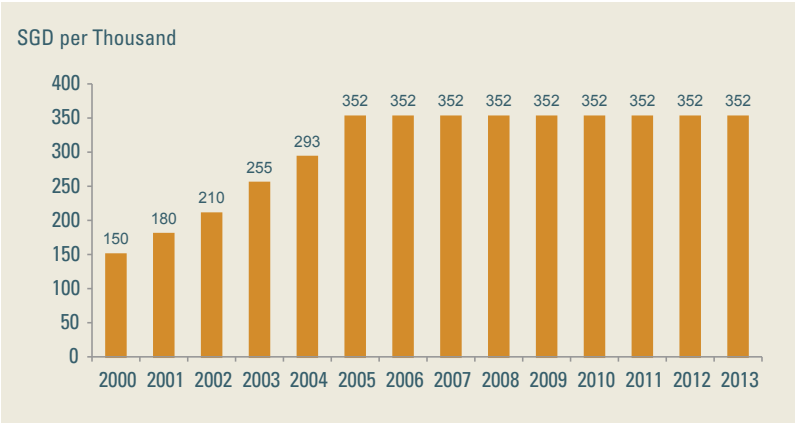
Figure 64

Excise Tax Development



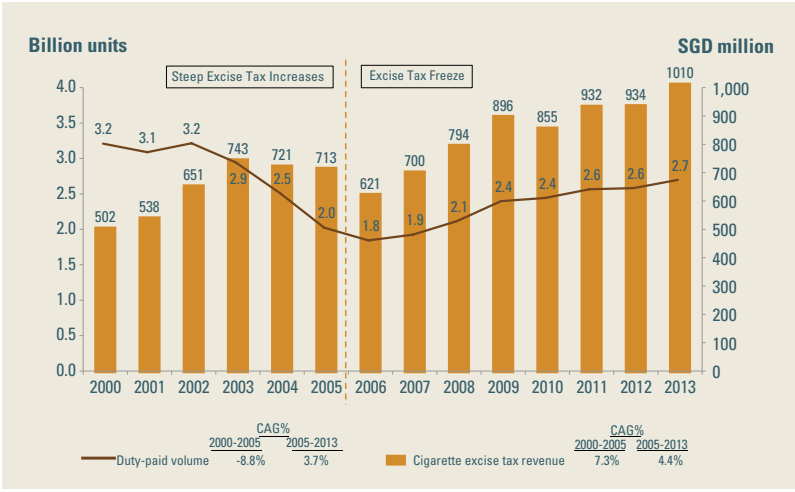
2. DUTY PAID CIGARETTE VOLUME AND GOVERNMENT EXCISE TAX REVENUE DEVELOPMENT

The duty-paid cigarette volume dropped by 43 percent from 3.2 billion cigarettes in 2000 to 1.8 billion cigarettes in 2006 and gradually recovered following the excise freeze and reached 2.7 billion cigarettes in 2013.[97]

Driven by the sharp annual excise tax increases, excise tax revenue initially rose steadily from SGD502 million in 2000 to SGD743 million in 2003, as is evidenced in Figure 65 below.[98] However, the continuous steep decline in duty-paid volume led to a drop in excise tax revenues in subsequent years, reaching a low of SGD621 million in 2006. Thereafter, following the recovery of the duty-paid volume, excise tax revenue started to rise again, reaching SGD1.0 billion in 2013 (Figure 65).

Figure 65

Duty Paid Volume and Cigarette Excise Tax Revenue



3. ILLICIT TRADE AND SMOKING INCIDENCE

The decline in duty-paid volume coincided with a marked increase in seizures by Singapore Customs, from 8 million cigarettes in 2000 to 106 million cigarettes in 2006, implying a sharp growth of illicit trade as legal cigarettes became less affordable for lower income consumers. However, smoking incidence remained essentially stable during this period, as it was 13.8 percent in 2001 and 13.6 percent in 2007,[99] indicating that the policy of steep annual excise tax increases was not effective in reducing the number of smokers, as many consumers simply switched from legal to illegal cigarettes.

In this regard, Finance Minister Lee Hsien Loong stated in his 2006 budget speech that *"I seriously considered raising tobacco duties, but have reluctantly decided against it because we are already seeing revenues declining, not because people are smoking less, but because smuggling has gone up"*. (Source: Singapore Finance Minister and Prime Minister. "Budget Statement 2006: Building on our Strengths, Creating Our Best Home." February 17th, 2006. http://app.mof.gov.sg/data/download/2006/FY2006_Budget_Statement.pdf)

However, illicit trade remains a serious concern, with an estimated illicit trade incidence of 19.6 percent of total consumption (63 million cigarettes) in 2013.[100]

This demonstrates that, notwithstanding an eight year excise freeze and robust anti-illicit trade legislation including deterrent penalties, illicit trade is extremely difficult to eradicate once established.

G. Philippines: Excise Tax Reform

1. CIGARETTE EXCISE RATE INCREASES UNDER REPUBLIC ACT 10351

In 2013, the Philippine government implemented a tobacco excise tax reform, significantly increasing the excise rates and simplifying the structure, which was modified from a 4-tier specific system to a 2-tier specific system. From 2014 to 2017, the tax rates on these 2 tiers will be approximated, resulting in a single tier specific tax system in 2017. Thereafter, the law plans automatic annual tax increases in line with projected inflation of 4 percent.

Many aspects of this tax reform are similar to tax reforms implemented in other countries; this book already mentioned the examples of Brazil and Indonesia. These countries and their tax systems are, obviously, not directly comparable, reflecting different domestic priorities. Nevertheless, the general themes of all these reforms are the simplification of the tax system, the approximation of tax rates on different products and brands, and the implementation of the reform over a number of years, through a multi-year time table.

In particular, the Philippine example stands out for the draconian magnitude of the initial tax increase. On January 1st, 2013, cigarette brands in the following categories experienced the following excise tax increases:

- Low tax tier (65 percent share of tax-paid volume): increased by 341 percent, from PHP 2.72 to PHP 12 per pack of 20 cigarettes;
- Mid tax tier (8 percent of tax-paid volume): increased by 231 percent, from PHP 7.56 to PHP 25;
- High tax tier (26 percent of tax-paid volume): increased by 108 percent, from PHP 12 to PHP 25.

On a weighted average base, the excise tax level almost tripled, increasing by 173.4 percent.[101]

2. IMPACT ON OVERALL CONSUMPTION

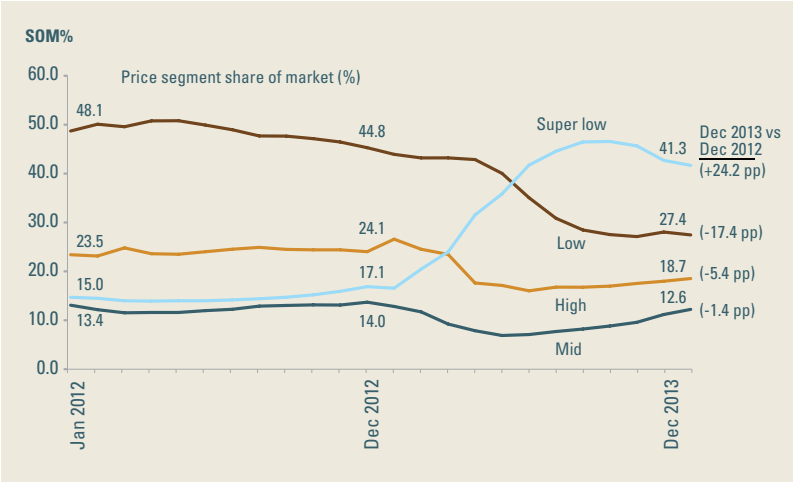
The massive excise tax increase led to retail price increases that ranged from 59 percent to 175 percent per pack for the most sold brands in the various price segments; however, the weighted average retail price increase was significantly less at 41.7 percent[102] due to wide scale down trading, as explained below. As a result of these price increases, the legal sales volume dropped by 15.6 percent, from 102.2 billion to 86.3 billion cigarettes between 2012 and 2013.[103] A simple, "back of the envelope" calculation suggests that the price elasticity for legal products must have been close to -0.37,[104] which is low for a developing country, but consistent with the fact that, initially, tobacco taxes and prices in the Philippines were low by international standards.[105] The drop in legal sales was largely compensated by a huge jump in illicit trade, from an estimated 6.4 billion cigarettes in 2012 (5.9 percent of total consumption) to an estimated 19.1 billion cigarettes in 2013 (18.1 percent of total consumption).[106] The largely stable overall market volume (sum of tax paid and illicit trade) is reflected in the adult smoking incidence and daily cigarette consumption figures, which remained essentially flat between 2012 and 2013 at 49 percent and 50 percent (smoking incidence), and 13.1 and 12.8 cigarettes (daily consumption), respectively.[107]

3. EXACERBATION OF DOWN-TRADING TREND

In addition to the sharp increase of illicit trade, the excise tax increase in January 2013 has led to a major shift of consumption towards the cheapest, legally available cigarettes on the market—the so-called "super low" price segment—which more than doubled from 17.1 percent market share in December 2012 to 41.3 percent market share in December 2013 (Figure 66).[108] Many consumers that previously smoked brands in the "low", "mid", and "high" price segments, compensated for the price increases by trading down to lower tax and priced cigarettes—thereby containing, to some extent, their expenditure on tobacco products.

Figure 66

Price Segment Share of Market (%)



4. IMPACT ON GOVERNMENT REVENUE

The 2013 excise tax hike more than doubled cigarette excise tax revenue, from PHP 32.9 billion to PHP 70.4 billion. However, the non-tax paid volume of 19.1 billion cigarettes is estimated to represent foregone excise revenue of PHP 12.7 billion,[109] whilst the erosion of the tax bases, as consumers shift towards lower tax products, represents foregone excise tax revenues of an estimated PHP 6.4 billion (Table 12**,** Table 13).

In summary, the massive average tax increase of 173.4 percent led to a significant 113.7 percent increase in excise tax revenues. But the difference between these growth rates illustrates an erosion of the tax base—both illicit trade, as well as consumer down trading—which affects tax revenue growth going forward. From a public health perspective, the tax increase seems not to have had a major impact. The data show that many consumers who could not afford to continue smoking their current brand, instead switched to lower priced legal or illegal cigarettes. With the envisaged approximation and, ultimately, harmonization of the tax rates, the scope for further down-trading will be more limited. This will remain an interesting case study to follow over the next years.

