

**AN EVALUATION OF MONGOLIAN TOBACCO TAXES  
2011-2015 AND A PROPOSAL FOR FUTURE TOBACCO  
TAX INCREASES**

**MONGOLIAN TOBACCO TAX WORKING GROUP**

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**DRAFT**

**The Mongolian Tobacco Tax Working Group is a joint initiative of the following institutions:**

- Ministry of Health, Government of Mongolia
- Tobacco Control Economics, Department of Prevention of Noncommunicable Diseases, World Health Organization
- WHO Representative's Office Mongolia, World Health Organization

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## **Key Findings**

- Cigarettes excise taxes and prices in Mongolia are amongst the lowest in the region.
- Currently, excise taxes account for 27.7% of retail prices (23.8% for domestically produced brands and 43.7% of imported brands), significantly lower than the World Health Organization's recommendation that excise taxes should account for at least 70% of retail prices.
- Mongolia has the third lowest excise tax share in a selected group of countries from the World Health Organization's Southeast Asian region and Western Pacific region (Mongolia is a part of the Western Pacific region) and the fifth lowest US Dollar price in the group. In the regional context, there is significant scope and opportunity for the Government of Mongolia to raise taxes and prices of cigarettes.
- Mongolia does not produce any tobacco leaf. Imported cigarettes account for 70% of volumes, while the remaining 30% is manufactured domestically using imported tobacco leaf.
- Mongolia implements a uniform specific tax in line with global best practices. Prior to September 2012, Mongolia implemented a differential system for imported and domestically produced cigarettes.
- Prior to January 2015, Mongolia implemented excise taxes in US Dollars creating a natural hedge against inflation, however this was changed to Mongolian Tugrik in January 2015. Given the relatively high inflation environment in Mongolia this presents significant risks to the budget and real excise tax revenues have declined and will continue to decline without specific action being taken to increase nominal excise taxes periodically.
- In September 2012, Mongolia significantly increased cigarette excise taxes, from \$0.12 to \$0.48 per pack on domestically produced cigarettes and from \$0.24 to \$0.48 on imported cigarettes. This resulted in higher cigarette prices, volumes declining by 17.5% from 2013 to 2012) and excise tax revenues increasing by MNT 57.3 billion from 2012 to 2013 (107% in nominal terms and 88.1% in real terms).
- In January 2015, Mongolia reduced cigarette excise taxes from \$0.48 per pack (MNT 927 at January official exchange rate) to MNT 696 (\$0.36 at January official exchange rate). Importers and domestic producers did not lower prices and thus there was no effect on net-of-tax prices and volumes, however excise tax revenue declined sharply by MNT 30.6 billion from 2014 to 2015 (22% in nominal terms and 27% in real terms).
- The decline in excise tax revenue of 31 billion MNT as a result of the January 2015 excise tax decrease resulted in an increase in industry revenues of a similar magnitude (32 billion MNT). This represents a direct transfer (i.e. a handout) to cigarette importers and producers of 32 billion MNT.
- Various tobacco tax increases are proposed, in both Mongolian Tugrik and US Dollars representing increase in the excise taxes of 25%, 50%, 75% and 100%, as well as raising the excise tax to \$1.00 per pack (175% increase).
- Increases in excise taxes will result in increases in prices, increases in excise tax revenues, declines in volumes and deaths averted (full details in Tables 1 and 2).

- As an illustrative example, a 100% increase in the excise tax to MNT 1,392 per pack would result in the excise tax burden increasing to 41.7%, retail prices rising by 29.2%, excise tax revenues increasing by 80.7 billion Mongolian Tugrik to 184.9 billion Mongolian Tugrik (an increase of 77.5%), volumes falling by 8.8% and between 2,234 and 3,385 deaths averted.
- An increase in the excise tax to \$1.00 per pack would result in the excise tax burden increasing to 50.4%, retail prices rising by 61.6%, excise tax revenues increasing by 146.5 billion Mongolian Tugrik to 250.7 billion Mongolian Tugrik (an increase of 140.6%), volumes falling by 18.3% and between 4,648 and 7,042 deaths averted.

## **Introduction/Background**

The Ministry of Health of Mongolia requested for technical assistance from the World Health Organization (WHO) to review Mongolia's tobacco tax system and to update the previous simulation model, which had been constructed using 2011 data. Based on the above request a team of one staff economist and one consultant visited Mongolia from 7 to 11 March 2016 to conduct assessment on the tobacco tax system and tax administration of the country. During their visit, a Technical Working Group (TWG) was formed including various sectors of government, led by the Ministry of Health.

Since its transition to a market economy, Mongolia has been one of the fastest growing economies in the world due to investment in its resources sector. Economic growth has averaged over 9% in the last 10 years. However, Mongolia's dependence on resources left it vulnerable to external shocks, especially since 90% of resource exports are destined for China. With the slowdown in growth in China, exports have fallen since 2013, as has Foreign Direct Investment. Slowing economic growth, along with an expansion of social programs such as universal child support have increased budget deficits.<sup>1</sup>

By making appropriate policy changes in tobacco taxation it is possible to generate significant amount of revenue that would contribute to closing these resource gaps through internal means. The simulation of tobacco tax policy change later in this report shows that doubling the excise tax in Mongolian Tugrik can generate 185 billion Mongolian Tugrik (81% increase in excise revenues), in 2016 alone. A doubling of a US Dollar denominated excise tax would yield 200 billion Mongolian Tugrik (96% increase). Increasing the US Dollar specific tax to \$1.00 per pack would generate 251 billion Mongolian Tugrik (147%). This can help alleviate the budget deficit, while still leaving room for additional increases to reach the World Health Organization recommended tobacco excise tax level of 70% of the retail price. At the same time, it can contribute to improvement in public health by raising price of cigarettes, discouraging smoking and reduce cigarette use.

## **Justification for Technical Work on Tobacco Taxation**

Taxation is considered to be the most effective and cost-effective tobacco control measure available to governments. Higher tobacco taxes are also referred to as 'win-win' policies because they generate extra government revenue while at the same time reduce long-term tobacco consumption. Many health professionals have therefore been advocating for higher levels of tobacco taxation on public health grounds alone, while macro-economists have begun estimating the positive impact of higher tobacco taxes on government revenues, fiscal space and financial sustainability.

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<sup>1</sup>IMF Country Report No. 15/109.

The major concern of Ministry of Finance officials when designing and implementing changes to the tobacco tax system is to generate sustainably higher revenues. Other concerns such as illicit trade, domestic employment, the regressivity of tax rates, and public health all play a role to some extent.

Generally speaking, public health concerns should be accorded a higher priority in many countries, especially as higher tax rates are consistent with the primary revenue generation objective.

Many countries still have the opportunity to substantially increase their tax revenues from tobacco products. This is because tax rates on tobacco products in these countries, such as in Mongolia, are low to begin with, and consumer demand for tobacco products is relatively price inelastic. There is need for strong tax administrations in designing, implementing and monitoring more effective tobacco tax systems, and this often requires the administrations to build up their level of technical and analytical capacity.

### **Objective**

The main objective of the TWG is to examine the tobacco market and the existing tobacco excise system in Mongolia to determine how to increase the efficiency and the effectiveness of the excise system in tobacco taxation. This would fit the country setting in the short to mid-term, and ensure sustainably higher tax revenues while helping to achieve public health objectives with respect to reduced tobacco consumption. The collaboration between the WHO and the Government of Mongolia focused on the following areas:

- Ensuring short-run reductions (e.g. expected immediate impact of tax increases) in the consumption of all cigarette brands through tax policies.
- Exploring areas of tax-system induced tax avoidance and reducing it with an efficient tax system(s) across the supply chain.
- Monitoring the market and creating a database for market analysis that enables the tax officials to formulate policy and then to implement it effectively.
- Scanning current stakeholders (tobacco products manufacturers, importers and distributors) in the market and their position in the tobacco sector (their market share in different price bands).
- Ensuring reduction of tax and price differentials between cigarette brands.
- Ensuring increased tax revenue collection from all brands and targeted segments (e.g. premium, mid-price, economy brands).
- Looking at the impact of tax changes on stakeholders' revenues.

### **Methodology**

Given that Mongolia has increased tobacco taxes and made structural reforms to the tobacco tax system in December 2012 it is necessary to evaluate the current tax system and rates, and the trends in tobacco excise taxes, retail prices, consumption and revenue. After conducting the evaluation the TWG then

considered the effect of further tax increases on retail prices, consumption and revenue, and consequent health outcomes through the use of the World Health Organization's simulation model (TaXSiM).

The WHO Tax Simulation Model (WHO TaXSiM) has been the key analytical tool in support of this work. It involved discussing and analyzing the:

- Economic and political context in which the tax department colleagues operate.
- Current tobacco market situation at both the supply and the demand sides.
- Strengths and weaknesses of the existing tobacco tax system.
- Viability and impact of corrective measures to the tobacco tax system.

In order to do this the TWG had to gather a significant quantity of data. The TWG is particularly thankful to the assistance of other government departments for assistance in gathering the data. The TWG found the quality and depth of data to be of a very high standard.

