

Recent evidence on the illicit cigarette trade in Latin America

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ABSTRACT

The tobacco industry continues to present the illicit trade of tobacco products as a reason to slow, stop, or reverse tobacco control efforts in Latin America, including increasing tobacco excise taxes. In most cases, industry estimates of illicit trade, usually non-transparent and flawed, dwarf those of independent, rigorous research. Often, independent studies find that the levels of illicit trade are mostly non-consequential or easily manageable (<12%). Almost always, industry findings grossly overestimate the illicit market. Fortunately, a burgeoning empirical literature in the region—including Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay—is illuminating the genuine levels and nature of this trade, typically employing gap analysis that compares tax-paid sales to consumption and/or pack inspection studies using packs shown by smokers in surveys or discarded in the streets or garbage. Additional research in countries including Brazil, Colombia, Ecuador, and Paraguay examines supply chains to help identify the illicit sources. This research is already helping governments to address any real problems with illicit trade and to reassure stakeholders that tobacco control efforts should be strengthened, not diminished.

Keywords

Tobacco-derived products commerce; taxation of the tobacco-derived products; tobacco industry; Latin America.

Identifying progress on tobacco control as an existential threat, the tobacco industry continues to push several false narratives to oppose these efforts, and there is strong evidence that this interference in tobacco control policymaking has increased in some countries in Latin America (1). Arguably, the most prominent myth is the alleged threat of illicit cigarettes taking over marketplaces, and it sometimes shifts governments away from tobacco control and, particularly, increasing tobacco excise taxes. Illicit trade—i.e., taxes not paid on tobacco products—is important because it can drive prices down and consumption up and undermine tax revenues. Notably, with only a couple of important exceptions (discussed below), there appears to be no crisis in most of the region; rather, a growing body of rigorous research consistently finds that illicit trade is often low and inevitably much lower than industry claims. In this discussion, we introduce the principal methodologies that researchers use

to rigorously measure illicit trade and present recent credible estimates and other relevant findings from the region. The discussion includes studies from 2010 to 2021, with illicit market estimates for six countries in various years between 2009 and 2019; trends in illicit trade for several countries as early as 2005 and up to 2019; and beginning in 2000 for supply chain analysis in several countries.

METHODOLOGIES

There are a handful of viable methodologies to measure illicit trade, each with inherent strengths and weaknesses (2). The most common methodology is arguably the gap analysis that compares tax-paid sales with estimated consumption. In theory, the two should be the same, but often are not, and it is this gap between the two that provides insight into the amount of tax

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evasion (illicit) and/or avoidance. The advantages of gap analysis include that it is quick and inexpensive because it relies on secondary data. If reliable data are available—which is not the case in some countries—it is easy to repeat regularly and consistently and therefore permits analysis of change over time. One major weakness is estimates are often biased by underreporting in the surveys used to estimate consumption. Respondents often misreport their consumption and, more systemically, surveys sometimes exclude significant discrete groups such as youth, tourists, and/or immigrants. Additional biases stem from not accounting for illegal exports of tax-paid cigarettes, misreported tax-paid sales, seasonal trends, and/or fluctuations around the time of a tax increase. Finally, this method does not illuminate the source(s) of illicit cigarettes. Nevertheless, if the bias is understood and relatively consistent across time periods, the methodology can still be useful for detecting trends.

Two more major methodologies focus on systematic inspection of cigarette pack characteristics typically from primary data collection. Key characteristics to identify illicit packs include brands, tax stamps, appropriate legal warning labels, and language, among others. One method to generate a sample of packs is to survey smokers directly and ask to inspect their packs and a second is to collect and examine discarded packages, which is generally less labor- and resource-intensive. The key to these surveys is developing a sample that represents the cigarettes smoked in the geographical area of interest and collecting enough packs to represent the universe of main brands in each area. For smoker surveys, calibrating the sample to recent representative survey data on smoking can help to develop a sample of respondents that is statistically similar to the desired smoking population; for example, through age, gender, income, etc. Similarly, constructing a sample for littered pack collection can be based on where smokers live. Surveys that focus on smokers can reveal valuable information about who is more likely to use illicit products, helping governments to address the issue. Pack characteristics can also reveal valuable information about supply chains, including brands, countries of origin, and/or the types of illicit producers. The studies discussed in the next section all utilize appropriate sample design and size.

