The International Tobacco Control Policy Evaluation Project

Cigarette Taxation in Kenya at the Crossroads: Evidence and Policy Implications

Nigar Nargis, Michal Stoklosa, and Jeffrey Drope
American Cancer Society, USA

Lawrence Ikamari
University of Nairobi, Population Studies and Research Institute, Kenya

Jane Rahedi Ong`ang`o
Kenya Medical Research Institute, Kenya

Geoffrey T. Fong
University of Waterloo, Waterloo, Canada

Vincent Kimosop
International Institute for Legislative Affairs, Kenya

Frank J. Chaloupka
University of Illinois at Chicago, USA

October 16, 2015

Suggested Citation: Nargis, N., Stoklosa, M., Ikamari, L., Ong`ang`o, J.R., Fong, G.T., Drope, J., Kimosop, V., and Chaloupka, F.J. (October 2015). Cigarette Taxation in Kenya at the Crossroads: Evidence and Policy Implications. University of Waterloo, Waterloo, Ontario, Canada.

Cigarette Taxation in Kenya at the Crossroads: Evidence and Policy Implications

Nigar Nargis[1], Michal Stoklosa[1], Lawrence Ikamari[2], Jane Rahedi Ong`ang`o[3], Geoffrey T Fong[4], Jeffrey Drope[1], Vincent Kimosop[5], and Frank J. Chaloupka[6]

[1] American Cancer Society, USA
[2] University of Nairobi, Population Studies and Research Institute, Kenya
[3] Kenya Medical Research Institute, Kenya
[4] University of Waterloo, Waterloo, Canada
[5] International Institute for Legislative Affairs, Kenya
[6] University of Illinois at Chicago, USA

October 16, 2015

Abstract

This paper analyzes some recent cigarette tax policy changes and their effects on cigarette consumption and revenue in Kenya. These analyses provide evidence that the change in cigarette excise system from tiered specific to ad valorem with minimum specific floor in 2011 followed by improvement of the tax administrative capacity of the Kenya Revenue Authority led to significant increases in revenue. The Excise Duty Bill 2015 proposed simplifying the excise system further to uniform specific excise, but the Parliament proposed an Amendment to the Bill to reinstate the tiered specific excise system. Kenya now stands at the crossroads. If the uniform specific excise initially proposed in the Excise Duty Bill 2015 is implemented, then Kenya would stand out globally as a country with a tobacco tax system that is consistent with best practices. As a consequence, Kenya would benefit significantly from both reduced smoking and growth of revenue in the short to medium term via regular upward adjustment of the excise tax rate in line with inflation and income growth. In contrast, if Kenya were to reinstate the tiered specific excise, as proposed by the Amendment, this would constitute a backwards step leading to a reversal of recent benefits achieved by the uniform tax system. Ultimately, Kenya would incur greater losses in public health via higher levels of cigarette consumption and smoking prevalence as well as lowered levels of revenue.

Introduction

Tobacco taxation is well recognized as one of the most effective and cost-effective measures of tobacco control globally. Raising tobacco tax is known as a win-win policy because it benefits public health by increasing tobacco price and reducing tobacco consumption on the one hand and increases government revenue on the other. With the expansion of government expenditures for development and the potential of widening fiscal deficit (Odero et al., 2015), Kenya is crucially in need of focusing on the channels of tax revenue generation. The role of tobacco, as an excisable product and hence as a potential source of higher revenue, is therefore important in its own right. At the same time, tobacco taxation can serve the public health goal by reducing tobacco consumption significantly.

The purpose of the present paper is to highlight and analyse the facts about the economics of cigarette taxation in Kenya and project the effects of recent cigarette tax policy changes on tax revenue and public health. First, it reviews the measures of tobacco consumption in Kenya. Then it explains why taxing tobacco is important from both fiscal and public health perspectives. The third section describes and assesses the history of cigarette excise systems in Kenya. The fourth section presents the trends in cigarette price, affordability, and consumption. The fifth section lays out the analytical framework of the report followed by the presentation of results on the effects of cigarette tax policy changes on consumption and revenue. The final section concludes the report underlining Kenya's recent tax policy initiative, as embodied in the proposed Amendment to the Excise Duty Bill 2015, as being contrary to best practice in tobacco taxation, compared to the original Excise Duty Bill 2015, which calls for an increase in the excise rate while retaining the existing uniform tax structure.

Tobacco consumption in Kenya

According to the Global Adult Tobacco Survey 2014, the current smoking prevalence in Kenya is 15.1% among men and 0.8% among women with the national average of 7.8%. Daily cigarette smokers are 11.6% among men and 0.6% among women (GATS, 2014). With a 7.8% smoking prevalence, 42.927 million people and 58.1% of the total population aged 15 and over (United Nations, 2015), there are 1.95 million adult smokers in Kenya. The total market value of cigarette sales in Kenya was KShs. 34 billion for 7,403 million sticks in 2013 (Euromonitor, 2014). It means the number of cigarettes smoked per day per adult smokers was 9 sticks and the annual expenditure on cigarettes per adult smoker was KShs. 17,477 or KShs. 48 per day per adult smoker. With per capita GDP of KShs. 124,468 as of 2014, this cigarette expenditure accounts for 14% of per capita GDP for a smoker. This percentage reflects that the opportunity cost of tobacco use (the household expenditure on tobacco products that could have been allocated to an

alternative use) is high. The corresponding estimate obtained by researchers in the Research for International Tobacco Control (RITC) project in Kenya during 2005-06 is 8.8% of the monthly household income of households with a tobacco user, which is higher than the monthly budget allocated for essential items such as clothes, education, or health (RITC, 2010). The smoker's household could have allocated the money spent on tobacco to meet other competing needs of the members of the household.

