WORLD BANK GROUP

ETHIOPIA: MODELLING THE IMPACT OF TOBACCO TAX POLICY REFORMS ON TOBACCO USE AND DOMESTIC RESOURCES MOBILIZATION UNDER DIFFERENT SCENARIOS

ASSESSMENT PREPARED FOR SUBMISSION TO ETHIOPIA’S MINISTRY OF FINANCE AND ECONOMIC COOPERATION AND MINISTRY OF HEALTH

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Contents

ACKNOWLEDGEMENTS ................................................................................................................................. 3

Executive Summary ........................................................................................................................................... 4

I. Tobacco Use: A Global Development Challenge ......................................................................................... 8

II. Taxing tobacco: a win-win policy measure for public health and domestic resources mobilization ........................................................................................................................................... 8

III. Modelling the fiscal impact of tobacco tax policy reforms in Ethiopia over 2017/18 under different policy scenarios ........................................................................................................................................ 10


V. Results .......................................................................................................................................................... 19

Annex 1: Parameters of Simulation Model: Inputs and Assumptions ................................................................. 23

Annex 2: Suggested References on Global Experience with Tobacco Taxation ............................................... 26
ACKNOWLEDGEMENTS

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Executive Summary

As part of the ongoing tax policy dialogue with the Government of Ethiopia, the World Bank Group organized a workshop in Addis Ababa, on June 20, 2016, to discuss tobacco use, its health impact, and excise taxes on tobacco as a public policy measure to reduce tobacco use, and hence the risk of ill health, premature mortality, and disability due to tobacco-related diseases, and mobilize additional domestic resources to expand the fiscal capacity of the government, in accordance with the Financing for Development Addis Ababa Action Agenda. This event was attended by officials from the Ministry of Health (MOH) and Ministry of Finance & Economic Cooperation (MoFEC).

Ethiopia’s Health Sector Transformation Plan 2015-2020 lists noncommunicable diseases (NCDs) as one of the major public health challenges facing the country. As in the rest of sub-Saharan Africa, NCDs are expected to become the leading cause of ill health and death by 2030, influenced by rapid urbanization, rapid per capita economic growth, increase in behavioral risk factors (most NCDs are the result of tobacco use, physical inactivity, unhealthy diet, and/or the harmful use of alcohol), and improvements in the control of infectious diseases that increase life expectancy. As NCDs have become a major health burden in the country, the Government has put in place ambitious targets to reduce the prevalence of the main health risk factors associated with the onset of NCDs among the population. The strategy focuses on increasing prevention and control of the main risk factors: tobacco use and alcohol abuse, physical inactivity and unhealthy diet, which contribute to about 80% of NCDs.

Rationale for Taxing Tobacco

Experiences from around the world indicate that tobacco taxation, the focus of this report, is one of the ‘best buy’ in public health and one of the best buys in all of development. Taxes can be a powerful instrument to decrease tobacco consumption for health reasons and have therefore been a core component of efforts by the World Health Organization (WHO) and World Bank Group (WBG) to curb the tobacco epidemic. With an annual global death toll of over 7 million people, tobacco is one of the most prominent killers of our times. Despite low price elasticity in the short run, the much larger long-run impact of taxes on consumption has motivated a significant surge toward the use of taxes to decrease the burden of tobacco-related diseases (Jha and Chaloupka, 1999).

Per the International Monetary Fund (IMF), determining the desirable level of tobacco excises requires considering various demand-related factors (IMF 2016). These notably include overall consumption (and therefore prevalence), price, income levels and the ensuing affordability of tobacco products, the reaction of the demand to tax increases, as well as due consideration to negative externalities from smoking. With respect to externalities, harm suffered, in some form, by non-smokers, has been the primary economic argument for taxing tobacco products more heavily than other goods. Such analyses also need to consider “internalities” --self-control problems that can provide a distinct reason (additional to external effects) for heavy taxes on smoking (IMF 2016).

Given the problems of quantifying the various social costs and offsets, particularly for countries with limited data, the WBG and WHO recommend that countries, which want to adopt comprehensive tobacco control policies, should use, as a yardstick, a rule that tax should account for two-thirds to four-fifths of the retail price of a pack of cigarettes (World Bank 1999, WHO
This yardstick, which should be viewed as a floor or goal and not as a ceiling, has become widely used in discussions of tobacco control across the world. It is desirable that the application of this yardstick is referred to excise taxes and not total taxes. An excise yardstick is preferred since cigarette excises raise the price of cigarettes relative to the prices of other consumer goods. In contrast, a general consumption tax at a standard rate does not change relative prices and thus will have a minimal effect on smoking (Sunley, 2009).

As noted by the IMF (2016), in many countries, raising tobacco taxes can offer a “win–win”: higher revenue and positive health outcomes. Countries’ circumstances and governments’ weighting of revenue, health, and other objectives vary, and consequently the desirable level of tobacco tax rates will need to reflect such variance. In many cases, however, current tax rates are far below what is feasible in terms of revenue potential. Of course, countries putting more weight on health objectives could raise taxes even further than the revenue maximizing point, in which case lower tax revenue would be an implicit and accepted consequence of a higher tax level.

Global Situation
Over the past 10 years, since entry into force of the World Health Organization (WHO)’s Framework Convention on Tobacco Control (WHO’s FCTC), efforts to control tobacco have intensified globally. In response, over 100 countries have made at least some partial progress in raising tobacco taxes. But progress in most countries is lagging what would be needed even to get close to the WHO target of taxation making up 75 percent of the selling price of cigarettes.

Convincing confirmed cigarette smokers to stop, or at least sharply cut back their tobacco consumption, and convincing young people not to initiate smoking behavior requires both sharp increases in taxes and prices of cigarettes and convincing them that in the future prices are going to go up even more. Going too slowly should be recognized as condemning large numbers of people unnecessarily to severe illness and premature death in near and medium-terms, particularly in regions with young populations.

WHO has recommended a 30 percent reduction in smoking prevalence by 2025, which would avoid at least 200 million deaths by the end of the 21st century among current and future smokers across the world. Estimates done show that the only plausible way to reduce smoking to this extent would be to triple tobacco excise taxes in most lower- and middle-income countries. A tripling of the excise tax would roughly double the retail price and reduce tobacco consumption by about 40 percent.

Tobacco taxation has a mutually reinforcing effect with other cost-effective elements of tobacco control programs, such as complete bans on smoking in public places as well as on advertising and promotion and plain packaging or prominent warning labels. The evidence across the world indicates that major raises in tobacco taxes are win-win-win, both for public health and fiscally for mobilizing additional domestic resources to expand the budgetary capacity of governments to finance priority investments and programs that benefit the entire population, such as the expansion of universal health coverage.

Modelling Tobacco Taxation in Ethiopia
To support the Ministry of Finance and Economic Coordination (MoFEC) analyze the possible impact of tobacco tax policy reform options on prices, consumption level, and tax revenues, the WBG team, in consultation with the MoFEC and the Ministry of Health (MOH), focused on:
i) examining the tobacco market, consumption trends, retail prices, and products market share by brands and categories (domestic production economy and mid-price; and premium imported);  
ii) assessing the existing excise tax system, tax structure and excise tax, VAT, customs, and other tax related government revenues; and,  
iii) simulating and assessing the impact on increased excise taxes and resultant retail prices and expected impact in reduced consumption level, government excise and total tobacco tax revenue.

To ensure consistency with and to frame alternative policy options in accordance with policy deliberations in the country, relevant background information was obtained from the following documents:

i) Final Report of the Technical Working Group on Tobacco Taxation in Ethiopia prepared by the MoFEC with WHO technical support;  
ii) Ethiopia MoFEC Tobacco Excise & VAT Tax reports; and  
iii) WBG Draft “A Proposal to Shift the Excise Tax Base from Cost of Production to Sales Price” in Ethiopia.

In formulating the proposed tobacco tax policy reform scenarios, the WBG team considered not only the data and recommendations included in the above-mentioned documents, but also considered the accumulated evidence from international experiences that are cited in this report. The proposed policy option scenarios for 2017-2018 suggested for consideration of the MoFEC and MOH are considered feasible options to achieve the MOH NCD targets as stated in the Health Sector Transformation Plan 2015-2020 and the MoFEC enhanced domestic revenue mobilization goals.

