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Impact of Indirect Tax Policy Reforms on Revenue Performance in Kenya

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Abstract

The largest source of government revenue in Kenya is taxation. Domestic revenue mobilization is a key priority for providing governments with funds to deliver public services, for sustainable development agendas and investing in development. Tax and non-tax revenue are critical components of domestic resource mobilization. Over the years, there have been major changes in the tax systems of various countries including Kenya. The motivation for these reforms has varied from country to country. For many developing countries, the impending fiscal crisis has provided the need for immediate tax reforms to enhance revenues. Kenya has undertaken massive tax reforms since the late 1980s under the Tax Modernization Programme. The significance of Indirect taxes over direct taxes as a means of raising government revenue has gained momentum and is viewed as more favorable for investment and growth. Little is known about the performance of the reforms in terms of revenue-raising capacity for each tax category. This study aims to examine the impact of tax reforms with respect to pre- and post-reform periods and the factors underlying the observed trends of indirect taxes as one of the revenue sources that is not fully utilized. The objectives of the study were to establish the effects of the introduction of Withholding VAT the introduction of EGMS and switching the tax system from hybrid to a uniform specific or ad valorem Excise tax regime on revenue collection in Kenya. Annual secondary data spanning the period 2010-2019 was used in the analysis. The source of the data was mainly the Kenya Revenue Authority and the Kenya National Bureau of Statistics. Impact evaluation techniques (regression discontinuity and difference-in-difference) also known as quasi-panel analysis techniques were used in the analysis. Stata software was employed in the analysis. From the difference-in-difference model, the analysis reveals that the introduction of EGMS led to an increase in excise revenue by 81.2%. This was significant at a 1% level of significance. VAT increased by 13.4 percent following the introduction of VAT withholding agents. This was equally significant at a 5a % level of significance. These findings are expected to shape policy direction that is aimed at enhancing domestic revenue mobilization. Based on the findings, the study recommends that the Commissioner of Domestic Taxes should map all Medium Taxpayers (MTO) based on risk assessment and enroll additional taxpayers who can serve as potential VAT withholding agents. Further, the study recommends the broadening of the scope of goods covered under the EGMS system, and amendment of the Excise Duty Act to revert to the hybrid system (Higher specific or ad valorem rates).
Keywords: Tax policy, revenue performance

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1. Introduction

1.1 Background of the Study

In the past, developing countries used tax systems to serve numerous objectives, including increasing equity in the distribution of income, promoting savings and investment (facilitating the process of channeling savings into investment); directing investment into necessary activities; encouraging labor-intensive production techniques; correcting externalities; and mobilization of resources to finance government expenditure. Recently, the perception of the role of taxation has shifted fundamentally and gained acceptance in international institutions and academic circles. It is widely accepted that tax systems should be assigned a much narrower role; focusing on raising revenue (Islam, 2001). The main objective of tax policy is to design a tax system that raises enough revenue to meet a Government's revenue target while minimizing the level of distortions (Mackenzie, Orsmond and Gerson, 1997).

Tax Reform is the process of changing the tax structure and the way taxes are collected or managed by the government. According to a publication by the International Monetary Fund, characteristics of an "ideal" tax system in developing countries should include; (i) Substantial reliance on a broadly-based sales tax, such as a value-added tax (VAT), if possible with a single rate and minimal exemptions, and Excise taxes on alcohol, tobacco, petroleum products, and a few luxury items. (ii) Non-reliance on export duties, except possibly as a substitution for income tax for hard-to-tax sectors such as agriculture. (iii) Reliance on import taxation for protective purposes only (iv) An administratively simple form of personal income tax, with limited exemptions, if possible, to personal dependents' allowances, a moderate top marginal rate, an exemption limit large enough to exclude persons with modest incomes, and a substantial reliance on withholding; (v) Corporate income tax levied at only one moderate-to-low rate, with depreciation and other non-cash expenditure provisions uniform across sectors and minimal recourse to incentive schemes for new ventures (Stotsky,1995).

The purpose of this study is to establish the impact of indirect tax reforms (VAT and Excise) on revenue collection in Kenya. This chapter presents the background of the study, statement of the problem, objectives, research hypothesis, significance of the study, scope of the study and limitations of the study.

Global Perspective

Indirect taxes (particularly Consumption taxes) is a tax levied on consumption spending on goods and services. They have two common forms: taxes on specific goods and services (mainly excise duties) and taxes on general consumption (value-added taxes and retail sales taxes).

Consumption taxes such as sales taxes, VAT and excise duties are often categorized as indirect taxes as they are generally not levied directly on the person who is supposed to bear the burden of the tax. The tax is collected from producers and distributors at various points in the value chain, while the burden of the tax falls on consumers assuming that it will be passed on to them in the prices charged by suppliers (OECD,2016).

According to the OECD, VAT is designed to be a tax on final consumption that is broadly neutral towards the production process and international trade. It is widely seen as a relatively growth-friendly tax and a neutral tax that can be imposed on all types of businesses. As such, many countries have sought to raise additional revenues from VAT (rather than other taxes) as part of their fiscal strategies in the aftermath of the global financial and economic crisis.

Excise duties is a per unit tax (specific amount for a unit of the item or volume), that is levied on a specific, narrow range of products. It is assessed by reference to various characteristics such as weight, volume, strength, or quantity of the product, and combined in some cases with ad valorem taxes. Although they generally apply to alcoholic beverages, tobacco products and fuels, their tax base, calculation method and rates vary widely between countries, reflecting local cultures and historical practice. Excise duties are increasingly being used to influence consumer behavior to achieve health and environmental objectives, (OECD, 2016).

Value Added Tax

VAT is an indirect form of tax that is paid to the government by customers but via producers of goods and services. It is a tax that is levied on goods and services and is paid to the government by producers although the actual tax is levied from the end user or consumers who purchase the services and goods. VAT is a multi-stage tax levied at each step of production of goods and services which involves sale/purchase. It is levied at each stage of the value addition chain, with a provision to allow input tax credit (ITC) of tax paid at an earlier stage, which can be set off against the VAT liability on subsequent sales. VAT is intended to tax every stage of sale where some value is added to raw materials and goods, but taxpayers will receive credit for tax already paid on procurement stages. The general principles, that guide the value-added tax, are as follows:

(i) General Tax: It is a general tax that applies, in principle, to all commercial activities involving the production and distribution of goods and the provision of services.

(ii) (ii) Charged as a Percentage of Price: this means that the actual tax burden is visible at each stage in the production and distribution chain. (iii)

(iii) Consumption Tax: It is a consumption tax because it is borne ultimately by the final consumer. It is not a charge on companies.

VAT is, described as a "self-enforcing" tax. The description arises from the nature of the invoice-based credit VAT: a taxable business can claim for the refund of the input VAT only if purchase invoices support the claim—the mechanism provides strong incentives for firms to keep invoices of their transactions and is an efficient means for tax authorities to check and crosscheck for enforcement enhancement. The tax is, however, not entirely 'self-enforcing'. This is because "ghost" invoices and false refund claims are common (Missing trader phenomenon).

In the past decade, more than 160 countries including developing countries, have modernized their tax systems by implementing Value Added Taxes (VAT). Further, eighty percent of countries in sub-Saharan Africa have adopted the VAT, which has become responsible for typically raising around one-quarter of all tax revenue (Keen, 2016).

According to McMoran (1995), opponents to the VAT usually argue that the VAT is more complex to administer than other types of consumption taxation, and the complexity naturally leads to higher administration costs (from the tax authority side) and greater collection costs (compliance costs from the taxpayer side).

Several merits are attributed to VAT including:

(i) Its neutrality as the tax burden falls equally heavily on different products, avoids the cascading effects of a conventional sales or turnover tax and does not distinguish between domestic production and imports. The achievement of neutrality through VAT depends on the universality of its coverage and the uniformity of the rate. Ahmad and Stern (1991) have argued that a comprehensive VAT would be almost impossible to administer in a developing country; economic theory does not suggest that uniformity is a desirable property of an indirect tax system except in special circumstances and the most persuasive arguments for uniformity are administrative. (ii) It allows the tax system to be more broad-based and, therefore, to yield greater revenue. Like any other tax, the revenue productivity of VAT would depend on its design (the rate, the coverage, etc.) and the effectiveness with which it is enforced

(ii) (iii) VAT is less subject to evasion compared with income taxes. If this were the case, however, the record of compliance should be better for VAT than for income taxes. Other studies available to measure the difference between the taxes actually paid and the taxes that should be paid under the existing laws and statutes do not indicate that compliance with VAT is necessarily any better than with income taxes (Silvani and Baer, 1997).

Many countries in the Asia-Pacific region have introduced a VAT (ADB, 1995). In most cases, the rates are uniform, but in a few countries, there are multiple rates. Typically some essential commodities such as unprocessed food are left out. Exports are zero-rated. In India, any person earning an annual turnover of more than Rs.5 lacs (Kes 700,000) by supplying goods and services is liable to register for VAT payment. The VAT systems exempt businesses with a low turnover from any VAT registration and obligations Value added tax or VAT is levied both on local as well as imported goods. The guidelines and rules of Value Added Tax vary from state to state as the tax is collected by state governments.

For instance, India levies both VAT and sales tax. Sales tax is simply calculated as a percentage of the final selling price of goods and services and is levied from customers at the time of purchase of goods and services. Unlike VAT which is levied from both producers of goods and services at each stage of production as well as consumers, sales tax is charged from customers at final purchase of goods or services.

VAT in India is categorized under 4 tax bands (i) Zero-rated where goods and services that fall under this category are exempt from VAT. (mainly items that are basic in nature). Examples of such items include khadi, salt, etc. (ii) 1%: VAT is charged at 1% for items that are relatively expensive in nature. The reason why VAT is charged at 1% on expensive goods is because increasing the rate of VAT will considerably increase the prices of the items that fall under this category. Examples of products that fall under this category include gold, silver, precious stones, etc. (iii) 4-5%: VAT is charged at 4% to 5% on certain items that are used on a daily basis. Examples of items that attract VAT at 4-5% include cooking oil, tea, medicines, etc. (iv) General: Items that fall under the general category attract VAT at 12% to 15%. The items that fall under this category are mainly luxury items such as cigarettes, alcohol, etc.

In China, VAT reforms were fully implemented, resulting in its VAT system being amongst the broadest-based systems (of the approximately 160 countries). The scope of VAT was widely expanded to include the financial and insurance services, real estate and construction services, and lifestyle services sectors (The lifestyle services sector includes cultural and sports, health care and education, travel and entertainment, hospitality, food and beverage, citizen daily services, and other lifestyle services). Unlike other VAT systems which exempt businesses with a low turnover from any VAT registration and obligations (i.e. a registration threshold), the Chinese VAT system imposes a turnover tax on small businesses, which is labeled a type of "simplified VAT method" in the regulation establishing the VAT. A small-scale taxable person (small business) must register for the simplified VAT and remit VAT at a flat rate of 3% of its gross revenue with no entitlement to claim input VAT. A general VAT taxable person must register for the general VAT regime and is potentially entitled to claim input VAT credits incurred on its purchases and issue VAT special invoices.

Le (2003) highlighted that setting a VAT threshold is complex. Some countries recognize that the below-threshold and hence exempted businesses bear the burden of the tax on their input purchase and thus allow them to register voluntarily. Firms in the middle stage or selling zero-rated goods/services have strong incentives to register in the VAT net in order to be entitled to claim their tax credit. As a result, voluntary registration may extend the base to capture too many small, low-turnover businesses; it may, therefore, nullify the effect of the exemption threshold and jeopardize the very purpose of its setting. An IMF survey shows that the thresholds range from 0 (i.e., all businesses are required to register) to $700,000 (in Singapore), and the mean threshold is $90,000 (Ebrill et al. 2001). Even across developed countries, thresholds differ dramatically. For example, Denmark allows for a complete exemption to businesses with annual turnover below $1,500, whereas the exemption threshold for Japan is over $200,000 (Tait 1991). In addition, many countries apply different thresholds to different types of activities. For example, producers may face a lower threshold than the one applied to traders.

Excise Taxes

According to Action Aid International (2018), Excise taxes are indirect (collected by someone other than the government), often levied at the point of sale and included in the price of a product or activity. The taxes are levied on specified goods such as alcohol, tobacco, fuel and luxury goods, and also on activities such as gambling. Hence they are sometimes colloquially known as 'sin' taxes. They can be applied to either domestically produced or imported goods.

Excise taxes are indirect taxes borne by consumers and (usually) flat-rated, and inherently likely to be regressive, like the VAT. For instance, Excise taxes on tobacco and alcohol tend to fall more heavily on people with low incomes in developed countries, hence regressive. However, when the identity of the consumers of the taxed items, and the possibility of exemptions are taken into account, the progressivity of Excise taxes is possible. For instance, Excise taxes on luxury goods such as yachts, perfume, and jewelry, are likely to be progressive, as they are likely to be bought only by the very well-off.

According to the IMF Fiscal Affairs Department, Excise taxes are roughly 1-2% of GDP in low and middle-income countries. Their importance is greater in Asia and Latin America than in Africa (for example, tobacco Excises alone raise 8% of government revenue in Indonesia, where smoking prevalence is very high). Most Excise revenue in developing countries comes from widely used products such as tobacco, alcohol, fuel, cars and (increasingly) electronic communications. For example, in 2009 Excise taxes on tobacco and alcohol raised 90% of non-fuel Excise duty in Egypt and the Philippines, and around 80% in Senegal and the Central African Republic.4 It is possible that the revenue potential of this source will grow as incomes grow. Excise taxes are also levied on luxury products such as perfume, jewelry, inputs for cars, planes and helicopters (and these things themselves), high-end brands and supplies for high-end services (such as pool cleaning). These raise relatively small amounts of revenue because the volume of purchases of these items is small, but where income levels are rising they could contribute greater amounts of revenue. China, for instance, has recently levied a tax on luxury goods.

