

Asia Illicit Tobacco Indicator 2015

Prepared by International Tax and Investment Center
and Oxford Economics
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Disclaimer

The Asia Illicit Tobacco Indicator 2015 Report (the “Report”) on the illicit tobacco trade in 17 selected Asian markets (including Australia and New Zealand) has been prepared by the International Tax and Investment Center (ITIC) and its partner, Oxford Economics (OE). ITIC and OE enjoyed academic freedom and full editorial control of the Report. We are grateful for the inputs and data received from public sector and industry stakeholders.

ITIC and OE prepared the Report in accordance with specific terms of reference agreed between Philip Morris International Management SA, an affiliate of Philip Morris International (PM), and ITIC. Financial support for the Report was provided by PM. ITIC and OE assume all responsibility for the Report analysis, findings, and conclusion. The terms of reference under which ITIC and OE were engaged by Philip Morris International Management SA are detailed in Annex F at the end of this Report.

Introduction

Since 1995, the International Tax and Investment Center (ITIC) and Oxford Economics have worked on Excise Tax related issues. If designed and implemented according to best practices, Excise Taxes can be a stable and predictable source of government revenues. Based on this guiding principle, ITIC and Oxford Economics expanded our research and education programs to focus on the tax, customs, and law enforcement elements of Excise Taxation.

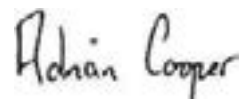
The purpose of the “Asia Illicit Tobacco Indicator 2015” Report is to provide policymakers and administrators with an objective, independent annual benchmark on illicit tobacco trade and its impact on government revenues.

The G-20/OECD base erosion and profit shifting (BEPS) initiative is focusing on direct taxation. However, governments are also facing significant budget losses from indirect taxation. This Report examines the erosion of the indirect tax base.

ITIC and Oxford Economics hope that this Report will help raise awareness and understanding of the growing problem of illicit trade in tobacco products and the associated indirect tax revenue losses. It is our goal to provide you with a measurement tool that will contribute to effective actions to combat illicit tobacco and thus protect government revenues.



Daniel A. Witt
President
International Tax and Investment Center



Adrian Cooper
Chief Executive Officer
Oxford Economics

About us



The International Tax and Investment Center (ITIC) is an independent, non-profit research and education organization founded in 1993 to promote tax reform and public-private initiatives to improve the investment climate in transition and developing economies. A key part of ITIC's mission is to undertake research and fact-based analysis to guide policymakers and administrators.

From 12 offices around the world, ITIC works closely with ministries of finance, customs services, and tax authorities in 85 countries, as well as international financial institutions such as the International Monetary Fund, World Bank, World Customs Organization, and Organization for Economic Cooperation and Development. ITIC's analytic agenda, global thematic initiatives, regional fiscal forums, and capacity-building efforts are supported by more than 100 corporate sponsors.



Oxford Economics was founded in 1981 as a commercial venture with Oxford University's business college to provide economic forecasting and modelling to UK companies and financial institutions expanding abroad. Since then, we have become one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on 200 countries, 100 industrial sectors, and over 3,000 cities. Our best-of-class global economic and industry models and analytical tools give us an unparalleled ability to forecast external market trends and assess their economic, social, and business impact.

Headquartered in Oxford, England, with regional centres in London, New York, and Singapore, Oxford Economics has offices across the globe. We employ over 250 full-time staff, including 150 professional economists, industry experts, and business editors – one of the largest teams of macroeconomists and thought leadership specialists. Our global team is highly skilled in a full range of research techniques and thought leadership capabilities, from econometric modelling, scenario framing, and economic impact analysis to market surveys, case studies, expert panels, and web analytics.

Oxford Economics is a key adviser to corporate, financial and government decision-makers, and thought leaders. Our worldwide client base now comprises over 1,000 international organisations, including leading multinational companies and financial institutions; key government bodies and trade associations; and top universities, consultancies, and think tanks.

Foreword

“Not only does the latest edition of the Asia Illicit Tobacco Report provide a thorough and professional account of the problem affecting the region in 2015, considered together with the three previous reports, it starts to delineate trends and patterns over an extended period of time, thus offering Governments a crucial tool to assess the very impact of their policies. As illicit trade in tobacco nurtures criminal groups spanning the globe, it can only be hoped that a similar initiative be replicated in other regions of the world.”

Stefano Betti

Former Senior Counsel – Office of Legal Affairs, INTERPOL General Secretariat

“Continuing to broaden its collection methodology and adding further valuable insight this latest report illustrates illicit trade in tobacco products remains price sensitive and demand and supply driven. It indicates consumption of untaxed tobacco products continues to grow across the region and that consumers and criminal networks continue to exploit porous borders, disparities in tax-driven prices between neighbouring countries and weak enforcement. Strong political will, public education, coordinated regional responses and enhanced public/private collaboration remain critical to stem further insidious erosion of the legitimate tax base.”

Allen Bruford

Former Deputy Director of the World Customs Organisation

“This fourth annual report provides important data for governments, health bodies, tax administrators and manufacturers concerned about the level of illicit consumption of cigarettes. Although consumption has fallen once again, it remains stubbornly high. The trend analyses and data sets now available for four years will enable all parties seeking to eradicate illicit consumption to test the efficacy of their actions so far and determine what new approaches are needed. By comparing different countries’ and manufacturers’ approaches, researchers can point to and promote best practice.”

Dave Hartnett

Former Permanent Secretary for Tax, HM Revenue and Customs, United Kingdom

“Criminal networks that are engaged in the illicit trafficking of narcotics, counterfeits, humans, illicit tobacco and illegal wildlife trade, pose not only an economic threat that results in loss of revenue for governments and businesses alike, but also harms the well-being, health, safety, and security of ordinary citizens.”

David M. Luna

Chair, OECD Task Force on Countering Illicit Trade

Foreword

“The illicit trade in tobacco products funnels billions (USD) to criminal groups and nefarious actors while depriving governments from much needed tax revenues. It is vital that governments, academia, and the private sector work together to create research methodologies, datasets, and evidence based policies to reduce this profitable form of illicit trade. The Asia Illicit Tobacco Indicator 2015 provides policy makers with accessible research and valuable insight into the illegal tobacco markets occurring in 17 Asian countries. As the report indicates, the consumption of illicit cigarettes in the ASEAN region exceeds world-wide estimates, despite the regions decrease in illicit tobacco consumption from prior years’ estimates for the region. This report’s regional and country-specific findings, triangulated with other data sources and studies, allow countries, intergovernmental organizations, nonprofits, and regional bodies to tailor their policies and capacity building programs so they may effectively and efficiently counter the illicit trade in tobacco products.”

Dr. Sharon Melzer

Senior Fellow & Affiliated Faculty, Schar School of Policy and Government, Terrorism, Transnational Crime and Corruption Center, George Mason University

“The Asia Illicit Tobacco Indicator continues the tradition of informative reports that quantify the scale of the illicit tobacco markets and analyze its dynamics in key Asian Countries. I am very happy to note that its methodology has been further improved and that data collected and analyzed are more and more reliable. This report is a good example of applied research producing good information for policy makers and practitioners.”

Prof. Ernesto Savona

Director of Transcrime (Joint Research Centre on Transnational Crime)

“The Asia Illicit Tobacco Indicator 2015 Report is another valuable resource from its comprehensive and easy-to-understand analysis on incidence of illicit cigarettes. The report clearly shows the flow of illicit trade and the extent of revenue loss. I hope it will increase greater awareness to the state agencies and public at large. It offers an excellent resource and tool for enforcement officers to devise intervention strategies and also for central revenue agencies to balance its tax policy reforms.”

The Honorable Dato’ Sri Mohamed Khalid bin Hj Yusuf

Former Director-General of the Royal Malaysia Customs Department

“Illicit consumption of cigarettes is an underground activity, which is still the abyss to explore in economic research. This report sheds light on the excellence of economic modeling in estimating the scale of illicit tobacco trade and its impacts on the tax losses in selected Asian countries. As an economic analytical scaffold for all stakeholders, the study provides significant insights on the well-balanced intervention strategy for tax policy reforms.”

Dr. Chu-Wei Tseng

Chair Professor of the Department of Public Finance and Taxation and Dean of the College of Business, Chinese University of Technology in Taiwan; former Legislator, Legislative Yuan of Taiwan

We would like to acknowledge and thank the expert review panel. Their comments and recommendations helped us make important improvements in this years report. Furthermore, as per some of the experts’ comments, the sections relating to methodology and data collection processes will be expanded in future reports. The expert panel included Mr. Joel L. Tan-Torres, former Commissioner Bureau of Internal Revenue, Philippines and Chairman of the Board of Accountancy, Philippines, and Mr. Jose Tong, former Superintendent, Hong Kong Customs. The expert review panel enjoyed full academic freedom and independence.

Scope

This Report provides an overview of the nature of the illicit trade of cigarettes¹ across 17 selected Asian markets (including Australia and New Zealand). It establishes estimates of consumption of illicit cigarettes and the impact this has on tobacco tax revenue. To this end, the purpose of this Report is to:

- Validate Illicit Incidence levels, reviewing and refining estimates using available sources such as Empty Pack Surveys, consumer research, and other sources.
- Estimate Illicit Consumption in terms of volume, including where possible a breakdown by Market Variant.
- Estimate annual government Tax Loss from indirect taxes on cigarettes including Excise Tax, VAT/GST/sales tax, and Earmarked Taxes.

This year, the selected 17 markets provide for coverage of all 10 ASEAN markets, as well as Australia, Hong Kong, Macao, New Zealand, Pakistan, South Korea, and Taiwan.²

¹Except for Australia and New Zealand, where RYO volumes are also included.

²For the purposes of this Report, "Hong Kong" and "Macao" refer to the two Special Administrative Regions of the People's Republic of China.

Methodology

We developed an Illicit Trade (IT) Flows Model to estimate the size of Illicit Consumption and trade flows in 17 markets across Asia. A detailed methodology is contained within the Annexes accompanying this Report, a summary of which is provided below:

- To measure Legal Domestic Sales, we used official statistics on duty-paid volumes and In-Market Sales (IMS) data provided by the industry.
- Legal Domestic Consumption was subsequently calculated by adjusting our estimates of Legal Domestic Sales for Outflows of legal cigarettes based on analysis of Empty Pack Surveys and consumer research.¹
- The incidence and size of Non-Domestic Inflows were then estimated using a variety of sources, primarily Empty Pack Surveys. Empty Pack Surveys provide an estimate of the non-domestic share in Total Consumption. By scaling up Legal Domestic Consumption using this non-domestic share, we get an estimate of the volume of Non-Domestic Inflows.
- The Empty Pack Surveys also provide a breakdown of the Inflows by Market Variant so that these could be matched against the Outflows data. The IT Flows Model was then “iterated” to ensure consistency between Inflows and Outflows by market, leading to a refinement of the estimates of incidence and volume of Inflows. More details on the Empty Pack Survey methodology is provided in the market-specific reports and the Annex.
- The volume of Non-Domestic Legal cigarettes entering each market was estimated based on the theoretical maximum volume of legal Duty-Free Inflows of cigarettes from other markets, using passenger data, Smoking Prevalence in tourists’ market of origin, and the passenger duty-free personal import allowance.
- The volume of Non-Domestic Illicit Inflows (i.e., Counterfeit, Contraband, and Non-Domestic Illicit with Unspecified Market Variant) is subsequently calculated by subtracting our estimates of Non-Domestic Legal from the total volume of Non-Domestic Inflows.
- Domestic Illicit Consumption was identified primarily through the use of retail audits where relevant. In addition, this Report supplements the analysis for Indonesia with estimates of Domestic Illicit Incidence from Satriawan et al.² in order to capture information on packs with the incorrect Excise Tax stamp attached. The decision to include additional information on Domestic Illicit was taken after meeting with the university authors to discuss the methodology and findings of their research. The revised methodology used for this Report has been applied to both current and historical estimates of Illicit Consumption, affecting the individual market and aggregate figures presented in this Report. We would like to thank the Centre for Economic & Public Policy Studies at Gadjah Mada University for sharing their findings and giving their permission to use the research.
- Finally, the Tax Loss associated with Illicit Consumption in each market was calculated using the applicable price and tax levels and structures for 2015. For those markets where the fiscal year differs from the calendar year, fiscal year data were adapted to be presented on a calendar year basis for presentation at the aggregate level. The Report focuses on the impact of indirect taxation only.
- Throughout this Report, figures presented in tables and charts may not add up due to rounding.

¹Conducted by independent research companies and commissioned by PM or jointly by several tobacco manufacturers.

²Satriawan, Elan, Artidiatun Adji, Kun Haribowo, Mohtar Rasyid, Restiatun, Wisnu Setiadi Nugroho, Riswanti Sekaringsih, Andika Ridha Ayu Perdana, Nadhila Adani, M. Alif Timur Ghifari, “Survey on Cigarettes Distribution in Indonesia”, Center for Economic and Public Policy Studies, Universitas Gadjah Mada, Unpublished Report, 2014.

Executive Summary: Illicit Consumption

This is the fourth year of the Asia Illicit Tobacco Indicator Report. The availability of data on Illicit Consumption in New Zealand has enabled us to expand the coverage to include 17 markets. Historical Reports in the Asia Illicit Tobacco Indicator series are available via the following link <http://www.oxfordeconomics.com/asia-illicit-tobacco/overview>.

One in seven cigarettes consumed in 2015 across the 17 markets in this Report was illicit

- In the 17 markets included in this Report, Total Consumption amounted to an estimated 821.1 billion cigarettes in 2015, of which 14.3% or 117.3 billion cigarettes were illicit (i.e., non-duty paid).
- The aggregate volume of illicit cigarettes consumed across the 17 markets included in this Report is estimated to be higher than Total Consumption in most of the markets included in this Report, with the exception of Indonesia.
- Illicit Incidence was estimated to be higher than 10% in 11 markets: Australia, Brunei, Hong Kong, Indonesia, Laos, Macao, Malaysia, Pakistan, Philippines, Singapore, and Vietnam. In five of these markets, Illicit Incidence was greater than 25%, equivalent to one in every four cigarettes consumed (Brunei, Hong Kong, Macao, Malaysia, and Pakistan).
- The markets with the highest estimated volume of Illicit Consumption were Indonesia (38.3 billion illicit cigarettes), Pakistan (27.0 billion), Vietnam (22.2 billion), and Philippines (13.0 billion). Together, these four markets accounted for over 85% of Illicit Consumption across the 17 markets included in this Report.
- Domestic Illicit cigarettes (i.e., domestically produced but non-duty paid cigarettes) – identified in Indonesia, Pakistan, and Philippines – comprised 60% of Total Illicit Consumption in 2015.
- The remaining 46.8 billion illicit cigarettes consumed were composed of Non-Domestic Illicit Inflows, primarily of Unspecified Market Variant products.¹ Vietnam accounted for nearly half of the Non-Domestic Illicit cigarettes consumed in 2015 across the 17 markets included in this Report, with an estimated 22.2 billion Non-Domestic Illicit cigarettes consumed.

Composition of cigarette consumption in 17 Asian markets

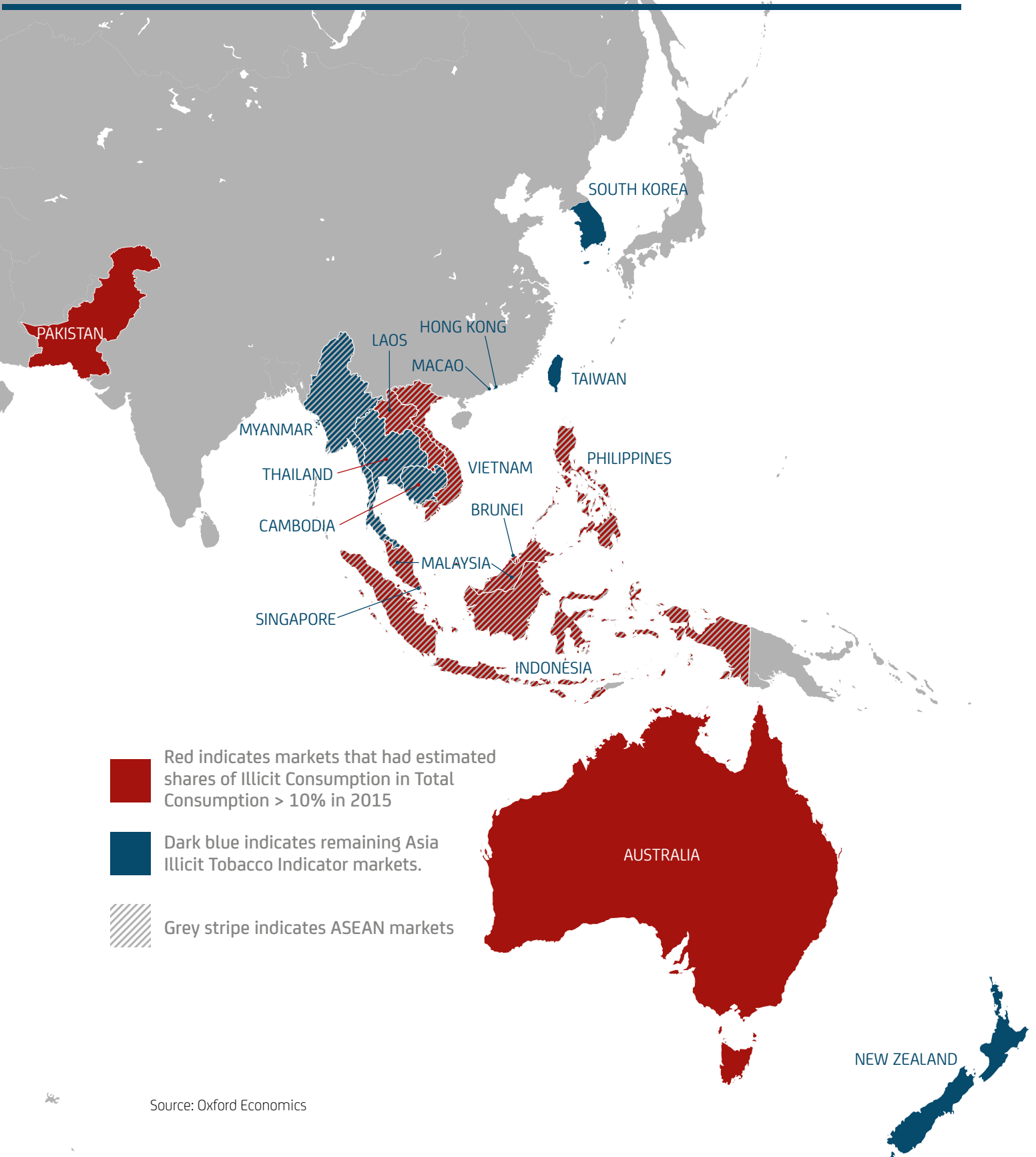
	2015	
	Cigarettes bn	%
Legal Domestic Consumption (LDC)	698.8	85.1
Legal Domestic Sales (LDS)	701.3	85.4
Outflows of domestic duty-paid cigarettes	-2.5	-0.3
Total Non-Domestic Inflows (ND)	51.8	6.3
Non-Domestic Legal (NDL)	4.9	0.6
Non-Domestic Illicit	46.8	5.7
Domestic Illicit	70.5	8.6
Total Consumption	821.1	100.0
Total Illicit Consumption	117.3	14.3

Source: Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

Executive Summary:

Map of Asia Illicit Tobacco Indicator markets



Executive Summary: ASEAN summary

In 2015, an estimated 13.9% of all cigarettes consumed in ASEAN were illicit.

- The largest markets in terms of the volume of illicit cigarettes consumed in ASEAN were Indonesia and Vietnam.
- In Indonesia, this is almost entirely composed of Domestic Illicit cigarettes, underpinned by a complex Excise Tax system which classifies cigarettes into 12 different tax tiers according to the cigarette type, production level, and price. This provides an opportunity for domestic manufacturers to under-declare their Excise Tax liabilities to authorities.
- In Vietnam, Illicit Consumption primarily consists of Non-Domestic Illicit of Unspecified Market Variant, including the brands “Jet” and “Hero”.
- Other markets with a significant volume of illicit cigarette consumption include Philippines, the only ASEAN market other than Indonesia with a significant presence of domestic non-duty paid cigarettes, and Malaysia, another market composed mostly of Non-Domestic Illicit of Unspecified Market Variant.
- Indonesia, Malaysia, Philippines, and Vietnam accounted for nearly 97% of Total Illicit Consumption in ASEAN.
- Although much smaller in terms of the volume of cigarettes consumed, Illicit Incidence was higher than the average for ASEAN Brunei, Laos, and Singapore.
- Only three markets in ASEAN exhibited an Illicit Incidence below 10% in 2015 (Cambodia, Myanmar, and Thailand).

Illicit Consumption in the ASEAN region fell to 82.9 billion cigarettes in 2015.

- Illicit Consumption fell by 6.2% in 2015 to the lowest level since the Asia Illicit Tobacco Indicator first included a complete coverage of the ASEAN region.
- Domestic Illicit Consumption fell by 13.1% in 2015 – underpinned by a decline of 39.2% in Philippines following the introduction of a system of Excise Tax security stamps to improve tax administration.
- The decline in Domestic Illicit Consumption in ASEAN offset a rise in Non-Domestic Illicit Inflows, which increased by 6.5% in comparison with 2014. Six ASEAN markets experienced an increase in the estimated volume of Non-Domestic Illicit Consumption: Brunei, Cambodia, Laos, Philippines, Thailand, and Vietnam.

Composition of cigarette consumption in ASEAN

	2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	523.7	85.3	515.6	85.0	512.6	85.7	-0.6
Legal Domestic Sales (LDS)	525.3	–	516.9	–	514.5	–	-0.5
Outflows of domestic duty-paid cigarettes	-1.5	–	-1.3	–	-1.9	–	46.1
Total Non-Domestic (ND) Inflows	40.8	6.6	34.0	5.6	35.8	6.0	5.4
Non-Domestic Legal (NDL)	3.4	0.6	2.8	0.5	2.6	0.4	-7.4
Non-Domestic Illicit	37.4	6.1	31.2	5.1	33.2	5.6	6.5
Domestic Illicit	49.3	8.0	57.1	9.4	49.7	8.3	-13.1
Total Consumption	613.8	100.0	606.7	100.0	598.1	100.0	-1.4
Total Illicit Consumption	86.7	14.1	88.3	14.6	82.9	13.9	-6.2

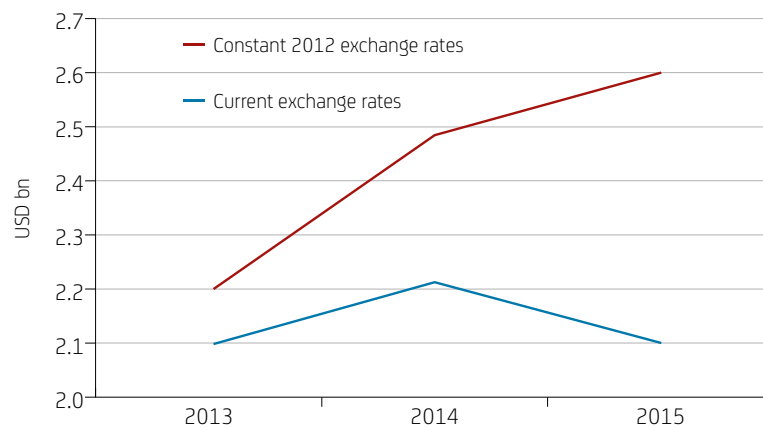
Source: Oxford Economics

Executive Summary: Government Finances

The Tax Loss in ASEAN has fallen in nominal terms by 0.3% since 2013.

- The total government Tax Loss in ASEAN was estimated at USD 2.1 billion in 2015. Indonesia, Malaysia, Philippines, and Vietnam accounted for more than 90% of the total USD nominal Tax Loss.
- The estimated Tax Loss fell by 5.9% in USD nominal terms in 2015, with seven ASEAN markets experiencing a decline in Tax Loss in comparison with 2014: Brunei, Indonesia, Malaysia, Myanmar, Philippines, Singapore, and Vietnam.
- However, when controlling for the impact of currency movements vs. USD, the estimated Tax Loss in 2012 prices increased by 2.9% in 2015, and is now 18.8% than in 2013.
- With the volume of Illicit Consumption remaining relatively stable, the increase in the estimated Tax Loss since 2013 is underpinned by rising Excise Taxes throughout the region, most notably in Malaysia and Philippines.

Estimated Tobacco Tax Loss in ASEAN (calendar year)



Source: Oxford Economics

Across the 17 markets included in this Report, an estimated USD 4.5 billion of government revenues were lost due to illicit tobacco consumption.

- The level of Tax Loss estimated across the 17 markets included in this Report was higher than total government revenues collected in each of Brunei, Cambodia, and Laos in 2015.¹
- The largest Tax Loss in 2015 was estimated in Australia (USD 1.3 billion) – a large market with an estimated Illicit Incidence of 13.6%. The Excise Tax rate in nominal terms is also the highest of the markets included in this analysis.
- In Indonesia, the estimated Tax Loss was nearly USD 0.7 billion in 2015. Indonesia is the biggest market in our sample, with a significant presence of Domestic Illicit Consumption. Data restrictions mean that this represents a lower-bound estimate of the Tax Loss in Indonesia.²
- The estimated Tax Loss was greater than USD 0.3 billion in four more markets: Hong Kong, Malaysia, Pakistan, and Philippines. In Hong Kong and Malaysia, this is underpinned by high levels of Illicit Incidence (above 25%) and relatively high nominal Excise Tax rates. For Pakistan and Philippines, the volume of illicit cigarettes consumed is much higher than most of the sampled markets.
- The level of Tax Loss estimated in smaller markets, such as Cambodia, Laos, and Myanmar, is much lower. Together, these markets account for less than 3% of Total Consumption, and the nominal Excise Tax rate is also low in comparison with other markets in our sample.

¹Government revenue data sourced from the IMF World Economic Outlook (WEO), via Haver Analytics.

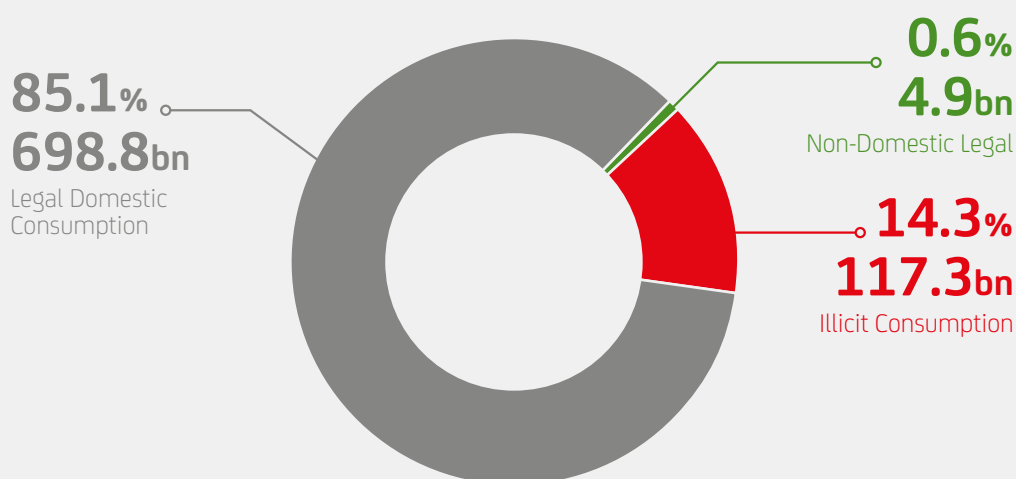
²A significant proportion of Domestic Illicit Consumption (nearly 50%) is composed of under-declaration of Excise Tax liabilities by domestic manufacturers. However, the data is not available to estimate the level of tax gap for these cigarettes (i.e., the difference between the actual tax liability of cigarettes and the tax paid according to the inappropriate Excise Tax stamp affixed). We therefore exclude this proportion of Domestic Illicit Consumption from the analysis of Tax Loss in Indonesia.

Regional Overview: Total Consumption

Total Consumption (legal and illicit) across the 17 markets included in this Report was an estimated 821.1 billion cigarettes in 2015. Total cigarette consumption consists of:

- **Legal Domestic Consumption** – After adjusting the volume of Legal Domestic Sales for Outflows of cigarettes to other markets included in this Report, Legal Domestic Consumption amounted to an estimated 698.8 billion cigarettes in 2015 (85.1% of Total Consumption).
- **Non-Domestic Legal** – Consumption of Non-Domestic Legal cigarettes amounted to 4.9 billion cigarettes (0.6% of Total Consumption).
- **Illicit Consumption** – 14.3% of Total Consumption, or 117.3 billion cigarettes, was estimated to have been illicit in 2015, consisting of Non-Domestic Illicit and Domestic Illicit cigarettes.¹

Composition of cigarette consumption 2015



Source: Oxford Economics

¹Non-Domestic Illicit includes Australian Chop-chop (unbranded loose tobacco) and Illicit RYO in New Zealand.

Regional Overview: Illicit Consumption

An estimated 117.3 billion illicit cigarettes were consumed across the 17 markets included in this Report. This is equivalent to nearly one in every seven cigarettes consumed in 2015.

- The four largest markets for the volume of illicit cigarettes consumed were Indonesia, Pakistan, Philippines, and Vietnam.
- In Indonesia, Illicit Consumption accounted for an estimated 11.8% of Total Consumption (38.3 billion cigarettes). This is almost entirely composed of Domestic Illicit cigarettes. As the largest market included in this Report, Indonesia accounted for nearly one-third of Total Illicit Consumption.
- In Pakistan, an estimated 27.0 billion illicit cigarettes were consumed in 2015. This is equivalent to nearly one in every three cigarettes consumed in the market. Domestic Illicit cigarettes accounted for 77.3% of total Illicit Consumption in Pakistan.
- Pakistan also experienced the largest increase in the volume of Illicit Consumption in 2015, equivalent to 5.8 billion cigarettes. This represents a 27.1% increase in Illicit Consumption. Both Domestic and Non-Domestic Illicit contributed to the rise in Illicit Consumption.
- Around 22.2 billion illicit cigarettes are estimated to have been consumed in Vietnam in 2015, composed primarily of Non-Domestic Illicit with Unspecified Market Variant.¹
- Despite falling by 34.5% in 2015, Total Illicit Consumption remains a significant problem in Philippines, with an estimated 13.0 billion illicit cigarettes consumed in 2015. This is 6.9 billion lower than the volume of illicit cigarettes consumed in 2014, a decline that coincides with the implementation of a new tax stamp regime in the market.

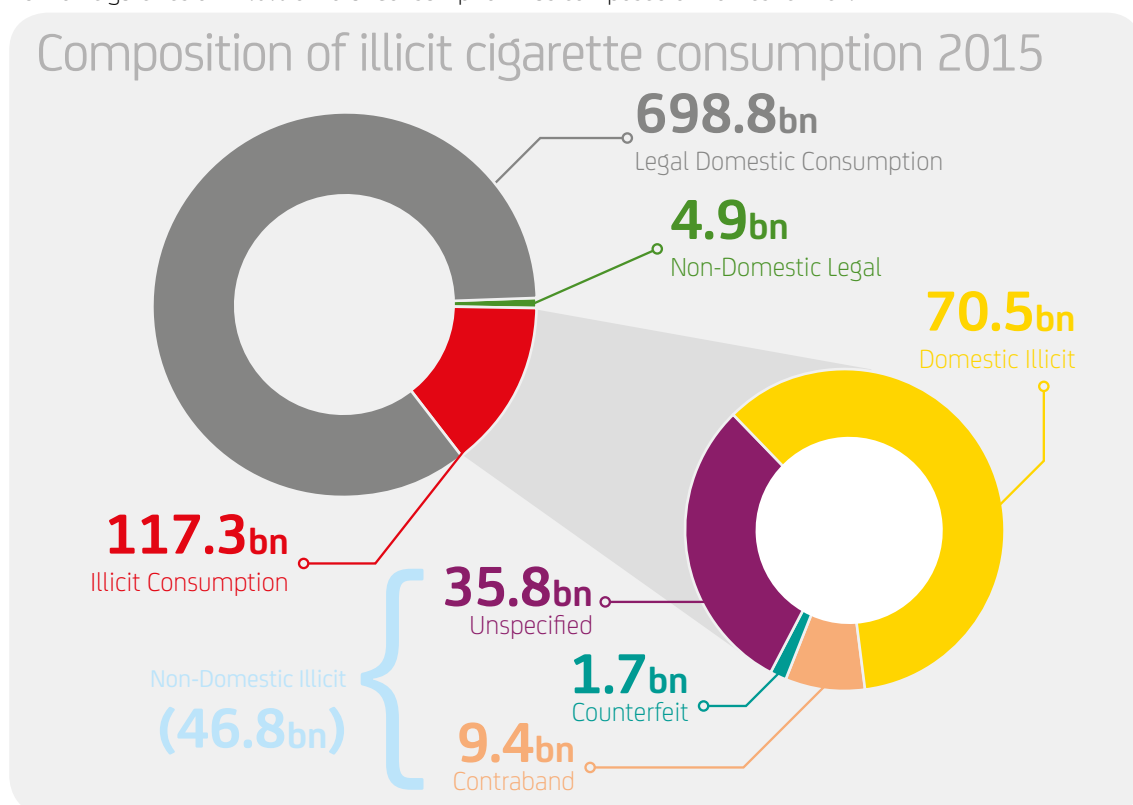
Illicit Incidence across the 17 markets included in this Report was an estimated 14.3% in 2015. Illicit Incidence was higher than 10% in 11 of the 17 markets.

- In Malaysia, an estimated 36.9% of Total Consumption was illicit in 2015, rising by 3.2pp in comparison with 2014. Non-Domestic Illicit Inflows of Unspecified Market Variant represented nearly 80% of Total Illicit Consumption.
- Illicit Incidence rose to 29.1% in Hong Kong, 1.1pp higher than estimated in 2014. The increase in Illicit Consumption in Hong Kong was attributable to Non-Domestic Illicit Inflows, with consumption of cigarettes purchased in China, Duty-Free labelled products, and Unspecified Market Variant products all increasing.
- In Laos, Illicit Incidence rose to 19.0% in 2015, from 8.8% in 2014. The higher level of Illicit Consumption was underpinned by a significant increase in Inflows from Cambodia.
- The level of Illicit Incidence in Singapore fell for a third consecutive year in 2015. Illicit Incidence is now more than 10pp lower than in 2012, the first year for which the Asia Illicit Tobacco Indicator estimates figures. However, at 14.4%, Illicit Incidence is slightly above the average of the 17 markets included in this Report.
- Illicit Consumption also fell in Australia, to 13.6% of Total Consumption in 2015, from 13.9% in 2014. This was driven by a 4.4% decline in the volume of Chop-chop consumed (unbranded loose tobacco) and a 7.3% decline in Non-Domestic Illicit cigarettes.
- In New Zealand, which is included in the Asia Illicit Tobacco Indicator research for the first time, Illicit Incidence is estimated to be relatively low at just 5.3% in 2015. The majority of Illicit Consumption was composed of Inflows on Non-Domestic Illicit Cigarettes, with a small volume of Illicit RYO Consumption also identified.

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

Regional Overview: Composition of Illicit Consumption

- **Non-Domestic Illicit Consumption** – This is composed of Non-Domestic Illicit with Unspecified Market Variant, Contraband, and Counterfeit cigarettes:¹
 - **Non-Domestic Illicit with Unspecified Market Variant** – In five markets (Australia, Malaysia, Pakistan, Taiwan, and Vietnam), more than one billion cigarettes in this category were consumed in 2015. Vietnam was the largest market, in which 19.6 billion Non-Domestic Illicit with Unspecified Market Variant cigarettes were consumed. The top brands of Non-Domestic Illicit of Unspecified Market Variant as identified by the Empty Pack Surveys were:
 - Jet (13.7 billion cigarettes primarily identified in Vietnam);
 - Hero (5.3 billion, Cambodia and Vietnam);
 - Pine (1.6 billion, Pakistan);
 - Era (1.2 billion, Brunei and Malaysia);
 - John (1.1 billion, Malaysia); and
 - Gudang Garam (0.9 billion, Malaysia).
 - **Contraband** – More than 1 billion Contraband cigarettes were consumed in three markets – Australia, Hong Kong, and Vietnam. In total, these three markets accounted for more than half of Total Consumption of Contraband in 2015.
 - **Counterfeit**² – Counterfeit cigarettes were largely concentrated in Philippines, where an estimated 1.4 billion Counterfeit cigarettes were consumed in 2015 (equivalent to nearly 80% of total Counterfeit consumption in the 17 markets covered by this Report).
- **Domestic Illicit** – cigarettes of this type were identified in three markets: Indonesia, where an estimated 38.1 billion Domestic Illicit cigarettes were consumed, equivalent to 11.7% of Total Consumption;³ Pakistan, where 20.8 billion or 24.2% of Total Consumption was composed of Domestic Illicit; and Philippines, where 11.6 billion cigarettes or 12.0% of Total Consumption was composed of Domestic Illicit.



Source: Oxford Economics

¹Non-Domestic Illicit with Unspecified Market Variant includes Australian Chop-chop (unbranded loose tobacco) and RYO illicit consumption in New Zealand.

²Note that Counterfeit estimates result solely from Empty Pack Surveys (and a consumer survey in Taiwan). Packs of PM brands were analysed for authenticity in all the markets, whereas packs of other participating companies were also analysed in Australia, Hong Kong, Malaysia, New Zealand, Singapore, South Korea, and Taiwan. As such, Total Counterfeit volumes could be underestimated as the analysis only includes those identified by participating companies.

³Based on the Domestic Illicit estimate share of Satriawan, Elan, Artidiatun Adji, Kun Haribowo, Mohtar Rasyid, Restiatun, Wisnu Setiadi Nugroho, Riswanti Sekaringsih, Andika Ridha Ayu Perdana, Nadhila Adani, M. Alif Timur Ghifari, "Survey on Cigarettes Distribution in Indonesia", Center for Economic and Public Policy Studies, Universitas Gadjah Mada, Unpublished Report, 2014.

Regional Overview: Government Finances¹

The estimated Tax Loss in 2015 was USD 4.5 billion for the 17 markets covered in this Report.

- Australia accounted for the largest share of the total Tax Loss in the sample of markets covered by this Report, a function of the size of the domestic market, the scale of illicit trade, and the high-tax environment. In total, Australia accounted for nearly 30% of the total Tax Loss in 2015 (USD 1.3 billion or AUD 1.7 billion), compared with just 2.6% of the total volume of illicit cigarettes consumed.
- The total Tax Loss in Australia has increased by around 50% (in local currency terms) since 2012 despite a relatively stable level of Illicit Consumption, driven by successive double-digit increases in Excise Tax rates.
- With an Illicit Incidence of around 36.9%, the estimated Tax Loss was also high in Malaysia (USD 562 million or MYR 2.2 billion), accounting for around 12.4% of the total Tax Loss across the 17 markets in this Report in 2015.
- In Pakistan, the nominal Tax Loss in local currency has approximately doubled since 2012, rising to USD 481 million (PKR 49.4 billion) in 2015. Both higher Excise Tax rates and rising levels of Illicit Consumption have underpinned the increase in Tax Loss. The Excise Tax Loss as a proportion of total Potential Excise Tax revenues rose above 30% in 2015.
- In Philippines, the estimated Tax Loss was USD 394 million (PHP 17.9 billion) in 2015, compared with USD 62 million (PHP 2.6 billion) in 2012, following a sharp rise in Domestic Illicit Consumption in 2013. This is despite a significant decline in estimated Tax Loss in 2015, which was in line with a corresponding fall in the volume of Illicit Consumption.
- In Indonesia, we estimate a Tax Loss of USD 688 million (IDR 9.2 trillion) in 2015. This represents a lower-bound estimate of the true value of Excise Tax Loss in Indonesia.²
- In Hong Kong, the level of Tax Loss increased in line with the rise in Illicit Consumption, and while the volume of illicit cigarettes consumed is relatively low in comparison with other markets, the level of Excise Tax per pack of cigarettes is one of the highest, leading to a relatively high Tax Loss.
- Meanwhile, Vietnam is the third-largest market in terms of the volume of illicit cigarettes consumed of the 17 markets included in this Report, leading to a relatively high level of Tax Loss despite the low price of cigarettes.
- The estimated Tax Loss is below USD 10 million in three markets: Cambodia, Laos, and Myanmar. These markets are relatively small and excise duties are low, thereby resulting in lower levels of Tax Loss when compared with other markets in the Asia Illicit Tobacco Indicator research.

¹Estimates presented are based on a calendar year basis, and therefore may differ from those presented in the individual market reports, which are based on fiscal year (where relevant).

²Analysis by Satriawan et al. indicate a large proportion of Domestic Illicit Consumption is composed of under-declaration of Excise Tax liability. However, the data are not available to estimate the level of tax gap for these cigarettes (i.e., the difference between the actual tax liability of cigarettes and the tax paid according to the Excise Tax stamp).

Australia: Legal Domestic Sales

- Australia Legal Domestic Sales of cigarettes and loose tobacco¹ are estimated at 19.1 billion cigarettes (or cigarette equivalents) in 2015, falling by 3.4% in comparison with 2014.
- Manufactured cigarettes account for the large majority of the legal market for tobacco, with a share of 87% of Legal Domestic Sales in Australia.
- The legal market for cigarettes is composed almost exclusively of 3 international manufacturers (BAT, Imperial Tobacco, and PM).
- Australian cigarette prices are the highest in the world, costing USD 15.1 per pack of 20 cigarettes based on the Most Sold Brand. This is not only higher than in neighbouring New Zealand (USD 13.1 per pack), but is extremely high when compared with Malaysia and Indonesia.²
- Nominal cigarette prices in Australia are also considerably higher than in China (USD 1.61 per pack) and South Korea (USD 3.75 per pack), both key source markets for non-domestic cigarettes.

Australia

Legal Domestic Sales:

19.1
bn cigarettes

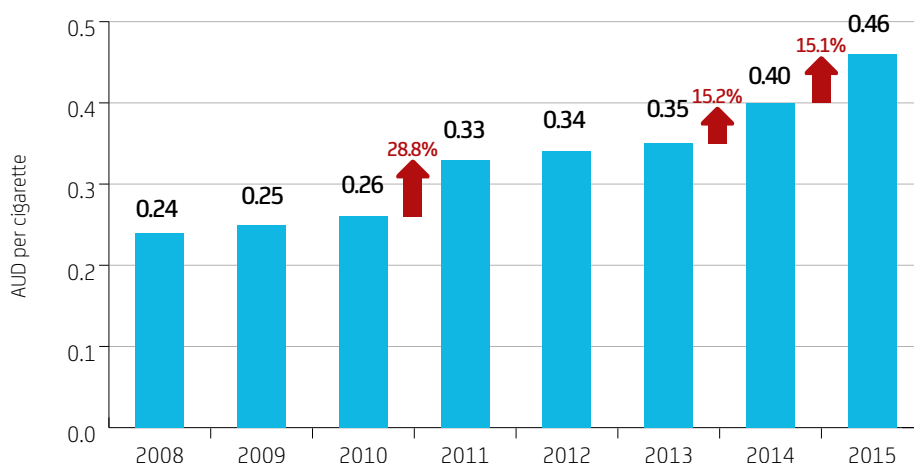
Price:

AUD **20.4**
USD **15.1**

¹A conversion rate of 0.8 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on rates applied by the Australian Taxation Office.

²Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data. The Most Sold Brand in Australia consists of a pack of 25 cigarettes. The Australian pack price of 20 is therefore derived from a pack of 25 cigarettes.

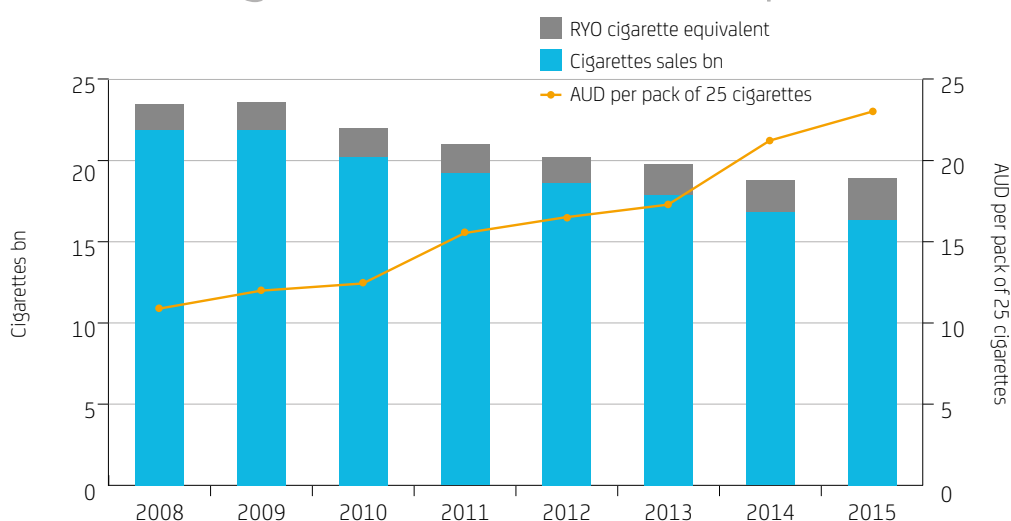
Australia: Excise duty applied to cigarettes³



Source: Australian Taxation Office

³Rate applied in January of each year. Includes individual Excise Tax increases as well as biannual index-linked rises.

Australia: Legal Domestic Sales and prices⁴



Source: Euromonitor, KPMG and Oxford Economics based on PM data

⁴Price per pack of 25 of the Most Sold Brand in January of each year.

Australia: Tobacco Consumption

- The results from two Empty Pack Surveys,¹ combined with official statistics on the volume of tobacco clearances sourced from the Australian Treasury Department,² and KPMG data on Chop-chop volumes,³ were used to estimate Total Consumption of cigarettes and loose tobacco in Australia.
- Total Consumption (legal and illicit) is estimated at 22.2 billion cigarettes in 2015, representing a decline of 4.0% in comparison with 2014. Of this, an estimated 85.8% or 19.1 billion cigarettes is Legal Domestic Consumption, 0.6% is Non-Domestic Legal Consumption, and 13.6% or 3.0 billion cigarettes is Illicit Consumption.⁴
- Total Consumption declined for a second consecutive year in 2015 after falling by 6.7% in 2014.
- Total Non-Domestic Inflows also fell in 2015, driven by a 5.7% decline in the volume of Illicit Consumption, as both Chop-chop (-4.4%) and Non-Domestic Illicit Consumption (-7.3%) were lower than in 2014.
- With Illicit Consumption registering a larger decline than Legal Domestic Consumption, Illicit Incidence fell by 0.3pp to 13.6% in 2015, representing a divergence from the trend of rising Illicit Incidence experienced since the first Asia Illicit Tobacco Indicator Report. However, in volume terms, Illicit Consumption remains higher than in 2012.
- The findings of this Report are in line with similar analysis conducted by KPMG,⁵ which also indicates that Illicit Consumption experienced a small decline in 2015.
- Concurrent to the decline in Illicit Consumption, enforcement efforts in Australia intensified in 2015. The Australian Customs and Border Protection Service (ACBPS) and the Department of Immigration and Border Protection (DIBP) were integrated in early 2015, following the recommendations of the National Commission of Audit in 2014, and the Australian Border Force (ABF) was established, a new front-line operational agency tasked with border protection. The reorganisation reflected a more holistic approach to border control in Australia, by providing the “optimal structure” to pursue a more effective strategy and remove the existing fragmented approach to authority and accountability.
- In early 2015, the ABF Commissioner declared that illicit tobacco was a top priority for the ABF. As a result, the ABF launched a dedicated unit called the “Tobacco Strike Team.” This reflects the “operational focus on the importation of illicit tobacco” of the ABF,⁶ to specifically target organised crime syndicates profiting from smuggling tobacco products. Since the establishment of the task force, their first major operation at the end of November saw them seize 10.6 million illegal cigarettes and 7 tonnes of tobacco molasses destined for Melbourne.

Australia: Composition of cigarette consumption

	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	21.9	88.7	21.5	86.5	19.8	85.6	19.1	85.8	-3.8
Legal Domestic Sales (LDS)	21.9	—	21.5	—	19.8	—	19.1	—	-3.4
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	-0.1	—	n/a
Total Non-Domestic Inflows (ND)	2.8	11.3	3.3	13.5	3.3	14.4	3.2	14.2	-5.3
Non-Domestic Legal (NDL)	0.1	0.4	0.1	0.4	0.1	0.5	0.1	0.6	6.9
Non-Domestic Illicit	0.8	3.1	1.9	7.8	1.5	6.4	1.4	6.2	-7.3
Chop-chop	1.9	7.8	1.3	5.2	1.7	7.4	1.6	7.4	-4.4
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	24.7	100.0	24.8	100.0	23.1	100.0	22.2	100.0	-4.0
Total Illicit Consumption	2.7	10.9	3.2	13.0	3.2	13.9	3.0	13.6	-5.7

Source: Oxford Economics

¹Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4 (see Annex A for more details).