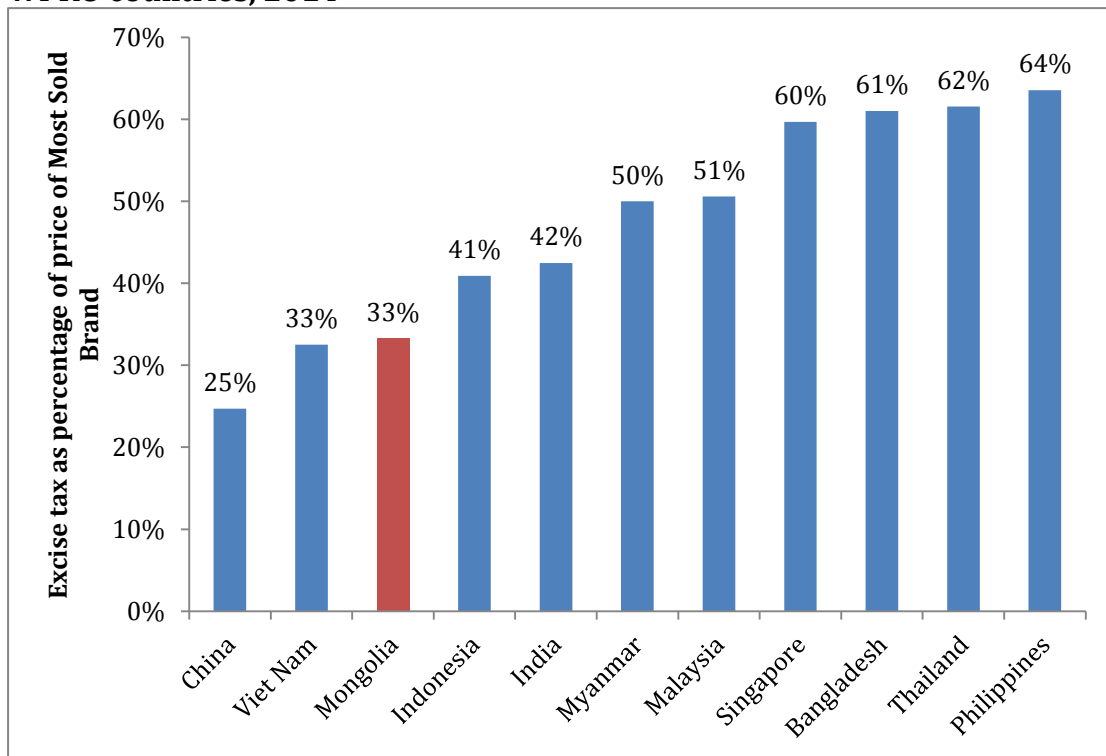
Specific data gathered included:

- Inflation: Bank of Mongolia, month-to-month inflation rates for month used to create a monthly Consumer Price Index with base month of December 2015.
- Exchange rate: Bank of Mongolia, monthly official exchange rate to US Dollars, averaged for year to get to annual exchange rate.
- Cigarette prices: Monthly cigarette prices for a locally produced and imported cigarette brand.
- Excise taxes: Excise Tax Act and amendments.
- Imports: Volumes and CIF values for imported cigarettes by tariff code. Using the specific tax and customs duty rate the TWG were able to impute tax revenues.
- Domestically produced: Excise tax revenues for domestically produced cigarettes. Using the specific tax for each period the TWG were able to impute volumes.

**Regional Comparison of Excise Taxes and Prices**

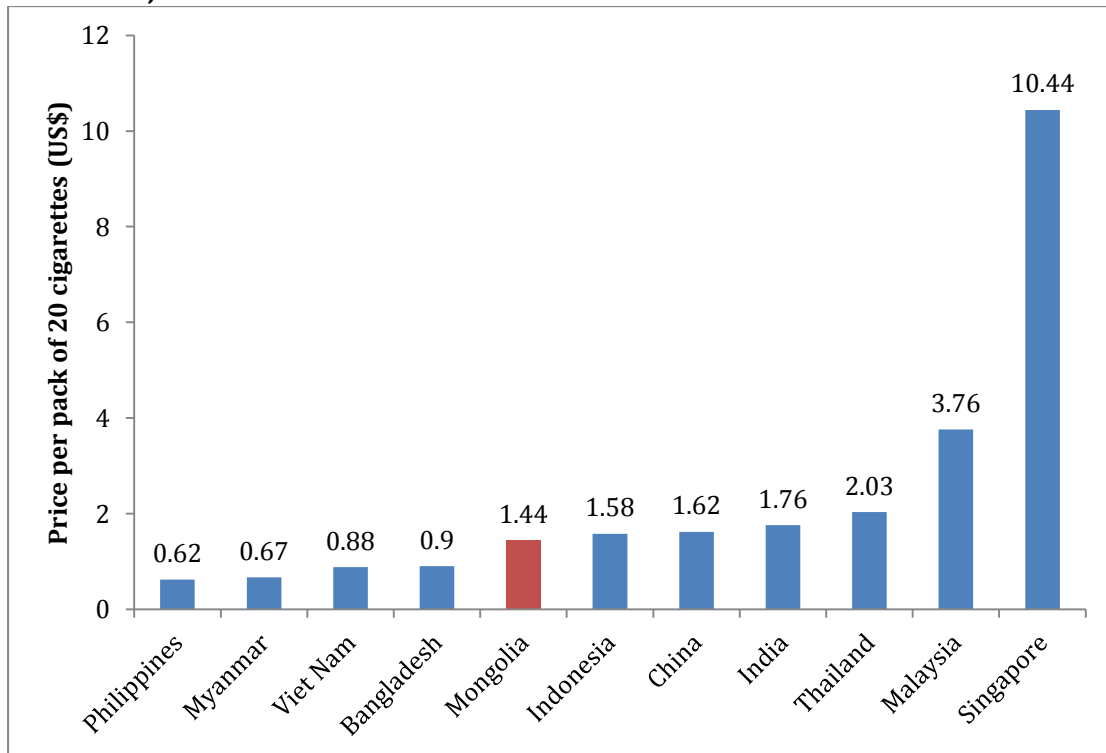
It is important to compare Mongolia against other countries in the region in order to benchmark their progress in tobacco control. There are two means to do this, firstly, by comparing the excise tax as a percentage of the retail price (also called the excise tax burden) in Figure 1, and secondly, by comparing the retail price in US Dollars in Figure 2. In order to do this in a comparable manner, we compare the prices of the Most Sold Brand in 2014 as per the World Health Organization's Global Tobacco Control Report (GTCR). The comparison countries are a selected group of countries from the World Health Organization's Southeast Asian region and Western Pacific region (Mongolia is a part of the Western Pacific region).

**Figure 1: Excise Tax Burden of Most Sold Brand in Selected SEARO and WPRO countries, 2014**



Source: WHO GTCR

**Figure 2: Price per pack of Most Sold Brand in Selected SEARO and WPRO countries, 2014**



Source: WHO GTCR



Figure 1 shows that Mongolia has the third lowest excise tax share in the selected group, while Figure 2 shows that Mongolia has the fifth lowest US Dollar price in the group. In the regional context, there is significant scope and opportunity for the Government of Mongolia to raise taxes and prices of cigarettes.

## **Evaluation of Current Tax Policy**

### **Trends in Excise Taxes and Tax Structure**

The purpose of using taxes as a tobacco control tool, i.e. to reduce tobacco use, is to ensure that the prices of tobacco products increase, relative to the prices of other goods and services. In order to do this, policy makers focus their attention to excise taxes, increasing of other tax constituents like value added tax (VAT) and import duties do not affect the relative price. In Mongolia, VAT is levied at a rate of 10% meaning that 9.09% of the final price is VAT. This rate has remained consistent through the period. Increasing VAT will not increase the price of tobacco products relative to other goods and services and thus not affect tobacco use. Imported cigarettes are subject to an import duty of 5% of the CIF (customs, insurance and freight) value. Increasing the import duty will not affect tobacco use directly, but increase the incentives for tobacco manufacturers to shift imported consumption to domestic production. Excise tax is charged on all cigarettes, independent of whether they are imported or domestically produced. Up until 23 January 2015, the excise tax is levied as a specific tax in US Dollars, and paid in Mongolian Tugrik based on the official exchange rate. Since 23 January 2015, the excise tax has been levied in Mongolian Tugrik. Furthermore, in an unusual policy change excise taxes were also reduced at the same time.

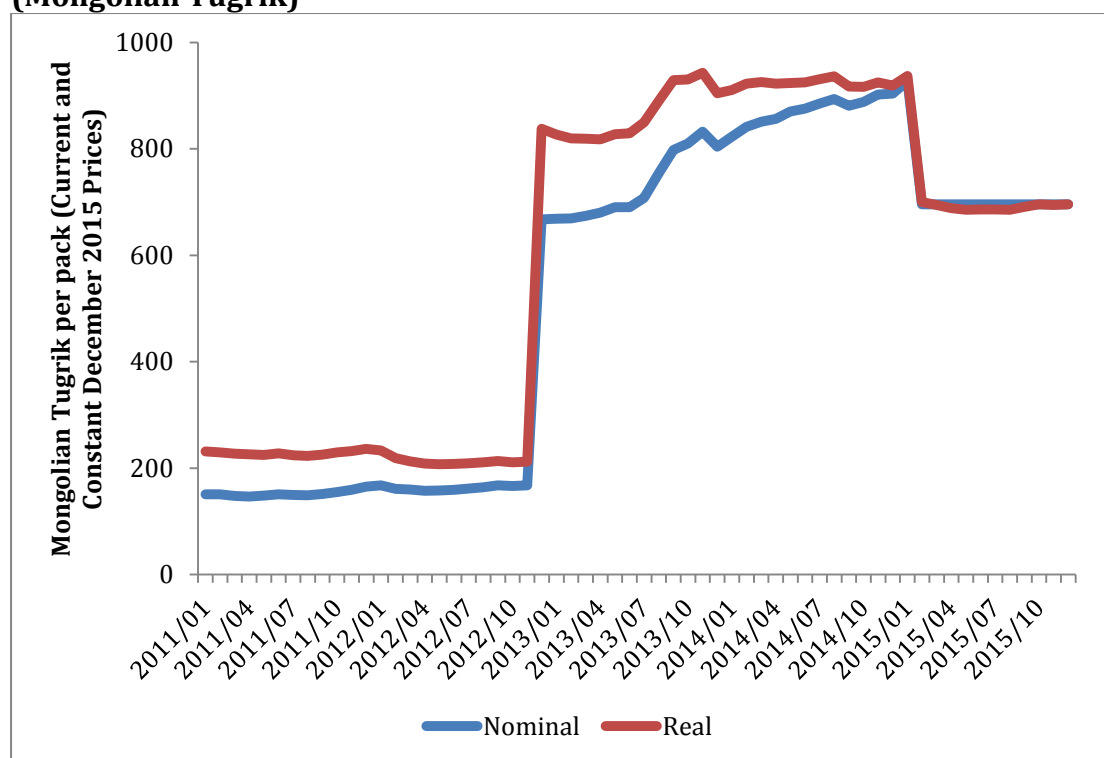
Between January 2011 and November 2012, a tiered specific tax was used, levying a lower rate of \$0.12 per pack on domestically produced cigarettes and a higher rate of \$0.24 per pack on imported cigarettes. In December 2012 when the excise tax rates were increased, the two tiers were unified into a single specific tax rate of \$0.48 per pack. While the rates have remained constant since in US Dollars, they have varied in Mongolian Tugrik, mostly increasing in nominal and real terms as the currency has depreciated. On 23 January 2015, the adjustment of the excise tax from US Dollars to Mongolian Tugrik coincided with an effective decline in the excise tax. The excise tax was set at 696 Tugrik per pack, which converted to \$0.35 per pack at the official monthly exchange rate, a decline of 26 percent.