Table 12

Down-Trading Impact on Government Excise Tax Revenue

	Tax Tier Segment			
	High	Mid	Low	Total
2012* tax-paid volume % share	26.3%	8.4%	65.3%	100.0%
2013* tax-paid volume % share	24.1%		75.9%	100%
% point change	-10.5%		+10.5%	
2013 equivalent change in tax-paid volume (billion units)	-9.8		+9.8	
2013 excise tax (PHP/pack)	25		12	
2013 excise tax gain/(loss) PHP million	(12,245)		5,877	(6,367)

** Source: Bureau of Internal Revenue (BIR)*

Table 13

Philippine Excise Tax Reform: Summary

	2012	2013	Percent Change
Cigarette sales volume (billion cigarettes)			
- legal tax paid sales	102.2	86.3	-15.6%
- estimated Illegal Sales	6.4	19.1	198.0%
- total estimated tobacco consumption	108.7	105.5	-3.0%
Smoking Incidence	49.0%	50.0%	+2.0%
Daily cigarette consumption (number of cigarettes)	13.1	12.8	-2.3%
Excise tax revenues (PHP billion)	32.9	70.4	113.7%
Foregone excise tax revenues (PHP billion)			
- estimated revenues not collected from illicit tobacco product	1.8	12.7	610.2%
- estimated revenues impact of consumer down trading	–	6.4	
- total foregone excise tax revenue	1.8	19.1	965.5%

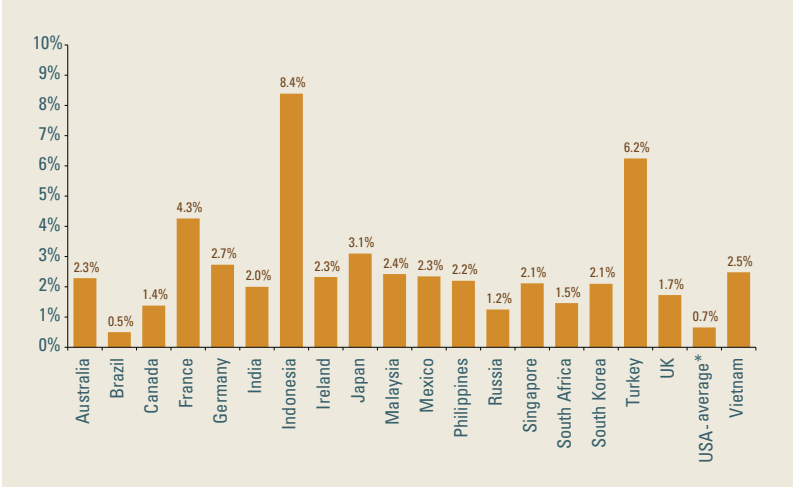
Source: BIR, Asia-11 Illicit Tobacco Indicator 2013 Update for the Philippines, Oxford Economics and the International Tax and Investment Center, June 2014 and Philip Morris International estimates

XI. LONG-TERM TAX PLANNING

Tobacco tax revenue is an important source of overall government tax revenues accounting for 2-3 percent of total government tax revenue in many developed countries such as Germany, Japan, Korea, Ireland, and Singapore—as shown in Figure 67 below. However, there are several countries in which tobacco taxation represents a much larger share of total tax revenues, such as France, Turkey, or Indonesia, where tobacco tax revenue accounts for 4.3 percent, 6.2 percent and 8.4 percent of total government tax revenues, respectively.

Figure 67

Tobacco Tax Revenues as a Percent of Overall Government Tax Revenues



Source: Philip Morris International estimates based on local state static offices as of 2011. US data is based on Federal taxes for FY 2011- Final Monthly Report Treasury Statement and Orzechowski & Walker report on tax burden.

Given the importance of tobacco tax as a source of government tax revenue, governments need to consider carefully how and when to increase the tobacco tax levels. More and more countries are adopting a long term approach in this regard, either by implementing some form of automatic indexation, which will we discuss first, or by introducing multi-year tax plans.

When Australia amended its excise tax system on cigarettes in 1999, it introduced automatic, biannual excise tax increases linked to the Consumer Price Index (CPI). The effect of this legislation is that the specific excise tax on cigarettes increases in line with inflation twice per year—February and August—ensuring that the excise tax amount remains constant in real terms. Several other countries including Canada, Colombia, Honduras, Philippines,[113] Sweden, Turkey and the UK apply a similar approach as Australia, where excise tax rates are indexed, usually to inflation.

More recently, the Australian Government further amended the excise indexation calculations. From March 2014, the excise level is linked to the Average Weekly Ordinary Time Earnings (AWOTE) index instead of the CPI, with adjustments continuing on a biannual basis in March and September. The change from CPI to AWOTE follows recommendations from "Australia's Future Tax System Review" of 2010, which recommended that, "*Tobacco excise should be indexed to a broad measure of wages rather than CPI*". As a result, Australia's fully specific excise will remain constant in real average earnings adjusted terms.[110]

Having in place an indexation system does not preclude countries from making further adjustments to the excise tax level, if seen necessary. In the case of Australia, for instance, the Government decided both to amend the indexation method, as described above, as well as to implement additional increases in the tobacco excise tax level. In April 2010, the Government increased tobacco excise tax by 25 percent.[111] From late 2013, tobacco taxes will increase by 12.5 percent every year until 2016.[112]

A different approach is applied in South Africa, where a fully specific excise tax system is applied on cigarettes, and additional measures are implemented to ensure that the tax is adjusted automatically over time. The way the system works is that the government has established by law that the total tax incidence must be kept at 52 percent of the retail price of the most popular price category. The nominal Value Added Tax (VAT) rate in South Africa is 14 percent, which implies that the excise tax incidence must be 39.72 percent (52 percent—(14/114)). Using the excise tax incidence of 39.72 percent and the retail price of the most popular brand, the tax authorities calculate the specific tax amount which is then applied equally to all cigarettes.

The retail price level is reviewed annually and the specific excise tax amount is increased in line with cigarette retail price increases, maintaining a constant excise incidence. For example, in 2012, the most popular (most sold) cigarette was Peter Stuyvesant, with a retail price of ZAR 26 per pack. Based on the excise tax incidence requirement of 39.72 percent, the specific excise tax was updated from ZAR 9.73 to ZAR 10.33 per pack, which is then applied equally to all cigarette brands (Table 14).

Table 14

South Africa: Excise Tax Adjustments Linked to Tobacco Price Increases

Tax Rates	Calculation	2011	2012
(A) Reference total tax incidence		52%	52%
(B) VAT – nominal rate		14%	14%
(C) Reference excise incidence	= A – (B / (1+B))	39.7%	39.7%
(D) Reference retail price (ZAR/pack)*		24.50	26.00
(E) Excise tax (ZAR/pack)	= C * D	9.73	10.33

**Reference retail price is based on most common retail price in previous calendar year.*

For excise tax structures that include an *ad valorem* tax element, there is often no need for the government to amend tax rates, because retail prices increases will automatically generate a higher tax yield for tobacco products. However, many countries with mixed tax systems have adopted multi-year tax planning as a tool to increase revenue predictability. Multi-year plans are also often applied during periods of excise tax reform, to facilitate the transition from on tax system to another, as this book has illustrated with the earlier examples of the Philippines and Brazil.

Germany, for example, adopted a 5-year plan for excise tax increases on cigarettes and fine cut tobacco over the period 2011 and 2015, with the objective of gradual approximation of taxes between these two product categories. Over this period, on both cigarettes and fine cut tobacco, the specific excise tax element was increased gradually and the *ad valorem* excise tax rate was reduced. At the same time, Germany increased the minimum total tax on fine cut tobacco at a slightly faster rate than on cigarettes, which helped to reduce the gap between the two categories (Table 15).

Table 15

Germany: 5-year Tax Plan

Cigarettes	2010	2011	2012	2013	2014	2015
Ad valorem tax (% of RSP)	24.66%	21.94%	21.87%	21.80%	21.74%	21.69%
Specific tax (Euro / 1000 cigarettes)	82.7	90.8	92.6	94.4	96.3	98.2
Minimum Total Tax (Euro / 1000 cigarettes)	175.86	181.56	185.18	188.81	192.59	196.36
Fine Cut	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Ad valorem tax (% of RSP)	18.57%	14.30%	14.41%	14.51%	14.63%	14.76%
Specific tax (Euro / kg)	34.06	41.65	43.31	45	46.75	48.49
Minimum Total Tax (Euro /1000 kg)	53.28*	81.63	84.89	88.2	91.63	95.04

** Minimum Excise Tax*

Source: all figures are based on the Excise Tax Law as approved by the German Parliament on December 2nd, 2010. Minimum Total Tax (MTT) includes VAT and excise tax except for fine cut in 2010

As stated by the German Federal Ministry of Finance:

> *"The model will bring security in planning for public administration as well as for trade and industry."*[114]

Russia has implemented a slightly more flexible fiscal plan than Germany. In Russia, there is a 3 year rolling plan where the government legislates on tax increases for a 3 year horizon, on an annual basis (Table 16). Each year the authorities have the possibility to fine-tune the previously agreed rates, but this longer term rate setting, nevertheless, does provide greater predictability and stability on the fiscal environment.

Table 16

Russia: "Rolling" 3 Year Tax Timetable

Law	Cigarettes	2009	2010	2011	2012	2013	2014	2015
2008	Specific	150	180	216				
	Ad valorem	6.00%	6.50%	7.00%				
	MET	177	216	260				
2009	Specific		205	250	305			
	Ad valorem		6.50%	7.00%	7.50%			
	MET		250	305	375			
2010	Specific			280	360	460		
	Ad valorem			7.00%	7.50%	8.00%		
	MET			360	460	590		
2011	Specific				360 - 390	550	800	
	Ad valorem				7.50%	8.00%	8.50%	
	MET				460 – 510	730	1040	
2012	Specific					550	800	960
	Ad valorem					8.00%	8.50%	9.00%
	MET					730	1040	1250

Specific and Minimum Excise Tax (MET) in RUB/000, ad valorem percent of Retail Selling Price.

The map in Figure 68 below provides an overview of countries that have implemented either automatic tax indexation or have implemented multi-year tax timetables.

Figure 68

Excise Tax Long Term Plans: Indexation and Multi-year Plans

Note: Nicaragua uses multi-year timetables and from 2017 onwards tax indexation; Philippines will use multi – year timetables from 2018 onwards
Costa Rica, Ecuador and Honduras also have automatic tax adjustments at the time of publishing this book.

XII. EARMARKED TOBACCO TAXES

Earmarked taxes on tobacco products are implemented in 38 countries, across different regions, as displayed in Figure 69 below. Earmarked taxes can take many different forms, such as an *ad valorem* excise, a specific excise, an earmarked portion of tax revenues, and a duty on importers or exporters. Earmarked taxes can either be included or not included in tobacco excise taxes. In the first case, the earmarked tax could for instance be expressed as a fixed percentage of the excise tax revenues, to be dedicated to a specific fund. In the second case, the earmarked tax is a separate tax that comes on top of the excise tax. However, even if these earmarked taxes are not included in the calculation of the excise tax yield or incidence, the cost is passed onto consumers in one form or another.