Among students covered by the Global Youth Tobacco Survey (GYTS) 2013, current smoking prevalence was 7% for all, 9.6% for boys, and 4% for girls aged 13-15 years. Such high prevalence rates among the youth projects even higher consumption of tobacco in the future. Note that the smoking prevalence among girls is much higher than the prevalence among adult women. It portends the future growth of tobacco use and heavier disease and disability burden among the female population. The percentage of youths aged 13-15 who are exposed to second hand smoke at home is 24.8%. This high level of exposure to tobacco smoke raises further concern for the future burden of tobacco in terms of death, disease and disability.

Why tax tobacco?

An effective tax increase should increase prices of tobacco products and make them less affordable. Thus tax increase will reduce tobacco consumption. Tax and price increases influence the demand for tobacco products in two ways. First, they reduce the prevalence of tobacco use by discouraging non-users from taking up tobacco use, encouraging existing users to quit, helping former users to stay quit, and preventing occasional smokers from turning into regular smokers (Chaloupka et al., 2012). Second, higher tobacco prices reduce the consumption of tobacco products among those who continue to use tobacco after a price increase.

Taxing tobacco serves the dual purpose of promoting public health and generating revenue. Historically, the primary aim of tobacco taxation has been to generate government revenue. There are multiple reasons for it to be considered as an important source of revenue (IARC, 2011). First, tobacco products are typically produced by a small number of manufacturers and/or imported by a few importers. It is relatively easy for the government to collect tax from a small number of producers and/or importers. Second, tobacco products have relatively few close substitutes. Third, tobacco products exhibit relatively inelastic demand. Fourth, the product is not considered a basic necessity. Finally, the share of tobacco tax in price is low in most countries. The relatively recent focus is to use tobacco taxes as a policy tool to improve public health because it provides a self-control device to reduce tobacco consumption.

Tobacco tax corrects for the market failure arising out of different types of individual behaviour. For instance, smokers impose external cost on non-smokers in terms of the disease burden

caused by tobacco smoke pollution. Smokers also cause external cost on the public health care system by drawing public resources from taxpayers' money to pay for their treatment of tobacco-induced illnesses. These external costs are not taken care of by the market mechanism of tobacco products. So, it is reasonable that smokers have to compensate for the negative 'externalities' that they cause to society.

In addition, children do not have the knowledge and capacity to make an informed choice about tobacco use. So, it is necessary to raise the price of tobacco products by raising taxes to protect them from becoming addicted to tobacco. By offering a commitment device, tax also corrects for the self-control failures or 'internalities' that result in greater tobacco use than desired (Gruber and Köszegi, 2002).

The cigarette excise tax systems in Kenya

Tiered specific excise system

Historically, Kenya had a complex excise tax system for tobacco products for long time. Prior to 1993, Kenya had ad valorem excise at the rate of 130% of the ex-factory price of tobacco products. In 1993, a new tiered specific tax regime based on banded retail selling price (RSP) was introduced that stayed in force until 2007 with minor adjustments in the tax rate in certain bands. The rate on other manufactured tobacco remained at 130% of the ex-factory price (Kenya Revenue Authority).

Between 2007 and 2010, Kenyan government experimented with various models of the tiered excise tax system for cigarettes (Table 1). In the Finance Bill 2007, the Minister for Finance made a proposal to Parliament to amend the tax structure from RSP to one based purely on packaging characteristics. However, this proposal was overturned by Parliament, which instead reinstated the earlier tax structure based on RSP. In 2008, the treasury again amended the tax structure from pure RSP to a hybrid system based on both RSP and packaging characteristics with the latter being predominant (Table 1b). However, an attempt by Parliament to return to a tax structure based only on RSP led to a compromised structure described in Table 1c, which was predominantly based on packaging characteristics.

In the Finance Act 2010, the Parliament amended the tax structure of cigarettes by shifting it back to a predominantly RSP structure (Table 1d). In addition, a 16% VAT on the producer price and 30% import duty on the CIF (cost, insurance and freight) value of the products imported from outside of East African Community (EAC) were applied. However, all imports are charged an import declaration fee of 2.25% irrespective of the origin. The excise duty on other manufactured tobacco products was charged at 130% of the ex-factory price.

The tiered tax structure creates incentive for repositioning of brands with some manufacturers reducing the RSP of their lead brands in order to qualify for a lower tax rate. In this way, the tiered tax structure ultimately induces smokers to switch to cheaper brands instead of quitting in the event of tax and price increase. Thus the complexity of the tax system operates as an obstacle in the use of tobacco taxation to achieve public health objectives. It also creates significant administrative burden on tax administrators to administer such as complex tax system.

Table 1: Rates of excise duty (KShs. per 1000) on cigarette sales in Kenya, 2003-2010.

(a) The tiered specific cigarette tax system in Kenya based on retail selling price

Band	Retail selling price (KShs.)	2003	2004	2005	2006	2007
A	<=1,500	450	450	495	495	500
B	1501-2500	650	650	715	715	800
C	2501-3500	900	900	990	990	1200
D	>3500	1400	1400	1540	1690	2000

(b) The tiered specific cigarette tax system in Kenya based on a mix of retail selling price and packaging characteristics, 2008

Band	Description	2008
A	Plain cigarettes or RSP of up to KShs. 1500	700
B	Soft Cap I or RSP of KShs. 1501-2500	1200
C	Soft Cap II or RSP of KShs. 2501-3500	1500
D	Hinge lid cigarettes or of RSP of more than KShs. 3500	2500

(c) The tiered specific cigarette tax system in Kenya based on a mix of retail selling price and packaging characteristics with emphasis on packaging characteristics, 2008