The tobacco tax policy reform scenarios are:

- The proposed excise tax structure change included in Scenario 1 over 2017/18 changes the current ad valorem excise tax of 75 percent on the domestic production costs and CIF\(^1\) for imported cigarettes, to an excise tax of 30 percent on producer/importer declared retail sales price. This option is consistent with WBG recommendation on shifting the excise tax base from cost of production to sales price of taxable commodities.\(^2\)

- Scenario 2 over 2017/18 builds on the proposed shift to an excise tax of 30 percent on producer/importer declared retail sales price in the first policy option and converts the tax structure into a mixed system, complementing the ad valorem excise tax with a uniform specific excise tax\(^3\) of 8 ETB per cigarette pack for 2017-18 as recommended by the MoFEC/WHO tobacco tax study\(^4\).

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\(^1\) CIF: Cost, Insurance and Freight.  
\(^2\) A Proposal to Shift the Excise Tax Base from Cost of Production to Sales Price, 2016  
\(^3\) International best practice is to impose uniform specific taxes, that are adjusted regularly to account for increases in price levels and increases in average incomes.  
\(^4\) FINAL REPORT OF THE TECHNICAL WORKING GROUP ON TOBACCO TAXATION IN ETHIOPIA; MINISTRY OF FINANCE & ECONOMIC DEVELOPMENT; 23 September 2014
Results:

Table 1: Ethiopia Excise Tax and VAT Projected Revenue by Policy Option

<table>
<thead>
<tr>
<th>Proposed Tax Policy Measure</th>
<th>Maintain 75% excise tax on CIF/Production costs FY 2017/18:</th>
<th>Policy Option Scenario 1 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%)</th>
<th>Difference with existing tax structure</th>
<th>Policy Option Scenario 2 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%) plus uniform specific excise tax (8 ETB/pack)</th>
<th>Difference with existing tax structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total excise tax revenue (billion ETB)**</td>
<td>0.85</td>
<td>1.58</td>
<td>0.73</td>
<td>2.98</td>
<td>2.12</td>
</tr>
<tr>
<td>Total excise tax revenue (US$ million)*</td>
<td>$38.47</td>
<td>$71.34</td>
<td>$32.87</td>
<td>$134.08</td>
<td>$95.60</td>
</tr>
<tr>
<td>Total government revenue (excise, VAT and levies, billion ETB) [1]</td>
<td>1.24</td>
<td>2.08</td>
<td>0.84</td>
<td>3.67</td>
<td>2.42</td>
</tr>
<tr>
<td>Total government revenue (excise, VAT and levies, US$ million)*</td>
<td>$56.06</td>
<td>$93.82</td>
<td>$37.76</td>
<td>$165.22</td>
<td>$109.16</td>
</tr>
</tbody>
</table>

**Reported excise tax revenue on tobacco products - Ethiopia Ministry of Finance/ Ethiopian Revenue and Customs Authority (ERCA): FYs 2014/15= 606.04 million ETB; -2015/16 = 520.21 million ETB
[1] It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory+AE for domestic, excluding retail VAT; total tax revenue projected is not including the National Tobacco Enterprise (NTE) profit.

Authors Note: the simulation model was adapted to the Ethiopian excise tax structure, and calibrated and validated based on the reported excise tax revenue on tobacco products produced by the Ethiopia Ministry of Finance/ Ethiopian Revenue and Customs Authority (ERCA). As part of the ongoing tax policy dialogue, and guided by the objective of collaborating and working with the MoFEC, the WBG Tobacco Control Program team stands ready to present and review in detail with MoFEC and other government agencies teams the simulation model that was developed for conducting this assessment, including data collected and assumptions made under policy scenario.

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5 The proposed scenarios include shifting the excise tax base from the current 75% ad valorem excise tax on the declared cost of production to a 30% ad valorem excise tax on the declared retail price of a pack of 20-cigarettes. If this policy option was adopted, the total tax burden on the average retail price of a pack of 20-cigarettes would increase to 35% and 50% under scenarios 1 and 2, respectively. And, the net of taxes amount in the average retail price of a pack of 20-cigarettes would be 65% and 50%, respectively. Note: Under the current tobacco tax structure, the total tobacco tax burden (total tax = ad valorem excise + VAT + import duties + levies) as percentage of average retail price for a pack of 20-cigarettes fluctuates between 22.5% and 24.6% (see Table 3 in the report). Thus, the net of taxes amount is estimated at 76% of the average retail price of a pack of 20 cigarettes, including industry costs and profits.
Main Report

I. Tobacco Use: A Global Development Challenge

1. Tobacco use is the largest cause of preventable disease and death in the world, killing 7 million people per year (WHO 2017), as it affects every major organ of the body. On average, smokers lose a decade of their life compared to non-smokers (Jha et al. 2013). Smokers are 2 to 4 times more likely to get coronary heart disease; 2 to 4 times more likely to experience a stroke; and about 25 times more likely to develop lung cancer (CDC 2014). Recent research has shown that smoking can kill up to 2/3 of those who consume tobacco products (Banks et al. 2015).

2. Besides the public health damage caused by tobacco smoking, there are significant direct and indirect economic costs for countries. Smoking-related illness costs billions of dollars each year, imposing a heavy economic toll on countries, both in terms of direct medical care costs and lost productivity among affected workers (NCI and WHO 2016; Xu et al. 2015). According to recent estimates, tobacco-related diseases account for US$ 422 billion in health care expenditures annually, representing almost 6% of total global spending on health. The total economic cost of smoking (including productivity losses from death and disability) amounts to more than US$ 1.4 trillion per year, equivalent to 1.8% of the world’s annual Gross Domestic Product (GDP) (Goodchild, Nargis, and Tursan d’Espaignet 2017).

3. Already 40 percent of these economic costs are estimated to be borne by low- and middle-income countries (LMICs), and there is a risk that these costs will escalate, if effective and sustained action is not supported over the medium term. This poses a major challenge for countries, such as Ethiopia and others in sub-Saharan Africa, with large youth populations vulnerable to manipulation by tobacco advertisement, and where smoking is on the rise. These countries often lack the resource base, the health systems, or the social safety nets required to protect their populations from the negative health, social, and economic consequences of tobacco-related chronic diseases (Marquez and Farrington 2013b; for a discussion on the economics of deception and manipulation, see the work of Nobel Laureates George Akerlof and Robert Schiller [2015]).

4. While the hazards of smoking accumulate slowly, cessation is effective quickly, helping to reduce tobacco-related mortality, and more importantly, inequality of mortality. People who quit by age 40 get back nearly the full decade of life that they would have lost from continued smoking (Jha and Peto 2014).

II. Taxing tobacco: a win-win policy measure for public health and domestic resources mobilization

5. How can reductions in smoking be achieved in the next decade? The path from policy to reductions in tobacco use depends on the likelihood that a country will implement tobacco control measures, and on the measures’ effectiveness (Gravely et al. 2017). Raising taxes sharply on tobacco products, and then adjusting for inflation and increased affordability due to growing incomes, is the single most cost-effective measure to reduce tobacco consumption. Indeed, as

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noted in The Economist (2017), “As the success in rich countries shows, there is no mystery about how to get people to stop smoking: a combination of taxes and public-health education does the job. This makes the abysmal record in poor countries a grave failure of public policy.”

6. A recent WBG report, based on global evidence, recommends that if leaders want to move forward on tobacco excise taxation, the following key lessons should be considered:

- **Go big, go fast.** Tax strategies should focus on health gains first, then on fiscal benefits. This means going for big tobacco excise tax rate increases starting early in the process. Adopting a slow, cautious timeline might sound prudent. But it means condemning large numbers of people to avoidable illness and premature death. In tobacco taxation, the rewards go to those who act boldly.

- **Attack affordability.** Tobacco taxes only reduce tobacco consumption if they reduce cigarette affordability. In most LMICs, wages are rising. Thus, cigarettes will become de facto more affordable for consumers, increasing consumption, unless tobacco taxes rise even faster. Effective strategies will generally involve combining big initial tax increases with recurrent hikes over time, to keep cigarette prices climbing more steeply than per capita real income growth (including inflation).