²Tobacco clearances for 2012-2015 retrieved via FOI requests from the Australian Treasury Department. 2012 data were adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation.

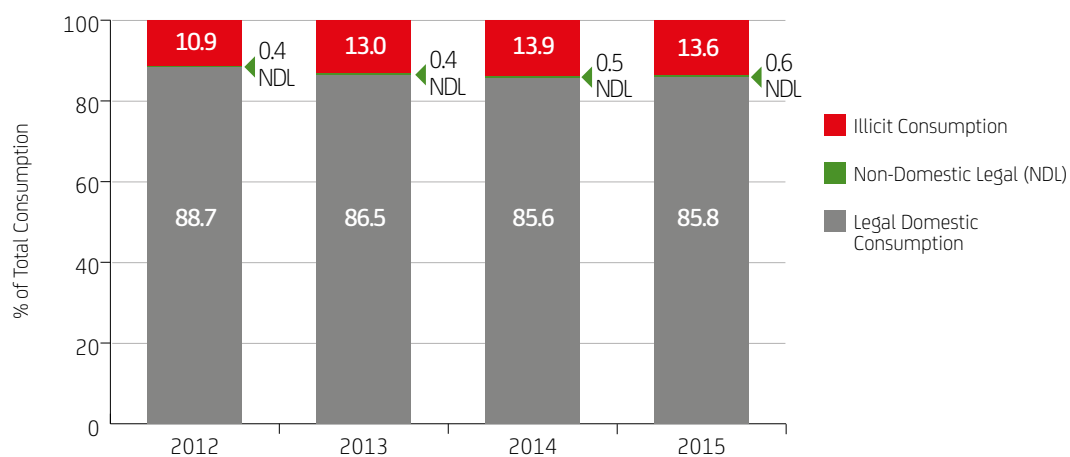
³KPMG, Illicit tobacco in Australia, 2015 Full Year Report, April 2016.

⁴This illicit total includes cigarette equivalents of Chop-chop. A conversion rate of 0.8 grams per cigarette was applied to turn weight into cigarette equivalent, based on rates applied by the Australian Taxation Office.

⁵KPMG, Illicit tobacco in Australia, 2015 Full Year Report, April 2016.

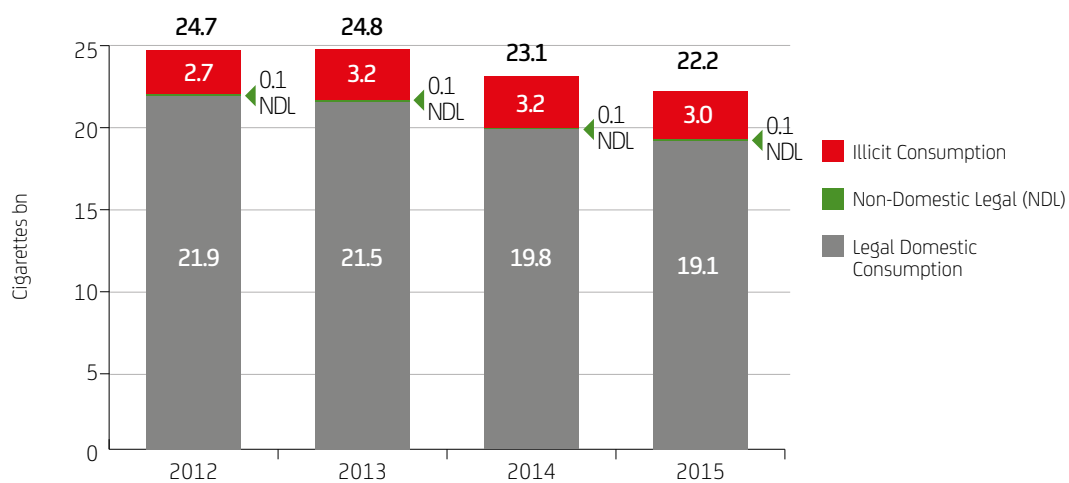
⁶ABF Commissioner, Opening Statement to the Legal and Constitutional Affairs Legislation Committee, October 2015.

Australia: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Australia: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Australia: Government Finances

- Australia operates a single-tier unit-specific Excise Tax structure with biannual index-linked tax increases.
- In November 2013, the federal government announced that it would proceed with a series of four 12.5% increases in excise duty on tobacco products. The third of the scheduled increases was implemented in September 2015.
- In addition, the government revised the basis for indexation of future tobacco index-linked increases, which are now linked to the average weekly ordinary time earning (AWOTE) index.
- Australia also levies a GST of 10% on the retail price for tobacco products.
- Actual revenues from excise on tobacco amounted to AUD 8.8 billion (USD 7.4 billion) in the fiscal year 2014/15, rising by 4.8% in comparison with fiscal year 2013/14. This is despite a decline in Legal Domestic Sales realised over the same period, instead it was driven by the increase in Excise Tax rates.
- Actual revenues from excise duties on tobacco have now increased every year since the first Asia Illicit Tobacco Indicator Report.
- The trend of increasing Excise Taxes on tobacco is also reflected in estimated Tax Loss over the same period, which increased by 4.5% in 2014/15. Again this is driven by the increase in Excise Tax rates following the decline in the volume of Illicit Consumption over the same period.
- The estimated Excise Tax Loss as a share of total potential Excise Tax revenues fell to 13.5% in fiscal year 2014/15, a slight decline of 0.2pp from 2013/14.

Australia: Actual government revenues and estimated Tax Loss

	2011-12 fiscal year		2012-13 fiscal year		2013-14 fiscal year		2014-15 fiscal year		% change in local currency 2013/14- 2014/15
	AUD bn	USD bn	AUD bn	USD bn	AUD bn	USD bn	AUD bn	USD bn	
Actual revenue from excise duties on tobacco ³	7.4	7.6	7.6	7.0	8.4	7.7	8.8	7.4	4.8%
Estimated number of illicit cigarettes purchased (cigarettes bn)	0.8		2.0		1.7		1.4		-15.3%
Estimated volume of illicit loose tobacco (Chop-chop) purchased (mn cigarettes equivalent)	1.8		1.3		1.8		1.6		-11.6%
Estimated Tax Loss from Illicit Consumption	1.1	1.1	1.3	1.2	1.5	1.4	1.6	1.4	4.5%
Lost excise revenue ⁴	0.9	0.9	1.1	1.1	1.3	1.2	1.4	1.2	2.8%
Lost GST revenue	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	15.4%
Excise Tax Loss as % of potential total Excise Tax revenues	10.8%		13.1%		13.7%		13.5%		

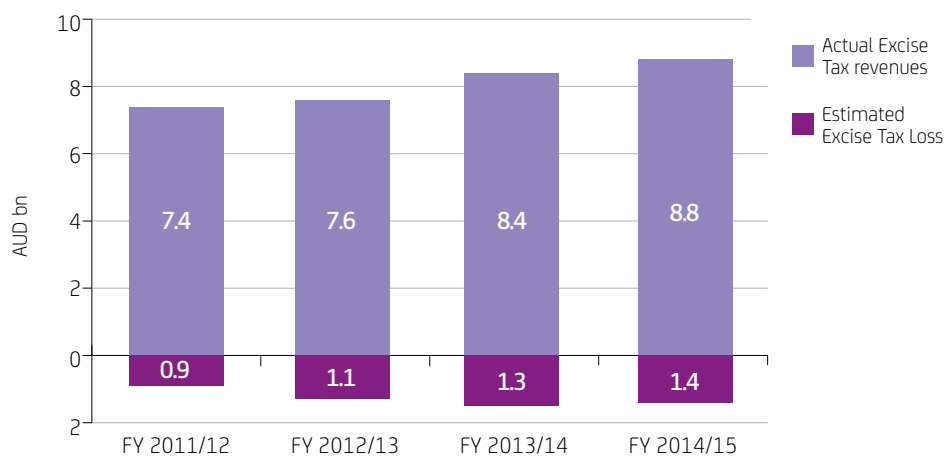
Source: Australian Treasury Department, Australian Tax Office, and Oxford Economics based on PM data

Estimated number of illicit cigarettes purchased adjusted for fiscal year.

Data for fiscal year, which runs from July to June.

Includes loose tobacco. A conversion rate of 0.8 grams per cigarette was applied to turn weight into cigarette equivalent, based on rates applied by the Australian Taxation Office.

Australia: Actual government revenues and estimated Tax Loss

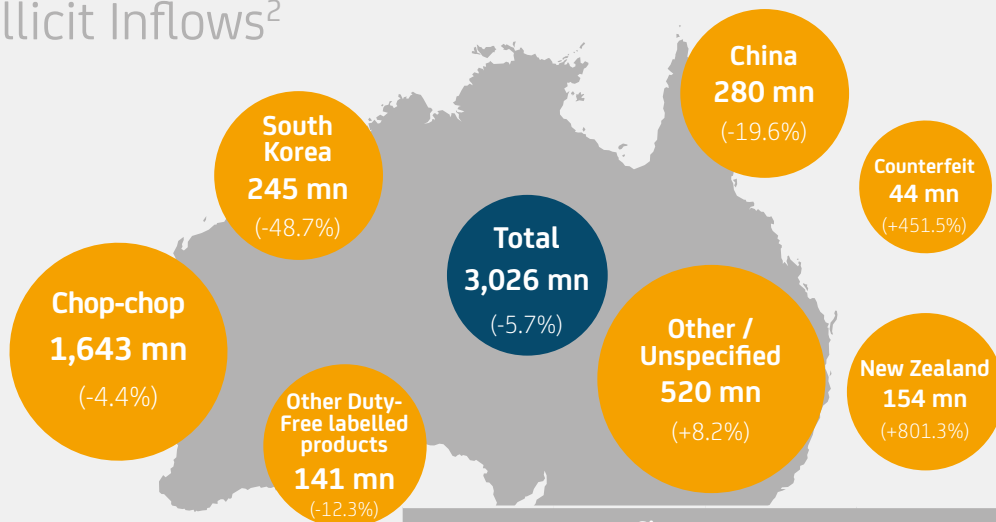


Source: Australian Treasury Department, Australian Taxation Office, and Oxford Economics based on PM data

Australia: Trade Flows

- Non-Domestic Illicit Inflows, including Chop-chop, fell by 5.7% in 2015, with both Chop-Chop and Contraband contributing to the decline in overall Illicit Consumption.
- Chop-chop consumption fell by 4.4% in 2015 to the equivalent of 1.6 billion cigarettes, reversing some of the sharp rise in consumption estimated for the previous year.
- Contraband cigarette consumption declined by 7.3% in 2015.
- Cigarettes intended for retail sale in South Korea represented a much reduced share of total Contraband in 2015 as volumes nearly halved in comparison with 2014.
- As a consequence, cigarettes intended for retail sale in China replaced South Korea as the largest individual market of identified Inflows despite also experiencing a decline in 2015 (-19.6%).
- By contrast, 2015 saw a large increase in the presence of cigarettes intended for retail sale in New Zealand (although from a very low base).
- Similarly, analysis of the Empty Pack Surveys suggests Counterfeit products also rose, from 8 million cigarettes in 2014 to 44 million cigarettes in 2015.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be small, as high domestic prices remove the incentive for individuals to take domestically bought cigarettes with them when travelling abroad.¹

Australia: Origin of total Non-Domestic Illicit Inflows²



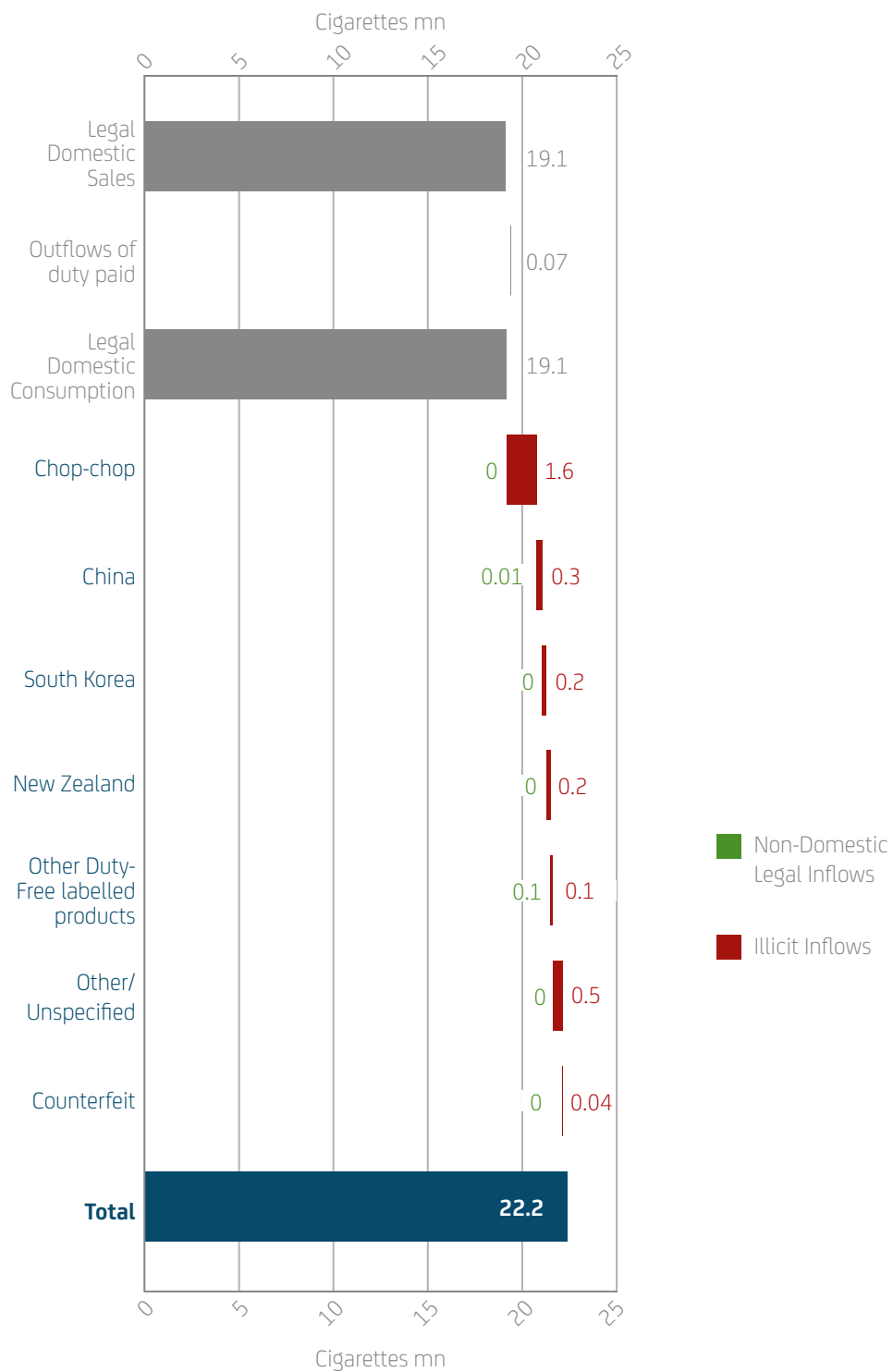
	Cigarettes mn			
	2012	2013	2014	2015
Chop-chop	1,930	1,293	1,719	1,643
China	171	285	347	280
South Korea	157	742	478	245
New Zealand	-	20	17	154
Other Duty-Free labelled products	126	133	161	141
Other / Unspecified	241	558	481	520
Counterfeit	83	204	8	44
Total	2,708	3,234	3,211	3,026

Source: IT Flows Model and Oxford Economics.

¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Including Chop-chop. Figures in brackets reflect % changes from 2014.

Australia: Consumption breakdown 2015

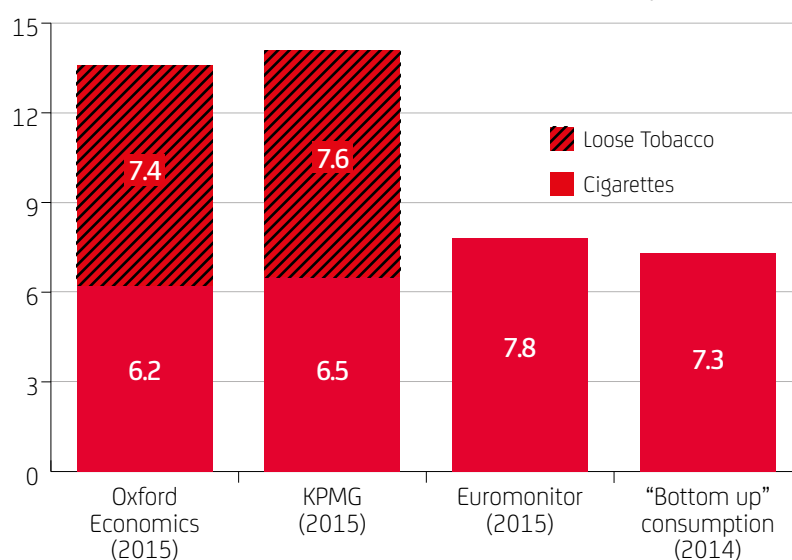


Source: IT Flows Model and Oxford Economics

Australia: Other estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 7.3%, or around 1.3 billion cigarettes (based on 2014 LDC). The source for annual cigarette consumption per adult is Euromonitor (available via www.tobaccoatlas.org).
KPMG, Illicit tobacco in Australia, 2015 Full Year Report, 15 April 2016. Retrieved via https://home.kpmg.com/uk/en/home/insights/2016/04/illegal-tobacco-in-australia.html	Analysis by KPMG of a survey of consumers carried out by Roy Morgan Research suggests an Illicit Incidence of 14.0% of Total Consumption in 2015.
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 7.8% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Illicit trade of tobacco in Australia. A report prepared by Deloitte for British American Tobacco Australia Limited, Philip Morris Limited, and Imperial Tobacco Australia Limited. A critique prepared by Quit Victoria, Cancer Council Victoria, March 2011 (updated 18 November 2011). Retrieved via http://www.cancervic.org.au/downloads/plainfacts/CommentsDeloitte18_11_11_2_.pdf	An estimate by Quit Victoria based on the 2010 National Drug Strategy Household Survey suggests an Illicit Incidence of around 2-3%. However, possible weaknesses of this survey include the generation of its results from a "drop and collect" self-completed questionnaire (risking unrepresentativeness) and the fact that its definition of illicit loose tobacco may be insufficiently broad.

Australia: Alternative estimates of Illicit Consumption



Australia: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual volume of tobacco clearances recorded by the Australian Taxation Office and Border Protection Service (Customs) in 2015, sourced from the Australian Treasury Department, and KPMG data for RYO sales.	—	Includes legal Other Tobacco Products sales.
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Australian market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 71 million cigarettes, with the majority going to New Zealand.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Australian Bureau of Statistics.
Non-Domestic Illicit	Empty Pack Surveys and KPMG.	Based on Empty Pack Surveys, KPMG data, and OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. An estimate for loose tobacco (Chop-chop) has been added based on the study by KPMG (2016). See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 22.2 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Brunei: Legal Domestic Sales

- Brunei Legal Domestic Sales are estimated to be zero in 2015.
- A series of radical regulatory and fiscal measures has caused international tobacco manufacturers to exit the market at various stages over the course of the last four years. PM, as the last major international tobacco manufacturer to leave the market in 2013, accounted for all Legal Domestic Sales in 2013. Legal Domestic Sales were negligible in 2014.
- With the absence of a legal market, there is no market price with which to compare to neighbouring markets. However, before 2015, prices for cigarettes were relatively high in Brunei in nominal terms. The price of a pack of 20 cigarettes of the Most Sold Brand in 2014 was USD 6.52 per pack, significantly higher than the equivalent price of the Most Sold Brand in Indonesia, Malaysia, and Philippines.¹

Brunei

Legal Domestic Sales:

—

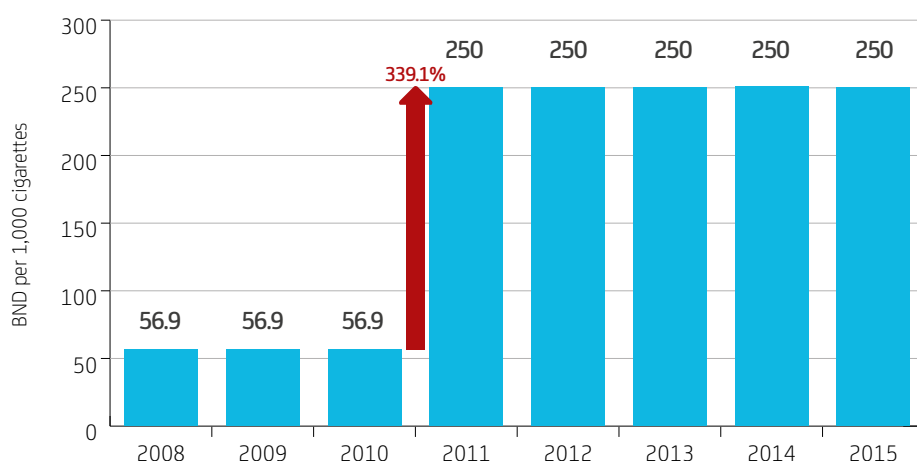
Price:

BND **8.10**

USD **6.52**

¹Price per pack of 20 of the Most Sold Brand in 2014 in Brunei sourced from the WHO Report on the Global Tobacco Epidemic, 2015. Analysis suggests there was no legal market present in Brunei in 2015.

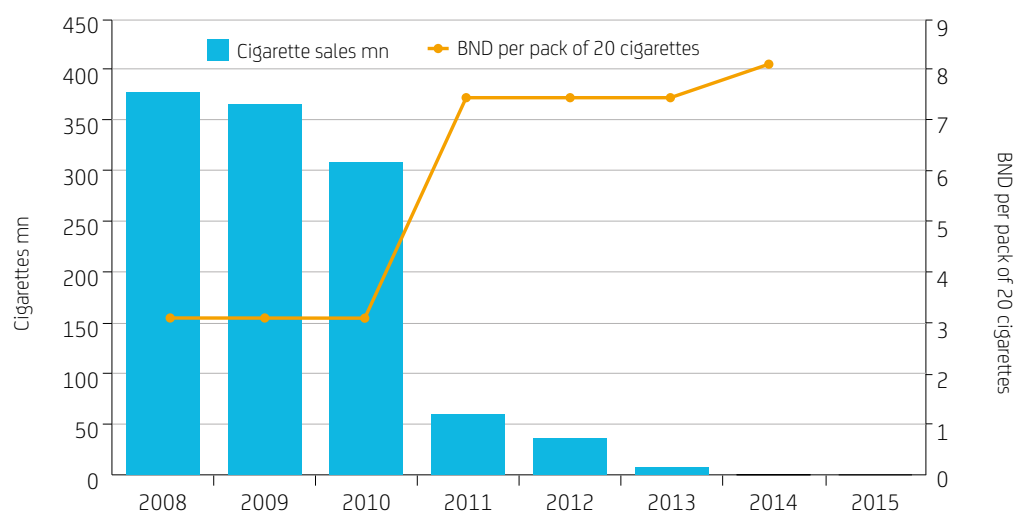
Brunei: Excise duty applied to cigarettes²



Source: SEATCA ASEAN Tobacco Tax Report Card, May 2014 and Oxford Economics based on PM data

²Rate applied in January of each year to the Most Sold Brand. Excise Tax increase of 339.1% based on an Oxford Economics conversion rate of 0.949 grams per cigarette, including filter, applied on the per kg Excise Tax rate of BND 60 (2008-2010).

Brunei: Legal Domestic Sales and prices³



Source: WHO Report on the Global Tobacco Epidemic, 2015 and Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year, except in 2015 when analysis suggests there was no legal market present in Brunei.

Brunei: Cigarette Consumption

- IMS data, combined with data on the adult population share and average adult per capita cigarette consumption, were used to estimate Total Consumption of cigarettes in Brunei.¹
- Total Consumption is estimated at 332.4 million cigarettes in 2015, representing an increase of 2.5% in comparison with 2014.
- Of this, it is estimated that there was zero Legal Domestic Consumption in Brunei, a finding that is corroborated by both IMS data on Legal Domestic Sales and the 2015 Empty Pack Survey, which found that 100% of the sample consisted of Non-Domestic Inflows (all non-domestic cigarettes are assumed to be illicit given the zero allowance for Duty-Free personal imports in Brunei).²
- The withdrawal of all major international tobacco manufacturers over the last four years signalled the end of imported cigarette brands in Brunei. As a consequence, the market is entirely served by illicit imports.
- As such, total Illicit Consumption is equal to 332.4 million cigarettes in 2015, representing 100% of Total Consumption.

Brunei: Composition of cigarette consumption

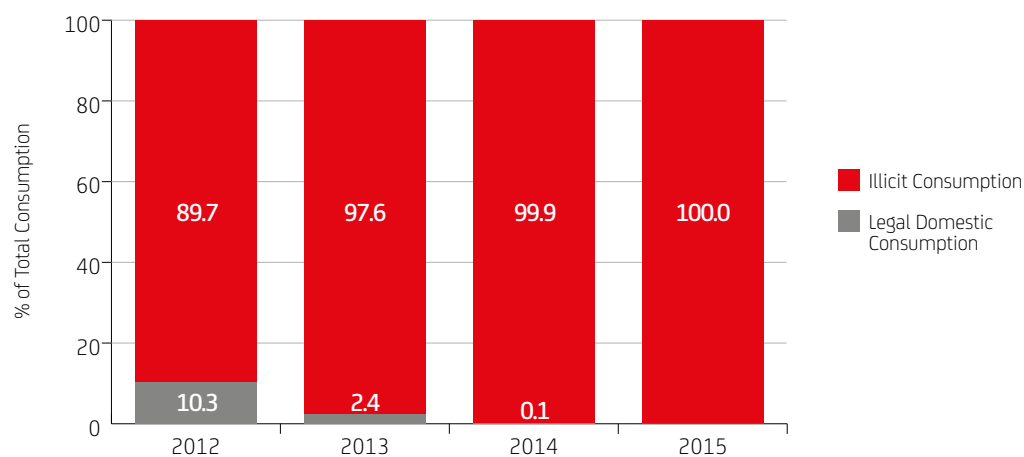
	2012		2013		2014		2015		% change 2014-15
	Cigarettes mn	%	Cigarettes mn	%	Cigarettes mn	%	Cigarettes mn	%	
Legal Domestic Consumption (LDC)	36.0	10.3	7.7	2.4	0.2	0.1	0.0	0.0	-100.0
Legal Domestic Sales (LDS)	36.0	—	7.7	—	0.2	—	0.0	—	-100.0
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	0.0	—	n/a
Total Non-Domestic Inflows (ND)	315.2	89.7	310.2	97.6	324.0	99.9	332.4	100.0	2.6
Non-Domestic Legal (NDL)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Non-Domestic Illicit	315.2	89.7	310.2	97.6	324.0	99.9	332.4	100.0	2.6
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	351.2	100.0	317.9	100.0	324.3	100.0	332.4	100.0	2.5
Total Illicit Consumption	315.2	89.7	310.2	97.6	324.0	99.9	332.4	100.0	2.6

Source: Euromonitor International and Oxford Economics

¹IMS data indicates there were no Legal Domestic Sales volume in Brunei in 2015, and therefore cannot be used as a base from which to estimate Total Consumption. Instead, this Report uses a “bottom up” approach to estimate Total Consumption based on the adult population size (sourced from the UN) and average per capita adult cigarette consumption (sourced from Euromonitor International and based on the latest available data for 2014).

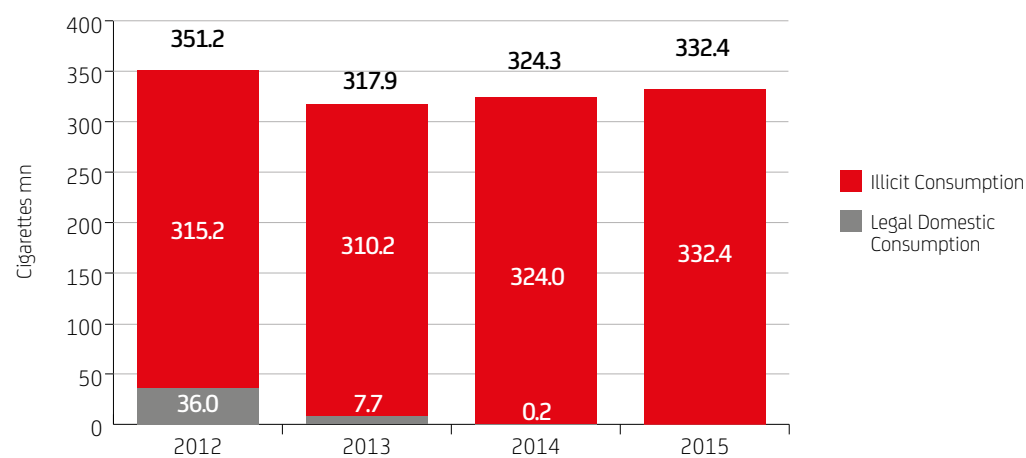
²The Empty Pack Survey was undertaken in 2015 Q2. 2012 results based on the 2011 Q3 Empty Pack Survey (see Annex A for more details).

Brunei: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Brunei: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Brunei: Government Finances

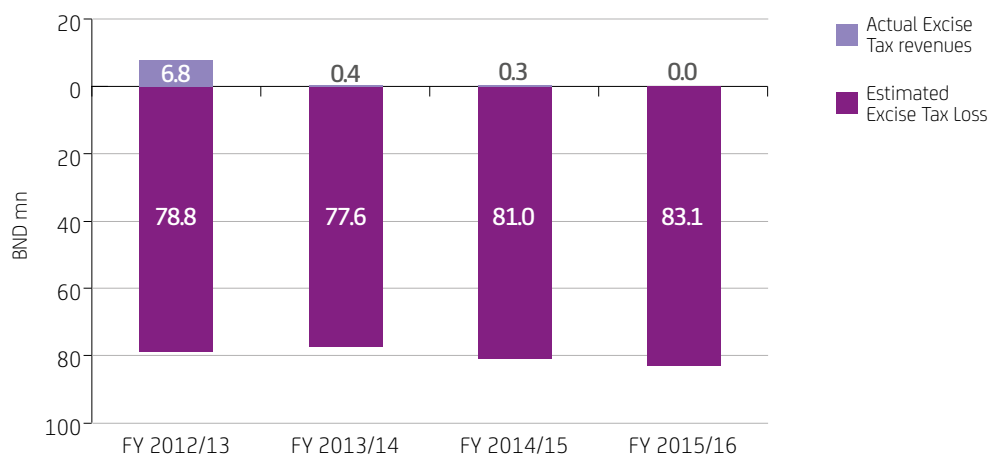
- Brunei operates a single-rate, unit-specific Excise Tax of BND 250 per thousand cigarettes. No GST or VAT is applied to cigarettes.
- The Excise Tax rate was last increased in November 2010, from an original rate of BND 60 per kg of tobacco (representing a 339.1% increase), and more stringent requirements were introduced for retail licences.
- The resulting large fall in the number of retailers has made it increasingly difficult for consumers to access legal duty-paid cigarettes, following the withdrawal from the market of international tobacco manufacturers.
- As a consequence, our findings indicate that there were no Legal Domestic Sales in 2015. As such, the Excise Tax Loss represents 100% of total potential Excise Tax revenues in 2015/16 fiscal year.
- We estimate the Excise Tax Loss associated with Illicit Consumption to be BND 83 million (USD 60 million) for 2015, a 2.6% increase in Tax Loss in comparison with 2014.

Brunei: Actual government revenues and estimated Tax Loss

	2012/13 fiscal year		2013/14 fiscal year		2014/15 fiscal year		2015/16 fiscal year		% change in local currency 2014/15- 2015/16
	BND mn	USD mn	BND mn	USD mn	BND mn	USD mn	BND mn	USD mn	
Actual revenue from excise duties on tobacco	6.8	5.5	0.4	0.3	0.3	0.2	0	0	-100%
Estimated number of illicit cigarettes purchased (cigarettes mn)	315		310		324		332		2.6%
Estimated Tax Loss from Illicit Consumption	79	63	78	62	81	63	83	60	2.6%
Lost excise revenue	79	63	78	62	81	63	83	60	2.6%
Excise Tax Loss as % of potential total Excise Tax revenues	92.1%		99.5%		99.6%		100.0%		

Source: Department of Economic Planning and Development, Prime Minister's Office (via CEIC) and Oxford Economics based on PM data
Fiscal year runs from April to March.

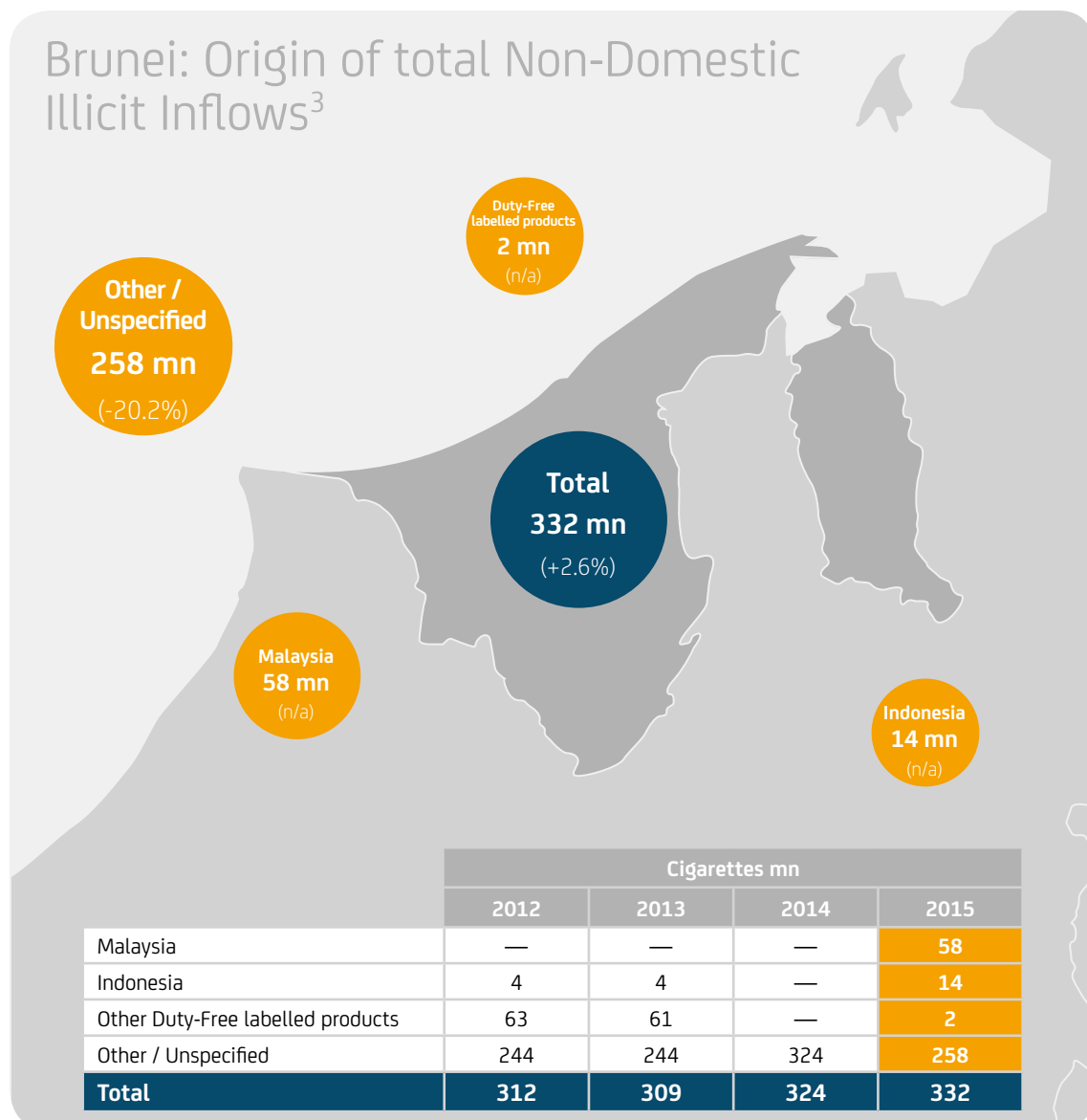
Brunei: Actual government revenues and estimated Tax Loss



Source: Department of Economic Planning and Development, Prime Minister's Office (via CEIC), and Oxford Economics based on PM data

Brunei: Trade Flows

- Total Consumption in Brunei is entirely composed of Non-Domestic Illicit Inflows according to our analysis of the 2015 Empty Pack Survey conducted in Brunei.
- Based on a “bottom up” analysis, we estimate that Total Consumption and hence Non-Domestic Illicit Inflows increased by 2.6% in 2015 to more than 332 million cigarettes.
- Cigarettes of Unspecified Market Variants account for the majority of Non-Domestic Illicit.¹ In total, more than three-quarters of Total Consumption was unidentifiable by intended market of retail sale, with the brands “Era” and “Extreme” accounting for 83.5% of total Unspecified Market variant volumes.
- There was also a significant presence of cigarettes intended for retail sale in neighbouring countries Malaysia (58 million cigarettes) and Indonesia (14 million).
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be zero.²



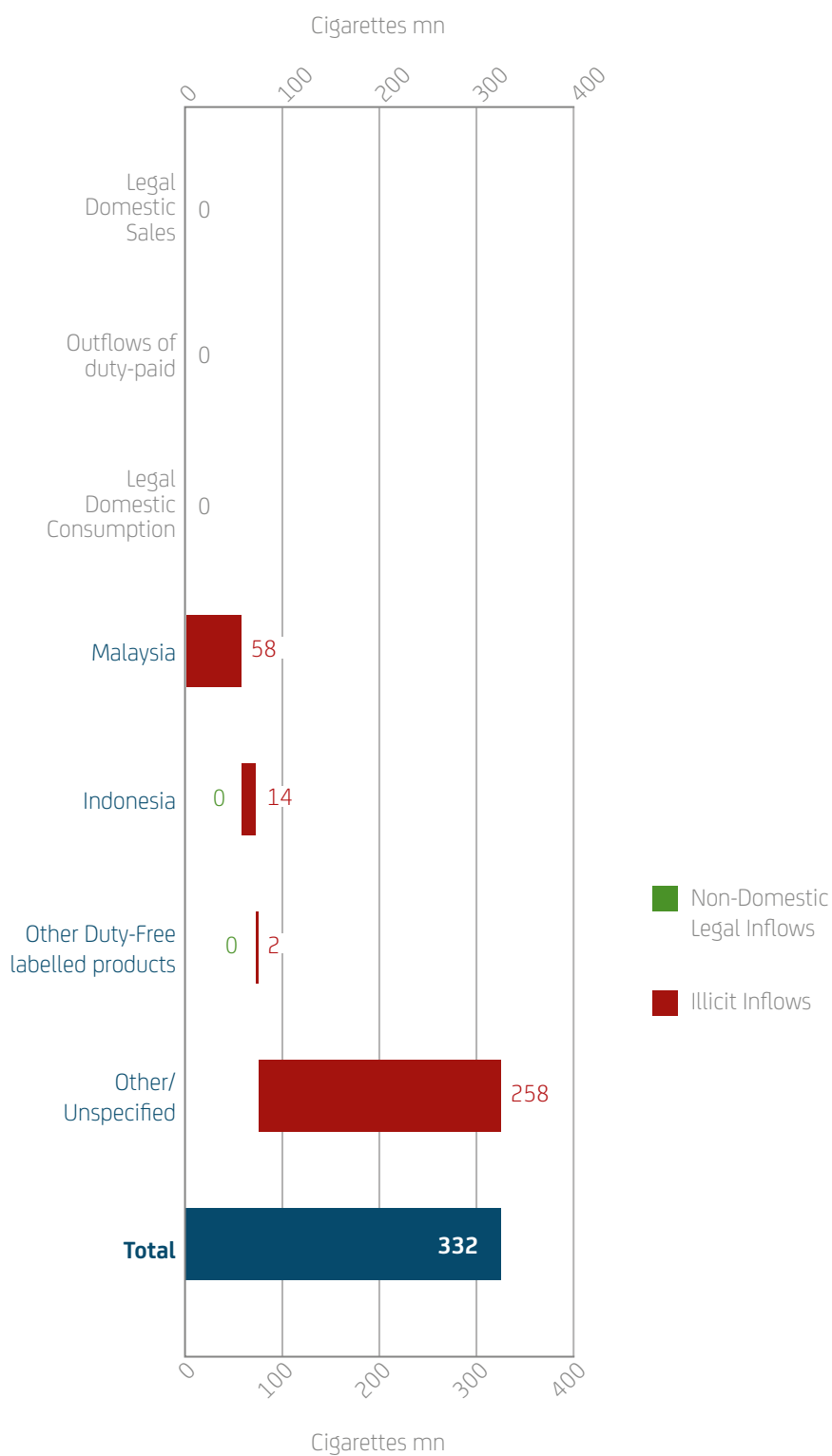
Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Figures in brackets reflect % changes from 2014.

Brunei: Consumption breakdown 2015



Source: IT Flows Model and Oxford Economics

Brunei: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	PM estimates based on IDS Retail Audit. Estimates suggest there were zero LDS in 2015.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Brunei market-specific labelling (e.g., health warnings, tax stamps, etc.).	Zero Outflows identified from Brunei.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Zero estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption are aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	The passenger duty-free personal import allowance for Brunei is zero.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q2 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Total Consumption minus Legal Domestic Consumption.	—
Total Consumption	“Bottom up” estimate of Total Consumption based on average cigarette consumption per capita (Euromonitor) and adult population (UN).	—	The IT Flows Model estimate of consumption is 332.4 million cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the prevailing Excise Tax rate.	See Annex B for more details.

Cambodia: Legal Domestic Sales

- Cambodia Legal Domestic Sales are estimated at 8.6 billion cigarettes for 2015, an increase of 1.7% from 2014.
- Four manufacturers (BAT, Vinton Tobacco, Imperial Tobacco, and Hong International) account for around 90% of Legal Domestic Sales.
- Cigarette prices remained unchanged in 2015 following an increase in the Excise Tax rate implemented in mid-2014 that increased the nominal price of a pack of 20 cigarettes of the Most Sold Brand by 15.4% in comparison with 2013.
- The price of the Most Sold Brand at USD 0.37 per pack remains much lower in nominal terms than neighbouring markets such as Laos (USD 0.87), Thailand (USD 1.13), and Vietnam (USD 0.80).¹

Cambodia

Legal Domestic Sales:

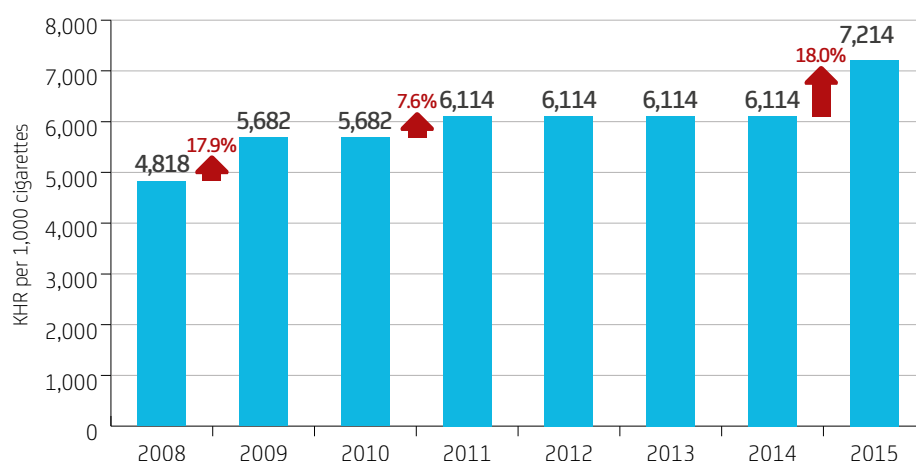
8.6
bn cigarettes

Price:

KHR **1,500**
USD **0.37**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

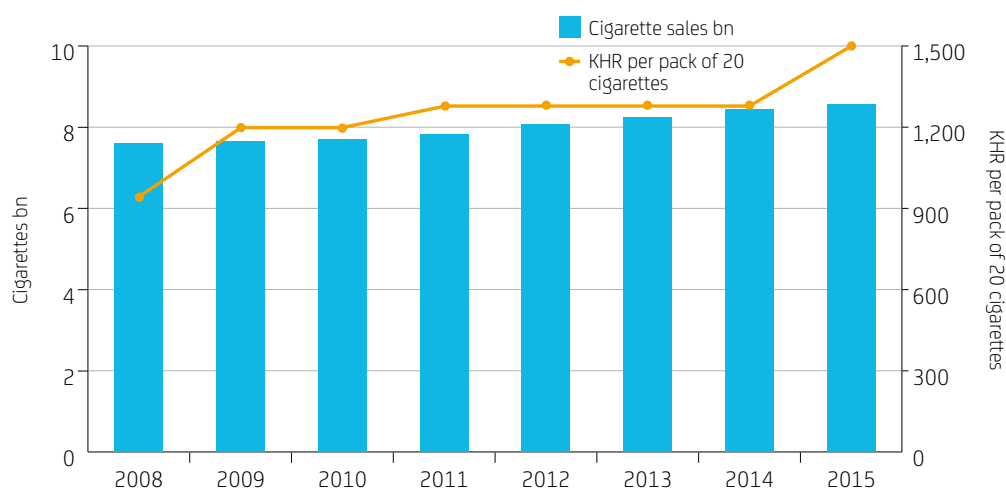
Cambodia: Excise duty applied to cigarettes²



Source: Oxford Economics based on PM data

²Rate applied in January of each year to the Most Sold Brand, including tax stamp and Earmarked Taxes. The increases in the excise duty in 2009 and 2011 were driven by retail price increases.

Cambodia: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year.

Cambodia: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Cambodia.
- Total Consumption (legal and illicit) is estimated at 8.5 billion cigarettes in 2015. Of this, an estimated 92.3% or 7.8 billion cigarettes is Legal Domestic Consumption, 0.9% is Non-Domestic Legal Consumption, and 6.8% or 571 million cigarettes is Illicit Consumption.
- Total Consumption fell by 0.4% in 2015. This was driven by the 2.9% decline in Legal Domestic Consumption, which accounts for most of Total Consumption in Cambodia.
- The volume of Non-Domestic Inflows has steadily increased over the past two years since the Asia Illicit Tobacco Indicator Report first included Cambodia within the analysis, with the largest increase of 42.7% recorded in 2015.
- Significant increases in Inflows of both Non-Domestic Legal and Non-Domestic Illicit contributed to the rise in Non-Domestic Inflows. Non-Domestic Legal consumption, albeit starting from a relatively small base, increased by 175.9% in comparison with 2014.
- Volumes of Illicit Consumption meanwhile increased by 33.8% in 2015, from 427 million cigarettes in 2014 to 571 million cigarettes.
- Illicit Incidence increased by 1.8pp to reach 6.8% in 2015. This is the highest level recorded since the Asia Illicit Tobacco Indicator Report included Cambodia.