Figure 69

Earmarking

Appendix III summarizes the global practices on tobacco tax earmarking—the important feature to notice is that there is very often a weak link between earmarked taxes and designated spending programs. Some examples of the programs funded by earmarked tobacco taxes are, for instance: student health insurance in Egypt, a man-made river project in Libya, and culture and sport in Lithuania. Overall, there seems to be no systematic order or explanation for the different approaches taken by each country to earmark tobacco tax-

es—in other words, there appears to be little economic linkage or pattern. Many of these earmark funded programs lack "economic rationale",[115] as they are often unrelated to the subject of the earmarked taxes, indicating that the beneficiaries of these programs are generally not the individuals paying the tax.

Another aspect of tax earmarking relates to the rigidities, and thus inefficiencies, it creates to the government budget system. In South Korea, for instance, all earmarked tax revenues (not just tobacco)[116] account for nearly 30 percent of local and central government tax revenues in 2011.[117] This implies that approximately 30 percent of the total government budget is automatically dedicated to the earmarked expenditure programs rather than facing an annual budgetary review. As a result of this rigidity, spending may become inefficient, for instance when programs and policies that do not receive earmarked funds have a greater public demand or higher returns, but remain underfunded.[118] In fact, a study commissioned by the South Korean government, recommends that earmarked tax revenues for public health promotion be directed to the general budget.[119] Generally speaking, when programs are funded by earmarked taxes, they will invariably be over- or underfunded; it will be a matter of coincidence when the taxes that are earmarked, exactly meet the program's optimal funding requirement.

XIII. TOBACCO AS A COMPONENT OF THE CONSUMER PRICE INDEX (CPI)

A question that arises from time to time is whether tobacco products should be kept in the basket of goods and services that comprise the Consumer Price Index (CPI). Clearly, as tobacco excise taxes increase, the retail prices of tobacco products are driven up. It is sometimes argued that cigarettes and other tobacco products should be removed from the CPI so that the government could increase tobacco taxes without affecting inflation as measured by the CPI. However, from an economic point of view, this does not make sense.

As defined by international organizations:

> "*The consumer price index (CPI) measures the rate at which the prices of consumer goods and services are changing over time. It is a key statistic for economic and social policymaking and has substantial and wide-ranging implications for governments, businesses, and households.*"[120]

The CPI should be an objective, economic measure—reflecting the actual expenditure on consumer goods and services—and not become a political instrument. The CPI is a key statistic for economic and social policymaking, ranging from decisions on monetary policy to adjustments of wages, social security and other benefits to compensate for the changes in cost of living. It is also used to adjust government fees and charges, or payments in commercial contracts. The CPI is, furthermore, a key macro-economic indicator, enabling governments to formulate and assess fiscal and monetary policies, as well as trade and exchange rate policies. The public must have confidence in the integrity and objectivity in measuring this statistic by ensuring that it is representative of the goods and services actually purchased by consumers.

Recognizing the important status of the CPI, an advisory committee on the CPI in New Zealand stated:

> "*At the heart of a credible CPI is the concept of representational faithfulness. The basket of goods and services that are priced in a CPI should be representative of the goods and services actually used by households*".[121]

The international standard reference manual on CPI states in this respect:

> "*All the goods and services that households willingly purchase in order to satisfy their personal needs or wants constitute consumers' expenditures and therefore fall within the scope of a CPI [….]. Particular kinds of goods or services must not be excluded because they are considered to be undesirable, harmful or objectionable. Such exclusions could be quite arbitrary and undermine the objectivity and credibility of the CPI.*"

It continues stating: "*if it is accepted that some goods and services may be excluded on the grounds that they are undesirable, the index is thereby exposed to actual or attempted manipulation by pressure groups.*" On the inclusion or not of indirect taxes, this reference manual states: "*All taxes on products, such as sales taxes, excise taxes and value added tax (VAT), are part of the purchasers' prices paid by consumers that should be used for CPI purposes.*"[122]

A. International Harmonization of the CPI

In 1993, the United Nations published an international standard: the "Classification of Individual Consumption According to Purpose", or COICOP. This UN classification scheme divides consumer expenditure in 12 divisions, each subdivided into groups. Tobacco has its own group (02.2) and is therefore a mandatory component for price indices based on the COICOP system.

All EU member countries, for instance, produce a Harmonised Index of Consumer Prices (HICP) based on this COICOP classification. This HICP is the mandatory, harmonized measure of inflation for all EU countries, and is used by the European Union and the European Central Bank (ECB), for instance when verifying Member States commitments with the convergence criteria for the European Monetary Union. As an example, the ECB uses HICPs as the key inflation measure for the Euro area. Tobacco is included in HICP for the Euro area with a weight of 2.4 percent (2014 data). However, different weights are applied in different countries in the Euro area to produce the national HICP, ranging from 2 percent in Spain to 8 percent in Luxembourg.[123]

B. Weight of Tobacco in the CPI

The consumer price index is generally calculated as a weighted average of the change in prices paid for goods and services consumed,

> "*The weights are meant to reflect the relative importance of the goods and services as measured by their shares in the total consumption of households. The weight attached to each good or service determines the impact that its price change will have on the overall index.*"[124]

Variances among countries in the weight assigned to a particular product, such as tobacco, therefore, reflect differences in consumption patterns as well as in relative prices. Thus, a weight of 2.40 percent for cigarettes in the United Kingdom, compared to 0.43 percent in the index for Costa Rica, indicates that a greater share of household expenditure is allocated to these products in the UK. Table 17 below provides the Tobacco weight within the CPI in selected countries:

Table 17

Tobacco Weight within the Consumer Price Index

Country	Tobacco Weight within CPI
Japan	0.51 %
Costa Rica	0.43 %
Norway	1.93 %
Australia	2.32 %
United Kingdom	2.40 %
Ireland	2.90 %

The consumer price index measures the change over time in prices of consumer goods and services acquired by households. Additionally, a wide range of governmental and commercial entities depend on the CPI to assess changes in price levels and to adjust monetary and fiscal policies, wages and benefits and assorted contractual commitments. Thus, a true and accurate reflection of price changes requires that the CPI covers all consumer goods and services of significance to the reference population, including tobacco products.

XIV. COMPARING EXCISE TAX LEVELS INTERNATIONALLY

In order to efficiently and effectively accomplish government objectives such as generating fiscal revenues or promoting public health, the optimum tax area for excise tax policy is segregated at either a national or local level given differences in economic fundamentals, socioeconomic characteristics, and political factors. However, motivated by an earlier World Bank[125] report that recommends a benchmark tax of two-thirds to four-fifths of the retail sales price of

cigarettes, the WHO has continued the dialogue on global comparisons and proposes an excise tax benchmark of at least 70 percent of retail sales price of all[126] tobacco products.[127] While the benchmark rate is approximately the same in both reports, the WHO specifies that excise taxes should account for at least 70 percent of retail prices, not just total taxes. Total tax incidence differs from excise tax incidence in that the VAT or sales tax is included in the total tax incidence calculation—a distinction worth noting as countries that levy a relatively high VAT or sales tax will struggle to meet an excise tax incidence requirement versus a total tax incidence requirement. This point will be discussed in the ensuing subsection.

This section will discuss 3 different methods to compare excise tax levels internationally: (a) the excise incidence; (b) the excise yield; and, (c) affordability.[128] While these international references can provide useful insights, they should not serve as the sole measure of national excise tax policy evaluation, especially since each country has its own unique set of fiscal and public health objectives.

A. Excise Incidence

As the excise incidence will vary depending on the retail price on which it is calculated, as well as on the excise tax structure, any international comparison of excise incidence will need to be based on a reference brand or reference price point. In general, the calculation for the excise tax incidence is as follows:

$$Excise\ Incidence = Excise\ Tax\ Yield / RSP_{Reference\ Brand} \times 100$$

The first question that must be answered is how to choose the reference price point to compare excise incidence internationally in a meaningful way. In the EU, where excise incidence exists as a benchmark since 1992, initially MPPC (price of the Most Popular Price Category, or group of most sold brands) was used, later replaced by WAP (Weighted Average Price) in 2011. With some simple examples, we will demonstrate that excise incidence is not a meaningful way of comparing tobacco tax rates internationally, whatever the reference point.

Imagine we compare two countries with the same specific tax structure, the same tax level, and the same retail prices for cigarettes. The only difference is that consumers in Country A prefer premium cigarettes and consumers in Country B prefer low priced cigarettes, perhaps because incomes are lower in Country B. Therefore, as a result of these different consumer preferences, the MPPC is €10 in Country A and €6 in Country B. As can be seen in Table 18 below, if one would use the excise incidence as a tool for tax comparison, one would be led to believe that Country B applies much higher tax levels than Country A—even though tax and price levels in both countries are identical.

Table 18

Retail Selling Prices (in €)	Country A	Country B
High	10	10
Mid	8	8
Low	6	6
MPPC	10	6
Excise Tax (specific)	4	4
Excise Tax Incidence on MPPC	40%	67%

Switching the reference point to WAP does not significantly improve the situation. Imagine the same situation as before only this time the reference point will not be the price of one of the existing groups of cigarettes, but will instead be skewed towards high priced cigarettes in Country A (e.g., with a WAP of €9) and skewed towards low priced cigarettes in Country B (e.g., with a WAP of €7). Again, as illustrated in Table 19, one can see dramatic differences in the calculated excise incidence in the two countries, even though tax rates and cigarette prices are identical.

Table 19

Retail Selling Prices	Country A	Country B
High	10	10
Mid	8	8
Low	6	6
Weighted Average Price	9	7
Excise Tax (specific)	4	4
Excise Tax Incidence on WAP	44%	57%

The excise incidence not only fails to provide meaningful information about tax policy when making cross-country comparisons, but equally, it does not provide a good indicator of how tax policy changes over time within one country. For instance, returning to the previous example of Country A, with an excise incidence measured on WAP of 44 percent, now imagine this country suffers an economic crisis and thus consumers reduce their spending by switching to lower priced cigarettes. Alternatively, imagine this country takes some regulatory measures, such as plain packaging, which may reduce brand loyalty and lead consumers to switch towards lower priced products. In both scenarios, the weighted average price of cigarettes will decline, and the excise incidence will increase—even though from a tax and pricing perspective, nothing has changed. A distant observer would thus be led to believe that Country A somehow increased the excise incidence on cigarettes, as demonstrated in Table 20, even though no tax change has been taken.