- **Change expectations.** Communication with the public is also critical. Governments must make sure consumers know that a tax-rate hike is not just a one-off, but that cigarette prices will keep going up. This is a motivator for current smokers to quit and young people not to start.

- **Tax by quantity.** Tobacco tax rates should be simplified and based on the quantity of cigarettes, not their price. This is done in two ways, both of which preempt smokers ‘switching to cheaper cigarette brands after a tax-rate hike on the brands they previously smoked (a response called “downward substitution”). The first key move is to use specific excises, as opposed to ad valorem (value-based) excises or other taxes. A key factor that needs to be considered is that specific rates require to be adjusted over time to at least keep pace with inflation and, preferably, at a faster rate so that affordability is reduced over time. Any strategy for adopting them should be therefore accompanied by a framework/instrument to allow for annual increases over time (such as the United Kingdom’s tobacco duty escalator). The second is to merge the multiple tobacco tax “tiers” used by most developing countries. This way, tax hikes raise prices by the same large amount on all brands at once, pushing smokers to quit completely, rather than switch.

- **“Soft earmarks” can win support.** Earmarking tax revenues through legislation is criticized by fiscal experts as contributing to rigidities, fragmentation, and eventual distortions in public expenditures. However, “soft” earmarking of funds — for example, linking increased taxes to increased health spending — has helped generate grassroots support for the tax hikes. This has been shown by experience in other sectors, and it has worked for tobacco taxes in countries like Australia, Philippines, and the United States.

- **Regional collaboration can boost results.** Momentum for ambitious tobacco tax reform can be enhanced, and cross-border threats like cigarette smuggling minimized, when countries work together in a regional structure. The European Union (EU) provides an example. The EU experience shows that regional cooperation can help countries achieve the dual goals of reducing tobacco consumption while increasing government revenues. Lessons also concern the pace of reforms. EU lawmakers faced early political pressure to “go slow,” by setting a low initial minimum tobacco excise rate to apply to all Member States. However, the EU accelerated progress by convincing Member States to agree up
front to relatively high minimum tobacco excise rates, with longer transition periods authorized for some countries facing special challenges.

- **Build broad alliances.** Country leaders face sharp resistance to tax rate increases and other tobacco control measures from the tobacco industry. The industry is both financially powerful and politically astute. Tobacco industry advice to governments promotes the most ineffective interventions and seeks to undercut and weaken tax measures. To counter these pressures requires robust scientific and economic analysis, as well as multi-sectoral policy development. It also demands the mobilization of civil society and opinion leaders. Support from international partners is also required, particularly in low-income countries, to strengthen country capacity for lining up and coordinating all parts of government, while engaging a wide set of stakeholders outside of government.

### III. Modelling the fiscal impact of tobacco tax policy reforms in Ethiopia over 2017/18 under different policy scenarios

7. Based on available Ethiopian Demographic and Health Surveys (EDHS), the current smoking population is put at 2.6 million in 2014 and is largely male (85.9%)\(^7\). The prevalence of smoking among adult males is estimated at 11% among urban men and 21.6% among rural men. This implies that more than 2 million men smoke cigarettes each day, signaling a growing public health threat posed by the growing incidence of tobacco-related diseases. The 2011 EDHS report put the highest incidence of cigarette smoking among men in the 40-44 age band (12.6%) with the lowest in the 15-19 age band (1.3%). The highest incidence of other tobacco use was in the 45-49 age band (5.9%).

8. Until recently, the tobacco industry in Ethiopia has effectively operated as a state monopoly. The National Tobacco Enterprise (NTE), which was established in 1934, remained a state-owned manufacturer until 1999. Japan Tobacco Inc. (JT), the seller of Camel and Winston cigarettes outside the United States, announced in 2016 that it had won a bid to buy 40% NTE from the Ethiopian government for a record US $510 million. As of December 23, 2017, Government sold its remaining 30% of shares to JT for $434 million, making JT the largest shareholder of NTE.

9. Main importers are British American Tobacco (BAT) and Philip Morris International (PMI), accounting for 11% of the market in 2014 (Canadean), mainly Rothman and Marlboro brands. NTE holds the rights to import those brands into the market. Canadean report estimates of domestic brand shares suggest that Nyala held over three-quarters (78.3%) of volumes in 2013. The other domestic brands of note are Gisilla, NTE's only non-filter cigarette brand, with 9%, and Delight, a NTE brand, 0.2%.

10. Per a recent report\(^8\), prices are understood to have increased sharply between 2008 and 2010 because inflationary pressures. In December 2010, the Ethiopian Central Statistical Agency (ECSA) reported that the price of cigarettes and tobacco were up 39.8% over the previous 12

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\(^{7}\) Source: Canadean estimates based on combined sources; Cigarettes in Ethiopia, Canadean, May 2016.

\(^{8}\) Data and information on the cigarettes market in Ethiopia was obtained from the report “Cigarettes in Ethiopia, Canadean, May 2016”. Canadean is an independent research firm, which provides information on the Ethiopian cigarettes market, on prices, and different cigarette categories market share. If requested by the MoFEC team, we will gladly share this data set.
months. The rising cost of imported goods, made worse by the devaluation of the Birr by an effective 16.7% in September, largely explaining the increase level. Prices increased by a further 9.3% during 2011 and by 7% during 2012. Between 2008 and 2010 the price of a brand such as Nyala increased from Br 1.39 to Br 7.00 per pack. Price rises continued into 2011 and 2012 with Nyala's average price of Br 11. Inflation in the period grew at 17.9% for 2011, and 34.7% form 2012 per World Bank Group (WBG) projections.

11. However, in spite of such inflation pressure, the WHO Global Tobacco report estimated that the retail price for a pack of 20 cigarettes of the most sold brand in Ethiopia by 2015, was $0.77 (15.00 ETB) well below the sub-Saharan African regional average of $1.24, which is also below the global average price of $2.15.

12. Table 2 presents the actual (2013-2015 period), and projected (2015/16 period) average retail prices per 20 cigarettes pack for all brands (Canadean and WHO tobacco study estimates) ranging from US$0.72 in 2013 to US$0.85 for 2016. The table includes average retail prices and market share by the categories adopted for the Tobacco Tax Simulation Model for: domestic produced economy cigarettes (Elleni & Gisilla); domestic mid-price (Nyala premium; Nyala, and Delight); and premium imported cigarettes (Rothmans king size, and Marlboro).

Table 1: Ethiopia Cigarettes Market – Average retail prices and Market share 2013-2016

<table>
<thead>
<tr>
<th>Ethiopia Tobacco Excise Tax Matrix (FY July 8 - to July 7)</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition of the retail price</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes (Average price 20 cigarettes pack ETB)</td>
<td>13.34</td>
<td>15.66</td>
<td>17.48</td>
</tr>
<tr>
<td>Simulation model output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes (Average US$ price 20 cigarettes pack)</td>
<td>0.72</td>
<td>$0.80</td>
<td>0.85</td>
</tr>
<tr>
<td>Simulation model output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Economy cigarettes (Elleni, Gisilla)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average retail price of economy cigarettes (per pack)</td>
<td>6.00</td>
<td>7.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Source MoFEC/WHO-2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes (Average US$ price 20 cigarettes pack)</td>
<td>0.32</td>
<td>$0.36</td>
<td>$0.39</td>
</tr>
<tr>
<td>Market share of economy cigarettes Source Canadean 2016</td>
<td>9.00%</td>
<td>9.00%</td>
<td>9.00%</td>
</tr>
<tr>
<td><strong>Mid-price cigarettes (Domestic: Nyala premium; Nyala; Delight)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average retail price of mid-price cigarettes (per pack of 20) Source MoFEC/WHO</td>
<td>12.00</td>
<td>14.50</td>
<td>18.00</td>
</tr>
<tr>
<td>Cigarettes (Average US$ price 20 cigarettes pack)</td>
<td>$0.64</td>
<td>$0.74</td>
<td>$0.88</td>
</tr>
<tr>
<td>Market share of mid-price cigarettes Canadean 2016</td>
<td>81.60%</td>
<td>81.60%</td>
<td>81.60%</td>
</tr>
<tr>
<td><strong>Premium cigarettes (Imported: Rothmans king size; Marlboro)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average retail price of premium imported cigarettes (per pack) Source MoFEC/WHO-2014 &amp; Canadean 2016</td>
<td>32.00</td>
<td>34.00</td>
<td>40.00</td>
</tr>
<tr>
<td>Cigarettes (Average US$ price 20 cigarettes pack)</td>
<td>$1.72</td>
<td>$1.74</td>
<td>$1.95</td>
</tr>
<tr>
<td>Market share of premium imported cigarettes (Canadean estimate 11.1%/2014)</td>
<td>9.40%</td>
<td>9.40%</td>
<td>9.40%</td>
</tr>
</tbody>
</table>

13. International evidence shows that the low level of price makes cigarettes relatively more affordable and can encourage high rate of smoking, which has negative health and economic consequences for a country. In Ethiopia, as evidenced by MoFEC data, total consumption of cigarettes has been growing over the last five years, as measured by total taxed cigarette sales (as

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9 Source: WHO Global Tobacco Control Report, 2015 - National retail price for a pack of 20 cigarettes of the most sold brand.

