax revenue-GDP ratio, T/Y^* the desired tax revenue-GDP ratio, B refers to tax bases, E is economic policies and C is the tax level of corruption. Effectively, increased FDI inflows expand the tax base (B), contribute to growth and provide additional channels (together with the tax rates and tax policy) for improved tax revenue.

The main offerings of the applied tax models have been complemented by relative theories in support of this strand of tax literature for instance studies by Gropp and Kostial (2001), Montiel (2003), Garikai (2009), Hines and Summers (2009) and Mankiw, Weinzierl and Yagan (2009). The theories highlight the importance of choosing appropriate revenue instruments or tax handles (tax bases) aimed at influencing tax performance. Anecdotal and theoretical evidence support the rationale for using tax rates and tax administrative reforms to increase the amount of tax revenue collected. However, a general increase in tax rates may have an adverse effect on revenue collection while a reduction in tax rates (coupled with expansion of the tax base) may help improve tax revenue. This is further explained by the Laffer curve (Slavin, 2008; Trabandt, and Uhlig, 2011; Kazman, 2014).

Policy makers are therefore encouraged to explore other means of tax revenue maximisation apart from increasing tax rates. For example, revenue generating potential for VAT can be maximised by instead expanding the bases (through both tax policy changes and improving compliance) rather than increasing standard VAT rates (IMF, 2009). This is consistent with the main offering of the revenue mobilisation model. The model highlights the importance of two policy choice variables (namely, the definition of the tax base or B and the tax ratio or TR) and three administrative related variables (explicitly the size of the coverage ratio or CVR, the valuation ratio.

In the Ugandan context, only a few studies analyse the redistributive impact of indirect taxes. Jellema et al. (2016) adopted the commitment to equity (CEQ) approach and analysed the redistributive impact of Uganda's tax and social spending programmes, using 2012–13 Uganda National Household Survey (UNHS) data. The CEQ approach simultaneously analyses the incidence of government revenue and spending. They found that indirect taxes had an equalizing effect. Ssewanyana and Okidi (2008) using GAUSS software built UGATAX, a model of Uganda's tax system, which was underpinned by the 1999–2000 UNHS. Their study assumed constant consumption and expenditure, and total tax compliance of all households consuming goods on which VAT has to be paid and excisable commodities. They analysed the tax incidence of indirect taxes (VAT and excise duty) while assuming constant consumption behaviour and expenditure between the time periods. The analysis used per capita adult equivalent household consumption to analyse the tax incidence. The study noted that poor households bore a greater burden of indirect taxes, especially VAT, followed by excise duties and graduated tax.

Of recent, there has been a growing increase in the use of tax-benefit microsimulation modelling as a tool to analyse the redistributive impact of indirect taxes due to the availability of detailed expenditure data in household surveys used to underpin such models. The EUROMOD framework, which is a tax-benefit microsimulation model for countries in the European Union enables researchers and policy analysts calculate the effects of taxes and benefits on household incomes, among others. Consequently, the EUROMOD software has been applied in several countries in the Global South, including Uganda, under the auspices of the SOUTHMOD programme (Decoster et al. 2019). These static microsimulation models use household survey data on income and expenditure to ascertain the impact of tax policy and benefit schemes on poverty, inequality, and government revenue. So far, the South African model SAMOD, which uses the EUROMOD microsimulation software has been used to explore the distributional effect of indirect taxes with respect to VAT in the context of South Africa (Gcabo et al. 2019), and in a comparative paper on six African countries (Gasior et al. 2018).

2.4. Summary

The primary goal of this research is to evaluate the impact of VAT policy adjustments on revenue, poverty, and inequality in Uganda. The examination of literature begins by looking at the theoretical underpinnings of taxation as a tool for fiscal policy management and VAT as a tax policy choice for revenue generation. The Keynesian Theory is considered plausible as a foundation for VAT analysis in theory and practice. The literature has investigated the conceptual, functional mechanisms, and performance of VAT in established, emerging, and developing countries, with a focus on the predictors of VAT performance in varied circumstances. Though the predictors are basically comparable, the levels of significance of the variables varies significantly between the findings of developed and developing countries.

Low-income countries have extensive agriculture and informal sectors, which hamper VAT adoption and effective administration. Overall, the literature portrays VAT as a widely used and effective tax for increasing government revenue. This study provided methodology and a modelling framework for measuring the impact of VAT policy adjustments in Uganda on revenue, poverty, and inequality.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This Chapter presents the methodology used in assessing the effect of VAT policy reforms on revenue, poverty and inequality in Uganda. It presents the data and its source, describes the modelling framework, and the simulations as estimated by the model.

3.1 Data and Source

The study used secondary data obtained from the Uganda Bureau of Statistics (UBOS) and Uganda Revenue Authority (URA). From UBOS, data on the Uganda National Household Survey (UNHS) 2016/2017 was utilised which was used to classify households into expenditure deciles. The survey provided detailed data on household consumption patterns allowing for an accurate segmentation based on total expenditures which enabled simulation at national level (Waiswa et al 2020).

The data covered total of 15,721 households and 74,422 individuals (UBOS, 2017), thus it is disaggregated at household level which enabled analysis of the distributional impact of the VAT increment on revenue, poverty, inequality and consumption at the national level. VAT revenue data on rates, exemptions, and total VAT revenue collected were obtained for the URA reports. This data is critical for understanding the applicable VAT rate on different goods and services while further estimating the overall tax burden on households.

3.3 The Modelling Framework

This study is anchored in welfare economics and public finance theory, which posit that taxation affects household welfare, consumption, and income distribution while

simultaneously serving as a critical source of government revenue (Atkinson & Stiglitz, 1980; Musgrave & Musgrave, 1989). Changes in Value Added Tax (VAT) rates can therefore influence household purchasing power and consumption patterns, with varying effects across income groups. Tax incidence theory further suggests that although VAT is collected by businesses, its burden is largely borne by consumers through higher prices, making it important to assess the distributional consequences of VAT reforms (Fullerton & Metcalf, 2002; Bird & Gendron, 2007).

The study employs the UGAMOD/SOUTHMOD tax-benefit microsimulation framework to evaluate these effects. The model applies tax policy rules to nationally representative household survey data to estimate the impact of alternative VAT scenarios on government revenue, poverty, and inequality. As a static microsimulation model, UGAMOD captures the direct or first-round effects of policy changes on households, providing an evidence-based framework for examining the welfare and fiscal implications of VAT reforms before their implementation (Sutherland & Figari, 2013; Wright et al., 2017).

A tax-benefit micro simulation modelling framework (UGAMOD) version (v1.5) was utilised to analyse the implications of the VAT rates on revenue, poverty and inequality. The model analysed various VAT rate scenarios, including increases, decreases, or the introduction of exemptions. The model accounted for the elasticity of demand for goods and services affected by VAT, enabling an assessment of potential changes in consumption patterns.

The model used cross sectional data derived from UNHS 2016/17 and contained detailed information on the demographic and socio-economic characteristics of households. The analysis involved applying a set of policy rules to the household survey data in order to

calculate individual liability for taxation and/or entitlement to benefits among others. In the model, policies are simulated for the years 2019 and 2020, and the taxes captured are both direct and indirect domestic taxes. This study based on the 2018 system, and only VAT was considered.

The process of analysing the UNHS data involved removing VAT (where applicable) from expenditure items at the point of preparation of the data so that expenditure included in the model was ex-VAT, which simplified the modelling of indirect taxes on the model. The VAT is removed during the preparation stage which enables the expenditures items to be carried into the model as net of VAT. UGAMOD simulates VAT for 184 different items, each expenditure item was categorized as to whether the standard rate of VAT applies or if it is zero-rated or exempt supplies. The model also enables the user to specify the VAT standard rate. The expenditure items are then uprated using five subcategories of the consumer price index: food, non-food, energy and fuel, and alcohol and tobacco. Throughout the analysis, the conventions shown below is employed.