Anchoring the excise tax rates in US Dollars provided an important hedge against inflation since Mongolia has experienced relatively constant and high levels of inflation, averaging 11% per annum between 2010 and 2014 (World Bank). Normally, specific taxes would be required to be adjusted regularly to maintain their real value and protect the real value of revenue, however, anchoring them in US Dollars in an environment where the national currency depreciates regularly and/or consistently the hedge is naturally occurring. However, when the change of currency from US Dollars to Mongolian Tugrik occurred on 23 January 2015, Mongolia lost its ability to automatically protect the real value of

the tax and tax revenues. Without regular and deliberate action to adjust excise taxes, this policy change will significantly weaken the fiscal position of the budget and create fiscal policy risks. Regular action to protect real taxes and revenues would likely require Parliament to annually adjust excise taxes to account for inflation.

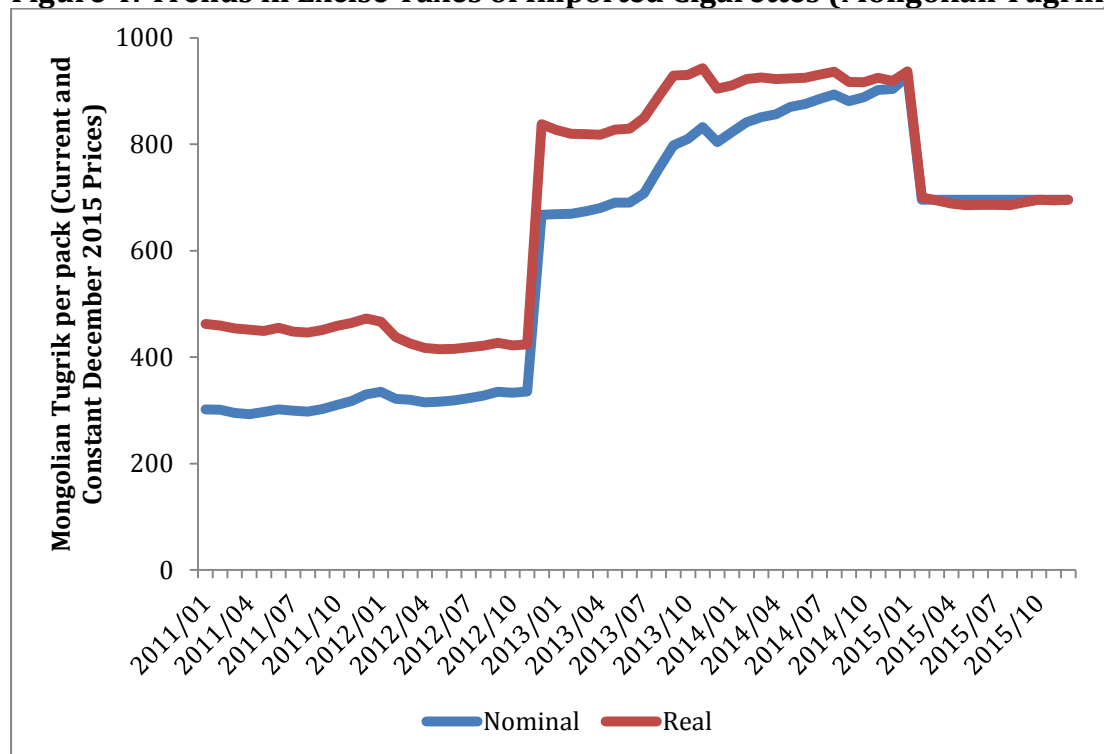
Figure 3 and 4 show the excise tax rates per pack of domestically produced and imported cigarettes, respectively, in nominal and real terms. The value of the US Dollar hedge that was in place until 23 January 2015 is immediately evident. Since the tax increase in December 2012, the nominal excise tax per pack has trended upwards, maintaining, and even increasing its real value slightly since the currency depreciated faster than inflation. However, before the tax increase in December 2012, even though the nominal value of the excise was trending upwards, the real values declined from 2011 to 2012 as the currency depreciation did not keep up with the rate of inflation. The decline in the tax per pack from 23 January 2015 is also immediately evident, although the nominal value remained stable afterwards in local currency since the excise tax was now denominated in local currency.

**Figure 3: Trends in Excise Taxes of Domestically Produced Cigarettes (Mongolian Tugrik)**



Source: Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

**Figure 4: Trends in Excise Taxes of Imported Cigarettes (Mongolian Tugrik)**



Source: Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

The current tax structure of a uniform specific tax meets the World Health Organization’s best practice recommendations as well as the recommendations contained within the Guidelines for Implementation of Article 6 of the Framework Convention on Tobacco Control. Mongolia should be congratulated for the December 2012 reforms to unify the tax rates. Furthermore, the anchoring of the excise tax in US Dollars created a hedge against inflation and would thus also meet World Health Organization’s best practice recommendations as well as the recommendations contained within the Guidelines for Implementation of Article 6 of the Framework Convention on Tobacco Control in a rather innovative way.

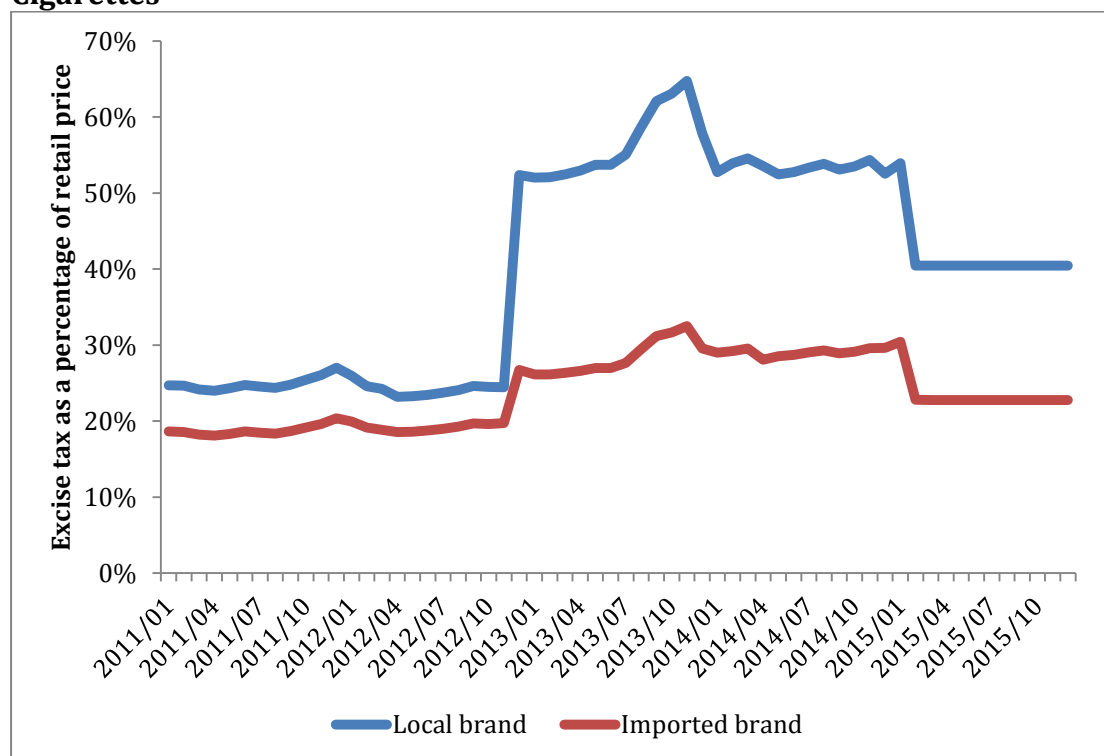
However, the Government of Mongolia should be aware that the change to denominate the excise tax in local currency presents risks to the fiscus given the relatively high rates of inflation experience in Mongolia since the democratic transition. It would be recommended that the Government of Mongolia implement a mechanism to automatically adjust the excise tax, either by linking the excise tax to Consumer Price Index or an index of nominal wages or incomes, or reverting to a tax denominated in US Dollars.

Furthermore, there is concern that Mongolia took the very unusual step to decrease excise. As will be seen later in the analyses, this significantly compromised the fiscus during an already challenging time by resulting in declining excise tax revenues and providing tobacco importers and producers significant margin increases. While the move from the US Dollar to local currency

denomination may have reduced the currency volatility challenges experienced by importers and manufacturers, the decline in excise tax revenue places significant and unnecessary strain on the budget.

While excise taxes have increased in Mongolia in recent years, the level of excise taxes can still be benchmarked against World Health Organization recommendations. The World Health Organization’s Technical Manual on Tobacco Tax Administration recommend that tobacco excise taxes account for at least 70% of the retail price of cigarettes. Figure 5 shows the excise tax as a percentage of retail prices, or excise tax burden, of domestically produced and imported cigarettes. While the excise tax burden increased significantly as a result of the December 2012 excise tax increase, and temporarily during the 2013 Mongolian currency depreciation, the excise tax burden then decreased suddenly and significantly as a result of the January 2015 excise tax decline. **The current levels of 41% and 23% for domestically produced and imported cigarettes, respectively, are well below the World Health Organization recommendation allowing ample room for future tax increases.**

