Increasing excise taxes in the presence of an illegal cigarette market: the 2011 Brazil tobacco tax reform

Roberto Magno Iglesias

ABSTRACT

The Brazilian cigarette excise tax reform of 2011 increased tax rates significantly in the presence of a high proportion of illegal and cheap cigarettes contributing to total consumption. Prior to 2011, tobacco tax policy in Brazil had reduced excise tax share on consumer prices, for fear of smuggling. This report examines two hypotheses explaining why tax authorities changed direction. The first is related to lack of concern regarding smuggling in tobacco industry pricing behavior before 2011 (rather than reducing prices following tax reduction, legal companies increased net of tax prices above inflation and key costs). The second hypothesis regards inconsistent industry assessments of the size of the illicit market, which ultimately undermined the credibility of the industry with tax authorities. The author concludes that the 2011 reform was designed to revert the weakness of previous policies, and did indeed succeed. The post-2011 experience in Brazil indicates that increased cigarette excise taxes can increase government revenues and reduce smoking prevalence and consumption despite widespread smuggling of tobacco products.

Keywords

Taxation of the tobacco-related products; smuggling; smoking; tobacco industry; tobacco-derived products commerce; health policy; Brazil.

In 2011, Brazil underwent cigarette excise tax reform despite the presence of an illegal cigarette market that was contributing significantly to the country’s total consumption. Prior to this reform, tobacco tax policy in Brazil had been driven by fear of an illicit tobacco market that had cropped up in the mid-1990s (1), fed by legal sales to Paraguay that then re-entered Brazil illegally. In an effort to undercut illegal trade, in 1999 the Ministry of Finance of Brazil reduced the excise tax-share on cigarettes from more than 30% to about 25% of the final sales price and changed the excise tax system from a single ad valorem rate to a multi-tiered specific system. At the same time, the Government decided to prohibit tobacco exports to other Latin American countries. This export prohibition was intended to curtail the legal export of tobacco products to Paraguay and their illegal entry into Brazil. After the 1999 decision, Brazil initiated a long road to curbing domestic evasion, which was part of the illicit market problem, but it could not curb cigarette factories and production in Paraguay, which had flourished.

The multi-tiered specific system was implemented in June 1999. After that, specific rates were adjusted in December 2002, January 2004, and July 2007. From 1999–2007, those rated were always increased below inflation rates. The last increase under that system was made in March 2009. The reduction of cigarette excise-tax share in consumer prices sought to maintain low real prices of legal cigarettes, stimulating a cheap market segment, in what could be considered a kind of market-based strategy to reduce illicit trade. Despite this policy, illicit products continued to flow from factories in Paraguay producing cheap cigarettes that fed the illegal market in Brazil.

During the discussions that led to the 2011 reform, smuggling fears were not at
the center and authorities expected that an excise tax increase could effectively increase revenues while reducing consumption. Tax authorities focused on how taxes can influence smoking behavior and the need for tobacco tax policy to implement the World Health Organization (WHO) Framework Convention for Tobacco Control (FCTC) (2). The 2011 reform reflected an important change of direction by the tax authorities regarding tobacco policy in Brazil.

This article explores why tax authorities changed their minds despite the presence of smuggling, by presenting a discussion of tobacco tax policy, tobacco industry price performance, and industry evaluations of the smuggling situation before the 2011 reform. Particularly, this paper highlights how tax authorities came to the conclusion that smuggling was not actually important for the tobacco industry, given its inconsistent pricing policies with a real market threat coming from illegal cheap cigarettes.

Examining and understanding what happened in Brazil prior to the 2011 reform could help tax authorities in other countries and the tobacco control community understand how the tobacco industry misuses the smuggling argument against increasing tobacco excise taxes. Examining Brazil’s experience with tobacco tax reform might also assist other countries more thoroughly evaluate their own market contexts and the possible outcomes of increasing cigarette taxes under smuggling.

Previous context and reasons for policy change

Although, as mentioned, the tax authorities justified their change of direction by citing the influence of taxes on smoking behavior and the need for new tax policy to implement the WHO FCTC (2), the exact reasons why tax authorities took this different approach have been difficult to decipher. In part, this difficulty is due to the proposal for cigarette excise taxes being presented together with other revenue-related proposals, such as tax exemptions and subsidies. Those tax and subsidies measures were sent together in a provisional measure and subsequently converted into Law 12546 (3).