As well as raising revenue, Excise taxes, particularly on alcohol and tobacco, are used to attempt to influence behavior and realize wider social objectives, on the grounds that higher prices tend to discourage consumption. This seems to be an effective strategy. The World Bank says that "raising taxes on tobacco products is one of the most cost-effective measures to reduce consumption of products that increase mortality, while also generating substantial domestic revenue for health and other essential programs." Taxes on fuel are key to the progressive taxation debate, as domestic fuel (for example, kerosene) is essential for most poor people, and many poor people rely on public transportation, where fares rise when fuel taxes rise. They are also often politically important, with proposals to increase fuel taxes generating protests, for example in 2018 in South Africa, Haiti, and Kenya. Fuel taxes are most often applied to fuels used for transport, such as petrol and diesel. Because this raises the cost of transporting goods, it affects the whole economy. Fuels for domestic heating and lighting (such as kerosene), crucial to many low-income households, are often taxed at lower rates or exempted. Fuels for agricultural or industrial vehicles, and for electricity generation, are also usually taxed at lower rates. Fuel taxes range from as much as 70% of the retail price (e.g. in Turkey and the Netherlands) to zero. Fuel taxes also carry the policy objective of influencing behavior, this time in order to reduce the consumption of carbon-emitting products for environmental reasons.

In Zimbabwe, Excise taxes are applied to alcohol, tobacco, fuel (petrol, diesel and illuminated kerosene), second-hand motor vehicles, and airtime (on mobile phone networks). The tax is gaining popularity in African countries but is very controversial because of its impact on the poor. In Mozambique, excise is levied on planes and boats, 'air vehicles without engines', and second-hand clothes, as well as tobacco and alcohol products. Uganda imposed a tax on the use of social media and money transactions by mobile phone (which has sparked a massive public backlash). In Bangladesh, bank deposits are taxed, with higher rates for larger deposits. Air tickets are also taxed, as are tobacco products and alcohol. The Philippines has recently levied a tax on sugary drinks (Action Aid, 2018).

Kenyan Perspective

Kenya has undertaken several major administrative reforms since independence in 1963. Tax reforms in Kenya were

initiated under the tax modernization program. Kenya has undergone reforms on the administration side and the policy side.

The main reason for undertaking tax reforms in Kenya was to address issues of inequality and to create a sustainable tax system that could generate adequate revenue to finance public expenditures. In this respect, the tax modernization program was introduced in the country for the achievement of a tax system that was sustainable in the face of changing conditions locally and internationally. Policies were shifted towards more reliance on the indirect taxes as opposed to the direct taxes.

Value-Added Tax Reforms in Kenya

VAT was introduced in Kenya in 1990 as a broad-based tax levied on the consumption of, not only locally manufactured and imported goods but also on services with a view of generating substantial revenue (Karingi & Wanjala, 2005). VAT is considered an effective means to collect revenue as a reformed sales tax.

Value Added Tax (VAT) is a consumer tax charged on the supply of taxable goods or services made in Kenya and on the importation of taxable goods or services into Kenya. It is a broad-based and modern tax that covers the value added to each commodity by a firm during all stages of production and distribution and enables an efficient collection system (increases efficiency and reduces tax evasion). All traders who have a turnover of taxable supplies of KES 5 million per annum and above are required by law to register for VAT, and then collect and remit VAT on their taxable supplies, with an allowance to recover tax paid on their purchase of inputs. Only registered traders are required to charge VAT, though there are provisions for voluntary registration even when a trader is below the KES 5 million threshold.

VAT performance has subsequently contributed to improved revenue collection at lower administrative and compliance costs. Indeed, the importance of VAT is evidenced by the fact that it accounts, on average, for 23% of total tax revenue, coming second after income tax.

In Kenya, supplies of goods and services are either taxable, tax-exempt or zero-rated. Exempt relieves the exempt trader's value added from the tax, but all his purchases including capital goods are taxed. Therefore, exemption eliminates the tax on value added in the final stage only. Although the retailer would not charge value added on its sales, the retailer would not be entitled to a credit for tax paid on the purchase of an exempt item. Exemption partially frees users of certain goods and services from VAT. Exempted users in Kenya do not register for VAT and do not file returns. Exemptions from VAT in Kenya include medicaments, rice, maize and wheat, live animals, unprocessed milk, fertilizers, plant and machinery, milk prepared for infants, aircraft parts, operation of current, savings and deposit accounts, et cetera.

However, in the case of zero-rated goods and services, the seller pays no tax on its sale and additionally receives a credit for the tax paid on the purchase of materials and other inputs used. Zero-rating ensures that a product is truly free of VAT. With zero-rating, unlike exemption, only the final sale of the commodity is zero-rated since any tax paid would be credited on the last sale. Supplies and services that are currently zero-rated include milk, bread, maize flour, wheat flour, ship stores, etc. For a broader tax base, exemption is preferred to zero-rating. In addition, the administrative burden of the zero-rating procedure can be tedious.

Tax incentives, in this case exemptions and zero rating of a number of goods and services, lead to low productivity (Institute of Economic Affairs). In addressing these challenges the government introduced VAT legislation that seeks to make the VAT system simpler and rationalize zero-rated and exempted supplies. By removing some goods and services from the exemption and zero-rated brackets, the government would get more revenue from VAT. Reducing the number of zero-rated goods and services will also reduce the backlog of refunds which has posed a great challenge to KRA.

VAT also plays a great role in the revenue mobilization in Kenya. Further steps taken at VAT rationalization included the further reduction of the standard rate from 18% in the '90s to 16% by 1998 and the reduction of the rate bands from 15 to 3. (Institute for Fiscal Studies) suggests that one of the most common justifications for differential commodity tax rates in policy debates is distributional. For instance, the poor spend a greater proportion of their budget on food and thus this should be taxed more lightly.

The establishment of an autonomous revenue authority, KRA, in 1995 marked an important reform not only in VAT administration but in the tax administration in general. This made the tax administration, in this case, VAT, service-oriented, professional and efficient. VAT is administered by the Domestic Tax Department of KRA.

Withholding tax is a system used by the tax authorities the world over to bring taxpayers into the tax net. It is also a way of collecting tax in advance to meet the government's need for cash; necessitated by its mandate to provide public goods and services to the people. One of the withholding tax systems in Kenya is that of withholding VAT where taxpayers who have been appointed by the Kenya Revenue Authority (KRA) as agents are required to withhold a certain portion of the VAT and pay it over to the tax authority. Benefits of the Withholding System of taxation include a decrease in collection costs, timely availability of money to the government throughout the year and an increase in compliance.

The Finance Act 2014 re-introduced the WH VAT system at the rate of 6% with effect from 19th September 2014 as a measure to ensure that all VAT due to the government is paid. One of the withholding tax systems in Kenya is that of withholding VAT where taxpayers who have been appointed by the Kenya Revenue Authority (KRA) as agents are required

to withhold a certain portion of the VAT and pay it over to the tax authority. The system involves a declaration of VAT by both the supplier and purchaser who has been appointed as a WH VAT agent. Only KRA-appointed Withholding VAT Agents are authorized to withhold. KRA initially appointed government agencies and later expanded the list to include other taxpayers. The list of agents has continued to grow with almost all taxpayers falling under large and medium taxpayers having been appointed agents. The following are some categories of Withholding tax agents in Kenya; Government Ministries, Departments, Commissions, Corporations, banks, Universities, County Governments, Independent offices, State corporations and other agencies.

Electronic Tax Register (ETRs) was introduced in Kenya in 2004 through gazette notice no. 7 of October, 2004. The law makes it mandatory for businesses registered for VAT to issue tax invoices which must be ETR generated or supported by ETR receipts (James Ogero). This was expected to enhance the efficiency of administration, reduce evasion and address the perennial problem of poor record-keeping for business transactions by shortening the time taken for the preparation of VAT returns (KRA, 2010).

Further reforms include the removal of petroleum products from exempt status to taxable status with effect from 1st September 2018 in accordance with the relevant legal provisions. The charge is in accordance with the VAT Act, 2013 which deferred implementation for three (3) years up to September 2016, with a further two (2) year extension being granted under Finance Act, 2016 (KRA, 2018). VAT is currently chargeable on all petroleum products including petroleum oils, motor and aviation spirits, illuminating kerosene and gas oils, among others at a rate of 8% of transaction value. This rationalization has led to an increase in the number of rates from 2 to 3 (0%, 8% and 16%).

Excise Tax Reforms in Kenya

Excise duty is levied on a specified schedule of goods and services and charged at either specific or ad valorem rates (value-based) depending on the type of goods. Excise tax can be defined as a levy that is applied selectively on particular goods and services. The tax may be levied on either production or sale, to domestic output or imported and is directly paid by the manufacturers; but the tax burden is passed to the consumers through an increase in prices (Karingi & Wanjala, 2005).

A review of the Excise tax policy indicates that Kenya maintained a specific Excise tax regime. For the better part of the mid to late 1980s, Excise duty on cigarette and tobacco products was increased annually to keep pace with domestic inflation and, in turn, maintain the level of real Excise duty. Reforms in Excise tax were characterized by shifting between specific and ad valorem tax regimes and variation in the schedule of excisable goods. This presented a challenge of balancing between revenue maximization and pursuing a specific tax regime. A number of Excise tax rates were converted from specific to ad valorem to help the government achieve its multiple objectives including ensuring that Excise tax revenue increased in parallel with inflation, thus eliminating the need for discretionary measures. The automatic inflation adjustment was intended to offset the anticipated revenue loss from reduced import duty rates, allowing for the rationalization of VAT rates and increasing control over high-tax rate goods.

In the late 1980s, Kenya initiated a Tax Modernization Programme (TMP) to reform the tax system. In this respect, there was a switch between specific rate and ad valorem regimes, in order to ensure that revenue maximization was maintained. For example, although Kenya maintained a specific rate regime during the implementation of TMP, in the early 1990s, there was a switch from specific to ad valorem, where there were discretionary annual changes to Excise duty for beer and tobacco to keep in line with inflation. Further, in the late 1990s, there was the rationalization of multiple Excise rates on cigarettes to a uniform rate in order to simplify collection and curb mis-declaration of imported cigarettes. In 2000, the government reverted back to a specific tax regime from ad valorem. Generally, ad valorem is used where the objective is to raise revenue, where specific Excise duty is imposed to correct for externalities (Keen, 1998).

Some of Kenya's excisable commodities include soft drinks, alcoholic and non-alcoholic beverages, cigarettes, tobacco, fuel, motorcycles and motor vehicles. Excisable services mainly include telephone and internet data services, airtime, fees charged for money transfer services by cellular phone service providers, banks, money transfers agencies and other financial service providers, gambling, etc. Other than on excisable services, airtime and motor vehicles, Excise taxes on beer, cigarettes, petroleum, et cetera are currently charged on a specific basis that is, per volume or quantity.

In Kenya, Excise taxes, particularly on alcohol, tobacco and gambling, are used to attempt to influence behaviour and realize wider social objectives, on the grounds that higher prices tend to discourage consumption. . Characteristic of these commodities is that they have a low own-price elasticity of demand implying that their responsiveness to price change is low and hence minimum shifting of consumer purchases. It is these characteristics that make high tax rates applicable. However, price differences may promote smuggling from neighboring countries that do not levy these taxes. This risk is particularly cited for alcohol and cigarettes Fuel taxes are likely to be regressive, as fuel is essential for domestic use and for the transport of people and products, affecting everyone, however poor. Taxing fuel for private cars is likely not to be regressive in most low-income countries, but may be hard to separate out from other transport fuels.

Historically, Excise duty has been viewed as a tax aimed at influencing consumer behavior by punishing those consuming

products that are viewed as having major externalities both for the consumer and society. This has seen the tax assigned a loose moniker as a 'sin tax', based on the fact that Excise duty was historically levied on products like alcohol, tobacco, motor vehicles and petroleum. These were products viewed as having a big impact on society and hence high rates of Excise duty were levied on them to enable the Government to counteract their impact on the users and affected third parties. The evolution of Excise duty in the recent past indicates the scope of excisable goods has expanded with products like bottled drinking water, cosmetics, and soft drinks, among others being brought into the Excise duty net.

Additionally, the scope of Excise duty has expanded to include services. In the year 2013, financial services and money transfer services were brought into the Excise duty net. The introduction of Excise duty on traditionally non-excisable products as well as services has gone to dispel the notion that Excise duty is a 'sin tax' but a means of revenue collection. (Murungi 2015) suggests that whether the evolution of Excise duty will translate into higher revenue collection for the Government is subject to the distribution of the applied rates on the Laffer curve.

Figure 1.1 below shows the overall performance of VAT and Excise taxes, over the FY 2000/2001 to 2019/20. There has been a steady growth in VAT domestic over the FY 2015/2016 to 2019/20, followed by VAT Imports, Excise Domestic and Excise Imports.

Figure 1.1: % Composition of Tax Revenue for the FY 2000/20001 to 20019/2020

1.2 Statement Problem

Taxation is the key source of revenue that the government uses to provide public services to its citizens. The tax structure in Kenya is skewed heavily towards income taxes and Value Added Taxes (VAT) as the largest source' of revenue. The Kenya Revenue Authority's Seventh Corporate Plan (2018-2021) indicates that VAT, Corporate Income Tax, Personal Income Tax, Import Duty and Excise Duty account for 90 percent of Kenya's core revenues. The country has however not realized its full potential in raising different taxes for the past 25 years. There exists compliance tax gaps in almost all the tax heads.

A tax gap is the difference between the actual taxes collected and those that would be collected under full compliance. By estimating the tax gap, it is possible to obtain relevant information about the degree of non-compliance. KRA's 7th Corporate Plan highlights the tax compliance gap for the key tax heads as follows: VAT (45%), Corporate Income Tax (17.6%), Personal Income Tax (34.3%), Import Duty (35.6%) and Excise Duty (15.2%).

Little is known about performance of Indirect tax policy reforms in terms of enhancing revenue collection. This study aims to analyze the impact of Indirect tax policy reforms in Kenya in reducing the Indirect tax gap (i.e. VAT-45% and Excise duty-15.2%) and achieving revenue growth.

This study evaluates whether Indirect Tax reforms in Kenya have been effective in raising more revenue to handle the fiscal challenges imposed by an increasing fiscal deficit. Against this backdrop, the study sought to determine: The impact othe f introduction of VAT Tax withholding agents on tax revenue, the impact of the introduction of an excisable Goods Management System on Excise revenue and finally the effect of switching the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya

1.3 General Objective

The broad objective of the study is to establish the impact of Indirect Tax Reforms on Revenue Performance in Kenya.