**Figure 5: Excise Tax Burden of Domestically Produced and Imported Cigarettes**



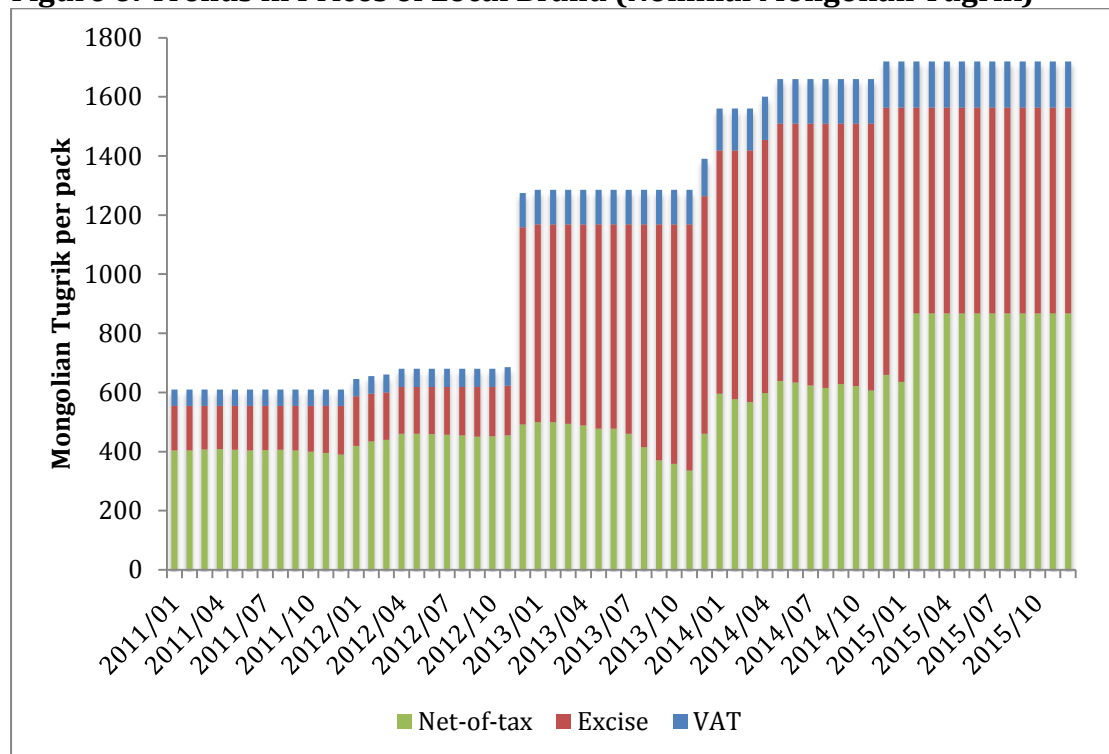
Source: Raw Consumer Price Index prices, Excise Tax Act and subsequent amendments; from January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

### **Trends in Prices**

Cigarette price differ between brands, but predominantly vary around two broad market segments, namely: local or domestically produced brands and imported brands. Raw price data per pack is available for an undefined local and imported

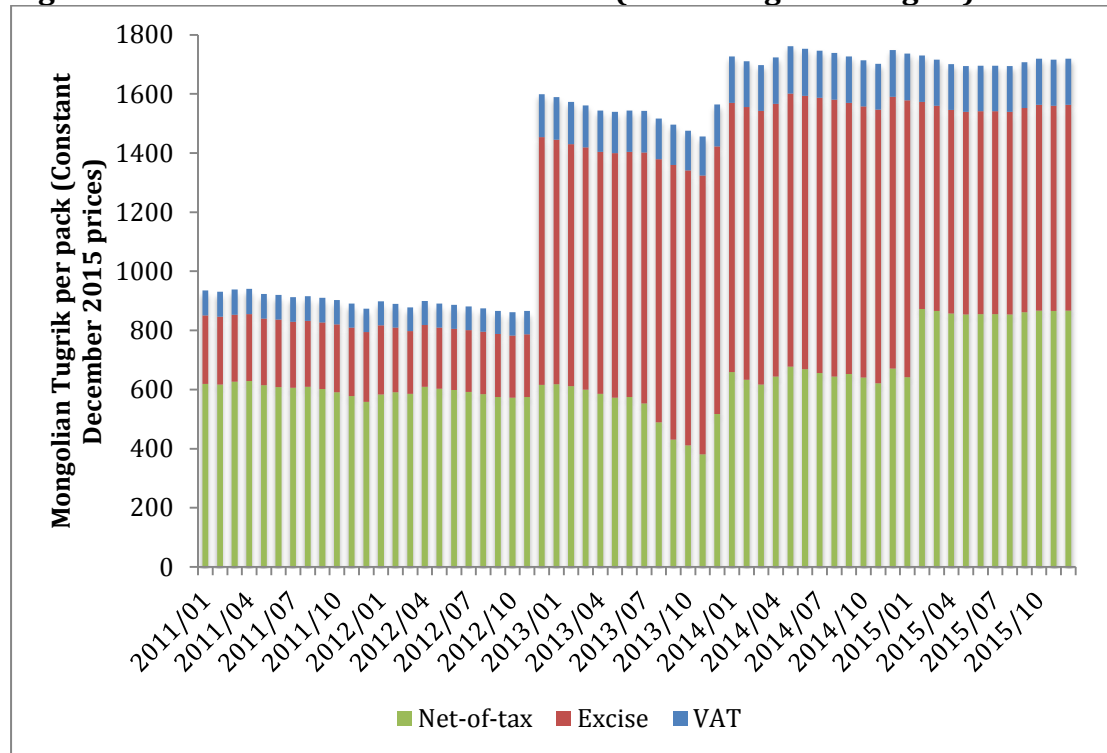
brand on a monthly basis from January 2011 to December 2015 from the Consumer Price Index. We deconstructed the price per pack of each into three components on a monthly basis: VAT is a consistent 9.09% of retail prices, the excise tax, and then net-of-tax price (the price that is not due to government in either excise tax or VAT). The excise tax is calculated by taking the US Dollar value and converting to local currency using the official exchange rate per month for the periods during which the excise tax was denominated in US Dollars. For imported brands the net-of-tax price includes the CIF value and the customs duty. Prices are shown in nominal local currency, real local currency (constant December 2015 prices) and US Dollars.

**Figure 6: Trends in Prices of Local Brand (Nominal Mongolian Tugrik)**



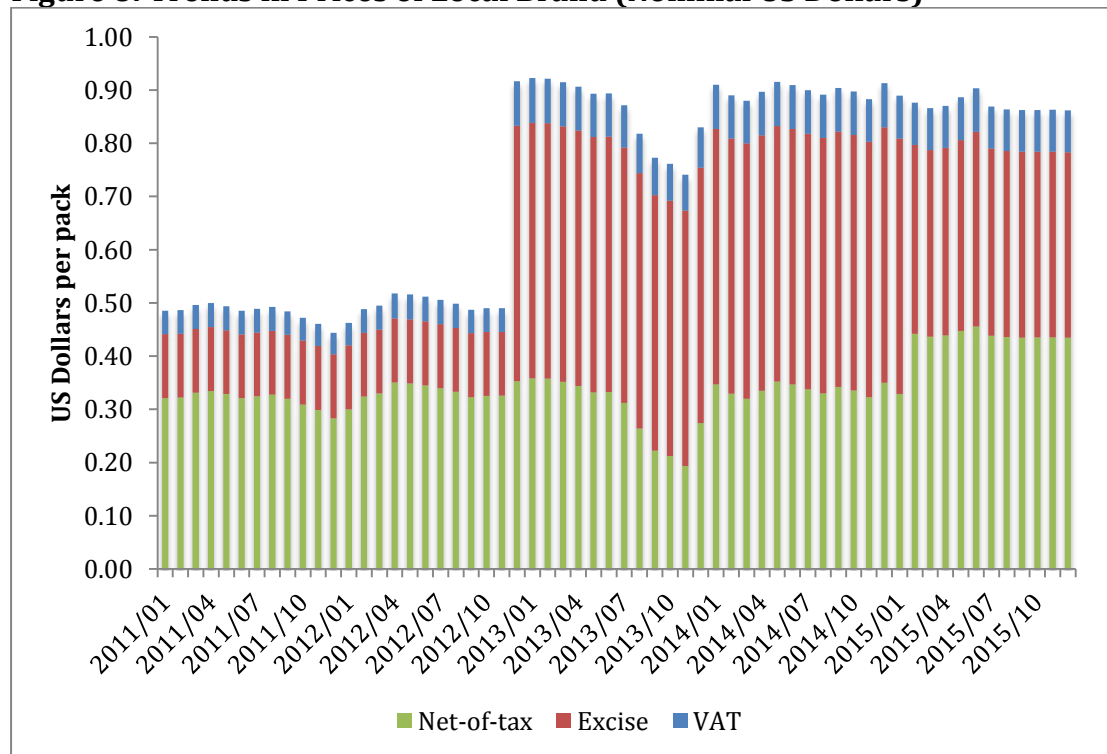
Source: Raw Consumer Price Index prices, Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; From January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

**Figure 7: Trends in Prices of Local Brand (Real Mongolian Tugrik)**



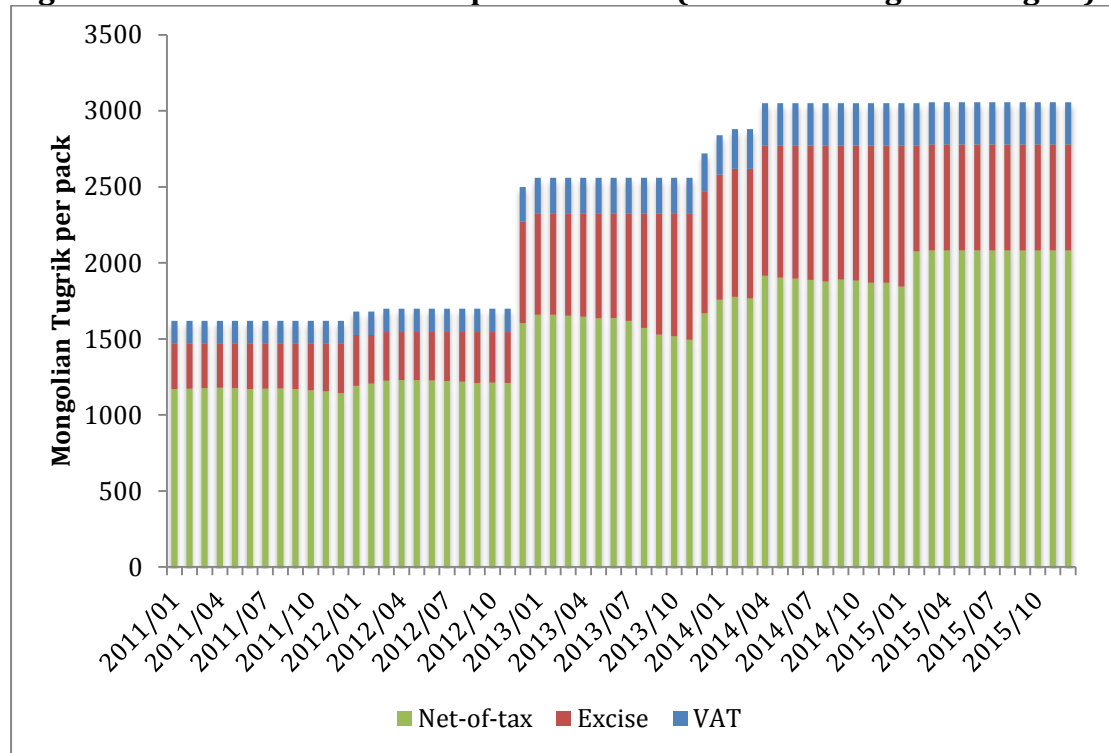
Source: Raw Consumer Price Index prices; Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