10 Simulation Model was developed using WHO Tobacco Tax Simulation Model (TaXSiM) adjusted and adapted by the WBG team in accordance to the current Ethiopia tobacco tax structure.
a proxy to consumption): growing from 3.5 billion pieces in 2010/11 to 4.1 billion in 2013/14 (MoFEC/WHO, 2014)\textsuperscript{11}.

14. The growth in domestic consumption in cigarettes is primarily coming from increasing local production, as well as the income elasticity of demand effect\textsuperscript{12}. Per recent updated WBG projections, GDP per capita has been growing at about 10% in 2014-2015 and is projected to continue expanding at about 8% in the period 2016-2018. As such, the results of the modelling exercise should be seen as conservative estimates as they are based on previously available WBG estimates (average rate of 6 to 8% for 2012-2015 and 5% to 6% for 2016-2018). The increasing trend in domestic sale is also confirmed by data from Euromonitor International Ltd. and Canadean which estimates volumes reaching 6.1 billion cigarette pieces and 6.4 billion for 2014 and 2015 respectively. Based in those cigarette consumption figures and trend, and the excise tax revenue reported for 2014/15 by the Ethiopian Revenue and Customs Authority (ERCA), the simulation model was calibrated generating the excise tax revenues shown in Table 3 below.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
CIGARETTES & 2014/15 Actual MoFEC excise tax revenue & Actual Situation 2015/16 (projected) \\
\hline
Total cigarettes taxed (billion pieces) & 5.09 & 5.08 \\
Average cigarette price (ETB per pack) & 15.66 & 17.48 \\
Average cigarette price (US$ per pack) * Average excise tax burden (excise tax as percentage of retail price) & $0.80 & $0.85 \\
& 15.2 & 16.7 \\
Average excise tax (ETB per 1000 pieces) & 119.3 & 145.9 \\
Average cigarette tax burden (total tax - excise, VAT, import duties, and levies as percentage of retail price) & 22.5 & 24.6 \\
Total excise tax revenue (million ETB) ** & 607.509 & 740.398 \\
Total government tobacco tax revenue (excise, VAT, duties, and levies, million ETB) [1] & 896.78 & 1,089.39 \\
\hline
\end{tabular}
\caption{Ethiopia Tobacco Excise Tax Current Situation –2014/15-2015/16}
\end{table}

\begin{itemize}
\item *World Bank Group forecast: annual average exchange rate = 2014 (1 US$/ 19.59 ETB); 2015 (1US$/20.54 ETB); 2016 (1US$/ 21.73); 2017 (1 US$/22.20 ETB)
\item **Reported excise tax revenue on tobacco products - Ethiopia Ministry of Finance/ Ethiopian Revenue and Customs Authority (ERCA): FYs 2014/15= 606.04 million ETB; 2015/16 = 520.21 million ETB
\item [1] It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory +AE for domestic; excluding retail VAT; total tax revenue projected is not including the National Tobacco Enterprise (NTE) profit.
\item [1] NOTE: The Simulation Model was calibrated to match MoFEC/ Ethiopian Revenue and Customs Authority (ERCA) excise tax revenue reported for FY 2014/2015= 606.04 million ETB within 0.24% difference (607.51 million ETB from the simulation model). For Fiscal year 2015/2016 given the large drop observed in revenue (14.2% from FY 2014/15 to FY 2015/16 which is not supported by current cigarettes consumption trends) it is assumed that is partial data, and therefore the simulation model annualized the expected revenue for projected cigarettes taxed (5.08 billion pieces for 2015/2016).
\end{itemize}

\textsuperscript{11} See Figure 1: Production, import, export and total consumption of cigarettes in Ethiopia, 2009-2013; Final report of the technical working group on tobacco taxation in Ethiopia; WHO/MoFEC; 23 September 2014

\textsuperscript{12} The greater the income elasticity may lead to greater consumption of cigarettes in response to a given percentage change in income (income elasticity tends to be unit elastic or somewhat more elastic).
15. Ethiopia cigarettes excise and VAT tax structure. Proclamation No 307/2002 (as amended) provides the legal basis for excise taxes in Ethiopia (Zake et al 2012). Excise taxes in Ethiopia aim at improving government revenue and reducing the consumption of goods that are hazardous to health and cause social problems. Excises are imposed on luxury goods and basic goods which are demand inelastic. Specifically, excise taxes are levied on selected goods when they are imported and produced locally with tax rates ranging from 10 percent to 100 percent. Some of the excisable goods include tobacco and tobacco products.

16. The current excise tax system (see Table 4) for cigarettes and tobacco products in Ethiopia is 75% ad valorem tax as percentage of CIF value and customs duty (10%) for imports and cost of production for domestic production. Surtax is a relatively new tax imposed only on imports of all products except fertilizer, medicine, fuel, all organic and inorganic chemicals, some primary goods like raw materials, and some identified inputs for industries (WHO/MoFEC Tobacco Taxation TWG, 2014).

17. As can be observed in Table 3 before, current average excise tax share in the retail price of cigarettes at 16.7% is lower than the African regional average of 39.88% and much below the WHO recommended share of 70%, suggesting that there is significant potential for extracting more tax revenue that has remained untapped (MoFEC/WHO 2014). The price differential (see Table 2) between the cheapest brands (8 ETB (US$ 0.39) for economy brands) and the premium brands is more than four times (40 ETB (US$ 1.95). When compared with 18 ETB (US$ 0.88) for the most popular mid-price brands is higher than twice. The existing ad valorem excise tax structure unless changed, will maintain at best such differential providing downward switching incentives to consumers in response to tax and price increases. The current Ethiopia tobacco tax system does not include the typical mixed system combining ad valorem and uniform specific excise tax. The uniform specific excise tax is applied equally to economy, mid-price, premium and non-filter cigarettes.

18. International best practice is to impose uniform specific taxes that are adjusted regularly to account for increases in the price level and increases in average incomes. Recent findings documented in an IMF publication show that the structure of cigarette taxes is critical in determining the relative prices of different tobacco products and brands across the price spectrum and thereby influencing the behavior of consumers within a country. Indeed, while tax policy can help reduce negative externalities associated with tobacco consumption, the taxation arrangement needs to avoid providing incentives to switch down to cheaper cigarette brands in response to tax related and other price increase therefore protecting public health.