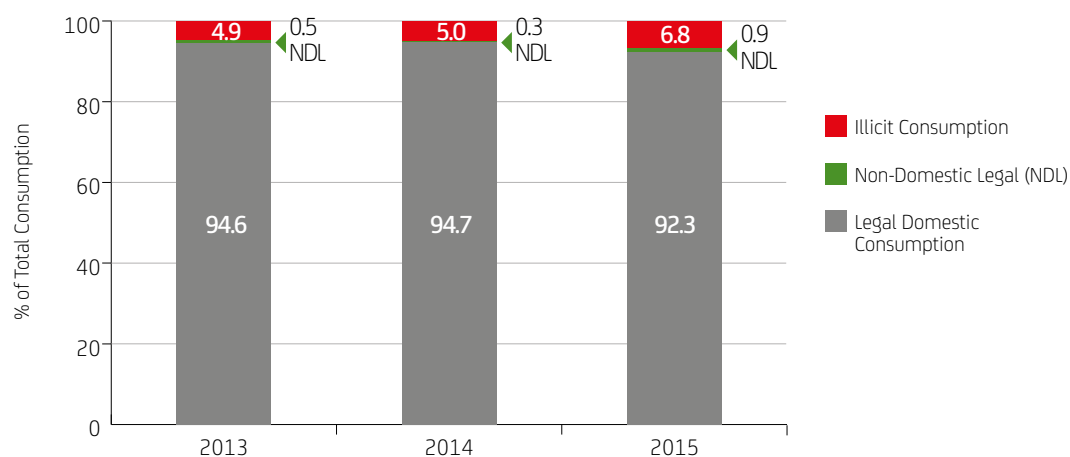
Cambodia: Composition of cigarette consumption

	2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	7.8	94.6	8.0	94.7	7.8	92.3	-2.9
Legal Domestic Sales (LDS)	8.2	—	8.4	—	8.6	—	1.7
Outflows of domestic duty-paid cigarettes	-0.5	—	-0.4	—	-0.8	—	96.4
Total Non-Domestic Inflows (ND)	0.4	5.4	0.5	5.3	0.7	7.7	42.7
Non-Domestic Legal (NDL)	0.0	0.5	0.0	0.3	0.1	0.9	175.9
Non-Domestic Illicit	0.4	4.9	0.4	5.0	0.6	6.8	33.8
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	8.2	100.0	8.5	100.0	8.5	100.0	-0.4
Total Illicit Consumption	0.4	4.9	0.4	5.0	0.6	6.8	33.8

Source: Oxford Economics

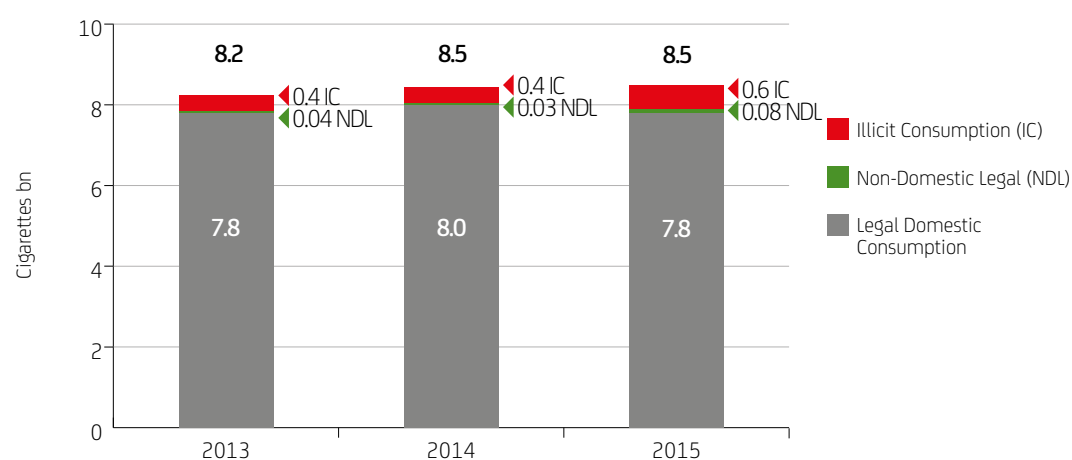
¹The Empty Pack Survey was undertaken in 2015 Q2. 2013 results based on the 2014 Q2 Empty Pack Survey (see Annex A for more details).

Cambodia: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Cambodia: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Cambodia: Government Finances

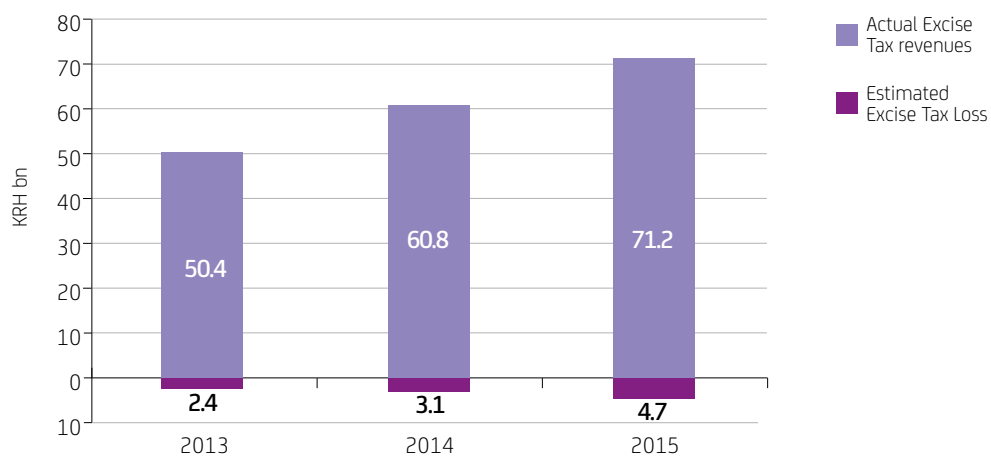
- Cambodia applies a single-rate ad valorem Excise Tax to the net ex-factory selling price or CIF. The net ex-factory selling price is defined as 65% of the retail price before VAT and any discount is applied.
- In addition, there is an Earmarked Tax for public lighting of 3% of the retail price (before VAT) and an additional KHR 10 per pack as part of the manufacturer's obligation to buy and affix tax stamps.
- VAT is levied at a rate of 10% on sales.
- There was no change in the rate of Excise Tax in 2015.
- The Excise Tax rate was last increased in mid-2014, from 10% to 15%.
- As a consequence of the hike in Excise Tax, actual revenues from excise duties on tobacco are estimated to have increased by 17.2% in 2015 despite a more modest 1.7% increase in Legal Domestic Sales.
- Our estimates suggest that the Tax Loss associated with Illicit Consumption amounted to KHR 8.6 billion (USD 2.1 million) in 2015, a 48.9% increase in comparison with 2014. This represents 6.2% of total potential Excise Tax revenues.
- The increase in the estimated Tax Loss was driven by a combination of the rising trend in the volume of Illicit Consumption, as well as the increase in Excise Taxes implemented in mid-2014.
- The estimated level of Excise Tax Loss in 2015 was the highest recorded for Cambodia in the Asia Illicit Tobacco Indicator series.

Cambodia: Actual government revenues and estimated Tax Loss

	2013		2014		2015		% change in local currency 2014-2015
	KRH bn	USD mn	KRH bn	USD mn	KRH bn	USD mn	
Actual revenue from excise duties on tobacco	50.4	12.5	60.8	15.1	71.2	17.5	17.2%
Estimated number of illicit cigarettes purchased (cigarettes mn)	399		427		571		33.8%
Estimated Tax Loss from Illicit Consumption	4.8	1.2	5.8	1.4	8.6	2.1	48.9%
Lost excise revenue	2.4	0.6	3.1	0.8	4.7	1.2	53.7%
Lost VAT revenue	2.4	0.6	2.7	0.7	3.9	1.0	43.4%
Excise Tax Loss as % of potential total Excise Tax revenues	4.6%		4.8%		6.2%		

Source: Oxford Economics based on PM data
Includes tax stamp and Earmarked Taxes.

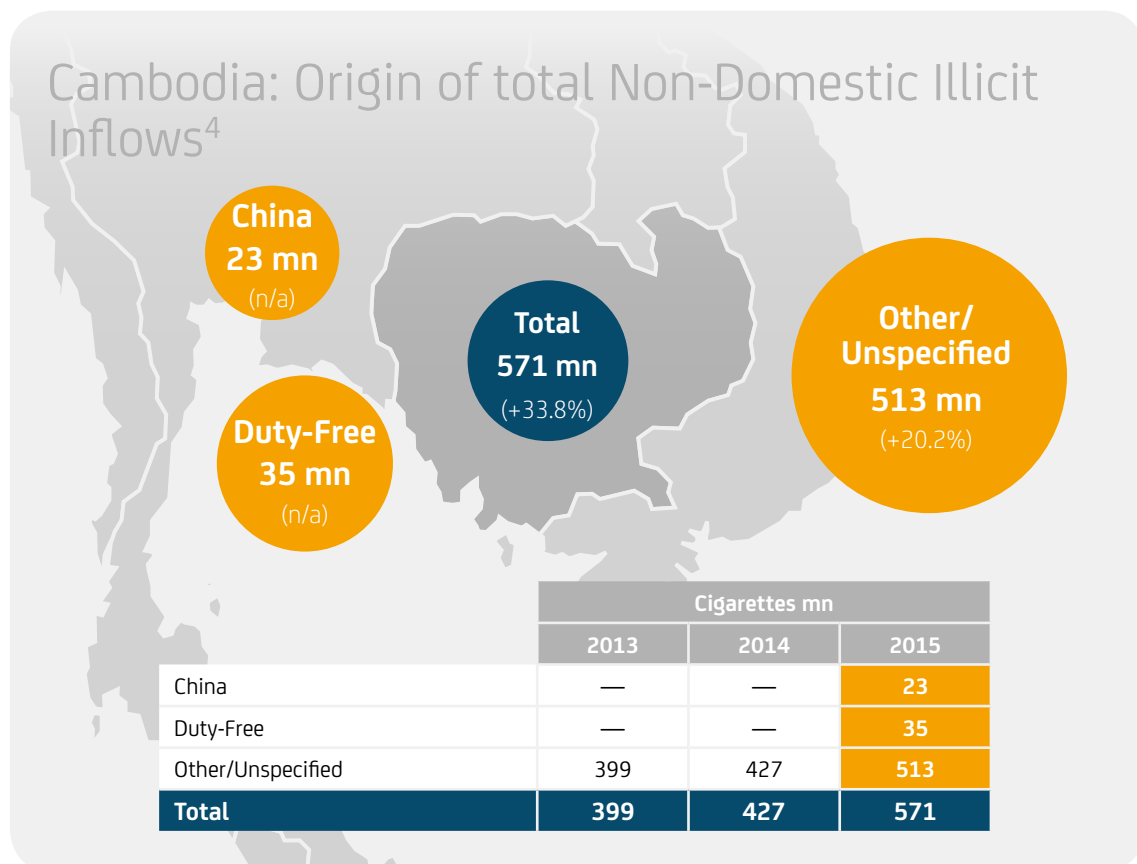
Cambodia: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on PM data

Cambodia: Trade Flows

- The volume of Outflows of domestic duty-paid cigarettes are relatively high compared with rest of the 16 markets included in this Report¹ as the nominal price of a pack of cigarettes remains low in comparison with neighbouring markets (the lowest of the 17 markets included in this Report), and Cambodia is known as a market of significant Outflows of cigarettes intended for retail sale in the domestic market.
- Laos, Thailand, and Vietnam are the primary destination markets identified for domestically-manufactured cigarettes in Cambodia, accounting for nearly 97% of total Outflows.
- In total, the volume of Outflows nearly doubled in 2015, driven by a significant increase in cigarettes intended for retail sale in Cambodia present in the Laos and Thailand markets. As a consequence, although Legal Domestic Sales increased by 1.7% in 2015, Legal Domestic Consumption actually fell by nearly 3% in comparison with 2014.
- For the same reason, Non-Domestic Legal Inflows² are relatively small, with little incentive for consumers to legally bring in duty-paid cigarettes from abroad.
- In total, Non-Domestic Legal Inflows represented just 0.9% of Total Consumption in 2015.
- The majority of Non-Domestic Illicit Inflows are designated as Unspecified Market Variant,³ with the brands “Hero” and “Esse” accounting for approximately 88% of total volumes identified.
- In total, nearly 90% of the volume of Non-Domestic Illicit consists of Unspecified Market Variant products, with some small Inflows identified as intended for retail sale in other markets, the largest of which is China.
- A small volume of Duty-Free products, equivalent to 35 million cigarettes, were also identified in 2015.



Source: IT Flows Model and Oxford Economics

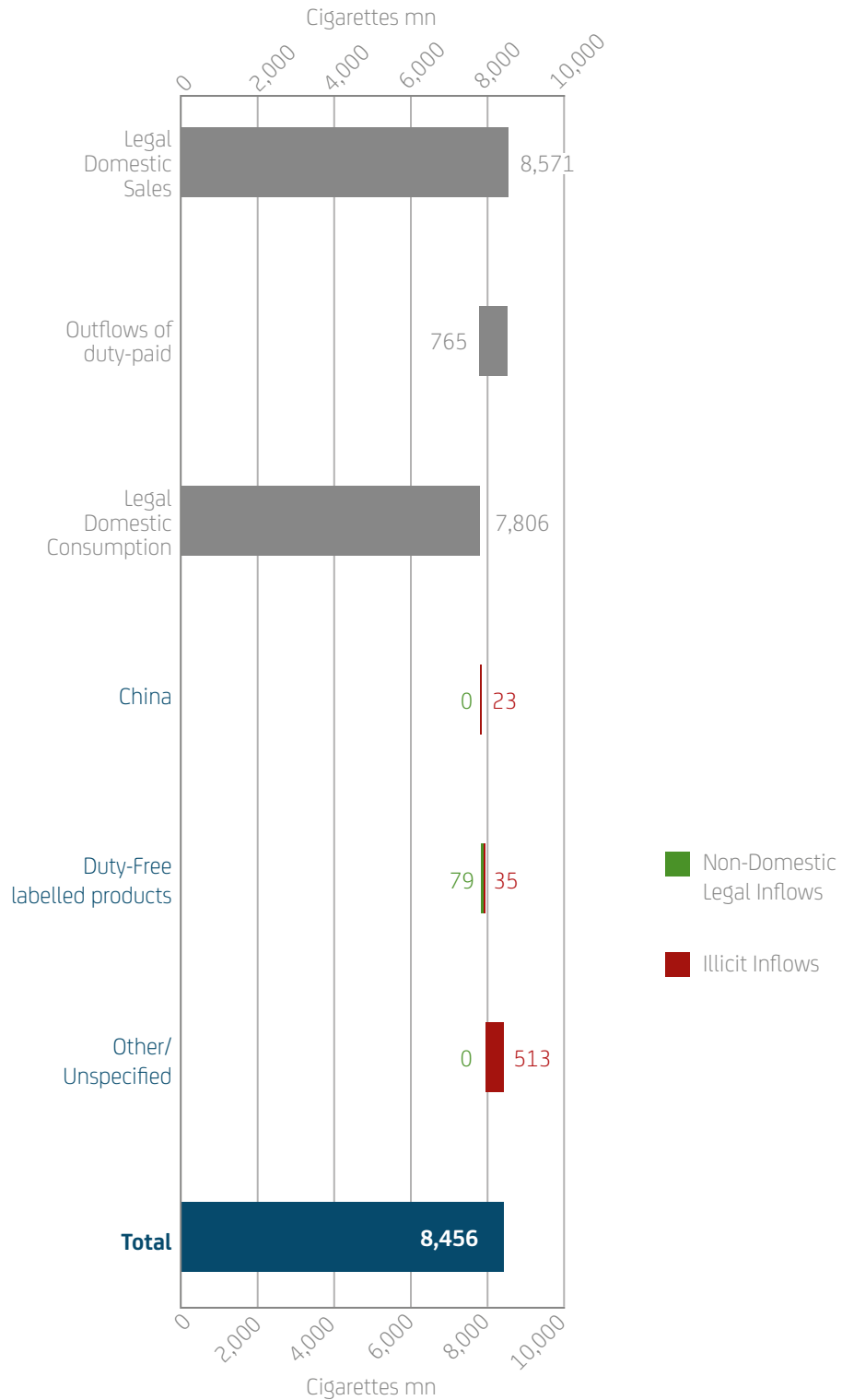
¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Estimated using passenger data, smoking prevalence in tourists' country/market of origin, and the passenger duty-free personal import allowance limit.

³Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such, the intended market is not known.

⁴Figures in brackets reflect % changes from 2014.

Cambodia: Consumption breakdown 2015

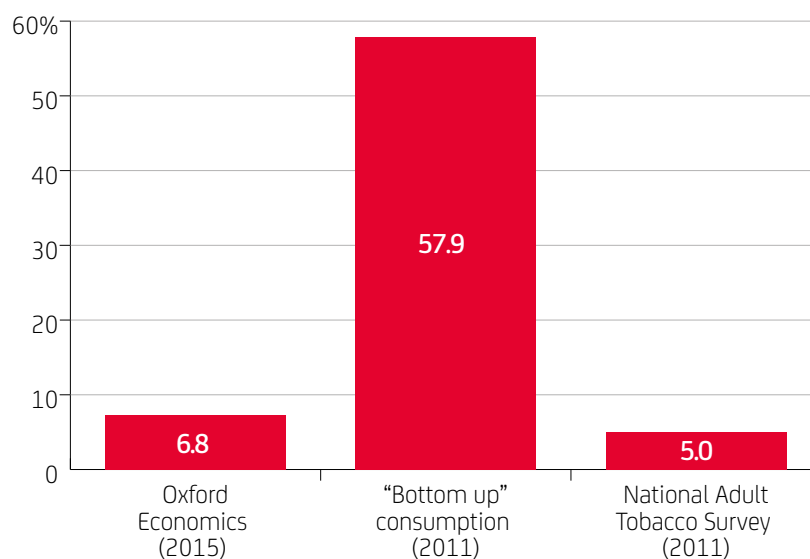


Source: IT Flows Model and Oxford Economics

Cambodia: Other estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 57.9% in 2011, or around 10.5 billion cigarettes (based on 2011 LDC). The source for Smoking Prevalence and average daily cigarette consumption come from the WHO FCTC 2014 report (based on the National Adult Tobacco Survey of Cambodia, 2011).
National Adult Tobacco Survey of Cambodia (2011). Retrieved via http://seatca.org/dmdocuments/2011%20NATSC_final%20Aug%202011_extracted%20version.pdf	95% of cigarette packs examined by the National Adult Survey of Cambodia interviewers while interviewing current smokers displayed a domestic tax stamp, suggesting an Illicit Incidence of 5% in 2011.

Cambodia: Alternative estimates of Illicit Consumption



Cambodia: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Total industry volume based on PM and distributor estimates.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Cambodian market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 765 million cigarettes, with a large share going to Laos, Thailand, and Vietnam.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other markets.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Cambodia Ministry of Tourism.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q2 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 8.5 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the tax rates applicable to the Most Sold Brand of cigarettes (Excise Tax, GST, and Earmarked Taxes).	See Annex B for more details.

Hong Kong: Legal Domestic Sales

- Hong Kong Legal Domestic Sales, based on duty-paid volumes, are estimated at 3.3 billion cigarettes for calendar year 2015, representing a 3.8% increase in comparison with 2014.
- Legal Domestic Sales are primarily accounted for by four manufacturers: PM, BAT, JT, and Nanyang Brothers.
- The price of the Most Sold Brand of cigarettes in Hong Kong was USD 7.10 per pack of 20 in 2015, unchanged in 2015 after rising by 10% in March 2014.¹
- Cigarettes prices are relatively high in Hong Kong compared with neighbouring markets.² The price of the Most Sold Brand in Hong Kong in 2015 was higher than China (USD 1.61) and Taiwan (USD 3.00) in nominal terms.
- Cigarette prices also remain higher than in Macao, where the price of the Most Sold Brand of cigarettes rose by 66.7% in 2015 following a large Excise Tax increase implemented in July.

Hong Kong

Legal Domestic Sales:

3.3
bn cigarettes

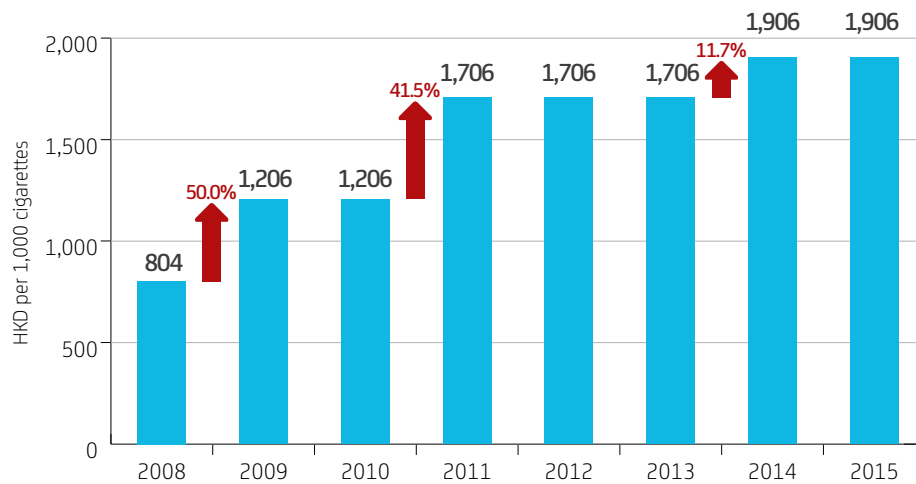
Price:

HKD **55.0**
USD **7.10**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data. While the price of the Most Sold Brand did not increase in 2015, prices did increase in the below premium and above premium segments.

²This includes China, of which Hong Kong is a Special Administrative Region. The border crossing between the two is one of the busiest in the world.

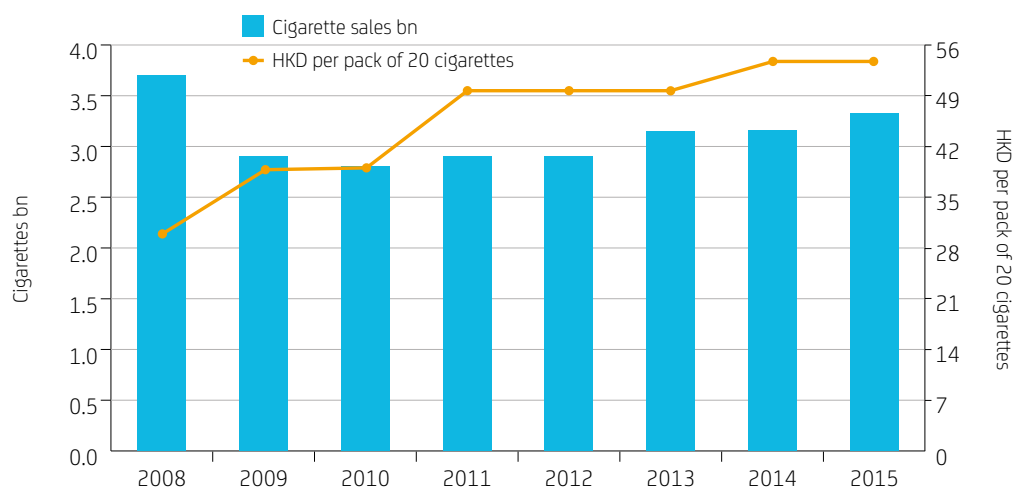
Hong Kong: Excise duty applied to cigarettes³



Source: Hong Kong Customs & Excise Department and Oxford Economics based on PM data

³Rate applied in February of each year to the Most Sold Brand.

Hong Kong: Legal Domestic Sales and prices⁴



Source: Hong Kong Customs & Excise Department and Oxford Economics based on PM data

⁴Price of the Most Sold Brand in March of each year.

Hong Kong: Cigarette Consumption

- The results from two Empty Pack Surveys¹ conducted in 2015, combined with data on the volume of duty-paid tobacco sourced from the Hong Kong Customs & Excise Department, were used to estimate the total volume of cigarette consumption in Hong Kong.
- Total Consumption (legal and illicit) increased by 6.5% in 2015 to an estimated at 5.1 billion cigarettes, similar to levels registered in 2012.
- Of this, an estimated 62.8% or 3.2 billion cigarettes is Legal Domestic Consumption, 8.0% is Non-Domestic Legal Consumption, and 29.1% or 1.5 billion cigarettes is Illicit Consumption.
- The volume of Illicit Consumption was estimated at 1.5 billion cigarettes in 2015, representing an increase of 10.7% from the 1.3 billion cigarettes estimated in 2014.
- As a share of Total Consumption, Illicit Consumption has remained relatively stable over the last couple of years, registering 29.1% in 2015 and 28.0% in 2014.
- However, since 2012 when the first Asia Illicit Tobacco Indicator Report was conducted, Illicit Incidence has fallen by 6.7pp, down from 35.9% in 2012.
- In volume terms, this is equivalent to a 19.7% decline in the number of illicit cigarettes consumed.
- Non-Domestic Legal Inflows have maintained a relatively constant level of around 0.4 billion cigarettes over the last four years.
- In 2015, there were over 14,600 reported enforcement cases handled by the Hong Kong Customs & Excise Department. The value of total seizures rose by 41.3% over the same period, from USD 138 million in 2014 to USD 195 million in 2015.²

Hong Kong: Composition of cigarette consumption

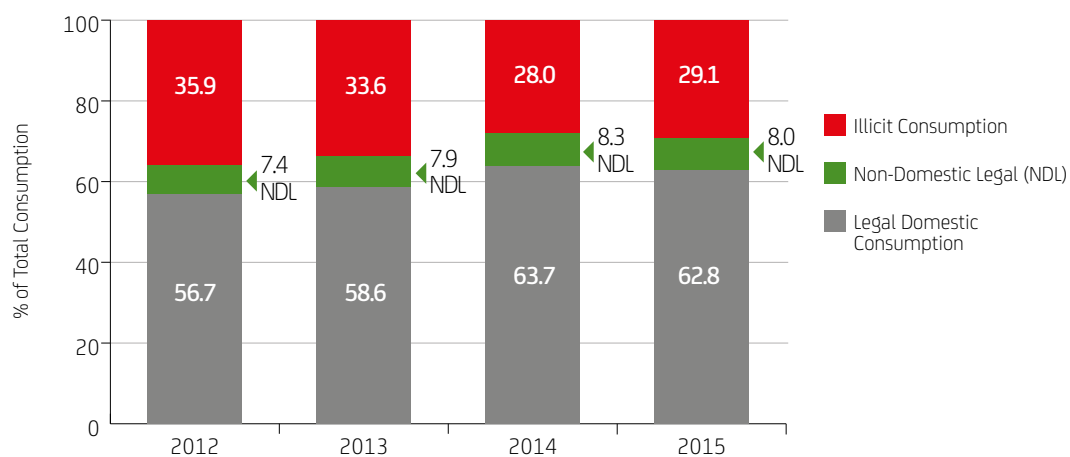
	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	2.9	56.7	3.1	58.6	3.0	63.7	3.2	62.8	5.1
Legal Domestic Sales (LDS)	2.9	—	3.1	—	3.1	—	3.3	—	3.8
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	-0.1	—	-0.1	—	-28.7
Total Non-Domestic Inflows (ND)	2.2	43.3	2.2	41.4	1.7	36.3	1.9	37.2	9.0
Non-Domestic Legal (NDL)	0.4	7.4	0.4	7.9	0.4	8.3	0.4	8.0	3.3
Non-Domestic Illicit	1.8	35.9	1.8	33.6	1.3	28.0	1.5	29.1	10.7
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	5.1	100.0	5.4	100.0	4.8	100.0	5.1	100.0	6.5
Total Illicit Consumption	1.8	35.9	1.8	33.6	1.3	28.0	1.5	29.1	10.7

Source: Oxford Economics

¹Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4 (see Annex A for more details).

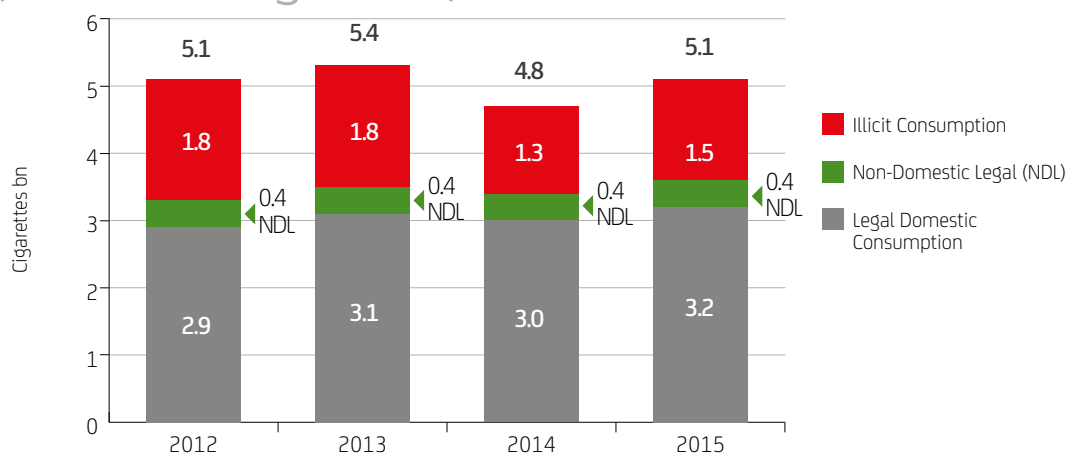
²Sourced from Hong Kong Customs & Excise Department

Hong Kong: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Hong Kong: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Hong Kong: Government Finances

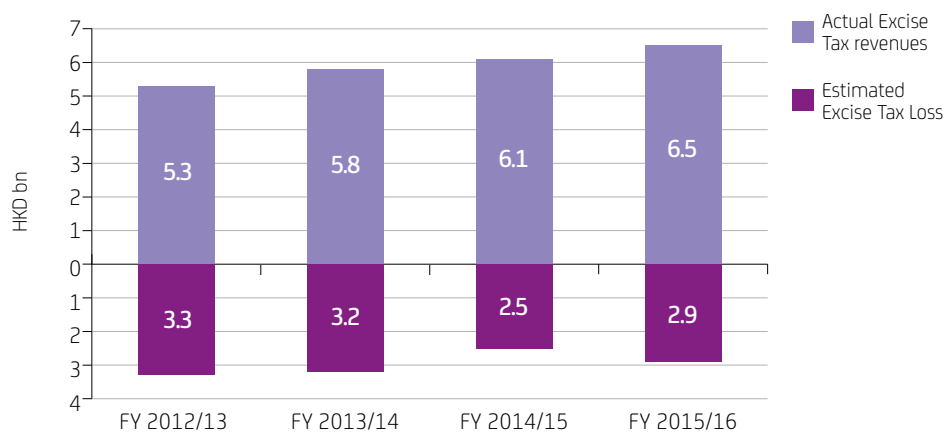
- Hong Kong levies a single unit-specific Excise Tax rate, and there is no GST or VAT in place.
- There was no change in the level of the Excise Tax rate in 2015.
- Having been left unchanged since February 2011, the Excise Tax rate was increased to HKD 1,906 per thousand cigarettes (equivalent to HKD 38.12 per pack of 20 sticks) on 26th February 2014.
- Prior to this, the Excise Tax rate was HKD 1,706 per thousand cigarettes (equivalent to HKD 34.12 per pack of 20 cigarettes).
- Actual revenue from excise duty on tobacco was HKD 6.5 billion in fiscal year 2015/16, an increase of 7.7% in comparison with 2014/15 following an increase in Legal Domestic Sales over the same period.
- Our estimates indicate that the Tax Loss associated with Illicit Consumption of cigarettes in fiscal year 2015/16 amounted to HKD 2.9 billion (USD 377 million). This represents a 15.1% increase in the estimated Tax Loss from fiscal year 2014/15.
- As a proportion of total potential Excise Tax revenues, the estimated Tax Loss from Illicit Consumption increased to 30.9%, a slight uptick from 29.5% estimated for the previous year, but still lower than the share of 35.7% estimated for the fiscal year 2013/14.

Hong Kong: Actual government revenues and estimated Tax Loss

	2012/13 fiscal year		2013/14 fiscal year		2014/15 fiscal year		2015/16 fiscal year		% change in local currency 2014/15- 2015/16
	HKD bn	USD mn	HKD bn	USD mn	HKD bn	USD mn	HKD bn	USD mn	
Actual revenue from excise duties on tobacco	5.3	678	5.8	754	6.1	783	6.5	843	7.7%
Estimated number of illicit cigarettes purchased (cigarettes bn)	2.0		1.9		1.3		1.5		15.1%
Estimated Tax Loss from Illicit Consumption	3.3	429	3.2	419	2.5	328	2.9	377	15.1%
Lost excise revenue	3.3	429	3.2	419	2.5	328	2.9	377	15.1%
Excise Tax Loss as % of potential total Excise Tax revenues	38.7%		35.7%		29.5%		30.9%		

Source: Hong Kong Customs & Excise Department and Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal year runs from April to March.

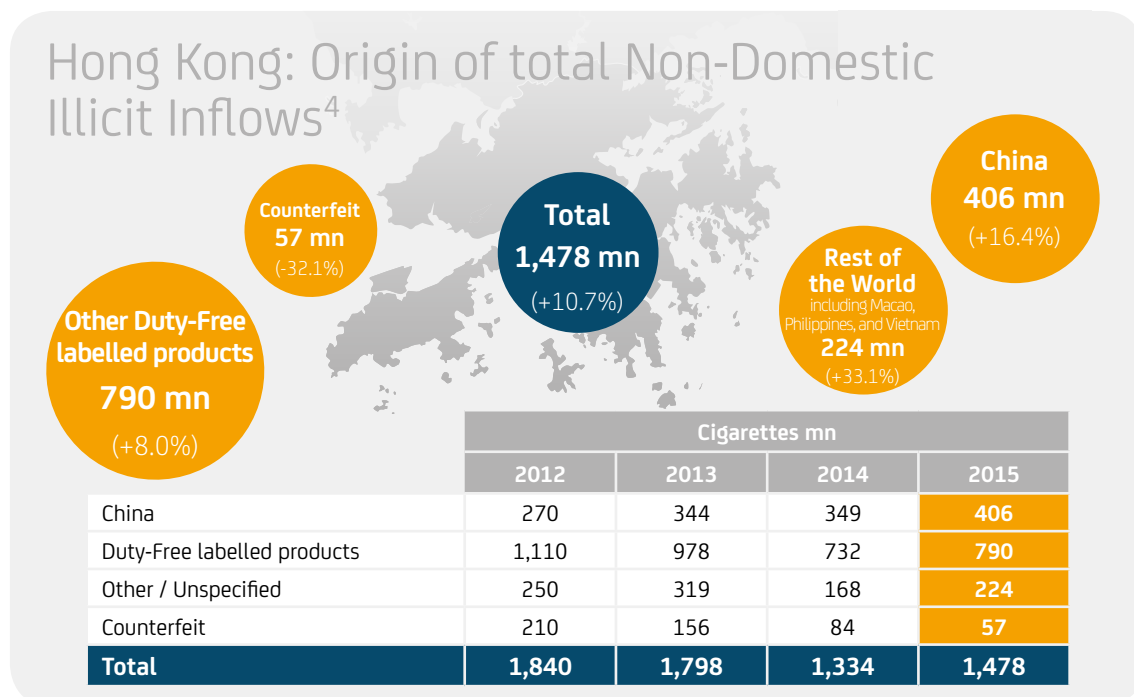
Hong Kong: Actual government revenues and estimated Tax Loss



Source: Hong Kong Customs & Excise Department and Oxford Economics based on PM data

Hong Kong: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 16 markets fell by 28.7% (to an estimated 83 million cigarettes), with nearly 90% found in nearby Macao.¹
- Given the proximity with China and the high frequency of passenger traffic over land borders, a high proportion of cigarettes consumed in Hong Kong originate abroad. The Non-Domestic share in Total Consumption increased by nearly 1 pp in 2015 after declining for the preceding three years since the first Asia Illicit Tobacco Indicator Report.
- In total, more than one in three cigarettes consumed in Hong Kong are still of Non-Domestic origin.
- We estimate the volume of Non-Domestic Legal Inflows to be slightly more than 400 million cigarettes in 2015,² representing an increase of 3.3% compared with 2014.
- However, the share of Non-Domestic Legal Inflows in Total Consumption showed a small decline to 8.0% in 2015, from 8.3% in 2014, given that growth in Total Consumption was higher than growth in Non-Domestic Legal Inflows.
- The remaining volume of Non-Domestic Inflows, which originates through illicit channels, is dominated by products intended for retail sale in China and Duty-Free labelled products, with notable contributions from Macao, Philippines, and Vietnam.
- Since 2012, cigarettes intended for retail sale in China have contributed the most to total Contraband consumption in Hong Kong.
- With the exception of Counterfeit products, the increase in Non-Domestic Illicit Inflows was broad-based. Inflows of cigarettes intended for retail sale in China rose by 16.4% in 2015 to an estimated 406 million cigarettes, while other Duty-Free labelled products rose by 8.0%. Illicit cigarettes intended for retail sale in other markets excluding China also rose in 2015. Included within this is nearly 100 million cigarettes of Unspecified Market Variant, after doubling in volume in comparison with 2014.³ “Double Happiness”, “Esse”, “Golden Deer”, and “Zhong Nan Hai” were the top Unspecified Market Variant brands identified, accounting for 89% of total volumes in 2015.
- By contrast, the incidence of Counterfeit products declined by 32.1% in 2015, with an estimated 57 million Counterfeit cigarettes consumed. However, this was not enough to offset a rise in Contraband cigarettes consumed.



Source: IT Flows Model and Oxford Economics

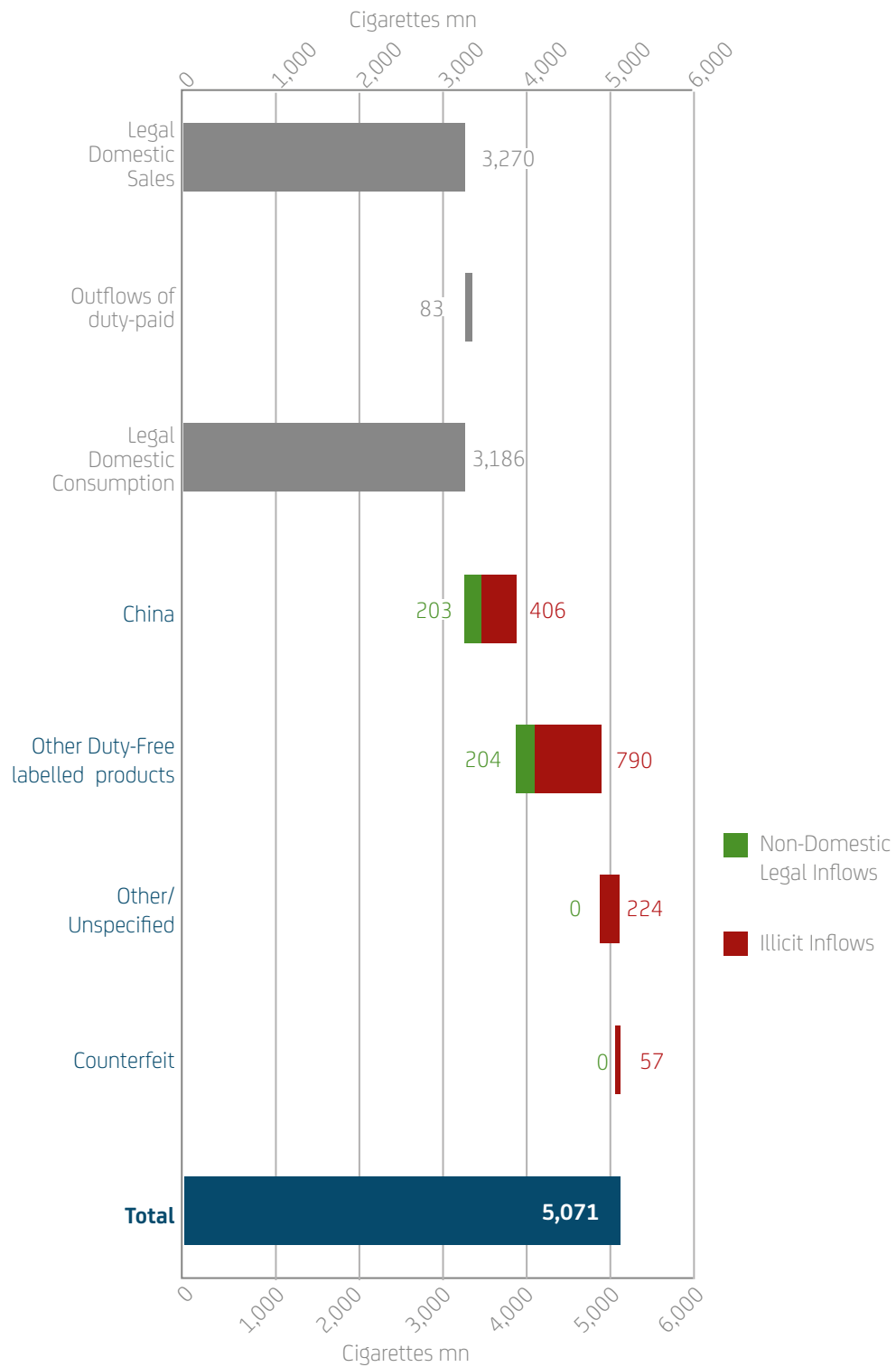
¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin and the passenger duty-free personal import allowance limit.

³Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

⁴Figures in brackets reflect % change from 2014.

Hong Kong: Consumption breakdown 2015

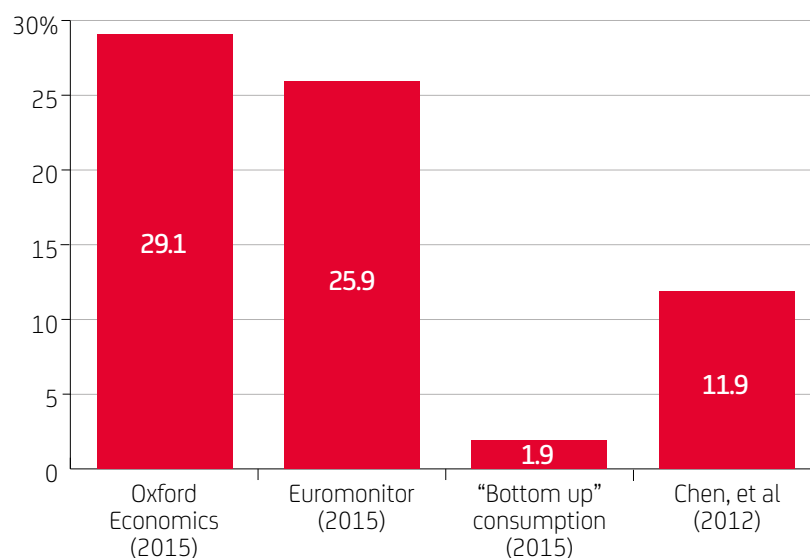


Source: IT Flows Model and Oxford Economics

Hong Kong: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 1.9% in 2015, or around 61 million cigarettes (based on 2015 LDC). The source for Smoking Prevalence and average daily cigarette consumption is the Hong Kong Thematic Household Survey Report No. 59, compiled by the Census and Statistics Department, 2016.
Chen J, McGhee SM, Townsend J, et al. Tob Control, 2015. Retrieved via http://www.ncbi.nlm.nih.gov/pubmed/25566812	Total Consumption is estimated through a "bottom up" approach, including estimates of both domestic consumption and visitor consumption. Illicit Consumption is subsequently estimated as the difference between Legal Domestic Sales, sourced from Hong Kong Customs & Excise Department, and Total Consumption, allowing for Non-Domestic Legal Inflows from inbound visitors and returning domestic residents. Based on this approach, the authors estimate Illicit Consumption of between 8.2% and 15.4% in 2012.
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 25.9% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

Hong Kong: Alternative estimates of Illicit Consumption



Hong Kong: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Sales of Duty-Paid Tobacco, sourced from the Hong Kong Customs & Excise Department.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Hong Kong market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 83 million cigarettes, with the large majority destined for Macao.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Hong Kong Tourism Board.
Non-Domestic Illicit	Empty Pack Surveys.	Based on Empty Pack Surveys plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes. Based on market intelligence and analysis of seizure data, Counterfeit cigarettes identified in the Empty Pack Survey were assumed to be Inflows to Hong Kong.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 5.1 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the prevailing Excise Tax rate.	See Annex B for more details.

Indonesia: Legal Domestic Sales

- Legal Domestic Sales in Indonesia are estimated at 286.7 billion cigarettes for 2015, virtually unchanged in comparison with the previous year.¹
- Since 2012, Legal Domestic Sales have remained relatively stable.
- Indonesia is the largest market in this Report based on the volume of Legal Domestic Sales.
- Three manufacturers (PM/Sampoerna, PT. Gudang Garam, and PT. Djarum) account for around 80% of Legal Domestic Sales.
- Despite rising by nearly 10% in 2015, the nominal price of a pack of cigarettes in Indonesia is lower than its neighbouring markets. The price of the Most Sold Brand at USD 1.48 per pack of 20 cigarettes is lower than in Malaysia (USD 3.29) and Singapore (USD 9.49).²
- In terms of affordability of cigarettes as measured by the Relative Income Price,³ cigarette prices in Indonesia are the second most “expensive” among the 17 markets included in this Report, behind Laos. It costs approximately 4.4% of per capita income to buy 100 packs of the Most Sold Brand in Indonesia, as opposed to Malaysia and Singapore, where the equivalent will cost 3.4% and 1.8%, respectively.

Indonesia

Legal Domestic Sales:

286.7
bn cigarettes

Price:

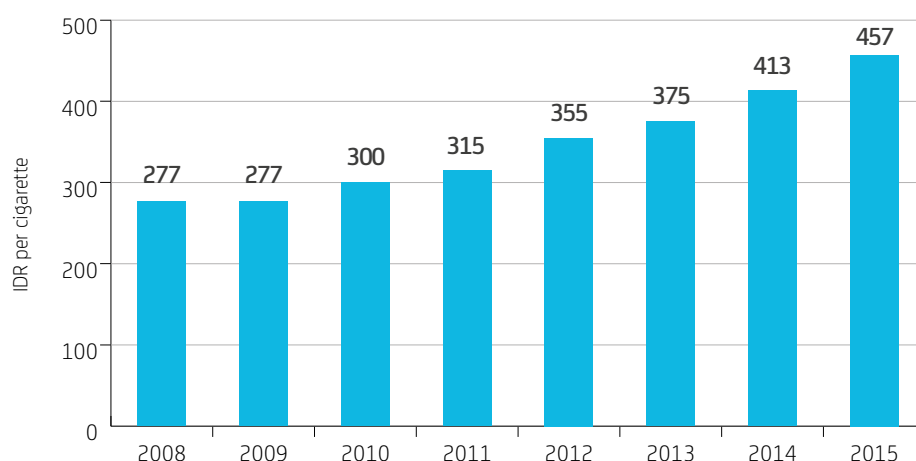
IDR **20,700**
USD **1.48**

¹Legal Domestic Sales is based on IMS data, adjusted to reflect the proportion of Domestic Illicit Consumption that includes under-declaration, used, and Counterfeit Excise Tax stamps. As such, our estimate of Legal Domestic Sales is lower than IMS estimates.

²Price per pack of the Most Sold Brand in October 2015, based on PM data. In Indonesia, the Most Sold Brand is a machine-made kretek, which comes in the format of 16 cigarettes per pack. The pack price of 20 is therefore derived from a pack of 16 cigarettes.

³The Relative Income Price is defined as the proportion, expressed as a percentage, of nominal GDP per capita required to buy 100 packs of the Most Sold Brand of cigarettes in a particular market.

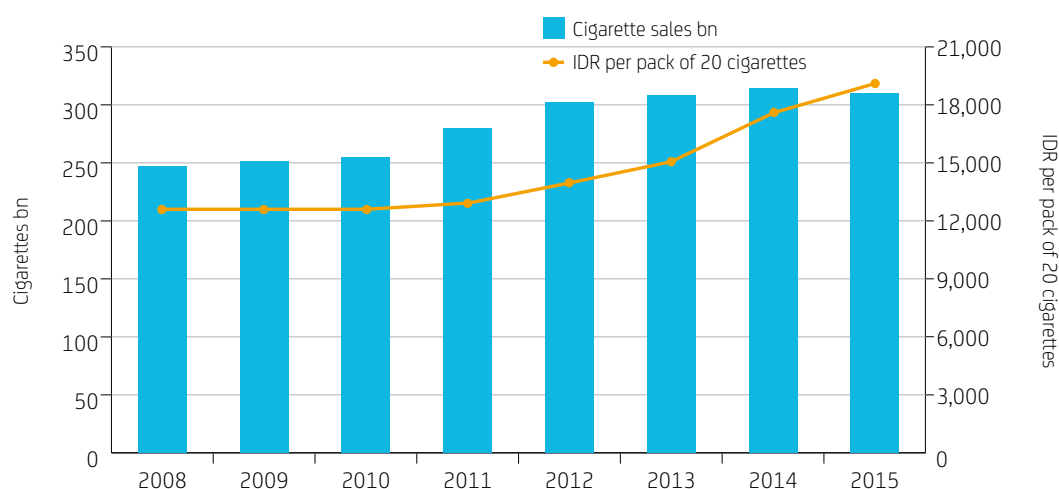
Indonesia: Excise duty applied to cigarettes⁴



Source: Indonesian Directorate General of Customs & Excise

⁴Rate applied in January of each year to Most Sold Brand (machine-made kretek with volume > 2bn), including Earmarked Tax introduced in 2014.