Several unusual things happened during the debate surrounding the 2011 reform. For one, the smuggling argument was not used at all by the tobacco industry in its fight against the tax authority’s proposal. It was striking that, instead, the tobacco industry tried to incorporate, in the same government proposal, several measures to weaken non-price-related policies, such as designated smoking areas, legal protection for cigarette components, and advertising and sponsorship strategies. On the other hand, tax authorities seemed free of smuggling fears, proposing completely new policies, such as annual adjustments for tax rates at percentages well above expected inflation for lower-tier rates.

Why had the smuggling argument been dropped? By observing industry behavior and through personal interactions with the Brazilian tax authorities, two hypotheses might be advanced: first, the inconsistent pricing behavior of increasing cigarette net-of-tax price above inflation (and above key cost component), without considering the smuggling situation that the industry itself was sitting on; and, second, the tobacco industry’s inconsistent evaluations of the size of the illicit market. These two industry attitudes might have discredited its smuggling argument.

Price behavior inconsistencies. In order to criticize the tobacco industry for price behavior inconsistency, it is necessary to define what could be considered consistent practice in the situation. As said, tax authorities had decided to reduce the weight of cigarette excise taxes on retail sale prices in order to reduce price in real terms and the price differential between legal and cheaper illegal cigarettes. Consequently, consistent price behavior would be to increase net-of-tax price according to general inflation or the growth of key-input costs; or at the very least to reduce profit margins and final prices in order to gain market share from cheaper illegal cigarettes.

Cigarette excise tax policy had two phases between 1999 and 2011: declining real tax amounts per pack before 2007, and rising tax amounts per pack beginning with that year. Figure 1 shows the behavior of real tax amounts per pack and average cigarette prices in constant values (2013 Brazilian Reais, R$) for the whole period.

Before 2007, tax authorities clearly managed to reduce the real value of excise taxes per pack. Considering these authorities' objectives, the policy functioned well only until 2001—when real price decreases were aligned to real tax amount reductions—but after that, the industry started increasing its prices in real terms despite a declining trend in tax amounts. As a result, from 2004–2006, average excise tax amount per pack remained below the real levels of 2001–2003, but real cigarette prices were almost 10% more than they were at the decade’s start (Figure 1).

From the tax authority’s point of view, the tax policy could not be considered a success by the end of 2006. Price performance seemed to show that the tobacco industry had other objectives beyond taking care of smuggling. For example, in 2006, real excise tax amounts were 60% of the 1999 value, and real prices per pack were only 6% less than 1999 real prices, indicating that cigarette companies were not clearly committed to reducing real prices and price differentials with illegal cigarettes.

The industry pricing behavior could have resulted from cost pressures, which obliged companies to increase net-of-tax prices. Table 1 presents the real variation (inflation adjusted) of net-of-tax prices, excise tax amount per pack, tobacco leaf prices, and consumer prices for the 1999–2009 period.

According to Table 1, cigarette companies experienced a huge cost reduction from 2000–2003 due to falling tobacco-leaf prices. However, instead of reducing net-of-tax prices, cigarettes companies raised them, expanding profit margins per pack. In 2004–2006, there may have been some narrowing of the profit margins, because cigarette producers raised final prices (about 6.1%) below the cost increases on tobacco leaves (about 11.2%). Overall, however, the

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2 The two hypotheses advanced were the result of several conversations with technical staff at the Federal Revenue Secretariat of Brazil. This is only an interpretation, because traditionally, technical staff of the Secretariat do not make public nor detail statements regarding their policy analysis of sensitive issues, such as tobacco taxation.

3 Cigarette retail safe prices could be broken down into net-of-tax prices and indirect taxes (excise + other indirect taxes).

4 The price variation of tobacco leaves is used as a proxy for cigarette-cost variation because tobacco leaf is the main input. There is no exclusive index for tobacco leaf prices at the factory gate; therefore, a price index of tobacco leaf exports is used. Since Brazil is an important exporter of tobacco leaves, domestic prices should use export prices as floor, representing the opportunity-cost of selling leaves domestically. In order to estimate the impact on cigarette costs, leaf costs were assumed to represent 70% of the total pack costs.
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In the second phase of the study period (2007–2011), tax authorities increased tax rates more aggressively (Figure 1). This new phase of active exercise tax policy was implemented because of tax authorities’ displeasure with the industry’s pricing behavior during the first phase.

