Tracking and tracing tobacco products in Kenya

Hana Ross

Room 3.17 School of Economics Building, Middle Campus, University of Cape Town, Rondebosch, Cape Town 7700, South Africa

ARTICLE INFO

Article history:
Received 29 January 2017
Received in revised form 20 April 2017
Accepted 22 April 2017
Available online 29 April 2017

Keywords:
Tobacco
Taxation
Administration

ABSTRACT

This report evaluates the effectiveness of various measures to control the size of illicit cigarette trade in Kenya. It is based on a literature review, a review of conference proceedings/materials, online searches, and analyses of data from the National Statistical Office of Kenya, ERC, and Euromonitor. I used both published and grey literature, official government reports, and online news articles. In response to the presence of illicit cigarettes in the market in the early 2000s, Kenya adopted numerous measures to reduce tobacco tax evasion, with varying degrees of success. The latest solution involving a tracking and tracing system accompanied by electronic cargo monitoring of export seems to be the most effective, as it reduced the size of the illicit cigarette market and increased tax revenue. In addition, it seems to be more resistant to tampering.

The experience of Kenya highlights the importance of consistency and comprehensiveness of the system addressing tax evasion, because piecemeal measures have only short-term effects.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

Tobacco tax evasion and avoidance can diminish the effectiveness of tobacco taxation as a public health measure, because they generally make tobacco products more affordable, thus stimulating demand. In addition, they deprive the government of tax revenue.

Since the early 2000s, Kenya has been dealing with multiple forms of tobacco tax evasion including undeclared domestic production, unaccounted-for exports, undeclared imports of raw tobacco and finished products, counterfeited products, and under-declared tax values (Ngewyo and Kenya Revenue Authority, 2012; ERC Group, 2009). The Kenya Anti-Counterfeit Agency (ACA) estimated that in 2011 illicit cigarette trade deprived the country of about KES 70 billion (US$ 790 mil) taking into account tax revenue, job, and investment losses (Muchangi, 2012).

Estimates of the illicit cigarette market in Kenya vary greatly (Table 1). ERC reports that illicit cigarettes accounted for 20%–26% of the total cigarette market in 2007 (Ngewyo and Kenya Revenue Authority, 2012; ERC Group, 2009, 2015), but it revised this estimate to 12% in 2010 (ERC Group, 2010) and to 11% in 2012 (ERC Group, 2015). Euromonitor published an even wider range of estimates. It claimed that the share of illicit cigarettes in Kenya reached 11.3% in 2006 (Nargis, 2012) but this 2006 estimate was subsequently revised to 30.3% (Euromonitor International, 2016a), almost 3-times as much. Clearly, the latest Euromonitor’s estimates are outliers compared to the estimates reported by ERC, the tobacco industry (BAT), and the Kenya Revenue Authority (KRA). An academic or a peer-reviewed estimate of the size of the illicit trade in Kenya does not exist.

This article describes the measures taken by the Kenyan authorities to deal with tobacco tax evasion and their impact on legal cigarette sales and tobacco tax revenue.

2. Methods

I conducted a literature review, online searches, and reviewed conference proceedings/materials. I obtained and analyzed data from the National Statistical Office of Kenya, ERC, and Euromonitor. I used both published and grey literature, official government reports, and online news articles.