Indonesia: Legal Domestic Sales and prices⁵



Source: Oxford Economics based on PM

⁵Price of the Most Sold Brand in January of each year. In Indonesia, the Most Sold Brand is a machine-made kretek, which comes in the format of 16 cigarettes per pack. Pack price of 20 is therefore derived from a pack of 16 cigarettes. For the purposes of this chart, Legal Domestic Sales data has not been adjusted for the presence of under-declaration, used, and Counterfeit Excise Tax stamps. The estimates of Legal Domestic Sales are therefore higher than presented elsewhere in this Report.

Indonesia: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales² were combined with estimates by Satriawan et al., from the Centre for Economic & Public Policy Studies at Gadjah Mada University (UGM),³ to estimate Total Consumption of cigarettes in Indonesia.
- Total Consumption (legal and illicit) is estimated at 325.1 billion cigarettes in 2015. Of this, an estimated 88.0% or 286.3 billion cigarettes is Legal Domestic Consumption, 0.2% is Non-Domestic Legal Consumption, and 11.8% or 38.3 billion cigarettes is Illicit Consumption.
- The Empty Pack Survey methodology, which is mostly limited to the measurement of Inflows of Non-Domestic cigarettes, under-estimates the true volume of Illicit Consumption in Indonesia. This is due to the presence of domestically manufactured cigarettes where duty has not been paid, or where duty has been under-declared (i.e., cigarette packets with incorrect Excise Tax stamps affixed according to the appropriate tax tier of the cigarettes).
- This year the Asia Illicit Tobacco Indicator Report supplements the Empty Pack Survey analysis with estimates of Domestic Illicit Consumption based on an academic study conducted in Indonesia.⁴ This study reported a Domestic Illicit Incidence of 11.7% in 2014, based on a random sample of over 21,000 newly-purchased cigarette packets collected from 16 provinces in Indonesia. These packets were analysed for the presence of “violations” based on the following categories:
 - Incorrect personalisation: Incorrect Excise Tax stamp according to appropriate manufacturer.
 - Improper orientation: Incorrect Excise Tax stamp according to appropriate tax tier of cigarettes.
 - Used: Pre-used Excise Tax stamp affixed to new cigarette packets.
 - Counterfeit: Fake Excise Tax stamp.
 - Plain: No Excise Tax stamp present.
- The research by Satriawan et al., which was also conducted in 2010 and 2012, indicates a rising trend of Domestic Illicit Consumption in Indonesia. Domestic Illicit Consumption rose from 6.2% in 2010, to 8.5% in 2012 and 11.7% in 2014.
- Total Non-Domestic Inflows, which represent a very small proportion of Total Consumption (0.2%) fell for a second successive year in 2015, from nearly 1 billion cigarettes in 2014 to around 750 million cigarettes. This represents a decline of nearly one-quarter, with Non-Domestic Inflows at their lowest level since the beginning of the Asia Illicit Tobacco Indicator series.
- The Indonesian Ministry of Finance through its Customs & Excise department continue to increase enforcement efforts to tackle illicit cigarettes. In 2015, Customs & Excise processed more than 1,200 illegal cigarette trade cases, up from the 901 cases processed in 2014.

Indonesia: Composition of cigarette consumption⁵

	2012 ³		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	282.9	91.3	284.7	89.3	286.2	88.0	286.3	88.0	0.0
Legal Domestic Sales (LDS)	283.6	—	285.2	—	286.6	—	286.7	—	0.0
Outflows of domestic duty-paid cigarettes	-0.7	—	-0.5	—	-0.4	—	-0.4	—	11.6
Total Non-Domestic Inflows (ND)	0.9	0.3	2.1	0.7	1.0	0.3	0.8	0.2	-24.3
Non-Domestic Legal (NDL)	0.6	0.2	0.6	0.2	0.7	0.2	0.5	0.2	-20.7
Non-Domestic Illicit	0.3	0.1	1.5	0.5	0.3	0.1	0.2	0.1	-31.9
Domestic Illicit	26.2	8.5	32.2	10.1	38.1	11.7	38.1	11.7	-0.1
Total Consumption	310.0	100.0	318.9	100.0	325.3	100.0	325.1	100.0	-0.1
Total Illicit Consumption	26.5	8.6	33.6	10.6	38.4	11.8	38.3	11.8	-0.3

Source: UGM and Oxford Economics

¹The Empty Pack Survey was undertaken in 2015 Q4. 2012 results based on 2011 Q2 Empty Pack Survey (see Annex A for more details).

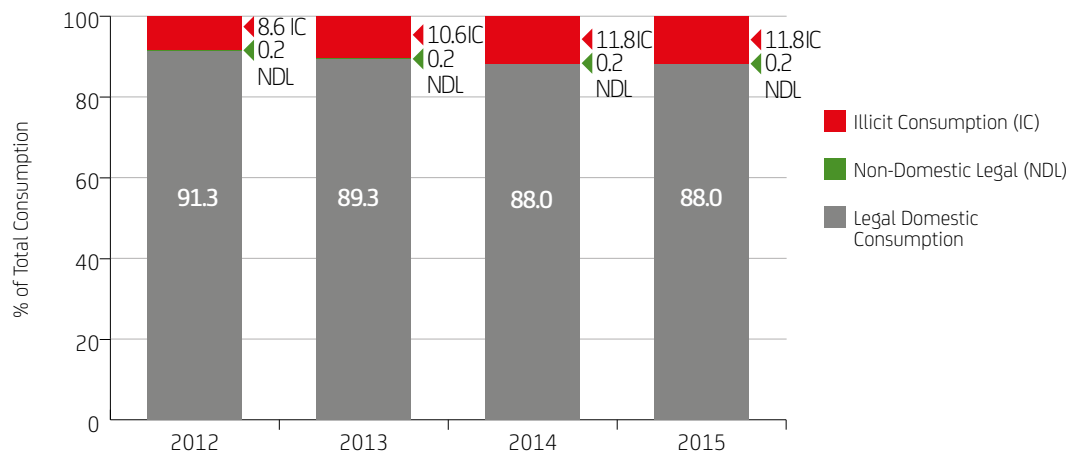
²Given that a proportion of Domestic Illicit Consumption includes cigarettes with incorrect, used, or Counterfeit Excise Tax stamps affixed, it was necessary to adjust the estimate of Legal Domestic Sales for the purposes of this Report as these volumes are likely to be included within the IMS data.

³Satriawan, Elan, Artidiatun Adji, Kun Haribowo, Mohtar Rasyid, Restiatun, Wisnu Setiadi Nugroho, Riswanti Sekaringsih, Andika Ridha Ayu Perdana, Nadhila Adani, M. Alif Timur Ghifari, “Survey on Cigarettes Distribution in Indonesia”, Center for Economic and Public Policy Studies, Universitas Gadjah Mada, Unpublished Report, 2014.

⁴ibid.

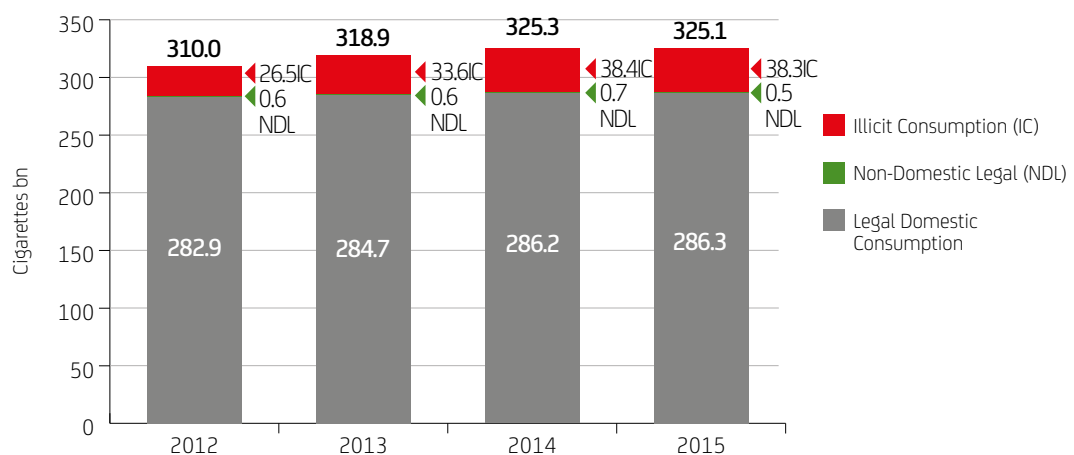
⁵Domestic Illicit estimates for 2013 based on interpolating between 2012 and 2014 data from Satriawan et al. 2015 estimates based on 2014 data. Previous editions of the Asia Illicit Tobacco Indicator Report included estimates based on the Empty Pack Surveys only and therefore exclude estimates of Domestic Illicit Consumption.

Indonesia: Composition of cigarette consumption (% of Total Consumption)



Source: UGM and Oxford Economics

Indonesia: Composition of cigarette consumption (number of cigarettes)



Source: UGM and Oxford Economics

Indonesia: Government Finances

- Indonesia has one of the most complex Excise Tax systems for tobacco products in the world.
- A multi-tiered specific excise structure is applied, where the level of excise applied depends on three variables: the cigarette type (hand-rolled kretek, machine-made kretek, or machine-made white cigarettes), production volume (above 2 billion cigarettes, between 350 million and 2 billion cigarettes, between 50 million and 350 million, and below 50 million cigarettes), and the price (various price levels).
- In recent years, the government has taken gradual steps to reduce the complexity of the Excise Tax system.
- Effective from January 2015, the multi-tiered system was reduced from 13 tiers to 12. This follows previous changes in 2012 and 2013 that have reduced the number of tiers from 19 in 2011.
- Excise Tax rates were also increased in 2015, by approximately 10.7% based on a weighted average of the different tax tiers.
- An Earmarked Tax (a regional tax which is equivalent to 10% of Excise Tax) was implemented on 1st January 2014.
- VAT was also applied to sales at a rate of 8.4% of the Banderole price.¹
- Actual revenues from Excise Tax on tobacco increased by 24.0% in 2015 to IDR 139.5 trillion. Government revenues have increased every year since the first Asia Illicit Tobacco Indicator Report and are now more than 50% higher than 2012 levels.
- Our estimates for Tax Loss are based on those cigarettes where no Excise Tax is paid and indicate that the Tax Loss associated with Illicit Consumption of cigarettes in 2015 amounted to IDR 9.2 trillion (USD 0.7 billion).
- This represents a lower bound estimate of the true value of Excise Tax Loss in Indonesia. Analysis by Satriawan et al. indicate a large proportion of Domestic Illicit Consumption is composed of under-declaration of Excise Tax liability by domestic manufacturers. However, the data is not available to estimate the level of tax gap for these cigarettes (i.e., the difference between the actual tax liability of cigarettes and the tax paid according to the inappropriate Excise Tax stamp affixed). We therefore exclude this proportion of Domestic Illicit Consumption from the analysis of Excise Tax Loss, including only those cigarettes packets with used, counterfeit, or no Excise Tax stamps present.

Indonesia: Actual government revenues and estimated Tax loss²

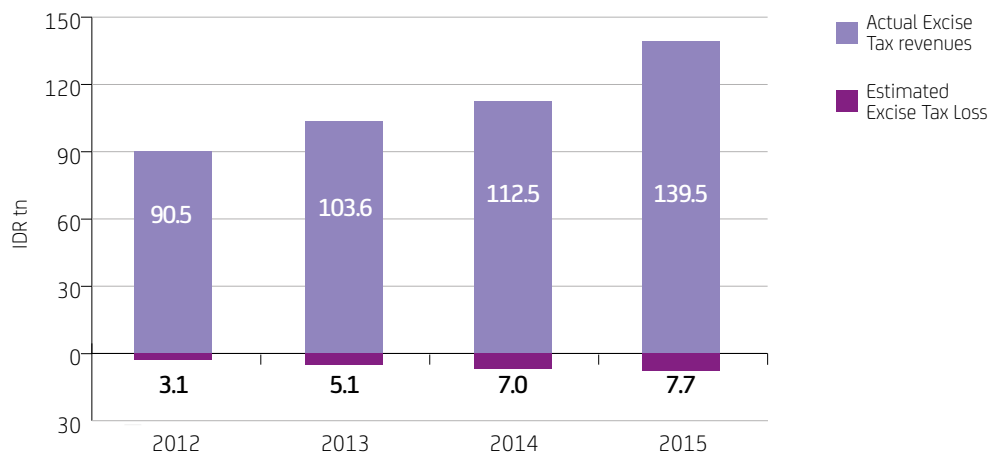
Indicator	2012		2013		2014		2015		% change in local currency 2014-15
	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	
Actual revenue from excise duties on tobacco	90.5	9.6	103.6	9.9	112.5	9.5	139.5	10.4	24.0%
Estimated number of illicit cigarettes purchased (cigarettes bn)	26.5		33.6		38.4		38.3		-0.3%
Estimated Tax Loss from Illicit Consumption	3.7	0.4	6.1	0.6	8.3	0.7	9.2	0.7	11.0%
Lost excise revenue	3.1	0.3	5.1	0.5	7.0	0.6	7.7	0.6	10.1%
Lost VAT revenue	0.6	0.1	1.0	0.1	1.3	0.1	1.5	0.1	15.8%
Excise Tax Loss as % of potential total Excise Tax revenues	3.3%		4.7%		5.9%		5.3%		

Source for government revenue data: Indonesian Ministry of Finance and Oxford Economics based on PM data
Includes Earmarked Taxes.

¹The banderole price is an estimation of the price of a pack of cigarettes sold to the end consumer. When placing an order for Excise Tax stamps, manufacturers also submit the banderole price. In theory, the banderole price should reflect the actual retail selling price. However, due to the length of the distribution network, the retail selling price may vary. Regulation dictates that the retail selling price should be within 5% of the printed banderole price.

²Excluding estimates of Domestic Illicit resulting from under-declaration of Excise Tax liabilities as outlined in Satriawan et al.

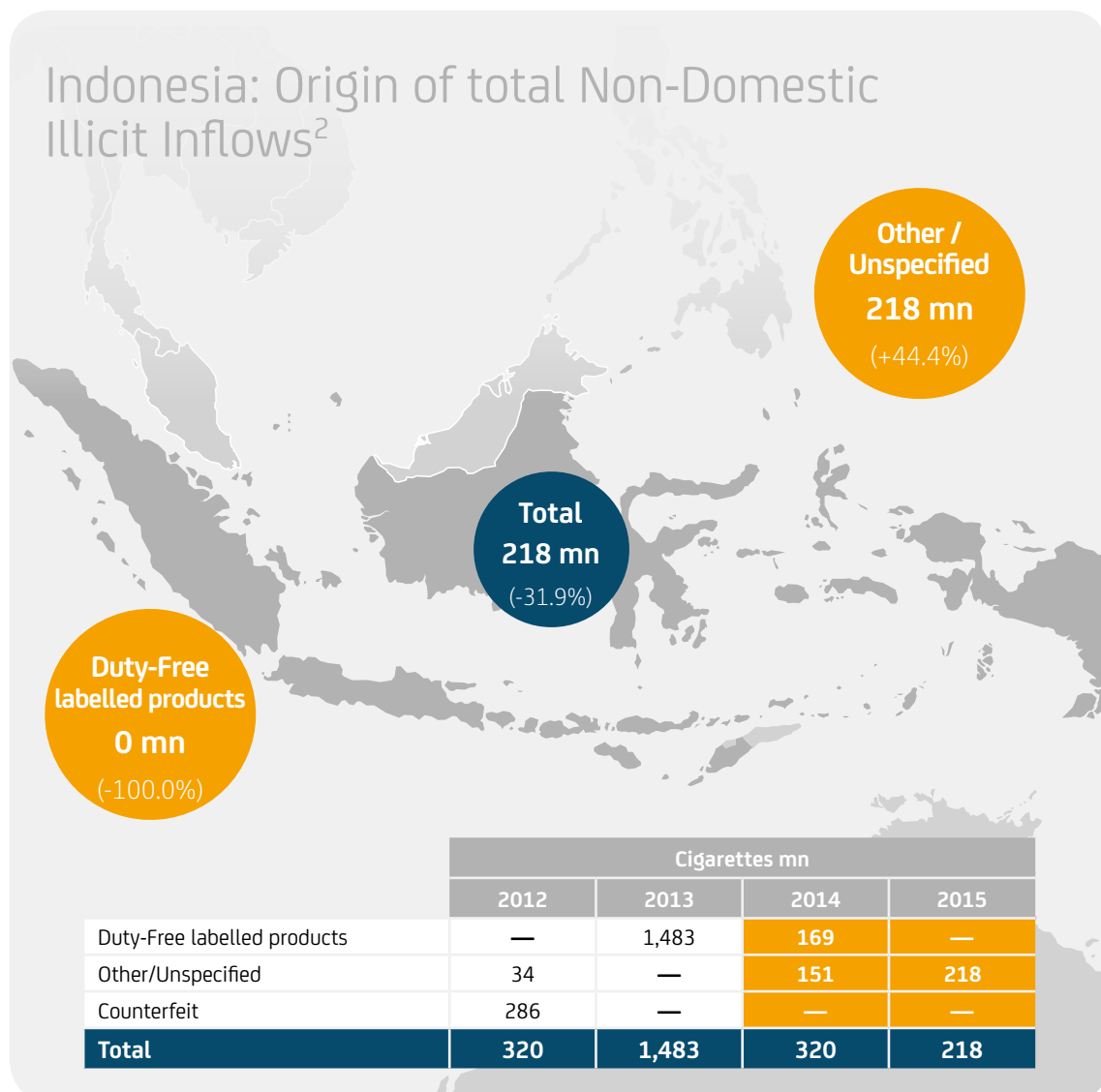
Indonesia: Actual government excise revenues and estimated Tax Loss



Source: Indonesian Ministry of Finance and Oxford Economics based on PM data

Indonesia: Trade Flows

- Illicit Consumption of cigarettes in Indonesia is almost entirely composed of Domestic Illicit. This is driven by the complex Excise Tax system, which classifies cigarettes into 12 different tax tiers according to the cigarette type, production level, and price, providing the opportunity and incentive for domestic manufacturers to under-declare their Excise Tax liabilities to authorities.
- Non-Domestic Illicit Inflows represent a very small proportion on Total Illicit Consumption (less than 0.1% in 2015). All Non-Domestic Illicit Inflows identified in 2015 were designated as Unspecified Market Variant products.¹
- No Counterfeit products were identified in Indonesia according to the Empty Pack Survey, a finding consistent with the previous two years of the Asia Illicit Tobacco Indicator research.

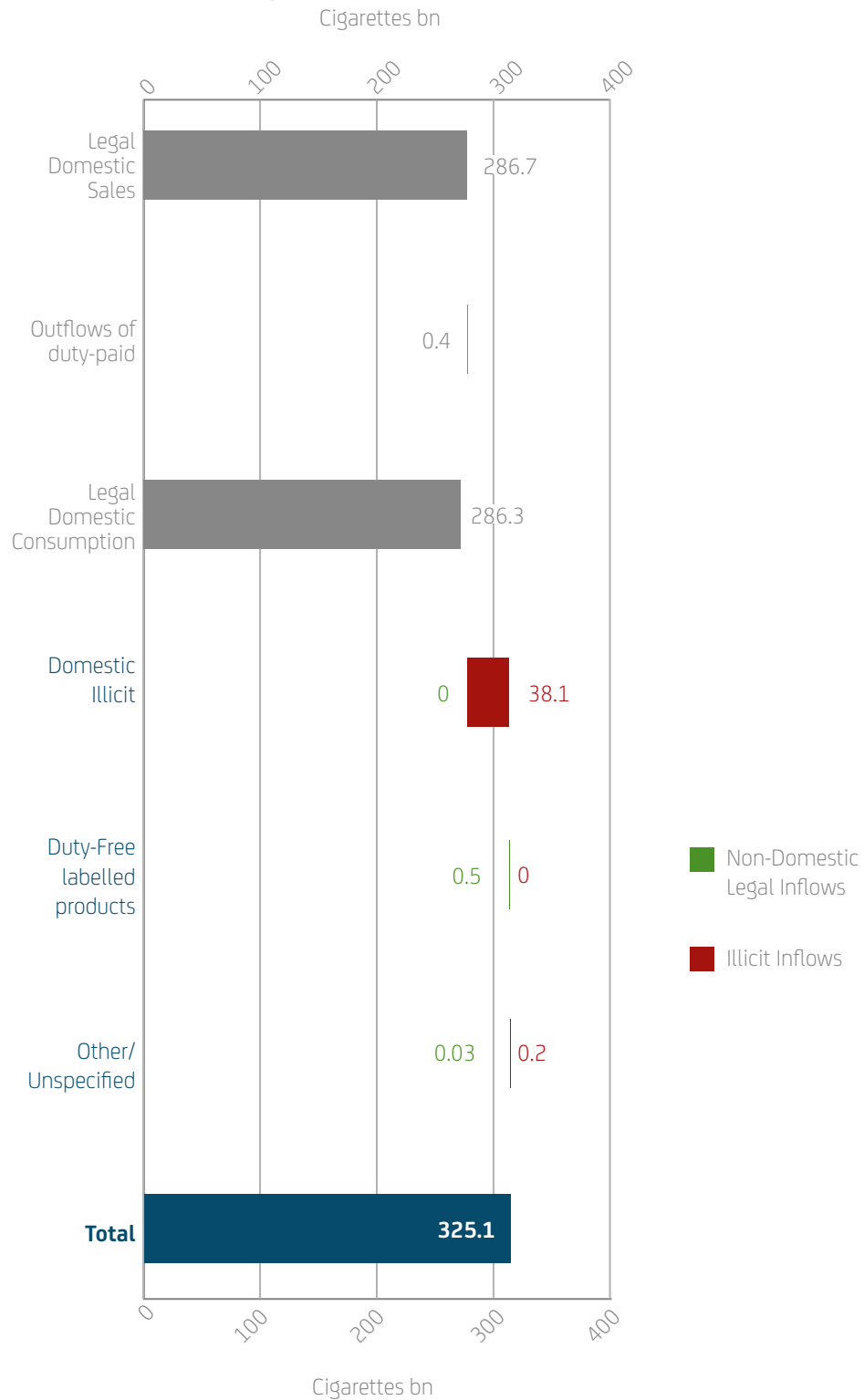


Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known. "Luffman" was the primary Unspecified Market Variant brand identified in 2015.

²Figures in brackets reflect % change from 2014.

Indonesia: Consumption breakdown 2015

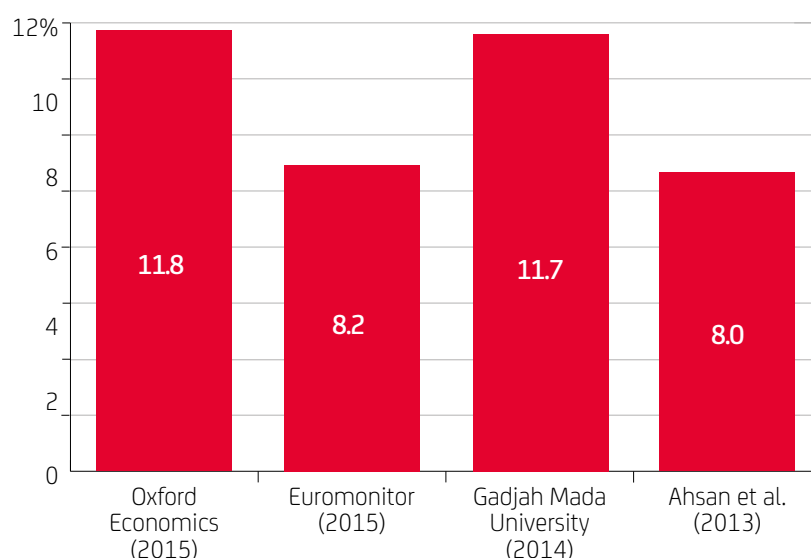


Source: IT Flows Model, UGM, and Oxford Economics

Indonesia: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made which can then be compared with LDC. Using this approach, estimated consumption is less than LDC, implying no evidence of substantial Illicit Consumption. The source for Smoking Prevalence and average daily cigarette consumption is the WHO FCTC 2014 report (based on the Global Adult Tobacco Survey 2011).
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 8.2% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Satriawan, Elan, Artidiatun Adji, Kun Haribowo, Mohtar Rasyid, Restiatun, Wisnu Setiadi Nugroho, Riswanti Sekaringsih, Andika Ridha Ayu Perdana, Nadhila Adani, M. Alif Tilmur Ghifari, "Survey on Cigarettes Distribution in Indonesia", Center for Economic and Public Policy Studies, Universitas Gadjah Mada, Unpublished Report, 2014.	Satriawan et al. estimate an Illicit Incidence of 11.7% in 2014, based on the identification of Excise Tax stamp violations in a sample of cigarette packets. The sampling methodology involved the forensic analysis of over 21,000 newly-purchased cigarette packets from wholesale, large, and small retail vendors, located in a randomly selected sample of both rural and urban areas within 16 provinces in Indonesia.
Ahsan et al. "Illicit cigarette consumption and government revenue loss in Indonesia. Globalization and Health 2014", Retrieved via http://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-014-0075-7	Estimates the magnitude of Illicit Consumption using two methods: a comparison of Legal Domestic Sales and estimated Total Consumption based on survey data, and a comparison of imports recorded by Indonesia and exports recorded by trade partners. Based on this methodology, the authors find an Illicit Incidence of 8% in 2013.

Indonesia: Alternative estimates of Illicit Consumption

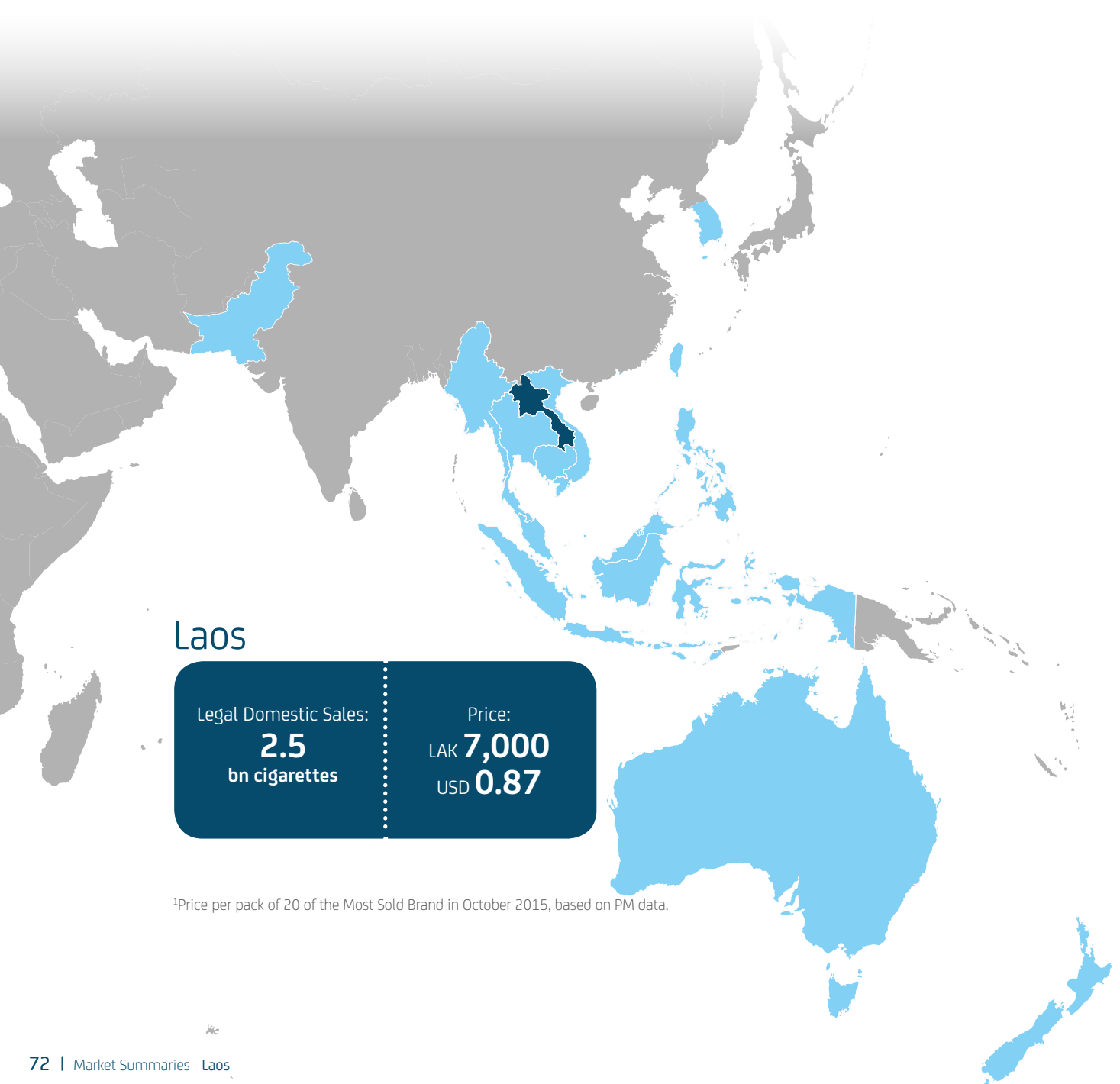


Indonesia: Data Sources

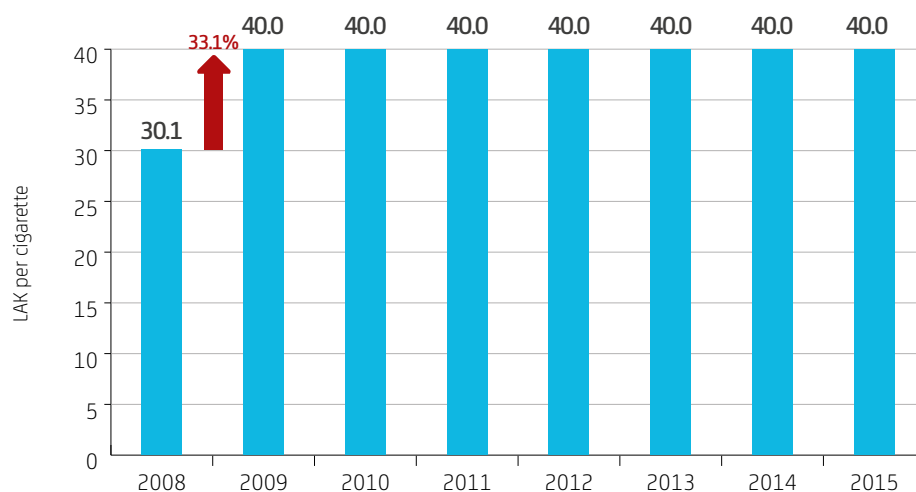
	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit, adjusted for the proportion of Domestic Illicit Consumption where the incorrect Excise Tax stamp was affixed (under-declaration, used, and Counterfeit), based on research by Satriawan et al.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Indonesian market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 392 million cigarettes, with a large share going to Singapore.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the UNWTO and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q4 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Based on estimates from Satriawan, Elan, Artidiatun Adji, Kun Haribowo, Mohtar Rasyid, Restiatun, Wisnu Setiadi Nugroho, Riswanti Sekaringsih, Andika Ridha Ayu Perdana, Nadhila Adani, M. Alif Tilmur Ghifari, "Survey on Cigarettes Distribution in Indonesia", Center for Economic and Public Policy Studies, Universitas Gadjah Mada, Unpublished Report, 2014.	Over 99% of illicit cigarettes are domestically manufactured in Indonesia.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 325.1 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption (excluding Domestic Illicit Consumption resulting from under-declaration of Excise Tax where the data is not sufficient to estimate the tax gap) multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Laos: Legal Domestic Sales

- Legal Domestic Sales in Laos are estimated at 2.5 billion cigarettes for 2015. This represents an increase of 3.3% in comparison with 2014.
- Two manufacturers (Imperial Tobacco and Lao-China Tobacco Company) account for nearly all Legal Domestic Sales in Laos.
- The cost of the Most Sold Brand of cigarettes in Laos remained the same in 2015 after rising by 16.7% in 2014. However, the Excise Tax rate has not changed since 2009.
- The nominal price of a pack of 20 of the Most Sold Brand of cigarettes in Laos is USD 0.87. This is lower than in Thailand (USD 1.13 per pack), but higher in comparison to other neighbouring markets such as Cambodia (USD 0.37), Myanmar (USD 0.47), and Vietnam (USD 0.80).¹



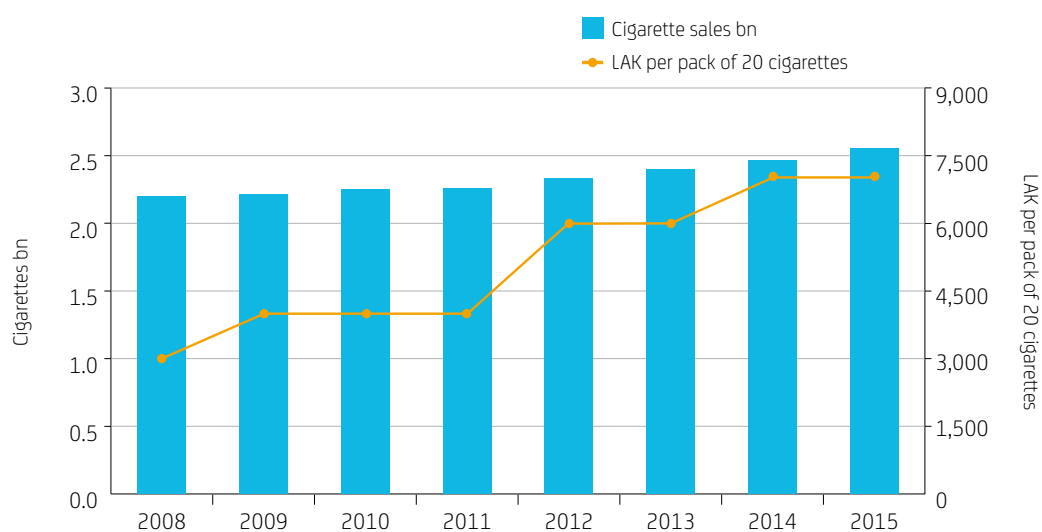
Laos: Excise duty applied to cigarettes²



Source: Oxford Economics based on PM data

²Rate applied in January of each year to the Most Sold Brand, including tax stamp.

Laos: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year.

Laos: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales were combined to estimate Total Consumption of cigarettes in Laos.
- Total Consumption (legal and illicit) is estimated at 3.4 billion cigarettes in 2015. Of this, an estimated 73.8% or 2.5 billion cigarettes is Legal Domestic Consumption, 7.2% is Non-Domestic Legal Consumption, and 19.0% or 652 million cigarettes is Illicit Consumption.
- Total Consumption has increased for two consecutive years since the Asia Illicit Tobacco Indicator series first included Laos within the analysis. In 2015, Total Consumption rose by 15.0% in comparison with 2014.
- With the volume of Legal Domestic Consumption remaining relatively stable in 2015, increasing by just 3.0% from 2014, the growth in Total Consumption was driven by an increase in Non-Domestic Inflows, and, in particular, through significant growth in Non-Domestic Illicit Consumption.
- Illicit Consumption more than doubled in 2015, from 262 million cigarettes in 2014 to 652 million cigarettes. This is equivalent to an increase in the level of Illicit Incidence to 19.0% in 2015, up from 8.8% in 2014.

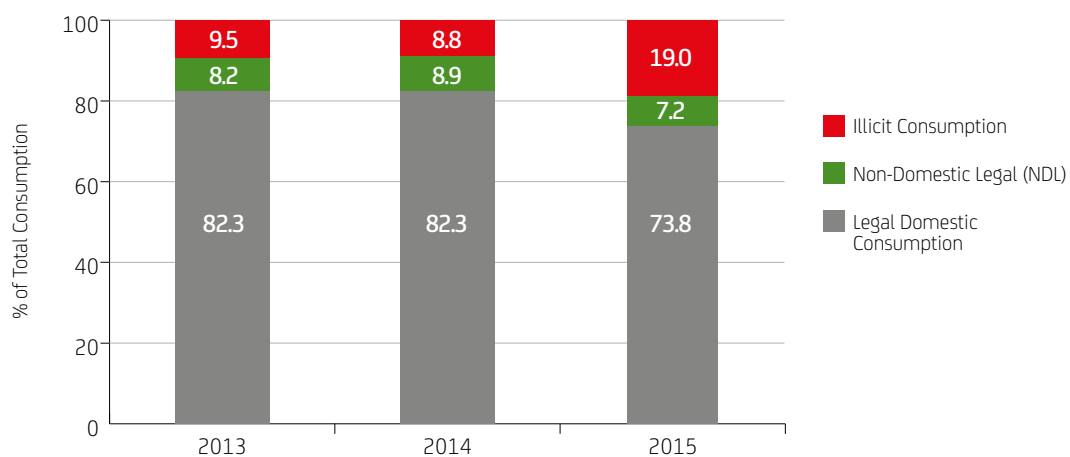
Laos: Composition of cigarette consumption

	2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	2.4	82.3	2.5	82.3	2.5	73.8	3.0
Legal Domestic Sales (LDS)	2.4	—	2.5	—	2.5	—	3.3
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	74.0
Total Non-Domestic Inflows (ND)	0.5	17.7	0.5	17.7	0.9	26.2	70.7
Non-Domestic Legal (NDL)	0.2	8.2	0.3	8.9	0.2	7.2	-6.9
Non-Domestic Illicit	0.3	9.5	0.3	8.8	0.7	19.0	149.1
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	2.9	100.0	3.0	100.0	3.4	100.0	15.0
Total Illicit Consumption	0.3	9.5	0.3	8.8	0.7	19.0	149.1

Source: Oxford Economics

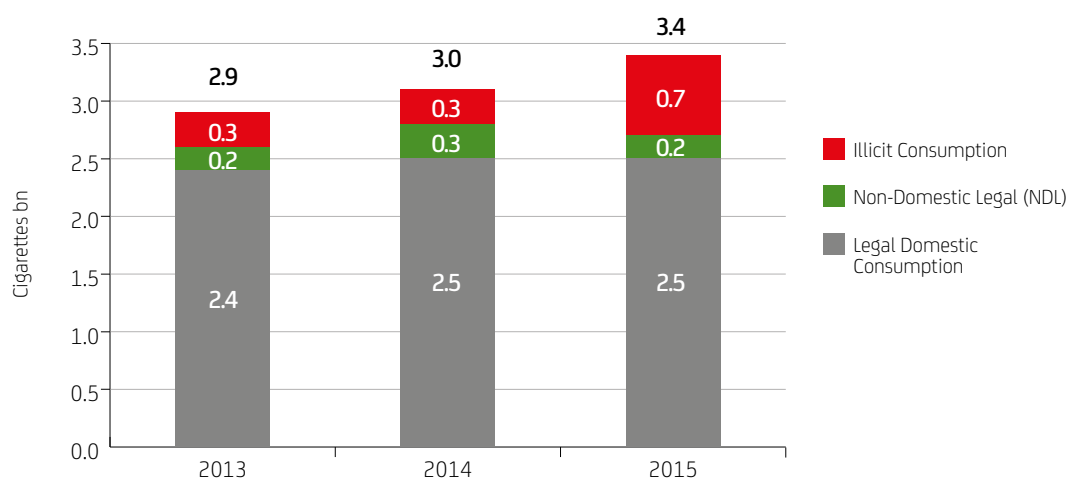
¹The Empty Pack Survey was undertaken in 2015 Q1. 2013 results based on the 2014 Q1 Empty Pack Survey (see Annex A for more details).

Laos: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Laos: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Laos: Government Finances

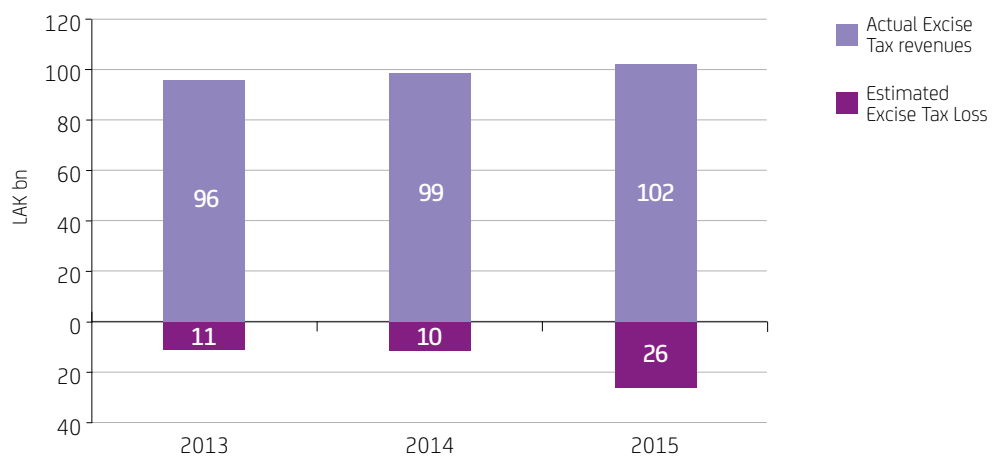
- Laos applies an ad valorem tax rate of 60% of the net ex-factory selling price for locally manufactured cigarettes.
- However, most manufacturers pay less due to a 25-year Investment Licence Agreement signed in 2001. This states that if production costs are LAK 1,500 or less per pack of 20 cigarettes, an Excise Tax rate of 15% is levied; otherwise a 30% rate will be applied.
- A specific excise duty rate of USD 20 per thousand cigarettes is levied on imports. In addition, there is a tax stamp of LAK 500 per pack.
- The rate of excise on tobacco has not changed since 2009.
- VAT is also levied on cigarettes at a rate of 10%.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2015 amounted to LAK 46.9 billion (USD 5.8 million), representing a 149.1% increase from the previous year. With the Excise Tax rate remaining unchanged, this represents an equally proportional increase with the volume of Illicit Consumption in comparison with 2014.
- The Excise Tax Loss in 2015 represents 20.4% of total potential Excise Tax revenues, up from the average of 10% estimated in 2013 and 2014.

Laos: Actual government revenues and estimated Tax Loss

	2013		2014		2015		% change in local currency 2014-2015
	LAK bn	USD mn	LAK bn	USD mn	LAK bn	USD mn	
Actual revenue from excise duties on tobacco	95.8	12.2	98.6	12.2	101.8	12.5	3.3%
Estimated number of illicit cigarettes purchased (cigarettes mn)	275		262		652		149.1%
Estimated Tax Loss from Illicit Consumption	18.5	2.4	18.8	2.3	46.9	5.8	149.1%
Lost excise revenue	11.0	1.4	10.5	1.3	26.1	3.2	149.1%
Lost VAT revenue	7.5	1.0	8.3	1.0	20.8	2.5	149.1%
Excise Tax Loss as % of potential total Excise Tax revenues	10.3%		9.6%		20.4%		

Source: Oxford Economics based on PM data
Includes tax stamps

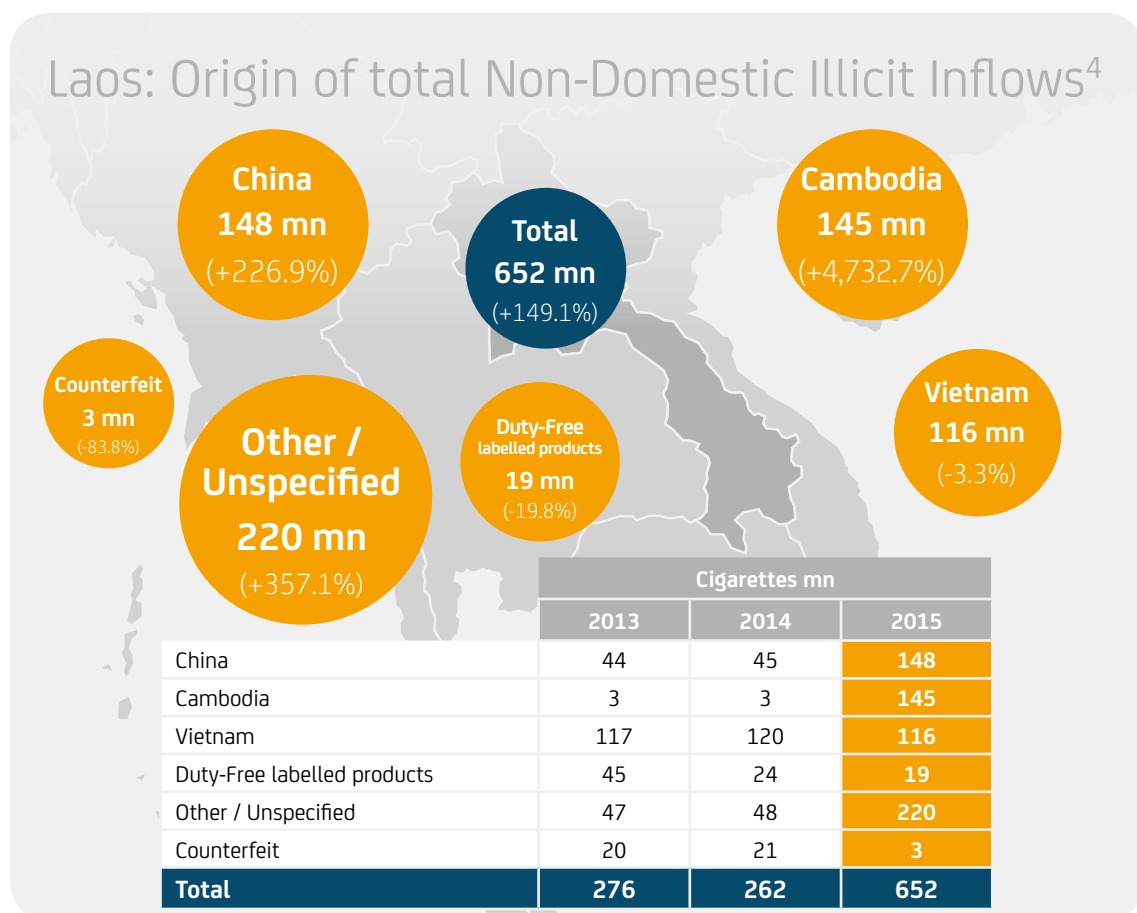
Laos: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on PM data

Laos: Trade Flows

- Non-Domestic Legal Inflows¹ are relatively large in Laos, with an estimated 247 million cigarettes (7.2% of Total Consumption) coming through legal non-duty-paid channels, primarily from neighbouring markets China and Vietnam.
- Cambodia, China, and Vietnam are the primary origin markets for Non-Domestic illicit cigarette consumption in Laos. In particular, illicit cigarettes intended for retail sale in Cambodia are estimated at 145 million in 2015, a substantial increase from around 3 million in 2013 and 2014.
- A significant proportion of Non-Domestic Illicit cigarettes identified were also intended for retail sale in China (148 million cigarettes or 22.7% of total Non-Domestic Illicit), with volumes more than doubling in comparison with 2014 estimates.
- Approximately 30% of Non-Domestic Illicit Inflows were identified as Unspecified Market Variant.² “Esse” and “Jet” were the primary Unspecified Market Variant brands, accounting for 89% of total volumes identified.
- There was also a small volume of Counterfeit products identified in Laos, amounting to 3 million cigarettes in 2015. This represents an 83.8% decline from the 21 million sticks estimated in 2014.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be very low,³ most of which were identified in the Empty Pack Survey conducted in Thailand.