In countries with clear price distinctions between licit and illicit brands, it is sometimes possible to use surveys that collect individual-level (i.e., smoker) data on cigarette prices but poor or no brand information to estimate the size of the illicit market. Because illicit cigarettes are almost always cheaper, by defining a defensible price threshold—e.g., based on covering production and distribution costs, retail margins, and tax payments—researchers can develop a valid estimate of what proportion of cigarettes consumed were illicit. Note that under some conditions, producers/vendors of illicit cigarettes might raise their prices to increase their profits, and/or producers/vendors of licit cigarettes might lower their prices to compete, and therefore the prices between licit and illicit cigarettes can overlap, rendering this methodology less useful.

In some countries, cigarettes are commonly sold outside of the pack, often as single sticks, making pack inspection more challenging. It is important to note that, in many countries, single sticks come from packs where taxes were paid, so they are not illicit from a taxation perspective even though they may have been sold illegally if selling single sticks is prohibited. They are related but distinct issues that typically require different interventions. In countries where single stick sales are

common, to understand better whether the single sticks were tax-paid it may be necessary to systematically collect packs from the vendors that sell them (3) or to observe the brands selected by consumers to determine how they correspond to the licit/illicit cigarettes sold by pack (4).

Another strand of research examines other important dimensions of the illicit market beyond just estimating size, including illuminating key facets of the illicit supply and/or value chains. For example, an analysis comparing a country's domestic production—which can be estimated through its inputs (e.g., cigarette papers, raw tobacco, etc.) and compared to official production figures—to its consumption and legal imports and exports can be utilized to illuminate if there is an outflow of illicit products (5–10). Related research from outside the region has also estimated cigarette production using production functions—i.e., input and output prices and volumes as explanatory variables (11).

FINDINGS FROM RECENT STUDIES ESTIMATING ILLICIT TRADE

Argentina

In 2018, researchers collected 4 906 discarded packages in a prescribed and standardized sample of streets across 50% of the census tracts (180 total) in the city of Buenos Aires, the country's capital and largest population center (12). The pack inspection revealed that the illicit market was 4%, which compared to contemporaneous tobacco industry estimates ranging from 14% to 22% (13).

In the first half of 2019, the same research team collected 15 658 discarded packs across eight large Argentine cities including Buenos Aires and estimated that approximately 13.7% of packs were illicit. Of the illicit packs, 45% had counterfeit tax stamps and 55% were foreign cigarette brands imported illegally without paying excise or other taxes (i.e., no tax stamps at all). The foreign brands were overwhelmingly from Paraguay and found in large proportion in the two cities—Posadas (65%) and Salta (29%)—nearest the Paraguayan border (14).

Brazil

Brazil has the most extensive literature estimating illicit trade in the region, and researchers have used multiple methodologies that often serve to cross-validate findings. The use of high-quality government health surveys has been particularly novel and cost-effective. The impetus of this literature is the consistently high levels of illicit trade even though Brazil has a cigarette tracking and tracing system, called Scorpios. These levels of illicit trade strongly suggest that the system does not sufficiently address the ongoing challenges.

Comparing cigarette prices from two nationally representative surveys, researchers identified the proportion of cigarettes consumed that were sold below a threshold price below which the cigarettes were very likely to be illicit. They found that the proportion almost doubled between 2008 and 2013 (16.8% vs. 32.3%) (15).

Starting in 2014, researchers have regularly utilized gap analysis to track illicit trade over time. They found a sustained increase in the estimated proportion of illicit cigarette use, reaching a peak of 42.8% in 2016 (16). From 2017 onwards, real (inflation-adjusted) prices declined largely because there were no excise tax increases and the minimum legal price did not change. The

Brazilian real also depreciated, decreasing smokers' purchasing power to buy (mostly illicit) foreign cigarettes. There was a concomitant decrease in the consumption of illicit cigarettes from Paraguay (38.6% in 2019, based on self-reported brand names not approved by the Health Regulatory Agency) (17, 18). Remarkably and counterintuitively, in the same period, the tobacco industry estimated an increase in the size of the illicit market (from 48% in 2017 to 57% in 2019) (19), designed to pressure the Ministry of Justice to establish a working group to evaluate a reduction in cigarette taxes as a measure to contain smuggling (20).