Given that excise revenue depends both on legal sales and the tax rate/structure, I focus primarily on changes in legal cigarette sales as an indicator of the effectiveness of a track and trace (T&T) system. Legal sales is also a function of prevalence, population growth, and income. Real per capita GDP growth in Kenya during the time period of interest (2003–2015) has been quite stable, between 2 and 3% a year (with the exception of a retraction by 1% in 2008). The same is true for population growth – an annual increase of about 3% (Kenya National Bureau of Statistics, 2012). The smoking prevalence among males has declined from 23% in 2004 to 17% in 2013, about 0.6% annually. The smoking prevalence among females is negligible (0.04%) in 2013 (KNBS, 2014, 2010; Central Bureau of Statistics, CBS [Kenya et al., 2004]). If we assume that these three parameters have a relatively stable impact on changes in legal sales, any abrupt changes in the size of the licit market are likely to reflect more control over that market.
Table 1
Kenya: size of illicit cigarette trade market as % of total cigarette market 2006–2015.
Sources: (ERC Group, 2009; ERC Group, 2010; Nargis, 2012; Kenya National Bureau of Statis-
tics (KNBS), 2016; Kenya National Bureau of Statistics (KNBS), 2009; Kenya National Bu-
KNBS, 2010; Central Bureau of Statistics (CBS) [Kenya] et al., 2004).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC 2009</td>
<td>20.0</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERC 2010</td>
<td>26.0</td>
<td>8-12</td>
<td>12.0</td>
<td>8.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAT 2013</td>
<td>11.3</td>
<td>11.5</td>
<td>11.8</td>
<td>12.4</td>
<td>12.9</td>
<td>13.5</td>
<td>13.5</td>
<td>14.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM 2015</td>
<td>12.7</td>
<td>12.9</td>
<td>13.3</td>
<td>13.6</td>
<td>13.9</td>
<td>14.0</td>
<td>10.8</td>
<td>10.8</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>EM 2016</td>
<td>30.3</td>
<td>30.7</td>
<td>31.3</td>
<td>32.0</td>
<td>32.4</td>
<td>32.6</td>
<td>26.5</td>
<td>26.6</td>
<td>26.6</td>
<td></td>
</tr>
<tr>
<td>KRA</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: ERC = ERC Group; BAT = British American Tobacco; EM = Euromonitor International; 
KRA = Kenya Revenue Authority.

3. Results

To deal with growing concerns about the illicit cigarette market, Kenya introduced paper tax stamps in 2003 (Muthaura, 2013). The stamps had a serial number, a unique identifier for a particular type of cigarette, came in two colors for filter and non-filter cigarettes, and served as proof of payment. Thanks to these measures, monthly excise tax revenue in 2003 increased from KES 230 million to 350 million (Ngeywo and Ministry of Finance, 2013) and legal cigarette and cigar sales increased by 52% from 2003 to 2004 (Fig. 1).

However, the tax stamps were easy to counterfeit or steal, had to be counted manually, and could not be linked to a particular brand/quantity of production. It soon became obvious that this was not an adequate method to control the illicit cigarette market (Muthaura, 2013). The size of the legal market began to shrink again from 2005 (Fig. 1).

In 2008 the Kenya Revenue Authority (KRA) proposed to implement a T&T system (Ross, 2015). Given the lengthy process of selecting a provider, KRA decided in 2010 to implement a set of temporary measures. These involved tax stamp verification at four points in the supply chain, improved licensing controls, importer registration, and an overhaul of the accounting system to better track cigarette production. Newly established tax enforcement units (Ngeywo and Kenya Revenue Authority, 2015) conducted periodic checks on production to determine how many production lines were active, what raw materials were being used, and to compare input material with the actual output (Muthaura, 2013). These measures increased the cost of the tax stamp regime by KES 66.5 million (US $750,000) a year (Wahome, 2015), which was covered by a 2% fee on total audited revenue paid by the industry, but also increased legal cigarette and cigar sales by 67% (Fig. 1).

In July 2011 Kenya introduced a single specific tax regime, which reduced tax evasion related to false declaration of the number of cigarettes produced in various tax categories (Ngeywo and Kenya Revenue Authority, 2012; Nargis et al., 2015). However, the excise tax on the mid-price brands such as the most popular Sportsman went down by 45% in real value (Fig. 1). The tax revenue first declined in 2011 (by 9%) and then increased by 14% in 2012, with only 0.7% and 3% increases in legal sales in 2011 and 2012, respectively (Fig. 1). Thus, the 2011 tax reform generated some extra revenue and a higher tax yield per cigarette. This, combined with an increase in the size of the legal cigarette market, points to a possible reduction in the size of the illegal cigarette market.