Source: IT Flows Model and Oxford Economics

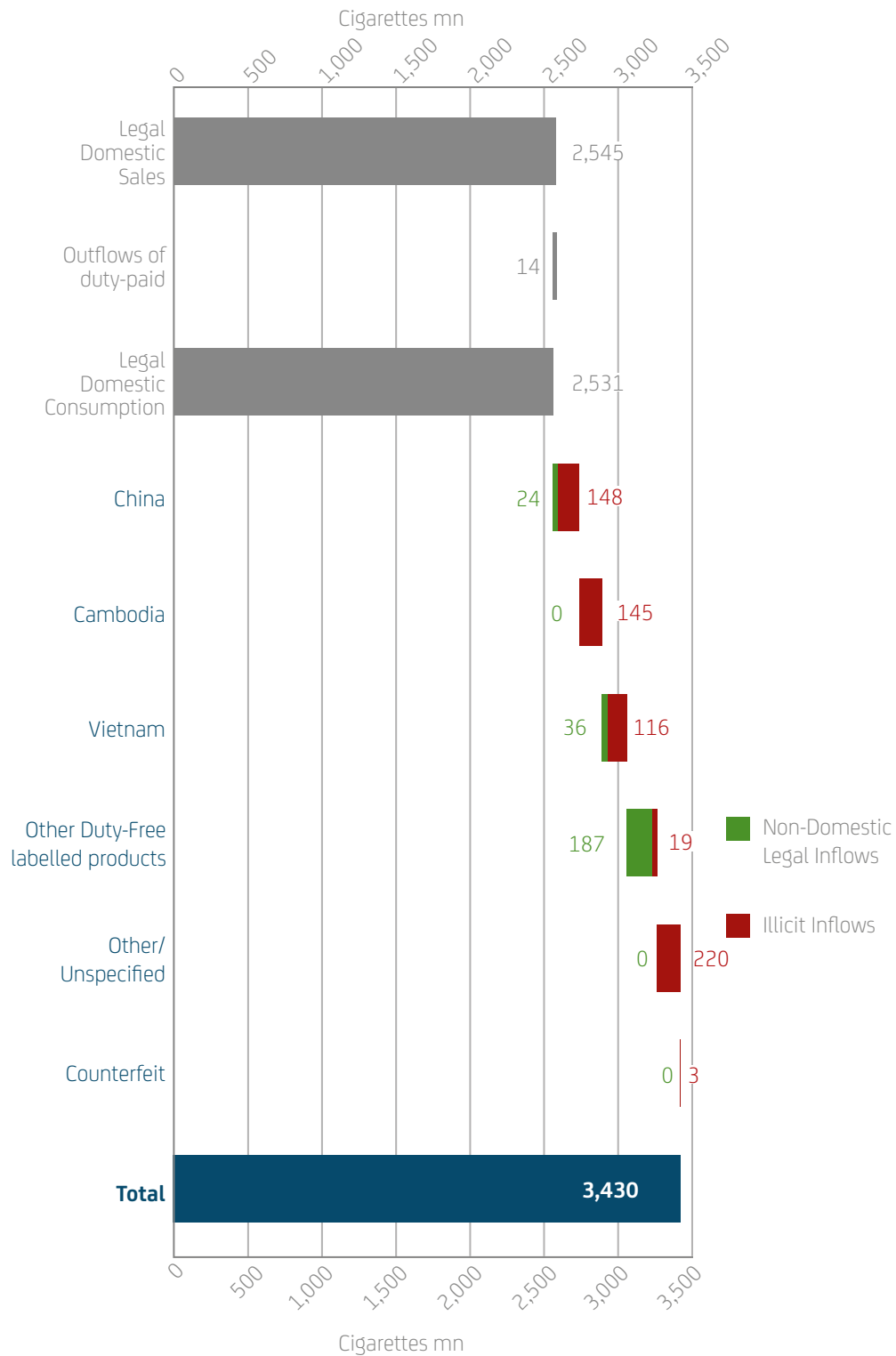
¹Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin and the passenger duty-free personal import allowance limit.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

⁴Figures in brackets reflect % change from 2014.

Laos: Consumption breakdown 2015

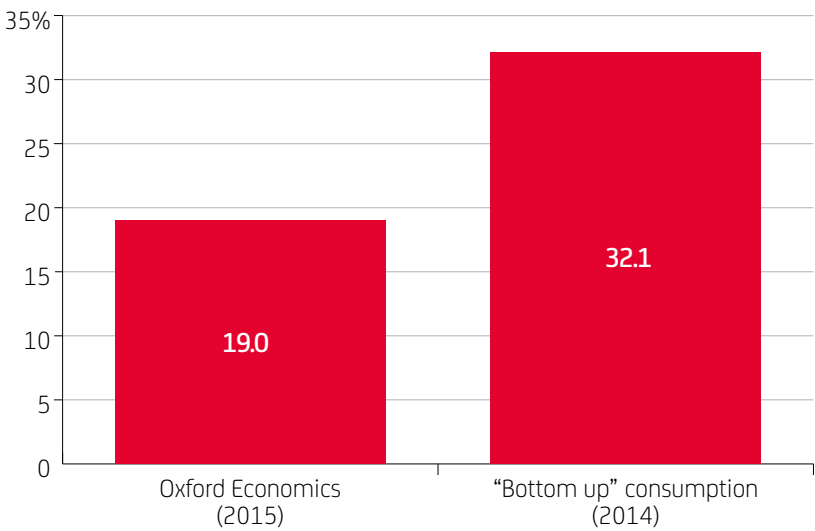


Source: IT Flows Model and Oxford Economics

Laos: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 32.1%, or around 1.2 billion cigarettes (based on 2014 LDC). The source for annual cigarette consumption per adult is Euromonitor, 2014 (available via www.tobaccoatlas.org).

Laos: Alternative estimates of Illicit Consumption



Laos: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Total industry volume based on PM and distributor estimates.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Laos market-specific labelling (e.g., health warnings, tax stamps, etc.).	Limited number of Laos domestic Market Variant cigarettes identified in other markets.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Limited Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Laos Tourism Development Department.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q2 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 3.4 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the tax rates applicable to the Most Sold Brand of cigarettes (Excise Tax, GST, and Earmarked Taxes).	See Annex B for more details.

Macao: Legal Domestic Sales

- Macao Legal Domestic Sales are estimated at 463 million cigarettes in 2015. This represents a 15.1% decline in comparison with 2014.
- The legal market for cigarettes is dominated by four manufacturers (accounting for nearly 75% of Legal Domestic Sales), namely PM, JTI, BAT, and Nanyang Brothers, with some additional presence of various Chinese brands and other small manufacturers.
- Cigarette prices rose by 66.7% in 2015 following the implementation of a new tobacco tax bill in July 2015, which led to an increase of 200% in the unit-specific rate of Excise Tax.
- The passenger duty-free personal import allowance limit was also reduced at the same time, from 100 sticks per person to 19 sticks, bringing Macao in line with current legislation in Hong Kong.
- Following the hike in Excise Tax, cigarette prices are now relatively high in Macao in nominal terms, costing USD 6.27 per pack of 20 based on the Most Sold Brand in 2015. Cigarette prices are now nearly four times higher than in China (USD 1.61 per pack). However, in comparison with Hong Kong, where a pack of cigarettes costs USD 7.10 for the Most Sold Brand, cigarette prices remain slightly lower.¹

Macao

Legal Domestic Sales:

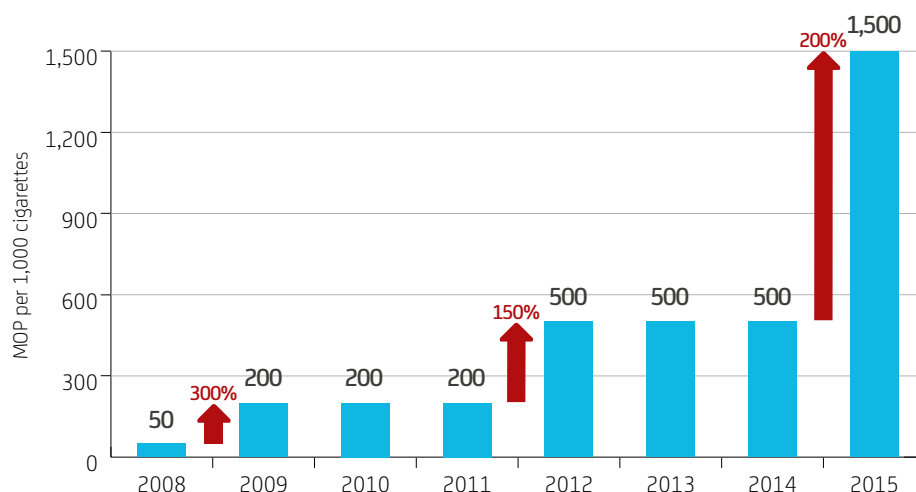
463
mn cigarettes

Price:

MOP **50.0**
USD **6.27**

¹ Price per pack of 20 of the Most Sold Brand in October 2015 based on PM data.

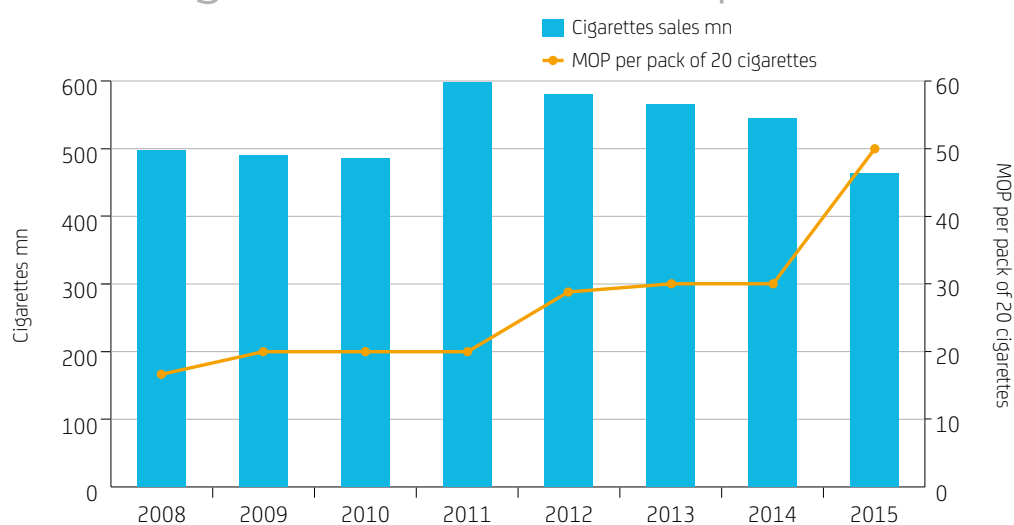
Macao: Excise duty applied to cigarettes²



Source: Macao government

²Rate applied in January of each year to the Most Sold Brand.

Macao: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price per pack of the Most Sold Brand in October of each year.

Macao: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Macao.
- Total Consumption (legal and illicit) is estimated at 820 million cigarettes in 2015, falling by 23.5% from an estimated 1.1 billion in 2014.
- An estimated 53.9% of Total Consumption, or 442 million cigarettes, is Legal Domestic Consumption. The share of Legal Domestic Consumption in Total Consumption is much lower than many markets in this Report given the very active border with China and high frequency of international passenger traffic.
- As a consequence, Non-Domestic Inflows accounted for as much as 46.1% of Total Consumption.
- Despite the reduction in the passenger duty-free personal import allowance limit implemented in July 2015, the Empty Pack Surveys indicate that a significant volume of Non-Domestic Inflows continue to be present in the Macao market.
- Following the implementation of a new tobacco tax bill in July 2015, a comparison of the Empty Pack Surveys indicates that the total Non-Domestic Incidence rose by 7.6pp in the second half of the year, from 42.3% in Q2 to 49.9% in Q4.
- Non-Domestic Illicit Consumption accounted for an estimated 28.0% of Total Consumption in 2015, equivalent to around 230 million cigarettes.
- Cigarette consumption declined across the board in 2015 in Macao. Legal Domestic Consumption declined by 15.2%, Non-Domestic Legal fell by 17.9% and Illicit Consumption was 37.8% below the volume estimated for 2014.
- Illicit Incidence fell by 6.5pp in 2015, from 34.5% in 2014 to 28.0%.

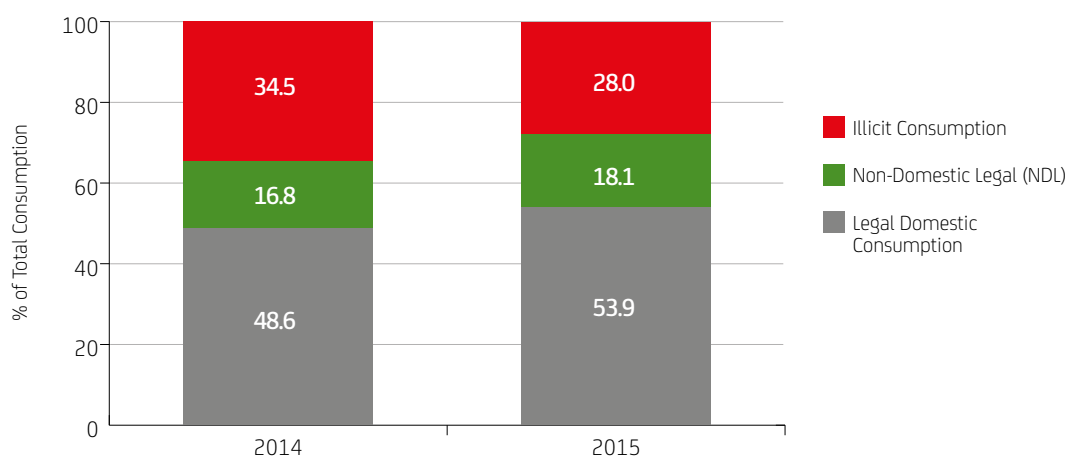
Macao: Composition of cigarette consumption

	2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	0.5	48.6	0.4	53.9	-15.2
Legal Domestic Sales (LDS)	0.5	—	0.5	—	-15.1
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	-188.0
Total Non-Domestic Inflows (ND)	0.6	51.4	0.4	46.1	-31.3
Non-Domestic Legal (NDL)	0.2	16.8	0.1	18.1	-17.9
Non-Domestic Illicit	0.4	34.5	0.2	28.0	-37.8
Domestic Illicit	0.0	0.0	0.0	0.0	n/a
Total Consumption	1.1	100.0	0.8	100.0	-23.5
Total Illicit Consumption	0.4	34.5	0.2	28.0	-37.8

Source: Oxford Economics

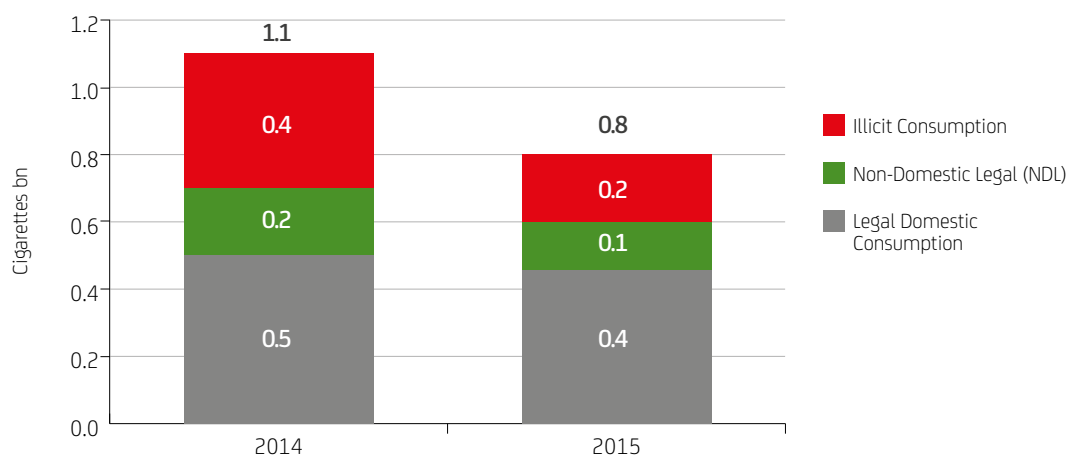
¹The Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4 (see Annex A for more details).

Macao: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Macao: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Macao: Government Finances

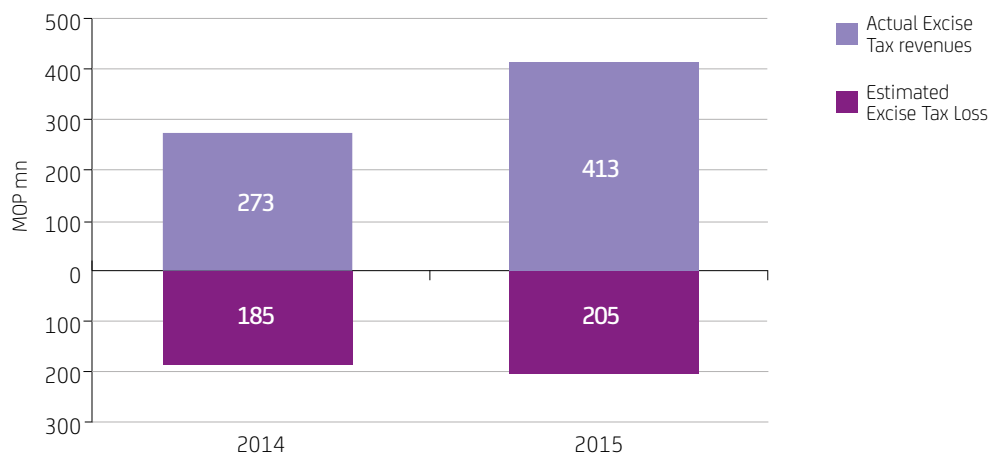
- Macao operates a single unit-specific Excise Tax system. There is no VAT or GST in place.
- The passage of a new tobacco tax bill in July 2015 saw the Excise Tax rate increase from MOP 500 to MOP 1,500 per thousand cigarettes. This is equivalent to a 200% increase in the rate of Excise Tax, and was the first tax increase implemented since late 2011.
- The new bill also reduced the passenger duty-free personal import allowance limit from 100 cigarettes to 19. As a consequence, Macao now operates the same limits as have been in place in Hong Kong since 2010.
- The increase in Excise Tax has led to an estimated 51.5% increase in actual revenues in 2015, despite the 15.1% decline in Legal Domestic Sales. In total, actual revenues from excise duties on tobacco are estimated at MOP 413 million in 2015 (USD 51.7 million).
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2015 amounted to MOP 205 million (USD 25.7 million). This represents a 10.8% increase in estimated Tax Loss in comparison with 2014.
- As a share of potential Excise Tax revenues, the Excise Tax Loss from Illicit Consumption fell by 7.2pp, from 40.4% in 2014 to 33.2% in 2015.

Macao: Actual government revenues and estimated Tax Loss

	2014		2015		% change in local currency 2014-2015
	MOP mn	USD mn	MOP mn	USD mn	
Actual revenue from excise duties on tobacco	273	34.1	413	51.7	51.5%
Estimated number of illicit cigarettes purchased (cigarettes mn)	370		230		-37.8%
Estimated Tax Loss from Illicit Consumption	185	23.1	205	25.7	10.8%
Lost excise revenue	185	23.1	205	25.7	10.8%
Excise Tax Loss as % of potential total Excise Tax revenues	40.4%		33.2%		

Source: Oxford Economics based on PM data

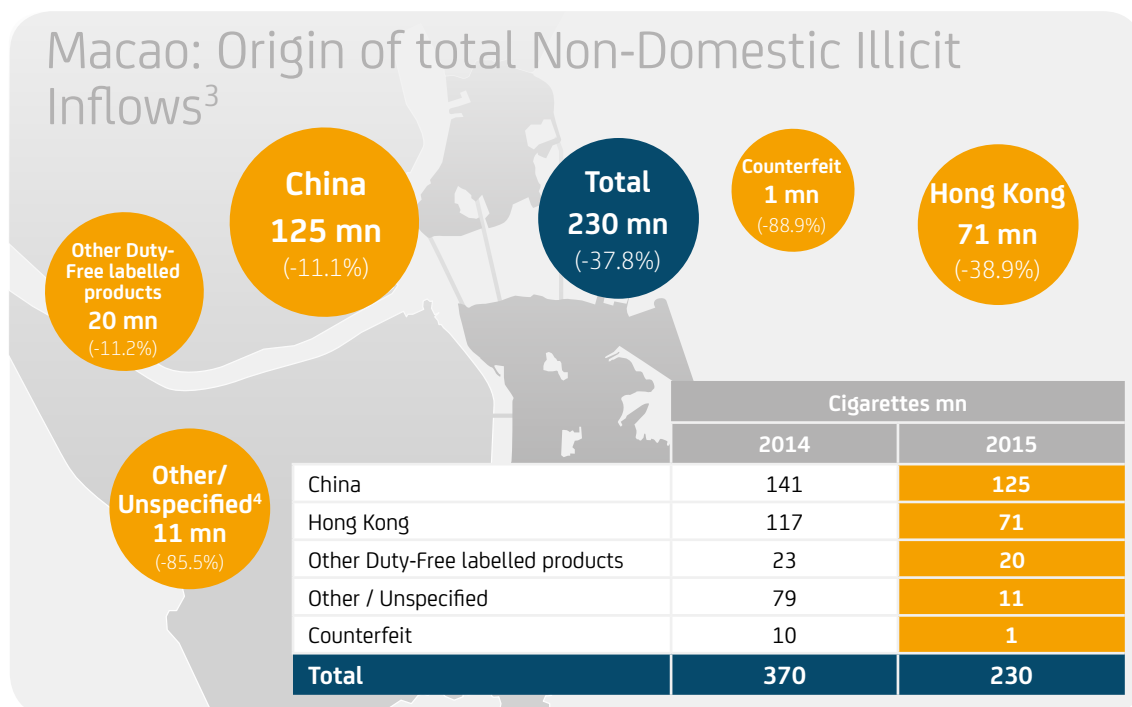
Macao: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on PM data

Macao: Trade Flows

- Macao has an extremely active border with China. In total, over 30 million people travelled to Macao in 2015 (equivalent to nearly 50 times the population of Macao), with nearly 90% of visitors coming from China or Hong Kong.
- As a consequence, there is a significant presence of Non-Domestic cigarettes in the Macao market, equivalent to an estimated 46.1% of Total Consumption.
- However, the average length of stay of international visitors is relatively short, just over 2 nights in 2015, and over half of all visitors choose to make the trip in the same day.
- Although the passenger duty-free personal import allowance was cut from 100 to 19 cigarettes in July 2015, it is unrealistic to assume that all inbound adult smokers in the first half of the year carried the full allowance with them when estimating the volume of Non-Domestic Legal Inflows for Macao.
- Instead, prior to the change in the passenger duty-free personal import allowance, we assume that inbound adult smokers carried with them Duty-Free products equivalent to one pack (20 cigarettes) per day spent in Macao. The restriction applies to inbound foreign visitors only, with domestic adult smokers returning from trips abroad bringing the full allowance back. For the second half of the year, we apply the new passenger duty-free personal import allowance limit of 19 cigarettes to all inbound visitors and returning residents.
- Based on this approach, we estimate the volume of Non-Domestic Legal Inflows to be 148 million cigarettes in 2015, falling by nearly 18% in comparison with 2014.¹
- The remaining volume of Non-Domestic Inflows is considered to be illicit, primarily consisting of cigarettes with intended retail sale in China and Hong Kong. In addition, a very small proportion of Counterfeit products were identified in 2015, with total volumes estimated at 1 million cigarettes, down from the estimated 10 million in 2014.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated at just 21 million cigarettes, most of which were identified in the Hong Kong market.²



Source: IT Flows Model and Oxford Economics

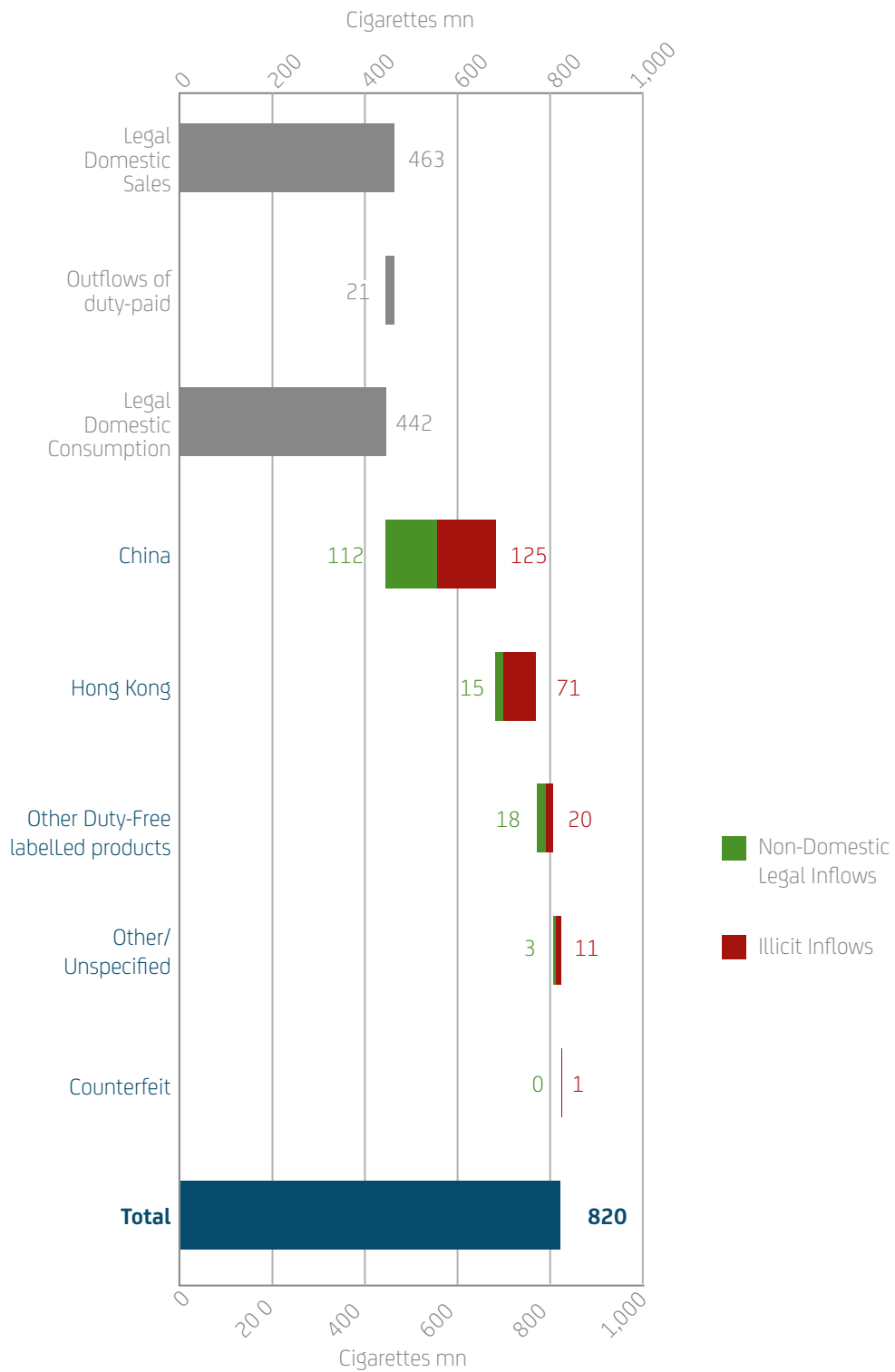
¹Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin and the passenger duty-free import allowance limit (limited to one pack per day for inbound visitor arrivals for the first half of the year).

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Figures in brackets reflect % change from 2014.

⁴Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known. "Double Happiness" and "Esse" were the primary Unspecified Market Variant brands identified in 2015.

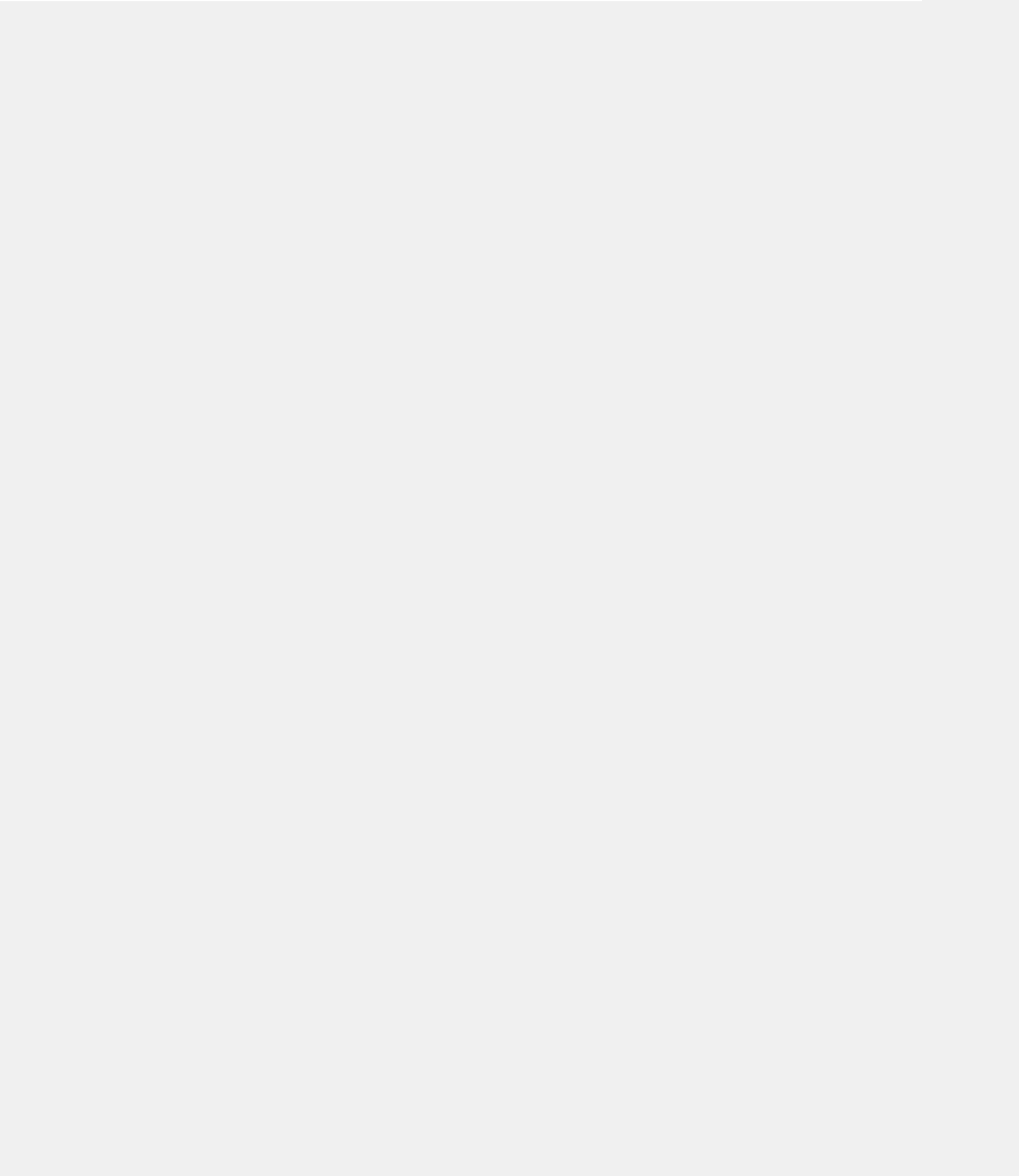
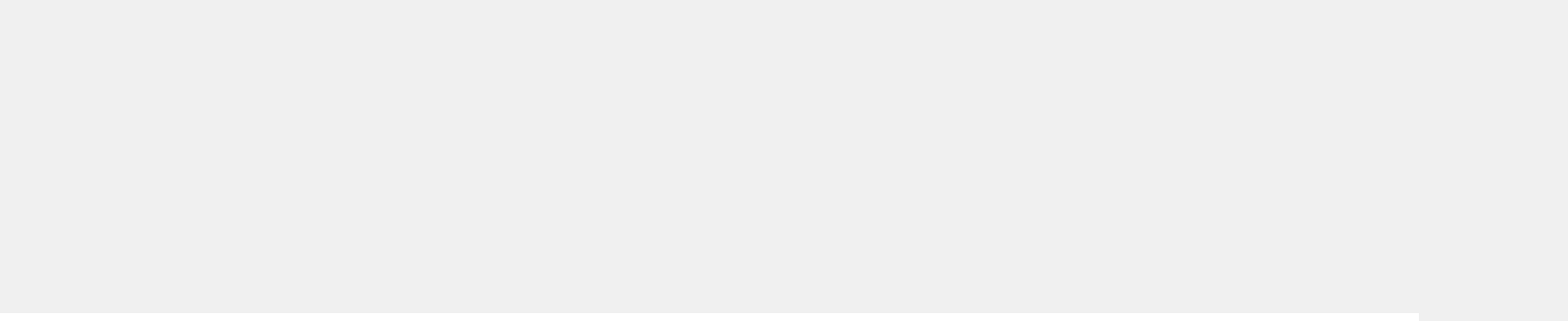
Macao: Consumption breakdown 2014



Source: IT Flows Model and Oxford Economics

Macao: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Macao market-specific labelling (e.g., health warnings, tax stamps, etc.).	Small number of Macao domestic Market Variant cigarettes identified in other markets, almost entirely going to Hong Kong.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Prior to reduction in the passenger duty-free personal import allowance in July 2015, inbound adult smokers were assumed to carry one pack (20 cigarettes) per day spent in Macao. Returning domestic adult smokers assumed to carry the full passenger duty-free personal import allowance. Passenger data from the Macao Statistics and Census Service.
Non-Domestic Illicit	Empty Pack Surveys.	Based on Empty Pack Surveys plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 820 million cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted-average Excise Tax rate.	See Annex B for more details.



Malaysia: Legal Domestic Sales

- Malaysia Legal Domestic Sales are estimated at 11.1 billion cigarettes for 2015. Legal Domestic Sales continued to trend downwards in 2015, falling by 13.0% from 2014.
- Legal Domestic Sales have now fallen by nearly one-quarter since 2012 when the first Asia Illicit Tobacco Indicator Report analysed the Malaysian market.
- BAT, JTI, and PM continue to account for nearly all Legal Domestic Sales in Malaysia. In total, the three manufacturers represented almost 97% of Legal Domestic Sales in 2015. BAT holds the largest market share with 60% of total Legal Domestic Sales.
- The specific component of Excise Taxes was increased in November 2014, equivalent to a 12.1% increase in the total Excise Tax rate. This was followed by the implementation of a 6% Goods and Services Tax (GST) in April 2015 and a much larger increase in Excise Tax on cigarettes of about 40% implemented in November 2015.
- The nominal price of cigarettes in Malaysia is higher than most neighbouring markets. At USD 3.29 per pack of 20 for the Most Sold Brand, the price of cigarettes is higher than in Indonesia (USD 1.48 per pack), Thailand (USD 1.13), and Vietnam (USD 0.80).¹

Malaysia

Legal Domestic Sales:

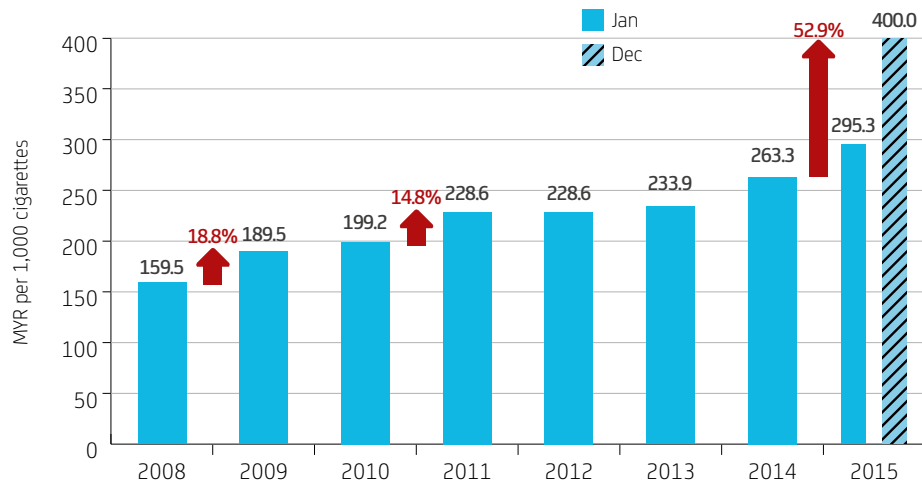
11.1
bn cigarettes

Price:

MYR **13.8**
USD **3.29**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

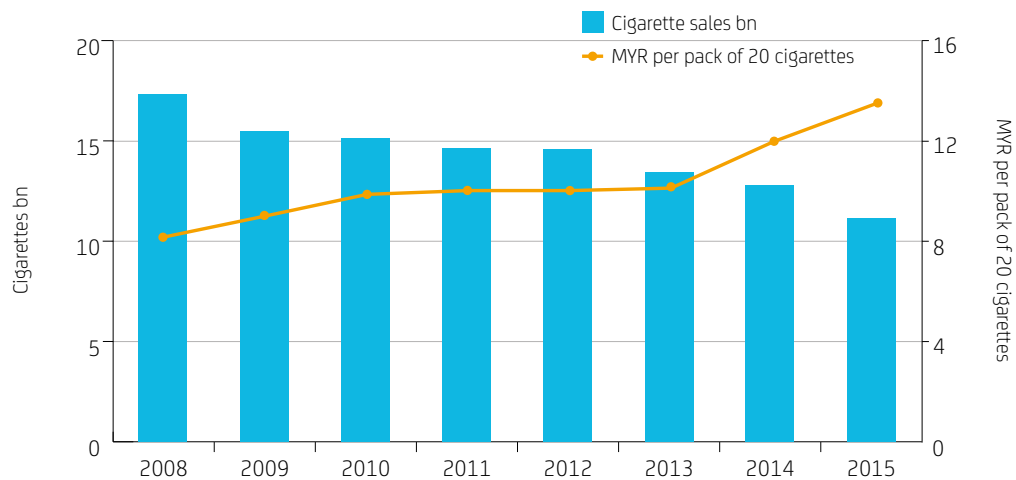
Malaysia: Excise duty applied to cigarettes²



Source: Malaysia Customs & Excise Department and Oxford Economics

²Rate applied to the Most Sold Brand.

Malaysia: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year.

Malaysia: Cigarette Consumption

- The results from three Empty Pack Surveys¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Malaysia.
- Total Consumption (legal and illicit) is estimated at 17.8 billion cigarettes in 2015, down 10.8% from 2014.
- Of this, an estimated 61.6% or 10.9 billion cigarettes is Legal Domestic Consumption, 1.5% is Non-Domestic Legal Consumption,² and 36.9% or 6.6 billion cigarettes is Illicit Consumption.
- Total Consumption of cigarettes in Malaysia has now fallen for three consecutive years since the beginning of the Asia Illicit Tobacco Indicator series, driven by declines in both Non-Domestic Inflows and Legal Domestic Consumption.
- As a consequence of the trend decline in consumption observed over the last three years, Total Consumption in 2015 was around 22.5% lower than in 2012. This is equivalent to nearly 5.1 billion cigarettes.
- Declining consumption trends are apparent across the board. In particular, the volume of Illicit Consumption has fallen every year since 2012. An estimated 6.6 billion illicit cigarettes were consumed in 2015, down from 7.9 billion cigarettes in 2012.
- Despite registering a decline in volume terms, the share of Illicit Consumption in Total Consumption increased to 36.9% in 2015, the highest level recorded in the Asia Illicit Tobacco Indicator series of Reports.
- This is due to the larger declines apparent in Non-Domestic Legal consumption and Legal Domestic Consumption, both of which experienced a larger fall in comparison with Illicit Consumption.

Malaysia: Composition of cigarette consumption

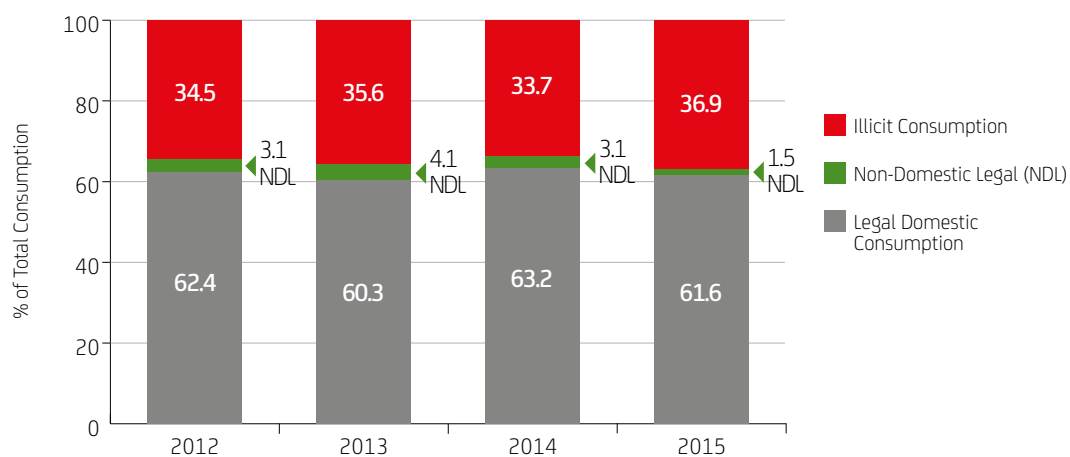
	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	14.3	62.4	13.2	60.3	12.6	63.2	10.9	61.6	-13.1
Legal Domestic Sales (LDS)	14.6	—	13.4	—	12.8	—	11.1	—	-13.0
Outflows of domestic duty-paid cigarettes	-0.2	—	-0.2	—	-0.2	—	-0.2	—	-7.9
Total Non-Domestic Inflows (ND)	8.6	37.6	8.7	39.7	7.3	36.8	6.8	38.4	-6.8
Non-Domestic Legal (NDL)	0.7	3.1	0.9	4.1	0.6	3.1	0.3	1.5	-55.6
Non-Domestic Illicit	7.9	34.5	7.8	35.6	6.7	33.7	6.6	36.9	-2.3
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	22.9	100.0	21.9	100.0	19.9	100.0	17.8	100.0	-10.8
Total Illicit Consumption	7.9	34.6	7.8	35.6	6.7	33.7	6.6	36.9	-2.3

Source: Oxford Economics

¹Empty Pack Surveys were undertaken in 2015 Q2, 2015 Q3, and 2015 Q4 (see Annex A for more details).

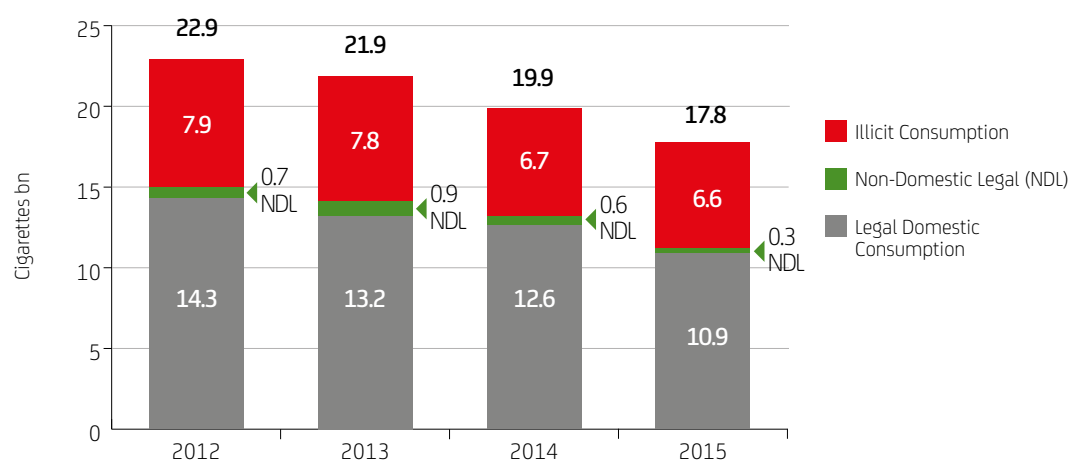
²Empty Pack Survey: 1.5% of total cigarettes identified as Malaysia Duty Non Paid (MDNP) with genuine Pink Banderol (a security feature for imported packs of Duty-Free).

Malaysia: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Malaysia: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Malaysia: Government Finances

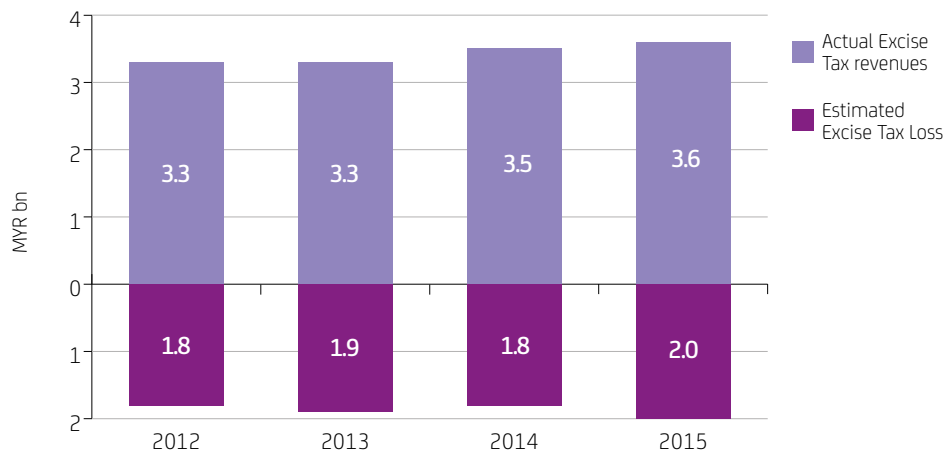
- Malaysia applies a single-rate, unit-specific Excise Tax rate of MYR 400 per thousand cigarettes following an Excise Tax hike implemented in November 2015. Before this, a specific Excise Tax rate of MYR 280 per thousand cigarettes was applied, as well as a small ad valorem component of 20%.
- A universal GST of 6% was implemented in April 2015, replacing the previous sales tax in operation in Malaysia.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2015 amounted to MYR 2.2 billion (USD 562 million). The Estimated Tax Loss rose by more than 16% in 2015, driven by a rise in both the Excise Tax and sales tax.
- Actual revenues from Excise Tax collections increased in 2015, but it was not large enough to prevent an increase in the share of Excise Tax Loss in total potential Excise Tax revenues from 34.1% in 2014 to 35.8%.

Malaysia: Actual government revenues and estimated Tax Loss

	2012		2013		2014		2015		% change in local currency 2014-2015
	MYR bn	USD mn	MYR bn	USD mn	MYR bn	USD mn	MYR bn	USD mn	
Actual revenue from excise duties on tobacco	3.3	1,074	3.4	1,076	3.5	1,055	3.6	911	3.0%
Estimated number of illicit cigarettes purchased (cigarettes bn)	7.9		7.8		6.7		6.6		-2.3%
Estimated Tax Loss from Illicit Consumption	1.9	622	2.0	624	1.9	577	2.2	562	16.1%
Lost excise revenue	1.8	587	1.9	587	1.8	545	2.0	507	11.0%
Lost GST revenue	0.1	35	0.1	36	0.1	32	0.2	55	103.7%
Excise Tax Loss as % of potential total Excise Tax revenues	35.3%		35.3%		34.1%		35.8%		

Source: Malaysian Ministry of Finance and Oxford Economics based on PM data

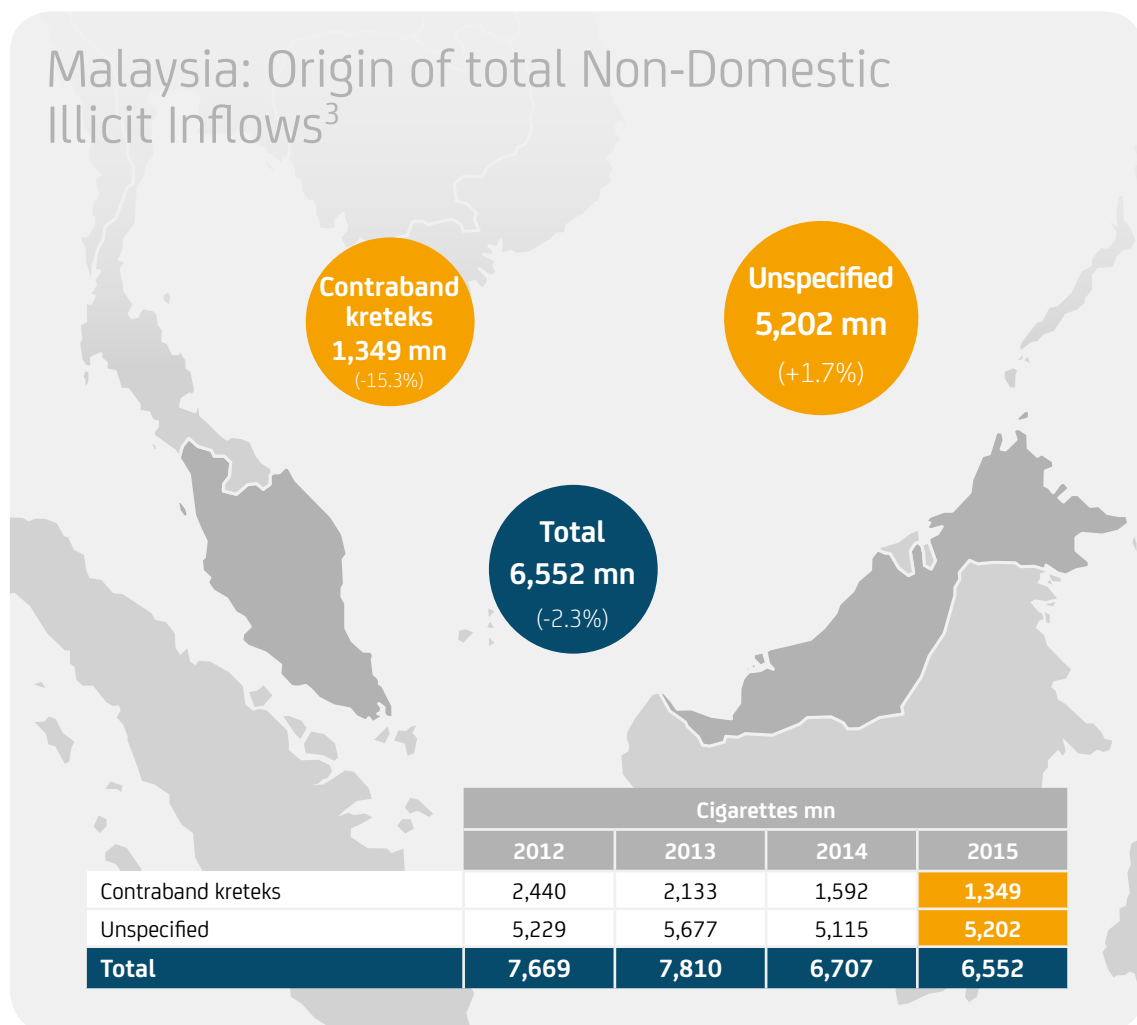
Malaysia: Actual government revenues and estimated Tax Loss



Source: Malaysian Ministry of Finance and Oxford Economics based on PM data

Malaysia: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated at 208 million cigarettes.
- The large majority of these Outflows are destined for high-price markets including Singapore (65% of total Outflows) and Australia (15%).¹
- Non-Domestic Illicit Inflows primarily consist of Unspecified Market Variants,² representing 79% of Total Illicit Consumption in 2015. “Era”, “John”, and “Canyon” were the top three Unspecified Market Variant brands identified for the year.
- The consumption of Unspecified Market Variant cigarettes has increased by 1.7% since 2014, but remains below levels recorded in 2012 and 2013.
- Over the same period the volume of Contraband kreteks consumed fell by 15.3% to 1.3 billion in 2015, the lowest level recorded by the Asia Illicit Tobacco Indicator series of Reports.
- As a consequence, the share of Contraband kreteks in Total Illicit Consumption has fallen to just over one-quarter in 2015.
- Zero Counterfeit products of international brands were identified in the domestic market in 2015, a finding consistent with historical observations.