1.3.1 Specific Objectives

The specific objectives will include:

To establish the impact of the introduction of VAT Tax withholding agents on tax revenue in Kenya

To examine the impact of the introduction an of excisable Goods Management System on Excise revenue in Kenya

To find out the impact of switching the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya.

1.4 Research Hypotheses

Ho1: The introduction of withholding VAT agents has no impact on VAT revenue in Kenya

Ho2: The Introduction of EGMS has no impact on Excise duty revenue in Kenya

Ho3: Switching the tax system from hybrid to a uniform specific/ ad valorem rate has no impact on Excise duty in Kenya.

1.5 Significance of the Study

This study will be of value to:

The policy makers. The study will help in creating awareness with regard to the impact of Indirect tax policy reforms in Kenya especially in regards to the objective of Excise duty policy reforms as a discriminatory tax or simply as a revenue raising tool.

Kenya Revenue Authority, Treasury and other Government agencies, will add knowledge on the importance and impact of EGMS on Excise revenue.

The academicians. This study will contribute to the already existing body of knowledge on the impact of Indirect Tax reforms in Kenya. In addition, the study will stimulate further research in the area of taxation in Kenya.

1.6 Scope of the Study

The study focuses on the impact of indirect tax Policy reforms on tax revenue in Kenya between the Financial Year 2010 to Financial Year 2019 in order to assess the trends as well as tax revenue yield. The specific components of indirect tax policy reforms to be covered include: change in VAT Tax bands, introduction of VAT Tax withholding agents, shifting

between specific and ad valorem Excise tax regime, and introduction of Excise duty on services.

2. Literature Review

2.0 Overview

This section reviews theoretical and empirical literature on the impact of tax reforms on revenue. It provides a contextual understanding of indirect tax reforms and theoretical contributions of an optimal tax structure. The theoretical review highlights various theories that have been used to measure the impact of these reforms to trade. Secondly, previous empirical research performed in relation to indirect tax reforms and various methodological approaches that can be applied to estimate the impact of tax reforms on revenue. Then a critique and summary of the literature review is made where the gaps in literature to be filled by this study are identified.

2.1 Value Added Tax Reforms

VAT is a multi-stage tax levied at each step of production of goods and services which involves sale and/or purchase. It is levied at each stage of the value addition chain, with a provision to allow input tax credit (ITC) of tax paid at an earlier stage, which can be set off against the VAT liability on subsequent sale. VAT is intended to tax every stage of sale where some value is added to raw materials and goods, but taxpayers will receive credit for tax already paid on procurement stages. Most countries have modernized their tax systems by implementing Value Added Taxes (VAT) reforms.

2.1.1 VAT Withholding

Withholding tax is a system used by the tax authorities the world over to bring taxpayers into the tax net. It is also a way of collecting tax in advance to meet the government's need for cash; necessitated by its mandate to provide public goods and services to the people. One of the withholding tax systems in Kenya is that of withholding VAT where taxpayers who have been appointed by the Kenya Revenue Authority (KRA) as agents are required to withhold a certain portion of the VAT and pay it over to the tax authority. Benefits of Withholding System of taxation include: decrease in collection costs, timely availability of money to the government throughout the year and increase compliance.

This is not a new tax but an enforcement measure to ensure that all VAT due to the Government is paid. The system involves the declaration of VAT by the supplier and withholding VAT agent. 'Withholding VAT Agent' means all Government Ministries, Departments and Agencies required to withhold VAT in accordance with Section 25A of the VAT Act 2013.

When a supplier makes taxable supplies and invoices a withholding VAT Agent, the payment for the supply will be made less the withholding VAT. On payment of the withheld VAT to the Commissioner a withholding certificate will be issued online to the supplier which will be used as credit when filing the next VAT 3 return. The withholding of VAT by a withholding VAT Agent shall NOT relieve the supplier (Taxable person) of the obligation to charge VAT at 16% and file monthly returns in accordance with the relevant provisions of the VAT Act 2013. Withholding VAT shall be operated at the rate of 6% of the taxable value at the point of payment by the Withholding VAT Agent

The Finance Act 2014 re-introduced WH VAT system at the rate of 6% with effect from 19th September 2014 as a measure to ensure that all VAT due to the government is paid. One of the withholding tax systems in Kenya is that of withholding VAT where taxpayers who have been appointed by the Kenya Revenue Authority (KRA) as agents are required to withhold a certain portion of the VAT and pay it over to the tax authority. The system involves a declaration of VAT by both the supplier and purchaser who has been appointed as a WH VAT agent. Only KRA-appointed Withholding VAT Agents are authorized to withhold. KRA initially appointed government agencies and later expanded the list to include other taxpayers. The list of agents has continued to grow with almost all taxpayers falling under large and medium taxpayers having been appointed agents. The following are some categories of Withholding tax agents in Kenya; Government Ministries, Departments, Commissions, Corporations, banks, Universities, County Governments, Independent offices, State corporations and other agencies.

2.2 Excise Tax Policy Reforms

Excise tax relates to a form of taxation that is applied to a narrow base of goods (and services) that primarily are seen to have a level of harm associated with their consumption, typically tobacco, alcohol, fuel, motor vehicles, and gambling. Excise taxes are classified by the Organization for Economic Co-operation and Development (OECD) as being those taxes that are: levied on particular products, or on a limited range of products, imposed at any stage of production or distribution and are usually assessed by reference to the weight or strength or quantity of the product, but sometimes by reference to the value. Excise is not a VAT or sales tax, which the OECD differentiates by reference to the application of such taxes (and tax credits for business inputs) at each stage or tier within the supply chain, as well as a generally broader tax base. Excise is not usually levied instead of such taxes but rather, levied in addition to such taxes.

Excise can also be levied on imported goods, in which case they are often referred to as 'like goods' or goods which are like those domestically manufactured goods subject to Excise. Excise duties in this context are generally collected by the local customs agency at the time the goods are declared at importation, along with any customs duties and VAT. Under the OECD classification of taxes, where an Excise duty is to be collected from imported goods, it is not considered to be a 'customs' duty but is considered to be an Excise tax.

Traditionally, Excise has been used to raise revenue with the tax levied on high-volume, relatively priced inelastic

goods for which there are few substitutes. Today, Excise policy is largely driven by the correction of negative externalities and as such, the most common forms of goods subject to Excise are tobacco, alcohol, motor vehicles, and fuels, where Excise tax is used to capture those negative externalities in the price paid by the consumer. Excise taxes are now moving away from ad valorem or value-based taxes that have been designed to solely raise revenue and towards specific-rate taxes with the tax base relating directly to the cause of harm, such as the alcohol content, weight of tobacco, the quantity of fuel or level of CO2 emissions from a vehicle, such as a litre of alcohol, kilogram of tobacco, a stick of cigarette or per tonne of CO2.

The effectiveness of a discriminatory tax, such as Excise, on various products deemed 'luxuries' or even 'harmful to health' has been debated regularly in recent years. The concept of 'effective' needs can be discussed in the context of what the tax is trying to achieve in terms of government policy. For instance, it's expected that the objective of a discriminatory tax on these products would be to raise revenue or externalize perceived harm from consumption, or both. (Preece, 2015).

Excise taxes are taxes on the manufacture or production of certain goods and services and they have the effect of increasing the price of the good or service being taxed as the manufacturer or supplier seeks to recover this additional tax burden when they sell their product. In some cases, the market may not allow for this full cost to be passed on and the result is a fall in the manufacturer's or supplier's profit margins. With any price rise for the consumer resulting from the Excise tax being built into the price, (for price-elastic goods), we can also expect to see a reduction in consumption of that product as consumers respond to the additional cost they must incur to consume the good in question. In short, Excise taxes have the effect of reducing demand and consumption of any good subject to the tax and will place pressure on the manufacturer's or supplier's margins as they attempt to maintain sales and market shares in this environment of reduced demand.

As the EAC member countries work towards the formation of an economic bloc, further issues will also arise where Excise is payable on certain goods in one member country but not in another in the same fashion as where goods have significant Excise rate differentials. Simply, it makes business or consumer sense to purchase such goods Excise Free in one country with a view to bringing those goods back to a country that has Excise payable.

2.2.1 Switching from a Hybrid system to a uniform Specific or Ad valorem Tax Regime

In Kenya, part of the reforms in the Excise tax was characterized by shifting between specific and ad valorem tax regimes. A review of the Excise tax policy indicates that, at the time of implementing the tax modernization programme, Kenya maintained a specific Excise tax regime. For the better part of the mid to late 1980s, Excise duty on cigarette and tobacco products was raised annually to ensure that they kept pace with domestic inflation and, in turn, maintained the level of real Excise duty. This presented a challenge of balancing between revenue maximization and pursuing a specific tax regime. As part of the TMP, and to support the still valid objective of revenue maximization, there was a change in the Excise tax regime in 1991/92. A number of Excise tax rates were converted from specific to ad valorem to help the government achieve its multiple objectives of ensuring that Excise tax revenue increased in parallel with inflation, thus eliminating the need for discretionary measures. This automatic inflation adjustment was intended to offset the anticipated revenue loss from reduced import duty rates; allowing for the rationalization of VAT rates and increasing control over high-tax rate goods, and giving equal tax treatment to all types of beer, and closing the gap between malt and non-malt beer.

In the late 1980s, Kenya initiated a Tax Modernization Programme (TMP) which was meant to reform the tax system affecting Excise tax policy. In this respect, there was a switch between specific rate and ad valorem regimes, in order to ensure that revenue maximization was maintained. For example, although Kenya maintained a specific rate regime during the implementation of TMP, in 1991/2, there was a switch from specific to ad valorem, where there were discretionary annual changes to Excise duty for beer and tobacco to keep in line with inflation. Further, in 1997/98 there was rationalization of multiple Excise rates on cigarettes to uniform rate in order to simplify collection and curb mis-declaration of imported cigarettes. In 2003/04, the government reverted back to specific tax regime from ad valorem.

Specific taxes are levied as a flat amount per physical unit, say per stick or package for cigarettes or unit of alcohol or liter for alcoholic beverages. Ad valorem taxes are a percent of the price (wholesale or retail) of the good. Which is better? As usual in economics and life, there is not always a simple and clear answer. Each approach has its merits and problems, and the best trade-off between the two may differ from country to country, from tobacco to alcohol, and even from item to item within each category.

One important advantage of specific taxes is that they simplify administration. The tax inspector only needs to be able to count and does not have to worry about the often troublesome issue of valuation. In addition, since one objective in taxing alcohol and tobacco is to discourage consumption, imposing the tax on the target – the tobacco or alcoholic content – and not the value of the product makes sense. The most important problem with specific rates is that such taxes have generally proved to be "sticky" – difficult to change – in the face of inflation, with the result that real revenues tend to decline over time, thus decreasing both the public health effectiveness of the tax and its possible efficiency advantage as a revenue raiser compared to other

possible revenue sources. Although it is easy to circumvent this problem by including a provision in the law requiring an annual adjustment in specific Excise tax rates in accordance with changes in the general level of prices, surprisingly few countries have taken this obvious step.

Kenya is one of the countries that has taken steps to incorporate the adjustment for inflation in its Excise legislation. Other countries may be reluctant because if the rate of inflation is high it is also likely to be variable, and frequent revisions in specific duty rates can create significant undesirable incentives for anticipatory stock-building, as evidenced in the Philippines tax reform (World Bank 2014).

In addition, uniform specific taxes also discriminate against relatively cheaper products since tax as a proportion of the final price constitutes a larger proportion of lower prices. For this reason, such taxes are often applied at different rates to lower-priced products or varieties of products e.g. In Kenya, the application of lower rates for spirit based ready to drink products as opposed to spirits, which are assumed to be consumed more by low-income people or the granting of a remission at the rate of 90 percent on beer made from sorghum, millet or cassava grown in Kenya, following the introduction Excise duty on sorghum based beer in the 2014/2015 budget.

Ad valorem taxes, although less adversely affected by inflation and often imposed for distributional reasons (as discussed below), have their own problems. Since such taxes are more complicated to administer, sometimes administratively-determined prices are used as the tax base thus converting the ad valorem tax to a specific tax. On the whole, international experience suggests that the specific tax approach is probably the best way both economically and administratively to impose relatively high taxes on products like alcohol and tobacco

Generally, ad valorem is used where the objective is to raise revenue, whereas a specific Excise duty is imposed to correct for externalities.

2.2.2 Introduction of Excisable Goods Management System (EGMS)

Historically, Excise duty has been viewed as a tax aimed at influencing consumer behaviour by punishing those consuming products that are viewed as having major externalities both for the consumer and society. This has seen the tax assigned a loose moniker as a 'sin tax', based on the fact that Excise duty was historically levied on products like alcohol, tobacco, motor vehicles and petroleum. These were products viewed as having a big impact on society and hence high rates of Excise duty were levied on them to enable the Government to counteract their impact on the users and affected third parties. The evolution of Excise duty in the recent past indicates the scope of excisable goods has expanded with products like bottled drinking water, cosmetics, soft drinks, among others being brought into the Excise duty net.

In efforts to tackle illicit trade, maximize tax revenue and reduce tobacco consumption, the Kenyan government has in the past taken several initiatives that are in line with global initiatives. The initiatives include the introduction of paper tax stamps back in 2003; the introduction of the electronic cargo tracking system in 2010; and the implementation of a single specific tax regime for cigarettes in 2011 (Ross, 2017). An initiative this study focuses on is the track and trace system introduced by the Excisable Goods Management System (EGMS) Regulations 2013. The system came into force on 5th November 2013 and was introduced mainly to enhance Excise tax revenues (Government of Kenya, 2013).

Based on the aforementioned, EGMS 2013 regulation, both domestic manufacturers and importers of excisable goods are required to register with the Commissioner-General of the Kenya Revenue Authority (KRA); install the EGMS in their production or import facilities; and affix every package of specified excisable goods with an Excise stamp. The regulation further requires that the Excise stamps facilitate the tracking of excisable goods along the supply chain; enable accounting for the production/quantity of excisable goods manufactured or imported; and facilitate persons in the supply chain to authenticate the stamps and excisable goods. Players in the supply chain including manufacturers, importers, distributors, and retailers are required to verify and authenticate the stamps and excisable goods before admitting them into their premises. The regulation was therefore designed to enhance Excise tax revenues by accounting for production and at the same time curbing illicit products (Government of Kenya, 2013).