**Figure 8: Trends in Prices of Local Brand (Nominal US Dollars)**



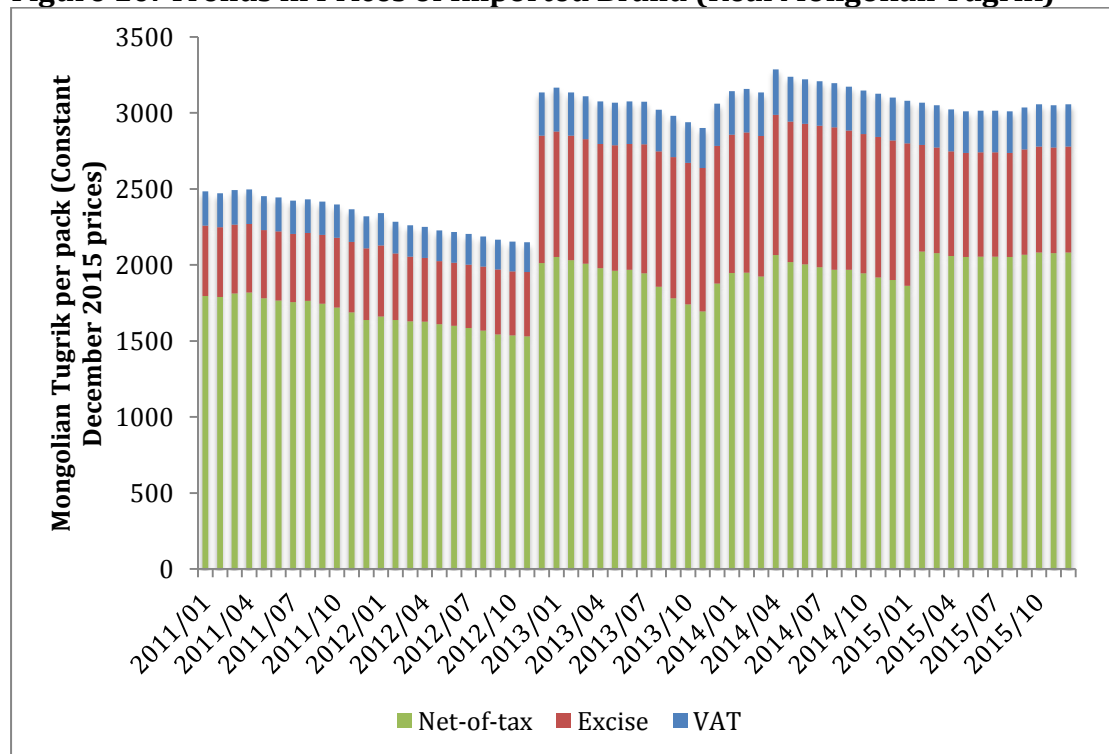
Source: Raw Consumer Price Index prices, Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2015 Mongolian Tugrik converted to US Dollars using monthly official exchange rate from the Bank of Mongolia

**Figure 9: Trends in Prices of Imported Brand (Nominal Mongolian Tugrik)**



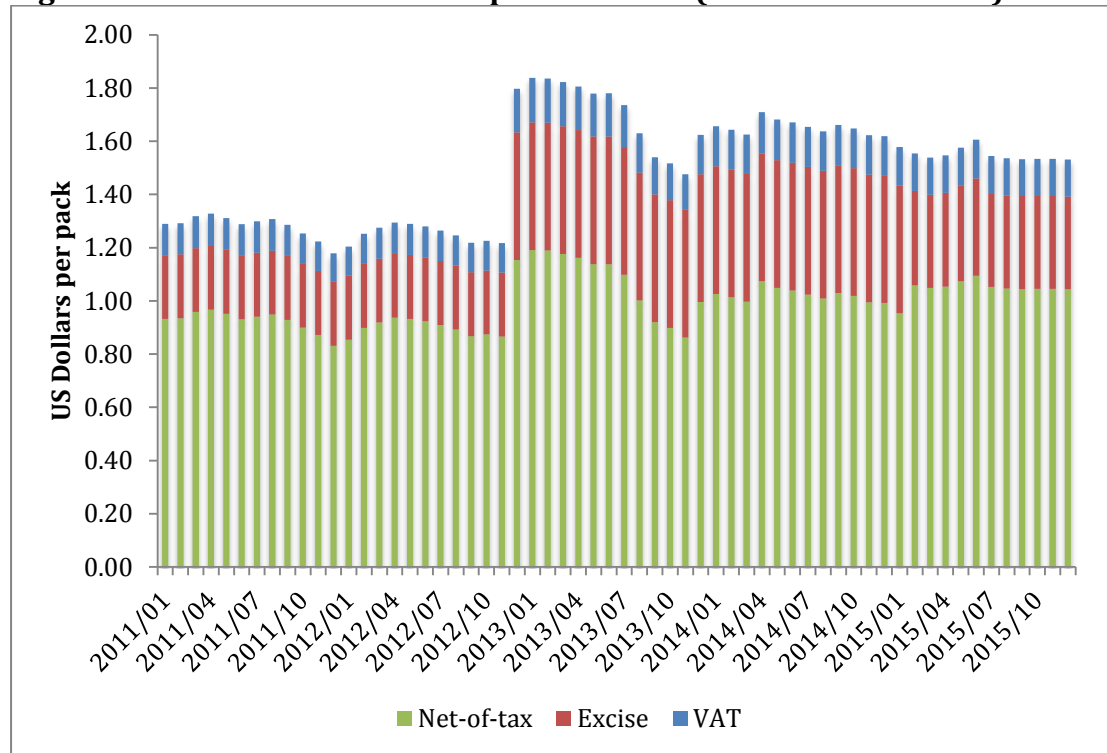
Source: Raw Consumer Price Index prices, Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; From January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

**Figure 10: Trends in Prices of Imported Brand (Real Mongolian Tugrik)**



Source: Raw Consumer Price Index prices; Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2011 to January 2015 US Dollar excise tax converted to Mongolian Tugrik using monthly official exchange rate from the Bank of Mongolia

**Figure 11: Trends in Prices of Imported Brand (Nominal US Dollars)**



Source: Raw Consumer Price Index prices, Excise Tax Act and subsequent amendments; Bank of Mongolia Consumer Price Index; from January 2015 Mongolian Tugrik converted to US Dollars using monthly official exchange rate from the Bank of Mongolia

The most important finding from the figures is that the increase in the excise tax in December 2012 resulted in a significant increase in prices, of both domestic and imported brands. However, the increase in domestic prices was significantly larger than the increase in imported prices since the absolute and relative increase in excise tax was larger for domestic than imported cigarettes. This established that increases in taxes result in the desired outcome of increasing prices, and thus will contribute to declines in tobacco use.

Secondly, the tax increase was initially over-shifted on imported brands, meaning that prices increased by more than the increase in tax as indicated by the immediate increase in the net-of-tax price, however, this increase was not fully sustained in real terms. The over-shifting behavior is somewhat expected given the specific tax system. Over-shifting of tax increases means that prices increase by more than the increase in tax, further increasing the effectiveness of tobacco taxes as a public health tool, but reducing the revenue impact of the tax increase.

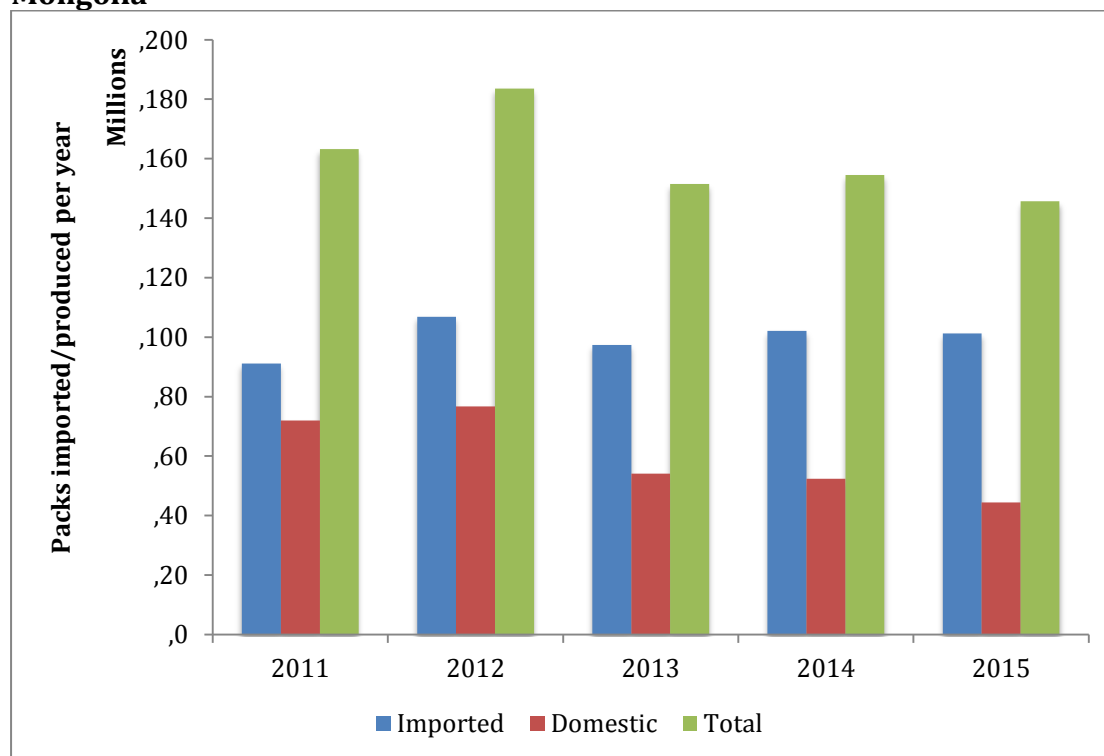
Thirdly, the decrease in the excise tax in January 2015 did not result in a decline in prices. The tobacco industry supply chain received all the rents from the reduction in excise taxes through a significant increase in the net-of-tax price. This means that the decline in tax did not affect volumes, but would result in significant declines in excise tax revenues.