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13 Zake, J, Gaperi, H and Brimble, B (2012), Accelerating Revenue Administration Modernization to support the growth and transformation plan, IMF, Fiscal Affairs Department
14 Final report of the technical working group on tobacco taxation in Ethiopia; WHO/MoFEC; 23 September 2014
### Table 3: Ethiopia Actual 2014-2016 and Current Cigarette Tax Structure 2017

<table>
<thead>
<tr>
<th>Tax Description</th>
<th>2014/15 Actual MoFEC excise tax revenue</th>
<th>Projected Situation 2015/16</th>
<th>Baseline FY 2016/17: projected</th>
<th>Tax Base (for calculation purposes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ETB</td>
<td>ETB</td>
<td>ETB</td>
<td></td>
</tr>
</tbody>
</table>

**Cigarettes Taxes**

<table>
<thead>
<tr>
<th>Description</th>
<th>2014/15</th>
<th>2015/16</th>
<th>2016/17</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Customs Duty (ID)</td>
<td>35%</td>
<td>35%</td>
<td>35%</td>
<td>e.g., CIF (Cost, Insurance and Freight)</td>
</tr>
<tr>
<td>Surtax</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>CIF+ID+AE+VAT for imports</td>
</tr>
<tr>
<td>Value Added Tax (VA)**</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>CIF+ID+AE for imports; and Ex-factory + AE for domestic</td>
</tr>
<tr>
<td>Ad valorem excise tax (AE) - CIF/Cost</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>CIF+ID for imports; and Ex-factory cost for domestic</td>
</tr>
<tr>
<td>Shift the Ad valorem excise tax form cost to sales price</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Maximum retail price set by producer (importer)</td>
</tr>
</tbody>
</table>

* Excise Tax on Tobacco products - Ethiopia MoFEC FY 2014/15- 2016/17
** It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory + AE for domestic, excluding retail VAT

19. **Current and Projected Excise Tax Fiscal Revenue Impact Assessment.** The actual situation and baseline needed to simulate the fiscal revenue impact of additional tobacco tax increases in Ethiopia in 2017-2018, including the parameters of the simulation model that was constructed are as follows:

- **Key consideration underlying the model.** Tobacco taxes are non-distortionary taxes which have a dual benefit: (i) reduce tobacco-related diseases that lead to ill health, premature mortality; and disability, and cost health systems and individual’s enormous amounts of money for treating often preventable diseases; and (ii) raise fiscal revenue for priority investments and programs that benefit the entire population, such as financing the progressive realization of universal health coverage.

- **Actual Situation 2014/15 and 2015/16 to Baseline 2016/17 projections:** The model was run using the current tax structure for 2014/15 to 2016/17 as shown in the actual tax structure presented in Table 4. Ethiopia signed the Framework Convention on Tobacco Control (FCTC) in February 2004, ratified it on 25 March 2014, and came into force on 23 June 2014. Current tobacco excise tax structure is, however, below a level that would...
be consistent with the recommended FCTC guidelines for the implementation of Article 6 of the WHO FCTC. Effective taxes on tobacco products that lead to higher real consumer prices (inflation-adjusted) are desirable because they lower consumption and prevalence, and thereby in turn reduce mortality and morbidity and improve the health of the population. Given the annual rate of inflation around 10% (2016 - WBG forecast) and the annual per capita GDP growth rate of 8% (updated 2018-WBG forecast for 2016-2018), the average nominal price would have to increase by at least 15% annually to keep the affordability of cigarettes from going up. Such actual inflation-adjusted real price percentage, is above currently observed 12% average retail price per cigarette pack. Therefore, since current retail price is producer/importer driven, the existing fixed ad valorem excise tax structure does not account for inflation or per capita GDP growth.

- The simulation model was calibrated to reach the excise tax revenue reported considering the average retail price per 20-cigarette pack and respective market share for all the adopted tobacco categories in 2014/15 and 2015/16. Based in those figures, the simulation model projected an excise tax revenue for 2014/15 of ETB 607.5 million which compared to the ERCA reported total excise revenue of ETB 606.04 million the model output is within 0.24% difference which is statistically accepted range (+- 0.3% error).

20. Assuming the same trend of number of cigarettes sales taxed, the excise tax revenue projected by the calibrated model for 2015/16 is estimated in ETB 740.4 million (US$ 36 million equivalents at 2015 prices). For 2016/17, applying the existing 75% ad valorem tax, the model projected a tobacco excise tax revenue of ETB 792.2 million, generating an additional excise tax revenue of only ETB 51.8 million (about US$2.4 million). Including the excise tax, VAT and import duties on cigarettes, total government tobacco tax revenue for 2016/17 is expected to reach ETB 1.16 billion (US$53.3 million) or 0.07% of GDP (2017 WBG CO forecast) (see Table 5 below).

also defines smoke-free areas (in public places) and the responsibilities to enforce the measures established by the Directive.

17 The projections under the model were based on lower projected GDP growth numbers which have been adjusted upward since the assessment was conducted. Therefore, the projections produced under the model are conservative estimates.

18MoFEC/ Ethiopian Revenue and Customs Authority (ERCA) excise tax revenue reported for FY 2014/2015 = 606.04 million ETB.
### Table 4: Ethiopia Cigarettes Actual Excise Tax Revenue 2014/15 (MoFEC/ERCA Report) and Projected 2015/16 and 2016/17 (Simulation Model)

<table>
<thead>
<tr>
<th>Government Revenue Type</th>
<th>2014/15 Actual MoFEC excise tax revenue</th>
<th>Projected Situation 2015/16</th>
<th>Expected Contribution to GDP</th>
<th>Baseline FY 2016/17: projected</th>
<th>Expected Contribution to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cigarettes taxed (billion pieces)</td>
<td>5.09</td>
<td>5.08</td>
<td>4.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cigarette price (ETB per pack)</td>
<td>15.66</td>
<td>17.48</td>
<td>19.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cigarette price (US$ per pack) *</td>
<td>$0.80</td>
<td>$0.85</td>
<td>$0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average excise tax (ETB per 1000 pieces)</td>
<td>119.3</td>
<td>145.9</td>
<td>159.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average excise tax (US$ per 1000 pieces)</td>
<td>$6.09</td>
<td>$7.10</td>
<td>$7.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total excise tax revenue (million ETB) **</td>
<td>607.51</td>
<td>740.40</td>
<td>792.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total excise tax revenue (US$ million)</td>
<td>$31.01</td>
<td>0.06%</td>
<td>$36.05</td>
<td>0.06%</td>
<td>$36.46</td>
</tr>
<tr>
<td>Additional tobacco excise (million ETB) /percentage of GDP</td>
<td>132.9</td>
<td>51.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional tobacco excise (US$ million) *</td>
<td>$6.47</td>
<td>0.01%</td>
<td>$2.38</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Total government tobacco tax revenue (excise, VAT, duties, and levies, million ETB) [2]</td>
<td>896.8</td>
<td>1,089.4</td>
<td>1,157.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total government revenue (excise, VAT, and levies, US$ million)</td>
<td>$45.78</td>
<td>0.08%</td>
<td>$53.04</td>
<td>0.08%</td>
<td>$53.28</td>
</tr>
<tr>
<td>Total expenditure on cigarettes (million ETB)</td>
<td>3,987.62</td>
<td>4,435.82</td>
<td>4,856.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage change in total cigarette consumption (%)</td>
<td>-0.4</td>
<td>-1.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*World Bank Group forecast: annual average exchange rate = 2014 (1 US$/ 19.59 ETB); 2015 (1US$/20.54 ETB); 2016 (1US$/ 21.73); 2017 (1US$22.20 ETB)

**Reported excise tax revenue on tobacco products - Ethiopia Ministry of Finance/ Ethiopian Revenue and Customs Authority (ERCA): FYs 2014/15= 606.04 million ETB; - 2015/16 = 520.21 million ETB.

[1] It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory +AE for domestic, excluding retail VAT; total tax revenue projected does not include the National Tobacco Enterprise (NTE) profit.

### IV. Alternative Policy Scenarios and Estimated Fiscal Revenue Impact of Tobacco Tax Policy Reforms in Ethiopia

21. For conducting this assessment, WBG team adapted the WHO’s tobacco excise tax simulation model considering Ethiopia’s excise tax structure. Annex 1 describes the price and income elasticities adopted, as well as the sources of data for conducting the modelling exercise. Based on global evidence for across countries at different level of income, for this exercise it is assumed that higher income smokers consume higher-price brands of cigarettes, and are less price sensitive than lower income smokers. Hence, it is assumed that the price elasticity of cigarette consumption for premium brands is -0.2, for mid-price brands in -0.4 and for economy brands is -

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19 The simulation model was developed using WHO Tobacco Tax Simulation Model (TaXSiM) adapted to Ethiopia current cigarette excise tax structure.
0.6. For income elasticity of demand, it is assumed that the greater the income elasticity may lead to greater consumption of cigarettes in response to a given percentage change in income (income elasticity tends to be unit elastic or somewhat more elastic). Therefore, for economy cigarettes it was adopted a positive 0.8 income elasticity, followed by 0.6 positive for mid-price cigarettes, and positive 0.5 for premium cigarettes.