Table 20

Retail Selling Prices	Before Down-trading	After Down-trading
High	10	10
Mid	8	8
Low	6	6
Weighted Average Price	9	8
Excise Tax (specific)	4	4
Excise Tax Incidence on WAP	44%	50%

These examples illustrate the fundamental issues with using the excise incidence as a basis for cross-country comparison or comparisons over time. A second issue arises from the interaction with VAT.

The calculations in Table 21 below simulate the required excise tax increase to meet a minimum excise incidence (70 percent in this example) for three countries that have the same excise tax rate to start with, but a different VAT rate in place.

Initially, the excise tax yield was €200 per 1000 cigarettes in all three countries and the Retail Selling Price gap between the high VAT and low VAT country was €51 per 1000 cigarettes. Assume then that the countries increase the excise tax in order to meet a 70 percent excise incidence benchmark. The excise tax increase that is required to meet a minimum excise incidence is significantly larger for high VAT countries—in the scenarios described in Table 21, the excise tax yield must increase by 67.5 percent for a VAT rate of 10 percent, while a VAT rate of 27 percent requires a 302.5 percent increase in the excise tax yield! Upon imposing a minimum excise tax incidence of 70 percent, the excise tax yield is now nearly 2.5 times larger for the high VAT country compared to the low VAT country and the RSP gap is about €670 per 1000 cigarettes.

These calculations demonstrate two major points about excise tax incidence: (1) the excise tax incidence does not strongly correlate with the excise tax yield—a high excise tax yield does not imply a high excise incidence; and, (2) implementing a minimum excise tax incidence requirement can move prices away from approximation. The harmonization experience of the EU demonstrates the practical issues that can arise when aiming for a minimum excise tax incidence benchmark; in fact, price differentials actually widened following EU harmonization, as was discussed earlier in this book.

Table 21

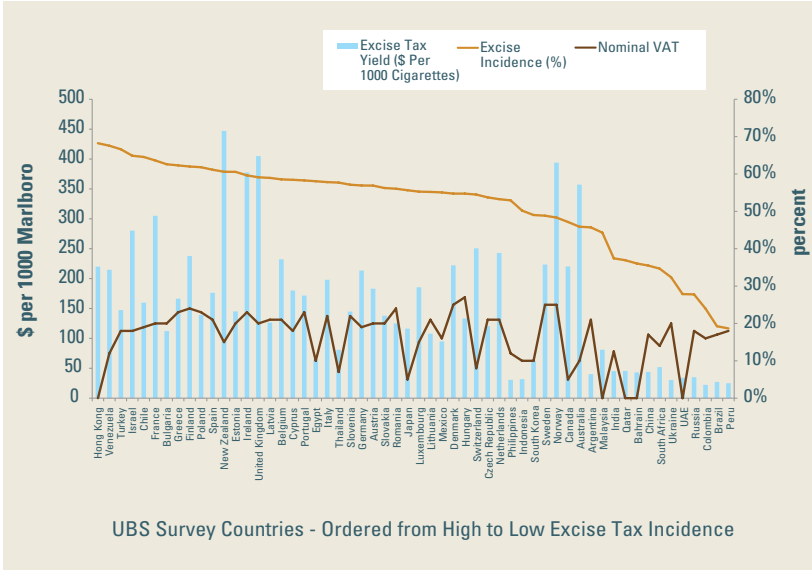
Example of Higher VAT Rates Leading to Divergence of the Excise Tax Incidence

				Excise Tax Increase Required to Reach 70% Benchmark
Country 1: VAT is 10%	RSP (€ per 1000 Cigarettes, sum of (a.) to (c.))	€ 330	€ 478.5	
	(a.) Pre-Tax Price (per 1000)	€ 100	€ 100	
	(b.) Excise Tax Yield (per 1000)	€ 200	€ 335	+ €135 or 67.5%
	(c.) Tax Paid for VAT Rate @10% (per 1000)	€ 30	€ 43.5	
	Cigarette Excise Tax Incidence (%, Excise Yield/RSP)	60.61%	70.01%	
Country 2: VAT Rate is 18.5%	RSP (€ per 1000, sum of (a.) to (c.))	€ 355.5	€ 699.15	
	(a.) Pre-Tax Price (per 1000)	€ 100	€100	
	(b.) Excise Tax Yield (per 1000)	€ 200	€490	+ €290 or 145%
	(c.) Tax Paid for VAT Rate @18.5% (per 1000)	€ 55.5	€ 109.15	
	Cigarette Excise Tax Incidence (%, Excise Yield/RSP)	56.26%	70.09%	
Country 3: VAT Rate is 27%	RSP (€ per 1000 Cigarettes, sum of (a.) to (c.))	€ 381	€ 1,149.35	
	(a.) Pre-Tax Price (per 1000)	€ 100	€100	
	(b.) Excise Tax Yield (per 1000)	€ 200	€805	+ €605 or 302.5%
	(c.) Tax Paid for VAT Rate @27% (per 1000)	€81	€244.35	
	Cigarette Excise Tax Incidence (%, Excise Yield/RSP)	52.49%	70.04%	

Based on the UBS survey countries used throughout this book, we further illustrate this point with actual data. Figure 70 below shows the excise incidence, excise yield, and VAT rate on January 2014. The correlation between the excise tax yield and incidence is not strong: correlation values are 0.56, 0.47, and 0.23 for Marlboro, the most sold brand, and the cheapest brand, respectively.[129]

Figure 70

Excise Tax Yields, Incidences, and VAT Rates



Source: Philip Morris International, Marlboro, as of January 1st, 2014
Exchange Rate Data: Bloomberg, as of January 1st, 2014

For example, Egypt and Thailand have excise incidences of 58.1 percent and 57.7 percent, respectively, which are well above the sample average of 51.4 percent. However, the excise tax yields per 1000 Marlboro cigarettes are $65 for Egypt and $81 for Thailand, which are well below the sample average of $154; while the nominal VAT rates are 10 percent and 7 percent, for Egypt and Thailand, respectively.

Furthermore, when comparing the highest excise tax incidence in the sample (Hong Kong, 68.2 percent), to Germany, Denmark, and Sweden, which have comparable excise tax yields, it is clear that the relationship between yields and incidences further erodes due to VAT differentials. In spite of having very similar excise tax yields, Germany, Denmark, and Sweden have much lower excise tax incidences relative to Hong Kong at 56.9 percent, 54.75 percent, and 48.8 percent, respectively (Figure 70). This is explained by the fact that nominal VAT rates are significantly higher than Hong Kong (0 percent), at 19 percent for Germany, and 25 percent for both Denmark and Sweden.

Although an excise incidence target has not been applied on a global scale, the EU provides a regional example of this benchmark in practice. The following case studies highlight the practical concerns and challenges of implementing a minimum excise incidence benchmark:

- As previously documented, despite having the highest excise tax yield in 1997, Sweden could not meet the minimum excise tax incidence requirement for harmonization due to its relatively high nominal VAT rate of 25 percent. Illicit trade became a severe fiscal and public health issue as a result of Sweden's attempt to meet this requirement—duty paid volume declined immediately by 28 percent in 1997, while the smoking incidence remained about 19 percent from 1998 to 2001.[130]

- In Luxembourg, the amount of excise tax needed to meet the EU minimum excise incidence requirement is smaller due to its relatively low nominal VAT rate of 15 percent, which generally translates into lower cigarette prices. Neighboring countries with higher nominal VAT rates, such as Belgium at 21 percent, tend to have higher excise tax yields and thus retail prices,[131] which can incentivize consumers to shop across the border. In fact, 63 percent of Belgium's non-domestic legal inflows were from Luxembourg in 2012.[132]

- As discussed earlier, the cigarettes tax gaps between the lowest and highest taxed EU country were not approximated, but instead widened, from €166 per 1000 cigarettes to €184 per 1000 cigarettes from 2002 to 2011. This tax divergence was driven by the imposition of the EU minimum excise incidence, which affected countries in different ways depending on the VAT rate and domestic trade margins, combined with the lack of an EU wide maximum tax level.

Therefore, with all the above in mind, the excise incidence should not be used as a benchmark to compare tobacco tax policies across countries and over time.

B. Excise Yield

The excise yield refers to the monetary amount of excise tax per 1000 cigarettes of a reference brand or price point. For countries with a single tier specific tax, the excise yield is the same as the tax rate. For countries with *ad valorem*, mixed, dual or multi-tier systems, the excise yield for international comparison purposes must be established with reference to a reference brand and price point. For instance, for countries with a mixed tax structure, the excise tax yield is represented as the following:

$$Excise\ Tax\ Yield = (RSP_{Reference\ Brand} \times ad\ valorem) + Specific$$

Also for this comparison method, one must consider which reference price to use. The EU provides an interesting insight in this regard. Currently, the EU applies a minimum excise yield benchmark of €90 per thousand cigarettes. Under the EU mixed excise tax system, the excise yield will differ by brand. However, one only needs to look at the excise yield on the cheapest cigarette to know whether a country meets this benchmark, because the *ad valorem* element implies that the excise yield on the cheapest cigarettes will be lower[133] than on all other cigarettes.

Apart from this practical reason, it makes most sense from a public policy reason to use the retail price of the cheapest cigarettes as the reference point to compared tax levels internationally. To discourage smoking, governments generally seek to reduce the affordability of cigarettes. As the cheapest cigarette is the most affordable, it is the tax level on this price category that should be the focus of the fiscal policy to discourage smoking.

If countries, as is the case in the EU, implement a regional minimum excise yield requirement, the equation above must be expressed in a common currency, such as the Euro. Although this benchmark ensures approximation such that the excise tax component of cigarette prices (for the cheapest brand) is consistent everywhere, the underlying weakness is that it relies on nominal exchange rates, which fail to account for the variation in purchasing power. In this sense, cigarettes may become relatively unaffordable in countries with weaker currencies relative to the benchmark currency used. Another potential issue is that large currency devaluations would, in turn, lead to

a need to increase excise tax rates, to continue meeting the international monetary benchmark. Additionally, the minimum excise tax yield must be adjusted for the benchmark currency's inflation to ensure that the benchmark remains relevant over time.

Despite the issues outlined above, a regional minimum excise yield, as applied in the EU, ensures that the reference price cigarette is taxed the same regardless of location. From a public health or Pigouvian framework, this minimum excise yield benchmark is a positive, as cigarettes are treated as equally harmful everywhere. Moreover, with cigarettes being taxed equally in terms of the minimum monetary amount, the incentive to shop across the border may decline.[134]

The EU, the U.S., and Canada are examples of applying a minimum excise yield. In the U.S. and Canada, a federal excise tax is implemented, which functions as a minimum excise yield for the States and Provinces respectively. However, on top of the Federal excise, substantial State and Provincial excise taxes are applied to cigarettes in many cases, and there is no minimum nor maximum level agreed upon with respect to these regional excise taxes. In the EU, the minimum excise yield is currently €90 per thousand cigarettes.