## Trends in Volumes

Economic theory teaches us that increases in prices results in declining quantity demanded for that product. This relationship is formalized through the price elasticity of demand, or the percentage change in consumption as a result of the percentage change in price. Cigarettes are empirically shown to be relatively price inelastic, meaning that the decline in consumption as a result of a price increase is less than proportional to the increase in price. Therefore for a 10% increase in price we would expect a decline in consumption of less than 10%. Empirical studies suggest that in a low- and middle-income country like Mongolia, the price elasticity of demand lies between -0.2 and -0.6, meaning that for a 10% increase in price, consumption is expected to decline by between 2% and 6%, all else being held constant. Thus, given the excise tax and price increases experienced in Mongolia and described previously, we would expect a decline in consumption.

**Figure 12: Volume of Cigarettes Imported and Domestically Produced in Mongolia**



Source: Volumes of imported cigarettes from tariff code import data; volumes of domestically produced cigarettes imputed from revenue data (revenue divided by specific tax)

Figure 12 shows that between 2011 and 2012 Mongolia experienced an increase in the number of cigarette packs imported and produced domestically. This was to be expected given the declining real prices between 2011 and 2012. However, after the December 2012 excise tax increases and subsequent increases in prices, volumes of imported and domestically produced cigarettes declined in 2013. The decline in domestically produced cigarettes was significantly greater than the decline in imported cigarettes and is attributable to the significantly bigger excise tax and price increases of domestically produced cigarettes due to the

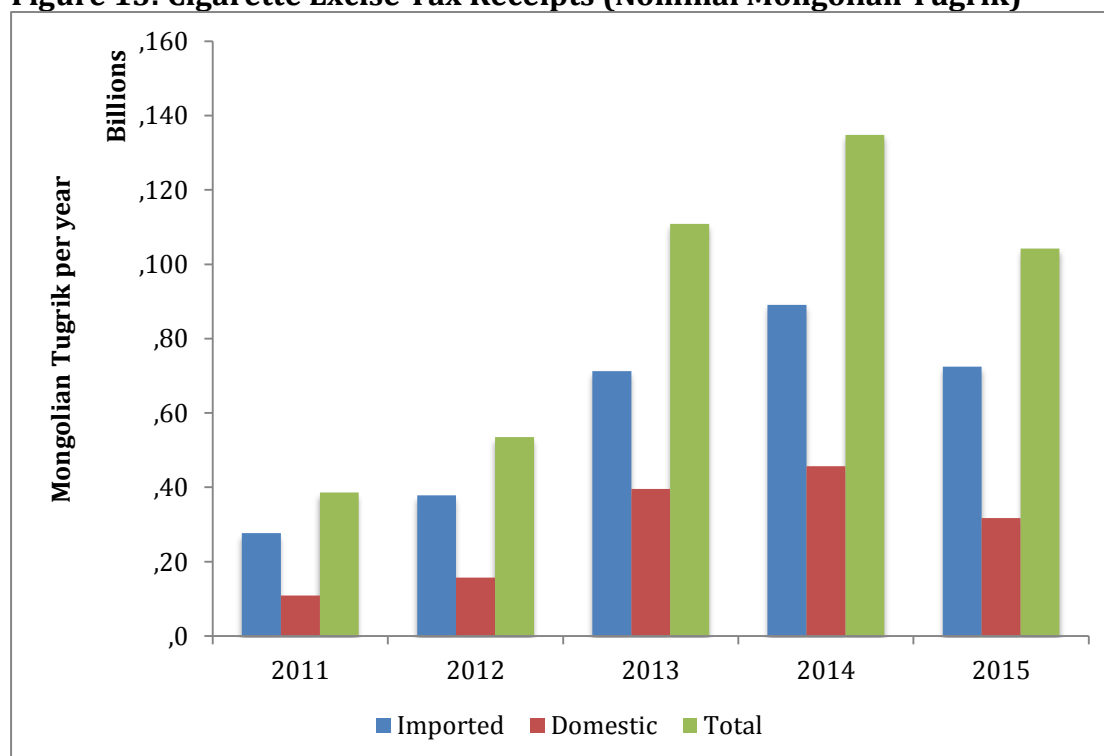
unification of the excise tax system. Volumes remained relatively unchanged in 2014, and declined in 2015 likely a result of poor economic conditions.

The data confirms our expectations that increases in excise taxes and prices will result in declined in cigarette volumes.

### **Trends in Revenues**

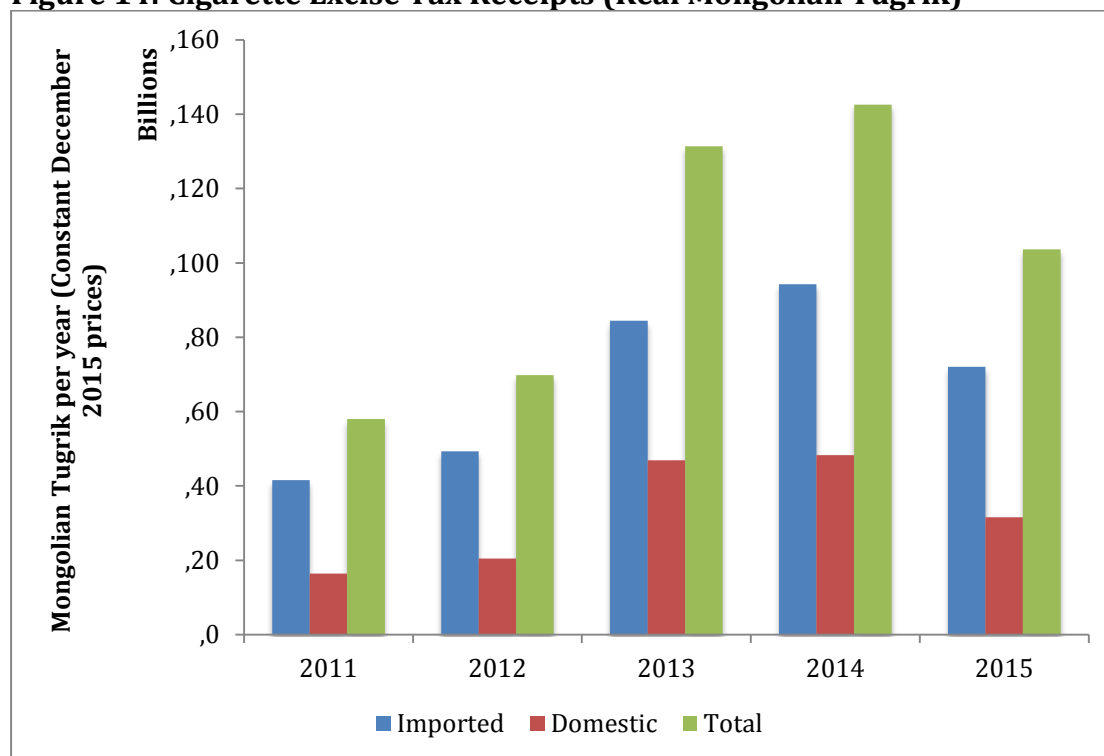
The purpose of increasing cigarette excise taxes is to reduce consumption, but also to increase excise tax revenue. The relationship between excise tax and excise tax revenue is defined by the price elasticity of demand. Since cigarettes are relatively price inelastic, any increase in the price will result in a less than proportional decline in consumption. Thus, unless prices are significantly over-shifted, increases in the specific excise tax will result in increases in revenues. Our analysis of the revenues considers both nominal and real revenue in Mongolian Tugrik, and US Dollar values of revenues, broken down into imported and domestic cigarettes, and are displayed in Figures 13, 14 and 15, respectively.

**Figure 13: Cigarette Excise Tax Receipts (Nominal Mongolian Tugrik)**



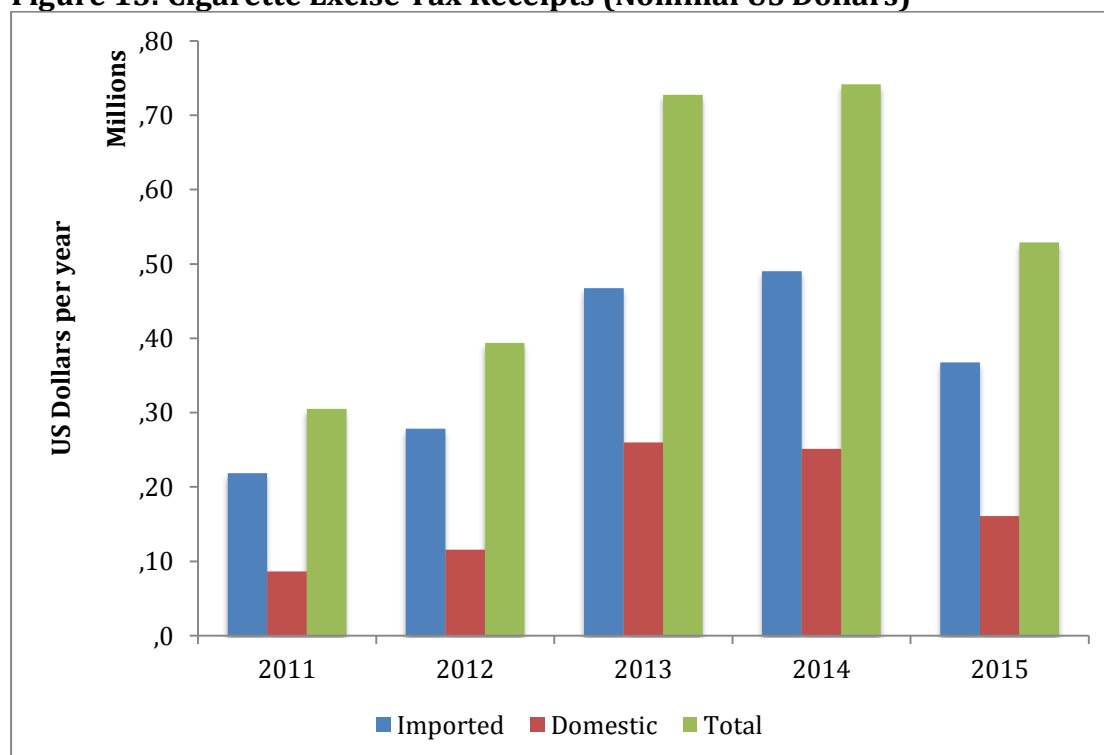
Source: Revenues from domestically produced cigarettes sources from budget revenue estimates; revenues from imported cigarettes inputed from import volumes data (volumes multiplied by specific tax).