Table 1 shows that real excise tax amounts per pack increased 39% from 2006–2011, leading to a nearly 36% rise in the final price per pack. A closer look at the components of final prices shows that the industry was not fully committed—not willing to sacrifice profit margin—to fighting smuggling through prices (Table 1). Probably motivated by discussions with tax authorities in 2006 and 2007, the tobacco companies absorbed part of the tobacco-leaf price increases of that period, which reduced profit margins somewhat. Nevertheless, in 2009–2011, the industry sought better profit margins, in clear contradiction to the whole idea of using price moderation to reduce illegal cigarette market share.

Inconsistencies in smuggling estimations

In Brazil, as in many developing countries, the cigarette industry is the only source of estimates on the size and scope of the illicit cigarette market. Academic and statistics-based studies have found that industry-funded assessments tend to overestimate its size and reach, and are used to influence tobacco excise policy (4, 5). Regrettably, Brazilian tax and health authorities have had difficulty promoting independent studies using other feasible methodologies. Recently, a team of researchers and members of the National Cancer Institute (Rio de Janeiro, Brazil), has estimated the increase of illicit tobacco trade using two waves of the Global Adult Tobacco Survey and other methodologies (6).

Prior to 2011, the tobacco industry made several errors regarding its evaluations of the size and scope of smuggling in Brazil. In 2001–2003, the tobacco industry committed its first error by allowing a high and constant level of illicit trade (around 30%, basically the same size as in the late 1990s) after real reductions of average excise tax amounts and prices per pack and despite introducing several anti-smuggling measures. Figure 2 shows the industry figures of the illicit market as a percentage of total consumption and average real cigarette prices (in 2007 prices). For example, average real prices in 2001 were over 20% maintaining high levels of estimated illicit market share must have been part of its strategy to induce tax authorities to use tax policy as an instrument against illicit trade.
lower than in 1998, but the size of the illicit market remained high and of similar size (more than 30%). Besides that, during those years the Brazilian government and the Congress took several measures to fight smuggling and illicit products coming from Paraguay. A description of some of those measures, which consisted of parliamentary investigations, police investigation of smugglers, additional production regulations, and new tax stamps, is provided in more detail elsewhere (1).

In 2008, a system to counteract domestic tax evasion by uniquely identifying each pack of cigarettes was implemented. The system, called SCORPIOS, included assembly line controls, thus eliminating any possibility of underreporting by legal factories in Brazil. In a sense, Brazil was already adopting several provisions of the WHO FCTC Protocol to Eliminate Illicit Tobacco Trade, (7) even before the protocol was adopted by the Conference of the Parties in 2012. Because of these initiatives, the illicit market figures should have been decreasing; however, the industry stubbornly maintained its unrealistically high and constant estimations of smuggling accounting for 30% of the market.

During 2007–2011, there was an upward trend in average real prices (Figure 1), with no extraordinary measures taken against smuggling. Surprisingly, the cigarette industry estimations of the smuggling market size remained 27%, less than that of the first part of the decade, and in clear contradiction with the prediction of its traditional argument of direct relationship between tax and price increases and smuggling volume. Industry estimations for 2007–2011 could be perceived as a second error, which also diminished the industry’s credibility among tax authorities.

The third error in relation to smuggling evaluations and definitions of proper policies for fighting smuggling was the tobacco industry’s position relative to conversations between the tax authorities of Paraguay and Brazil. In 2009–2011, Brazilian and Paraguayan tax authorities grappled with a difficult process that aimed to legalize Paraguayan cigarette imports. Rather than supporting or not interfering, the Brazilian cigarette industry attempted to block the initiative, both directly and indirectly. Although the reasons for their position were not clear, the blockade was clearly perceived as undermining a possible solution to the smuggling problem.

The perceived overestimations of the smuggling market’s share by the tobacco industry were recently confirmed by the own industry in a public interview about illicit trade in Brazil (8). In that interview, the industry acknowledged that, prior to 2012, the illicit trade averaged only 20%.