Band	Description	2008
A	Plain cigarettes or plain cigarettes of RSP of up to KShs. 2500	700
B	Soft cap cigarettes of 72mm or less or soft cap cigarettes of 72mm or less with RSP of KShs. 2501-3500	1200
C	Soft cap cigarettes of more than 72mm or soft cap cigarettes of more than 72mm of RSP of KShs. 3501-4500	1500
D	Hinge lid cigarettes or hinge lid cigarettes of RSP of more than KShs. 4500	2500

(d) The tiered specific cigarette tax system in Kenya based on a mix of retail selling price and packaging characteristics with emphasis on retail selling price, 2010

Band	Description	2010
A	Plain cigarettes or cigarettes of RSP of less than KShs. 2500	700
B	Soft Cap cigarettes or cigarettes of RSP of more than KShs. 2500 but not more than KShs. 3500	1000
C	Soft Cap cigarettes or cigarettes of RSP of more than KShs. 3500 but not more than KShs. 4500	1500
D	Hinge lid cigarettes or cigarettes of RSP of more than KShs. 4500	2500

Source: Finance Act 2003, 2005, 2006, 2008, 2010, Republic of Kenya.

A way forward: Simplification of the tax system

Until 2011, Kenya dealt with the problem of brand repositioning due to the complex tiered specific excise tax system on cigarettes. In the finance year 2011-12, the government decided to simplify the cigarette excise tax structure by introducing a single tax rate of KShs. 1200 per 100 cigarettes (i.e. KShs. 24 per pack) or 35% of the retail selling price, whichever is higher, and VAT at the statutory rate of 16% on the producer price (Republic of Kenya, 2012). This is called the ad valorem tax system with a minimum specific floor. The new tax system became effective in July 2011 and government collected taxes based on the new rate, but it became law in 2012. In addition, the Ministry of Finance introduced non-revenue considerations referred commonly as externalities of tobacco consumption. In his Budget speech, the Minister for Finance highlighted using fiscal policy to address public health objectives.

Under the ad valorem system with minimum specific floor, however, the manufacturers have incentive to under declare the retail price of cigarettes to reduce tax liability. As a consequence, the brand prices tend to be clustered around the level where the minimum floor applies. In other words, the potential of collection of higher revenue from higher price brands for which the ad valorem rate will apply is minimal. To overcome this problem, in June 2015, Kenya attempted further to simplify the cigarette excise tax structure by introducing a uniform specific rate of KShs. 2500 per 1000 cigarettes or KShs. 50 per pack (Excise Duty Bill, 2015).

Compared to the previous system, this shift would have implied a 1% increase in the excise rate for premium brands (e.g. Dunhill and Embassy), a 37% increase for mid-price brands (e.g. Sportsman, Sweet Menthol, and Safari), and an 81% increase for economy brands (e.g. Rooster, Super Match, and Rocket). The Parliamentarians recognized that this uneven increase would hurt the economy brand market most where the poorer smokers consume. So they decided to revert to the tiered specific excise system that was in force prior to the ad valorem excise with minimum specific floor. The idea is to create a tax structure favorable to the poor smokers.

Reversal to the complex tax structure

The Parliament passed an amendment to the Excise Tax Bill 2015 on 27 August 2015 by reinstating the tiered specific excise system for cigarettes based on package characteristics and RSP again as it prevailed prior to 2011. The amended excise tax structure is described in Table 2 below.

Table 2: Rates of excise duty (KShs. per 1000) on cigarette sales in Kenya, 2015.

Band	Description	Excise (KShs. per mille)
A	Plain cigarettes or cigarettes with ex-factory selling price of up to KShs.2750 per mille	900
B	Soft cup cigarettes with ex-factory selling price of KShs. 2751 to KShs. 3750 per mille	1200
C	Soft cup cigarettes with ex-factory selling price of KShs. 3751 to KShs. 4750 per mille	1800
D	Hinge lid cigarettes or cigarettes with ex-factory selling price of more than KShs. 4750 per mille	2800

Source: Orders of the Day, Supplementary, The National Assembly, Republic of Kenya, August 27, 2015.

The implications of this reversal are twofold. First, the excise tax rates would be lower compared to the previous system. This is likely to lead to lower real price of cigarettes and greater consumption with adverse public health consequences. Second, the producers would have incentive to reposition cigarette brands in the lower tiers to take advantage of the lower tax rates. This will further bring the average price of cigarettes down and more switching to cheaper brands.

In addition, the reversal to the tiered specific excise system will increase the administrative burden of the tax authority in collecting revenue. This apprehension is reflected in the following statement of the President of Kenya who refused to assent to the Bill:

> The proposed change will make revenue collection complex through the application of multiple rates to similar excisable goods contrary to the provisions of section 40(5)(b) of the Public Finance Management Act, 2012. That provision requires that any proposals adopted by the House on revenue matters take into account, *inter alia*, the principle of ease in revenue collection (Refusal to assent to the Excise Duty Bill 2015).

The President recommended reinstating the originally proposed uniform specific excise of KShs. 2500 per mille of cigarettes. Thus Kenya's tobacco excise system is at the crossroads.

Trends in price, consumption, and affordability

Although the adjustment of the tax rates led to increase in the average nominal price in current prices, the real price per pack of cigarettes fell from KShs. 142 in 2006 to KShs. 92 in 2013 in 2013 constant prices (Figure 1).

One possible reason for the lowering of the average real price is the large proportion of purchase in the form of sticks rather than packs. In Kenya, the ITC Kenya Survey shows that in 2012, 64% of total sales were in stick form and the average price of 20 sticks or of a pack in stick purchase was KShs. 93, whereas the average price of 20 sticks in pack purchase was KShs. 103 (Table 3). The widespread allowance of cigarette purchase in stick form thus makes cigarettes more affordable to smokers. More stringent adherence to the current legislation in banning stick sales would help preventing increase in affordability from purchase of single cigarettes.