Although these three examples provide case studies of the minimum excise yield in practice, it is important to recognize that all three have their own common currency (although, in the case of the EU, not applicable in all countries), eliminating the problem that currency devaluations imply automatic tax increases.

Another point to consider is the substantial differences in income within the U.S., Canada, and the EU—which is an important reason for the lack of excise tax harmonization within these geographies. However, compared to these regional income differences, the income differences at a global scale are vastly larger—illustrating the impossibility for implementing a global minimum excise yield.

Therefore, the excise yield expressed in monetary amounts is not a very useful way to judge whether a country's tobacco taxes are high or low from a public policy perspective.

C. Affordability

The final excise tax benchmark considered is affordability, which compares the excise yield against a measure of income, such as nominal GDP per capita, nominal private consumption per capita, net hourly wage, or net daily wage. The following equations formally represent the different affordability measures:

- $PRI_{GDP}=(Excise\ Tax\ Yield/Nominal\ GDP\ per\ Capita)\times 100$

- $PRI_{Consumption}=(Excise\ Tax\ Yield/Nominal\ Consumption\ per\ Capita)\times 100$

- $Minutes\ of\ Labor_{All\ Occupations}=(Excise\ Tax\ Yield/Net\ Hourly\ Wage_{All\ Occupations})\times 60$

- $Minutes\ of\ Labor_{7\ Lowest\ Pay}=(Excise\ Tax\ Yield/Net\ Hourly\ Wage_{7\ Lowest\ Pay})\times 60$

- $Percentage\ of\ Daily\ Income_{All\ Occupations}=(Excise\ Tax\ Yield/Net\ Daily\ Wage_{All\ Occupations})\times 100$

- $Percentage\ of\ Daily\ Income_{7\ Lowest\ Pay}=(Excise\ Tax\ Yield/Net\ Daily\ Wage_{7\ Lowest\ Pay})\times 100$

Consistent with the previous subsection, the recommended way to calculate the excise tax yield for these various benchmarks is based on the cheapest cigarette in each market. Also from an international perspective, when comparing the "tax level" across countries with widely differing tax structures, the lowest excise tax yield is the most transparent and meaningful.

Comparing the first two affordability benchmarks, Price Relative to Income (PRI) based on GDP or nominal consumption, the latter best reflects consumers' spending ability since savings, income taxes, and government spending are netted out of this measure. For instance, despite having the largest nominal GDP per capita in the sample of countries used in this book, which was over $112,000, Luxembourg's household final consumption as a percentage of GDP in 2012 was as low as 32 percent—implying that only about $36,000 of residents' income is spent on consumption in Luxembourg.[135] Contrast that

to Australia, which has nominal GDP per capita of about $64,000 (or 57 percent of Luxembourg's), but consumed nearly $35,000—clearly nominal GDP per capita, while a very useful reference, will not capture consumer's actual spending capacity as well in countries where high private savings, a large non-resident presence in the workforce,[136] high income taxes, and large government spending programs are prevalent.

Both PRI benchmarks have the advantage that the data are easily available from the national accounts. However, as there are large differences in income equality around the world, these macro statistics may not correctly reflect the income and thus affordability among key groups from a policy perspective, e.g., low income smokers.

An affordability benchmark that measures income based on the 7 lowest paying occupations[137] is probably more appropriate if reflecting the large income differences around the world is the objective. Here, however, there is a problem with data collection. The source most commonly used for these statistics, the UBS Prices and Earnings report, does not cover all countries in the world and measures incomes only in the capitals of each country, which likely introduces a significant bias since income differences between urban and rural areas are large and vary significantly between developed and developing countries.

Considering the advantages and disadvantages of the various affordability benchmarks for excise taxes, we decided to proceed with an analysis that estimates the relationship between excise tax yields for 1000 cigarettes of the cheapest reference brand[138] with nominal private consumption per capita[139]—all data are expressed in U.S. dollar terms.[140] Additionally, both variables are transformed by the natural logarithm (ln) to ensure symmetry and due to the fact that all values are positive. In other words, the relationship that is being estimated by OLS[141] is the following model:[142]

$$\ln\left(Excise\ Tax\ Yield_{Per\ 1000\ Cheapest\ Cigarettes}\right)=b_0+b_1\ln\left(Nom\ Private\ Consumption_{Per\ Capita}\right)$$

Using the 57 countries from the UBS survey as the sample for the regression analysis, the standard regression output is provided in Table 22 below. As such, the regression coefficient, b_1, is interpreted as an elasticity estimate: a 1 percent change in nominal private

consumption per capita relates to about a 0.92 percent change in the excise tax yield. The adjusted R-squared indicates that approximately 60 percent of the variation in the excise tax yield is explained by the nominal private consumption per capita (in natural log terms of course).

Table 22

	ln Excise Tax Yield (1000 Cheapest Cigarettes)
ln Nominal Private Consumption (per Capita)	0.9161*** (9.23)
Constant	-4.0554*** (-4.36)
Observations	57
Adjusted R-Squared	0.6006
t-statistics are in parentheses	
* p<0.005, ** p<0.01, *** p<0.001	

Figure 71 on the next page depicts the positive, linear correlation between the natural log of private consumption per capita and excise tax yields—as nominal consumption per capita rises, in general, the excise tax yield will also tend to be higher.[143] Observations that deviate substantially above or below from this linear trend (especially above or below the confidence intervals) indicate that the level of taxation is significantly above or below the sample, after accounting for domestic per capita consumption levels. For instance, both Romania and Slovakia have similar excise tax yields on the cheapest cigarettes (about $115 per 1000 cigarettes); however, Slovakia's nominal private consumption per capita is approximately 2 times larger. As such, Romania is well above the linear regression trend, while Slovakia much closer to this trend. In contrast, Luxembourg and Slovenia also have similar excise tax levels, but Luxembourg is well below the trend line as its per capita private consumption is more than 2.5 times larger than that of Slovenia's.

Countries that are well below the regression trend estimated in Figure 71 either indicate a low overall tax level or, alternatively, a tax structure that applies low taxes to certain brands. Consequently, countries must consider both the tax level and the tax structure in order to assess whether domestic tax policy is consistent with international practice. In the case of China and Japan, for instance, an adjustment to the tax structure, such that preferential tax treatment is eliminated, would suffice. As demonstrated by plotting the most sold brand price relative to the nominal consumption per capita (CN-MP and JP-MP, respectively) in Figure 71, shifting the tax structure in China and Japan would bring the domestic tax policies of both countries closer to international practice.

Figure 71

Regression of Excise Tax Yield on Nominal Consumption per Capita

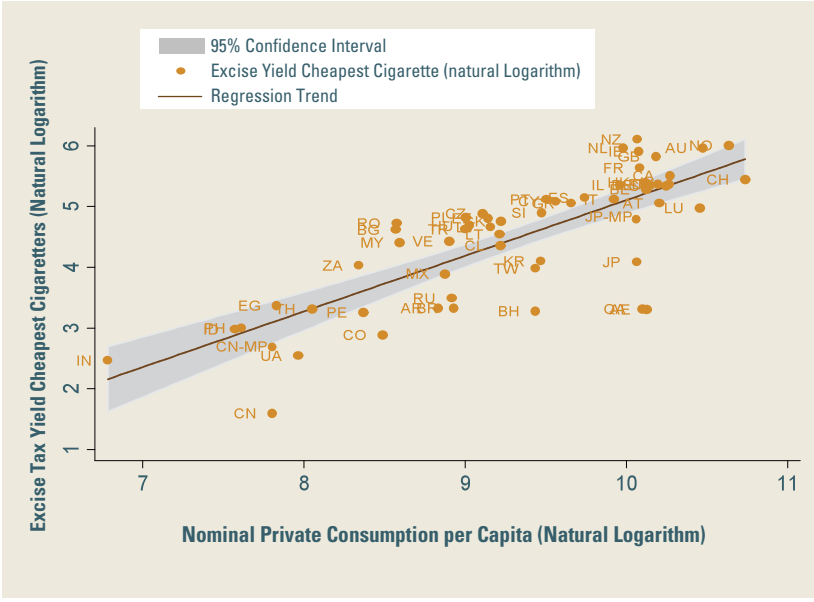


Table 23

Country	Country Code	Country	Country Code
Argentina	AR	Lithuania	LT
Australia	AU	Luxembourg	LU
Austria	AT	Malaysia	MY
Bahrain	BH	Mexico	MX
Belgium	BE	Netherlands	NL
Brazil	BR	New Zealand	NZ
Bulgaria	BG	Norway	NO
Canada	CA	Peru	PE
Chile	CL	Philippines	PH
China	CN	Poland	PL
Colombia	CO	Portugal	PT
Cyprus	CY	Qatar	QA
Czech Republic	CZ	Romania	RO
Denmark	DK	Russia	RU
Egypt	EG	Slovakia	SK
Estonia	EE	Slovenia	SI
Finland	FI	South Africa	ZA
France	FR	South Korea	KR
Germany	DE	Spain	ES
Greece	GR	Sweden	SE
Hong Kong	HK	Switzerland	CH
Hungary	HU	Taiwan	TW
India	IN	Thailand	TH
Indonesia	ID	Turkey	TR
Ireland	IE	UAE	AE
Israel	IL	Ukraine	UA
Italy	IT	United Kingdom	GB
Japan	JP	Venezuela	VE
Latvia	LV		

Additionally, countries such as New Zealand, the United Kingdom, Ireland, and Australia have exceedingly high excise tax levels in relation to private consumption per capita, and are therefore more likely to face illicit tobacco trade issues or a high proportion of tobacco consumed in the form of low tax roll-your-own. Interestingly enough, the United Kingdom, Ireland, and Australia have each become common examples of countries with a large illicit trade issue. In the United Kingdom, the 2012 share of cigarette consumption attributed to counterfeit and contraband cigarettes was 16.4 percent of the market, compared to 10.1 percent of the previous year (2011).[144] In Ireland, this figure was 19.1 percent in 2012[145]—obviously a concern in terms of government excise tax revenues.