3.2 Analysing the distributional effect of VAT by expenditure deciles

Household expenditure decile classification based on total expenditures was done to ensure representation across both urban and rural areas recognising the diversity of consumption patterns in Uganda. Consumption analysis involved calculation of expenditure shares and estimation of effective VAT burden. Calculation of expenditure shares for VAT liable goods and services across decile involved identifying of goods and services subject to VAT and determining the proportion of each household's total expenditure allocated to these items, using the following equation:

$$E_{IJ} = \frac{c_{ij}}{c_i} \times 100 \quad (1)$$

Where:

E_{ij} = expenditure share of household i on good j

C_{ij} = total expenditure of household i on good j

C_i = total expenditure of household i

Estimation of the effective VAT burden for each decile was done by applying relevant VAT rates to the expenditures on VAT liable goods. This allowed for a comparative analysis of the VAT burden across the different groups.

$$B_d = \frac{T_d}{C_d} \times 100 \quad (2)$$

Where:

B_d = effective VAT burden for decile d

T_d = total VAT paid by decile d

C_d = total expenditure of decile d

3.4 Analysing implications of the VAT rate on revenue, poverty and inequality

Tax burden analysis facilitated a clear understanding of the tax's regressivity, as lower-income households typically allocate a larger portion of their income to consumption. The VAT burden was expressed as a percentage of total expenditure and income for each decile.

$$TB_d = \frac{B_d}{I_d} \times 100 \quad (3)$$

Where:

TB_d = tax burden for decile d

I_d = income of decile d

The Lorenz curve and Gini Coefficient were utilized to analyse the distribution of VAT burdens among deciles. These tools provided insights into the equity of the VAT system, highlighting any disparities in the burden borne by different income groups.

$$G = \frac{A}{A+B} \quad (4)$$

Where:

A = area between the Lorenz curve and the line of perfect equality

B = area under the Lorenz curve

Historical VAT revenue data was analysed to evaluate trends over time and to identify the contribution of VAT to overall government revenue. Using poverty data, including the national poverty line, the study assessed how VAT affects different income groups. Simulations were conducted to determine the share of VAT burden borne by low-income households compared to higher-income households, revealing the tax's impact on poverty levels.

$$P_d = \frac{V_d}{H_d} \times 100 \quad (5)$$

Where:

P_d = share of VAT burden on the decile d

V_d = VAT burden for decile d

H_d = total households in decile d

3.5 Estimating the impact of VAT rate changes

The model analysed changes in the total VAT revenue under various scenarios and their implications. Additionally, shifts in poverty rates and inequality were evaluated in response to potential VAT rate changes. The VAT revenue equation is specified as:

$$\Delta VAT = \sum_{i=1}^{\pi} \frac{(E_{ija} * Vatr_{tija})}{1 + Vatr_{tija}} - \sum_{i=1}^{\pi} \frac{(E_{ijb} * Vatr_{tijb})}{1 + Vatr_{tijb}} \quad (6)$$

The subscripts b and a correspond to pre-reform and post-reform, respectively; i refers to the household; and j , the good.

It should be noted that the simulated amounts of VAT differ from reported VAT revenue as

captured by the URA due to a number of reasons, including that VAT revenue will be obtained from additional sources such as companies (and such expenditure would not be captured in a household survey), or that overall expenditure is over- or under-captured. It is also the case that UGAMOD does not simulate all VAT revenue. Nevertheless, it is assumed that there is no need to scale up (or down) the simulated VAT prior to examining its distributional impact. For the financial year 2016 to 2017, UGAMOD simulated UGX 3,622.46 billion in revenue from VAT. This is slightly more than the UGX 2,022.45 billion actual revenue collected, and less than the target of UGX 1,952.44 billion (Waiswa et al. 2020).

Table 1: Summary of reform scenarios simulated

System	Description
Baseline	Status quo (VAT at 18 percent)
Reform 1	Same baseline but VAT at 19 percent
Reform 2	Same baseline but VAT at 20 percent

Table 1 summarizes the different reforms that were simulated using the model, and they are discussed in Chapter four. For the first phase of the analysis, the baseline was defined as being the tax-benefit situation in 2018 but with a standard rate of VAT being 18 per cent (baseline scenario): this amounts to the tax-benefit arrangements that were introduced in 2018. All zero-rated items were zero-rated on-model, and VAT at the rate of 18 per cent was applied to all standard rated items. The reforms (1 and 2) were chosen to show the impact that different types of policy changes have on revenue, poverty, inequality and consumption. The baseline system in the analyses uses 2018 tax-benefit calculation rules, and two new systems were created for the reforms: 2018_reform 1 and 2018_reform 2.

The Data is further extracted from the model and analysed by decile using Stata software. The analysis is presented in tables and figures which illustrate the impact of VAT on household Consumption expenditures before and after the reforms.

CHAPTER FOUR

PRESENTATION, INTERPRETATIONS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents and discusses the empirical results of the study on assessing the effect of VAT policy reforms on revenue, poverty, inequality and consumption in Uganda. Section 4.1 presents the data such as descriptive statistics, on the distributional effect of VAT in Uganda. Section 4.2 presents implications of VAT on revenue, poverty and inequality, and Section 4.3 presents the impact of VAT rate change simulation results and interpretation of the results.

4.1 Distributional effects of VAT in Uganda

In this section, the distributional effects of VAT by expenditure decile in Uganda are examined using population-weighted consumption deciles in 2018, (Table A1 in the Appendix). The analysis was undertaken using per capita monthly household amounts, and deciles of consumption constructed on a per capita basis in order to account for variations in household size.

Table 4.1: Household consumption with VAT rate of 18%

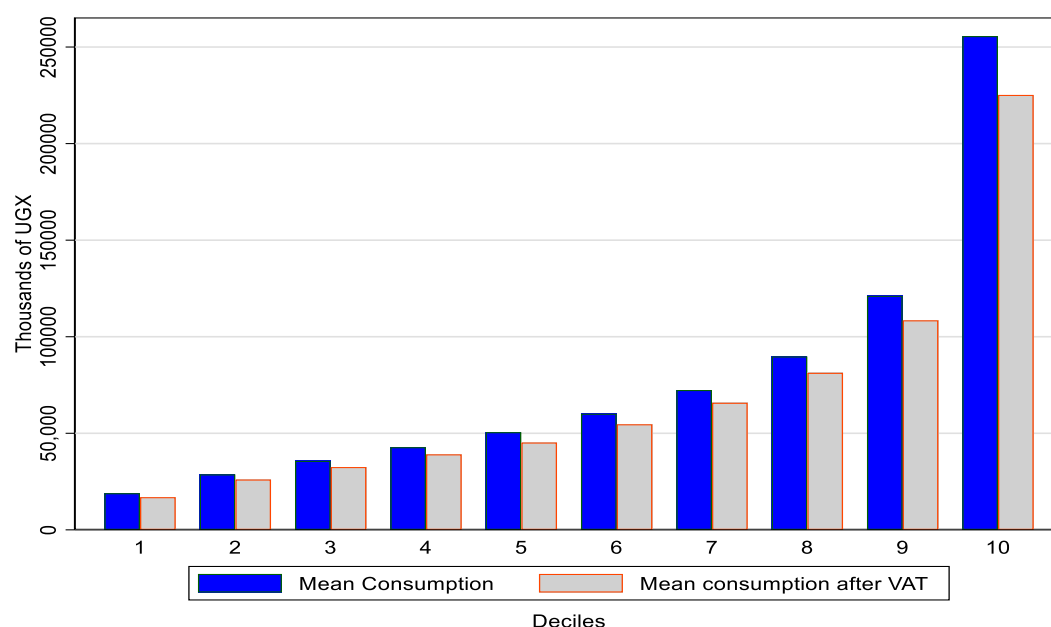
Decile	<i>Obs</i>	<i>Weight</i>	<i>Average of pc_VAT</i>	<i>Average of household consumption_income</i>	<i>Average of household consumption_expenditure</i>
1	1,300	3,972,919	2,180.27	18,517.13	16,336.86
2	1,323	3,949,315	2,612.79	28,728.23	26,115.44
3	1,384	3,955,727	3,222.79	35,710.71	32,487.92
4	1,451	3,957,469	3,761.11	42,806.64	39,045.54
5	1,465	3,964,592	4,707.07	50,647.29	45,940.22
6	1,472	3,958,192	5,854.59	60,122.33	54,267.74
7	1,601	3,953,899	6,905.25	72,299.04	65,393.79
8	1,705	3,970,670	9,154.01	89,889.59	80,735.58
9	1,862	3,947,471	13,891.75	121,855.11	107,963.36
10	2,158	3,958,288	37,648.59	274,455.95	236,807.36