(Murungi 2015) suggests that whether the evolution of Excise duty will translate into higher revenue collection for the Government is subject to the distribution of the applied rates on the Laffer curve.

2.3 Theoretical Literature

This section describes various taxation theories that have been used to measure the impact of tax reforms.

2.3.1 Optimal Tax Theory: The Atkinson-Stiglitz Theorem

The preference for direct versus indirect taxes is essential to the optimal design of tax structures. Various forms of taxation affect the goals of efficiency and equity differently. Scholars have made contributions to demonstrate the superiority of direct over indirect taxes under specific conditions (Hicks, 1939).

Atkinson and Stiglitz theorem postulates that, in an economy where individuals differ only in their earning abilities, the government can impose a general income tax, while where the utility function is separable between labor and all commodities, then the optimum tax design would need no indirect taxation. Authors Ramsey, 1927; Diamond and

Mirrlees, 1971 studied the interaction of direct and indirect taxes in the realization of equity and efficiency goals.

Vazquez, Vulovic & Liu (2011), examined how important aspects of the economy (e.g., the scope of tax evasion) and heterogeneity among taxpayers would rationalize an optimal tax design including both direct and indirect forms of taxation as follows:

In tax administration, consideration for the optimal tax mix requires consideration of enforcement and evasion issues. According to Boadway, Marchand and Pestieau (1994) if different taxes have different evasion characteristics and assuming only income tax can be evaded (or can be evaded more easily), an optimal tax structure with a critical role for indirect taxes materializes.

Cremer and Gahvari (1995) show that differential commodity taxation is a crucial factor of an optimal tax structure where otherwise identical individuals are uncertain about the wage they would earn.

Naito (1999) found that imposing a non-uniform commodity tax can improve welfare, once the assumption of constant marginal cost of production is abandoned and the production side of the economy is unequivocally introduced in the analysis.

According to Pestieau and Rochet (2001) differential commodity taxes do have a role to play as instruments of optimal tax policy - where individuals differ in several unobservable characteristics (productivity and endowments).

Naito (2004) shows that indirect redistribution such as imposing a tariff on unskilled human capital-intensive goods can increase the efficiency of, and complement, an income tax system. This can be achieved by using a commodity tax to increase social welfare, assuming that individuals with greater ability have a comparative advantage in accumulating skilled human capital.

Dahlby (2003) contends that levying both direct and indirect consumption taxes could enhance the transparency of the tax system, particularly when there are several tiers of government with independent taxing powers.

According to Kim (1998), Dahlby (2003) and Li and Sarte (2004), switching the tax mix toward consumption taxation and away from income taxation has significant growth effects.

Atkinson-Stiglitz (1976) noted that the extent to which indirect taxes are employed may depend on consumer preferences; for example, horizontal equity considerations can introduce constraints on the structure of income taxes. The costs of tax administration could also affect the optimal tax structure.

2.3.2 Optimal Tax Theory: Diamond- Mirrlees & Atkinson-Stiglitz

Diamond and Mirrlees (1971) contend that optimal taxes are zero on all intermediate goods while Atkinson and Stiglitz (1976) suggest that optimal taxes are equal across all final consumption goods, with known exceptions for goods that generate externalities and that justify corrective, Pigovian taxes or subsidies. For standard goods, differential commodity taxes can be optimal if goods vary in their complementarity with leisure, if these taxes affect the wages paid to workers of different skills, or if preferences for goods are correlated with individual abilities as discussed in Kaplow (2008b), Naito (1999), and Saez (2002b).

Diamond and Mirrlees generally prohibit taxes on intermediate inputs to production as they distort the allocation of factor inputs. They also argue against taxes on corporate accounting profits because they distort the return to capital for a subset of the economy, thus encouraging capital flight. The theory implies no taxation of human and physical capital (as both are inputs to future production) and taxing them would be restrictive to the economy.

Atkinson and Stiglitz highlighted that the optimal taxation of final goods is uniform when a fully nonlinear income tax is available.

Diamond and Mirrlees (1971) and Atkinson and Stiglitz (1976) postulated that indirect taxation should have a simple structure: taxes ought to avoid intermediate goods and be uniform across final goods. A value-added tax (VAT), also known as goods and services tax (GST), is well designed to implement these recommendations. The VAT design implemented in OECD countries exempts intermediate inputs (including physical capital) and applies equally to all final goods.

Value-added tax is a widespread policy. According to OECD, more than 130 countries use a value-added tax (OECD, 2009). According to Mankiw, Weinzierl & Yagan (2009), Value-added taxes are laden with exceptions and rules that violate the guidelines of optimal tax policy. They stated that most countries exempt “basic goods,” such as food from the value-added tax to lower the tax burden on low-income individuals, Atkinson and Stiglitz (1976) suggest that there are better mechanisms, such as redistributive income taxation, for achieving that goal.

2.3.3 Optimal Commodity Taxation: Ramsey Rule

According to Aytac (2018), optimal taxation reflects society’s choices between the rival goals of equality and economic efficiency, to maximize social welfare. The optimal taxation of commodities that was launched by Ramsey in 1972 is based on the rule of inverse elasticity, such that the taxation of goods with low elasticities of demand at a higher rate will reduce the loss of efficiency. The criticism of this rule is the fact that whereas luxury goods have high price elasticity, essential goods to meet basic needs, on the other hand, have low price elasticity of demand. Assuming that consumers are similar, it is argued that the taxation of luxury goods at a lower rate than necessity goods will have a negative effect on tax equity.

2.3.4 Tax Reform Theory

According to Rao (2000), the perspective of tax reform has undergone significant changes over the years in line with the changing perception of the role of the state. The latest approaches to reform lay prominence on minimizing distortions in tax policy to keep the economy competitive. Minimizing distortions implies reducing the marginal rates of both direct and indirect taxes and reducing differentiation in tax rates to reduce unintended distortions in relative prices. To accomplish this, the approach suggests broadening of the tax bases.

Consequently, over the years, emphasis has shifted from vertical equity where both direct and indirect taxes are subject to high marginal rates with minimal differentiation in rates, to horizontal equity where the taxes are broad-based, simple and transparent and subject to low and less differentiated rates. Equity refers to improving the living conditions of the poor and has to be achieved mainly through human resource development and expenditure policies, instead of reducing the incomes of the rich as was envisioned in the 1950s and 1960s (Rao, 2000). The following are three different models of tax reform:

2.3.5 The Optimal Tax Theory: Ahmad and Stern

The optimal tax (OT) theory (Ahmad and Stern 1991) is satisfactory in terms of its theoretical soundness, but has been found to be impractical in its applications. Besides the trade-off between efficiency and equity in tax policy, the information and administrative costs of designing an optimal tax model have been found to be prohibitive and, therefore, as a practical guide to tax policy, this has not been useful.

2.3.6 The Harberger Tax Theory

The Harberger tax theory (HT) like the OT theory is well grounded in theory. It, however, draws much more on practical experience. According to this, while efficiency (and distribution weights) is clearly desirable in the design of tax policy, administrative capability is equally, if not more, important. The principal concern, according to this approach, is not to design a system that will be optimal, but emphasize the system that will minimize tax-induced distortions and at the same time be administratively feasible and politically acceptable. In fact, Harberger suggests that tax reformers should pay less attention to the economic methodology and more to best practice experiences (Rao & Rao, 2006).

According to Panagariya and Rodrik (1991), the basic Harberger reform package for developing countries that are price takers in the international market consists, among other things, of uniform tariffs and a broad-based VAT. The thrust of most tax policy advice within this approach is to enhance the ability of the tax system to raise revenue while minimizing relative price distortions. This involves efforts to broaden the tax base, lower the rates, and reduce rate differentiation of both direct and indirect taxes. The adoption of uniform tax rates has been an important feature of practical approaches to tax reform. A broader base requires lower rates to be levied to generate a given amount of revenue. It also helps to ensure horizontal equity, and it is desirable from the political economy viewpoint because the elimination of exemptions and concessions reduces administrative costs as well as the influence of special interest groups on tax policy.

2.3.7 The Supply Side Tax Theory

This theory emphasizes the need to reduce the role of the state. Reduction in the volume of public expenditures has to be achieved by cutting the tax rates, particularly the direct tax rates to minimize disincentives on work, saving and investment. The proponents of this model emphasize the need to broaden the base with minimal exemptions and preferences and to have low marginal tax rates. Lower marginal rates not only reduce disincentives to work, save, and invest but also help to improve tax compliance. Again emphasis is on minimizing distortions in relative prices and, therefore, the approach emphasizes less rate differentiation.

The best practice approach is to make the tax systems comprehensive, simple and transparent. The general pattern of these reforms is to broaden the base of taxes, reduce the tax rates and lower the rate differentiation both in direct and indirect taxes. A broader base requires lower rates to be levied to generate a given amount of revenue. Lower marginal rates not only reduce disincentives to work, save and invest, but also help to improve tax compliance. More importantly, broadening the tax base helps to ensure horizontal equity, and is desirable from the political economy point of view as it reduces the influence of special interest groups on tax policy, and reduces administrative costs. (Rao & Rao, 2006)

In the case of indirect taxation, the reform agenda includes the levy of a broad-based VAT with minimal exemptions and supplemented by a few luxury Excises. As regards import duties, quantitative restrictions should be replaced by tariffs, export taxes eliminated, and dispersion in tariffs should be minimized. Personal income tax too is to be levied on all but a small number of persons with income levels less than twice the per capita income of the country. Much of the direct taxes should be collected by withholding, but for the "hard-to-tax" groups, presumptive taxation is to be applied. Emphasis on horizontal equity also implies emphasis on strengthening the administration and enforcement of the tax and the development of proper information systems and automation (Rao, 2000).

2.4 Previous Empirical Research on Tax Reforms

Antwi, Eben and Xicang (2012) used the ARDL cointegration procedure to analyze the effect of changes in the VAT rate on VAT revenue in Ghana using data for the period, 2003-2010. The study revealed that changes in the VAT rates have not had any significant effect on the VAT revenue. In addition, they observed that government expenditure and improvement in GDP had a more significant impact on the VAT revenue, even though the tax buoyancy was generally low.

Chilibasi (2012) evaluated the effects of VAT reforms on revenue and developed a model for predicting VAT revenue from the financial years 2009 to 2013. The analysis showed that VAT reforms have a significant effect on VAT revenue. This implies that the growth in VAT revenue during the period of study was accounted for by the implementation of the reforms. The study provides decision-makers with an analytical framework that can be used to estimate the associated revenues for a VAT in Kenya and guides policymakers in countries planning to introduce a Value Added Tax. Further, it identified various tax reforms on VAT which would make it possible to estimate accurately VAT revenues within a specified period.

Kariba (2011) reviewed tax revenue performance during the period 2001 - 2010 in order to identify priorities for further tax reform. The observation was that tax structure is less buoyant and possibly inelastic; and that indirect taxes had the capacity to improve the flexibility of the tax system. The study highlighted challenges that confront tax design including taxation of agriculture and the informal sector; repeal of tax holidays; high dispersion of tariff rates; detailed and rigid custom rules; the poor response of VAT to reforms; weak capacity to process large volumes of returns and refunds for zero-rated transactions.

Ndemezo (2015) assessed the redistributive potential of indirect taxes in Rwanda, by means of the methodological framework of the marginal tax reform by Ahmed and Stern, 1984. Using data derived from the second Integrated Survey on the Living Standards of Rwandan households (EICV2). The observations revealed that there was room for improvement in the distributional effects of indirect taxes without revenue reduction. For instance: commodities to be upward reformed are communication and private fuel; whereas goods likely to be downward reformed are manufactured foods, clothing, agricultural foods, water and energy.

Giesecke and Nhi (2010) studied the impact of the various VAT systems in a given economy. They analyzed the likelihood of moving away from a uniform taxation rate to the application of multiple rates and exempt goods. Additionally, Emini (2000) postulated budget neutrality with a lower level of taxation than the one set down in the Finance Act. The observations indicated that re-establishing VAT neutrality by expanding the tax base enables economic expansion and an increase in household welfare compared to the initial situation. Nevertheless, Emini rejected the hypothesis of budget neutrality and re-established the VAT at the official rate. This revealed that the sudden increase in VAT led to a strong loss in reallocation.

Osoro (1991) observed that increasing expenditure requirements in the 1980s forced developing countries to undertake tax reforms, of which, most of these reforms focused on tax structure rather than on tax administration geared towards generating more revenue from existing tax sources. According to OECD (2010), a growing number of countries that operate a VAT are considering fundamental reforms to increase their revenue-raising capacity and to address the efficiencies of the current system.

Gitau (2011) pinpoints buoyancy and elasticity models as the models that measure tax productivity. Tax revenue can rise as a result of a change in the tax rate to raise more revenue from the same base or as a result of the growth of the base on which the tax is imposed. Consequently, the growth of tax as a result of GDP growth can be divided into two components: the automatic growth as the base on which the tax is charged grows in response to GDP, and the growth resulting from discretionary changes in tax rates and legislations. The combined effect of the two is the buoyancy of a tax.

Adari (1997) studied the performance of value-added tax (VAT) in Kenya which substituted sales tax in 1990. The study analyzed the structure, administration and performance of VAT. The observation was that the estimated buoyancy and elasticity coefficients were less than 1, hence the VAT to GDP ratio was exceptionally low. This revealed the presence of laxity and deficiencies in VAT administration. Nevertheless, Wawire (2011) critiqued the study and argued that the estimation of buoyancy and elasticity coefficients was done in total disregard of the time series properties and without taking care of unusual observations in the data. He concluded that the results were not reliable for planning purposes.