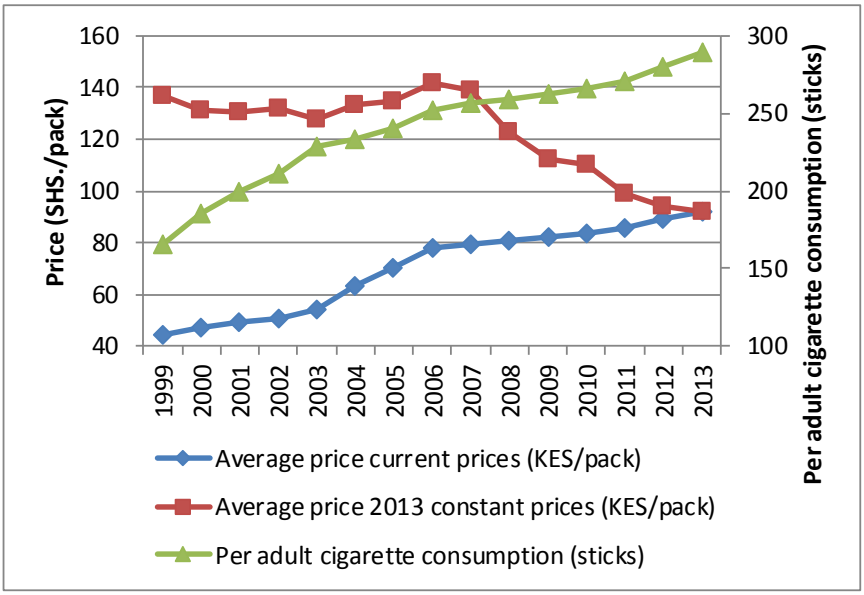
Table 3: Comparison of the prices of cigarette brands in pack and stick purchases in Kenya, 2012.

Brands	Market share	Average price per pack (KShs.)		Average price per stick (KShs.)	
		Pack purchase	Stick purchase	Pack purchase	Stick purchase
Premium brands	**6.19%**				
Dunhill	0.94%	142.00	-	7.10	-
Embassy	5.25%	142.00	128.55	7.10	6.43
Mid-price brands	**56.58%**				
Sportsman	51.23%	105.08	100.19	5.25	5.01
Sweet Menthol	2.10%	100.00	105.00	5.00	5.25
Safari	3.25%	90.00	68.99	4.50	3.45
Economy brands	**33.64%**				
Rooster	7.71%	66.67	73.65	3.33	3.68
Super Match	21.75%	85.71	88.34	4.29	4.42
Rocket	4.18%	55.00	53.03	2.75	2.65
Others	3.59%				
	N = 953				
Average		103.47	93.22	5.17	4.66

Source: ITC Kenya Survey, Wave 1, 2012.

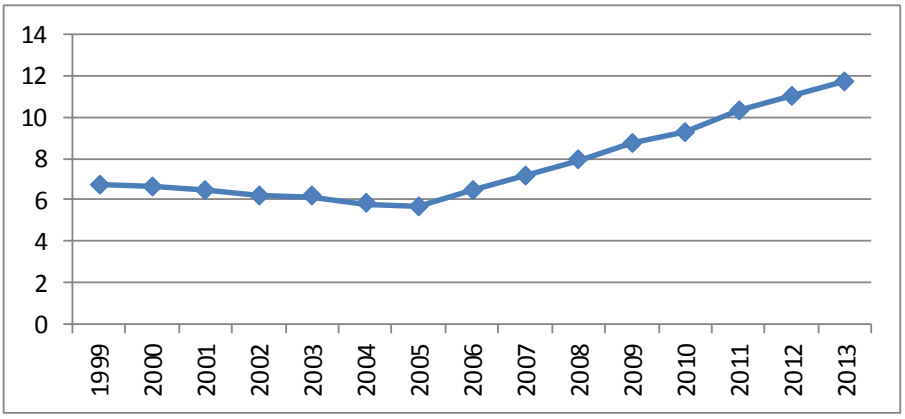
In addition, the affordability of cigarettes (measured by the inverse of the ratio of the cost of 100 packs of cigarettes to GDP per capita) remained steady and then increased since 2005 (Figure 2). These phenomena contributed to increased cigarette consumption in Kenya over the last one and a half decade under observation as reflected in the increasing per capita cigarette consumption in Figure 1.

Figure 1: The average price per pack of cigarettes (KShs.) in current prices and 2013 constant prices and per adult annual consumption of cigarettes in Kenya, 1999-2013.



Source: Authors' calculations based on data from Euromonitor International Ltd.

Figure 2: The affordability index for cigarettes in Kenya, 1999-2013.



Source: Authors' calculations based on data from Euromonitor International Ltd and World Development Indicators Database 2015.

Note: The affordability index of cigarettes is measured by the inverse of the ratio of the cost of 100 packs of cigarettes to GDP per capita.

Analytical framework

In this paper, we examine the effects of cigarette tax policy changes on cigarette consumption and revenue in two different periods, one retrospective from 2011 to 2014 and one prospective from 2015 to 2025. The retrospective analysis is done based on the tax policy change that took place in 2011 and was implemented during 2011-2014. The prospective analysis takes the tax policy change in 2015 as the benchmark and undertakes simulation of regular tax increases through 2025.

In order to examine the effects of tax policy change from tiered specific excise to ad valorem excise with minimum specific floor that became effective in 2011, we compare the prices before and after the policy change using price data from Euromonitor International collected in January 2011 and January 2012. We measure the change in consumption as a result of the price change and income growth using price and income elasticity of demand. The price elasticity of demand is defined as the percentage change in demand in response to a 1% change in price. The income elasticity of demand is defined as the percentage change in demand in response to a 1% growth in income. Global evidence on the price sensitivity of tobacco demand shows that the price elasticity is negative, ranges from 0 to -1, and is relatively high for low and middle income countries compared to high income countries (IARC, 2011). There is no consensus regarding the value of the income elasticity of demand except that it is positive, which implies that tobacco is a normal good. In the absence of estimated price and income elasticities for Kenya, we assume the values of these elasticities that are consistent with global evidence.