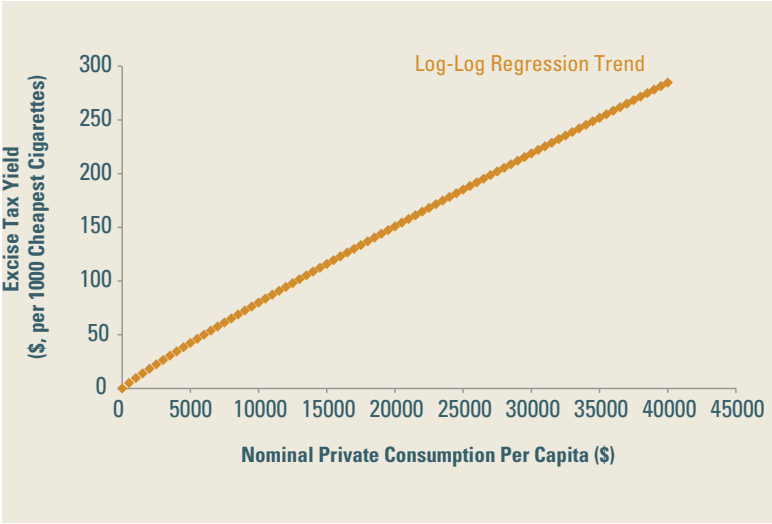
Table 24 below estimates the excise tax yield per 1000 cheapest cigarettes, as predicted by the regression model, for the given nominal private consumption per capita input. Therefore, if the nominal private consumption per capita is $10,000, then one would normally expect an excise tax yield of about $80 per thousand cigarettes—recognizing that there may be very good reasons for an individual country to deviate from this value predicted by the regression line. Figure 72 graphs the data from Table 24, which is useful as it illustrates the regression model back in level terms, rather than in natural logarithmic transformation.

Table 24

Nominal Private Consumption Per Capita ($)	Excise Yield as Predicted by Regression Model ($ per 1000 Cigarettes)
$500	$5
$5,000	$42
$10,000	$80
$15,000	$116
$20,000	$151
$25,000	$185
$30,000	$219
$35,000	$252
$40,000	$285

Figure 72

Theoretical Log-Log Regression Trend



Although Figure 71 and Figure 72 are useful for analyzing international trends in excise tax yields and nominal consumption per capita, it doesn't capture regional variation due to differences in policy, socioeconomic and political factors, economic fundamentals, or market characteristics, for example.

For instance, some countries have an overall fiscal policy which puts more emphasis on direct taxes (such as Japan)—as a result, it is only normal to expect relatively lower indirect taxes, including excise taxes in these countries. This also works vice-versa. Turkey's fiscal policy mix focusses on indirect taxes—as a result, one could expect relatively high tobacco taxes.

Another point to keep in mind is that the excise yield shown in Figure 71 refers to the excise yield on the cheapest cigarette. Therefore, if a country wishes to increase tobacco tax to comparable affordability levels internationally, this may not point to an overall increase in tax levels, but rather to an adjustment of the structure. For instance, in Japan and China, the tax on the cheapest cigarettes is 1/2 and 1/3 of the tax on the most sold product, respectively. By bringing the tax on the cheapest products in line with the most sold product, both

countries would move much closer to the line shown in Figure 71, which is illustrated by the two data points in the figure showing the excise yield on the most popular price category in Japan and China (JP-MP and CN-MP, respectively).

As a benchmark, affordability could be used in two ways: to assess a country's tax level with other countries, but also to pace excise tax yield growth within a country over time. For instance, by linking excise tax yield increases to the chosen affordability indicator. In this sense, approximation of the excise tax component occurs relative to income and thus equalizes affordability internationally over time, which can mitigate the incentive for illicit trade and thus help policymakers achieve fiscal objectives. However, in regions with high income differences, absolute excise and price differences would continue to exist, thus not fully addressing the incentives to illicit trade and cross-border shopping. Most importantly, however, given the many domestic factors that must be reflected in formulating tax policy, any international affordability comparison should be used as a point of reference only—not as a technocratic rule.

XV. INTERNATIONAL TAXES

International taxation, while a popular topic for theoretical discussion, tends to be much less popular in terms of implementation: at present, there exist very few examples of internationally coordinated tax policy, and *no* examples of a compulsory, centralized global tax. As discussed previously in Part I, international taxes would infringe upon national sovereignty, as well as raising issues of flexibility, accountability, and equitability—and, as such, international tax efforts have tended to be voluntary in nature.

A. Compulsory International Taxation

1. GLOBAL TAXATION

Currently, there are no instances of compulsory centralized global taxation, nor are there any such regulatory or fiscal authorities that could impose such tax. The United Nations (UN), while a large, centralized, international organization, lacks the authority to reg-

ulate or enforce tax policy in any of its member states. Furthermore, the UN does not have the ability to overrule national sovereignty, as membership (while beneficial) remains voluntary, consequently, policy impositions could not be considered "compulsory" in the strictest sense of the term. There have been various proposals to support the UN's Millennium Development Goals with some type of global taxation, but such suggestions have always been rather short-lived. A surcharge on both currency exchanges and financial transactions has been considered recently, however, criticisms of the excessively burdensome[146] nature of such taxation have prevented the movements from gaining much traction.[147]

2. REGIONAL TAXATION

The European Union is a good example of a strong regional authority, with the ability to implement tax policy in its member states. (Similar to the UN, however, such taxes are not strictly compulsory, as membership is similarly voluntary.) Presently, the EU has implemented a minimum VAT rate of 15 percent (a portion of which is remitted to the EU central budget), with individual VAT rates ranging from 15 percent in Luxembourg, to 27 percent in Hungary.[148] The primary purpose behind implementing minimum VAT levels was market harmonization—lowering or eliminating regulatory and financial barriers to intra-European trade has long been a major focus within the EU.

In addition to VAT, the EU has also harmonized to some extent excise taxation on mineral oils, alcoholic beverages, and tobacco products. The current excise tax system applied to tobacco products in the EU has evolved over 40 years to accommodate enlargement of the community from 12 member states in 1971 to 28 member states in 2014, while recognizing the diverse range of income levels and trading conditions within the single market. It comprises four key elements:

1) A harmonized set of products definitions that all EU Member States must apply. This includes: cigarettes; cigars and cigarillos; fine cut tobacco for the rolling of cigarettes; and other smoking tobacco. Member states can include other categories of tobacco products in their national legislation (e.g. smokeless tobacco).

2) A set of minimum taxation requirement by product category, determined as a minimum excise incidence; excise yield; or both (cigarettes).

3) A compulsory excise tax structure for cigarettes.

4) A set of provisions that regulate accessory processes, such as price setting, collection of excise, exemptions and refunds and reporting requirements for Member States.

For cigarettes, historically the Southern European countries applied *ad valorem* excise tax while the northern European countries applied specific tax. In 1972, it was agreed that a mixed excise tax system, consisting of one *ad valorem* excise tax element based on the final retail selling price and one specific tax element, should become the standard excise tax structure for cigarettes. At the same time, to promote greater harmonization of the excise tax structures across member countries, the share of the specific excise as a percent of the total tax (excise combined with VAT), also referred to as "specific tax ratio", was set between 5 and 55 percent—to be further harmonized over time.

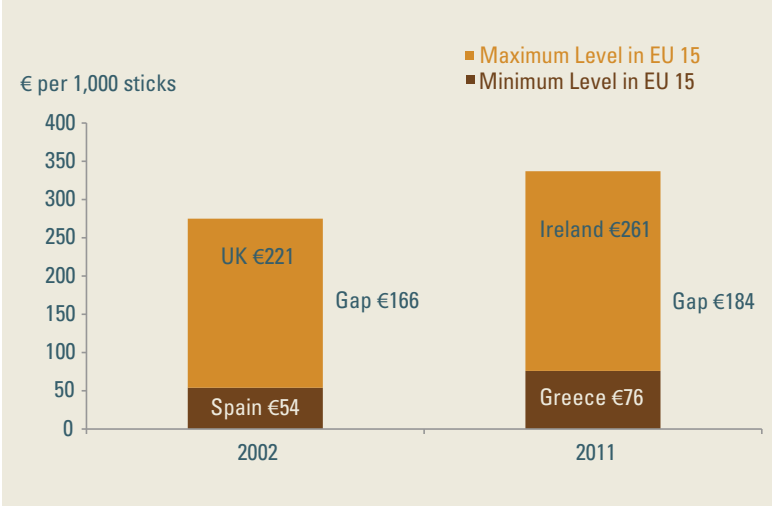
In 1992, further measures were introduced in the context of the so-called Single Market, setting a minimum excise tax incidence of 57 per cent of the retail price based on the retail price of the Most Popular Price Category (MPPC). The EU tobacco tax Directives—as with most EU law—are subject to regular review. In 2002, a modification was introduced whereby countries with high excise levels in monetary terms (exceeding 95 Euro per 1000 cigarettes), would not have to respect the 57 percent excise tax incidence rule.[149] This modification was sought by Sweden, which due to its high VAT rate had difficulties meeting this minimum excise rule as discussed earlier in this book. At the same time, in view of the enlargement of the EU with 10 countries from Central and Eastern Europe joining the union, a minimum excise tax amount of Euro 60 per thousand cigarettes (to be increased to Euro 64 per thousand cigarettes as from 1 July 2006) was introduced alongside the existing tax criteria.[150] This minimum excise tax requirement forced up the tax levels in countries such as Poland, Czech Republic and Hungary and helped narrow the tax gaps with neighboring EU countries with higher cigarette tax levels. Some Accession Countries were given transitional

periods of up to 10 years to meet the minimum excise tax yields on joining the EU. Note that the introduction of both monetary benchmarks, the €95 "escape clause" and the €60 "minimum excise yield", illustrate the lack of "harmonization power" provided by the existing minimum excise incidence rule, expressed as a percentage, as also discussed in the Sweden case study.[151]

While the goal of tax harmonization in the EU was to bring about the approximation of tobacco excise taxes and retail prices, excise tax yield gaps actually increased, even if only considering the "old" EU-15 countries. As Figure 73 illustrates, the excise tax yield gap between the country with the highest yield and lowest yield has risen from €166 per 1000 cigarettes to €184 per 1000 cigarettes, or by nearly 11 percent from 2002 to 2011.[152]

Figure 73[153]

Cigarette Excise Tax Gaps Between the EU 15 Countries in 2002 and 2011



Source: European Commission (2011); International Tax & Investment Center (2012), The Impact of Imposing a Global Excise Target for Cigarettes: Experience from the EU Accession Countries

The key point cannot be stressed enough: **tax harmonization is very difficult to achieve without economic distortions, even in areas with somewhat similar income levels.** Therefore, policymakers should exercise caution when assessing the costs and benefits of excise tax harmonization. The lack of a maximum tax level was another reason why the EU tobacco tax Directives did not bring about a real approximation of tax levels. As countries with relatively low tax levels had to increase tobacco taxes to meet minimum EU requirements, EU countries with relatively high tax levels simply continued increasing tobacco taxes, resulting in an effective increase in the tax gap within the EU.