**Figure 14: Cigarette Excise Tax Receipts (Real Mongolian Tugrik)**



Source: Revenues from domestically produced cigarettes sources from budget revenue estimates; revenues from imported cigarettes inputted from import volumes data (volumes multiplied by specific tax); Consumer Price Index from Bank of Mongolia.

**Figure 15: Cigarette Excise Tax Receipts (Nominal US Dollars)**



Source: Revenues from domestically produced cigarettes sources from budget revenue estimates; revenues from imported cigarettes inputted from import volumes data (volumes multiplied by specific tax); Mongolian Tugrik converted into US Dollars at average official exchange rate from the Bank of Mongolia.

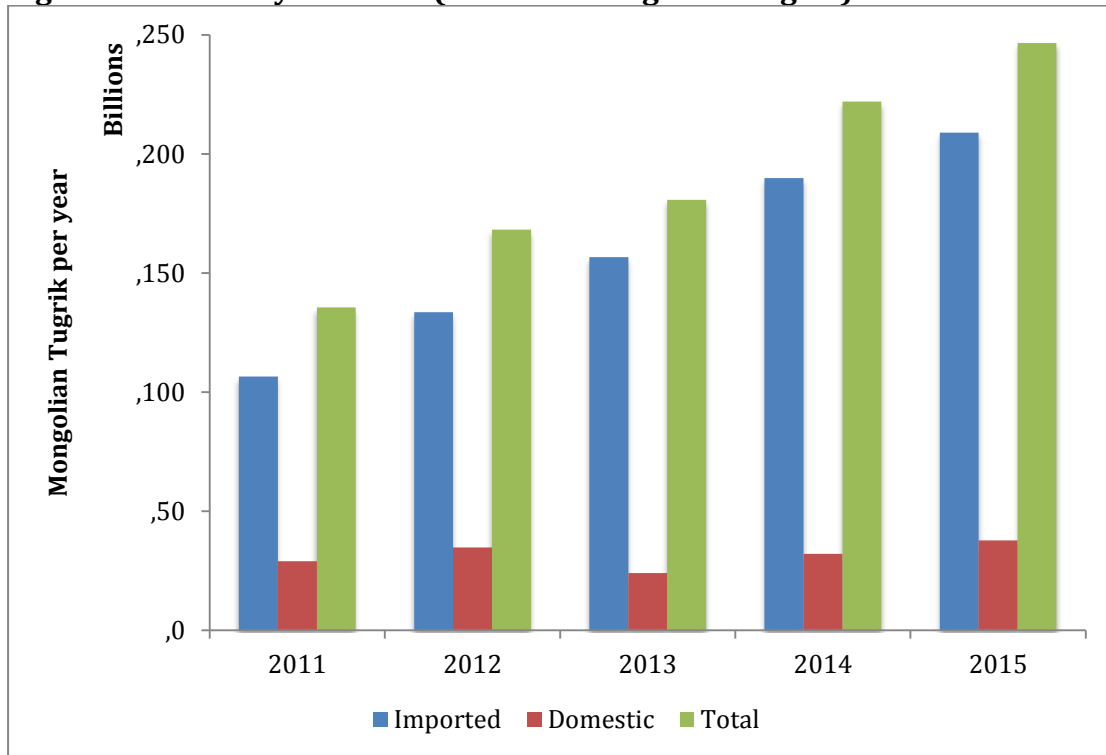
Excise tax revenues of both domestic and imported cigarettes have increased consistently from 2011 to 2014. The excise tax per pack increased significantly in November 2012, resulting in a very large increase in excise tax revenue for both domestically produced and imported cigarettes in 2013. The increase in revenue from domestically produced cigarettes was larger than for imported cigarettes as the tax per pack for domestically produced cigarettes increased by a greater amount in absolute and relative terms. The increases in revenues were in spite of the significant decline in consumption, thus confirming that revenues will increase along with declining volumes.

Excise tax revenues increased in 2014, however, domestically produced cigarettes only saw a revenue increase in nominal and real local currency terms and not in US Dollar terms as the local Mongolian currency depreciated.

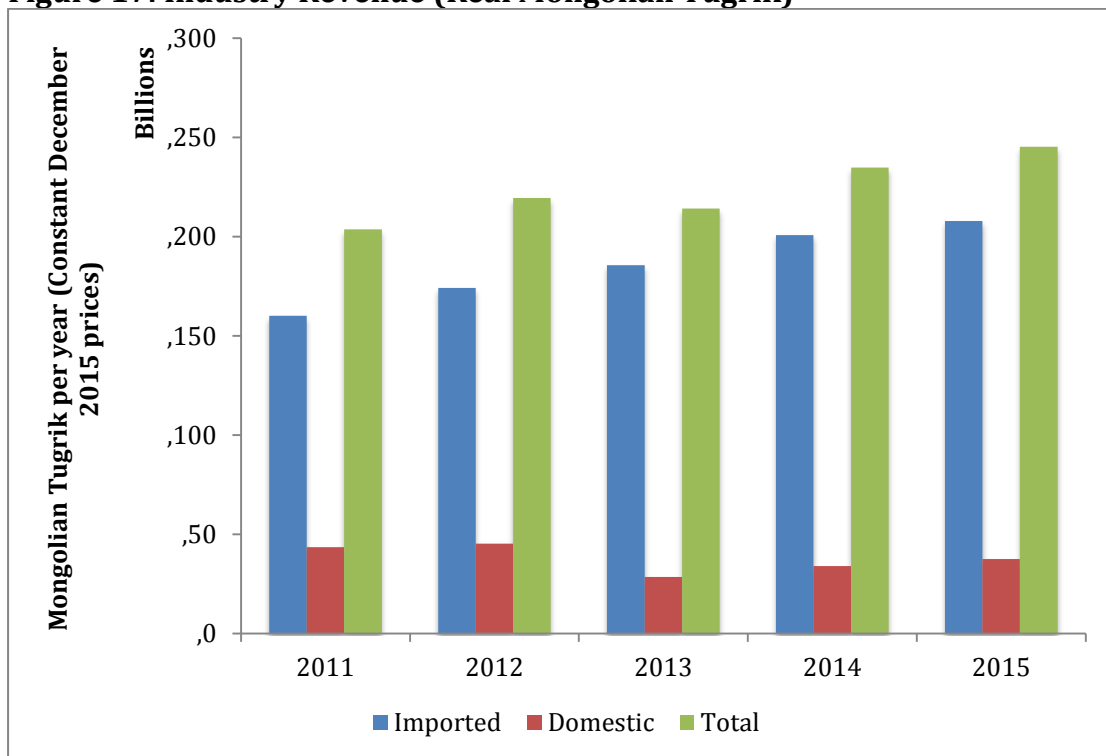
It is concerning that excise tax revenues declined significantly from 2014 to 2015 as a result of the decline in the excise tax per pack and the rebasing of the tax from US Dollars to Mongolian Tugrik. This decline in revenue significantly compromises the national budget.

Given the significant changes in tax policy, both the changes in tax rates as well as the tax structure reforms, it is necessary to consider the effects on the tobacco industry. The tobacco industry is split into two broad sectors: cigarette importers and domestic cigarette manufacturers. We are able to estimate the entire value of the supply chain to both sectors independently by applying the net-of-tax price to the volume. This metric does not break down the value into various levels in the supply chain but aggregates all that is not due to government in excise taxes and VAT, and thus including leaf farming, processing and distribution (entirely offshore), cigarette manufacturing (offshore for importers, onshore for domestic), cigarette distribution (onshore) and retail (onshore). Figures 16, 17 and 18 display the industry revenue in nominal and real Mongolian Tugriks and in US Dollars, respectively.

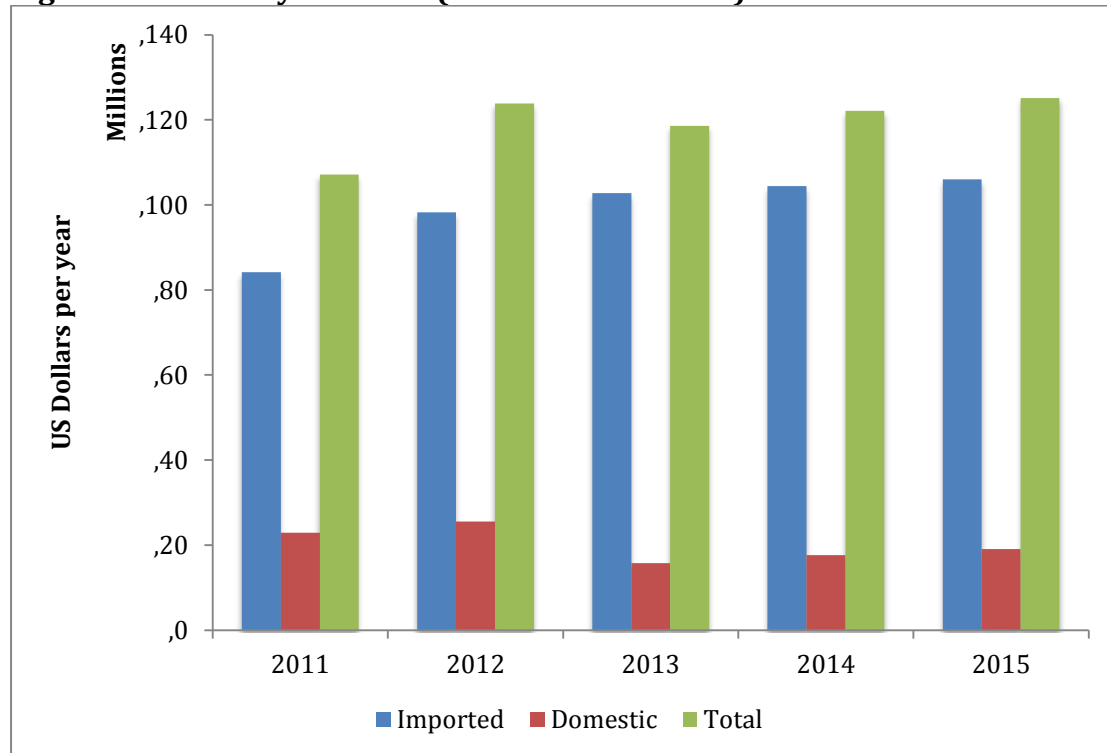
**Figure 16: Industry Revenue (Nominal Mongolian Tugrik)**



**Figure 17: Industry Revenue (Real Mongolian Tugrik)**



**Figure 18: Industry Revenue (Nominal US Dollars)**



The industry revenue for imported cigarettes has increased in nominal and real terms in Mongolian Tugrik and US Dollars. This is because the volumes of imported cigarettes have not fallen over the long term even while the total market did. The structural reform of the tax system to move towards a unified rate has increased the prices of domestically produced cigarettes by more than the imported brands thereby causing a shift in market share from the domestic to imported market. Therefore the value due to the imported market has remained strong. This is contrary to the trends in domestically produced cigarettes, which saw declines in real Mongolian Tugrik and US Dollars. Nominal industry revenue increased but this was eroded by inflation.