Source: Author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

Table 4.1 illustrates the average expenditure share for VAT liable goods across each decile, highlighting that lower deciles allocate a smaller percentage of their total expenditure on VAT liable goods while higher deciles demonstrate a larger share.

A tax is vertically equitable when the rich pay a greater share of their income in tax. When examining the deciles of consumption, progressivity in VAT would be demonstrated by an increase in the share of consumption paid as VAT, as consumption rises.

Figure 4.1: Mean monthly per capita household consumption and mean monthly per capita household consumption after VAT, 2018

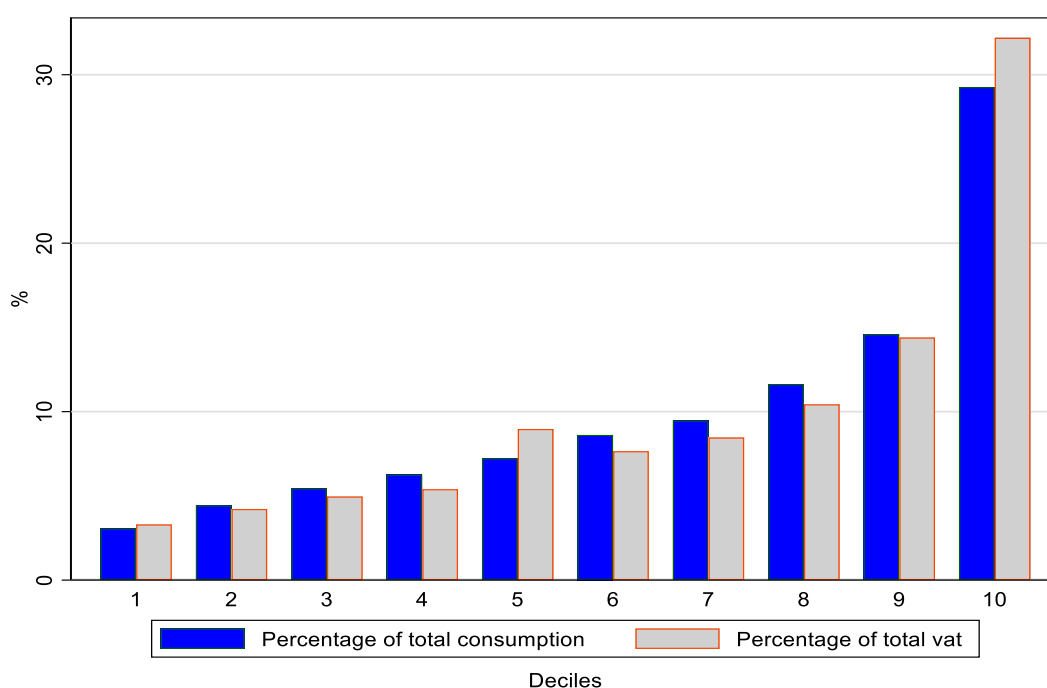


Source: Author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

Figure 4.1 depicts the mean monthly per capita household consumption and the mean monthly per capita household consumption after VAT in thousands of Uganda shillings in 2018. The mean monthly per capita household consumption before and after VAT is deducted follows an upward trend across the deciles. In decile one (the poorest), the mean monthly per capita household consumption is Uganda shillings 18,517, which decreases by 12 percent to Uganda shillings 16,337 after the deduction of VAT. From decile two, there begins to be a slight

reduction in the mean monthly per capita household consumption after VAT is deducted, indicating that households in the upper deciles are paying more VAT relative to those in the bottom. This subsequently reduces their per capita household consumption. There is a sharp increase in mean monthly per capita household consumption between deciles nine and ten. Households in decile ten (the richest) have a mean monthly per capita household consumption of approximately Uganda shillings 274,456. Their mean monthly per capita consumption decreases to Uganda shillings 236,807 after VAT is paid. This implies that there is progressivity in VAT.

Figure 4.2: VAT as percentage of total VAT, and consumption as percentage of total consumption, by consumption decile, 2018

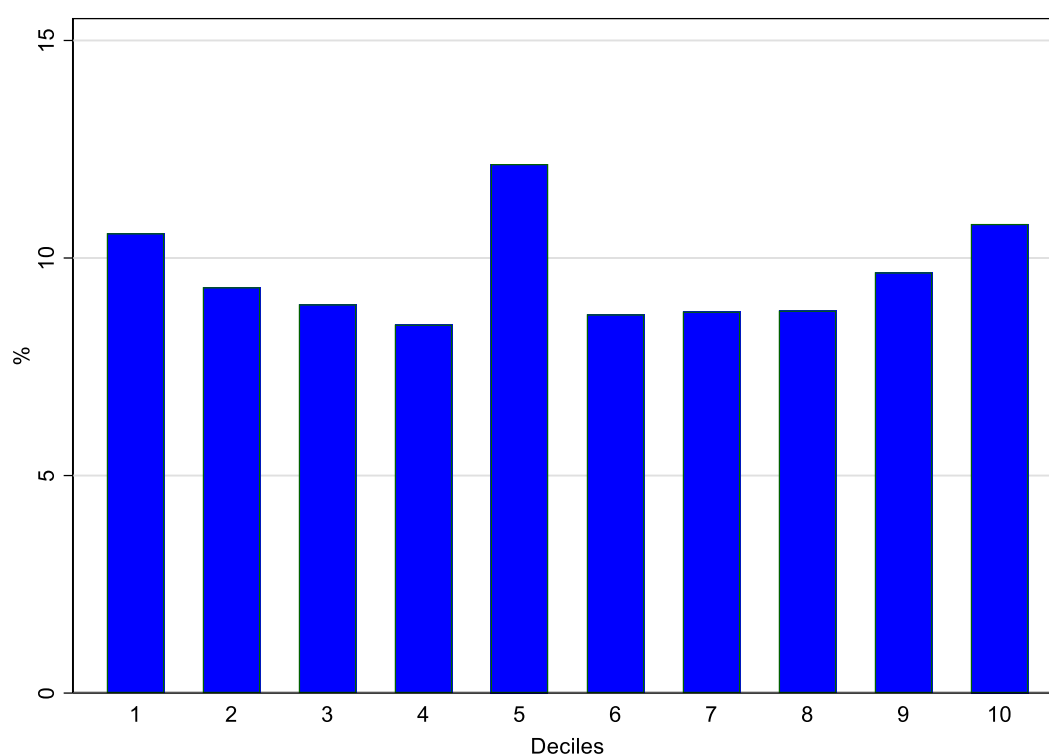


Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

Figure 4.2 illustrates the VAT and consumption for each decile as a percentage of total VAT and total consumption respectively. In decile one (the poorest), per capita consumption accounts for 3.1 percent of total consumption, and per capita VAT accounts for 3.3 percent of total VAT. In each of the first seven deciles, per capita VAT and per capita consumption

account for less than ten per cent of total VAT, and total consumption respectively. In deciles five and ten, the share of total consumption exceeds the share of total VAT; in the final decile, consumption accounts for approximately 29 percent of total consumption, and VAT accounts for 32 percent of total VAT. This indicates that the majority of VAT is being paid by households in the top deciles, particularly decile ten.