22. The results of the assessment are intended to inform the Ethiopian government in analyzing policy options to protect the population from health risks associated with tobacco-related diseases and to mobilize additional domestic resources to expand fiscal space to fund priority investments and programs that benefit the entire population. To that end, the tobacco excise taxation model was run considering the MOH public health and MoFEC fiscal goals, and simulated the impact of adopting tobacco tax policy reforms over 2017-18.

23. The proposed policy option scenarios for 2017-2018 included in the model are feasible options to help achieve the above mentioned MOH and MoFEC goals (see proposed tax structure in Table 6).

Table 5: Ethiopia Actual 2015-2016 and Current Cigarette Tax Structure 2017/18 and proposed policy options (Scenarios 1 and 2)

<table>
<thead>
<tr>
<th>Tax Description</th>
<th>Maintain 75% excise tax on CIF/Production costs FY 2017/18:</th>
<th>Policy Option Scenario 1 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%)</th>
<th>Policy Option Scenario 2 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%) plus uniform specific excise tax</th>
<th>Tax Base (for calculation purposes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import Customs Duty (ID)</td>
<td>35%</td>
<td>35%</td>
<td>35%</td>
<td>e.g., CIF (Cost, Insurance and Freight)</td>
</tr>
<tr>
<td>Surtax</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>CIF+ID+AE+VAT for imports</td>
</tr>
<tr>
<td>Value Added Tax (VA)**</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>CIF+ID+AE for imports; and Ex-factory+AE for domestic</td>
</tr>
<tr>
<td>Ad valorem excise tax (AE) - CIF/Cost</td>
<td>75%</td>
<td>15%</td>
<td>15%</td>
<td>CIF+ID for imports; and Ex-factory cost for domestic</td>
</tr>
<tr>
<td>Shift the Ad valorem excise tax form cost to sales price</td>
<td>N/A</td>
<td>30%</td>
<td>30%</td>
<td>Maximum retail price set by producer (importer)</td>
</tr>
<tr>
<td>Simple Specific excise tax (SE) ***</td>
<td>N/A</td>
<td>N/A</td>
<td>8.00</td>
<td>per 20 sticks pack</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>$ 0.36</td>
<td>or per 1000 cigarettes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>$ 4.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>$ 18.02</td>
<td></td>
</tr>
</tbody>
</table>

* Excise Tax on Tobacco products - Ethiopia MoFEC FY 2014/15-2016/17
Note: shadow values in US$ equivalent (World Bank Group forecast: annual average exchange rate = 2014 (1 US$/ 19.59 ETB); 2015 (1US$/20.54 ETB); 2016 (1 US$/21.73; WBG projected exchange rate = 2017 (1 US$/ 22.20 ETB); 2018 (1 US$/ 23.30 ETB)
** It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory+AE for domestic, excluding retail VAT
*** Mixed excise system (Ad valorem and Specific excise tax (SE) recommended by Ethiopia Working Group & WHO, September 2014 (Specific excise 2017: 8.00 ETB);
The proposed excise tax structure change included in the first policy option (Scenario 1 over 2017/18) changes the current ad valorem excise tax of 75 percent on the domestic production costs and CIF\textsuperscript{20} for imported cigarettes, to an excise tax of 30 percent on producer/importer declared retail sales price. This option is consistent with WBG recommendation on shifting the excise tax base from cost of production to sales price of taxable commodities.

The second policy option (Scenario 2 over 2017/18) builds on the proposed shift to an excise tax of 30 percent on producer/importer declared retail sales price in the first policy option and converts the tax structure into a mixed system, complementing the ad valorem excise tax with a uniform specific excise tax\textsuperscript{21} of 8 ETB per cigarette pack for 2017-18 as recommended by the MoFEC/WHO tobacco tax study\textsuperscript{22}. This recommended policy option is in line with the Article 6, of the FCTC of adopting a uniform specific tax to simplify and increase efficiency in the taxation system administration. Such uniform specific excise tax, added to the current ad valorem excise tax, would result in a desirable mixed system. As shown by international evidence, a mixed tobacco taxation system would provide an upward shift in the tax yield across all brands ensuring higher average price and discouraging consumption. The specific excise component will also ensure significantly higher revenue flow by guarding against the fall in revenue yield from undervaluation of the tax base. At the same time, it will reduce the price gap of the economy brands and prevent downward switching thereby protecting public health. From a public health perspective, smoking cigarettes, either filter or non-filter, is equally harmful.

The specific excise component in the mixed system, however, must be adjusted regularly to account for increases in the price level and increases in average incomes. In the WHO/MoFEC study of 2014, the technical working group recommended the adoption of a uniform specific excise tax of 8 ETB per cigarette pack for 2017, since at the time of the study (2014), the annual rate of inflation was 8% and the per capita GDP growth rate was 5%, calling for an average nominal price increase of at least 13% annually. The WBG projected inflation of 8% to 10% in the period 2015-2017, and GDP per-capita growth between 7.6% to 4.9% in the same period, confirmed these assumptions, justifying therefore the adoption of the upper end 8 ETB per cigarette pack for 2017 (The study recommended a progressive scale from 4.0 ETB for 2015, 6.0 ETB for 2016, and 8.0 ETB for 2017).

\textsuperscript{20} CIF: Cost, Insurance, and Freight.
\textsuperscript{21} International best practice is to impose \textit{uniform specific taxes}, that are adjusted regularly to account for increases in the price level and increases in average incomes.
\textsuperscript{22} A Proposal to Shift the Excise Tax Base from Cost of Production to Sales Price, 2016
V. Results

24. The projected tax revenue impact is included in Table 7 below. The table includes the estimated reduction in consumption and the increased tax revenue, both for the two policy option scenarios and the do-nothing projected revenue under the current 75% ad valorem tax on cigarettes CIF/production price. The table also provides the different contributions to GDP compared with the projected Baseline 2016/17.

25. As shown in Table 7, the resulting average price for a pack of cigarettes in Ethiopia after the proposed 30% tax excise on the excise tax base shift to retail sale price resulted in ETB 26.19 (US$1.18) compared to the ETB 21.75 (US$0.98) projected for 2017/18 with the current 75% on CIF/production cost. Alternatively, under the mixed excise tax system, adding the proposed uniform specific excise tax of ETB 8.00 (US$0.36) to the 30% ad valorem of Scenario 1, increased the price of a 20-cigarettes pack to estimated ETB 36.42 (US$1.64 at the projected 2017 exchange rate). Under both policy reform options, the estimated price increase (scenario 1: 20%; scenario 2: 67%) exceed the projected inflation (7.3%) and the annual per capita GDP growth (5.7%) for a combined 13% increase in 2017/18 (WBG forecast), while the estimated 12% price increase under the do-nothing option falls short of inflation and per capita GDP growth.

- **Policy Option Scenario 1**  -- (the current ad valorem excise tax of 75 percent on the domestic production costs and CIF for imported cigarettes is changed to an ad valorem excise tax of 30 percent on producer/importer declared retail sales price over 2017-18). As observed in Table 7 below, the additional excise tax revenue generated under this policy option scenario, on top of the expected revenue projected for 2016/17, is estimated under the simulation model at ETB 792 million (about US$35.7 million), contributing to mobilize additional fiscal revenues estimated at 0.04% of GDP (2017 WBG forecast) – for a total excise tax revenue estimated at ETB 1.6 billion (US$71.3 million) equivalent to 0.09% of GDP. Including the excise tax, VAT\(^{23}\) and import duty on tobacco, total government tobacco tax revenue\(^{24}\) is expected to reach ETB 2.1 billion (US$93.8 million) or 0.12% of GDP (2017 forecast). The estimated 20% increase on 2016/17 projected average retail prices would have a significant effect in reducing the expected number of cigarettes sales taxed under Scenario 1 by about -7.9% (as a proxy for consumption), compared to -1.2 expected under the current regime of 75% excise tax on CIF/production cost.