Following the WHO Tax Simulation Model (TaXSiM), we simulate the policy change on the cigarette market segmented into premium, mid-price, and economy brands. Evidence suggests that the demand for premium brands is less price elastic than that for mid-price brands and the demand for mid-price brands is less price elastic than that for economy brands (Tauras et al, 2006). It is therefore assumed that price elasticity is higher for lower-priced brands: -0.5 for economy brands, -0.3 for mid-price brands and -0.1 for premium brands. The income elasticity is assumed to be 0.1 for all price bands. It is less clear whether income elasticity varies with the price band of cigarette brands, so it is assumed in this simulation that it does not.

The original consumption level is obtained from the Euromonitor sales data for the year 2011. The new sales level is estimated by using the formula, new consumption = original consumption [1+ price elasticity X percentage change in price + income elasticity X percentage change in per capita GDP]. The effects on excise revenue and VAT revenue are also estimated using the new tax rates and the estimated new sales level. Thus the impact of the tax policy change from tiered specific excise to ad valorem with minimum specific floor on the level of cigarette consumption and tax revenue is evaluated. For adjustment of price change for inflation, the inflation rate is

assumed at the current rate of 8%. The per capita GDP growth is taken at the current rate of 2.5%.

The next step is to use 2012 levels of consumption and revenue as the baseline and apply the recently proposed tiered specific excise of 2015 in the Amendment of the Excise Duty Bill 2015 to estimate the changes in price, consumption and revenue expected in 2016. The expected effects on consumption and revenue of the 2015 Amendment of the reversal to the tiered specific excise system are contrasted with the outcomes that would have resulted had the best case scenario of the uniform specific excise proposed in the Excise Bill 2015 been effective.

For the next 10 years until 2025, the excise rate is increased so that it leads to price increase at a rate at least equal to the rate of inflation plus the rate of per capita income growth in order to keep the affordability of cigarettes from falling. The inflation and per capita GDP growth rates are assumed the same as the current rates. These tax increases are simulated to project the price increases, reduction in consumption and revenue gain under both scenarios of the tiered specific excise proposed under the Amendment and the uniform specific excise originally proposed in the Excise Duty Bill 2015.

Results

Effects of cigarette tax policy changes on cigarette consumption and revenue

2011-2014

The introduction of the ad valorem excise on retail price with minimum specific floor on cigarettes in 2011 increased the excise tax burden per pack of cigarettes of the most sold brand Sportsman (51% of the market) from KShs. 20 to 32 per pack. This significant increase in the tax yield is attributable to the increase in the retail price from KShs. 70 to 90 per pack which was the base of the ad valorem excise. The imposition of the minimum specific floor lifted the minimum tax yield from KShs. 20 to 24 per pack for most of the economy brands. On the other hand, the tax yield for premium brands remained the same at KShs. 50 per pack. However, premium brands were only 6.2% of the market. The increase in the tax yield at the lower end of the price distribution increased the average excise per pack from KShs. 22 to 31 resulting in increase in the average price from KShs. 77 to 87 per pack or 5% increase in inflation-adjusted average price.

The excise share in retail price was 29% and the total tax share including excise and VAT was 38% in 2011 to begin with. The introduction of the ad valorem excise with minimum specific floor raised the excise tax share to 35% and the total tax share to 43%. This tax share is low compared

to the WHO recommended excise tax share of 70% (WHO, 2010). The low tax share indicates that there was scope for increasing revenue by raising tax.

As a result of the tax and price increase in 2011, the excise revenue collection was expected to be KShs. 8,456 million in 2012. However, the actual excise revenue collection in the 2011-12 fiscal year was KShs. 6,092 million (WHO, 2015). It implies that an excess of KShs. 2,364 million could have been generated in excise revenue in one year from the tax policy change in Kenya.

In order to explain why the full revenue potential was not realized, we need to examine the capacity of the tax administration in efficiently collecting tax revenues as well. The Kenya Revenue Authority (KRA) is the government agency under the Ministry of Finance, Kenya, which is in charge of the revenue collection and remittance to the Central Bank of Kenya. The problems faced by the KRA in administering tobacco tax in Kenya are manifold, such as follows:

(1) Manufacturers under declare production of cigarettes to reduce tax liability.
(2) Manufacturers have recourse to switched declaration of production so that higher price brands that previously had to pay excise at the ad valorem rate would qualify for the minimum specific floor. This strategy ensures minimum tax liability.
(3) Exports are exempted from excise tax and hence manufacturers tend to exaggerate exports part of which can be reimported into Kenya from neighbours (e.g. EAC Partner States Uganda, Rwanda, Burundi and Tanzania) who are not subject to import duty as a regional economic bloc.
(4) Kenya is a major tobacco grower and cigarette manufacturing hub (British American Tobacco Kenya) in East Africa. It exports cigarettes to 17 countries from Nairobi. It shares porous borders with the neighboring countries Uganda, Rwanda, Burundi, Tanzania, Somalia and South Sudan. These countries also have heterogeneous and complex tax laws. On top of that, Kenya is surrounded by countries (e.g. Somalia, South Sudan) which have internal conflicts and are not in a position to pay much attention to regional collaboration to find solutions to illegal cross-border trade. Also the existence of sea port and transit route for hinterland countries and lack of administrative capacity to address tobacco industry tactics aggravate the problem. All these factors contribute to Kenya's challenge in facing illicit trade in tobacco in the form of undeclared imports, undeclared local production, counterfeit brands production, or diverted exports (e.g. domestic production declared as export never leave the country or is illegally imported to the destination countries).