Figure 4.3: VAT expenditure per decile as percentage of consumption, 2018



Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

Figure 4.3 shows VAT expenditure per decile as a percentage of consumption per decile. In decile one (the poorest), and ten (the richest) households' expenditure on VAT makes up approximately 10.6 percent and 10.7 percent of their consumption. Expenditure on VAT significantly increases in the fifth decile to 12.2 percent. This implies that middle income households generally spend a higher percentage of their consumption on VAT compared with households in the upper and lower deciles.

The results in Figure 4.2 show that higher consumption deciles contribute a larger absolute share of VAT revenue, with the top decile bearing the highest VAT payments. This indicates a degree of progressivity in Uganda's VAT system when assessed in absolute terms. This finding is consistent with the theoretical argument by Gordon and Li (1997), who note that indirect taxes can be progressive when consumption rises with income, leading wealthier households to pay more tax overall.

However, when VAT payments are considered as a share of total consumption, the burden appears highest among middle-income households, particularly around the fifth decile. This pattern aligns with previous empirical studies that identify a hump shaped incidence of consumption taxes, where middle-income households consume more taxable goods but do not benefit as much from exemptions targeted at basic necessities (Muñoz & Cho, 2003; Bird & Gendron, 2007). The results therefore support the view that VAT design, particularly exemptions and zero-rating, plays a critical role in shaping its distributional effects.

4.2 Implications of VAT on Revenue, Poverty and Inequality

Having examined the distributional of VAT across deciles of consumption, it is informative to examine the impact of the current VAT rate on revenue, poverty and inequality.

4.2.1 Revenue

In Table 4.2, a reform scenario has been modelled in which no VAT is payable on goods currently subject to VAT. From the table it is clear that in the absence of VAT, revenue of approximately Uganda shillings 3,188.912 billion is lost from indirect taxes.

Table 4.2: Impact of VAT on revenue

<i>Yearly, Mill. National Currency</i>			
	<i>Ug_2018 (Base)</i>	<i>Ug_2018_with no VAT payable</i>	<i>Difference To Base</i>
<i>Government Revenue Through Taxes, Ssc And Indirect Taxes</i>	10,170,286.67	6,981,373.70	-3,188,912.97
<i>... Direct Taxes</i>	4,488,232.65	4,488,232.65	0.00
<i>... Indirect Taxes</i>	4,593,811.90	1,404,898.92	-3,188,912.97
<i>... Social Security Contributions (Employer, Employee And Self-Employed)</i>	1,088,242.12	1,088,242.12	0.00

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

4.2.2 Poverty

The impact on consumption-based poverty net of indirect taxes is presented in the absence of VAT in Table 4.3 below.

Table 4.3: Poverty After Taxes and Transfers

<i>Consumption Based, Net Off Indirect Tax</i>			
	<i>Ug_2018 (Base)</i>	<i>Ug_2018_with no VAT payable</i>	<i>Difference To Base</i>
<i>Share Of Poor Population, In %</i>	0	0	0
<i>All</i>	22.11	18.09	-4.03
<i>Poor Households Out Of ...</i>	0	0	0
<i>... Male Headed Households</i>	22.18	17.90	-4.28
<i>... Female Headed Households</i>	21.92	18.59	-3.33
<i>... Households With Children</i>	23.24	19.04	-4.20
<i>... Households With Older Persons</i>	23.07	19.45	-3.62
<i>Poverty Gap (Average Normalised Poverty Gap, Fgt(1))</i>	0	0	0
<i>All</i>	5.85	4.47	-1.38
<i>Poor Households Out Of ...</i>	0	0	0
<i>... Male Headed Households</i>	5.75	4.33	-1.41
<i>... Female Headed Households</i>	6.13	4.86	-1.27
<i>... Households With Children</i>	6.14	4.69	-1.44
<i>... Households With Older Persons</i>	6.09	4.68	-1.40
<i>Absolute National Poverty Line, In National Currency, Yearly:</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

Table 4.3 shows that the removal of VAT results in a reduction in the consumption-based poverty headcount by approximately four percentage points. Male-headed households

experience the greatest reduction, whereas female-headed households experience the least reduction. There are also small decreases in the average normalized poverty gap. The difference between male-headed households and female-headed households indicates that female-headed households spend less on goods on which VAT has to be paid than male-headed households.

This confirms earlier findings that indirect taxes can exacerbate poverty by increasing consumer prices and lowering real purchasing power among poor and near-poor households (Younger et al., 1999). The magnitude of the poverty reduction suggests that VAT has a meaningful impact on household welfare in Uganda.

The larger reduction in poverty observed among male-headed households is consistent with the literature indicating that gender differences in consumption patterns influence tax incidence (World Bank, 2018). Male-headed households tend to allocate a higher share of expenditure to VAT-liable goods, which makes them more responsive to changes in indirect tax policy.

Results in Table 4.3 further indicate that the poverty gap declines following the removal of VAT, suggesting that VAT affects not only poverty incidence but also poverty severity. This finding supports Gupta et al. (2014), who argue that indirect taxes can deepen poverty among vulnerable households by reducing real disposable income, particularly for those clustered around the poverty line.

The reduction in the poverty gap implies that VAT contributes to pushing poor households further below the poverty threshold. Consequently, VAT reforms have implications for both the number of poor households and the depth of poverty, reinforcing the importance of considering multiple welfare indicators when assessing tax policy.

4.2.3 Inequality

Regarding inequality, the situation is reversed in Table 4.4. In the absence of VAT, there is a minimal increase in inequality of 0.0039 percentage points measured using both the Gini coefficient and the P80/P20 ratio. This indicates that those at the top of the income distribution experience a greater increase in their post-fiscal income in the absence of VAT—than those at the bottom of the income distribution.

Table 4.4: Inequality after taxes and transfers

<i>Income</i>	2018	<i>2018 with no VAT payable</i>	<i>difference from base</i>
<i>Gini (Household Income)</i>	0.3900	0.3939	0.0039
<i>P80/P20</i>	2.95	2.95	0.00
<i>Quantiles Of Distribution And Median</i>	0	0	0
<i>20th</i>	473,706.26	516,652.52	42,946.27
<i>40th</i>	672,871.42	728,279.43	55,408.01
<i>50th</i>	790,571.42	854,004.05	63,432.63
<i>60th</i>	929,956.62	1,010,093.68	80,137.06
<i>80th</i>	1,396,910.40	1,523,817.31	126,906.91
<i>Absolute National Poverty Line, In National</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

4.3 Impact of Changes in VAT Rate on Revenue, Poverty, Inequality and Consumption

In this section, two simulations were carried out to assess the impacts of changes in the VAT rate. In the base scenario the current VAT rate and base are maintained. In the two simulations the current VAT base is maintained, and the VAT rate is increased to 19 percent, and 20 percent as illustrated in Table 11. All results were compared relative to the base (baseline) scenario.