- **Policy Option Scenario 2** (builds on the proposed shift to an excise tax of 30 percent on producer/importer declared retail sales price under the first policy option and converts the tax structure into a mixed system, complementing the ad valorem excise tax with a uniform specific excise tax of 8 ETB per 20-cigarette pack for 2017-18): The estimated impact of adopting a uniform specific excise tax for both domestic (filter and non-filter) cigarettes and imported (premium) cigarettes, would result in leveling the retail price of the tax yield across all brands ensuring higher average price and discouraging consumption. The average retail price for pack of 20-cigarettes would grow from estimated ETB 19.49 (US$0.90) under the current tax regime in 2016/17 to ETB 36.42 per pack (US$1.64) or

\(^{23}\) It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory +AE for domestic, excluding retail VAT.

\(^{24}\) Total tax revenue projected does not include the National Tobacco Enterprise (NTE) profit.
67% increase over 2017/18. The model estimated a cigarette consumption reduction of -18.9% for 2017/18\(^{25}\).

26. As shown in Table 7, the additional excise tax revenue over FY 2017/18, is estimated under the model at ETB 2.2 billion (about US$98.4 million) contributing to mobilize additional fiscal revenues amounting to 0.12% of GDP (2017 WBG CO forecast) – for a total excise tax revenue estimated at ETB 2.98 billion (US$134 million) or 0.17% of GDP. Including the excise tax, VAT (excludes retail VAT) and import duties on tobacco, total government tobacco tax revenue is expected to reach ETB 3.7 billion (US$165 million) or 0.21% of GDP (2017 WBG forecast).

Recommendation: Strong consideration should be given by the MoFEC and MOH to adopt the proposed mix excise tax system (Policy Option 2): converting the tax structure into a mixed system by adopting an ad valorem excise tax of 30 percent on producer/importer declared retail sales price and introducing a uniform specific excise tax of 8 ETB per 20-cigarette pack on top of the ad valorem tax over 2017-18. This suggested policy reform option is consistent with recent findings documented in an IMF publication\(^{26}\) that evidence that the structure of cigarette taxes is critical in determining the relative prices of different tobacco products and brands across the price spectrum and thereby influencing the behavior of consumers within a country. Indeed, while tax policy can help reduce negative externalities associated with tobacco consumption, the taxation arrangement needs to avoid providing incentives to switch down to cheaper cigarette brands in response to tax and other price increases.

\(^{25}\) See price and income elasticity price assumptions in Annex I.

<table>
<thead>
<tr>
<th>Government Revenue Type</th>
<th>Baseline 2016/17: projected</th>
<th>Expected Contribution to GDP</th>
<th>Maintain 75% excise tax on CIF/Production costs FY 2017/18:</th>
<th>Expected Contribution to GDP</th>
<th>Policy Option Scenario 1 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%)</th>
<th>Expected Contribution to GDP</th>
<th>Policy Option Scenario 2 - 2017/18 Shift the Excise Tax Base from Cost to Sales Price (30%) plus uniform specific excise tax</th>
<th>Expected Contribution to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cigarettes taxed (billion pieces)</td>
<td>4.98</td>
<td>4.92</td>
<td>4.59</td>
<td>4.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cigarette price (ETB per pack)</td>
<td>19.49</td>
<td>21.75</td>
<td>26.19</td>
<td>36.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cigarette price (US$ per pack) *</td>
<td>$ 0.90</td>
<td>$ 0.98</td>
<td>$ 1.18</td>
<td>$ 1.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average excise tax (ETB per 1000 pieces)</td>
<td>159.0</td>
<td>173.4</td>
<td>345.0</td>
<td>745.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average excise tax (US$ per 1000 pieces)</td>
<td>$ 7.32</td>
<td>$ 15.54</td>
<td>$ 33.56</td>
<td>$ 15.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total excise tax revenue (million ETB) **</td>
<td>792.22</td>
<td>854.10</td>
<td>1,583.77</td>
<td>2,976.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total excise tax revenue (US$ million)</td>
<td>$ 36.46</td>
<td>0.05%</td>
<td>$ 38.47</td>
<td>0.05%</td>
<td>$ 71.34</td>
<td>0.09%</td>
<td>$ 134.08</td>
<td>0.17%</td>
</tr>
<tr>
<td>Additional tobacco excise (million ETB) /percentage of GDP</td>
<td>51.8</td>
<td>61.9</td>
<td>791.6</td>
<td>2184.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional tobacco excise (US$ million) *</td>
<td>$ 2.38</td>
<td>0.00%</td>
<td>$ 2.79</td>
<td>0.00%</td>
<td>$ 35.66</td>
<td>0.04%</td>
<td>$ 98.39</td>
<td>0.12%</td>
</tr>
<tr>
<td>Total government tobacco tax revenue (excise, VAT, duties, and levies, million ETB) [2]</td>
<td>1,157.7</td>
<td>1,244.6</td>
<td>2,082.8</td>
<td>3,667.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total government revenue (excise, VAT, duties, and levies, US$ million)</td>
<td>$ 53.28</td>
<td>0.07%</td>
<td>$ 56.06</td>
<td>0.07%</td>
<td>$ 93.82</td>
<td>0.12%</td>
<td>$ 165.22</td>
<td>0.21%</td>
</tr>
<tr>
<td>Total expenditure on cigarettes (million ETB)</td>
<td>4,856.28</td>
<td>5,355.43</td>
<td>6,012.50</td>
<td>7,276.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage change in total cigarette consumption (%)</td>
<td>-1.8</td>
<td>-1.2</td>
<td>-7.9</td>
<td>-18.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*World Bank Group forecast: annual average exchange rate = 2014 (1 US$ 19.59 ETB); 2015 (1US$20.54 ETB); 2016 (1US$// 21.73); 2017 (1US$22.20 ETB)

**Reported excise tax revenue on tobacco products - Ethiopia Ministry of Finance/ Ethiopian Revenue and Customs Authority (ERCA); FYs 2014/15= 606.04 million ETB; -2015/16 = 520.21 million ETB.

[1] It is assumed that the 15% VAT revenue includes only the CIF+ID+AE for imports; and Ex-factory +AE for domestic, excluding retail VAT; total tax revenue projected does not include the National Tobacco Enterprise (NTE) profit.
27. As shown in Table 8, the resulting average price increase for a pack of cigarettes in Ethiopia after the proposed simulated excise tax increases under current (US$ 0.98) and proposed Scenario 1 (US$1.18), would still be lower (except for Kenya and Uganda) than the prevailing prices in the neighboring and other sub-Saharan African countries, and well lower compared to the sub-Saharan African regional average of $1.24, which is also below the global average price of $2.15 (1915 prices). Under proposed Scenario 2, the estimated average retail price would increase to US$1.64, to a level similar to Nigeria but below Tanzania, another tobacco producing country.

Table 7: Ethiopia Average Price of Pack of Cigarettes, Compared with other AFRO Countries

<table>
<thead>
<tr>
<th>AFRO Countries/neighbors</th>
<th>Price of 20-Cigarette pack of the most sold brand (US$ equivalent)*</th>
<th>Specific excise</th>
<th>Ad valorem excise</th>
<th>Excise tax burden (excise tax as percentage of retail price)*</th>
<th>Total tax burden (total tax: excise, VAT, duties and levies as percentage of retail price)</th>
<th>Ethiopia Average Retail Price per pack per Scenario (% average excise/total tax burden) (US$ 2016 - 2018 est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>$ 1.71</td>
<td>0.00%</td>
<td>15.87%</td>
<td>20.63%</td>
<td>Actual: FY 2014/15 $ 0.80</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>$ 1.14</td>
<td>0.00%</td>
<td>30.00%</td>
<td>48.79%</td>
<td>Actual Situation (est.): 2015/16 $0.85</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td>$ 0.76</td>
<td>35.00%</td>
<td>0.00%</td>
<td>45.08%</td>
<td>Baseline FY 2016-17 $0.90</td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>$ 2.24</td>
<td>14.13%</td>
<td>0.00%</td>
<td>29.69%</td>
<td>FY 2017/18 $0.98 (projected)</td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>$ 0.76</td>
<td>0.00%</td>
<td>13.90%</td>
<td>18.77%</td>
<td>Scenario 1 - FY 2017/18 $1.18</td>
<td></td>
</tr>
<tr>
<td>pack/most sold brand *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Scenario 2 - FY 2017/18 $1.64</td>
<td></td>
</tr>
</tbody>
</table>

* Source: Global Tobacco Control Report, 2015 - National retail price for a pack of 20 cigarettes of the most sold brand

28. Raising the price of tobacco through increased tobacco taxes is the most effective and efficient way to reduce tobacco use. Table 9, shows the tax impact in percentage (for both cigarettes excise taxes and total taxes) on the average retail prices in Ethiopia projected for 2016/17 (16.3/23.8) and 2017/18 under current tax structure. Under scenario 1 for 2017/18 (green shadow) it is observed a slight improvement of 26.3% of excise tax burden and 34.6%, and much better for scenario 2 with 40.9% on excise tax burden and 50.4% of total burden. However, the current and projected total cigarette tax burden ranging between 24% and 50% are well below the 75% of total burden recommended by WHO.