Researchers in Brazil have also used other methodologies. The share of illicit cigarette consumption based on direct observation of thousands of packs littered in the streets and discarded in the household garbage in five selected Brazilian state capitals ranged from 26.8% in Rio de Janeiro in 2018 to 70.1% in Campo Grande (near the border with Paraguay) in 2019 (3, 21–23). Mainly from brand information, these surveys reveal that most illicit packs were manufactured in Paraguay.

Research has also revealed likely illicit activity by domestic manufacturers. By combining data on the systematic inspection of packs shown during a household interview and on price per pack paid by smokers in their last purchase, the proportion of legal brands being sold below the minimum legal price was estimated at 1.5% for the two most populous Brazilian cities, Rio de Janeiro and São Paulo, in 2019 (23). In the same year, a nationally representative household survey (*PNS*) that uses self-reported information on cigarette brand name found that potential domestic tax evasion by legitimate manufacturers or by illicit cigarettes being produced in illegal factories was likely higher for other cities (24). Not surprisingly, this survey also confirmed that the tobacco industry (*TI*) consistently overestimates the size of the problem of illicit cigarettes being produced illegally or smuggled across the border (e.g., Rio de Janeiro city, *PNS* 18.1% vs. *TI* 41.0%; and São Paulo city, *PNS* 29.8% vs. *TI* 54.0%) (24–26). Despite limitations (low coverage and a high proportion of differential missing information on price per pack across different socioeconomic groups), a major annual telephone survey among residents with landlines in all state capitals also found much lower estimates of illicit cigarette consumption for the same cities (18, 27).

Finally, it is worth noting that recent available national data sources have shown that the difference between the average price per pack paid by smokers of legal cigarettes and the average price paid by smokers who bought illegal cigarettes has declined (in 2013, R\$ 5.29 vs. R\$ 2.31; in 2019, R\$ 6.90 vs. R\$ 4.10) and that around 25% of smokers who bought illegal brands produced in Paraguay in 2019 paid at least the minimum legal price (16, 28). Previously, regular excise tax increases on cigarettes and a minimum cigarette price that was regularly raised contributed to steady price increases of legal cigarettes, but these findings suggest that recent failures to continue these policies are threatening tobacco control progress in Brazil.

Chile

In 2017, researchers used a survey of smokers in greater Santiago (>40% of the country's population) to estimate illicit trade, finding levels much lower than the industry: 10.9% vs. 24% (29, 30). It was novel methodologically because, to generate a representative sample of smokers, it systematically identified points of high traffic to enumerate survey respondents, which were

combined with a quota to meet the characteristics of smokers drawn from a recent national survey. Such an approach works for countries where recent census or similar data of sufficiently high quality to establish where smokers live are not available.

Colombia

In 2016, researchers used a smoker survey across five large cities to estimate the illicit market before a major 2017 cigarette excise tax increase. They found that illicit trade was 3.5% while the industry estimates were at least 14% (31). After the tax increase, the average real price of a pack increased by 28.2%. In 2018, after the tax increase, a second effort found that illicit trade had increased but was still low by global standards at 6.4% and still much lower than the industry estimate of 18% (32). There is anecdotal evidence that policymakers pay attention to independent studies and incorporate them into developing policy. The 2016 estimate was part of the policy discourse prior to the tax reform, as was the second—post-reform—estimate for the new policy's review (32).

Mexico

In November and December of 2017, researchers utilized a cross-validation of a smoker survey and a littered pack collection in eight major cities, including the populous capital. They implemented 2 396 face-to-face interviews of adult smokers and collected 8 204 littered packs. To determine whether cigarette packs were intended for the Mexican market, researchers analyzed the key pack features explicitly identified by the agency that regulates packs, the Comisión Federal para la Protección contra Riesgos (or COFREPRIS). The share of cigarettes identified as illicit was 7.6% from the smoker survey and 8.8% based on the littered pack collection. Importantly, these estimates were significantly lower than the tobacco industry's claim of 16.6% (5, 33). Getting government support for these studies is helpful; for this research, the Pan American Health Organization brokered a direct request from Mexico's Ministry of Finance to develop a rigorous estimate of illicit trade as they considered indexing their tobacco excise tax to inflation (34). Eventually, after the research demonstrated minimal illicit trade, the Ministry indexed the tax, retroactive to 2011.