THE 2011 CIGARETTE EXCISE TAX REFORM

In 2011, tax authorities proposed a change in the cigarette excise taxation system, and large increases in excise tax rates. This change was driven by, among other things, the inconsistent tobacco industry behavior described previously. The Government of Brazil sought to increase cigarette excise taxes to offset new tax exemptions in “merit goods” (durable consumer goods, e.g., cars, washing machines) therefore, there was also a revenue interest. The new tobacco tax system had been prepared over the course of 3 years by the Federal Revenue Secretariat. After 2011, Brazil tobacco tax policy would be preemptively aligned with the policies suggested by the then still forthcoming “Guidelines for Implementation of Article 6 of the WHO FCTC (9).”

The proposal altered the previous multi-tiered excise tax structure by

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**FIGURE 2.** Illicit market share on cigarette total consumption (%) and real average cigarette prices in constant 2007 Brazilian Reais (R$), Brazil, 1992–2007

*Source:* Smuggling market share, industry estimations provided by the Federal Revenue Secretariat. Average prices: Brazilian Institute of Geography and Statistic (IBGE), Consumer price index (CPI) CPI data.
establishing two excise taxation options to be selected by tobacco producers: one, purely ad valorem, and the other, a mix of single ad valorem and specific rates. Specific rates were initially reduced from several to just two, eliminating the distinction between cigarette sizes and heading toward a single rate in 2015. The reason for adding an ad valorem rate to the tax structure was the Government’s intent to capture part of the benefits of industry pricing strategies. The proposal also gave the Executive Branch the authority to set and increase a minimum consumer price for the entire nation of Brazil.

**Two excise tax options**

There were two excise taxation system options for each tobacco producer to choose from:

1. **The general system.** Essentially returns to the system that was in place in Brazil until May 1999. Companies choosing the general system would pay an ad valorem rate of 300% on a tax base, established as 15% of the consumer price. This means that the ad valorem rate would be 45% of the consumer price.

2. **The special system.** Offers a mixed system, with both specific and ad valorem rates. The law sets some parameters for these rates. The specific quota cannot be lower than R$ 0.80 and the ad valorem rate cannot be higher than 1/3 of the general system (in the case of a general ad valorem rate being 45%, the special ad valorem rate could not be higher than 15%). Tax authorities would be entitled to fix the rates within those parameters.

**Frequent tax rate increases and minimum prices**

In contrast to previous practices of sporadic adjustments, tax authorities used the law to establish annual tax rate adjustments and minimum prices for the period 2012–2015. Presidential Decree 7555/2011, modified by Decree 7,593/2011 (10, 11), established the detailed rates of the new tobacco excise system created by Law 12,546 (3). The main details were:

*Increases of specific rates in 2012–2015 (over expected inflation for lower tier) in the special system.* The actual starting point was R$ 0.90 for a simple pack (soft package) and R$ 1.20 for a box (hard package) in the case of specific rates, reaching a single rate of R$ 1.30 in 2015. For ad valorem rates, in 2012, the rate was 40% of the tax base (or 6% of consumer price). Ad valorem rates were raised by 1 percentage point each year through 2015. Those definitions were especially important considering the low tax rate increases of the past and the country’s rapid economic growth, which had made cigarettes increasingly affordable until the 2011 reform.

**REFORM OUTCOMES**

The 2011 reform has had significant impacts on excise revenues and smoking prevalence in Brazil. In addition, from the experience of tobacco tax policy in 1999–2015, certain policy lessons can be extracted.

**Increased revenue**

Increasing tax revenues is a concern of all tax policymakers. Regarding this point, the 2011 reform was a success. Figure 3 shows that revenues went up 20% in real terms, from R$ 4.2 billion in

![Figure 3. Domestic cigarette sales, cigarette excise revenues, and average real excise tax amount per pack, in billions of 2013 Brazilian Reais (R$), Brazil, 2010–2014](image)

**Source:** Domestic sales and Tobacco excise revenues, Federal Revenue Secretariat. Real excise tax amount per pack = Tobacco excise revenue/domestic sales. Federal Revenue Secretariat.
Reduced smoking prevalence

A systematic reduction of smoking prevalence was observed by VIGITEL, an annual telephone survey of risk factors in the largest cities of Brazil. The data in Figure 4 refers to prevalence of current smokers among the adult population (at least 18 years of age). Smoking prevalence dropped from over 13% in 2011 to 10.8% in 2014.

Among other factors favoring quitting decisions, real cigarette prices were affecting smoking behavior, as was the widespread implementation of smoke-free environments at the state level. The reduction of smoking prevalence in this context means that tax and price increases reduced total cigarette consumption, an important public health objective, irrespective of the market share of legal versus illegal cigarettes.