Karingi and Wanjala (2005) evaluated tax reform efforts in Kenya and established that the compliance rates for VAT and income taxes in Kenya are 55 and 35 percent, respectively. Consequently, (KIPPRA, 2005) argued that the low compliance rates indicate the possibility of reducing the tax burden of those currently paying taxes by raising the compliance rate. The results indicate a further possibility of reducing the VAT rate from the current 16 percent, without the government facing any revenue shortfalls by raising the level of compliance. The study concluded that low compliance is mainly an administrative issue and high compliance costs faced by taxpayers interfered with their willingness to pay taxes. The study recommended the implementation of international best practices by reforms in the organizational structure of the revenue administration into functional units. Currently, KRA is restructured into a functional-based organizational structure.

Moyi and Ronge (2006) analyzed the impact of tax modernization in Kenya on revenue performance and the effect of inflation on tax revenue and the effect of inflation on tax revenue. They observed that the tax structure was less buoyant and possibly inelastic. Their observation was that nominal measures can be misleading because they can conceal the effects of changes in the rate of inflation. Further, they observed that aggregate tax revenues shrunk by 0.07% while Customs revenues shrunk by 4.1%. Only VAT and Excise tax

revenues had grown in real terms. The results indicate that inflation has had a potentially adverse effect on tax revenues in Kenya. The analysis showed that with the exception of import tax revenues with a correlation coefficient of –0.346, all the other tax revenues are highly correlated with inflation. Correlation coefficients were 0.933 for total taxes, 0.891 for income taxes and 0.985 for VAT. The authors also established that in terms of individual taxes, VAT had the highest buoyancy index followed by Excise duty and income tax. Customs duty had the lowest and negative buoyancy index, indicating rigidity. Therefore, for every 1% increase in GDP, customs revenues shrunk by 0.004%. This suggests that indirect taxes are likely to improve the buoyancy of the tax system in Kenya, as opposed to direct taxes. Reforms in tax policy should consequently put more emphasis on indirect taxes, especially VAT and Excise tax.

Okara and Kongo (2019) analyzed the trend of import flows in pre- and post-pre-shipment inspection (PVoC) periods and observed the underlying trend. To address the objectives of this study, the researchers used two quasi-experimental techniques; regression discontinuity design and difference in differences approaches. These techniques exploit the discontinuity (kinks) following a policy change to examine its effects. The results indicated that import values (CIF) declined by an average of Kshs. 1,838,895 while import taxes declined by an average of Kshs. 366,024 following the introduction of Pre-shipment inspection (PVoC) in Kenya.

2.5 Critique of the Literature Review

The literature reviewed clearly confirms that a number of studies have been conducted on tax reforms in Kenya (Karingi & Wanjala, 2005; Wawire, 2011; Mwakalobo, 2009; Moyi and Ronge, 2006; Nada and William, 2009; and, Chilibas, 2012). Most of the aforementioned studies attempted to establish the contribution of VAT and tax reforms to revenue productivity in Kenya. This study attempts to fill in this gap, by putting emphasis on Indirect tax (VAT and Excise) reforms with respect to pre- and post-reform periods from FY 2010 to 2019, which is a period long enough to give a clear picture of the impact of these reforms on revenue collection in Kenya.

2.6 Summary of the Study

Subsequently, this study focuses on VAT and Excise Indirect tax reforms. The study seeks to bridge the gap by attempting to analyze pre- and post-reforms that have taken place in Kenya from the Financial Years 2010 to 2019 and their contribution to Kenya's Revenue collection during this period. The methodology to be adopted will be two quasi-experimental techniques; discontinuity regression and difference-in-difference research designs to determine if there is a significant relationship between them by taking advantage of a control group formed by similar items that were unaffected by the reforms. This study will shed light on whether the indirect tax reform process in Kenya can effectively raise more revenue to handle the fiscal challenges imposed by the increasing budget deficit.

2.7 Conceptual Framework

A conceptual framework is defined as a graphical presentation of study concepts and how they relate to each other (Dannels, 2018). The independent variables in this study are indirect tax policy reforms, while the dependent variable is tax revenue in Kenya. The conceptual framework is illustrated in Figure 2.1.

Figure 2.1: Conceptual Framework

Source: Author's Conceptualization, 2020

3. Research Methodology

3.0 Overview

This chapter shall highlight in brief the methodology that shall be used in conducting the study. It includes the research design, target population, sampling design, data collection procedure, analysis and presentation.

3.1 Research Design

The study applied panel data. The design provides for individual-specific variables, thus providing for heterogeneity that is normally related to individual variables. The design was a combination of time series cross-sectional observations and due to this aspect, it is normally considered one of the most effective designs in the study of causation, other than pure random experiment (Stimson, 1985). A regression discontinuity (RD) and difference-in-differences (DiD) study designs were used. The regression discontinuity and difference in difference designs are quasi-experimental approaches. These methods are the most effective in estimating the impact of policy reforms when implemented. RD measures the effect of the size of the discontinuity in regression. The regression discontinuity (RD) and difference-in-differences (DiD) study model will look at the tax policy reforms consisting of Excise Tax policy reforms. This design was adopted by Okara and Kongo (2019) in their research on the impact of Non-Technical barriers of Trade on Import flows in Kenya.

3.2 Model Specification

The study employed Regression discontinuity design and Difference-in-differences models used by (Okara & Kongo, 2019).

3.2.1 Model 1- Difference in Difference

To establish the net effect of a policy in a situation where the outcomes were already improving or deteriorating before the policy, using a pre-post study would lead to the inaccurate conclusion that the policy was associated with better outcomes. Difference in difference methodology is used in overcoming this limitation.

Difference in different methodology was employed to estimate treatment effects in non-experimental settings and provide causal estimates. Using this method, the size of the effects is measured as the size of discontinuity in regression

lines at the cutoff.Discontinuity in the model shows the presence of a treatment in the model. Interaction of the assignment and interactive model is necessary for model specification. This will be specified as follows:

$Y_{it}=\propto+\beta T_{it}+\gamma t_{it}+\delta(T_{it}.t_{it})+\in_{it}$

Where α, β, γ, δ, are all unknown parameters and εi is a random, unobserved "error" term which contains all determinants of Yi which our model omits.

Yi represents the aggregate revenue for VAT and Excise tax i.e.

VAT revenue before and after the introduction of VAT withholding agents

Excise revenue before and after the introduction of the Excisable Goods Management System

Excise revenue before and after the Switching of the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya.

α = Constant term

β = parameter estimate of the treatment group-specific effect (to account for average permanent differences between treatment and control).

γ = parameter estimate for the time trend

δ = parameter estimate for the true effect of treatment

T = is the treatment status 0, 1 where 0 indicates a value of VAT/ Excise revenue that does not receive treatment i.e. the control group, and 1 indicates the value of VAT/ Excise revenue that receives treatment

t= The time of observation t = 0, 1 where 0 indicates a time before the treatment group receives treatment i.e. pre-treatment and 1 indicates a time period after the treatment group receives treatment, i.e. post-treatment

3.2.2 Model 2- Regression Discontinuity

The regression discontinuity approach was employed to estimate treatment effects in non-experimental settings and provide causal estimates. In this approach, the size of the effects is measured as the size of the discontinuity in regression lines at the cut-off. Discontinuity in the model suggests the presence of a treatment effect in the model. Interaction of the assignment and interactive model is necessary for correct model specification. This was specified as follows:

$Y_{iVAT}=\beta_0+\beta_1 Z_1+\beta_2 (X_i-X_C)+\mu_i$ ……3.1

$Y_{iExcise}=\beta_0+\beta_1 Z_1+\beta_2 (X_i+X_C)+\mu_i$ ……..3.2

Where,

Yi-is the outcome, β_0 is the intercept, Z is the treatment dummy variable (1 0), Xi is the assignment variable, Xc is the cut-off (to estimate the effects of treatment at the cut-off, β1 is the estimate of treatment effect, β2 predicts outcome from the assignment, and μ_i is the random error term.

3.3 Definition and Measurement of Variables

Table 3.3: Definition and Measurement of Variables

3.4 Target Population

The target population was the Large Taxpayer and Medium Taxpayer companies registered for both VAT and Excise Tax obligations.

3.5 Data Collection Methods

Secondary data was collected on the identified taxpayers for the period captured before and after the policy changes. The period of data collection was content analysis. For VAT withholding agents, data for the identified taxpayers will be collected for the period 2010-2019 annually. VAT withholding was introduced in the year September 2014. For Excise, tax the period of study will equally be the period 2010-2019. The Introduction of the EGMS was in September 2015. The Excise rates were amended subject to the Excise Duty Act of 2015.

3.6 Data Analysis

This section explains the various types and sources of data used in the research together with the tests carried out.

3.6.1 Types and Sources of Data

The study used secondary panel data from 99 companies for a period of ten years (2010 to 2019). The source of data was from the Kenya Revenue Authority and Kenya National Bureau of Statistics. The data collected was analyzed using the STATA software to examine the impact of the identified policy changes on revenue.

3.6.2 Diagnostic test

Before the processing of the data for analysis, a number of essential assumptions will be checked so as to avoid errors that occur during the interpretation stages of the model (Cohen, West & Aiken, 2013). For the difference in difference model, the main assumption is the parallel trend assumption.

3.6.3 Parallel Trend Assumption

A common problem cited with differences in difference estimates is the failure of the parallel trend assumption. Suppose $cov(\varepsilon_i,T_i.t_i)=E(\epsilon_i(T_i.t_i)=\Delta$ So that Y follows a different trend for the treatment and control group. The control group has a time trend of $\gamma^c=\gamma$ while the treatment group has a trend of $\gamma T = \gamma + \Delta$. In this circumstance, the difference in difference estimator will be biased as;

$E[\delta_{DD}]=(\gamma^T+\partial)-\gamma^C=\gamma+\Delta+\delta-\gamma=\delta+\Delta$

The failure of the parallel trend assumption is a relatively common problem in many program evaluation studies, causing many differences in difference estimators to be biased. One of the ways to help avoid these problems is to obtain more data on other time periods before and after treatment to see if there are any other pre-existing differences in trends. It may also be advisable to find other control groups which can provide additional underlying trends. Meyer (1995).

4. Results and Discussions

4.0 Overview

This section begins by providing a summary statistics analysis of the variables in the study. It then proceeds to discuss the parallel trend assumption and finally discusses the difference in difference as well as the regression discontinuity designs.

A key assumption was that during this period, macroeconomic variables such as GDP growth, inflation, and interest rates affected all the revenue streams in a similar manner. Another plausible assumption is that the companies that were not withholding agents and those that were not subjected to EGMS were unaffected by the 2015 policy regulation changes of implementation of the EGMS and the Introduction of VAT withholding. These assumptions allowed the use of the Difference in Differences (DiD) method to estimate the impact of the EGMS and Introduction of the VAT withholding agents on both overall Excise and VAT tax revenue for the affected companies. Based on this, the study made an inference on the possible impact of the EGMS and VAT withholding agents on VAT and Excise revenues.

To decipher the impact of the withholding agents and EGMS on Excise and VAT revenue, the companies that implemented the EGMS and the companies that became withholding agents are the "treatment group", whereas those companies that are not using the EGMS and are Non-withholding agents are the "controls".

4.1 Overall Performance of Excise and VAT Taxes

Figure 1 below indicates the performance of Excise and VAT in Kenya with a mini break in the year 2015. From the figure, Import VAT (VATi) was above VAT Domestic (VATd) and Excise Duty Domestic (Exd) from the year 2010-2014 after which it has been on a downward trend. This can be explained by low compliance by Domestic VAT taxpayers due to lax regulations in place at the time. A turnaround was experienced from the year 2015, following the VAT reforms including the introduction of VAT Withholding agents.

On the other hand, both domestic VAT and as well as Excise duty have been on an upward trend since the year 2010. Domestic VAT has always been above Excise duty domestic. The slope of VAT domestic became steeper from the year 2015, which may be because of the introduction of VAT withholding agents as well as the good performance of the economy with GDP growth of 5.7 percent. However, there was a notable decline in the growth of VAT and Excise in the year 2017 attributed to the reduced consumption following the economic shock brought about by the prolonged election period. However, the upward trend picked up from the year 2018.

Figure 4.1: Performance of Excise and VAT in Kenya

4.2 Summary Statistics of the Variables under study

The measures of dispersion and measures of central tendency were used to describe the data as shown in the table. The table reveals that the lowest amount of annual VAT reported by the companies under study is ksh. 698.97 million While the highest reported annual VAT is Ksh. 29,001.31 million. Further, the maximum Excise duty is Ksh.37, 140.39 million for the companies under study. The lowest is Ksh. 0.04 Million with a mean of ksh.417.72 million and a Standard deviation of Ksh. 2,244.92. Analysis of the Shift between hybrid to either specific/ad valorem, the mean of the goods is Ksh. 460.23 with the highest being Ksh. 13,017.18 and the lowest being 0.

Table 4.2: Summary Statistics of the Variables under study

4.3 Descriptive Line Plots for the Variables under Study

A descriptive statistics test was further conducted before subjecting the data to a regression analysis. Line graphs were plotted on panels to depict any structural breaks or outliers that need to be taken care of before the data is subjected to regression.

The first plot shows the non-stationary movement of logs of VAT depicting more of a consistent increase in VAT paid by the selected firms across the period of study. This is captured in Figure 4.3

Figure 4.3: Line plots for Logs of VAT panel

Figure 4.4 shows a trend in the performance of Excise taxes before and after the Introduction of EGMS for the companies under study. From the plots, Excise tax performance registered cyclical fluctuation across the companies under study.

Figure 4.4: Line plots for Logs of the Excise duty panel.

Figure 4.5. Shows the panel log plots for the hybrid and ad valorem goods. Most of the goods under study show a seasonal trend increasing with time. A few products were missing enough data for the study period as a result of companies that stopped importing certain goods due to the tax policy changes and others that began importing goods at a later period to take advantage of the policy change.

Figure 4.5. Panel log plots hybrid to Ad valorem.

4.4 MODEL 1: Difference in Difference

4.4.1 The parallel trend assumption

The assumption necessitates that in the absence of the policy intervention, the difference between the treatment and the control is constant over time. In this study, this was undertaken by splitting the pre-shock period into two (A and B) and running the DiD model to compare the changes in outcome for the treatment and control group between periods A and B. If the coefficient of the treatment dummy is significant, then it implies that the effect was already present before the shock and thus, the parallel trend assumption is violated. For this study the data before the shock was split at the year 2012 with 99 cross-sectional companies, to test the violation of the parallel trend assumption.