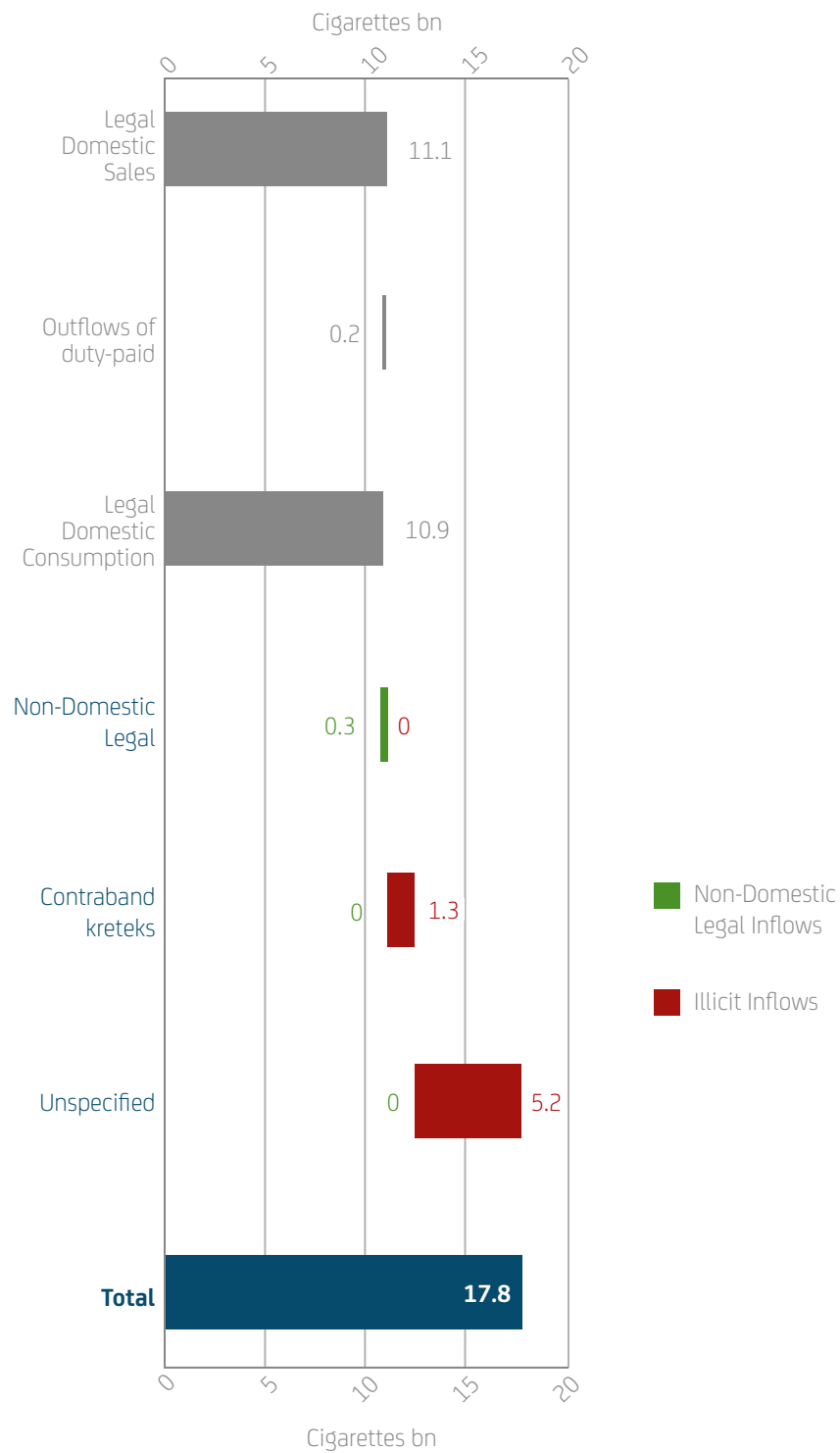
Source: IT Flows Model and Oxford Economics

¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

³Figures in brackets reflect % change from 2014.

Malaysia: Consumption breakdown 2015

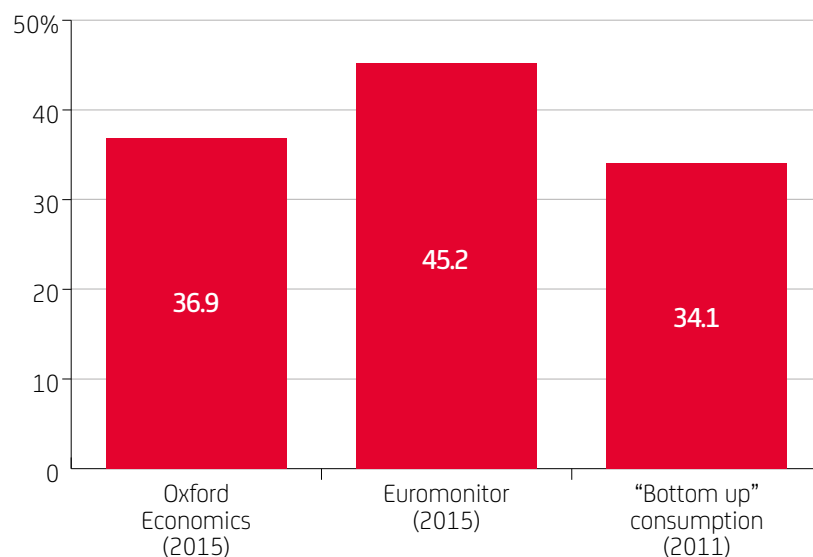


Source: IT Flows Model and Oxford Economics

Malaysia: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 34.1%, or around 7.6 billion cigarettes (based on 2011 LDC). The source for Smoking Prevalence and daily cigarettes consumption is the Global Adult Tobacco Survey 2011.
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 45.2% in 2015. The methodology, sampling and coverage are unknown, so it is difficult to assess the robustness of this estimate.

Malaysia: Alternative estimates of Illicit Consumption



Malaysia: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Distributor to trade volume based on Confederation of Malaysian Tobacco Manufacturers (CMTM) for top 3 companies (PM, BAT, and JTI), and PM estimates on others based on Nielsen Retail Audit.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Malaysian market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 208 million cigarettes, with a large share going to Singapore.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Based on Empty Pack Surveys.	1.5% total sticks identified in the Empty Pack Survey as Malaysia Duty Non Paid (MDNP) with genuine Pink Banderol present (a security feature for imported packs of Duty-Free).
Non-Domestic Illicit	Empty Pack Surveys.	Based on Empty Pack Surveys plus OE estimates.	Estimate derived from the average of three waves of Empty Pack Survey conducted in 2015. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 17.8 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Myanmar: Legal Domestic Sales

- Myanmar Legal Domestic Sales are estimated at 8.9 billion cigarettes for 2015, increasing by 1.8% in comparison with 2014.
- Despite the re-entry of international tobacco manufacturers into Myanmar via local business partners in manufacturing and distribution, Virginia Tobacco (previously known as Rothmans of Pall Mall Myanmar (RPMM)) remains as the dominant manufacturer in the market, accounting for the large majority (more than 80%) of Legal Domestic Sales in 2015.
- The price of a pack of 20 cigarettes of the Most Sold Brand was USD 0.51 in 2015.¹
- Nominal prices in Myanmar are amongst the lowest of the 17 markets included in this Report. Only in Cambodia (USD 0.37 per pack) is the price of the Most Sold Brand of cigarettes lower than in Myanmar.

Myanmar

Legal Domestic Sales:

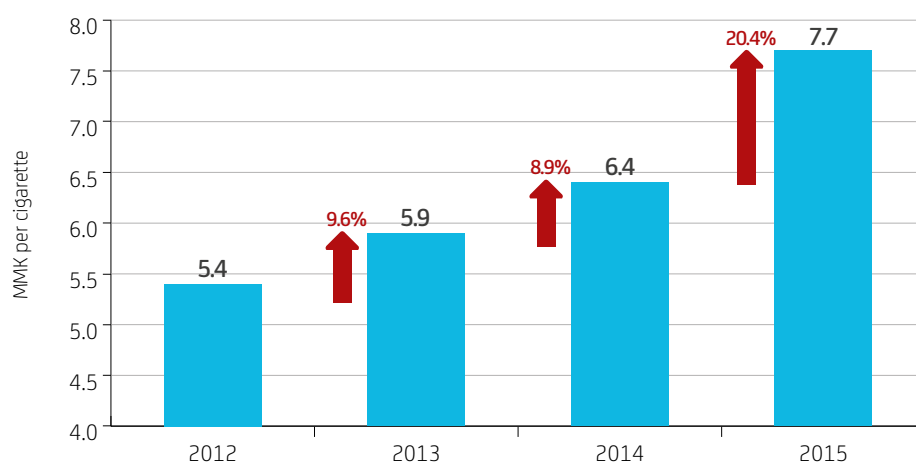
8.9
bn cigarettes

Price:

MMK **650**
USD **0.51**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

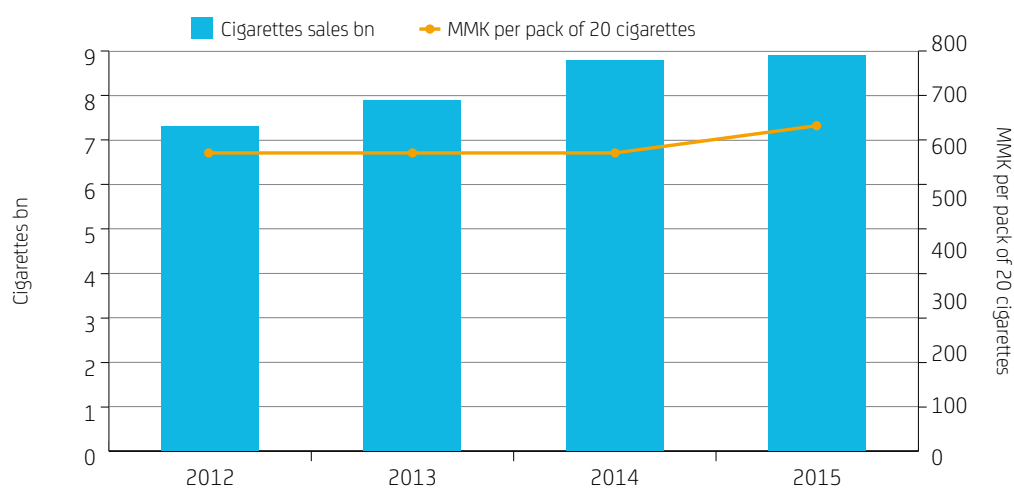
Myanmar: Excise duty applied to cigarettes²



Source: Oxford Economics based on PM data

²Estimated effective rate applied in October of each year to the Most Sold Brand.

Myanmar: Legal Domestic Sales and prices³



Source: Nielsen Retail Audit and Oxford Economics based on PM data

³Price of the Most Sold Brand in October of each year.

Myanmar: Cigarette Consumption

- The results from the Empty Pack Survey,¹ combined with PM estimates on Legal Domestic Sales based on the Nielsen Retail Audit, were used to estimate Total Consumption of cigarettes in Myanmar.
- Total Consumption (legal and illicit) is estimated at 9.1 billion cigarettes in 2015. Of this, an estimated 97.6% or 8.8 billion cigarettes is Legal Domestic Consumption, 1.9% is Non-Domestic Legal Consumption, and 0.6% or 51 million cigarettes is Illicit Consumption.
- Illicit Incidence fell by 0.7pp in 2015, from 1.3% in 2014 to 0.6%.
- With Non-Domestic Legal Inflows also falling in 2015, total Non-Domestic Inflows are estimated to have declined by more than one-third in comparison with 2014.
- Despite this, Total Consumption increased slightly by 0.1% due to a 1.5% increase in Legal Domestic Consumption.
- Legal Domestic Consumption has now increased for two consecutive years since the Asia Illicit Tobacco Indicator series first included Myanmar.
- The low level of Illicit Consumption estimated for 2015 corroborates estimates for 2014, which indicated a substantial decline in Illicit Consumption of nearly 2.2 billion cigarettes in Myanmar (equivalent to around one-quarter of Total Consumption).
- The decline in Illicit Consumption experienced in 2014 may potentially reflect a more stringent implementation of tax stamp legislation by the government, which has resulted in the exit of key illicit brands from the market.

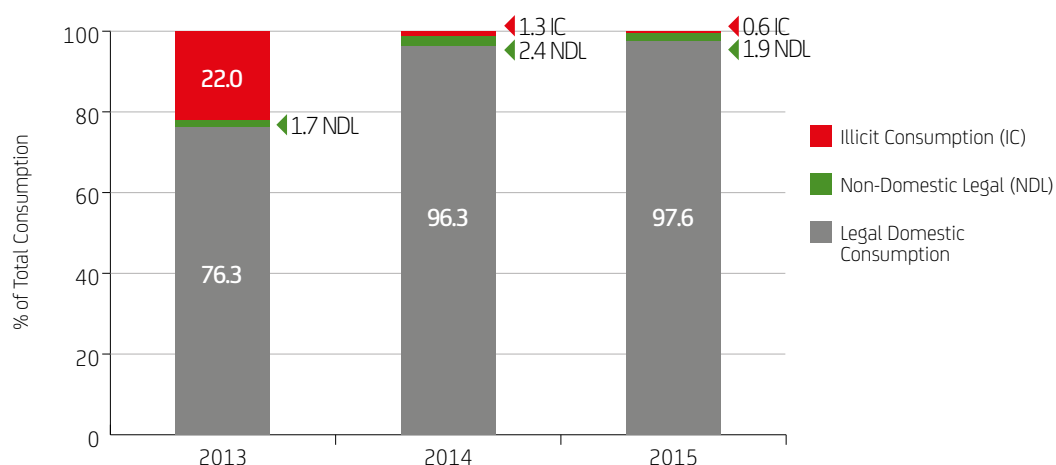
Myanmar: Composition of cigarette consumption

	2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	7.9	76.3	8.7	96.3	8.8	97.6	1.5
Legal Domestic Sales (LDS)	7.9	–	8.7	–	8.9	–	1.8
Outflows of domestic duty-paid cigarettes	0.0	–	0.0	–	0.0	–	n/a
Total Non-Domestic Inflows (ND)	2.5	23.7	0.3	3.7	0.2	2.4	-34.7
Non-Domestic Legal (NDL)	0.2	1.7	0.2	2.4	0.2	1.9	-24.0
Non-Domestic Illicit	2.3	22.0	0.1	1.3	0.1	0.6	-55.5
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	10.4	100.0	9.1	100.0	9.1	100.0	0.1
Total Illicit Consumption	2.3	22.0	0.1	1.3	0.1	0.6	-55.5

Source: Oxford Economics

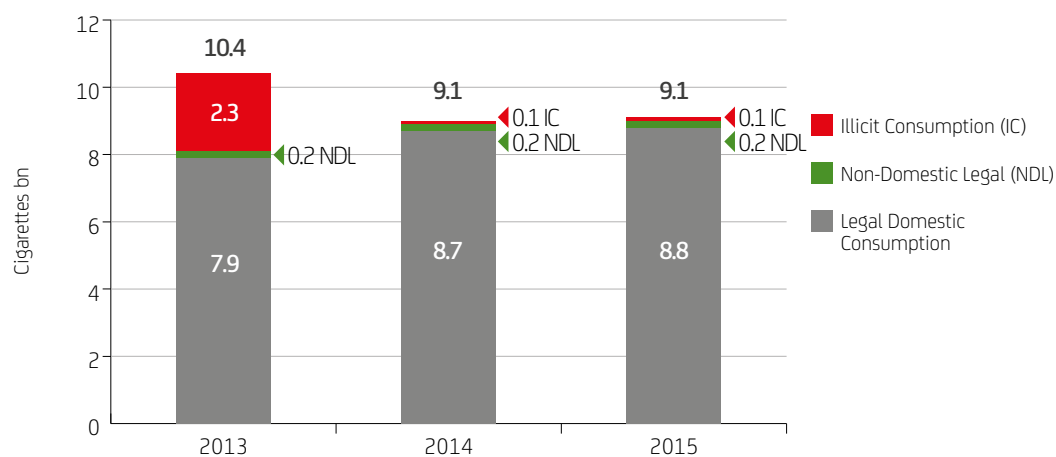
¹The Empty Pack Survey was undertaken in 2015 Q4 (see Annex A for more details).

Myanmar: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Myanmar: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Myanmar: Government Finances

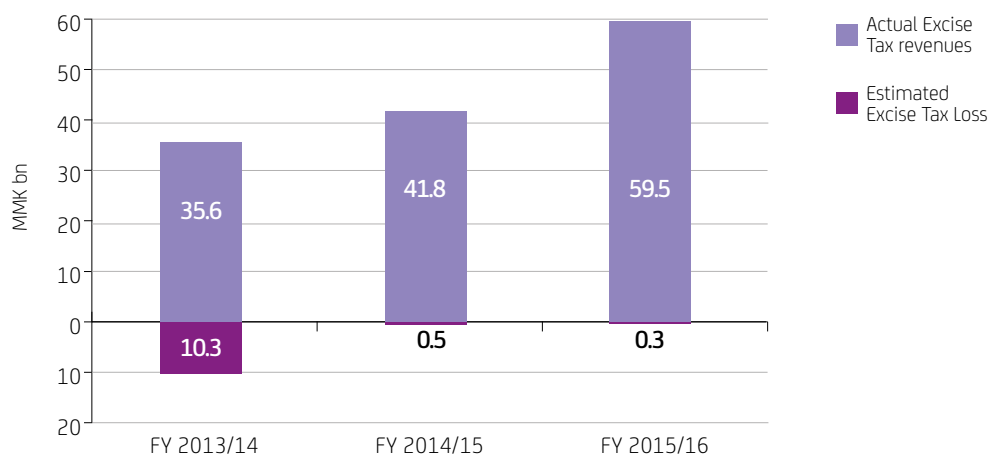
- In Myanmar, a commercial tax is levied on cigarette manufacturers, where a rate of 5%–50% is applied to the price of input material (CIF plus import duty) and 120% is applied to the net ex-factory selling price of finished cigarettes.
- The commercial tax was increased in April 2015, from 100% of the net ex-factory selling price of finished cigarettes.
- There is no GST or VAT in place in Myanmar, but a 5% commercial tax is levied on the invoice price for sales of cigarettes by traders (distributors, wholesalers, and retailers).
- Actual government revenues from Excise Taxes on tobacco are estimated at MMK 59.5 billion (USD 48.8 million) in the fiscal year 2015/16, increasing by 42.1% in comparison with the previous year.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2015/16 amounted to MMK 404 million (USD 0.3 million), representing a decline of 41.0% in the estimated Tax Loss resulting from Illicit Consumption.
- The estimated share of Excise Tax Loss in total potential Excise Tax revenues fell to 0.6% in 2015/16 as a consequence, more than half the value estimated for 2014/15 and significantly lower than 2013/14.

Myanmar: Actual government revenues and estimated Tax Loss

	2013/14 fiscal year		2014/15 fiscal year		2015/16 fiscal year		% change in local currency 2014/15- 2015/16
	MMK bn	USD mn	MMK bn	USD mn	MMK bn	USD mn	
Actual revenue from commercial tax duties on tobacco	35.6	37.0	41.8	42.0	59.5	48.8	42.1%
Estimated number of illicit cigarettes purchased (cigarettes bn)	2.3		0.1		0.1		-95.0%
Estimated Tax Loss from Illicit Consumption	13.0	13.5	0.7	0.7	0.4	0.3	-41.0%
Lost commercial (excise) tax revenue	10.3	10.7	0.5	0.5	0.3	0.3	-37.5%
Lost commercial (general) tax revenue	2.7	2.8	0.1	0.1	0.1	0.1	-55.2%
Excise Tax Loss as % of potential total Excise Tax revenues	22.4%		1.3%		0.6%		

Source: Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal years run from April to March.

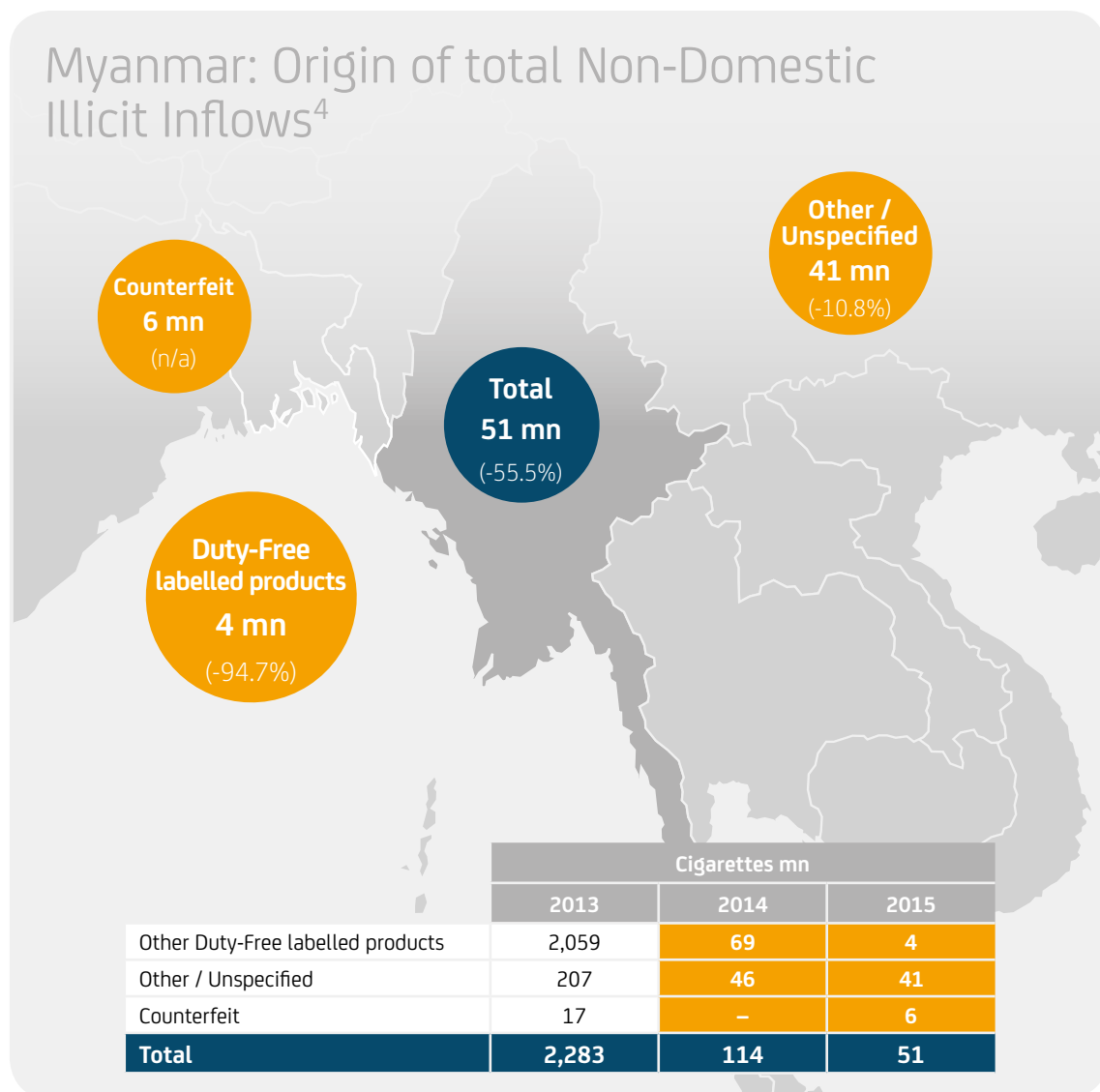
Myanmar: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on PM data

Myanmar: Trade Flows

- The volume of Non-Domestic Legal Inflows¹ are low in Myanmar due to a combination of the low price of cigarettes and the relatively small tourism market, with only 3.4 million inbound tourists in 2015.
- Non-Domestic Illicit Inflows are estimated to have fallen by half in comparison with 2014.
- Products of Unspecified Market Variant accounted for a large proportion of total Non-Domestic Illicit volumes identified in 2015,² with much smaller volumes identified as intended for retail sale in other countries including Japan and Indonesia. Among the Unspecified Market Variant volumes identified, “Esse” was the primary brand identified in 2015, accounting for nearly two-thirds of total volumes.
- A small volume of Counterfeit products, estimated at 6 million cigarettes, was identified in the 2015 Empty Pack Survey in Myanmar in 2015. There were no Counterfeit products identified in 2014.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be negligible.³



Source: IT Flows Model and Oxford Economics

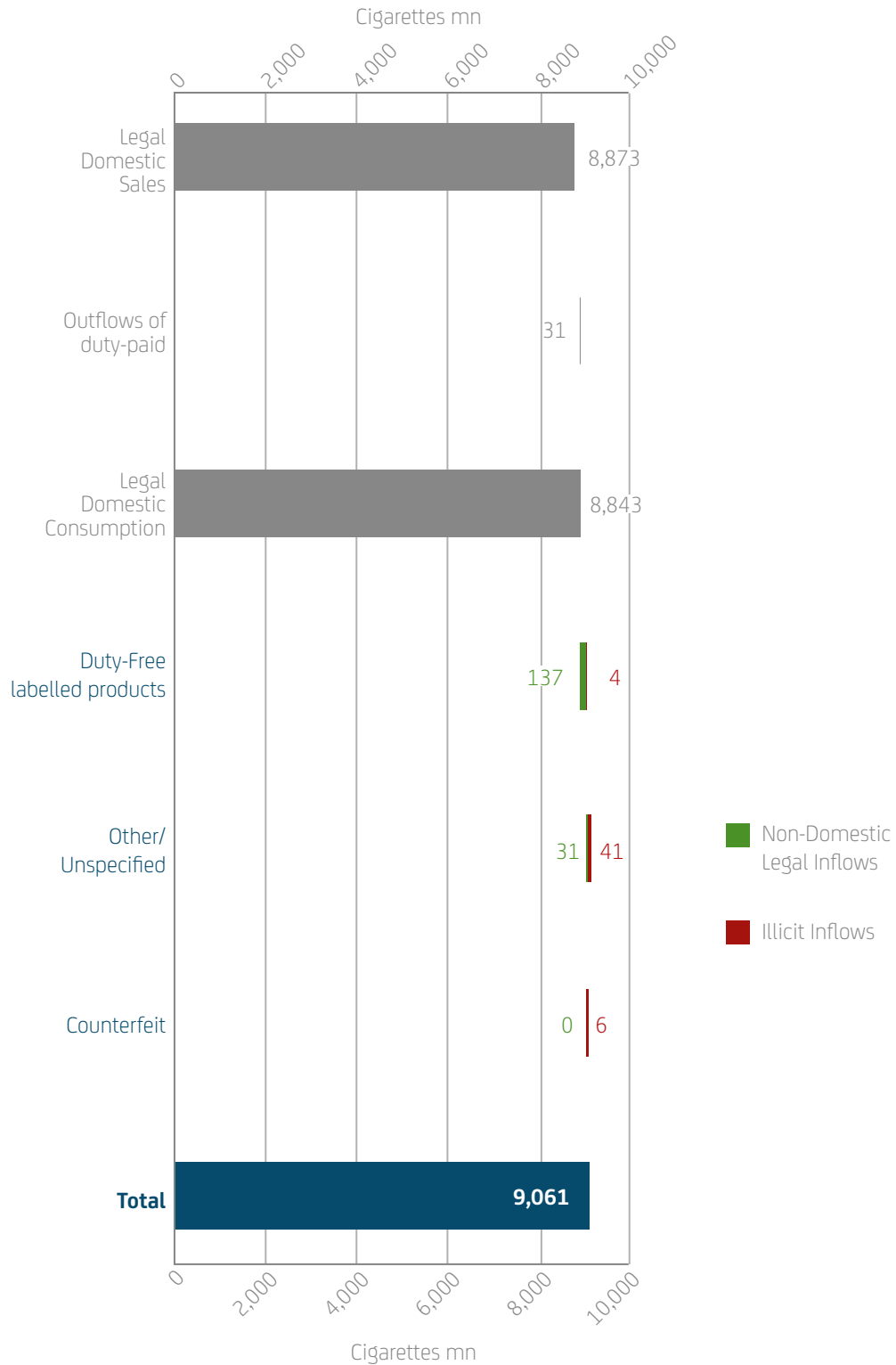
¹Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin and the passenger duty-free personal import allowance limit.

²Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

³Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

⁴Figures in brackets reflect % change from 2014.

Myanmar: Consumption breakdown 2015

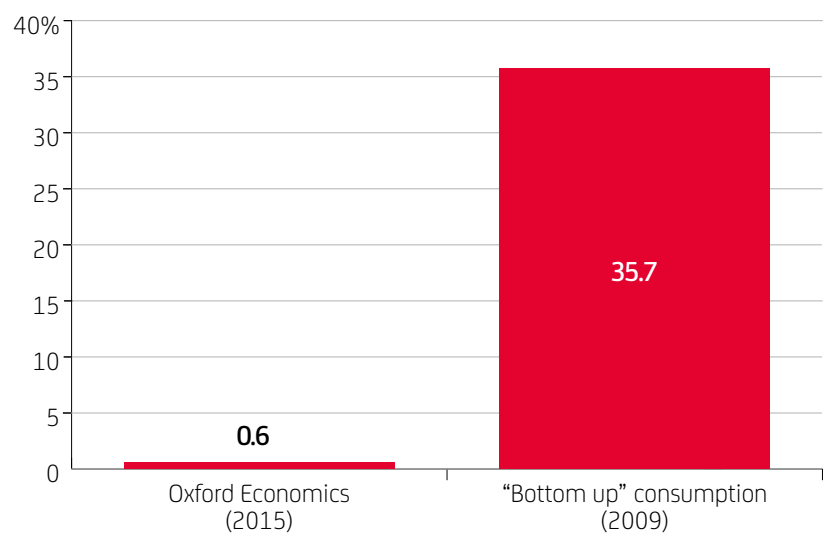


Source: IT Flows Model and Oxford Economics

Myanmar: Other Estimates

Source	Comment
Comparing consumption estimates with LDC (“bottom up” approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a “bottom up” estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 35.7%, or around 2.2 billion cigarettes (based on 2009 LDC). The source for Smoking Prevalence and average daily cigarette consumption come from the WHO FCTC 2014 report (based on the WHO NCD STEPS Survey, 2009).

Myanmar: Alternative estimates of Illicit Consumption



Myanmar: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Total industry volume from PM estimates based on Nielsen Retail Audit.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Myanmar market-specific labelling (e.g., health warnings, tax stamps etc.).	Small number of Myanmar domestic Market Variant cigarettes identified in other markets, with a large share going to Thailand.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Myanmar Ministry of Hotels and Tourism, UNWTO, and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q4 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 9.1 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

New Zealand: Legal Domestic Sales

- New Zealand Legal Domestic Sales of cigarettes and loose tobacco are estimated at 2.5 billion cigarettes (or cigarette equivalents) for 2015, representing a small decline of 2.6% from 2014.¹
- BAT is the dominant manufacturer in the market, accounting for two-thirds of Legal Domestic Sales. PM and Imperial Tobacco account for the large majority of the remaining one-third of sales.
- Cigarette prices have been steadily rising in recent years, with the government pushing through a series of four annual 10% Excise Tax increases between 2013 and 2016, a measure that was announced in the 2012 budget. The third scheduled tax increase was implemented in January 2015.
- As a consequence, cigarette prices in New Zealand are among the highest in the world in nominal terms, costing USD 13.1 per pack of 20 cigarettes based on the Most Sold Brand.² This is the second highest of the 17 markets included in this Report after Australia (USD 15.1 per pack).

New Zealand

Legal Domestic Sales:

2.5
bn cigarettes

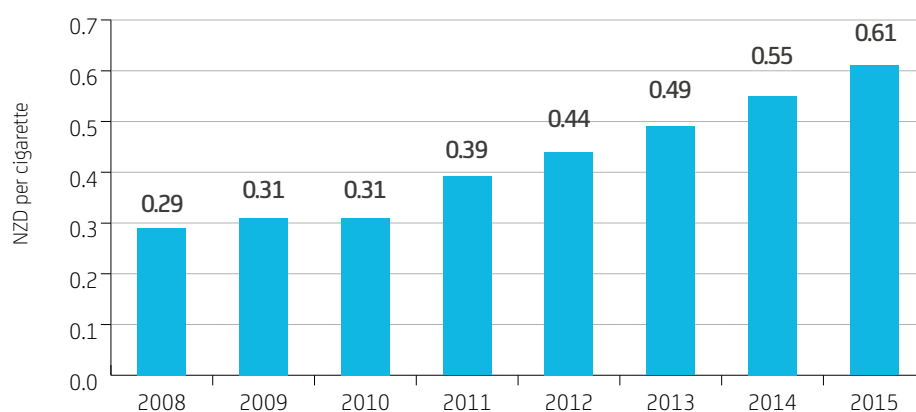
Price:

NZD **19.5**
USD **13.1**

¹A conversion rate of 0.7 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on rates applied by the New Zealand Ministry of Health in their analysis of annual tobacco returns data.

²Price per pack of 20 of the Most Sold Brand in October 2015. Exchange rate of NZD 1.49 per USD used. Based on PM data.

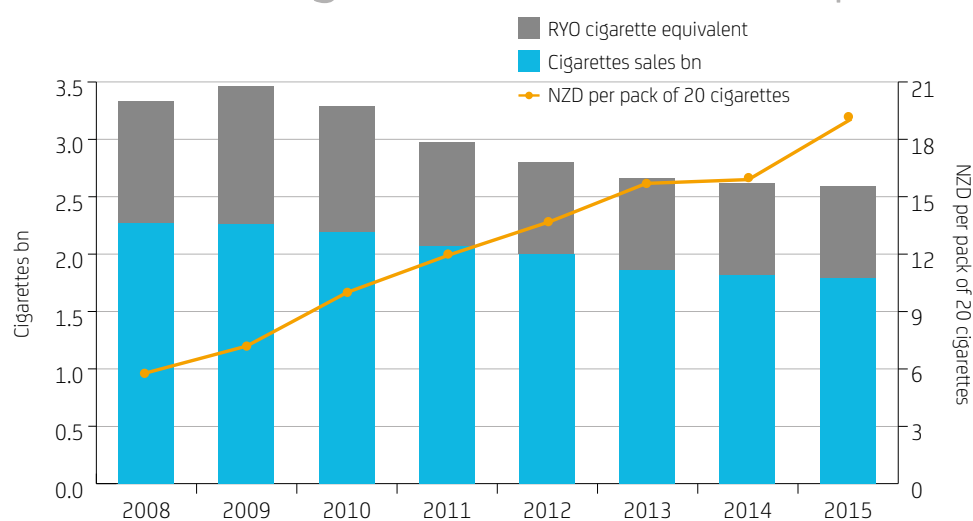
New Zealand: Excise duty applied to cigarettes³



Source: New Zealand Customs

³Rate applied in January of each year the Most Sold Brand of cigarettes

New Zealand: Legal Domestic Sales and prices⁴



Source: Oxford Economics based on PM data

⁴Price per pack of the Most Sold Brand in January of each year. A conversion rate of 0.7 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on rates applied by the New Zealand Ministry of Health in their analysis of annual tobacco returns data.

New Zealand: Tobacco Consumption

- The results from the Empty Pack Survey,¹ combined with IMS data on Legal Domestic Sales of cigarettes, annual tobacco returns sourced from the New Zealand Ministry of Health,² and consumer survey data on RYO volumes,³ were used to estimate Total Consumption of cigarettes in New Zealand.
- Total Consumption (legal and illicit) is estimated at just over 2.5 billion cigarettes in 2015. Of this, an estimated 93.6% or 2.4 billion cigarettes is Legal Domestic Consumption,⁴ 1.2% is Non-Domestic Legal, and 5.3% or 134 million cigarettes is Illicit Consumption.
- The volume of Non-Domestic Illicit Consumption in New Zealand is primarily composed of Non-Domestic Illicit cigarettes. In total, around 94% of total Illicit Consumption was composed of Non-Domestic Illicit cigarettes in 2015, equivalent to 126 million cigarettes.
- The remaining 6.3% or 8 million cigarettes of Illicit Consumption was composed of Illicit RYO consumption. As a share of Total Consumption, Illicit RYO consumption is relatively low at 0.3%.

New Zealand: Composition of cigarette consumption

	2015	
	Cigarettes mn	%
Legal Domestic Consumption (LDC)	2,384	93.6
Legal Domestic Sales (LDS)	2,538	—
Outflows of domestic duty-paid cigarettes	-154	—
Total Non-Domestic Inflows (ND)	164	6.4
Non-Domestic Legal (NDL)	29	1.2
Non-Domestic Illicit	126	4.9
Illicit RYO	8	0.3
Domestic Illicit	0	0.0
Total Consumption	2,548	100.0
Total Illicit Consumption	134	5.3

Source: Oxford Economics

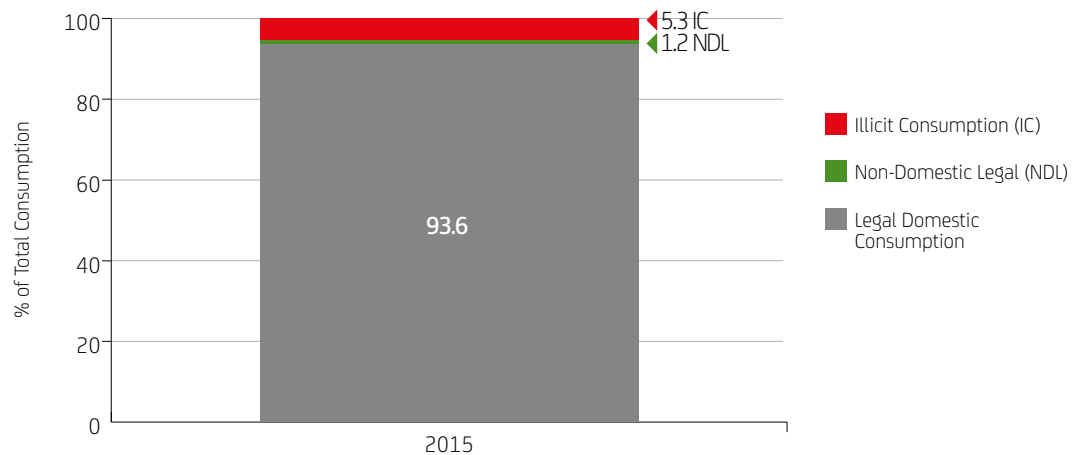
¹The Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4 (see Annex A for more details).

²Source: New Zealand Ministry of Health annual tobacco returns 2015. A conversion rate of 0.7 grams per cigarette was applied to turn weight into cigarette equivalent, based on rates applied by the Ministry of Health in their analysis of annual tobacco returns data.

³2015 Illicit Tobacco Research Update, Colmar Brunton, 2015 (see Annex A for more details).

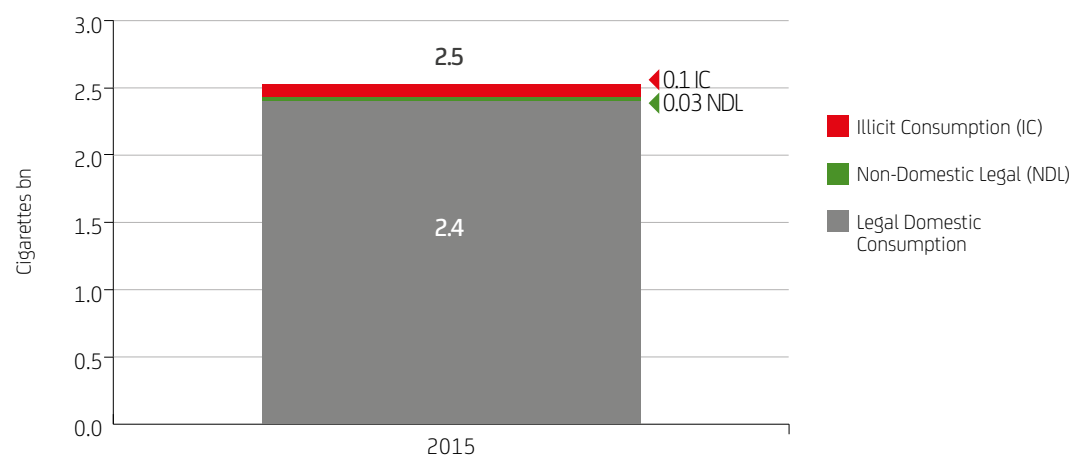
⁴In addition to Legal Domestic Sales, the "home-grown" allowance in New Zealand means that individuals can manufacture up to 15kg of loose tobacco every year for personal consumption. However in the absence of data, our estimates of Legal Domestic Consumption excludes the volume of "home-grown" loose tobacco legally consumed.

New Zealand: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

New Zealand: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

New Zealand: Government Finances

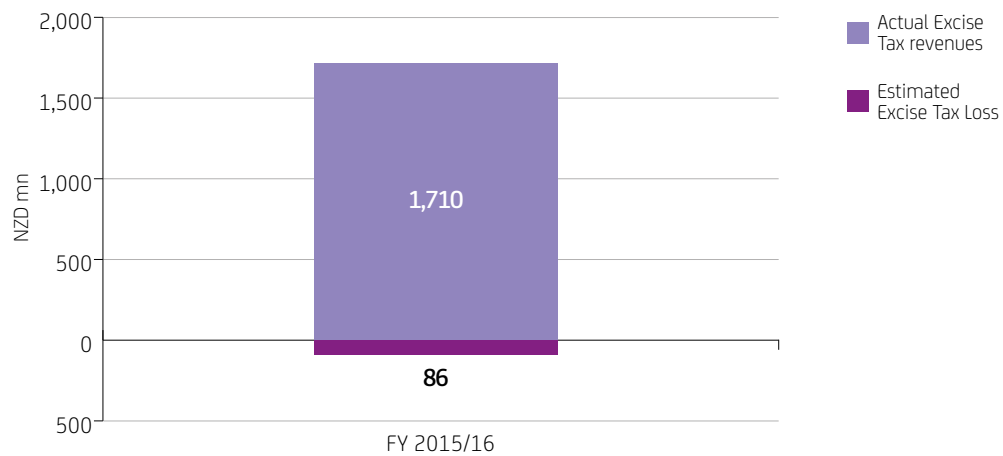
- New Zealand operates a weight-based specific Excise Tax system. For manufactured cigarettes weighing less than or equal to 0.8kg of actual tobacco content per thousand cigarettes, a rate of NZD 668.51 per thousand cigarettes applies. For manufactured cigarettes containing more than 0.8kg of actual tobacco content per thousand cigarettes, as well as smoking tobacco, homogenised or reconstituted tobacco, the duty rate is NZD 952.62 per kg of tobacco content. For all other tobacco products, including snuff, cigars, cheroots, and cigarillos, the duty rate is NZD 835.61 per kg of tobacco content.
- Excise Tax rates are subject to an annual indexation increase, based on the all groups Consumer Price Index (excluding credit services). Excise Tax increases are implemented on 1st January every year and are based on the 12-month period to September the previous year.
- In addition to the annual indexation, the Government announced in the 2012 budget a series of four annual 10% Excise Tax increases between 2013 and 2016. The third of the four increases was implemented on 1st January 2015.
- A 15% GST tax is also levied on all retail sales of cigarettes.
- In November 2014, the passenger duty-free personal import allowance in New Zealand was cut from 200 cigarettes to 50 cigarettes, or 50 grams of tobacco product. This move aligned New Zealand's customs procedures with those of Australia.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2015/16 amounted to NZD 106 million (USD 71 million).
- In terms of Excise Tax Loss, this represents 4.8% of total potential tobacco Excise Tax revenues.

New Zealand: Actual government revenues and estimated Tax Loss

	2015/16 fiscal year	
	NZD mn	USD mn
Actual revenue from excise duties on tobacco	1,710	1,142
Estimated number of illicit cigarettes purchased (cigarettes mn)	126	
Estimated volume of illicit loose tobacco purchased (mn cigarettes equivalent)	11	
Estimated Tax Loss from Illicit Consumption	106	71
Lost excise revenue	86	58
Lost VAT revenue	19	13
Excise Tax Loss as % of potential total Excise Tax revenues	4.8%	

Source: New Zealand Treasury Department and Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal year runs from July to June.