The current EU tobacco tax framework was revised again in 2010 and is set out in Directive 2011/64/EU. For cigarettes, countries must apply a specific excise tax per thousand cigarettes and must apply an *ad valorem* excise tax with the retail selling price as the tax base. In addition, countries have the option to apply a minimum excise tax (MET). Finally, all member states must apply value added tax (VAT) on cigarettes.

In addition to the excise tax structure, the EU also established requirements for excise tax levels:

- The excise tax incidence must be a minimum of 60 percent, based on the Weighted Average Price (WAP)
    - Where the nominal excise tax amount is greater than Euro 115 per thousand cigarettes, again based on the WAP, countries need not respect this minimum excise incidence requirement.
- The minimum excise tax yield for all cigarettes is Euro 90 per thousand cigarettes
- The specific to total tax ratio, calculated on the WAP, must be between 7.5 percent and 76.5 percent

For other manufactured tobacco products, the EU allows countries more freedom with respect to tax structure: it can be specific, *ad valorem*, or a mix of specific and *ad valorem*. Furthermore, countries may apply a minimum excise tax also for these other categories. In terms of the excise tax levels, the EU has established the following minimum rates in Table 25:

Table 25

EU Requirements on Other Tobacco Products

Year	Excise Incidence (percent of WAP)	or	Excise Yield (€/kg)	Other Requirements
	Fine-cut			
2013	43%		> 47	
2015	46 %		> 54	
2018	48 %		> 60	
2020	50 %		> 60	
	Other smoking tobacco (pipe)			
	20 %		> 22	Cut width 1.5 mm
	Cigars and cigarillos			
	5 %		> 12	Old "Filter cigarillos" taxed as cigarettes

Source: *Directive 2010/12/EU*

With respect to fine-cut tobacco, the EU has recognized that the excise tax levels on this tobacco category need to be increased to help reduce the tax gaps with cigarettes and it has taken a gradual approach to increase the minimum excise tax levels over a number of years. For "other smoking tobacco" or pipe tobacco the minimum excise tax levels are substantially lower than for fine-cut, recognizing that these are separate sub-categories of tobacco with differences in tax-bearing capacity. Finally for the cigars and cigarillos the minimum excise tax requirements are substantially lower than the other tobacco categories.

The different minimum excise tax levels required on the four EU tobacco categories highlights the need for clear product definitions in order to ensure that all products are classified correctly and pay the correct tax.

In addition to the EU, two other examples of formal coordinated tobacco tax policy are the Gulf Cooperation Council (GCC) and in the South African Customs Union (SACU).

In the GCC, the member countries apply a high level of import duties (in the absence of excise duties) at the rate of cost, insurance and freight (CIF) price on imported cigarettes, with a minimum specific import duty set in local currency, see Table 26 below.

Table 26

Tobacco Import Duty Rates in GCC Countries

Country	Duty regime	Duty rates (local currency per 1,000 cigarettes)
Bahrain	Import duty	100 % of CIF, min. 10 dinar
Qatar	Import duty	100 % of CIF, min. 100 riyal
Kuwait	Import duty	100 % of CIF, min. 8 dinar
Oman	Import duty	100 % of CIF, min. 10 rial
Saudi Arabia	Import duty	100 % of CIF, min. 10 riyal
UAE	Import duty	100 % of CIF, min. 100 dirham

In the Southern African Customs Union (SACU), which includes Botswana, Lesotho, Namibia, South Africa and Swaziland, there is a harmonized specific excise tax for cigarettes, currently set at 546 rand per thousand cigarettes.

B. Voluntary International Taxation

While an apparent contradiction in terms, several examples of voluntary international taxes exist—the important distinction being that they are voluntary at the national country level, rather than the individual level. Below, we describe several examples of such taxes, either already in place or being proposed. What is especially interesting is that, in addition to being international voluntary taxation, these taxes also tend to be earmarked for international programs.

1. AIR-TICKET LEVY

Since 2006, nine nations have implemented an airline ticket levy: Cameroon, Chile, Congo, France, Madagascar, Mali, Mauritius, Niger and the Republic of Korea. A surcharge (ranging from $1

to $40 per ticket) is paid to UNITAID and the International Finance Facility for Immunisation (IFFIm) to fund international health development, focusing on the eradication of HIV / AIDS, malaria, and tuberculosis.[154] While there were initial concerns that such a levy would adversely affect the French travel and tourism sector, the French National Assembly termed the tax "a French success"[155]—despite persistent criticisms of lower than anticipated revenues, deliberately opaque implementation, and rapidly increasing administrative costs. To address these claims in turn: first, the *Cour des Comptes*[156] indicated that revenues have been lower than anticipated, potentially due to similarly-underestimated price elasticity of demand for airline travel.[157] Secondly, the plurality and complexity of taxes and fees on air travel rendered the surcharge "invisible"—those paying the fee have been unaware of its existence, and unable to voice their opposition. Lastly, IFFIm's operating costs increased by 16 percent in 2007, 19 percent in 2008, and 92 percent in 2009; average remuneration per employee had increased to €160,000 in 2009, which reached €199,000 when training, representation, and travel costs were included.[158]

At the most basic level, the source of funding for the Air-ticket Levy is fundamentally disconnected from the recipients of the funds, violating one of the principle tenants of taxation efficiency, not to mention the plurality of issues discussed previously.

2. SOLIDARITY TOBACCO CONTRIBUTION

In 2009, the High Level Taskforce on Innovative Financing for Health Systems proposed the Solidarity Tobacco Contribution (STC) in order to "*expand the mandatory solidarity levy on airline tickets and explore the technical viability of other solidarity levies on tobacco and currency transactions*".[159] Building on this idea in 2011, the WHO further recommended that a voluntary[160] STC be imposed on tobacco products for the purpose of funding international health development goals.[161] Moreover, the WHO articulates that the STC should not be designed to replace existing national excise taxes on tobacco products, but rather, should be in addition to such taxes. The suggested micro-levy is $0.01 to $0.05 per pack of cigarettes,[162] which the WHO estimates would generate at least $5.5 billion annually if all EU and G-20+ countries were to adopt this proposal.

Although furthering the cause for international health development is a laudable goal, the STC is not only an international redistribution scheme, but it would also likely further aggravate the negative consequences some countries have faced as a result of increasing excise taxes on tobacco—such as illicit trade and regressivity. Imposing a levy in countries already facing high excise tax levels, reduced affordability, and a strong illicit trade presence[163] will further worsen illicit trade conditions and will thus negatively impact government excise tax revenues.[164] Furthermore, regressivity will be exacerbated by additional excise tax increases in countries where individuals in lower income brackets are a large proportion of the smoking population. Moreover, if smokers tend to be lower income individuals, the STC will essentially redistribute what little wealth those individuals have to other lower income individuals—which is not only counterproductive, but highly regressive to those burdened by the tax.

Additionally, since the STC is essentially an international earmarked tax, it suffers from the same drawbacks of earmarked taxes in general, which is mainly the lack of relationship between the taxpayer and the service being provided,[165] as well as the rigidity it poses to government budget reviews (such as in South Korea).[166] Furthermore, internationally agreed upon taxes pose additional inflexibility and bureaucracy since changes must be approved by various national governments.

Perhaps the weakest aspect of the WHO proposal is that it not only removes billions of dollars from consumers and national governments, but it is also designed such that the beneficiaries of the tax funds are not those burdened by the tax. Furthermore, there is very little political recourse for consumers burdened by this additional tax since it is levied and managed by an international organization, which does not have to answer to the constituents of the member-states. For instance, consumers cannot vote on these international proposals or elect the governing officials of these international bodies, indicating that the spending of these proposed tax revenues will lack public oversight by the citizens contributing to the fund.

3. WHO TOBACCO EXCISE TARGET

As discussed in Part I of this book, the WHO Tobacco Tax Manual recommends that countries ensure that tobacco excise taxes represent at least 70 percent of the retail price. The recommendation of the WHO is driven from non-economic objectives, which have been developed without consideration for existing fiscal policy. In fact, the data that is used by the WHO Technical Manual shows that excise duty exceeded 70 percent of the most popular price category (MPPC) in only 9 of the 183 countries in 2008—Bulgaria, Brunei Darussalam, Cuba, Fiji, Myanmar, Poland, Seychelles, Slovakia, and Venezuela. However, based on current information, the excise incidence in Bulgaria, Myanmar, Poland, Slovakia, and Venezuela is below 70 percent, leaving only 4 countries in the world that exceed an excise incidence of 70 percent. Of these 4 countries, 3 have a population of less than half a million people (Brunei Darussalam, Fiji, and Seychelles) and 2 are isolated islands (Fiji and Seychelles).

As demonstrated in more detail in Section XIV, "Comparing Excise Tax Levels Internationally", the excise tax incidence is not an appropriate reference to use as a reference benchmark, as there is no relationship between the excise tax incidence level and the monetary amount of excise tax which a consumer must pay. Norway has a high excise tax yield of $393 per 1000 cigarettes, while the excise tax incidence is 48.3 percent. And conversely, Bulgaria has an excise tax yield of $112 per 1000 cigarettes, while its excise tax incidence is 62.6 percent—again, highlighting the fact that "one size does not fit all" when it comes to setting excise tax levels.

A major drawback of focusing solely on the excise tax incidence is that it does not take into account other taxes applied on tobacco products, such a VAT/GST, which in some countries are 0 percent, such as Hong Kong, or can be as high as 27 percent, as is the case of Hungary. These other taxes have a significant impact on the magnitudes of the retail price increases required to reach the 70 percent excise tax incidence, as recommended by the WHO, if it were ever to be adopted as a global benchmark.

Using the UBS country sample, if these countries adopted the 70 percent excise tax incidence, the average retail price would increase from $5.66 per pack to $11.71 per pack or by $6.04 per pack, an

increase of 107 percent. Furthermore, the monetary gap between the retail price of the lowest and highest priced countries would increase from the current amount of $15.15 per pack between the Philippines and Norway, to $49.44 per pack if all countries adopted the 70 percent excise incidence, as suggested by the WHO and demonstrated in Table 27 below. Moreover, in Brazil given the other taxes that are applied on cigarettes, it would not be technically possible to reach the 70 percent excise tax incidence proposed by the WHO.

We already described the theoretical reasons to refrain from applying a one-size-fits-all approach to tobacco taxes, and more specifically, reasons why excise incidence is not a good way to compare taxes internationally. By simulating the impact of a global minimum excise incidence of 70%, it becomes even more clear that this WHO recommendation is far from best practice: it would lead to draconian and arbitrary tax increases in almost every country, and at the same time more than triple tax and price differences between countries, providing further incentives for illicit trade.