With a view to addressing these problems in tax administration, Kenya went through major reforms and innovation in the tax administration starting in 2012. It includes simplification of tax structure, introduction of new generation of encrypted excise tax stamps complete with production accounting and track-and-trace system known as Excisable Goods Management

System (EGMS) and Electronic Cargo Tracking System (ECTS). All these innovations contributed to greater compliance in tax collection and control of illicit trade. The outcome is reflected in the revenue performance of KRA in the subsequent years.

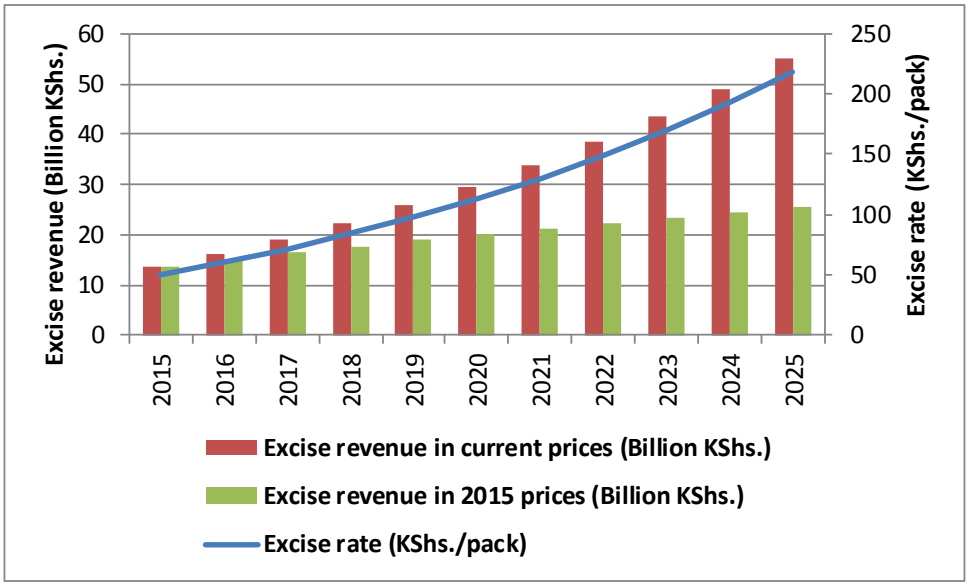
According to the simulation analysis based on the 2012 baseline scenario and continuation of the ad valorem excise system with minimum specific floor, in 2014, the excise revenue collection from cigarettes tax was expected to be KShs. 8,977 million. This would have meant 47% increase in excise revenue from cigarettes over the 2012 level in nominal terms. However, the actual excise revenue collection in that year was KShs. 11,044 million (WHO, 2015) implying 81% nominal increase. The additional KShs. 2,067 million revenue collection over the predicted level of KShs. 8,977 million is attributable to the improvement in the tax administration system as described above. Thus the interaction between the tax policy change and the tax administration system needs to be recognized in evaluating the effect of a given tax policy change on revenue.

The effect of improving the tax administration is also reflected in the volume of tax-paid sales. The increase in the tax and price in 2011 was expected to reduce cigarette consumption. In reality, the volume of tax-paid sales increased from 5,635 million sticks in 2011 to 6,009 million sticks in 2012 to 6,400 million sticks in 2013 (Euromonitor, 2014), which seems counterintuitive. Apart from the positive effect of population growth and income growth on total cigarette consumption, the answer to the puzzle lies partly in the act of the KRA in improving the tax administration beginning in 2012. To the extent that illicit trade is controlled by the track and trace system, it is likely that the volume of tax-paid sales will increase. It should be noted that the per capita cigarette sale was increasing even prior to 2011 primarily due to the stable or falling real price of cigarettes (Figure 1).

2015-2025

In the Excise Duty Bill 2015, Kenya planned to introduce uniform specific excise for cigarettes at the rate of KShs. 2500 per mille or KShs. 50 per pack. In the following exercise, we examine the outcomes that would have resulted from subsequent tax increases. It is assumed that the tax increase is fully passed on to price increase. The excise rate is increased consistently every year until 2025 at a rate so that price increases by at least as much as the annual rate of inflation plus the rate of per capita GDP growth. With the current inflation rate at 8% and assumed per capita GDP growth rate at 2.5%, the tax rate is increased such that the increase in the average nominal price is at least 10.5%. It is important that the tax increase induces increase in price needed for making cigarettes less affordable over time and reducing consumption and prevalence (WHO, 2014). The upward sloping blue line in Figure 3 shows the exponential growth in the excise rate per pack of cigarettes that is needed for maintaining 10.5% increase in the average nominal price of cigarettes every year.