4.3.1 Impact of change in VAT at 19 percent (Reform 1)

In reform 1, the VAT base of 2018 was maintained and the VAT rate increased to 19 percent.

Table 4.5: Annual Government Revenue under Baseline and Reform Scenario 1, 2018

Yearly, Mill. National Currency			
	<i>ug_2018 (base)</i>	<i>ug_2018 Reform 1</i>	<i>Difference to base</i>
<i>Government Revenue Through Taxes,</i>	10,170,286.67	10,383,255.11	212,968.44
<i>... Direct Taxes</i>	4,488,232.65	4,488,232.65	0.00
<i>... Indirect Taxes</i>	4,593,811.90	4,806,780.33	212,968.44
<i>... Social Security Contributions</i>	1,088,242.12	1,088,242.12	0.00

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

In table 4.5, the impact of the reform in VAT from the current tax of 18 percent to 19 percent is examined, with no change in other taxes and benefits. In comparing the base and the reform scenario, it is established that an increase in the rate will lead to an increase in revenue from indirect taxes of UGX 212.968 billion. It is observed that the net indirect tax revenue increases by 2.094% when the VAT rate was raised by 1%. This benefits mostly the government revenue.

Table 4.6: Poverty After Taxes and Transfers

Consumption Based, Net Off Indirect tax			
	<i>Ug_2018 (Base)</i>	<i>Ug_2018 Reform 2</i>	<i>Difference To Base</i>
<i>Share Of Poor Population, In %</i>	0	0	0
<i>All</i>	22.11	22.32	0.20
<i>Poor Households Out Of ...</i>	0	0	0
<i>... Male Headed Households</i>	22.18	22.39	0.21
<i>... Female Headed Households</i>	21.92	22.11	0.19
<i>... Households With Children</i>	23.24	23.45	0.21
<i>... Households With Older Persons</i>	23.07	23.16	0.10
<i>Poverty Gap (Average Normalised)</i>	0	0	0
<i>All</i>	5.85	5.95	0.10
<i>Poor Households Out Of ...</i>	0	0	0
<i>Male Headed Households</i>	5.75	5.85	0.11
<i>... Female Headed Households</i>	6.13	6.22	0.09
<i>... Households With Children</i>	6.14	6.24	0.11
<i>... Households With Older Persons</i>	6.09	6.19	0.10
<i>Absolute National Poverty Line, In</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

It is also evident from the results shown in Table 4.6 that the increase in the VAT rate impacts on overall poverty; however, the increase in poverty is observed in male headed households and households with children.

According to table 4.7, when the VAT rate was increased by 1 percent, the gini coefficient is found to slightly reduce from 0.3900 in the baseline scenario to 0.3897. This is mainly due to the reduction in percentile income ratio between poor and rich households.

Table 4.7: Inequality after taxes and transfers, yearly

Consumption based, net off indirect tax			
	<i>ug_2018 (base)</i>	<i>ug_2018 _reform 2</i>	<i>Difference to base</i>
<i>Gini (Household Income)</i>	0.3900	0.3897	-0.0003
<i>P80/P20</i>	2.95	2.95	0.00
<i>Quantiles Of Distribution And Median</i>	0	0	0
<i>20th</i>	473,706.26	471,060.88	-2,645.38
<i>40th</i>	672,871.42	669,211.52	-3,659.90
<i>50th</i>	790,571.42	786,537.57	-4,033.84
<i>60th</i>	929,956.62	925,998.00	-3,958.62
<i>80th</i>	1,396,910.40	1,389,285.73	-7,624.67
<i>Absolute National Poverty Line, In National Currency,</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

The income percentile ratio of the poorest 20 to 50 percent of households decreases by less than the income percentile ratio of the richest 50 to 80 percent. While Gini coefficient is a statistical measure of inequality, the decrease noticed in the simulation results means that there is reduced growth in inequality between the poor and rich households. Consequently, the impacts of the reduction in inequality inherent to the increasing of the VAT rate, generates an increase in revenue, as reported in Table 4.5.

4.3.2 Impact of change in VAT at 20 percent (Reform 2)

In reform 2, the VAT base of 2018 was maintained and the VAT rate increased to 20 percent.

Table 4.8 Annual Government Revenue under Baseline and Reform Scenario 2, 2018

Yearly, Mill. National Currency			
	<i>ug_2018 (base)</i>	<i>ug_2018 Reform 2</i>	<i>Difference to base</i>
<i>Government Revenue Through Taxes,</i>	10,170,286.67	10,596,223.54	425,936.87
<i>... Direct Taxes</i>	4,488,232.65	4,488,232.65	0.00
<i>... Indirect Taxes</i>	4,593,811.90	5,019,748.77	425,936.87
<i>... Social Security Contributions</i>	1,088,242.12	1,088,242.12	0.00

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

In this section, the impact of a reform in the VAT from the current tax of 18 percent to 20 percent is examined, with no change in other taxes and benefits. Comparing the base and the reform scenario, shows that an increase in the rate will lead to an increase in revenue from indirect taxes of UGX 425.936 billion. Additionally, the increase in the VAT rate does impact on overall poverty; there is an increase in poverty by 0.42 percent, most especially in male headed households and households in children by 0.46 percent and 0.43 percent respectively, as shown in Table 4.9.

Table 4.9: Poverty After Taxes and Transfers

Consumption based, net off indirect tax			
	<i>ug_2018 (base)</i>	<i>ug_2018 Reform 2</i>	<i>Difference to base</i>
<i>share of poor population, in %</i>	0	0	0
<i>all</i>	22.11	22.53	0.42
<i>poor households out of ...</i>	0	0	0
<i>... male headed households</i>	22.18	22.64	0.46
<i>... female headed households</i>	21.92	22.23	0.31
<i>... households with children</i>	23.24	23.67	0.43
<i>... households with older persons</i>	23.07	23.20	0.13
<i>poverty gap (average normalised poverty</i>	0	0	0
<i>all</i>	5.85	6.05	0.20
<i>poor households out of ...</i>	0	0	0
<i>... male headed households</i>	5.75	5.96	0.21
<i>... female headed households</i>	6.13	6.31	0.18
<i>... households with children</i>	6.14	6.35	0.21
<i>... households with older persons</i>	6.09	6.29	0.20
<i>absolute national poverty line, in national</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

Table 4.9 reports the Gini coefficients from the simulation results. With regard to the welfare implications after reform 2, the model results indicated a marginal decrease in inequality. When the VAT rate is increased by 2 percent, the gini coefficient was found to decrease to 0.3894 from 0.3900 in the baseline scenario.

Table 4.10: Inequality after taxes and transfers, yearly

Consumption Based, Net Off Indirect Tax			
	<i>Ug_2018 (Base)</i>	<i>Ug_2018 Reform 2</i>	<i>Difference To Base</i>
<i>gini (household income)</i>	0.3900	0.3894	-0.0006
<i>p80/p20</i>	2.95	2.95	0.00
<i>quantiles of distribution and median</i>	0	0	0
<i>20th</i>	473,706.26	468,364.02	-5,342.23
<i>40th</i>	672,871.42	665,606.99	-7,264.43
<i>50th</i>	790,571.42	782,677.77	-7,893.64
<i>60th</i>	929,956.62	920,478.76	-9,477.86
<i>80th</i>	1,396,910.40	1,380,387.44	-16,522.96
<i>absolute national poverty line, in national</i>	501,633	501,633	0

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

This is mainly due to reduction in the percentile income ratio between poor and rich households. While gini coefficient is a statistical measure of inequality, the increase noticed in the simulation results means that there was a systematic slower growth in inequality between the poor and rich households. This implies that the tax instrument generates an increase in revenue.