Table 8: Ethiopia Summary Cigarette Excise Tax Revenue Burden – Baseline FY 2016/17 projected and FY 2017/18 Forecast Current 75% cost based; 30% sales based (Scenario 1); and mixed system (Scenario 2) Output

<table>
<thead>
<tr>
<th>Summarized output</th>
<th>FY 2016/17 Projected</th>
<th>FY 2017/18 Projected</th>
<th>Scenario 1 FY 2017/18</th>
<th>Scenario 2 FY 2017/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average cigarette price (ETB per pack)</td>
<td>19.49</td>
<td>21.75</td>
<td>26.19</td>
<td>36.42</td>
</tr>
<tr>
<td>Average cigarette price (US$ per pack)*</td>
<td>$ 0.90</td>
<td>$ 0.98</td>
<td>$ 1.18</td>
<td>$ 1.64</td>
</tr>
<tr>
<td>Average excise tax burden (excise tax as percentage of retail price)</td>
<td>16.3</td>
<td>15.9</td>
<td>26.3</td>
<td>40.9</td>
</tr>
<tr>
<td>Average cigarette tax burden (total tax - excise, VAT, import duties, and levies as percentage of retail price)</td>
<td>23.8</td>
<td>23.2</td>
<td>34.6</td>
<td>50.4</td>
</tr>
</tbody>
</table>

Source: WBG estimates
To estimate the impact of the change in the retail price on consumption, the crucial parameters are:

**Price elasticity of demand:** The greater the price elasticity, the greater the decrease in the consumption of cigarettes in response to a given percentage change in the price (price elasticity falls in the inelastic range, but closer to -1 than zero).

**Income elasticity of demand:** The greater the income elasticity may lead to greater consumption of cigarettes in response to a given percentage change in income (income elasticity tends to be unit elastic or somewhat more elastic).

It is assumed that profit margins of the producer, importers, and distributors due to the tax increase are mostly passed on to consumer’s price increase.

Assumed percentage increase in industry profit per cigarette = 15%

The tax rates for the two scenarios are chosen so that the resulting increase price accounts for inflation and annual per capita GDP growth.

It is assumed that the 15% VAT revenue includes only the CIF + Import Duties Excise for imports, and Ex-factory + Excise for domestic, excluding retail VAT;

Total tax revenue projected does not include the National Tobacco Enterprise (NTE) profit.

**PRICE ELASTICITY:**

Meta-analyses of the relationship between tobacco prices and use suggest that the overall elasticity of demand for adults lies between -0.3 and -0.7 (CBO 2012, IARC 2011, Gallet and List 2003, Chaloupka and Warner 2000) ASSUMPTIONS [1]:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value (must be negative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price elasticity for Economy (domestic) cigarettes</td>
<td>-0.6</td>
</tr>
<tr>
<td>Price elasticity for mid-price (domestic) cigarettes</td>
<td>-0.4</td>
</tr>
<tr>
<td>Price elasticity for imported (premium) cigarettes</td>
<td>-0.2</td>
</tr>
<tr>
<td>Income elasticity for economy cigarettes</td>
<td>0.8</td>
</tr>
<tr>
<td>Income elasticity for mid-price cigarettes</td>
<td>0.6</td>
</tr>
<tr>
<td>Income elasticity for premium cigarettes</td>
<td>0.5</td>
</tr>
</tbody>
</table>

*Final report of the Technical Working Group on Tobacco Taxation in Ethiopia; WHO/MoFEC; 23 September 2014*
Sources of Data for the Simulation Model:

- **Simulation Model:** WHO Tobacco Tax Simulation Model (TaXSiM) adapted to Ethiopia current tax structure.
- Canada estimates based on combined sources; Cigarettes in Ethiopia, Canadean, May 2016.
- Final report of the technical working group on tobacco taxation in Ethiopia; WHO/MoFEC; 23 September 2014
- Ethiopia Ministry of Finance and Economic Coordination (MoFEC) Tobacco Excise & VAT Tax.
- MoFEC/ Ethiopian Revenue and Customs Authority (ERCA) excise tax revenue reports (FY 2014/15; 2015/16).
- **Ethiopia World Bank Group Office forecast:** Macro-economic indicators and annual average exchange rate.
- WBG. A Proposal to Shift the Excise Tax Base from Cost of Production to Sales Price, 2016.
Annex 2:
Suggested References on Global Experience with Tobacco Taxation (World Bank Group Reports 2016-2017)

Reports:

  (Executive Summary has been translated into French, Spanish, Portuguese, Chinese, Russian, Japanese, Arabic and posted at the WBG Global Tobacco Control Program site:  
• "The Distributional Consequences of Increasing Tobacco Taxes on Colombia's Health and Finances" (2017):  
• "The political economy of the 2016 tobacco and proposed sugar-sweetened beverage tax increases in Colombia" (2017):  
• “Economics of Tobacco Farming in Indonesia” (2017):  
• “The Economics of Tobacco Taxation and Employment in Indonesia” (2017):  
• “Policy note on the Economics of Tobacco Taxation and Employment in Indonesia” (2017):  
• “Expanding the Global Tax Base: Taxing to Promote Public Goods: Tobacco Taxes” (2016):  
• “Tobacco Taxation in Turkey: An Overview of Policy Measures and Results” (2017):  


• Botswana Health and HIV/AIDS Public Expenditure Review, includes a section on tobacco taxation: https://www.researchgate.net/publication/304748652_Botswana_Health_and_HIVAIDS_Public_Expenditure_Review


Upcoming Reports:

- Trinidad and Tobago; Tax System, Structure, Fiscal Assessment, and Future Reform (to be published in late January 2018).
- South Africa; The Distributional Impact of Tobacco Taxes (under preparation for delivery in February 2018).
- Lesotho Public Expenditures Review, includes chapter on tobacco tax policy reform (upcoming in early 2018).

Videos:

- Philippines: The Tax That Saves Lives, Gates Foundation: https://www.youtube.com/watch?v=iKPG-vX3H5Y


- Taxation: Most effective but still the least-used tobacco control measure: http://blogs.worldbank.org/health/taxation-most-effective-still-least-used-tobacco-control-measure
- The World’s Most Profitable Slow-Motion Disaster: Tobacco: https://www.cgdev.org/blog/worlds-most-profitable-slow-motion-disaster-tobacco
• Tobacco Taxes Need to Be a Much Bigger Part of the Fiscal Policy Discussion: [https://www.cgdev.org/blog/tobacco-taxes-need-be-much-bigger-part-fiscal-policy-discussion](https://www.cgdev.org/blog/tobacco-taxes-need-be-much-bigger-part-fiscal-policy-discussion)
• Tripling tobacco taxes: Key for achieving the UN Sustainable Development Goals by 2030: [http://blogs.worldbank.org/health/role-excise-tax-meeting-sdg](http://blogs.worldbank.org/health/role-excise-tax-meeting-sdg)
• Healthy women are the cornerstone of healthy societies: [http://blogs.worldbank.org/health/healthy-women-are-cornerstone-healthy-societies](http://blogs.worldbank.org/health/healthy-women-are-cornerstone-healthy-societies)
• Healthy living for healthy societies and stronger economies: [http://blogs.worldbank.org/health/healthy-women-are-cornerstone-healthy-societies](http://blogs.worldbank.org/health/healthy-women-are-cornerstone-healthy-societies)