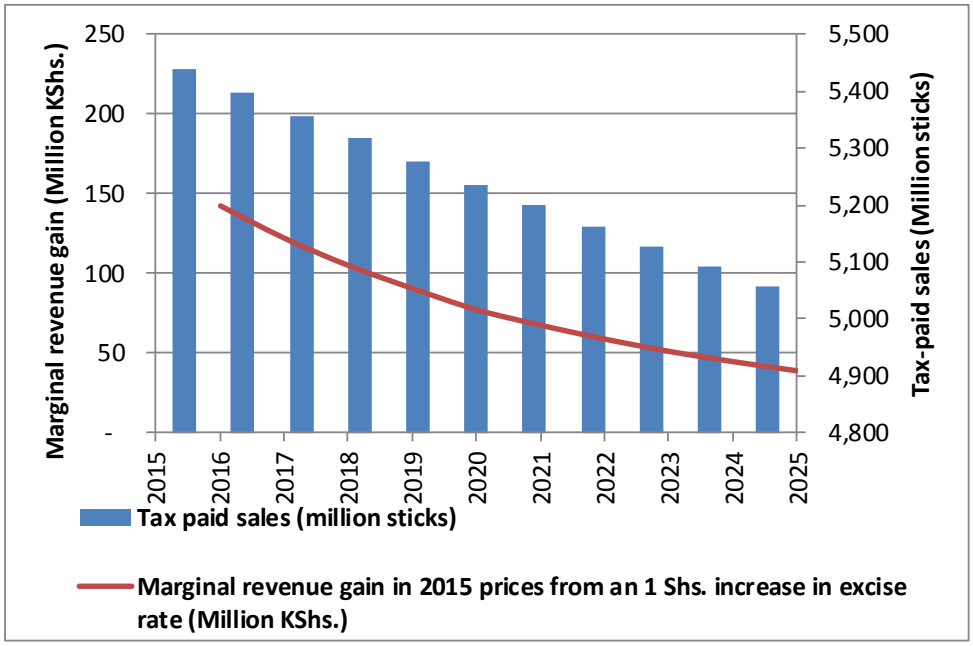
Figure 3: Simulated revenue growth from cigarette excise tax increases in Kenya, 2015-2025



Source: Authors' calculations.

Although the increase in the excise rate needs to be larger every successive year, the revenue gain is expected to occur at a decreasing rate as shown by the upward sloping excise revenue curve in 2015 prices in Figure 3 vis-à-vis the downward sloping marginal revenue curve in Figure 4. The decline in the marginal revenue curve is largely attributable to the decrease in consumption that follows the increase in tax and price (Figure 4). With the narrowing of the tax base, the overall volume of tax collection may even diminish at some point in the longer run. However, if the volume of tax-paid sales increases with the strengthening of the capacity of the tax administration in revenue collection, this scenario might change. For example, the marginal revenue curve may flatten out resulting in greater revenue gain if KRA brings increasing share of the illicit market under the purview of the track and trace system. On the other hand, if the producers overshift the tax increase by increasing the retail price more than the tax increase, which is a possibility under uniform specific excise structure, then reduction in consumption can be faster and the marginal revenue gain will be steeper as well. The ultimate result will depend on the relative strength of these two forces.

Figure 4: Simulated tax-paid sales and marginal revenue gain from cigarette excise tax increases in Kenya, 2015-2025.



Source: Authors' calculations.

Note: Marginal revenue gain is calculated as $(R_{t+1}-R_t)/(T_{t+1}-T_t)$ where R and T stand for revenue and excise tax rate and t and t+1 refer to two adjacent years.

Expected outcomes of the cigarette Excise Bill Amendment 2015

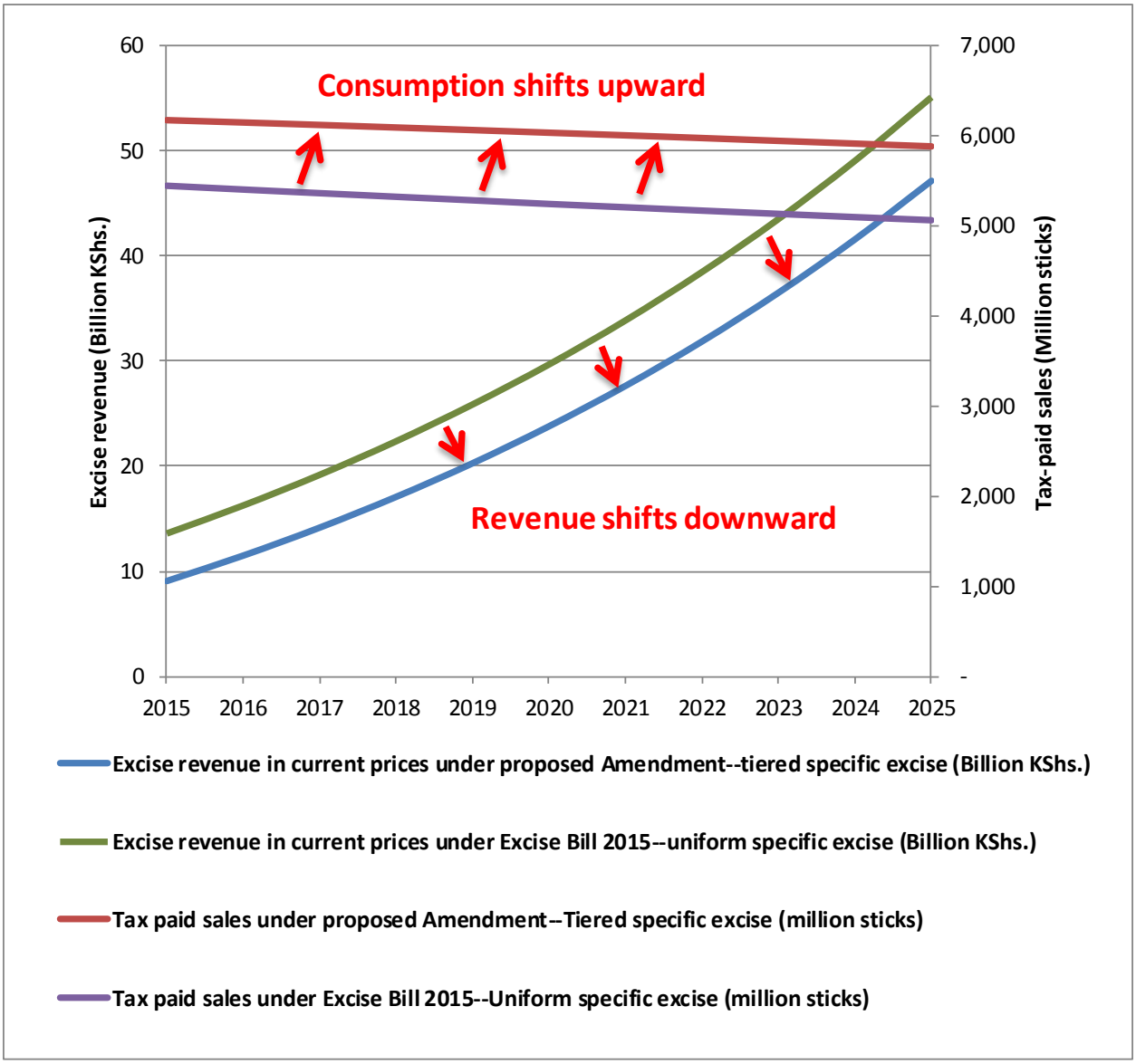
The tiered specific excise tax structure, as proposed in the Amendment of the Excise Duty Bill 2015, would lead to a reduction in the excise tax rate for economy brands, no change for mid-price brands, and a slight increase for premium brands. The immediate effect of the tax increase, according to the tax simulation model, is that the price adjusted for inflation would decrease for all three groups, resulting in a 14% reduction in the real price. This price reduction would lead to increases in cigarette consumption and ultimately, a greater burden on public health.