The results are reported in Table 4.1. From the result, the coefficient for the treatment dummy (EGMS exempt status and withholding Exempt status) is not statistically significant

at any level indicating adherence to the parallel trend assumption. This suggests there is insufficient evidence that the trend in the Excise revenue and VAT started way before the introduction of the EGMS. It can thus be concluded that EGMS and VAT withholding agents led to netting in more tax revenue.

Table 4.4 Parallel Trend Assumption

4.4.2 Empirical Estimation of Difference in Difference

The association between changes in policy and subsequent outcomes is often evaluated by pre-post assessments. Outcomes following the implementation of the policy change are compared with those before. This design is applicable only if there are no underlying time-dependent trends in outcomes unrelated to the policy change. If outcomes were already getting better before the policy, then using a pre-post study would lead to the erroneous conclusion that the policy was associated with better outcomes (Wooldridge, 2003).

The difference-in-differences study design addresses this problem by using a control group or comparison, which is experiencing the same trends but is not exposed to the policy change. The technique compares the before-and-after effects on the treated group with those of the control group. If the control group is a sufficiently close match, the remaining effect can be the impact of the policy alone on the companies subject to EGMS (treated group) and VAT withholding agents (treated group). If the comparator group is not a close match, it means that macroeconomic changes affect the treated and untreated groups differently. Did the model assume that Macroeconomic fluctuations have the same effect on both the treatment and the control group?

Table 4.5 Difference in Differences Regression Results

Source: Data Analysis Results (2020)

Table 4.5 presents regression results for the three outcome variables.

Column 1 presents the regression results for the impact of the introduction of EGMS on Excise revenue. The results show that the introduction of EGMS led to an increase in Excise revenue by 81.2% on average. This was statistically significant at 1%. It also shows the mean of Excise revenue for companies that use EGMS is higher than for companies exempted from EGMS by about Kshs. 83.4 percent. From the results above, the Null Hypothesis that the Introduction of EGMS has no impact on Excise duty revenue in Kenya is rejected.

Column 2 shows that that the VAT increased by 13.4 percent following the introduction of VAT withholding agents. The interaction term for the VAT equation is positive and implies that the increase in taxes was, on average, higher for companies that are withholding agents as compared to those that are non-withholding agents by 30.9 percent. From the results above, the Null Hypothesis that the introduction of withholding VAT agents has no impact on VAT revenue in Kenya is rejected.

Column 3 presents the regression results on the impact of switching the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya. The result shows that this policy change led to a decline in Excise duty revenues by 28 percent. This was a significant 1 percent level.

The decline was higher for goods subject to either specific/Ad valorem than those that were in hybrid by 34.7 percent. This however was not significant at any level. From the results above, the Null Hypothesis that switching the tax system from hybrid to a uniform specific/ ad valorem rate has no impact on Excise duty in Kenya is rejected.

4.5 MODEL 2: Regression Discontinuity

In the absence of manipulation, the density of the running variable should be continuous near the cut-off. This is the formal test of the null hypothesis that there was no discontinuity

4.5.1 Impact of Introduction of VAT Withholding Agents on VAT Revenues

Regression discontinuity design analysis was carried out to determine the effect of the introduction of VAT withholding agents on the VAT revenue performance. The results are presented in Figure 4. The control companies were plotted in Figure A while the treatment were plotted in Figure B. From the plots, there was a decline in VAT revenue performance in the year 2015 followed by an increase in revenue performance.

On the other hand for the treatment group, there was a significant increase in VAT revenue after the introduction of the VAT withholding agents. A mini spike sees this at the period of the introduction of the policy change (2015 (0))

Figure 4.6: Regression Discontinuity Results

Source: Data Analysis Results (2020) using STATA 14.0 Econometric Software

4.5.2 Effect of Introduction of EGMS on Excise Revenue

Regression discontinuity design analysis was further conducted to determine the effect of the introduction of EGMS, on excise revenue for the selected firms. The results are presented in Figure 5. Revenue performance for the companies that charge excise but do not use EGMS (Control) are plotted in Figure A, while the companies that were rolled out on the EGMS are presented in Figure B.

From the results, there is a noted decline in excise tax revenue for companies that did not implement the use of the EGMS system at the point of the introduction. On the other hand, for goods subject to the EGMS system, there is a notable increase in excise revenue collected after the introduction of the EGMS.

Figure 4.7: Regression discontinuity results on the effect of the introduction of EGMS on excise revenue

Source: Data Analysis Results (2020) using STATA 14.0 Econometric Software

4.5.3 Effect of switching the tax system from hybrid to a uniform specific/ advalorem rate on excise duty in Kenya.

Finally, Regression discontinuity design analysis was conducted to determine the effect of switching the tax system from hybrid to a uniform specific/ advalorem rate on excise duty. The results are presented in Figure 6.

From the results, there is a significant decline for the companies using hybrid from figure 6A. Companies that are using purely specific or purely advarolem reported a significant decline in excise revenue. This is captured in Figure 6B

Figure 4.8: Regression discontinuity results on the effect of switching the tax system from hybrid to a uniform specific/ advalorem rate on excise duty

Source: Data Analysis Results (2020) using STATA 14.0 Econometric Software

5. Discussion of Findings, Conclusions And Recommendations

5.0 Overview

This chapter presents the summary of findings, conclusions and recommendations. First, there is a summary of the main findings of the study guided by the research objectives; secondly, based on the findings, the emerging issues with an in-depth view of policy implications are discussed and thirdly, suggestions for further research are outlined. The study endeavored to study the impact of indirect tax policy reforms on revenue performance in Kenya

5.1 Summary of the Findings

The study endeavored to examine the impact of indirect policy reforms on revenue performance in Kenya. Secondary panel data based on each objective was collected and analyzed. Analysis was carried out using quasi-panel models to assess the impact of the policy changes. The specific objectives of the study were; to determine the impact of the introduction of VAT Tax withholding agents on tax revenue in Kenya, to determine the impact of the introduction of an excisable Goods Management System on Excise revenue in Kenya and to determine the impact of Switching the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya.

The study used the panel data spanning a period of ten years from 2010 to 2019 across 99 companies and products. The panel was found to be strongly balanced since there was no gap in the data. Summary statistics were carried out to pick out outliers or structural breaks before subjecting the data to regression.

The investigator undertook the test of the parallel trend assumption to determine the appropriateness of the Difference in the difference model. The p-value from the interaction term was found to be insignificant implying that the assumption was not violated.

5.1.1 Impact of introduction of VAT withholding agents on VAT revenues

The VAT revenue pre and post-the introduction of VAT withholding agents were analyzed using the impact evaluation technique of difference in difference. The 99 companies that were selected for analysis were split into two. The first 44 companies were those that were appointed as VAT withholding agents (treated) while the remaining 54 were those that were never appointed as withholding agents (control).

The study finds that an introduction of VAT withholding made VAT revenue increase by 13.4 percent. This is significant at 5 percent. These findings are consistent with a study by Nyangau (2015) who did a study on the impact of VAT withholding on compliance. The study found that the introduction of VAT withholding agents has a positive impact on revenue for LTO and MTO.

5.1.2 Impact of introduction of EGMS on Excise revenue

The impact of the introduction of EGMS regulation was analyzed to estimate its impact on Excise duty revenue collection. The study found that there was a positive impact on Excise revenue following the introduction of EGMS. This was significant at 1 percent. The findings are consistent with Siddik, Kabiraj and Joghee (2017), who found a positive impact of EGMS on Sweden's economy. The study used an impact evaluation technique but focused on products that were subjected to EGMS and those that were not subjected to EGMS. The EGMS effect increased Excise revenue collection by 74.5 percent

The findings are also consistent with the Kenya Institute for Public Policy Research and Analysis, 2014 on the evaluation of Kenya's excisable goods management system including challenges in implementation, and its role in enhancing Excise revenues and combating illicit trade. The study finds that the production of EGMS increased Excise revenue by 50.9 percent.

5.1.3 Impact of switching the tax system from hybrid to a uniform specific/ ad valorem rate on Excise duty in Kenya.

The movement from hybrid to specific/ad valorem was measured at the product level. 100 products were selected. 45 of them were those that moved prom hybrid to either specific/ duty rate. 55 of them were those that were in specific and remained at specific or ad valorem and remained ad valorem after the introduction of the Excise Duty Act of 2015.

For this study, the change in Excise duty policy of moving from hybrid to either ad valorem/specific led to a decline in Excise duty revenue by 28 percent. This was statistically significant at 1 percent. The findings were consistent with a study by Bidin (2018) who did a study on Excise duty compliance in Malaysia. The study finds that the

administration of a hybrid Excise regime increases compliance and hence Excise revenue.

5.2 Conclusion

The study concludes that the indirect tax policy reforms had a mixed effect on the Excise duty and VAT revenues. The introduction of VAT withholding agents and the introduction of EGMS had a positive significant effect on VAT and Excise duty revenues. On the other hand, the movement from a hybrid tax system to either pure specific or pure ad valorem led to a decline in Excise duty revenues over the period of study.

The study, therefore, concludes that all the variables under study are key drivers of Excise duty and VAT policy reforms in Kenya. For VAT taxes to grow the study finds that it is key for the KRA to implement further VAT reforms that are focused on increasing the tax net (tax base), automation and simplification of tax processes. The introduction of VAT withholding agents led to the netting in of more taxpayers and increased the compliance of withholding as the system prompted them to declared correct figures arising from their turnovers from businesses or professions. The Introduction of EGMS led to a significant increase in Excise revenue as the system provided a monitoring tool as well as a track and trace capability that made KRA know the exact volume and quantity of excisable goods produced in the country. This made accounting of Excise revenue more efficient.

Further, the system led to a significant decline in the level of illicit trade in the market as a result of the track and trace capability of the EGMS. This made genuine licensed manufacturers increase their sales volume.

The study further concludes that the movement from hybrid to either specific ad valorem was counter-productive as it led to a decline in Excise revenue by 28 percent. The hybrid system that is based on the two methods of estimating taxes where the higher of the two is considered appears to raise more revenue. It appears that KRA continues to lose more revenues as a result of using a either specific or ad valorem system. According to Keen (1998), where the objective is to raise revenue, ad valorem is used, and where the objective is to correct for externalities, specific Excise duty is imposed.

5.3 Implications of Policy

The findings of this study exhibit some important implications for policymakers in Kenya and the revenue authorities of other middle-income countries that implement similar policies. The findings indicate that VAT withholding and the introduction of EGMS are the game changers in indirect tax administration. Expanding the scope of products covered by EGMS to include soft drinks in Kenya is a good move to boost Excise revenue. KRA should enhance the administrative capacity of the EGMS to ensure that the system is not prone to abuse.

The introduction of VAT withholding agents has proved to be a successful story in VAT compliance. KRA should roll out the appointment of VAT withholding agents to include more MTOs as well as well-established small taxpayers.

Finally, the change from hybrid to either ad valorem or specific needs to be revisited by the revenue authorities as it appears to be causing revenue declines.

5.4 Contribution of the Study to Theory

The study makes some important contributions to both the theory and practice of indirect taxation. It is particularly a significant response to calls by researchers for studies focusing on the impact of indirect tax reforms brought about by automation on revenue in Kenya. The study paints a clear picture of how indirect tax policy reforms based on automation have led to high levels of revenue mobilization. The study also gives clarity on the mixed findings that have been posted by several researchers on the effect of the movement from hybrid to either specific or ad valorem of revenue. The study adds to the literature that the impact is negative.

Further, the findings of this study would be of importance to academicians since it contributes to knowledge by empirically testing the impact of indirect tax reforms on revenue performance using quasi-panel methods.

5.4.1 Contribution of the Study to Policy Makers

The variables under study in the impact of indirect tax reforms on revenue performance are of importance to the public and policymakers in trying to understand how the reforms impact revenue. This would further enable revenue authorities to use the appropriate policy mix in trying to attain a higher tax effort.

Additionally, a better understanding impact of the indirect policy reforms may assist policymakers in assessing whether policies aimed at more revenue mobilization are compatible with an existing regulatory environment. Results from this study would, therefore, provide critical input to the formulation of a policy framework that would assist in tax base expansion.

5.5 Recommendations

From the study conclusions, the ensuing recommendations can be made;

Commissioner for Domestic taxes should map all Medium Taxpayers (MTO) based on risk assessment and enroll additional taxpayers who can serve as potential VAT withholding agents. This will further increase the number of VAT withholding agents and hence increase VAT revenue performance.

KRA should enhance the administrative capacity of EGMS. For instance, the authority should reduce the costs associated with the process of acquiring the digital stamps that are monitored through EGMS introduce diverse/flexible modes of payment for the stamps; reduce the time taken to process requests for stamps; and consider devolving services to major towns in Kenya.

KRA should consider broadening the scope of goods covered under the EGMS system, for instance: cosmetics and beauty products as well as food supplements. Further, KRA should consider amending the Excise Duty Act that allowed the use of either specific or ad valorem rates and revert to the hybrid system (Higher of specific or ad valorem rates).