Table 27

Impact of 70 Percent Excise Tax Incidence

	Current situation	70% Excise tax incidence		
Country (lowest to highest Income)	RSP US$/pack*	RSP US$/pack**	RSP Increase	
			US$/pack	%
India	2.42	9.88	7.46	309%
Philippines	1.15	2.16	1.02	88%
Egypt	2.23	3.11	0.89	40%
Indonesia	1.27	3.08	1.81	143%
Ukraine	1.88	7.19	5.31	282%
Thailand	2.75	4.42	1.67	61%
China	2.48	8.00	5.53	223%
Peru	2.68	12.02	9.34	348%
Bulgaria	3.58	5.57	1.99	55%
Colombia	1.86	4.56	2.69	144%
South Africa	3.00	8.98	5.98	199%
Romania	4.46	10.30	5.84	131%
Mexico	3.45	6.63	3.18	92%
Malaysia	3.66	7.39	3.73	102%
Brazil***	2.83	Not feasible***	-	-
Argentina	1.76	4.34	2.58	147%
Turkey	4.42	5.44	1.01	23%

Venezuela	6.36	6.87	0.51	8%
Latvia	4.29	8.03	3.74	87%
Lithuania	3.91	8.48	4.57	117%
Poland	4.51	7.77	3.26	72%
Hungary	4.87	13.37	8.50	174%
Russia	2.53	9.76	7.23	286%
Chile	4.95	6.88	1.93	39%
Estonia	4.79	8.18	3.39	71%
Slovakia	4.90	9.96	5.06	103%
Czech Rep.	4.48	10.24	5.76	129%
Portugal	5.89	12.00	6.11	104%
Greece	5.34	8.98	3.64	68%
Taiwan	2.85	6.53	3.68	129%
Slovenia	5.07	10.52	5.45	108%
Bahrain	2.39	5.09	2.70	113%
South Korea	2.55	5.12	2.56	100%
Cyprus	6.16	11.24	5.08	82%
Spain	6.51	11.06	4.56	70%
Israel	8.64	11.63	2.99	35%
Italy	6.85	13.82	6.97	102%
Hong Kong	6.45	6.83	0.38	6%
Japan	4.18	6.56	2.38	57%
New Zealand	14.75	22.93	8.18	55%
UK	13.70	24.88	11.18	82%
Germany	7.50	14.48	6.99	93%
France	9.59	14.17	4.58	48%
UAE	2.45	5.89	3.44	140%
Netherlands	8.65	18.13	9.48	110%
Belgium	7.93	15.11	7.18	90%
Ireland	13.01	24.95	11.94	92%
Finland	7.67	13.44	5.77	75%
Austria	6.44	12.77	6.33	98%
Canada	9.34	19.54	10.20	109%
Denmark	8.12	20.50	12.38	153%
Sweden	9.15	28.52	19.37	212%
Australia	15.57	33.52	17.95	115%
Switzerland	9.20	15.51	6.31	69%
Qatar	2.47	5.20	2.73	110%
Norway	16.30	51.61	35.31	217%
Luxembourg	6.71	12.54	5.83	87%
Highest	**$16.30**	**$51.61**		
Average	**$5.66**	**$11.71**	**$6.04**	**107%**
Lowest	**$1.15**	**$2.16**		
Gap: High vs Low $/pack	**$15.15**	**$49.44**		

** Based on January 2014 excise tax rates and the Retail Selling Price of Marlboro (except for Canada - Benson & Hedges); RSPs are per pack of 20 cigarettes. Exchange rates January 2014. Bloomberg*

***** The Retail Selling Price(RSP) under the 70 percent excise tax incidence is based solely on the assumption that the excise tax incidence increases from the current level to 70 percent and that the pre-tax price has been held constant***

****Given that the current other than excise effective ad valorem rates plus VAT are already over 30 percent, a 70 percent excise rate is not feasible*

XVI. CONCLUSIONS

Four key elements must be in place for an efficient and effective tobacco excise tax system. First, clear and precise tobacco product definitions are required to prevent tax loopholes. These product definitions need to be updated over time in response to product developments.

Second, robust, simple excise tax structures are required to ensure that similar tobacco products are treated on an equal basis. From a government tax revenue stance, the excise tax structure should support stable and predictable collection, while ensuring that excise tax increases translate into commensurate government tax revenue increases. While there are a vast array of tax structures applied internationally, from a pure tax revenue point of view, specific tax structures ensure that all tobacco products within a category (e.g., all cigarettes) will pay the same amount of excise tax. A tax structure that is specific, or has a large specific component, thus reduces the incentive for consumers to down-trade to lower taxed products, and isolates government revenues from pricing initiatives by tobacco companies. There is a global trend towards both simpler and more specific tax systems. The EU, for instance, has changed its excise tax Directive to increase the size of the specific tax element that member states can apply, and several EU countries have followed by changing their domestic tax system in this direction. Outside of the EU, specific excise tax structures are applied in many of the leading global economies, including the U.S., Canada, South Africa, Japan, South Korea, and Australia.

Third, the correct excise tax level must be applied to each tobacco category. In many instances, the price elasticity for cigarette demand is low, but this can change in response to large tax increases or changes in macroeconomic factors, such as rising unemployment or declining consumer income levels. As many countries have experienced, and as is supported by the Laffer Curve, there is a point at which further tax increases will not result in increases in government tax revenues. When tax levels become too high, some consumers will stop or reduce consumption, whilst others will down-trade to lower taxed products or to non-taxed illicit tobacco products. While the net effect of these tax increases may still be positive from a public health perspective, it certainly will not be positive from a tax reve-

nue perspective, and there may well be other, more effective ways to reduce the harms from tobacco consumption.

Finally, the excise tax system needs to be supported by good tax administration and collection systems, such that the collection of the excise tax revenue by the customs officials is efficient and should not be unnecessarily burdensome on the tobacco manufacturers or importers. There should be a proper legal framework that provides a balance between the tax rights of taxpayers and the powers of the tax agency. In countries that use tax stamps or fiscal markers, these systems should not add unnecessary costs, but instead, improve tax collection in a cost effective manner. New digital fiscal marking systems are being developed, and countries may want to consider these options to modernize and improve their tax collection systems. In the same vein, countries need fair and effective anti-forestalling regulations to ensure that tax increases are passed on to consumers in a timely manner and that government tax revenues increase systematically as a result. Overall, the tax administration system should be as simple as possible in order to facilitate the efficient payment of tobacco taxes by all manufacturers and importers. In addition, the customs authorities need effective regulation, as well as the tools and resources to enforce these regulations, thus ensuring that the correct taxes are being paid by all parties concerned.

Although earmarked taxes are applied in several countries across the globe, economists, especially those in public finance, are in agreement that, fundamentally, earmarked taxes represent poor economic policy. Earmarking can lead to the misallocation of resources, where too much funding is given to activities designated to receive earmarked tax revenues and where too little funding to other, more urgently needed activities is provided. Earmarking can also hinder budget efficiency, as well as encroach upon the minister of finance's authority, who should have control over the allocation of scarce resources in order to determine the most appropriate manner to achieve national public policy.

Finally, given recent discussions on international tobacco taxation, it remains of interest to find a way to objectively compare tax levels across countries. Three commonly used approaches were investigated: (1) comparing excise tax incidence, which expresses taxes as a percentage of the consumer retail price; (2) comparing monetary

excise tax levels, in a common currency per pack of cigarettes; or, (3) comparing excise tax levels, while taking into account domestic income levels.

We demonstrated that the excise tax incidence is a meaningless way of comparing tax levels internationally. A better alternative, at least for international benchmarking purposes, is a comparison of excise levels that are corrected for the differences in per capita consumption of each country. Such a measure will allow an assessment of the domestic affordability of excise taxes on tobacco products, and thus provide a reasonable point of reference (but certainly not a technocratic rule) for domestic tobacco tax policy.

Endnotes: Part I

1 Cnossen, S. (1977), *Excise Systems: A Global Study of the Selective Taxation of Goods and Services*

2 Smith, A. (1776) *The Wealth of Nations.*

3 Adam Smith's notion of the natural wage rate of laborers is approximately the wage that is equivalent to the produce of labor.

4. Smith, A. (1776), *The Wealth of Nations.*

5 Dupuit, J. (1844), On the Measurement of Utility from Public Works

6 Dupuit, J. (1844), On the Measurement of Utility from Public Works

7 Smith, A. (1776), *The Wealth of Nations*

8 Hamilton, A. (1788), *The Federalist Papers*

9 Ramsey, F. (1927), *A Contribution to the Theory of Taxation*

10 Various elasticities of demand are discussed more in-depth in the next section, "Elasticity of Demand".

11 The story of how the Laffer Curve got its name isn't one of the Just So Stories by Rudyard Kipling. It began with a 1978 article published by Jude Wanniski in The Public Interest entitled, "Taxes, Revenues, and the 'Laffer Curve.'" As recounted by Wanniski (associate editor of the Wall Street Journal at the time), in December of 1974 he had been invited to have dinner with me (then professor at the University of

Chicago), Don Rumsfeld (chief of staff to President Gerald Ford) and Dick Cheney (Rumsfeld's deputy and my former classmate at Yale) at the Two Continents Restaurant at the Washington Hotel in Washington, D.C. (just across the street from the Treasury). While discussing President Ford's "WIN" (Whip Inflation Now) proposal for tax increases, I supposedly grabbed my napkin and a pen and sketched a curve on the napkin illustrating the trade off between tax rates and tax revenues. Wanniski named the trade off "The Laffer Curve." The Laffer Curve, by the way, was not invented by me; it has its origins way back in time. For example, the writings of 14th century Muslim philosopher Ibn Khaldun, Adam Smith, and John Maynard Keynes all make mention of the potential for lower tax receipts at higher tax rates.

12 Arthur B. Laffer, "The Laffer Curve: Past, Present and Future" Laffer Associates, January 6, 2004

13 Arthur Pigou (1920) *The Economics of Welfare*

14 Baumal, Oates (1971), *The Use of Standards and Prices for Protection of the Environment*

15 Ronald Coase (1960), *The Problem of Social Cost*

16 Buchanan, Stubblebine (1962), *Externality*

17 Davis, Whinston (1962), *Externalities, Welfare, and the Theory of Games*

18 Buchanan (1969), *External Diseconomies, Corrective Taxes, and Market Structure*

19 This is due to the fact that the price elasticity of demand often fluctuates over time as well as in the short and long run. Furthermore, the design of this model implies a positive relationship between the excise tax rate and government excise tax revenues, which is invalid; therefore, demand estimates from a double log specification should not be used as inputs when determining the optimal excise tax rate.

20 Becker, Murphy (1988), *A Theory of Rational Addiction*

21 Gruber, Koszegi (2000), *Is Addiction "Rational"? Theory and Evidence*

22 Gruber, Koszegi (2008), *A Modern Economic View of Tobacco Taxation*