POLICY LESSONS

There are two main policy lessons to be learned from the tobacco excise policy experience in Brazil from 1999–2015. First, reducing excise tax amounts per pack may not substantially reduce the illicit trade in a country with extensive smuggling networks and a cheaper illegal producer just across the border. And, second, it is possible to increase tax rates, obtaining higher revenues and decreasing total consumption, even in the context of smuggling.

Lower tax does not reduce illicit trade

Smuggling networks are sunken investment made by past and current smugglers and illicit cigarette producers. When the network exists and the investment has been made, it can operate with different levels of profits; therefore, legal price reductions in large intervals do not affect illicit activities. To counteract illicit trade, it is necessary to do more than reduce price incentives. The smuggling network must be countered and rendered inoperative with law enforcement actions.

Another barrier to a policy of tax-share and tax amount reductions was also observed in Brazil. Tobacco companies might not follow the policy, using the opportunity, instead, to increase profit margins per pack. By not reducing real price and price differentials, the whole tax reduction policy can be yielded ineffective.

Higher tax increases government revenue

Despite tobacco industry claims of a product continuum of legal and illegal cigarette markets, cigarette companies have shown to Brazilian tax authorities that legal and illegal markets are differentiated. For this reason, if tax authorities increase excise tax rates, excise tax collection will increase; and tobacco companies may increase net-of-tax prices to maintain their profits—all within a context where people will either reduce consumption, quit completely, or buy from the illicit cigarette market.

Industry behavior analysis

This report also shows some elements of a methodology used to analyze industry pricing behavior and industry estimations of the smuggling situation. This methodology could be useful for other countries, where the argument of illicit trade has been an obstacle to tobacco tax increases. A close follow up of price decisions, given cost and tax conditions, seems to be useful in defining industry
behavior in the face of a smuggling situation.

Additionally, independent measures of the size of the illegal cigarette market, or alternatively, the correlation between anti-smuggling policies and industry evaluations of illegal consumption could be useful for evaluating the accuracy of industry assessments of smuggling.

Conclusions

This report concludes that the 2011 Brazilian tobacco tax reform was designed to revert the weakness of previous policies, and did indeed succeed. The post-2011 experience in Brazil indicates that increased cigarette excise taxes can augment increase government revenues and reduce smoking prevalence, despite widespread sale of cheaper illicit tobacco products.

Conflict of interests: None declared.

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RESUMEN

La reforma brasileña de los impuestos indirectos sobre los cigarrillos, que tuvo lugar en el 2011, redundó en un marcado aumento de los impuestos en presencia de una situación en que los cigarrillos baratos y de fabricación ilícita constituían una gran proporción del consumo total. Antes del 2011, la política fiscal del Brasil respecto del tabaco había reducido la fracción del precio al consumidor que correspondía al impuesto indirecto por temor al contrabando. En el presente informe se examinan dos hipótesis acerca de por qué las autoridades cambiaron de rumbo. La primera tiene que ver con la indiferencia frente al contrabando que se transla en las prácticas de fijación de precios de la industria tabacalera antes del 2011 (en lugar de bajar los precios después de la reducción del impuesto, las empresas licitadas aumentaron los precios netos de impuestos por encima del nivel de inflación y de los costos básicos). La segunda hipótesis guarda relación con la incongruencia de las evaluaciones del tamaño del mercado negro realizadas por la industria, que acabó por menoscabar su credibilidad ante las autoridades tributarias. El autor llega a la conclusión de que la reforma del 2011 tuvo por objeto revertir la debilidad de las políticas anteriores y considera que, de hecho, lo consiguió. La experiencia del Brasil después del 2011 indica que un aumento de los impuestos indirectos sobre el cigarrillo puede engrosar las arcas públicas y reducir la prevalencia de tabaquismo y el consumo de productos del tabaco pese al extenso contrabando de estos productos.

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RESUMEN

El alza de los impuestos indirectos en presencia de un mercado negro de cigarrillos: la reforma brasileña de los impuestos sobre el tabaco del 2011

Palabras clave

Tributación de los productos derivados del tabaco; uso de tabaco; industria del tabaco; comercialización de productos derivados del tabaco; contrabando política de salud; Brazil.