5.6 Suggestions for Further Research

Drawing from the scope and limitations of the current study, further studies can be conducted on the product level study on the impact of indirect policy reforms on revenue in Kenya. The products that are subjected to the policy changes should be considered as the treatment while those that were not subjected to policy change be taken as control. The study can also increase the period to 30 years or increase the frequency of data to monthly to closely monitor the impact of the policy changes

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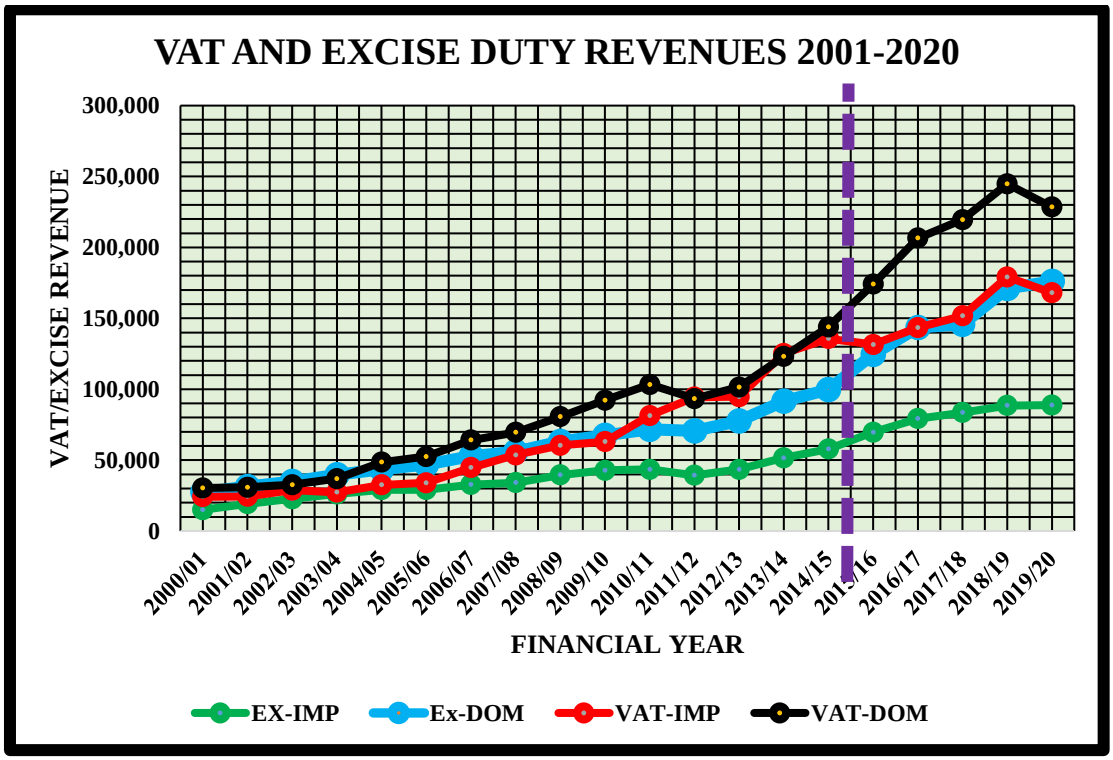


Figure 1.1: % Composition of Tax Revenue for the FY 2000/20001 to 20019/2020
Source: Economic Survey, 2017

Independent Variables **Dependent Variable**

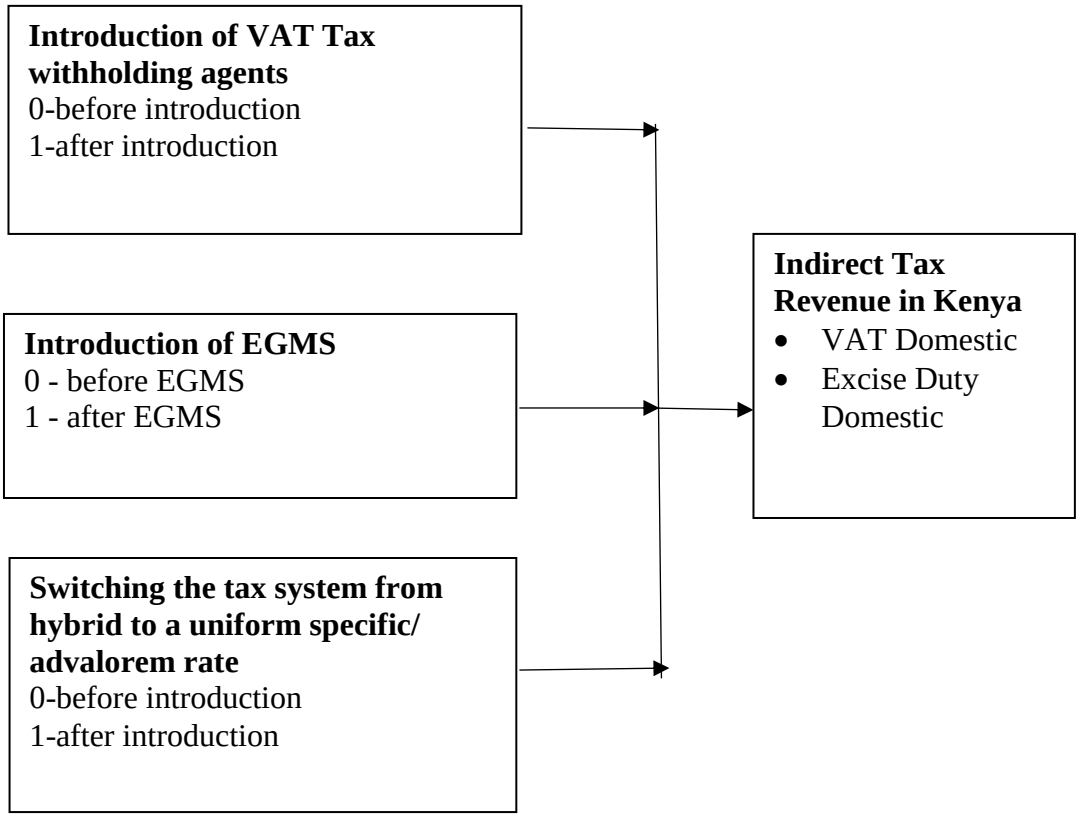


Figure 2.1: Conceptual Framework

Table 3.3: Definition and Measurement of variables

Variable	Type	Operationalization	Measurement	Hypothesized direction
Value added Tax	Dependent variable	Annual aggregate values of VAT	Million ksh	Positive
Excise tax Revenue	Dependent Variable	Annual aggregate values of Excise tax	Million ksh	Positive
Time dummy	independent	0 for the period before the policy and 1 for the period after the policy	Binary	Positive
Treatment dummy	independent	0 for the control group and 1 for the treatment group	Binary	Positive

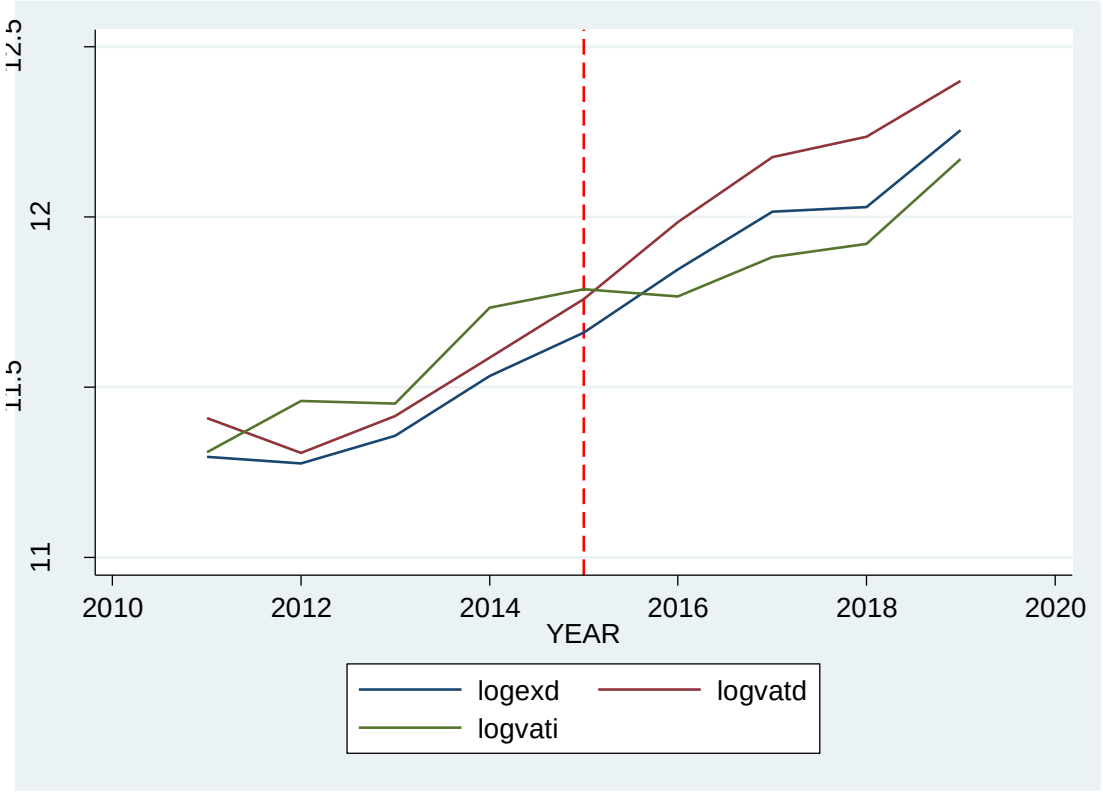


Figure 4.1: Performance of Excise and VAT in Kenya

Table 4.2: Summary Statistics of the Variables under study

		Figures in Kes Million'			
Variable	**Observation**	**Mean**	**Std. Dev.**	**Min**	**Max**
VAT1	990	3,333.90	3,778.63	698.97	29,001.31
EX1	990	417.72	2,244.92	0.04	37,140.39
ADS1	990	460.23	1,414.30	-	13,017.18