To complement the controls over domestic cigarette production, KRA launched an electronic cargo tracking system (ECTS) in 2010 to track cigarettes produced for export and cigarettes in transit. Export vehicles are secured by radiofrequency ID (RFID) electronic seals to ensure that items intended for export exit the country and reach the intended destination before excise and VAT taxes are refunded. The system relies on an electronic cargo tracking system complemented by GPS/GPRS technologies (Ngeywo and Kenya Revenue Authority, 2012), which enables sending and receiving data about the location of the vehicle at any time via digital cellular communication (Ngeywo and Kenya Revenue Authority, 2012). Any deviation in excess of 50 m on either side of the cargo route or tampering with the seal generates an alert (Ngeywo and Kenya Revenue Authority, 2012). Once the truck is loaded, information is transmitted to the relevant authority in the importing country, which then sends confirmation to the Kenyan authorities upon receiving the goods (Muthaura, 2013). ECTS reduced the number of checkpoints, the associated staffing needs, insurance costs thanks to improved security (Ngeywo and Kenya Revenue Authority, 2012), and allowed the revenue authorities to screen out companies that claim abnormally high tax refunds on exports (Ngeywo and Ministry of Finance, 2013; Ngeywo, 2012). As a result of implementing ECTS, exports from Kenya to Eritrea, Cote d'Ivoire, Sudan, and Mali (United Nations, 2015) were discontinued, some companies ceased to export cigarettes, and three tobacco factories were closed due to their failure to sell/distribute only duty-paid products (Ngeywo and Kenya Revenue Authority, 2012).
Additional evidence of the efficacy of the system was a substantial increase - up to 30% - in legal cigarette sales near the Western border of Kenya, previously known for its illicit cigarette market (Ng'ewyo and Kenya Revenue Authority, 2012). Even BAT Kenya praised government efforts in combating illicit cigarette trade and reported a decline in the illicit cigarette market in early 2012 (Gachiri, 2012). Similarly, ERC (ERC Group, 2015) and Euromonitor (Euromonitor International, 2015), (Euromonitor International, 2016a) reports showed a decline in the share of illicit cigarettes in the market (Table 1). The updated tax regime, together with the anti-tax evasion measures, generated an additional KES 1 billion (US$ 11.3 mil) annually in excise tax revenue (Ng'ewyo and Ministry of Finance, 2013).

Even though all these temporary measures resembled features of a T&T system, integration into a single data-sharing point was still missing. Following a tender, Kenya selected SICPA in April 2013 to set up the excisable goods management system (EGMS) for tobacco and alcohol products, which allows for production counting, T&T, stock control, tax forecasting, forecasting and processing of tax stamps, and collecting other business intelligence. It facilitates the detection of counterfeit goods, prevents smuggling, and eliminates the falsification of production volumes. The EGMS was accompanied by the rollout of an iTax system, which facilitates online tax payments and helps to improve income tax compliance.

The EGMS relies on electronic digital stamps that serve as proof that both excise tax and VAT have been paid. The new stamps are affixed on each pack in such a manner that removal would make them unusable. They have overt security features for the general public (e.g., holograms, color shifting), semi-covert security features for the supply chain actors, covert security features (e.g., fluorescent fibers, security ink) for the tax authority, and forensic security features (e.g. taggants) to support prosecution (Ng’ewyo and Kenya Revenue Authority, 2012; Muthaura, 2013). Thanks to these features, the new tax stamps are very difficult to counterfeit.

Cigarette manufacturers are required to affix photosensitive readers on production lines to transmit real-time production data to KRA servers. Cigarette importers purchase electronic digital stamps in Kenya and send them to their facilities abroad where they are affixed on each pack destined for Kenya (Ng’ewyo and Kenya Revenue Authority, 2015). All domestic producers and importers must activate an excise stamp online (African Tax Administration Forum, 2016). Tobacco products designated for export are not marked, because these products are already subject to a tight electronic cargo monitoring system introduced in 2010.

The T&T system requires high-speed broadband Internet and a reliable telecommunication network. KRA officials are equipped with handheld devices that can swipe a hidden photo-magnetic line embedded in the stamp and transmit real-time data such as the date of issue, the producer’s name, the product category, and the brand to the central server. These devices can also be used offline for authentication of the stamp and for tracking and tracing of the stamp. This allows for quick verification of the legality of a product at any point in distribution. Cigarette distributors and retailers have a device that allows for verification of all tobacco products before accepting them into their outlets. All major supermarkets participate in the system and are connected to KRA servers. In 2016, KRA released an app known as the KRA Stamp Checker, which allows the public to verify the genuineness of both cigarettes and alcohol using mobile phones (Dennis, 2016).

An authorized field officer may inspect a premise at any time (Gazette, 2015), seize illicit products, and arrest the offender on the spot (Ng’ewyo and Kenya Revenue Authority, 2015). Even though distributors and retailers are not licensed, they are criminally liable if they sell products without the appropriate excise tax paid. They can be fined up to KES 5 million (US$ 48,000) and/or be imprisoned for up to 3 years (Gazette, 2015). All manufacturers and importers must be licensed (Ng’ewyo and Kenya Revenue Authority, 2015).