Uruguay

Researchers in Uruguay utilized 2009 and 2017 GATS surveys to estimate illicit trade (35), using the surveys' strong brand information. Most unregistered brands originated in Paraguay. The illicit market size estimate was 12% for 2017, similar to 2009. It contrasted with contemporaneous estimates of 33% from the association of sales kiosk owners (36).

RELATED RECENT RESEARCH FROM LATIN AMERICA

Brazil and Paraguay

Researchers utilize supply chain analysis to illuminate the complex illicit marketplace. Researchers have shown a clear discrepancy between domestically available raw tobacco (input) and tax-based cigarette production (output) trends in Brazil, a difference that has been generally growing and tracks mostly with overall changes in Brazil's illicit market (11). This

gap shows an excessive amount of inputs given the specific needs to produce legal products, pointing strongly to possible tax evasion by domestic producers (6, 7, 11). Tax simulations suggest that taxed cigarette consumption should have been approximately 10 billion sticks per year higher between 2016 and 2018. To estimate the gap in earlier years, Ribeiro and Pinto (37) compared official sales data to a demand equation they estimated using time-series data, finding that efforts to tax these unreported cigarettes would increase revenues. Similarly, examining later data, Divino et al. (38) found that a 10% reduction in the size of the illicit cigarette market would lead to an increase of 8.5% in total tobacco tax revenue (~1.6 billion reais).

Researchers have also been comparing cigarette consumption to production in Paraguay. They find that over the last two decades, domestic tobacco consumption has been steadily decreasing, domestic cigarette production has accelerated, and registered net cigarette imports (imports minus exports) have generally decreased (10). Between 2008 and 2019, the estimated domestic production of cigarettes was almost seven times greater than estimated domestic consumption, an oversupply of approximately 2.5 billion cigarette packs. This enormous oversupply strongly suggests substantial cigarette smuggling to neighboring countries, well corroborated by the research described above. Further problematic, Paraguay's registered (i.e., legal) major exports—e.g., to Bolivia, Suriname, Aruba, Curacao, and Panama—are often far greater than domestic demand in those countries with no clear evidence of re-export, raising important questions about whether taxes are paid where these cigarettes are ultimately consumed (39).

Finally, several destination countries of illicit Paraguayan cigarettes, including Argentina, Brazil, and Uruguay, are among the main suppliers of raw tobacco and/or other important inputs (paper, filters, etc.) to tobacco manufacturing companies operating in Paraguay (36, 38). Despite clear evidence of a transborder supply chain of illicit tobacco products and the negative consequences on population health and the reduction of public revenues from it, governments in the region are failing to implement cooperative policies. Investigative journalism suggests high-level government complicity in the illicit trade, which helps to explain the inaction (40).

Ecuador

In 2019, to examine illicit trade, researchers implemented both a smoker's survey across the country's three largest cities—Quito, Guayaquil, and Cuenca—and a fourth major port city, Manta; and a littered pack collection in Quito, Cuenca, and Manta (41). Because both imports and exports are not part of Ecuador's tracking and tracing system—clearly fatal flaws—it is challenging to generate a definitive estimate. The research did find that more than half of cigarettes lacked the requisite warning labels, suggesting high levels of illicit market penetration. Importantly, the forensic pack inspection revealed that the largest sources of illicit packs were Marlboro cigarettes from Colombia and Mexico. Concomitantly and brazenly, Marlboro's manufacturer, Philip Morris International—by far the dominant tobacco company in Ecuador—was asking the Ecuadorian Government for compensation for losses due to illicit trade it was helping to facilitate (42). The next largest source was Asia—China and Korea—suggesting a new and different challenge for the region that requires further inquiry.

Multicountry gap analysis

Rather than using gap analysis to focus on measuring the size of illicit markets, Paraje instead uses it for what it does most effectively, analyzing change in illicit trade in five countries (43). This research demonstrates that in Argentina there was a decrease between 2005 and 2009 but then it appeared to stabilize. In Brazil, the findings suggest an increase from 2008 to 2013, which is consistent with Iglesias et al. (16). Challenging tobacco industry orthodoxy about what causes illicit trade, the analysis does not discern major changes in illicit cigarette trade in that same period for Chile, where there was a major price increase, or Colombia and Peru, where there were sizeable tax increases.