New Zealand: Actual government revenues and estimated Tax Loss

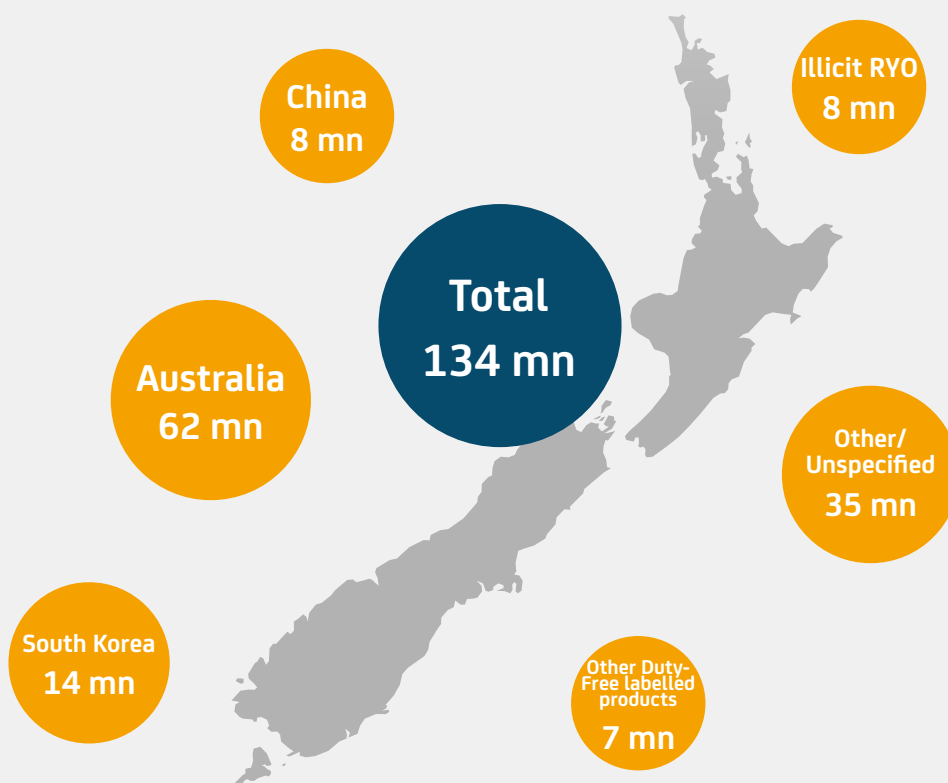


Source: New Zealand Treasury Department and Oxford Economics based on PM data

New Zealand: Trade Flows

- Illicit manufactured cigarettes in New Zealand consist primarily of Contraband products with intended retail sale in Australia. In total, an estimated 62 million cigarettes were identified as initially intended for the Australian market, representing 45.8% of total Non-Domestic Illicit Inflows in 2015.
- Cigarettes intended for retail sale in South Korea (14 million cigarettes), China (8 million), and other smaller markets were also identified in the Empty Pack Surveys conducted in New Zealand in 2015.
- A small volume of Unspecified Market Variant products were also present in New Zealand based on an analysis of the Empty Pack Surveys.¹
- There were no Counterfeit products identified in 2015.
- In addition to Non-Domestic Illicit manufactured cigarettes, a small volume of 8 million cigarettes (equivalents) of illicit RYO products are estimated to have been consumed in New Zealand in 2015.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated at 154 million, with only the Australian market indicating a presence of New Zealand duty-paid cigarettes in 2015.²

New Zealand: Origin of total Non-Domestic Illicit Inflows³



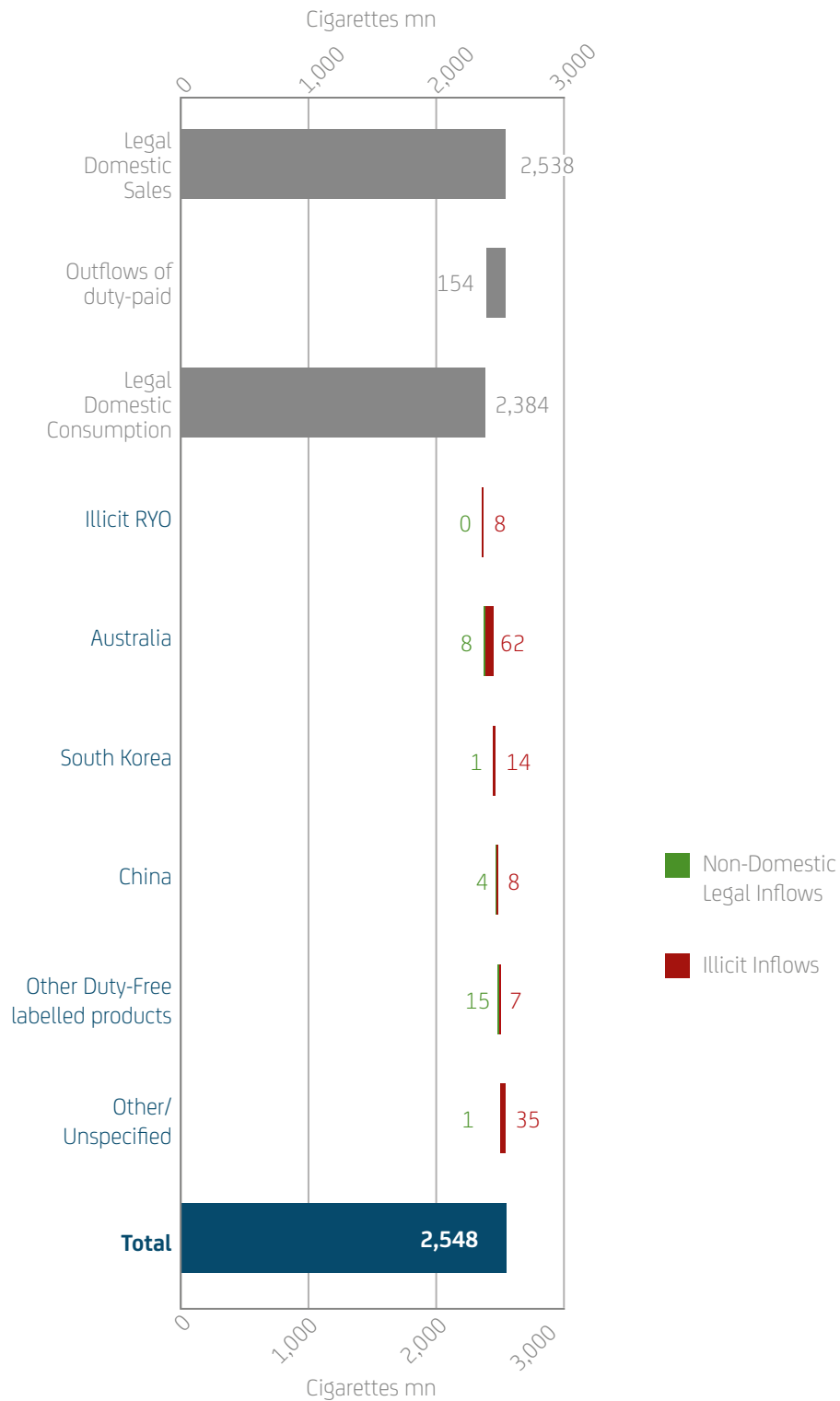
Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Including Illicit RYO.

New Zealand: Consumption breakdown 2015

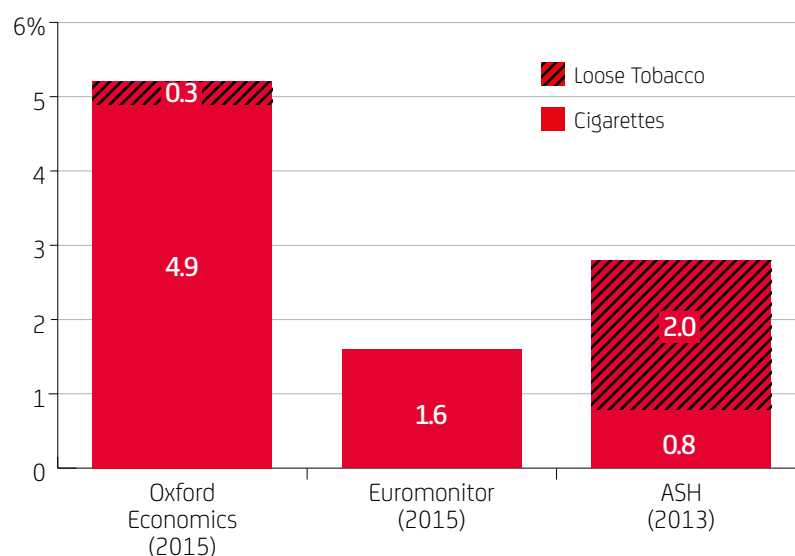


Source: IT Flows Model and Oxford Economics

New Zealand: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. Using this approach, estimated consumption is less than LDC, implying no evidence of substantial Illicit Consumption. The source for annual cigarette consumption per adult is Euromonitor (available via www.tobaccoatlas.org).
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 1.6% in 2015. The methodology, sampling and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Action on Smoking and Health (ASH) New Zealand, Update of Illicit Trade in Tobacco Products in New Zealand in 2013, 2013. Retrieved via http://www.ash.org.nz/the-evidence/we-produce/research-on-the-illicit-tobacco-market/	Analysis by ASH based on data on the import and seizure of legal and illegal tobacco in New Zealand from Customs, combined with previous literature which was used to calculate interception rates of illegal tobacco being smuggled and "home grown" in New Zealand, suggest an Illicit Incidence of between 1.8% and 3.9% in 2010-13.
Marshall et al. Missed tobacco tax revenue from 'foreign' packs in New Zealand: results from a discarded pack collection study, NZMJ 22 November 2013, Vol 126 No 1386. Retrieved via https://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2013/vol-126-no-1386/lett-wilson	A total of 1,776 discarded packs were collected from 7 locations across New Zealand between November 2012 and January 2013, suggesting a Non-Domestic share in Total Consumption of 5.8%. However no attempt was made to subtract Non-Domestic Legal consumption to derive an estimate of Illicit Consumption.

New Zealand: Alternative estimates of Illicit Consumption

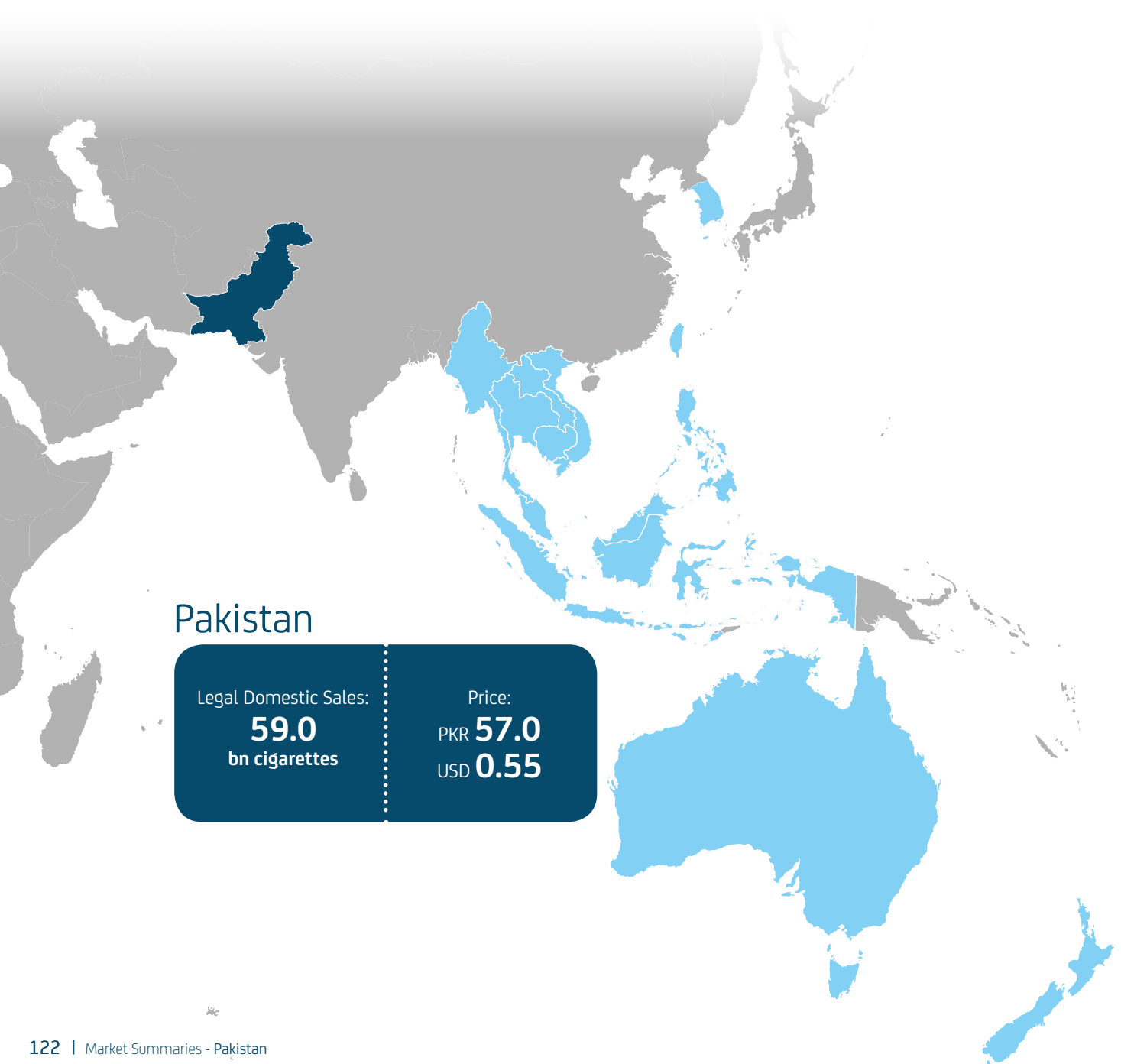


New Zealand: Data Sources

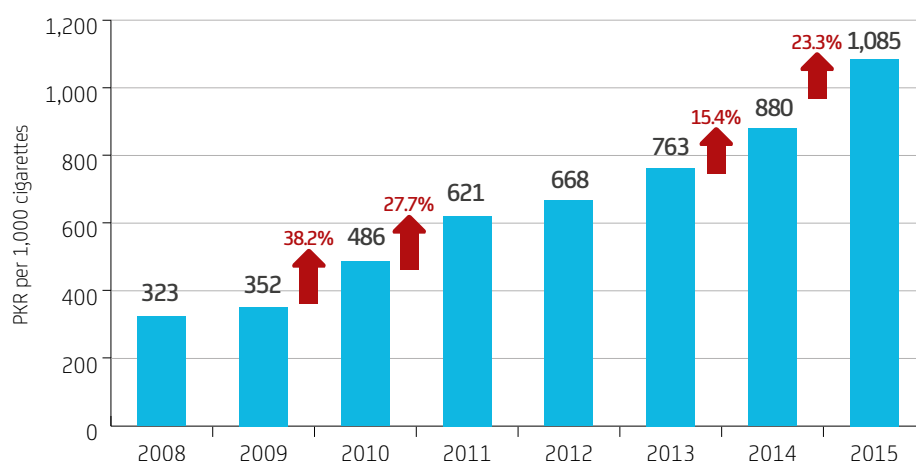
	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	For manufactured cigarettes, Industry volumes are based on ex-factory sales to the trade, sourced from InfoView Technologies Pty Ltd. data. For RYO volumes, data on annual tobacco returns filed by manufacturers and importers with the New Zealand Ministry of Health was used.	—	Includes legal Other Tobacco Products sales.
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing New Zealand market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 154 million cigarettes, all of which going to Australia.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from Statistics New Zealand.
Non-Domestic Illicit	Empty Pack Surveys and Colmar Brunton Consumer Survey.	Based on Empty Pack Surveys, Colmar Brunton data, and OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. An estimate for loose tobacco has been added based on analysis of the Colmar Brunton Consumer Survey (2015). See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 2.5 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Pakistan: Legal Domestic Sales

- Pakistan Legal Domestic Sales are estimated at 59.0 billion cigarettes for 2015.
- Legal Domestic Sales have been in gradual decline in recent years.
- After falling by 5.9% in 2015, Legal Domestic Sales were 7.8% lower than 2012 levels when the first Asia Illicit Tobacco Indicator Report was conducted.
- Based on data from the Federal Board of Revenue in 2015/16, BAT and PMI together contribute nearly 98% of total tax revenues from cigarette sales in Pakistan.
- Nominal cigarette prices are relatively low in Pakistan but have risen sharply in recent years, driven by a succession of large increases in Excise Tax.



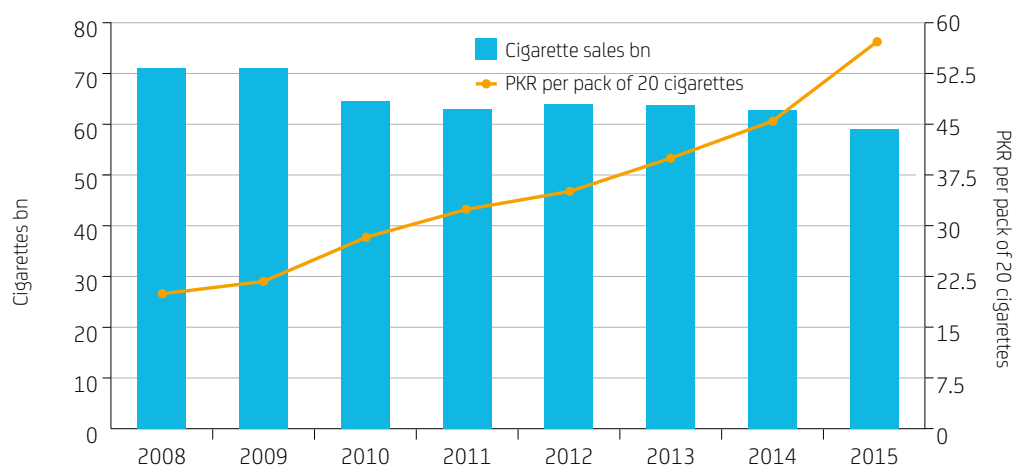
Pakistan: Excise duty applied to cigarettes¹



Source: Oxford Economics based on PM data

¹Rate applied in January of each year to the Most Sold Brand.

Pakistan: Legal Domestic Sales and prices²



Source: Oxford Economics based on PM data

²Legal Domestic Sales based on calendar year. Price of Capstain Original (the Most Sold Brand from 2014) in January of each year.

Pakistan: Cigarette Consumption

- The results from the Empty Pack Survey and Nielsen Retail Audit¹ were combined with IMS data on Legal Domestic Sales to estimate Total Consumption of cigarettes in Pakistan.
- Total Consumption (legal and illicit) is estimated at 86.0 billion cigarettes in 2015, up 2.4% from 2014. Of this, an estimated 68.6% or 59.0 billion cigarettes is Legal Domestic Consumption, 0.1% is Non-Domestic Legal Consumption, and 31.3% or 27.0 billion cigarettes is Illicit Consumption.
- Legal Domestic Consumption continued to trend downwards in 2015, falling by 5.9% in comparison with 2014. Legal Domestic Consumption has now fallen in each year since the first Asia Illicit Tobacco Indicator Report was conducted.
- By contrast, the volume of Non-Domestic Inflows increased in 2015, driven by an increase of 2.6 billion in Non-Domestic Illicit cigarette consumption. This represents an increase of 75.4% in comparison with 2014, pushing the level of Non-Domestic Illicit Incidence up to 7.1%, 3pp higher than the previous year.
- The volume of Non-Domestic Illicit Consumption has increased for three consecutive years since the first Asia Illicit Tobacco Indicator Report, with 2015 levels more than double the volume estimated in 2012.
- Domestic Illicit volumes also increased in 2015, from 17.7 billion cigarettes in 2014, to 20.8 billion cigarettes (+17.6%). In volume terms, the level of Domestic Illicit Consumption surpassed its previous high of 18.8 billion in 2012, estimated in the first Asia Illicit Tobacco Indicator Report.
- Total Illicit Consumption rose by 27.1% in 2015 to reach 27.0 billion cigarettes. This is equivalent to nearly one in every three cigarettes consumed in Pakistan (31.3%).
- With the volume of Non-Domestic Legal Inflows remaining at low levels, the rise in Total Illicit Consumption more than offset the decline in Legal Domestic Sales, leading to a net rise in Total Consumption for 2015.

Pakistan: Composition of cigarette consumption

	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	64.0	74.4	63.7	77.1	62.7	74.6	59.0	68.6	-5.9
Legal Domestic Sales (LDS)	64.0	–	63.7	–	62.7	–	59.0	–	-5.9
Outflows of domestic duty-paid cigarettes	0.0	–	0.0	–	0.0	–	0.0	–	-40.1
Total Non-Domestic Inflows (ND)	3.2	3.7	3.5	4.3	3.6	4.3	6.2	7.2	72.8
Non-Domestic Legal (NDL)	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	-19.9
Non-Domestic Illicit	3.0	3.5	3.4	4.2	3.5	4.2	6.1	7.1	75.4
Domestic Illicit	18.8	21.9	15.3	18.6	17.7	21.1	20.8	24.2	17.6
Total Consumption	86.0	100.0	82.6	100.0	84.0	100.0	86.0	100.0	2.4
Total Illicit Consumption	21.8	25.3	18.8	22.8	21.2	25.2	27.0	31.3	27.1

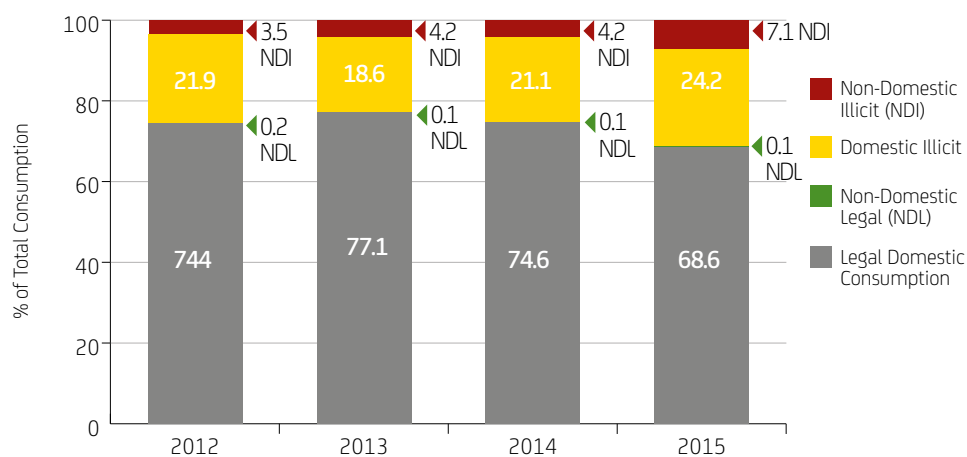
Source: Oxford Economics

The Empty Pack Survey was undertaken in 2015 Q2, while the Retail Audit provides data for each month in 2015 (see Annex A for more details). By comparing sales based on the retail audit with duty-paid volumes sourced from the Pakistan Federal Board of Revenue, this Report estimated the volume of domestically produced cigarettes where the appropriate excise rates were not paid.

2012 results for Non-Domestic Illicit based on 2011 Q4 Empty Pack Survey.

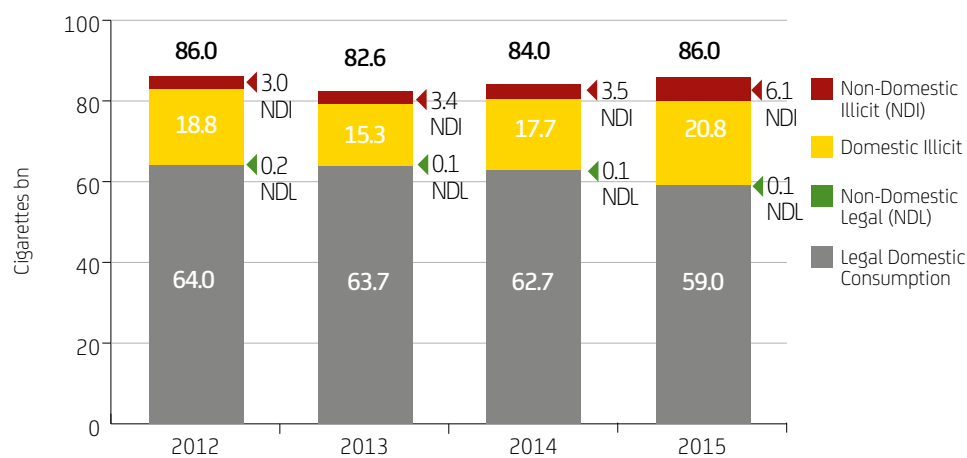
2013 results for Non-Domestic Illicit based on 2014 Q1 Empty Pack Survey.

Pakistan: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Pakistan: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Pakistan: Government Finances

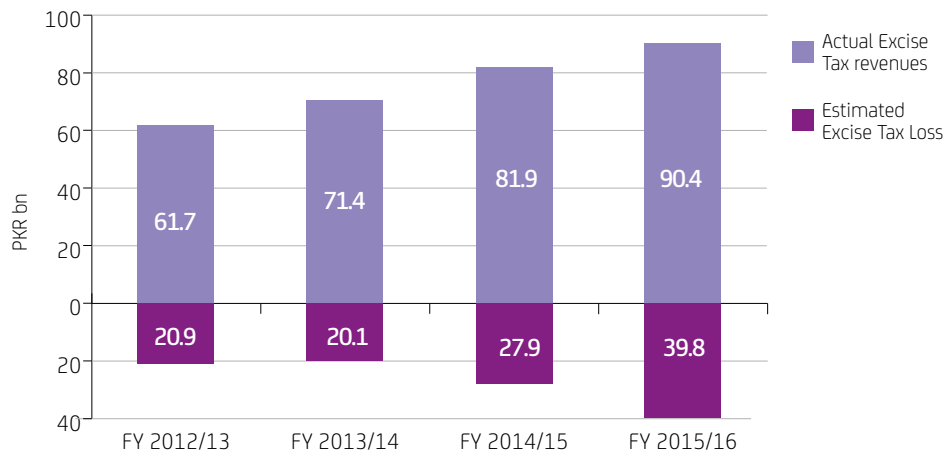
- Pakistan operates a two-tiered specific Excise Tax system whereby cigarettes are classified in the low- or high-tax tier based on the retail selling price net of gross sales tax.
- In the fiscal year 2015/16, excise duty was increased by the equivalent of 15.1% for the high-priced tax tier and by 21.7% for the low-priced tax tier.
- As a consequence of the increase in Excise Tax duty for both the low-priced and high-priced tax tiers, actual revenue collected from excise duties on tobacco increased by 10.4% in fiscal year 2015/16 despite the ongoing decline in Legal Domestic Sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2015/16 amounted to PKR 51.9 billion (USD 497 million).
- The estimated Tax Loss rose by 43.1% in comparison with fiscal year 2014/15 as both Excise Taxes and Illicit Consumption increased over the same period.
- The Excise Tax Loss as a share of total potential Excise Tax revenues rose above 30% in 2015, an increase of 5.2pp in comparison with 2014. This represents the highest level of Excise Tax Loss since the beginning of the Asia Illicit Tobacco Indicator research.

Pakistan: Actual government revenues and estimated Tax Loss

	2012/13 fiscal year		2013/14 fiscal year		2014/15 fiscal year		2015/16 fiscal year		% change in local currency 2014/15- 2015/16
	PKR bn	USD mn	PKR bn	USD mn	PKR bn	USD mn	PKR bn	USD mn	
Actual revenue from excise duties on tobacco	61.7	637	71.4	693	81.9	807	90.4	867	10.4%
Estimated number of illicit cigarettes purchased (cigarettes bn)	22.8		18.8		21.4		24.3		13.4%
Estimated Tax Loss from Illicit Consumption	26.9	275	26.2	253	36.3	358	51.9	497	43.1%
Lost excise revenue	20.9	214	20.1	194	27.9	275	39.8	382	42.9%
Lost VAT revenue	5.9	61	6.1	59	8.4	83	12.1	116	43.9%
Excise Tax Loss as % of potential total Excise Tax revenues	25.3%		22.0%		25.4%		30.6%		

Source: Pakistan Federal Board of Revenue and Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal years run from July to June.

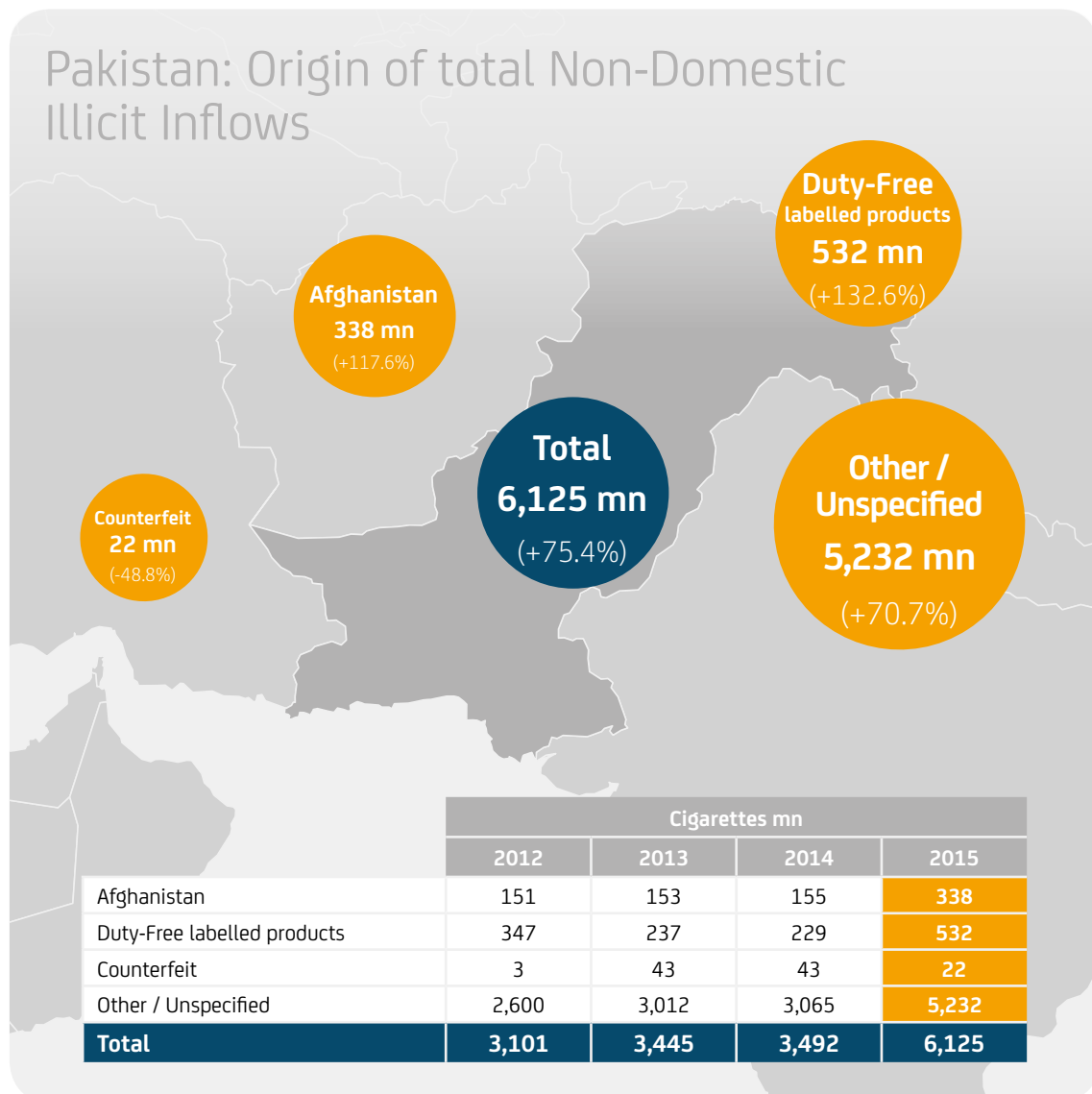
Pakistan: Actual government revenues and estimated Tax Loss



Source: Pakistan Federal Board of Revenue and Oxford Economics based on PM data

Pakistan: Trade Flows

- Domestic Illicit Consumption accounted for a significant proportion of Total Illicit Consumption in 2015, contributing 77.3% to the volume of Illicit Consumption.
- Growth in Non-Domestic Illicit Inflows was driven by an increase in cigarettes intended for retail sale in Afghanistan (+117.6%), Duty-Free labelled products (+132.6%), and Other / Unspecified Market Variant products (+70.7%).¹
- Unspecified Market Variant products account for the largest proportion of Non-Domestic Inflows in Pakistan. In total, nearly 85% of Non-Domestic Inflows were unspecified by intended market of retail sale, with "Pine" accounting for around 29% of total Unspecified Market Variant volumes identified.
- A small volume of Counterfeit products were also identified in the Empty Pack Survey conducted in Pakistan, although the volumes are much reduced from 2014 (approximately halved).
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be very low, less than 4 million cigarettes in 2015.²

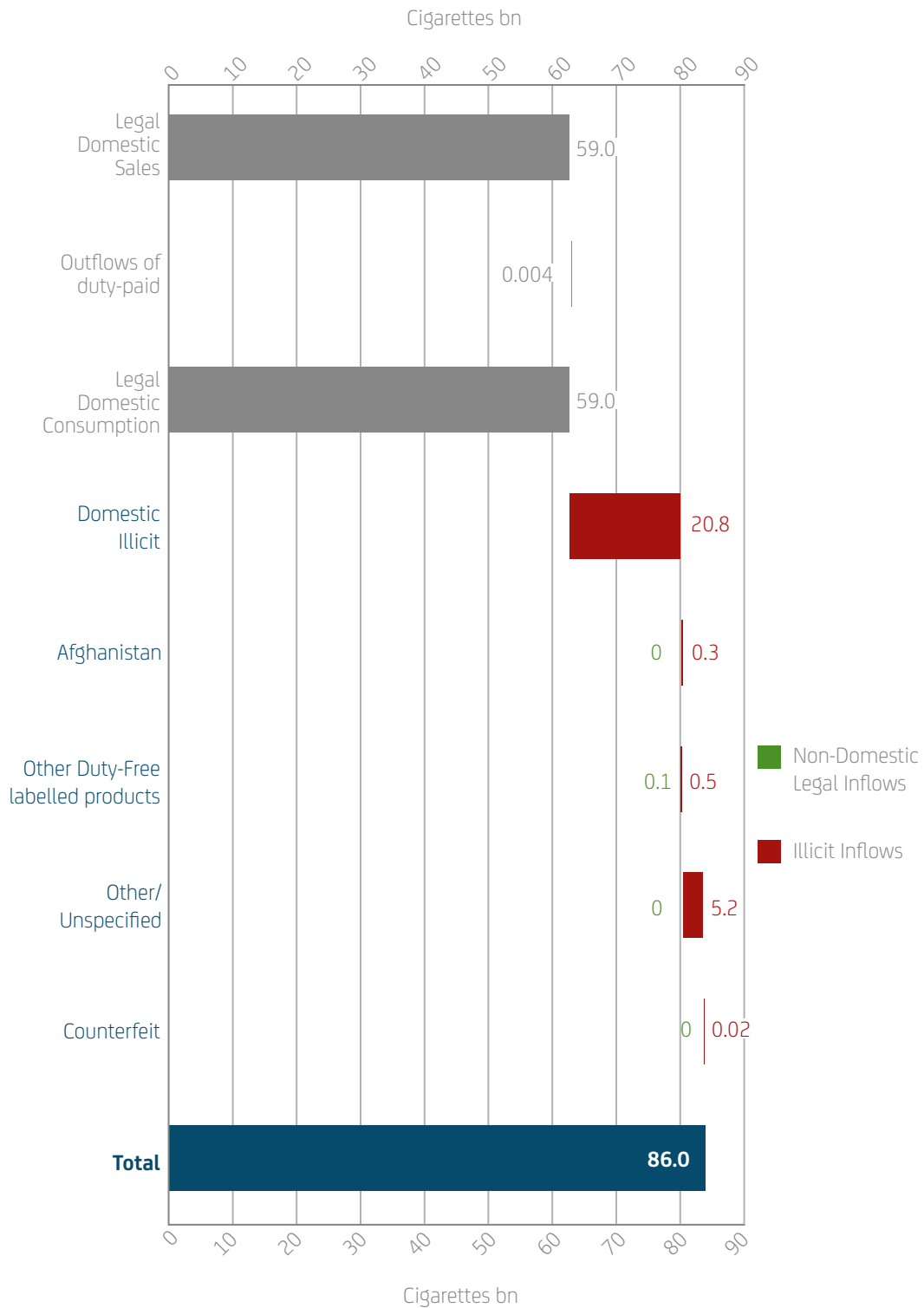


Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

Pakistan: Consumption breakdown 2015

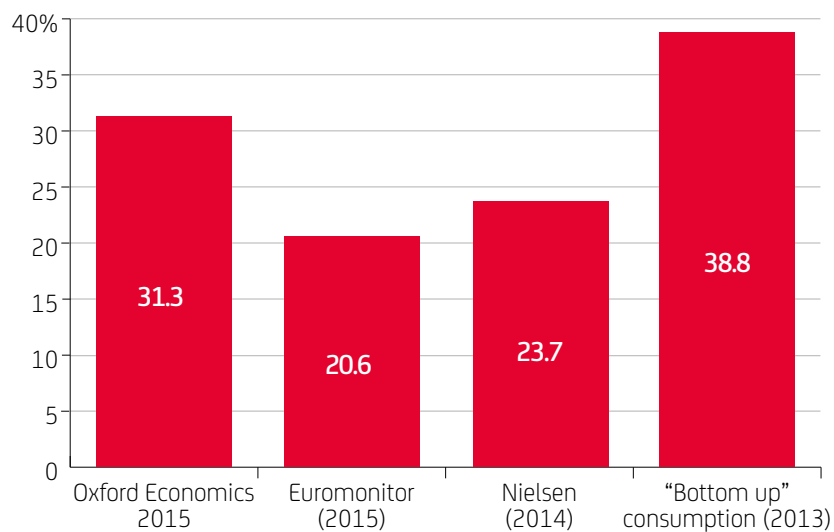


Source: IT Flows Model and Oxford Economics

Pakistan: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 38.8%, or around 40.4 billion cigarettes (based on 2013 LDC). The source for Smoking Prevalence and daily cigarette consumption data is the WHO FCTC 2014 report (based on the Pakistan Demographic & Health Survey, 2012-13).
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 20.6% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Nielsen (2015), The Challenge of Illicit Trade in Cigarettes: Impact and Solutions for Pakistan. Retrieved via http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf	Based on analysis of the retail audit conducted in 2014, Nielsen find an Illicit Incidence of 23.7% in Total Consumption.

Pakistan: Alternative estimates of Illicit Consumption



Pakistan: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual shipments for PM and BAT brands based on industry exchange (PM volume is based on tax-paid shipments and BAT volume is based on factory clearance).	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Pakistan market-specific labelling (e.g., health warnings, tax stamps, etc.).	Limited number of Pakistan Market Variant cigarettes identified in other markets.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Limited Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the UNWTO and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus Pakistan retail audit and OE estimates.	Estimate derived from the 2015 Q2 Empty Pack Survey. Estimated illicitly imported Non-Domestic cigarettes are relatively modest as a share of consumption. See Annex A for more details.
Domestic Illicit	Nielsen Retail Audit.	Based on augmentation of retail audit.	Illicit cigarettes in Pakistan are mostly domestically produced with a near 80% share in Total Illicit Consumption.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 86.0 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Philippines: Legal Domestic Sales

- Philippines Legal Domestic Sales are estimated at 83.5 billion cigarettes in 2015. This represents a 1.4% increase in comparison with 2014.
- PM accounted for nearly three-quarters of all Legal Domestic Sales in 2015. Mighty Corporation was the second largest manufacturer, with a market share of around 21%.
- Despite stabilising in 2015, Legal Domestic Sales remain nearly 20% lower than levels seen in 2012 following a series of significant Excise Tax hikes which has seen the price of a pack of 20 of the Most Sold Brand of cigarettes double in just three years.
- In 2015, the price of a pack of 20 of the Most Sold Brand of cigarettes was 25.5% higher in comparison with the previous year following an increase in the Excise Tax rate of nearly 24% implemented in January 2015.¹

Philippines

Legal Domestic Sales:

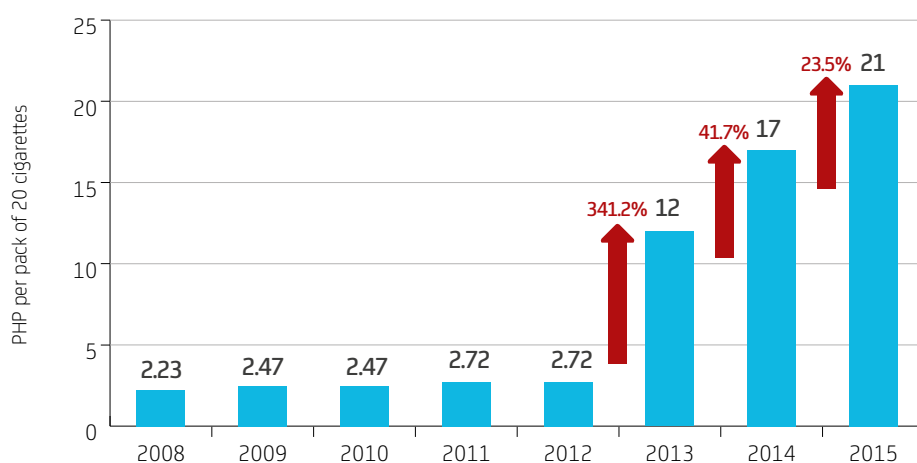
83.5
bn cigarettes

Price:

PHP **32.0**
USD **0.69**

¹Based on PM data.

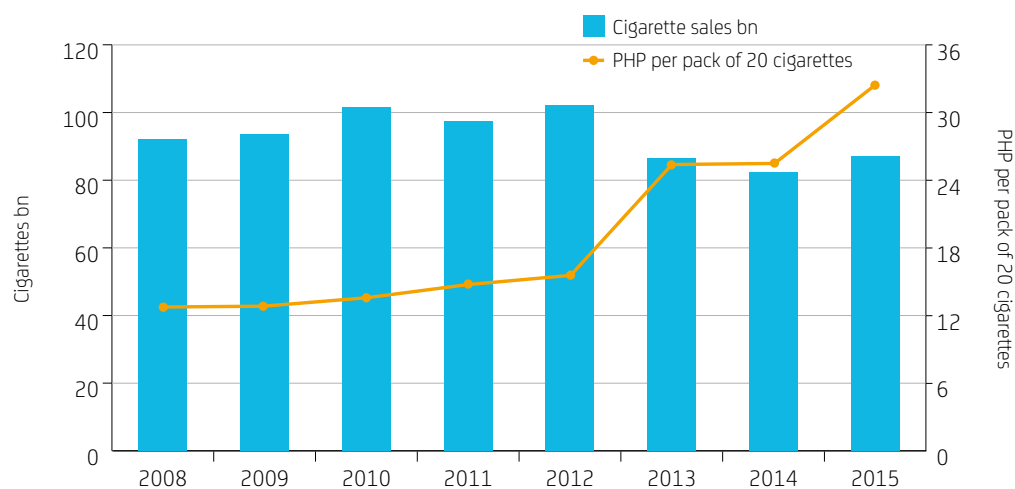
Philippines: Excise duty applied to cigarettes²



Source: Philippine Senate Tax Study and Research Office

²Rate applied in January of each year to the Most Sold Brand.

Philippines: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year.

Philippines: Cigarette Consumption

- The results from two Empty Pack Surveys and the Nielsen Retail Audit,¹ combined with data on withdrawals from the Bureau of Internal Revenue and actual shipments data from PM, were used to estimate Total Consumption of cigarettes in Philippines.
- Total Consumption (legal and illicit) is estimated at 96.7 billion cigarettes in 2015, representing a decline of 5.5% in comparison with 2014.
- Legal Domestic Consumption is estimated at 86.2% or 83.3 billion cigarettes, 0.4% is Non-Domestic Legal consumption, and 13.5% or 13.0 billion cigarettes is Illicit Consumption.
- Total Consumption has now fallen for three consecutive years since the first Asia Illicit Tobacco Indicator Report was conducted. This is despite Legal Domestic Sales rising by 1.4% in 2015.
- Overall, Total Consumption was nearly 11.1% lower than the level estimated for 2012 in the first Asia Illicit Tobacco Indicator Report (equivalent to 12.0 billion cigarettes).
- The decline in Total Consumption in 2015 was driven by a sharp fall in the estimated volume of Illicit Consumption, from 19.9 billion cigarettes in 2014 to 13.0 billion in 2015 (equivalent to a 34.5% decline).
- The lower level of Illicit Consumption was underpinned by a greater than one-third fall in Domestic Illicit Consumption. The share of Domestic Illicit in Total Consumption was 12.0% in 2015, representing a 6.6pp decline in comparison with 2014. This follows two consecutive years of rising Domestic Illicit in 2013 and 2014.
- The sharp decline in Domestic Illicit Consumption coincides with the amendment of the National Internal Revenue Code of 1997 which introduced a system of tax security stamps to improve tax administration.²
- However, the volume of Domestic Illicit Consumption was still double the level estimated for 2012 in the first Asia Illicit Tobacco Indicator Report.
- By contrast, Non-Domestic Illicit Consumption, which accounts for a relatively small proportion of Total Illicit Consumption (around 11%), increased by more than two-thirds in 2015. The total volume of Non-Domestic Illicit Consumption was 1.5 billion cigarettes, up from less than 0.9 billion in 2014.
- Non-Domestic Legal Inflows also experienced a significant increase in volumes, albeit from a relatively low level.

Philippines: Composition of cigarette consumption

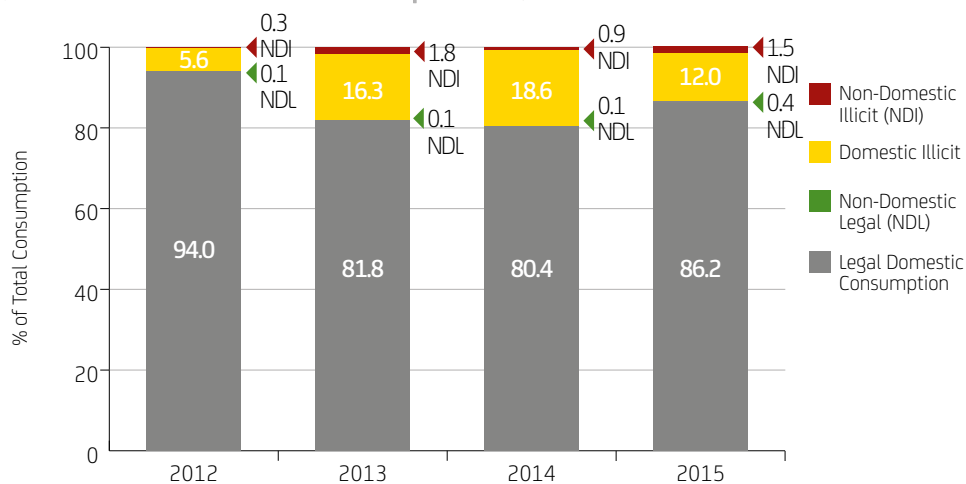
	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	102.2	94.0	86.3	81.8	82.3	80.4	83.3	86.2	1.3
Legal Domestic Sales (LDS)	102.2	–	86.3	–	82.3	–	83.5	–	1.4
Outflows of domestic duty-paid cigarettes	-0.1	–	-0.1	–	-0.1	–	-0.2	–	225.2
Total Non-Domestic Inflows (ND)	0.4	0.4	2.1	2.0	1.0	1.0	1.8	1.9	79.3
Non-Domestic Legal (NDL)	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.4	150.3
Non-Domestic Illicit	0.3	0.3	1.9	1.8	0.9	0.9	1.5	1.5	68.1
Domestic Illicit	6.1	5.6	17.1	16.3	19.0	18.6	11.6	12.0	-39.2
Total Consumption	108.7	100.0	105.5	100.0	102.3	100.0	96.7	100.0	-5.5
Total Illicit Consumption	6.4	5.9	19.1	18.1	19.9	19.4	13.0	13.5	-34.5

Source: Oxford Economics

¹The Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4, while the retail audit provides monthly data in 2015. By comparing sales based on the retail audit with manufacturers' withdrawals sourced from the Philippine Bureau of Internal Revenue (domestic manufacturers' withdrawals are domestic duty-paid cigarettes), this Report estimated the volume of domestically produced cigarettes where the appropriate excise rates were not paid. 2012 results are based on 2011 Q4 Empty Pack Survey (see Annex A for more details).

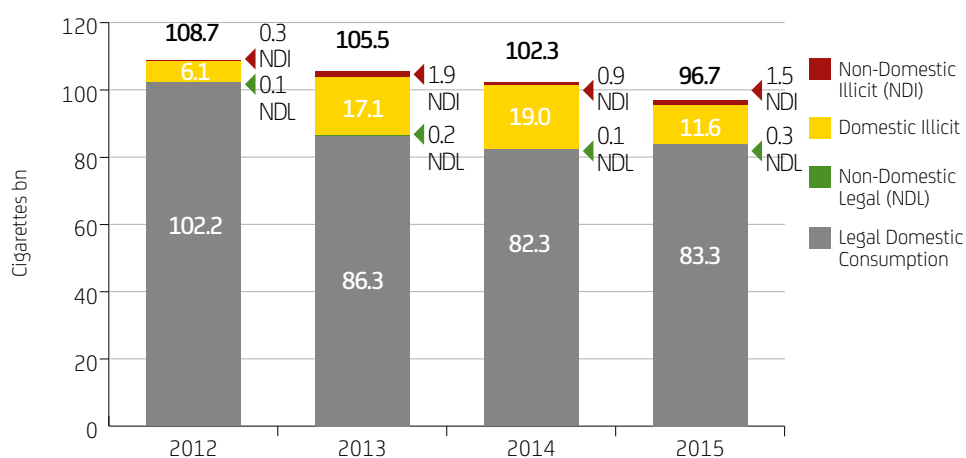
²Based on Section 8 of the Republic Act No. 8424 of the National Internal Revenue Code in relation to Revenue Regulation No. 9-2014.