KRA has established 300 new enforcement units to carry out inspections (Ng’ewyo and Kenya Revenue Authority, 2015); these units seized more than 300,000 illegal products from about 900 outlets and prosecuted more than 150 offenders just between February and June 2014 (World Health Organization, WHO, 2015). The rollout of the T&T system took approximately 11 months and was finalized in March 2014. In addition to tobacco products, it also covers spirits, wine, and beer, and there are plans to extend it to other products such as mineral water, juices, and soft drinks (African Tax Administration Forum, 2016; Mwita, 2015). The system is self-funding, since the companies pay for the readers installed in their facilities and are allowed to expense this cost, thus reducing their tax liability (Ng’ewyo and Kenya Revenue Authority, 2015). Overall, the cost of the T&T system in Kenya turned out to be cheaper than the cost of the previous system, which relied on tax stamps without T&T (Ng’ewyo and Kenya Revenue Authority, 2015).

A preliminary assessment of the EGMS’s impact is encouraging. The Kenya National Bureau of Statistics reports a 49% increase in legitimate cigarette and cigar sales from 2013 to 2015 (Fig. 1). Overall, 2014 tax compliance increased by 45% (African Tax Administration Forum, 2016), while its costs went down (Ng’ewyo and Kenya Revenue Authority, 2015). Companies reported better access to information and faster delivery of tax stamps (Ng’ewyo and Kenya Revenue Authority, 2015). The latest excise revenue trend supports these results: cigarette and cigar excise tax revenue increased by 20% (7% in real terms) from 2013 to 2015 (Fig. 1), while excise tax collection on beer and wine/spirits increased by 16% (6% in real terms) and 103% (36% in real terms) during the same period, respectively (Kenya National Bureau of Statistics, KNBS, 2016).

4. Discussion

The KRA stresses the importance of consistency in implementing comprehensive controls, because the partial rollout in 2010 had only a short-term effect (Muthaura, 2013). The rollout of the new system required a systematic approach, stakeholders’ participation, an information campaign, and an initial investment into infrastructure and enforcement (Ng’ewyo and Kenya Revenue Authority, 2014). It was vital to create a permanent association between the product and the code/stamp, which is rendered unusable upon its first use, and to expand enforcement beyond the KRA by facilitating the participation of the public and retailers/distributors. The official enforcement units conduct frequent checks and can get evidence of violation on the spot without requiring additional authentication. The system needs to be monitored and reviewed continuously for performance to ensure its robustness and stability and to deal with possible mutation of tax evasion schemes. Limited human involvement in daily operations and data security prevents errors and system manipulation. For example, production data are obtained without any input from manufacturers.

EGMS is not without its critics. The Anti-Counterfeiting Authority of Kenya expressed some skepticism about its long-term impact and its inability to control counterfeit cigarettes except through its tight control of retail channels. The system would clearly benefit from a region-wide solution. Therefore, the KRA is engaging in a dialog on possible collaboration within the East African Community (EAC). Another challenge is tax stamp management, since the KRA, the Anti-Counterfeit Agency, and the Kenya Bureau of Standards all have a mandate (Euromonitor International, 2016b). In addition, the current legal system does not allow for penalties that are punitive enough to deter illicit trade (Kenya Institute for Public Policy Research and Analysis, 2014).

The lack of credible estimates of the size of the illicit cigarette market, and/or its change makes it difficult to evaluate the system’s performance. Existing estimates of illicit trade come from either market research companies or from the tobacco industry, but neither of them discloses the methodology used to generate these estimates.
T&T systems similar to the one adopted in Kenya are the key requirement of the WHO FCTC Protocol to eliminate illicit trade in tobacco products. The Kenya experience demonstrates that even a lower middle-income country is capable of successfully implementing such system. This can encourage other countries to sign and ratify the Protocol, which will come to force once ratified/acceded to by 40 states. The presence of T&T systems in more countries will only enhance the effectiveness of such systems.

Conflict of interest

None.

Acknowledgements

This work was supported by funding from the Centers for Disease Control, Office on Smoking and Health contract 200-2009-28537/Task Order 0085 and by the Bill & Melinda Gates Foundation through the African Capacity Building Foundation, grant IRMA 20177. I would like to thank Vanessa Darsamo, a PhD student at the University of Cape Town, for her assistance with data and references.

References

KNBS, 2010. KNBoS, Macro II. Kenya Demographic and Health Survey 2008-09. KNBS and ICF Macro., Calverton, Maryland.
Ngeywo, C.M., Ministry of Finance, 4 March 2013. PowerPoint Presentation to CTFK Uganda Parliamentary Partners Held at Serena Hotel, Kampala.