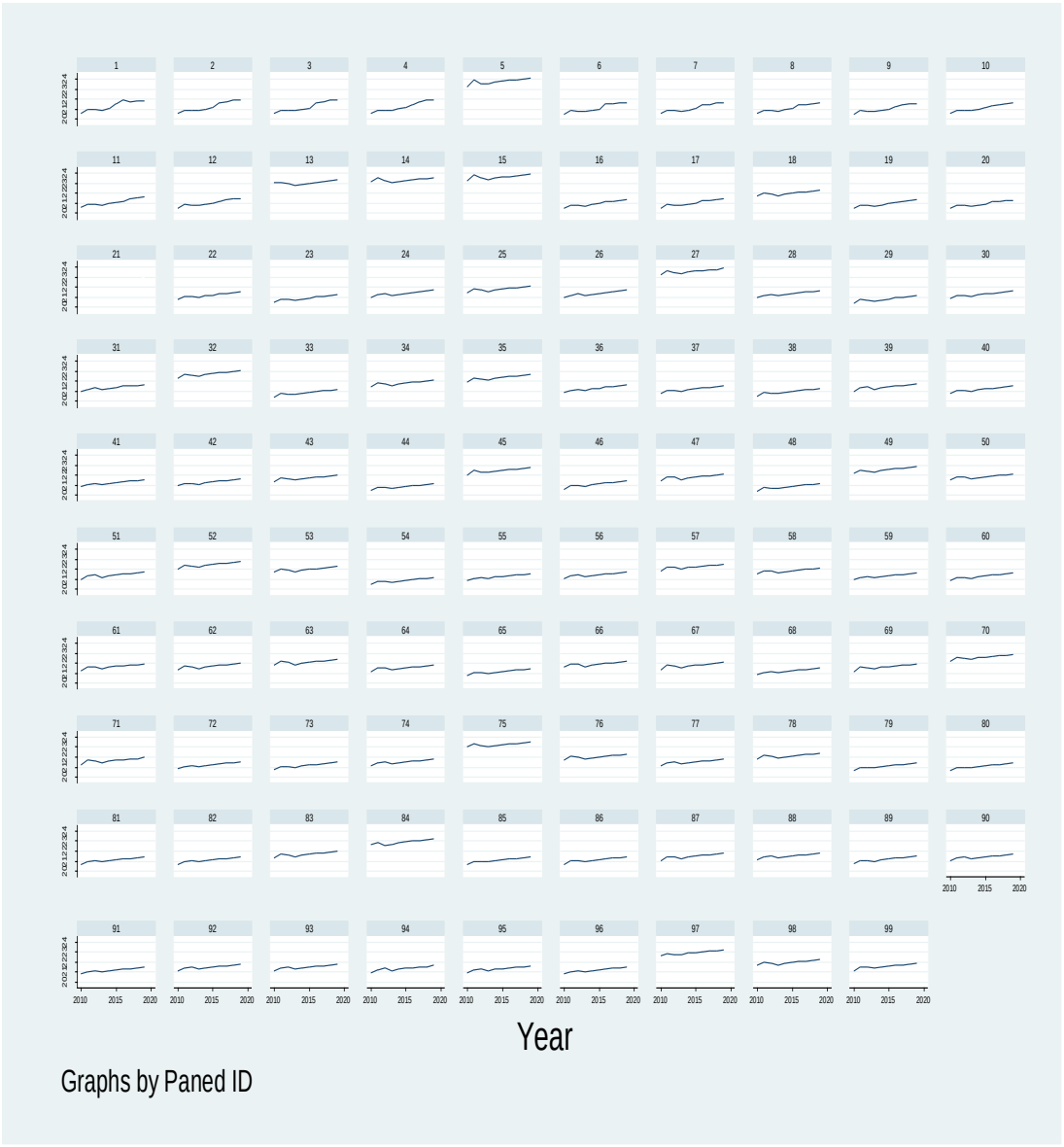


Figure 4.3: Line plots for Logs of VAT panel

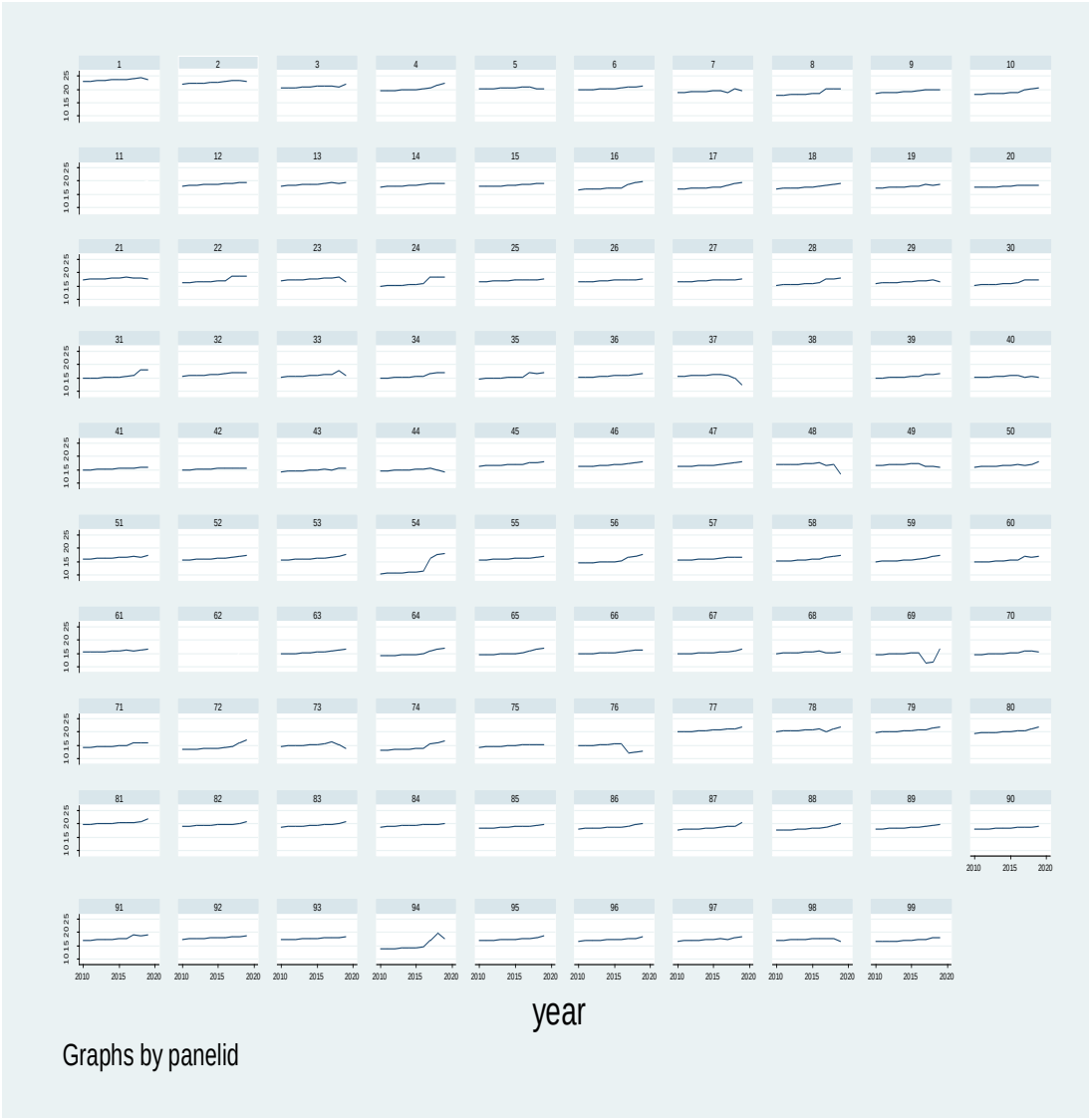


Figure 4.4: Line plots for Logs of Excise duty panel.

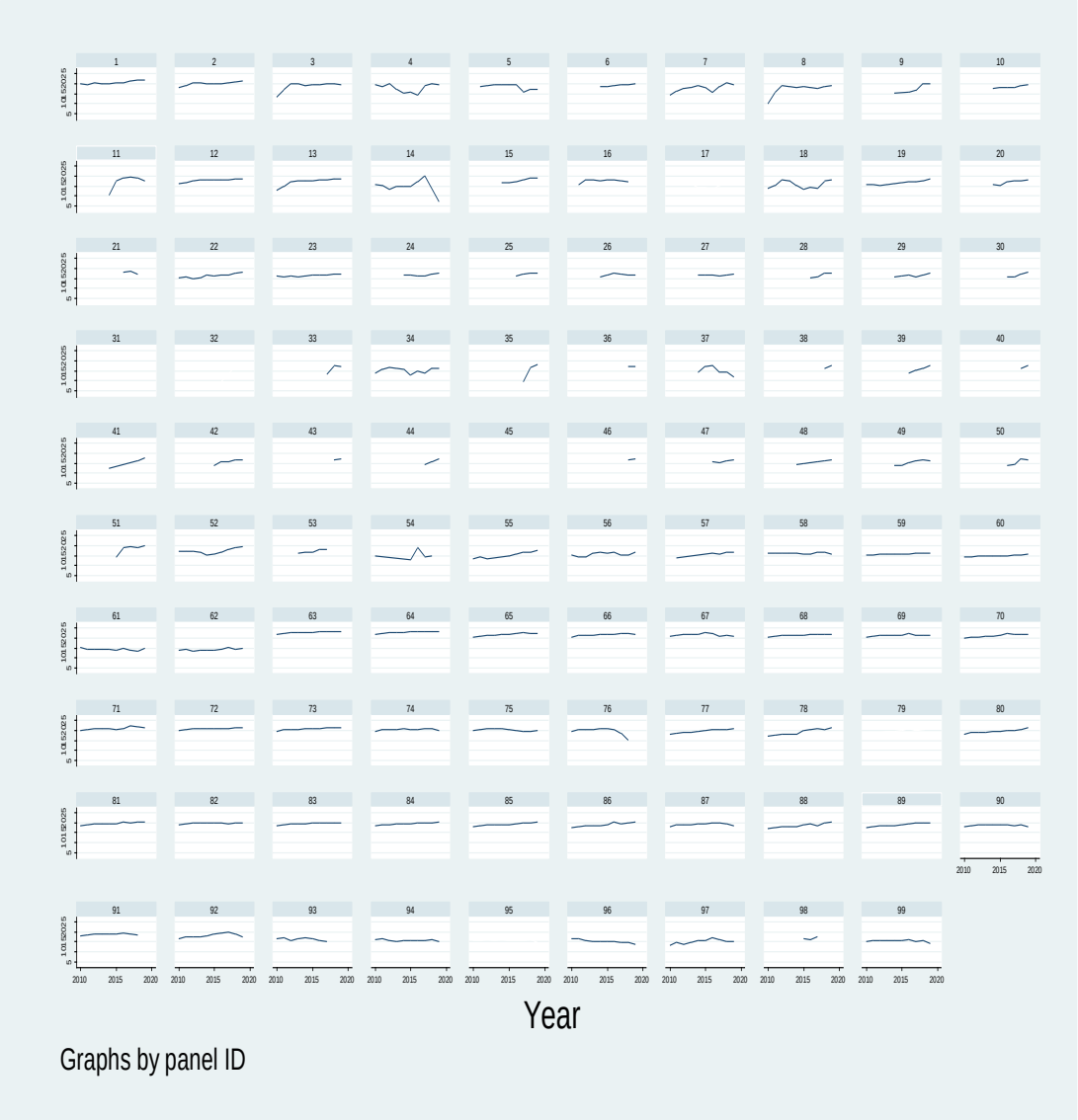


Figure 4.5. Panel log plots hybrid to *Ad valorem*.

Table 4.4 Parallel Trend Assumption

Variables	**(1)** LogEXD	**2** LogVAT	**3** LogADS
Time	-0.369 (0.433)	-0.425(0.251)	0.325(0.1125)
Treatment	1.521 (1.078)	1.158(1.008)	1.895(0.655)
Interaction term	0.976 (1.183)	0.885(1.058)	0.859(1.211)
Constant	5.933***(0.367)	4.555*(0.256)	3.445*(0.321)
R-squared	0.465	0.501	0.551

Observations	297	297	297

Note: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Source: Data Analysis Results, 2020

Table 4.5 Difference in Differences Regression Results

VARIABLES	(1) logEX	(2) logVAT	(3) logADS1
Time	0.834***	0.309***	0.347
	(0.177)	(0.0468)	(0.235)
Treated	0.812***	0.134**	-0.280***
	(0.203)	(0.0671)	(0.313)
DID	-0.0465	0.121	-0.108
	(0.266)	(0.0913)	(0.375)
Constant	16.36***	21.48***	4.405***
	(0.136)	(0.0339)	(0.180)
Observations	990	990	759
R-squared	0.069	0.070	0.070

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VAT REVENUE PERFORMANCE FOR THE CONTROL GROUP-at the cut off(0==2015) A	**VAT REVENUE PERFORMANCE FOR THE TREATMENT GROUP B**

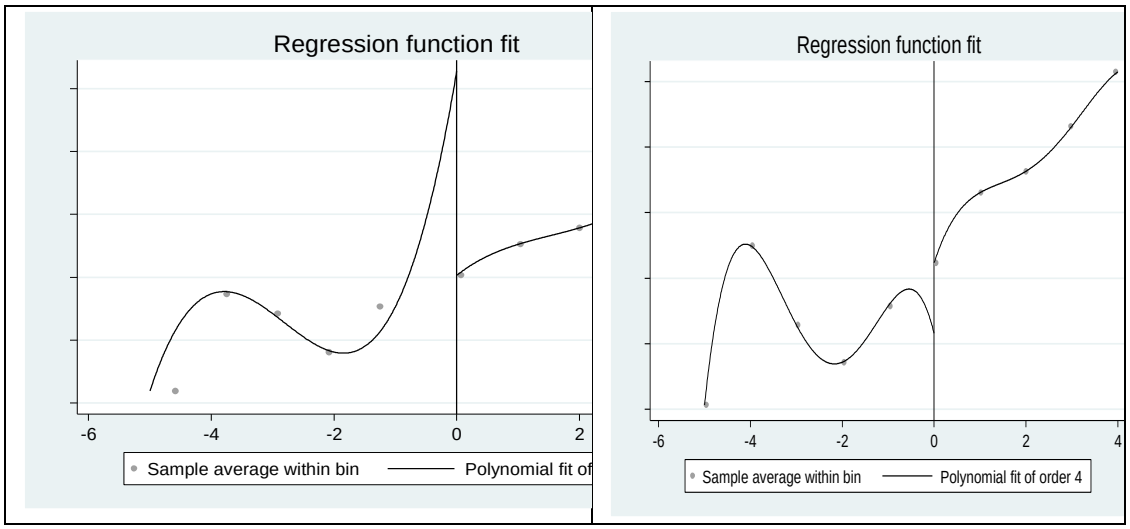


Figure 4.6: Regression Discontinuity Results
The X-Axis is obtained by generating time dummy[TIME =TIME-2015]
The Y axis is the VAT revenue in million KSh.

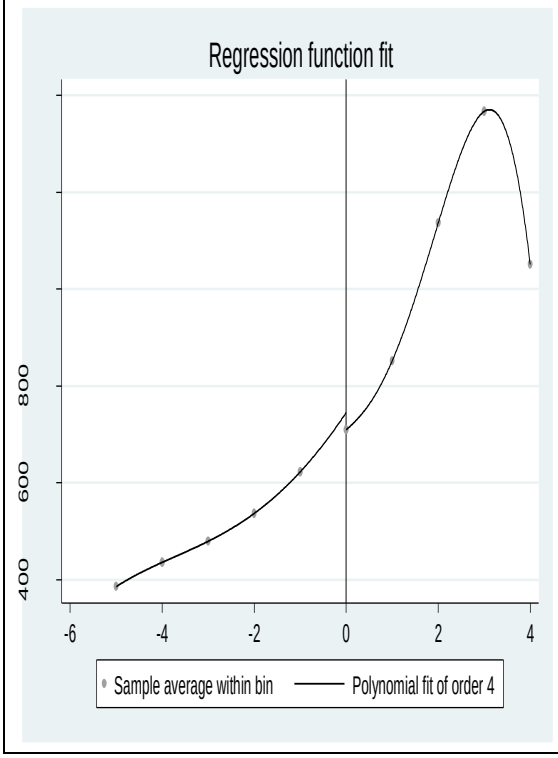
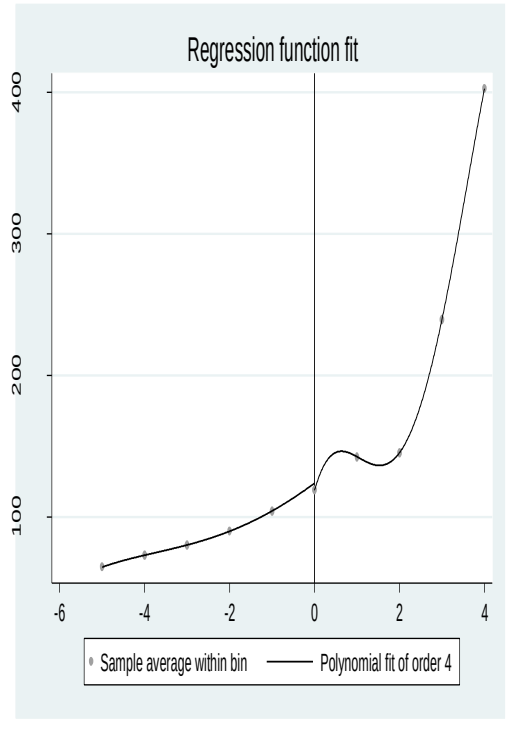
COMPANIES NOT SUBJECTED TO EGMS A	COMPANIES SUBJECTED TO EGMS B
	

Figure 4.7: Regression discontinuity results on the effect of introduction of EGMS on excise revenue

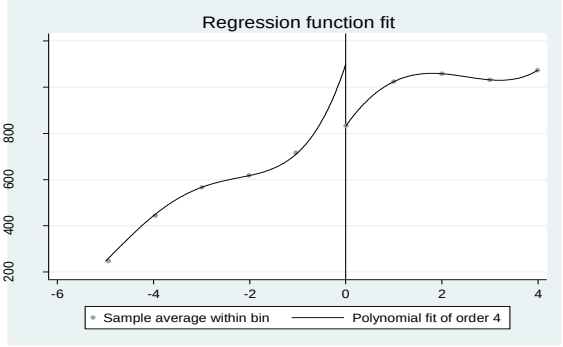
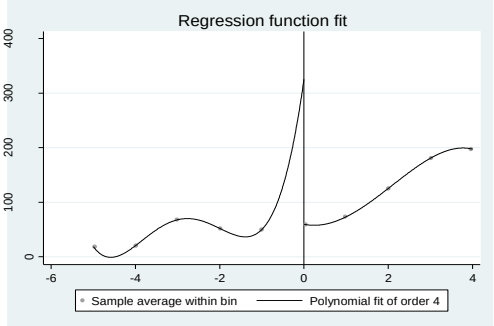
COMPANIES USING HYBRID SYSTEM A	COMPANIES USING PURELY HYBRID/ADVALOREM B
	

Figure 4.8: Regression discontinuity results on the effect of switching the tax system from hybrid to a uniform specific/ advalorem rate on excise duty