As shown in Tables 4.5 and 4.8, increasing the VAT rate from 18 to 19 percent and to 20 percent leads to substantial gains in indirect tax revenue, with proportional increases exceeding the rate changes. This finding corroborates earlier studies that identify VAT as one of the most efficient instruments for revenue mobilisation in low-income countries (Keen & Lockwood,

2010). The strong revenue response reflects Uganda's relatively broad VAT base and aligns with IMF (2019) assessments emphasizing VAT as a cornerstone of domestic revenue mobilisation in Sub-Saharan Africa. These results underscore the fiscal importance of VAT in financing public expenditure.

Tables 4.7 and 4.10 show a small decline in the Gini coefficient following increases in the VAT rate, indicating a marginal reduction in income inequality. Although the magnitude of the change is modest, the direction of the effect is consistent with evidence from other developing countries, where VAT has been found to be inequality-neutral or mildly progressive when higher-income households consume more taxable goods (Martinez Vazquez et al., 2013).

This result contrasts with the traditional view that VAT is inherently regressive (Deaton, 1989) and instead supports more recent arguments that the distributional impact of VAT depends on consumption patterns and policy design rather than the tax instrument itself.

4.3.3 Impact of VAT reforms on household consumption

Case (2013) points out that VAT is an indirect tax because the government receives the payment from the seller (the business) rather than the person who ultimately bears the economic burden of the tax (the consumer). In this respect, higher taxes should increase the prices of domestically produced and imported goods. This will reduce purchasing power and as a result lowers demand. This in turn has an effect on household saving and consumption as illustrated in Figures 4.4 and 4.5.

Figure 4.4: Mean household consumption after VAT of 19%

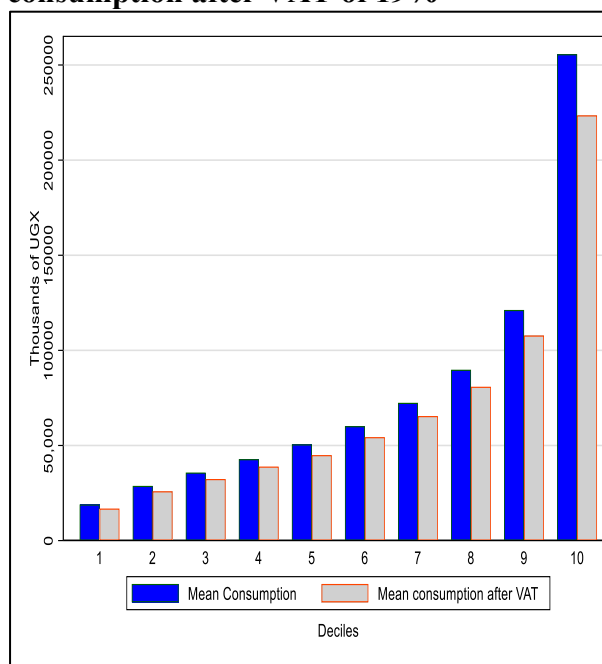
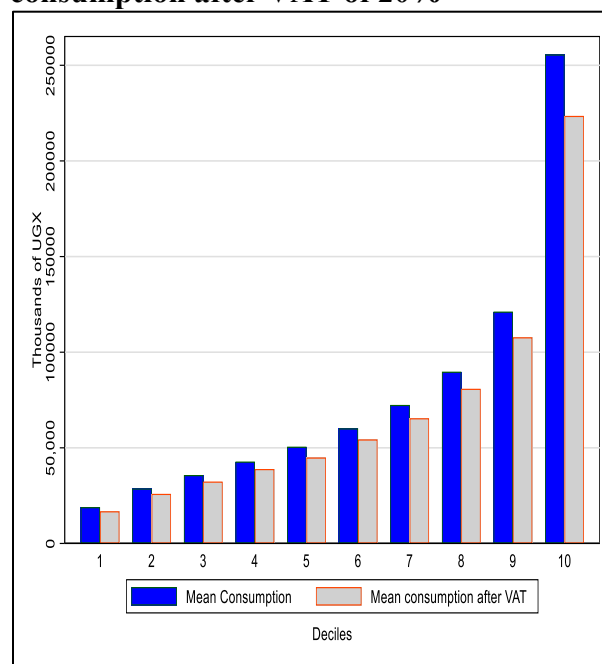


Figure 4.5 Mean household consumption after VAT of 20%



Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 dataset.

Table 4.11 below shows the pattern of consumption by household categories. The simulation results show that the lower income groups benefit the most from the policy reforms. This is mainly due to the fact that most provisions used by the lower income groups are zero rated or exempt from VAT, they reduce the VAT final consumption, because households, do not have to pay VAT on zero-rated or exempt commodities. It is observed that both policy reforms have a positive impact on income inequality. Nonetheless, any policy measures aimed at promoting the redistribution of income can consider an increase in the VAT rate mostly in the short term. The impact of the change in VAT rate seems positive across household categories.

Table 4.11: Household Consumption simulations with VAT of 19% and 20%

			VAT 18%	VAT 19%		VAT 20%	
Decile	Obs	Weight	hh_cons_pe	hh_cons_pe	hh_vat	hh_cons_pe	hh_vat
1	1,300	3,972,919	16,336.86	16,809.65	2,163.06	16,695.81	2,276.91
2	1,323	3,949,315	26,115.44	25,904.89	2,818.45	25,756.55	2,966.79
3	1,384	3,955,727	32,487.92	32,333.58	3,407.95	32,154.21	3,587.32
4	1,451	3,957,469	39,045.54	38,888.66	3,899.64	38,683.41	4,104.89
5	1,465	3,964,592	45,940.22	44,916.32	5,658.89	44,618.49	5,956.73
6	1,472	3,958,192	54,267.74	54,361.74	5,778.17	54,057.62	6,082.28
7	1,601	3,953,899	65,393.79	65,440.15	6,964.60	65,073.59	7,331.16
8	1,705	3,970,670	80,735.58	80,846.48	8,951.84	80,375.33	9,422.99
9	1,862	3,947,471	107,963.36	107,782.40	13,420.39	107,076.10	14,126.72
10	2,158	3,958,288	236,807.36	223,524.30	32,134.28	221,833.00	33,825.56

Source: Author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

The table above further indicates that increases in VAT rates reduce household consumption across most household categories, reflecting higher consumer prices and reduced purchasing power. This finding is consistent with Case (2013), who highlights the negative consumption effects of indirect tax increases.

Notably, lower-income households experience relatively smaller consumption declines, likely due to exemptions and zero-rated goods that shield basic consumption items from VAT. This supports earlier evidence (Ebrill et al., 2).

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND POLICY RECOMMENDATIONS

5.0 Introduction

This chapter is divided into three sections. Section 5.1 presents the summary of the findings, section 5.2 presents conclusions from the study, section 5.3 the policy recommendations, and 5.4 areas for further research.

5.1 Summary

This study employed the UGAMOD tax benefit micro simulation model version 1.5 to assess the impact of VAT policy reforms on revenue, poverty and inequality in Uganda. Using nationally representative household and revenue collection data, the analysis assessed VAT incidence across consumption deciles, evaluated the current VAT structure, and simulated the effects of alternative VAT rate scenarios (18%, 19%, and 20%) on revenue mobilisation, poverty, inequality, and household consumption, while holding all other taxes, transfers, exemptions, and zero-rated items constant.