An important consideration is what occurred in 2015 when excise taxes declined. Government excise tax revenue declined since the decline in excise tax did not result in lower prices and volumes remained steady as a result. However, the lower excise taxes and unchanged prices meant that the net-of-tax price was allowed to increase. Combined with steady volumes this meant a considerable increase in industry revenue of approximately 19 billion and 13 billion Mongolian Tugrik for importers and domestic producers, respectively. Given that excise tax revenue declined during this period by 17 billion and 14 billion Mongolian Tugrik from imported and domestically produced cigarettes, respectively. The decline in excise tax was effectively a cash handout by the Government of Mongolia to cigarette importers and producers.

## **Simulation of Future Tobacco Tax Policy Proposals**

The evaluation of tobacco tax policy in Mongolia for the period 2011 to 2015 shows that Mongolia has a good tax structure that meets and complies with global best practices. Mongolia has made progress in this regard by unifying the tobacco tax system in December 2012. Furthermore, the dynamics of increasing taxes to increase revenue and reduce consumption through increased prices is empirically proven in Mongolia, as per theoretical economic models.

While excise taxes have increased significantly in Mongolia in December 2012, the excise tax burden of 56% and 31% for domestically produced and imported cigarettes, respectively, still falls well short of the World Health Organization's recommendation that excise taxes should account for at least 70% of the retail price of cigarettes.

This creates a need for Mongolia to continue raising cigarette excise taxes. Furthermore, the increase in excise taxes will reduce consumption, leading to a reduction in smoking prevalence and avert many deaths from smoking-related diseases. In the broader fiscal context, Mongolia is suffering from a significant budget deficit and the increase in tobacco excise taxes will result in large increases in excise tax revenue. To this end, the Working Group has simulated the impact of tobacco tax increases using the World Health Organization TaXSiM model.

The TWG has tailored the WHO TaXSiM model to the specific circumstances and tax system in Mongolia. The interaction between the TWG and the WHO staff and consultant greatly enriched the overall analysis of Mongolia's tobacco tax system, and helped ensure that administratively realistic solutions can be developed and acted upon.

WHO TaXSiM is a data-intensive model that requires detailed information on tax paid sales and price of different brands available for the most popular tobacco product in the consumer market, typically manufactured cigarettes in most countries. Based on the data requirements template provided by WHO Mongolia office to the Government of Mongolia, officials collected and brought very detailed information and data on the import quantity and CIF value for imported products, production and ex-factory price for domestic products, retail price, tax rates and revenues for cigarette for an extended period of time. These data were fed into the TaXSiM model to estimate the impact of planned changes in the tobacco tax policy on the revenue, import and domestic sale of tobacco products.

### **Assumptions of the Model**

The tax simulation was done looking at the responses of price, sales and revenue under several assumptions:

1. The model simulates the tax changes for the 2016 year, using 2015 data as the base year.
2. We assume 2106.26 Mongolian Tugrik to the US Dollar, based on an IMF estimate of a 6.9% exchange rate depreciation. This allows presentation

of data in US Dollars to allow comparison for years in which the excise tax was denominated in US Dollars.

3. The CIF values for the imported brands of cigarettes increase by 11% given the expected depreciation in the local currency and experience of in-sample simulations conducted during the evaluation.
4. Consumers' income is held constant. In a rapidly growing economy such as in Mongolia, the consumption of tobacco would increase with higher incomes. As a result, the expected reduction in consumption from a given tax and price increase would be lower and the expected tax revenue growth would be higher than simulated. In this respect, the projection offers a conservative estimate of the effect of tax increase on consumption and revenue.
5. Higher income smokers consume higher-price brands of cigarettes (imported brands). As is evident from global studies, higher income smokers are less price sensitive than lower income smokers. We assume that the price elasticity of cigarette consumption for imported brands is -0.2, and for economy brands is -0.4 for domestically produced brands. The price elasticity of demand has been calibrated based on the experience of in-sample simulations conducted during the evaluation.
6. The substitution or switching between the cigarette brands in response to the tax change is not significant and accounted for in the price elasticity of demand.
7. The profit margins of the producer, importers and distributors do not change after the tax change. In other words, the tax increase is fully passed on to price increases.
8. The model is simulated in nominal terms.
9. Any tax avoidance or tax evasion by consumers or producers/ importers of cigarettes is accounted for in the price elasticity of demand.
10. When converting the change in volumes to changes in smoking prevalence, a 50-50 relationship between participation and intensity is used, meaning that half the change in consumption affects smoking prevalence while half the change in consumption affects smoking intensity.
11. When estimating the deaths averted, it is assumed that between one-third and one-half of continuing smokers will die of smoking related diseases, and thus between one-third (low) and one-half (high) of deaths are averted by reducing the number of smokers.



**Table 1: Summary of Simulated Tax Policy Proposals for 2016 Using Mongolian Tugrik Excise Tax Base**

Percentage increase in excise tax	Excise per pack (MNT)	Average excise tax burden	Percentage change					MNT (Billions)		Deaths averted	
			Excise per pack (USD)	Excise per pack (MNT)	Excise Revenue	Retail Prices	Volumes	Excise Revenue	Increase	Low	High
Base	696*	27.7%						104.2			
25%	870	31.8%	13.8%	21.6%	19.4%	5.7%	-1.8%	124.2	20.1	470	712
50%	1044	35.5%	36.5%	46.0%	39.9%	13.5%	-4.2%	145.7	41.5	1,058	1,603
75%	1218	38.8%	59.3%	70.3%	59.3%	21.4%	-6.5%	165.9	61.7	1,646	2,494
100%	1392	41.7%	82.0%	94.6%	77.5%	29.2%	-8.8%	184.9	80.7	2,234	3,385

Note: \* While the weighted average excise tax per pack in 2015 was 715.21 Mongolian Tugrik, the excise tax per pack at year end was 696 Mongolian Tugrik per pack.

**Table 2: Summary of Simulated Tax Policy Proposals for 2016 Using US Dollar Excise Tax Base**

Percentage increase in excise tax	Excise per pack (USD)	Average excise tax burden	Percentage change					MNT (Billions)		Deaths averted	
			Excise per pack (USD)	Excise per pack (MNT)	Excise Revenue	Retail Prices	Volumes	Excise Revenue	Increase	Low	High
Base	0.36*	27.7%						104.2			
25%	0.45	33.5%	24.0%	32.5%	28.7%	9.2%	-2.9%	134.1	29.8	733	1,111
50%	0.54	37.3%	48.7%	59.0%	50.4%	17.7%	-5.4%	156.7	52.5	1,374	2,081
75%	0.64	41.0%	76.3%	88.5%	73.0%	27.2%	-8.2%	180.3	76.0	2,085	3,160
100%	0.73	43.8%	101.1%	115.0%	91.9%	35.8%	-10.7%	200.0	95.7	2,726	4,130
175%	1.00	50.4%	175.4%	194.5%	140.6%	61.6%	-18.3%	250.7	146.5	4,648	7,042

Note: \* While the weighted average excise tax per pack in 2015 was 715.21 Mongolian Tugrik, equivalent to \$0.36 at the official exchange rate of the Bank of Mongolia, the excise tax per pack at year end was 696 Mongolian Tugrik per pack, equivalent to \$0.36 at the official exchange rate of the Bank of Mongolia.

## **Model Results**

Two broad sets of excise tax proposals have been modeled. The first, continues to use the Mongolian Tugrik as the excise tax base, and the second reverts to the US Dollar based excise tax. In both cases, excise tax increases of 25%, 50%, 75% and 100% are used, and in the US Dollar case, a further proposal of a \$1 per pack tax is considered. The results of the model are described in Table 1 and Table 2 for the Mongolian Tugrik and US Dollar based taxes, respectively. The baseline period for the simulation is 2015, and the simulated period is 2016. Thus, all data and parameters used including excise tax, price and price components (i.e. CIF value, customs duty, VAT, etc), consumption and revenue use the actual data from 2015 as the baseline. Furthermore, we model the tax increases from the excise tax as they were at the end of 2015 (in Mongolian Tugrik and US Dollars), while the data and price data for the baseline period are the weighted average. Since the excise tax decline during 2015 and thus the excise tax at the end of the year is lower than the weighted average for the year, the tax increase as displayed in Tables 1 and 2 appear lower than the 25%, 50%, 75% and 100% as indicated above, the full simulation model is available on request.

Both simulations show that increases in the excise tax, independent of the base used, will result in considerable declines in volumes, and increases in prices and excise tax revenues. Furthermore, reestablishing the US Dollar base for the excise tax will bring about immediate benefits by creating a natural hedge against inflation, to keep inflation from eroding the tax and relative price of cigarettes. In all cases the percentage increase in excise revenues will be larger than the increase in excise taxes due to the relatively inelastic nature of cigarettes. However, if cigarette importers or domestic producers over-shift the excise tax increases by increasing the net-of-tax price volume decreases will be larger than predicted, thereby increasing the health effects of the tax increase, but revenues will be lower than predicted as a result of the larger decline in volumes.

## **Strengths and Limitations**

Modelling tobacco taxes is based on a number of assumptions. These assumptions are well formed through global empirical evidence and modelling experience. In the case of Mongolia there is little published research informing the price elasticity of demand and how tax changes influence prices. While this is a significant limitation, it is mitigated through high quality historical data which have allowed in-sample testing and calibration of the model. Furthermore, high rates of economic growth and inflation make modelling challenging.

Within the model, the price data only allows for the market to be broken down into two market segments, imported and domestic. In future, detailed price data would allow a brand level model which could provide a more accurate simulation.

Data on consumption and revenues needs to be verified with other government ministries, however, the experience of the TWG was that the data quality was

generally very good when compared to other countries with similar levels of economic development. As such the simulation model is considered accurate for policy purposes.