In addition, revenue from cigarettes would decrease compared to the 2014 level, *ceteris paribus*, because of the lowered excise rate; the growth in consumption would not compensate for that decrease under the condition of inelastic demand. However, growing demand from population and income growth may more than offset the effect of the decrease in the tax rate and the net effect on revenue can be positive.

An appropriate method of understanding the implications is by comparing the amended scenario under the tiered specific excise with that originally proposed under the uniform specific excise. The simulation shows that the amendment would bring about a 'lose-lose' outcome as opposed to a 'win-win' outcome of reduced consumption and increased revenue with raising tax. As shown in Figure 5, the simulated consumption path for the period 2015-2025 shifts upward under the tiered specific system compared to the level under the uniform specific excise. And at the same time, the simulated excise revenue path shifts downward.

These simulation results demonstrate that if the tiered specific excise proposed in the amendment were to be implemented as opposed to the originally proposed uniform specific excise, the Kenyan economy would suffer in two ways: (1) greater health cost burden from increased cigarette smoking, and (2) substantially lower revenue potential, which could be, according to our estimates, as large as nearly KShs. 67 billion over the ten-year period.

Figure 5: Simulated excise revenue and tax-paid sales from cigarette tax increase under uniform specific and tiered specific excise system in Kenya, 2015-2025.



Source: Authors' calculations.

Conclusion

Kenya has traveled a long way in the regime of tobacco taxation by applying different tax structures and tax administration processes. This paper analyzes some recent cigarette tax policy changes and their effects on cigarette consumption and revenue. These analyses provide evidence that the change in cigarette excise system from tiered specific to ad valorem with minimum specific floor in 2011 followed by improvement of the tax administrative capacity of the Kenya Revenue Authority led to significant increases in revenue.

Kenya now stands at the crossroads. If the uniform specific excise initially proposed in the Excise Duty Bill 2015 is implemented, then Kenya would stand out globally as a country with a tax system that is consistent with best practices. The country could benefit significantly from reduced smoking and growth of revenue stream in the short to medium term by regular upward adjustment of the excise tax rate in line with inflation and income growth.

In contrast, if Kenya were to reinstate the tiered specific excise system, as proposed by the Amendment to the Bill, this would constitute a backwards step and would lead to a reversal of recent benefits achieved by a uniform tax structure. Ultimately, Kenya would incur greater losses in public health via higher levels of cigarette consumption and smoking prevalence as well as lowered levels of revenue.

References

Odero WO, Reeves WA, Kipyego N. 2015. *African Economic Outlook, Kenya, 2015*. Available at: http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2015/CN_data/CN_Long_EN/Kenya_GB_2015.pdf, accessed on 21 August 2015.

Chaloupka FJ, Yurekli A, Fong GT. 2012. Tobacco taxes as a tobacco control strategy. *Tobacco Control*; 21:172-180.

Euromonitor. 2014. Euromonitor International Ltd.

The Excise Duty Bill, 2015. Kenya Gazette Supplement No. 79, National Assembly Bills 2015, Nairobi, 11th June, 2015.

GATS. 2014. *Factsheet, Global Adult Tobacco Survey*.

Gruber J, Köszegi B (2002). *A theory of government regulation of addictive bads: optimal tax levels and tax incidence for cigarette excise taxation*. NBER Working Paper Series. Working Paper #8777. Cambridge, MA, National Bureau of Economic Research.

IARC. 2011. *Effectiveness of tax and price policies for tobacco control*. IARC Handbook of Cancer Prevention, Tobacco Control, Volume 14. International Agency for Research on Cancer, Lyon: France.

Refusal to assent to the Excise Duty Bill 2015, Memorandum, The Constitution of Kenya, 24 September 2015.

RITC. 2010. *Domesticating the FCTC in Kenya: providing the evidence, Project No. 103330-021*. Program report 2005-2010, Research for International Tobacco Control, International Development Research Centre.

Taurus JA, Peck RM, Chaloupka FJ. 2006. The Role of Retail Prices and Promotions in Determining Cigarette Brand Market Shares. *Review of Industrial Organization*. 28:253-284.

United Nations. 2015. *World Population Prospects: The 2015 Revision*, DVD Edition. United Nations, Department of Economic and Social Affairs, Population Division.

WHO. 2015. *WHO Report on the Global Tobacco Epidemic*. World Health Organization, Geneva.

WHO. 2010. *WHO technical manual on tobacco tax administration*. World Health Organization, Geneva.

WHO. 2014. FCTC Guidelines for Implementation of Article 6. Available at http://www.who.int/fctc/treaty_instruments/Guidelines_article_6.pdf, accessed on 8 September 2015.