The results indicate that VAT in Uganda displays mild but non-linear progressivity. While higher-income households contribute a larger absolute share of VAT due to higher consumption levels, middle-income households bear the highest VAT burden relative to their consumption. Poorer households are partially protected by VAT exemptions and zero-rated essential goods. Consumption after VAT is lower across all deciles relative to pre-VAT consumption, with the largest absolute decline observed among the top decile.

Comparisons between the baseline scenario and a counterfactual with no VAT show a reduction in consumption-based poverty of approximately 4.03 percentage points, confirming

that VAT increases poverty primarily through higher consumer prices. However, the removal of VAT leads to a marginal increase in income inequality (0.0039 Gini points), reflecting the fact that higher-income households account for a larger share of VAT payments in absolute terms.

Simulated increases in the VAT rate from 18% to 19% and 20% generate substantial additional revenue—approximately UGX 213 billion and UGX 426 billion annually, respectively. These reforms slightly reduce income inequality but increase overall poverty, particularly among middle-income households and those living just above the poverty line. Household consumption declines under higher VAT rates, with the largest relative losses borne by middle-income households, reinforcing the hump-shaped incidence of VAT.

5.2 Conclusions

The findings demonstrate that VAT in Uganda is neither inherently regressive nor uniformly progressive. Its distributional and welfare effects depend critically on consumption patterns and the structure of exemptions and zero-rating. While increases in the VAT rate are an efficient means of raising domestic revenue, they generate trade-offs by increasing poverty and reducing real consumption, especially among vulnerable non-poor and middle-income households.

Contrary to the traditional view that VAT is strongly regressive, the results show that modest increases in VAT rates can slightly reduce income inequality because higher-income households consume more taxable goods and services. However, this equalising effect is small and coexists with increases in poverty and poverty severity, underscoring the importance of complementary policies.

Overall, the study provides Uganda-specific microsimulation evidence that VAT reforms can raise significant revenue while maintaining mild progressivity, provided the current structure of exemptions and zero-rated goods is preserved. Nevertheless, VAT increases alone are insufficient as a welfare-enhancing policy tool and must be carefully balanced against their poverty impacts.

5.3 Recommendations

First, if the Government of Uganda pursues VAT rate increases to strengthen domestic revenue mobilisation, such reforms should be accompanied by targeted mitigating measures. Conditional or unconditional cash transfer programmes aimed at poor and vulnerable households could offset the adverse welfare effects of higher consumer prices.

Second, policymakers should place particular emphasis on protecting middle-income households and those just above the poverty line, who are disproportionately affected by VAT-induced price increases. Temporary compensatory measures during periods of tax reform could help prevent these households from falling into poverty.

Third, further analysis of VAT exemptions and zero-rated goods is warranted. A more detailed assessment of their revenue costs and distributional benefits would help identify which items are most effective in protecting poor households while minimising efficiency losses.

Finally, the continued use of microsimulation tools such as UGAMOD is strongly recommended for ex ante policy analysis. Such tools enable policymakers to evaluate the

combined effects of tax and transfer reforms on revenue, poverty, inequality, and consumption, supporting evidence-based and socially balanced fiscal policymaking in Uganda.

5.4 Areas for Further Research

Future research could analyse VAT reforms jointly with social protection policies to assess the poverty and inequality impacts of combined tax–transfer packages. Integrating compensatory cash transfers into the microsimulation framework would provide more realistic policy scenarios. More granular assessment of VAT exemptions and zero-rated items is needed to evaluate their revenue cost and distributional effectiveness across different household groups.

Further work could incorporate behavioural responses such as changes in labour supply, savings behaviour, informality, and tax compliance, which are not captured in the study.

.

REFERENCES

- Abhay Pant (2016), The Revenue Impact of VAT in Madhya Pradesh: Empirical Evidence from India. *International Journal of Economics and Finance*; Vol. 8, No. 5; 2016.
- Alesina, Alberto, and Romain Wacziarg, (1998), “Openness, Country Size, and Government,” *Journal of Public Economics*, Vol. 69, pp. 305–21.
- Antwi, S., & Atta, M. F. (2012), Impact of VAT Rate Changes on VAT Revenue in Ghana. *International Journal of Social Science Tomorrow*, 5.
- Atkinson, A. B., & Stiglitz, J. E. (1980). *Lectures on Public Economics*. New York: McGraw-Hill.
- Ayoki, M., & Obwona, M. &. (2005), Tax Reforms and Domestic Revenue Mobilization in Uganda. MPRA Paper 80328. Germany: University Library of Munich,
- Bahl, Roy, (1971), “A Regression Approach to Tax Effort and Tax Ratio Analysis,” *IMF Staff Papers*, Vol. 18 (Washington: International Monetary Fund), pp.570–612.
- Bird, R. a. (n.d.). *Is VAT the Best Way to Impose a General Consumption Tax in Developing Countries*. Toronto:
- Bird, R. M., & Gendron, P. P. (2007). *The VAT in Developing and Transitional Countries*. Cambridge: Cambridge University Press.
- Blinder, A. (2008), The Role of Monetary Policy, *American Economic Review*, 58(. 1), p13-17.
- Case, K. E. (2013), *Principles of economics* (11th ed.). Boston, MA: Pearson Education.
- Das-gupta, A. (2012), An Assessment of the Revenue Impact of State-Level VAT in India. *Economic & Political Weekly*, xlvii (10), 55-64. <http://dx.doi.org/10.2139/ssrn.1953165>.
- Deaton, A. (1989), Rice prices and income distribution in Thailand: A non-parametric analysis. *The Economic Journal*, 99(395), 1–37.

- Desai, Mihir A., and James R. Hines Jr., (2005), “Value-Added Taxes and International Trade: The Evidence” (mimeo, Michigan: University of Michigan).
- Ebrill, L., Keen, M., Bodin, J.-P., & Summers, V. (2001), *The Modern VAT*. Washington, DC: International Monetary Fund.
- Emran, Shahe M., and Joseph E. Stiglitz, (2005), “On Selective Indirect Tax Reform in Developing Countries,” *Journal of Public Economics*, Vol. 89, pp.599–623.
- Fullerton, D., & Metcalf, G. E. (2002). Tax incidence. In A. J. Auerbach & M. Feldstein (Eds.), *Handbook of Public Economics* (Vol. 4, pp. 1787–1872). Elsevier.
- Go, Delfin S.; Kearney, Marna; Robinson, Sherman; Thierfelder, Karen (2004), “An Analysis of South Africa's Value Added Tax”, Conference Paper Presented at the 7th Annual Conference on Global Economic Analysis, Washington DC, USA
- Gordon, R., & Li, W. (1997), Tax structures in developing countries: Many puzzles and a possible explanation. *Journal of Public Economics*, 67(2), 263–306.
- Gupta, S., Keen, M., Clements, B., Mauro, P., Allen, R., & Tareq, S. (2014), *Fiscal policy and income inequality*. Washington, DC: International Monetary Fund.
- Helgason, Agnar Freyr (2017), "Unleashing the 'money machine': the domestic political foundations of VAT adoption". *Socio-Economic Review*. 15 (4): 797–813. doi:10.1093/ser/mwx004.
- Hossian, S. M. (1995), *The Equity Impact of the Value-Added Tax in Bangladesh* (Vol. Vol. 42). Washington DC.: Staff Papers, International Monetary Fund.
- International Monetary Fund (IMF). (2019), *Domestic revenue mobilization in sub-Saharan Africa: Trends and policy issues*. Washington, DC: IMF.
- ITP Paper 0602, International Tax Program, Institute for International Business, Joseph L. Rotman School of Management, University of Toronto.