CONCLUSION

A decade ago, independent rigorous research on illicit trade in tobacco products in Latin America was scarce, but since then researchers have employed multiple and now well-established rigorous methodologies to accurately estimate levels and other characteristics of the trade, and to examine change over time. Comparing these transparent, rigorous estimates to the industry's—almost inevitably using flawed and/or opaque methodologies—it is clear the tobacco industry typically grossly overestimates these levels. These evidence-based comparisons are important to support tobacco control efforts and to help governments counter the industry pressure with new, evidence-based narratives. These dynamics also reinforce the imperative for countries to have effective tracking and tracing systems, serving to support tobacco taxation as a tobacco control strategy.

It is easy to understand why it is important to update estimates regularly because there is sometimes meaningful change. For example, illicit actors, often encouraged by the tobacco industry, may adapt their practices in response to government actions. As is evident in Colombia's tobacco excise tax reform, it is also helpful to measure any effects of tobacco control policies on illicit trade, most typically to show that tobacco control policies and illicit trade are usually weakly related.

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Evidencia reciente sobre el comercio ilícito de cigarrillos en América Latina

RESUMEN

La industria tabacalera sigue presentando el comercio ilícito de los productos derivados del tabaco como argumento para ralentizar, detener o revertir las actividades de control del tabaco en América Latina, como el aumento de los impuestos especiales al consumo de tabaco. En la mayoría de los casos, las estimaciones de la industria sobre el comercio ilícito, que generalmente tienen fallas y son poco transparentes, son pequeñas frente a las estimaciones hechas mediante investigaciones independientes y rigurosas. A menudo, los estudios independientes concluyen que los niveles de comercio ilícito son en su mayoría inconsecuentes o fácilmente manejables (< 12 %). Casi siempre, los resultados de la industria sobreestiman de manera considerable el mercado ilícito. Afortunadamente, una floreciente bibliografía empírica en la región, en países como Argentina, Brasil, Chile, Colombia, México y Uruguay, está arrojando luz sobre la verdadera naturaleza y los niveles reales de este comercio, generalmente empleando análisis de brechas que comparan las ventas que generan impuestos con el consumo, así como estudios de inspección de paquetes mostrados por fumadores encuestados o paquetes desechados en las calles o en la basura. En otras investigaciones en países como Brasil, Colombia, Ecuador y Paraguay se examinan las cadenas de suministro para ayudar a identificar las fuentes ilícitas. Esta investigación ya está ayudando a los gobiernos a abordar cualquier problema real con el comercio ilícito y reafirmar ante las partes interesadas que los esfuerzos de control del tabaco deben fortalecerse, no minimizarse.

Palabras clave

Comercialización de productos derivados del tabaco; tributación de los productos derivados del tabaco; industria del tabaco; América Latina.

Evidências recentes sobre o comércio ilícito de cigarros na América Latina

RESUMO

A indústria do tabaco continua a apresentar o comércio ilícito de produtos derivados do tabaco como um motivo para retardar, interromper ou reverter os esforços para controlar o tabagismo na América Latina, incluindo o aumento dos impostos específicos sobre o consumo de tabaco. Na maioria dos casos, as estimativas do comércio ilícito feitas pela indústria, de modo geral falhas e pouco transparentes, fazem com que os resultados de pesquisas independentes e rigorosas pareçam menores. Não raro, estudos independentes constataam que os níveis do comércio ilícito são, na maioria dos casos, pouco significativos ou facilmente administráveis (<12%). Quase sempre, as constatações da indústria superestimam grosseiramente o mercado ilícito. Felizmente, uma bibliografia empírica crescente na região — abrangendo Argentina, Brasil, Chile, Colômbia, México e Uruguai — está lançando luz sobre os níveis efetivos e a natureza desse comércio, normalmente empregando uma análise de lacunas que compara as vendas tributadas com o consumo e/ou estudos baseados na inspeção das embalagens, usando embalagens mostradas por fumantes em levantamentos ou descartadas nas ruas ou no lixo. Outros estudos em países como Brasil, Colômbia, Equador e Paraguai examinam as cadeias de fornecimento para ajudar a identificar as fontes ilícitas. Este estudo já está ajudando os governos a abordar problemas reais com o comércio ilícito e a assegurar às partes interessadas que os esforços para controlar o tabagismo devem ser reforçados em vez de reduzidos.

Palavras-chave

Comercialização de produtos derivados do tabaco; tributação de produtos derivados do tabaco; indústria do tabaco; América Latina.