- Joshua Aizenman & Yothin Jinjarak, (2008), "The collection efficiency of the Value Added Tax: Theory and international evidence," *Journal of International Trade & Economic Development*, Taylor and Francis Journals, vol. 17(3), pages 391-410.
- Kavuma, S. N., Byaruhanga, C., Musoke, N., Loke, P., Noble, M., & Wright, G. (2020). An analysis of the distributional impact of excise duty in Uganda using a tax-benefit microsimulation model (WIDER Working Paper 2020/70). UNU-WIDER.
- Keen Michael, and Ben Lockwood, (2006), "Is the VAT a Money Machine?" *National Tax Journal*, Vol. 59, pp.905–28.
- Keen, M., & Lockwood, B. (2010), *The Value-Added Tax: Its causes and consequences*. *Journal of Development Economics*, 92(2), 138–151.
- Keen, Michael, (2006), "VAT, Tariffs, and Withholding Taxes" (mimeo, Washington: International Monetary Fund).
- Le, T. M. (n.d.). *Value Added Taxation: Mechanism, Design, and Policy Issues*, Paper prepared for the World Bank Course on Practical Issues of Tax Policy in Developing Countries, April 28- May 1, 2003, Washington, DC at page 8.
- Manukaji, I. J., and Nwadiakor, E. O. (2016), *International Journal of Social Sciences and Management Research* Vol. 2 No.1 2016 ISSN: 2545-5303
- Martínez-Vázquez, J., Vulović, V., & Liu, Y. (2013), *Direct versus indirect taxation: Trends, theory, and economic significance*. *International Studies Program Working Paper Series*, 13–10, Georgia State University.
- Ministry of Finance, Planning and Economic Development, (2018), *Background to the Budget FY2018/19*. Kampala.
- Muñoz, S., & Cho, S. (2003), *Social impact of a tax reform: The case of Ethiopia*. IMF Working Paper, WP/03/232. Washington, DC: International Monetary Fund.
- Musgrave, R. A., & Musgrave, P. B. (1989). *Public Finance in Theory and Practice* (5th ed.). New York: McGraw-Hill.

- Nellor, David, (1987), “The Effect of Value-Added Tax on the Tax Ratio,” IMF Working Paper 87/47 (Washington: International Monetary Fund).
- Piggott, John, and John Whalley, (2001), “VAT Base Broadening, Self Supply, and the Informal Sector,” *American Economic Review*, Vol. 91, pp.1084–94.
- Rao Hemalata, (2002), “Value Added Tax: Design and Policy Issues”, Sun Publishing House, Bangalore.
- Rodrik, D., (1998), “Why Do More Open Economies Have Bigger Governments?” *Journal of Political Economy*, Vol. 106, pp. 997–1032.
- Ruebling E. Charlotte (1973) A Value Added Tax and Factors Affecting Its Economic Impact. https://files.stlouisfed.org/files/htdocs/publications/review/73/09/Value_Sep1973.pdf
- Saravane M, (1976), “Tax on Value Added for India: Issues and Alternatives”, *RBI Bulletin*, March, pp. 197-216.
- Secretary-General of the OECD. (2016, September 24). Consumption Tax Trends 2018: VAT/GST and excise rates, trends and policy issues. *Consumption Tax Trends*. doi:10.1787/ctt-2018-en.
- Shoup Carl, (1990), “Choosing among types of VATs”, in *Value Added Taxation in Developing Countries*, edited by Malcom Gillis, Carl Shoup and Gerardo Sicat, World Bank, Washington D.C.
- Sutherland, H., & Figari, F. (2013). EUROMOD: The European Union tax-benefit microsimulation model. *International Journal of Microsimulation*, 6(1), 4–26.
- Tait Alan, (1988), “Value Added Tax: International Practice and Problems”, *International Monetary Fund*, Washington D C.
- Tanzi, Vito, (1992), “Structural Factors and Tax Revenue in Developing Countries: A Decade of Evidence,” in *Open Economies: Structural Adjustment and Agriculture*, ed. by I. Goldin and A.L. Winters (New York: Cambridge University Press), pp. 205–41.

- Uganda Revenue Authority. (2017), Revenue Performance Report FY2016/17. Kampala: URA.
- University of Essex, UNU-WIDER, & SASPRI. (2024). UGAMOD: Tax-benefit microsimulation model for Uganda. UNU-WIDER SOUTHMOD Project.
- Waiswa, R., Ayo, J. O., Kaidu, T., Musoke, N., Nakyambadde, D., Noble, M., . . . Isingoma, a. N. (2018). UNU-WIDER Country Report (SOUTHMOD) - Uganda (UGAMOD v1.1).
- Warwick, R., Harris, T., Phillips, D., Goldman, M., Jellema, J., Inchauste, G., & Goraus-Tańska, K. (2022). The redistributive power of cash transfers versus VAT exemptions: A multi-country study. *World Development*, 151, 105742.
- World Bank. (2018), Uganda poverty assessment: Factoring in resilience and risks. Washington, DC: World Bank.
- Younger, S. D., Sahn, D. E., Haggblade, S., & Dorosh, P. A. (1999). Tax incidence in Madagascar: An analysis using household data. *The World Bank Economic Review*, 13(2), 303–331.

APPENDICES

Table A1: Population-Weighted Consumption Deciles in 2018

<i>Decile</i>	<i>Obs</i>	<i>Weight</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Avg VAT, UgxBn</i>
m	1300	3,972,919	18,973	5,577	-	24,973	3,415
2	1323	3,949,315	28,723	2,205	24,985	32,406	5,170
3	1384	3,955,727	35,742	1,953	32,408	39,160	6,434
4	1451	3,957,469	42,788	2,148	39,162	46,560	7,702
5	1465	3,964,592	50,575	2,491	46,560	55,026	9,104
6	1472	3,958,192	60,140	3,033	55,027	65,466	10,825
7	1601	3,953,899	72,405	4,003	65,468	79,656	13,033
8	1705	3,970,670	89,798	6,332	79,661	101,778	16,164
9	1862	3,947,471	121,203	12,980	101,782	147,607	21,817
10	2158	3,958,288	255,659	173,802	147,653	5,466,197	46,019

Source: author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.

Table A2: Household Consumption simulations with VAT of 19% and 20%

			VAT 18%	VAT 19%		VAT 20%	
Decile	Obs	Weight	hh_cons_pe	hh_cons_pe	hh_vat	hh_cons_pe	hh_vat
1	1,300	3,972,919	16,336.86	16,809.65	2,163.06	16,695.81	2,276.91
2	1,323	3,949,315	26,115.44	25,904.89	2,818.45	25,756.55	2,966.79
3	1,384	3,955,727	32,487.92	32,333.58	3,407.95	32,154.21	3,587.32
4	1,451	3,957,469	39,045.54	38,888.66	3,899.64	38,683.41	4,104.89
5	1,465	3,964,592	45,940.22	44,916.32	5,658.89	44,618.49	5,956.73
6	1,472	3,958,192	54,267.74	54,361.74	5,778.17	54,057.62	6,082.28
7	1,601	3,953,899	65,393.79	65,440.15	6,964.60	65,073.59	7,331.16
8	1,705	3,970,670	80,735.58	80,846.48	8,951.84	80,375.33	9,422.99
9	1,862	3,947,471	107,963.36	107,782.40	13,420.39	107,076.10	14,126.72
10	2,158	3,958,288	236,807.36	223,524.30	32,134.28	221,833.00	33,825.56

Source: Author's calculations using UGAMOD 1.5 and UNHS 2016–17 data set.