Philippines: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Philippines: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Philippines: Government Finances

- Philippines apply a two-tiered specific Excise Tax on cigarettes.
- On 1st January 2015, Excise Tax rates were increased to PHP 21 per pack of 20 cigarettes with a net retail price¹ (NRP) not exceeding PHP 11.50 (Low-tax-tier cigarettes) and PHP 28 per pack of 20 cigarettes with a NRP above PHP 11.50 (High-tax-tier cigarettes). This represents an increase of 23.5% and 3.7%, respectively.
- In addition, VAT is levied at a rate of 12%.
- The Excise Tax system was simplified in January 2013 through a reduction in the number of tiers from four to two. Excise Tax rates were set at PHP 12 per pack of Low-tax-tier cigarettes and PHP 25 per pack of High-tax-tier cigarettes.
- This represented a sharp increase in the Excise Tax rate applied of 341% on the Low-tax-tier (as defined in 2012), 231% on the Mid-tax-tier, and 108% on the High-tax-tier.
- Excise Tax rates were subsequently increased in January 2014 and 2015, and will continue to increase annually until they reach a uniform rate of PHP 30 per pack of 20 cigarettes in 2017. Thereafter, rates are set to increase by 4% annually.
- Actual revenues from Excise Taxes on cigarettes increased by nearly one-third in 2015, reaching a level of PHP 100.0 billion.
- The Tax Loss associated with Illicit Consumption was an estimated PHP 17.9 billion in 2015, representing a 20.3% decline in comparison with 2014.
- As a share of total potential Excise Tax receipts, the Excise Tax Loss was an estimated 13.1% in 2015. This is 7.1pp lower than the previous year.

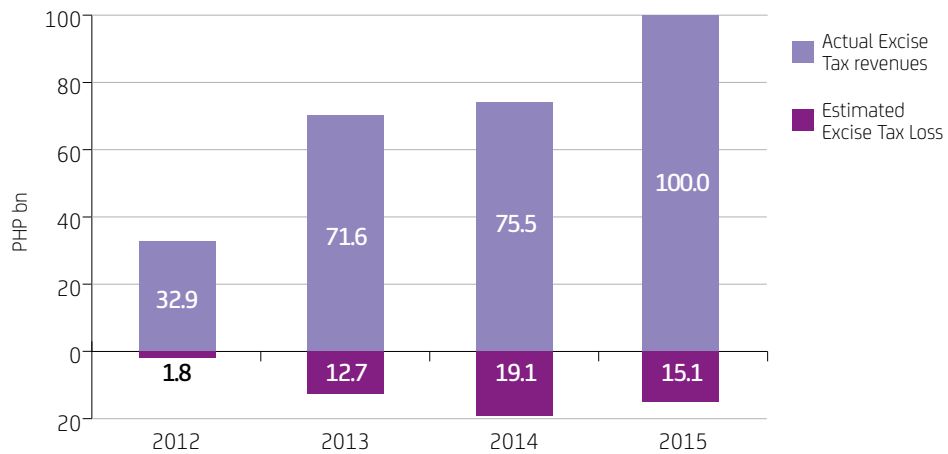
Philippines: Actual government revenues and estimated Tax Loss

	2012		2013		2014		2015		% change in local currency 2014-15
	PHP bn	USD mn	PHP bn	USD mn	PHP bn	USD mn	PHP bn	USD mn	
Actual revenue from excise duties on tobacco	32.9	780	71.6	1,687	75.5	1,701	100.0	2,198	32.5%
Estimated number of illicit cigarettes purchased (cigarettes bn)	6.4		19.1		19.9		13.0		-34.5%
Estimated Tax Loss from Illicit Consumption	2.6	62	15.6	368	22.5	506	17.9	394	-20.3%
Lost excise revenue	1.8	42	12.7	300	19.1	431	15.1	332	-21.1%
Lost VAT revenue	0.8	19	2.9	68	3.3	75	2.8	62	-15.6%
Excise Tax Loss as % of potential total Excise Tax revenues	5.2%		15.1%		20.2%		13.1%		

Source for government revenue data: Philippine Bureau of Internal Revenue and Oxford Economics based on PM data

¹Retail selling price net of excise and VAT.

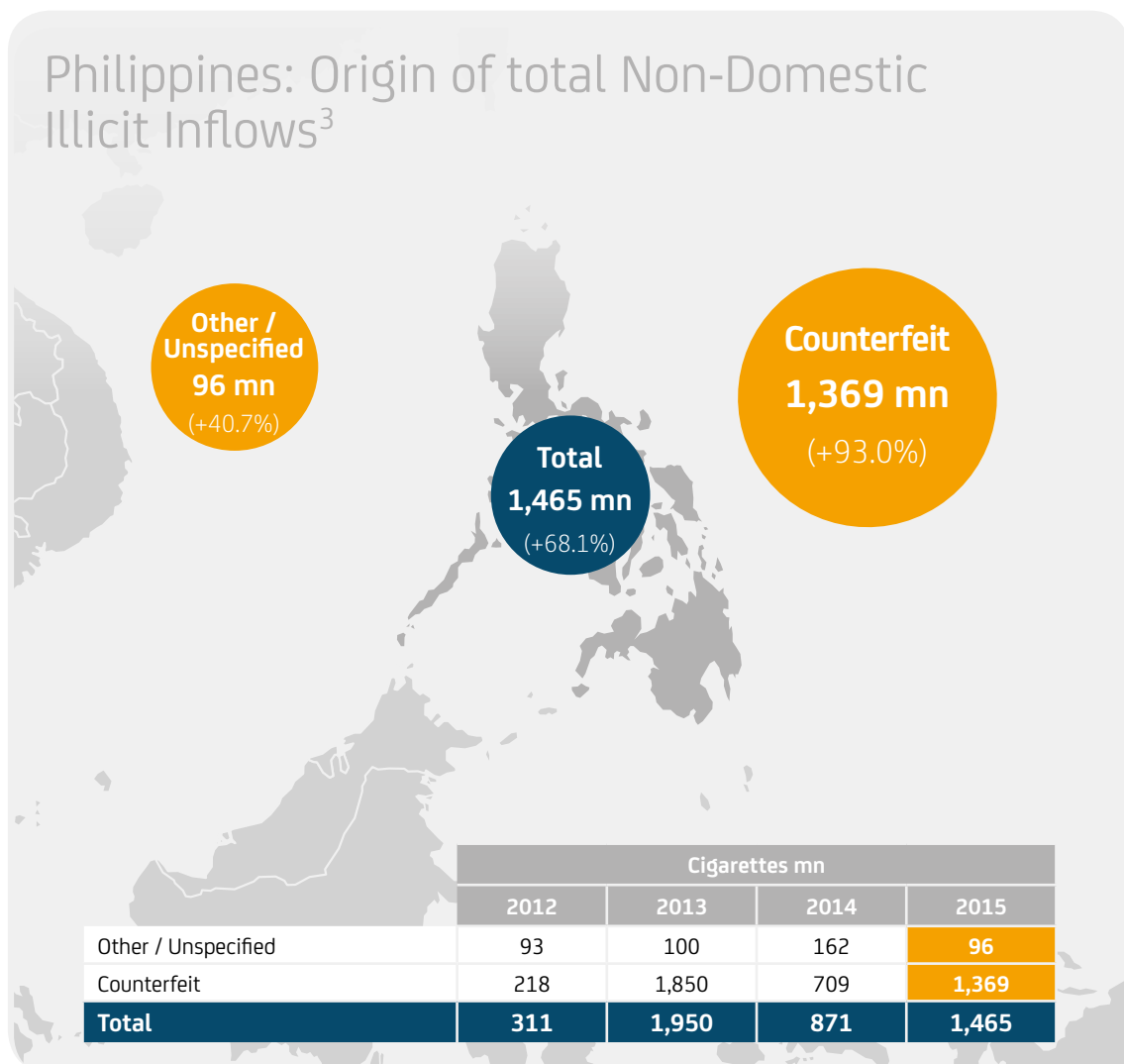
Philippines: Actual government revenues and estimated Tax Loss



Source: Philippine Bureau of Internal Revenue and Oxford Economics based on PM data

Philippines: Trade Flows

- Illicit cigarettes consumed in Philippines consist primarily of domestic non-tax-paid cigarettes. Just over one in ten illicit cigarettes consumed in 2015 were of Non-Domestic origin.
- However, the share of Non-Domestic in Total Illicit Consumption more than doubled in 2015, rising to nearly 1.5 billion cigarettes from less than 1 billion in 2014.
- The increase in Non-Domestic Illicit has been driven by a sharp increase in the presence of Counterfeit cigarettes in Philippines – which account for the large majority of Non-Domestic Illicit Consumption – rising from 0.7 billion cigarettes in 2014 to nearly 1.4 billion cigarettes in 2015 (equivalent to an increase of 93.0%). The volume of Counterfeit products identified in 2015 remains lower than the peak level of 2013, when an estimated 1.9 billion Counterfeit cigarettes were consumed.
- Non-Domestic Legal Inflows¹ are relatively limited in Philippines.
- Outflows of domestic duty-paid cigarettes to the other 16 markets have more than tripled, from 53 million in 2014 to 173 million in 2015.²



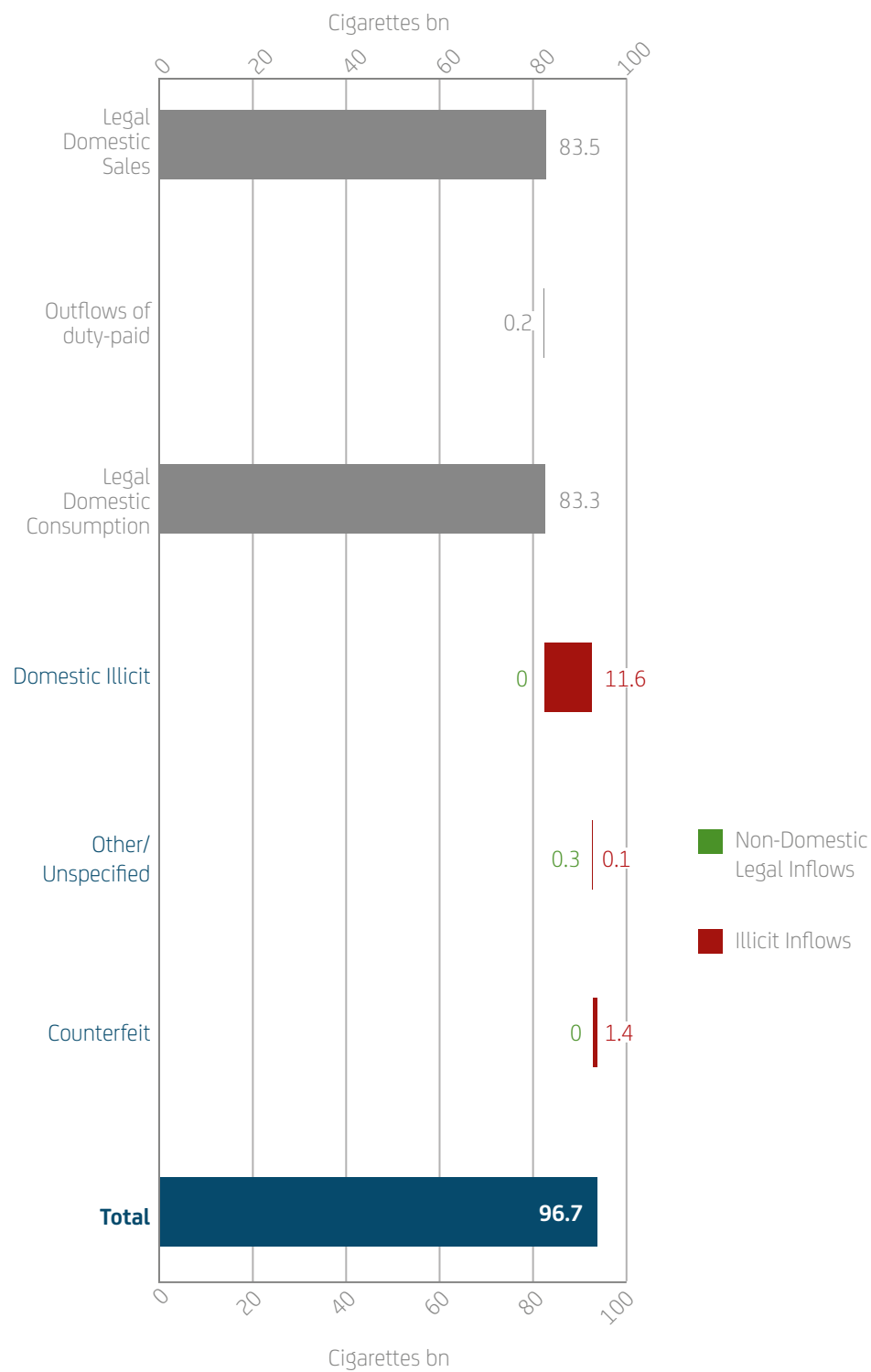
Source: IT Flows Model and Oxford Economics

¹Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin and the passenger duty-free personal import allowance limit.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Figures in brackets reflect % change from 2014.

Philippines: Consumption breakdown 2015

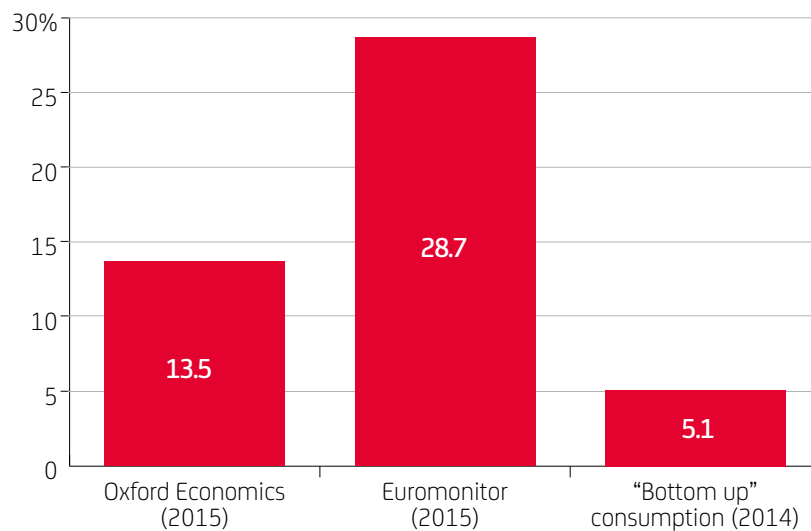


Source: IT Flows Model and Oxford Economics

Philippines: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 5.1%, or around 4.4 billion cigarettes (based on 2014 LDC). The source for annual cigarette consumption per adult is Euromonitor (available via www.tobaccoatlas.org).
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 28.7% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

Philippines: Alternative estimates of Illicit Consumption



Philippines: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Industry volume based on Bureau of Internal Revenue Statement of Manufactures' Ex-factory Withdrawals, adjusted for actual shipments for PM.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify Philippine domestic variant cigarettes based on market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 173 million cigarettes, with a large share going to South Korea and Thailand.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Philippines Department of Tourism, UNWTO, and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Surveys plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. Estimates of illicitly imported Non-Domestic cigarettes are relatively low in comparison with Domestic Illicit. See Annex A for more details.
Domestic Illicit	Nielsen Retail Audit.	Estimate derived from a comparison of market shares of domestic producers in the retail audit and BIR withdrawals data.	Illicit cigarettes in Philippines are believed to be mostly domestically produced.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 96.7 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

Singapore: Legal Domestic Sales

- Legal Domestic Sales in Singapore are estimated at 2.8 billion cigarettes for 2015, a decline of 2.1% from 2014. This represents a slight divergence from the rising trend in Legal Domestic Sales observed in previous years.
- BAT, JTI, and PM continue to dominate the legal market in Singapore, accounting for more than 90% of Legal Domestic Sales.
- In 2015, there was no Excise Tax increase implemented or change in cigarette prices from 2014.
- The specific rate of Excise Tax was last increased in February 2014, from SGD 352 per thousand cigarettes to SGD 388 per thousand cigarettes (+10.2%).
- After Australia and New Zealand, cigarette prices in Singapore are the highest of the 17 markets included in this Report. The nominal price of the Most Sold Brand at USD 9.49 per pack of 20 is significantly higher than the Most Sold Brand available in neighbouring Indonesia (USD 1.48) and Malaysia (USD 3.29).¹

Singapore

Legal Domestic Sales:

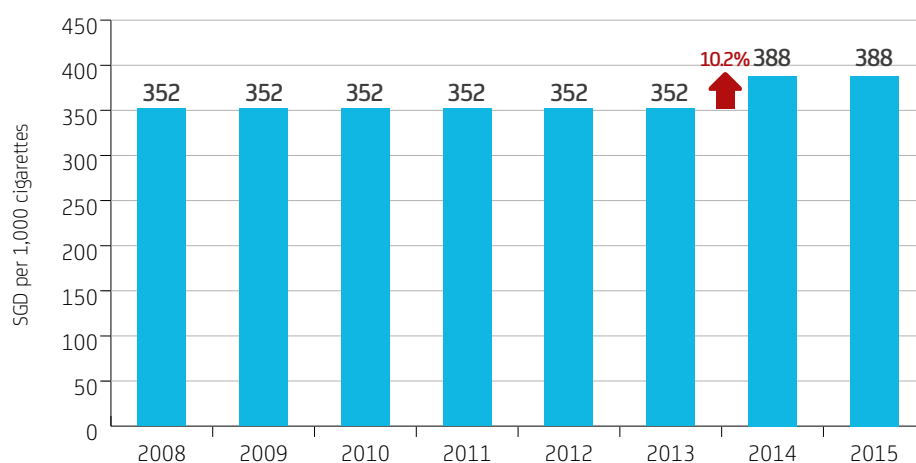
2.8
bn cigarettes

Price:

SGD **13.0**
USD **9.49**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

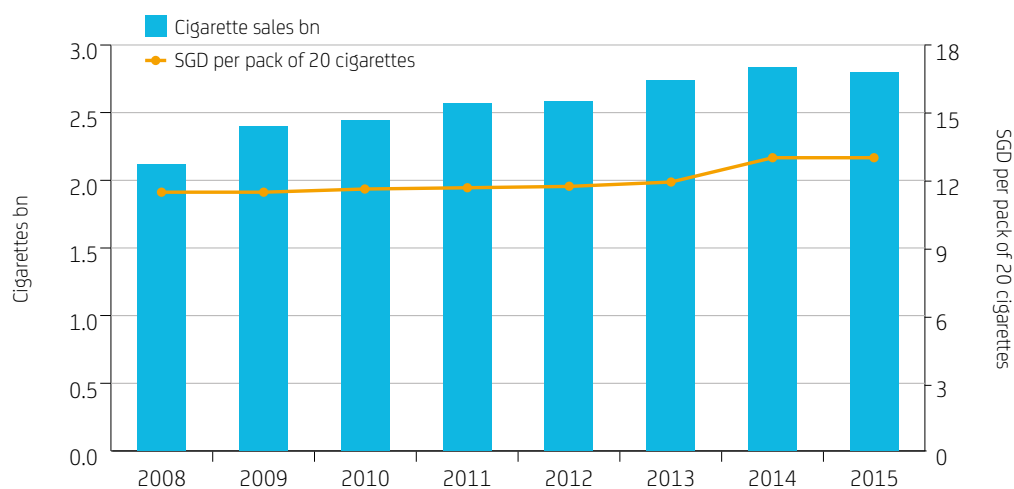
Singapore: Excise duty applied to cigarettes²



Source: Singapore Customs

²Rate applied in February of each year to the Most Sold Brand.

Singapore: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in March of each year.

Singapore: Cigarette Consumption

- The results from two Empty Pack Surveys¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Singapore.
- Total Consumption (legal and illicit) is estimated at 3.2 billion cigarettes in 2015, down 2.1% from 2014. Of this, an estimated 85.6% or 2.8 billion cigarettes is Legal Domestic Consumption. There is no Non-Domestic Legal consumption due to the zero passenger duty-free personal import allowance limit in Singapore. The remaining 14.4% of Total Consumption is therefore all Illicit Consumption.
- Over the past year, Legal Domestic Consumption fell by 1.9% in comparison with 2014.
- Total Consumption has declined each year since the first Asia Illicit Tobacco Indicator Report was conducted in 2012, at an average rate of 2.5% per annum.
- The volume of Illicit Consumption has also exhibited a declining trend over the last few years. In 2015, Illicit Consumption was estimated at around 464 million cigarettes (representing a 3.7% decline in comparison with 2014).
- In 2012, Illicit Consumption was estimated at around 890 million cigarettes. This fell to 657 million cigarettes in 2013 and 482 million cigarettes in 2014 before falling again this year.
- Overall, there has been a 47.9% reduction in Illicit Consumption in Singapore since 2012.
- The 3.7% reported decline in Illicit Consumption in 2015 is of a smaller magnitude compared to the declines seen in 2014 and 2013, when annual declines were around 26% per annum.
- The share of Illicit Consumption in Total Consumption fell to 14.4% in 2015, 0.2pp lower than in 2014.

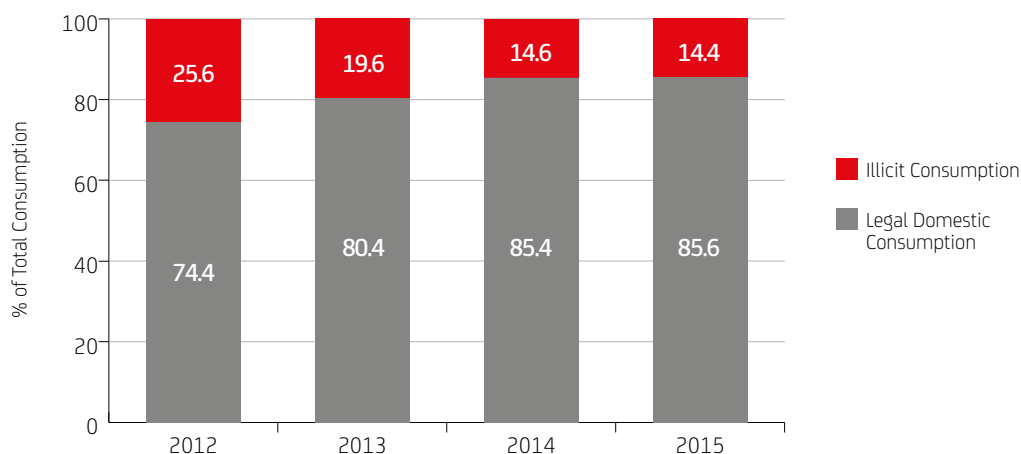
Singapore: Composition of cigarette consumption

	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	2.6	74.4	2.7	80.4	2.8	85.4	2.8	85.6	-1.9
Legal Domestic Sales (LDS)	2.6	–	2.7	–	2.8	–	2.8	–	-2.1
Outflows of domestic duty-paid cigarettes	0.0	–	0.0	–	0.0	–	0.0	–	-27.6
Total Non-Domestic Inflows (ND)	0.9	25.6	0.7	19.6	0.5	14.6	0.5	14.4	-3.7
Non-Domestic Legal (NDL)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Non-Domestic Illicit	0.9	25.6	0.7	19.6	0.5	14.6	0.5	14.4	-3.7
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	3.5	100.0	3.4	100.0	3.3	100.0	3.2	100.0	-2.1
Total Illicit Consumption	0.9	25.6	0.7	19.6	0.5	14.6	0.5	14.4	-3.7

Source: Oxford Economics

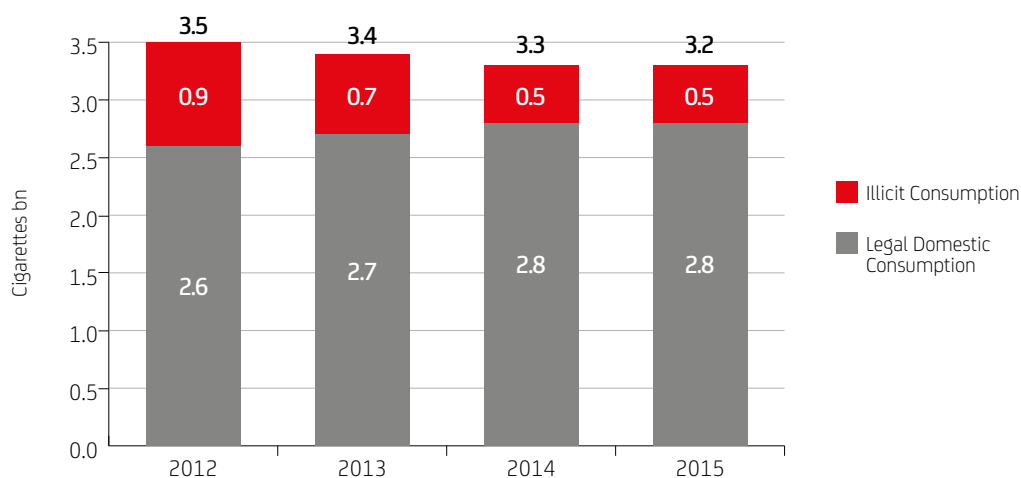
¹The Empty Pack Surveys were undertaken in 2015 Q2 and 2015 Q4 (see Annex A for more details).

Singapore: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Singapore: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Singapore: Government Finances

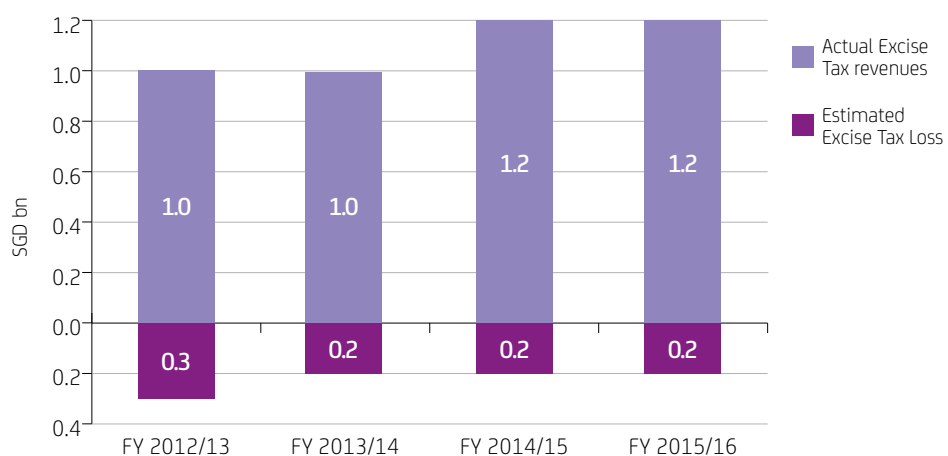
- Singapore applies a single-rate, unit-specific Excise Tax. There was no increase in Excise Tax in 2015.
- After no tax increases since 2005, the Excise Tax rate applied in Singapore was increased to SGD 388 per thousand cigarettes in February 2014 from SGD 352 per thousand cigarettes (an increase of 10.2%).
- A 7% sales tax is also levied on all retail sales of cigarettes.
- 2015 saw a slight 1.8% decline in actual revenues from excise duties on tobacco, owing to the decline in Legal Domestic Sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2015/16 amounted to SGD 199 million (USD 143 million). This represents a modest 2.0% decline in the Tax Loss of SGD 203 million (USD 157 million) estimated for fiscal year 2014/15.
- The level of Tax Loss associated with Illicit Consumption in fiscal year 2015/16 was the lowest in four years since the first Asia Illicit Tobacco Indicator Report, having fallen in every year since fiscal year 2012/13.
- With actual government revenues from Excise Tax on cigarettes also showing a slight decline in 2015, the share of estimated Excise Tax Loss in total potential Excise Tax revenues has remained constant this year at 13.1%. This represents an 11.2pp decline since the first Asia Illicit Tobacco Indicator Report, which reviewed fiscal year 2012/13.

Singapore: Actual government revenues and estimated Tax Loss

	2012/13 fiscal year		2013/14 fiscal year		2014/15 fiscal year		2015/16 fiscal year		% change in local currency 2014/15- 2015/16
	SGD mn	USD mn	SGD mn	USD mn	SGD mn	USD mn	SGD mn	USD mn	
Actual revenue from excise duties on tobacco	969	780	1,043	828	1,228	953	1,205	869	-1.8%
Estimated number of illicit cigarettes purchased (cigarettes mn)	883		674		477		467		-2.0%
Estimated Tax Loss from Illicit Consumption	345	278	262	208	203	157	199	143	-2.0%
Lost excise revenue	311	250	239	190	185	144	181	131	-2.0%
Lost VAT revenue	34	28	23	19	18	14	17	12	-2.1%
Excise Tax Loss as % of potential total Excise Tax revenues	24.3%		18.6%		13.1%		13.1%		

Source: Singapore Customs and Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal years run from April to March.

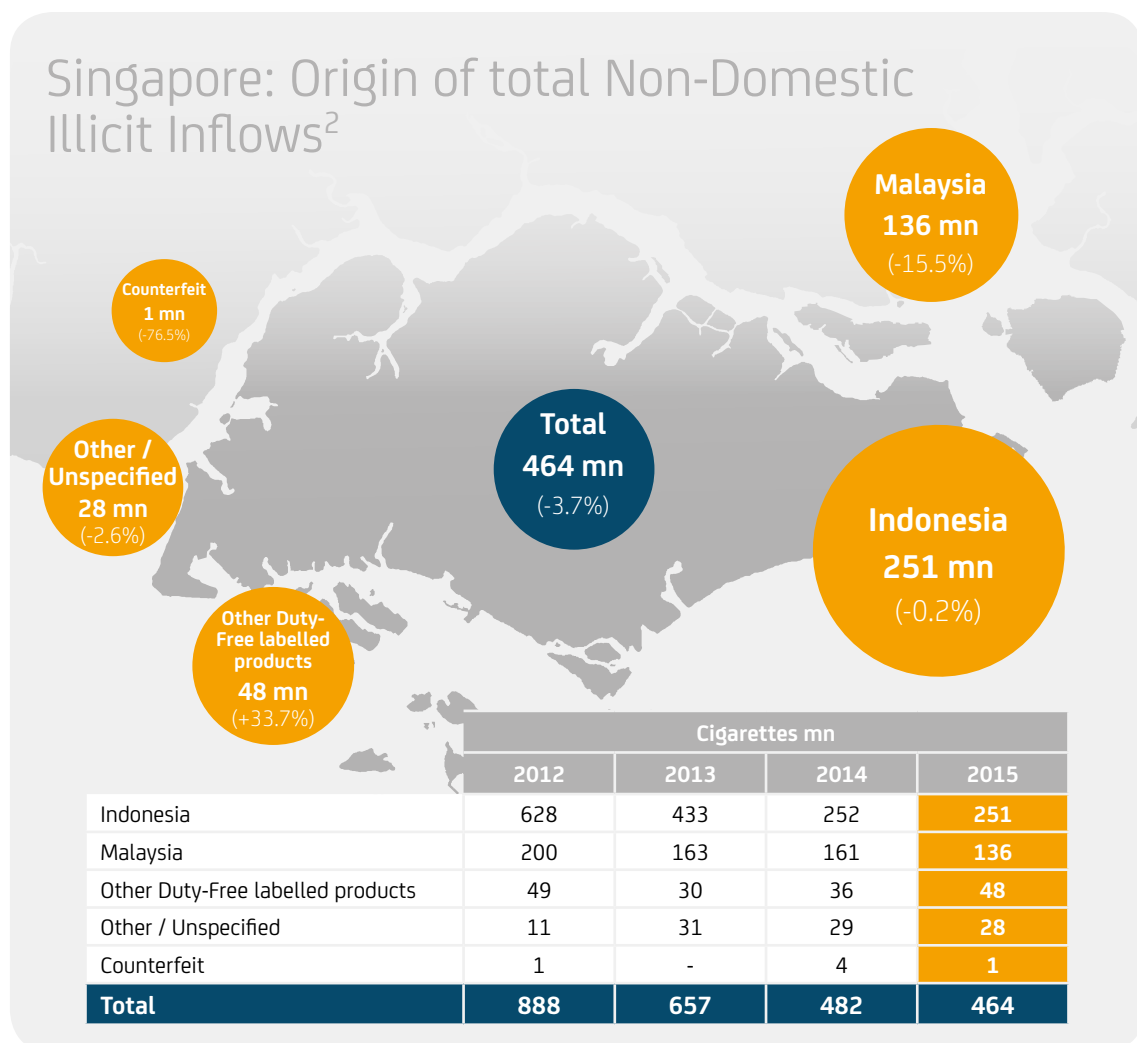
Singapore: Actual government revenues and estimated Tax Loss



Source: Singapore Customs and Oxford Economics based on PM data

Singapore: Trade Flows

- The market for illicit cigarettes in Singapore is entirely composed of Non-Domestic products. Close-proximity markets account for a large share of Non-Domestic illicit cigarettes in Singapore. Cigarettes intended for retail sale in Indonesia and Malaysia accounted for approximately 54% and 29% of Total Illicit Consumption respectively.
- While Inflows with intended retail sale in Indonesia remained relatively stable in comparison with 2014, Inflows with intended retail sale in Malaysia declined by 15.5% to an estimated 136 million cigarettes in 2015.
- A small volume of Counterfeit cigarettes was also identified in the Empty Pack Survey in 2015 – equivalent to less than 1 million cigarettes – in contrast to 2014, where 4.0 million Counterfeit cigarettes were present in the Singapore market.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be very low, as the cost of cigarettes is relatively high in Singapore, reducing the incentive for individuals to take legal domestic cigarettes with them when travelling within the region.¹
- There are assumed to be zero Non-Domestic Legal Inflows of cigarettes given the zero passenger duty-free personal import allowance in Singapore.

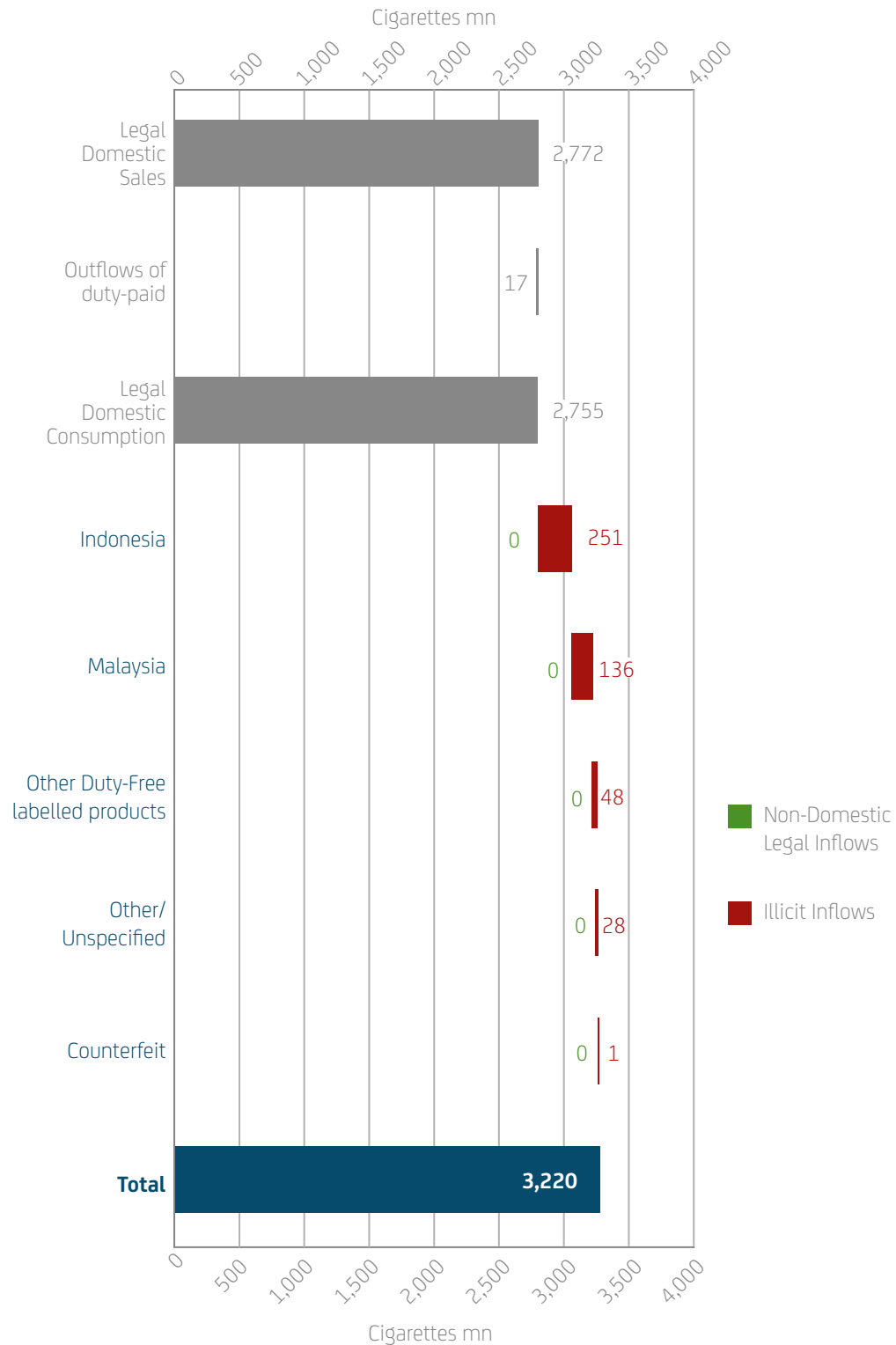


Source: IT Flows Model and Oxford Economics

¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Figures in brackets reflect % change from 2014.

Singapore: Consumption breakdown 2015

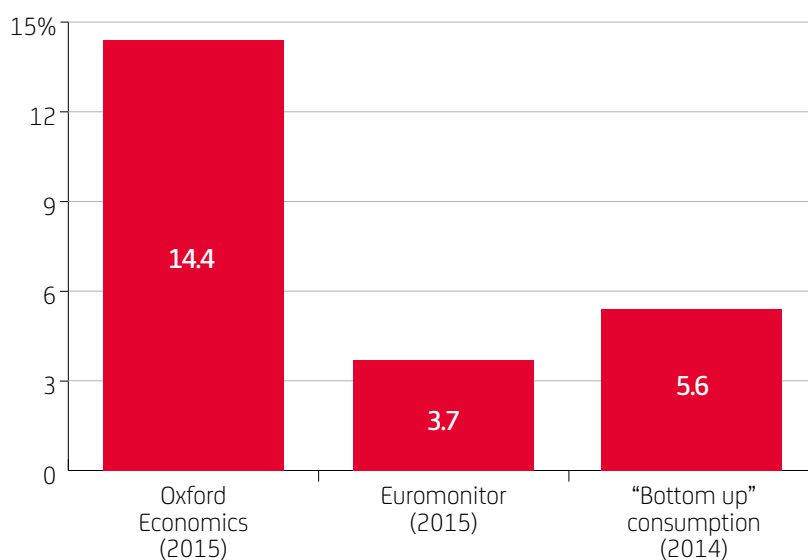


Source: IT Flows Model and Oxford Economics

Singapore: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 5.6%, or around 167 million cigarettes (based on 2014 LDC). The source for annual cigarette consumption per adult is Euromonitor, 2014 (available via www.tobaccoatlas.org).
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 3.7% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

Singapore: Alternative estimates of Illicit Consumption



Singapore: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Tobacco Association of Singapore for PM, BAT, and JTI, and estimates based on Nielsen Retail Audit for other companies.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Singaporean market-specific labelling (e.g., health warnings, tax stamps, etc.).	Limited Outflows identified from Singapore in other Empty Pack Surveys.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Limited Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	The passenger duty-free personal import allowance for Singapore is zero.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Surveys plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2015 Q2 and 2015 Q4. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 3.2 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax and GST).	See Annex B for more details.

South Korea: Legal Domestic Sales

- Legal Domestic Sales in South Korea are estimated at 67.3 billion cigarettes for 2015, falling by nearly 25% in comparison with 2014.
- KT&G is the dominant manufacturer in the market, accounting for nearly 57% of Legal Domestic Sales. The remaining share of Legal Domestic Sales is primarily composed of sales by PM, BAT, and JTI.
- Legal Domestic Sales have been in steady decline since 2009. However, in 2015 legal sales experienced the most significant fall over this period, a development that coincided with a significant increase in cigarette prices.
- In January 2015, the Excise Tax rate (including Earmarked Tax) on cigarettes was increased for the first time in a decade (by more than 120%), raising the price of a pack of 20 of the Most Sold Brand of cigarettes from KRW 2,500 to KRW 4,500, equivalent to an increase of 80%.
- At USD 3.75 per pack of 20, the nominal price of the Most Sold Brand of cigarettes in South Korea is now more than double the equivalent price of the Most Sold Brand in China (USD 1.61).¹
- However, cigarette prices are cheaper in nominal terms when compared with other markets included in this Report such as Hong Kong (USD 7.10) and Macao (USD 6.27).

South Korea

Legal Domestic Sales:

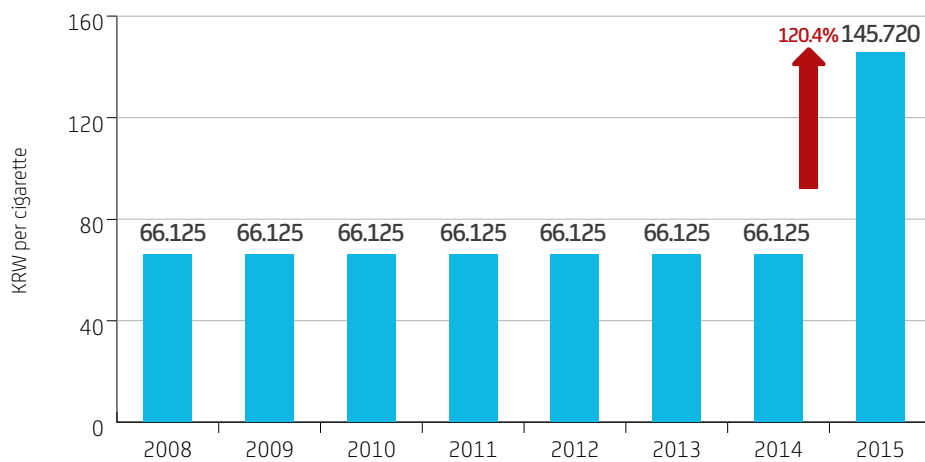
67.3
bn cigarettes

Price:

KRW **4,500**
USD **3.75**

¹ Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

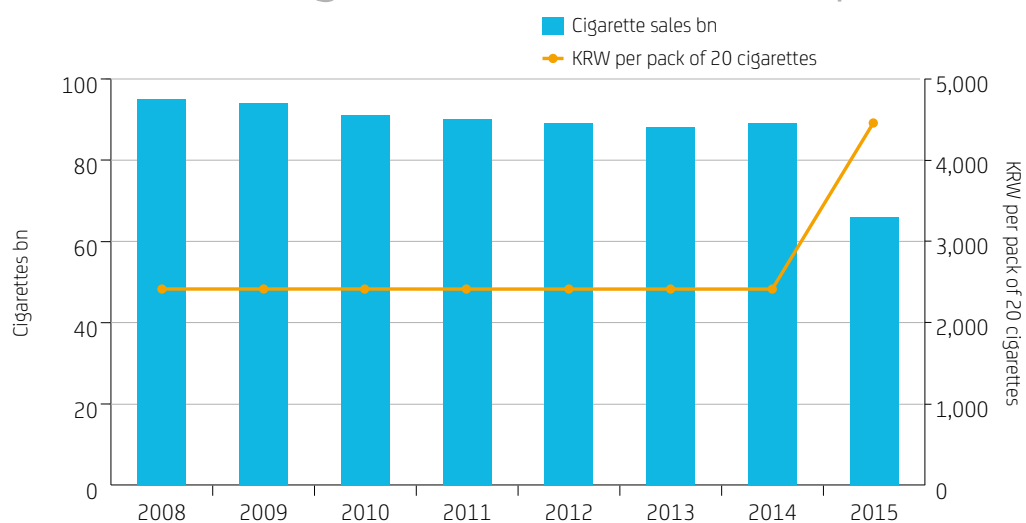
South Korea: Excise duty applied to cigarettes²



Source: South Korea government

²Rate applied in January of each year to the Most Sold Brand, including Earmarked Taxes (education, health and green taxes, and individual consumption tax)

South Korea: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price per pack of the Most Sold Brand in January of each year.

South Korea: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in South Korea.
- Total Consumption (legal and illicit) is estimated at 68.8 billion cigarettes in 2015, a 23.1% decline from the estimated 89.4 billion cigarettes in 2014.
- Of this 68.8 billion, an estimated 97.5% is Legal Domestic Consumption, 1.6% is Non-Domestic Legal Consumption, and 0.6% or 0.9 billion cigarettes is Illicit Consumption.
- Illicit consumption increased by more than 450% to an estimated 636 million cigarettes in 2015, from 113 million cigarettes in 2014.
- Non-Domestic Legal Inflows also increased in 2015, from 312 million cigarettes in 2014 to nearly 1.1 billion cigarettes, representing an increase of nearly 250%.
- In total, Non-Domestic Inflows accounted for 2.5% of Total Consumption in 2015, 2pp higher than in 2014.

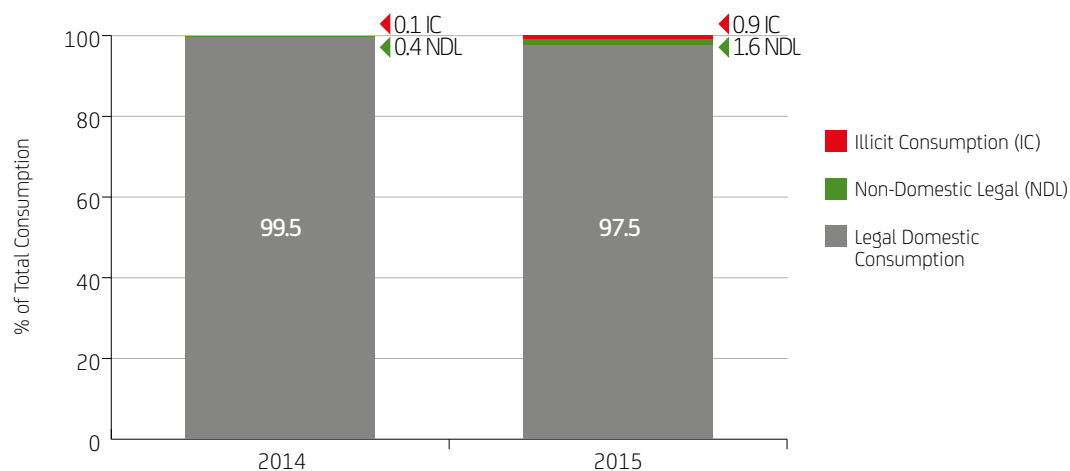
South Korea: Composition of cigarette consumption

	2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	89.0	99.5	67.1	97.5	-24.6
Legal Domestic Sales (LDS)	89.4	–	67.3	–	-24.8
Outflows of domestic duty-paid cigarettes	-0.4	–	-0.2	–	-53.0
Total Non-Domestic Inflows (ND)	0.4	0.5	1.7	2.5	305.3
Non-Domestic Legal (NDL)	0.3	0.3	1.1	1.6	248.2
Non-Domestic Illicit	0.1	0.1	0.6	0.9	463.2
Domestic Illicit	0.0	0.0	0.0	0.0	n/a
Total Consumption	89.4	100.0	68.8	100.0	-23.1
Total Illicit Consumption	0.1	0.1	0.6	0.9	463.2

Source: Oxford Economics

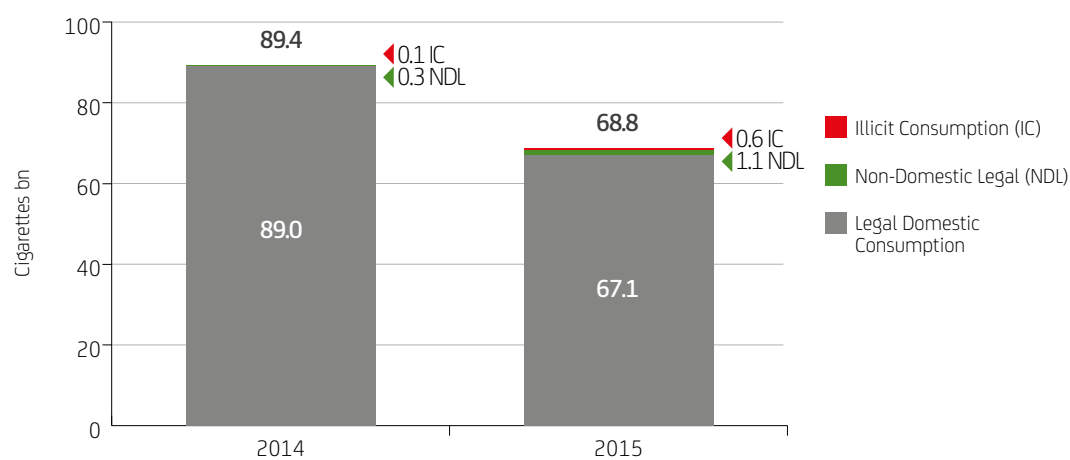
¹The Empty Pack Survey was undertaken in 2015 Q4 (see Annex A for more details).

South Korea: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

South Korea: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

South Korea: Government Finances

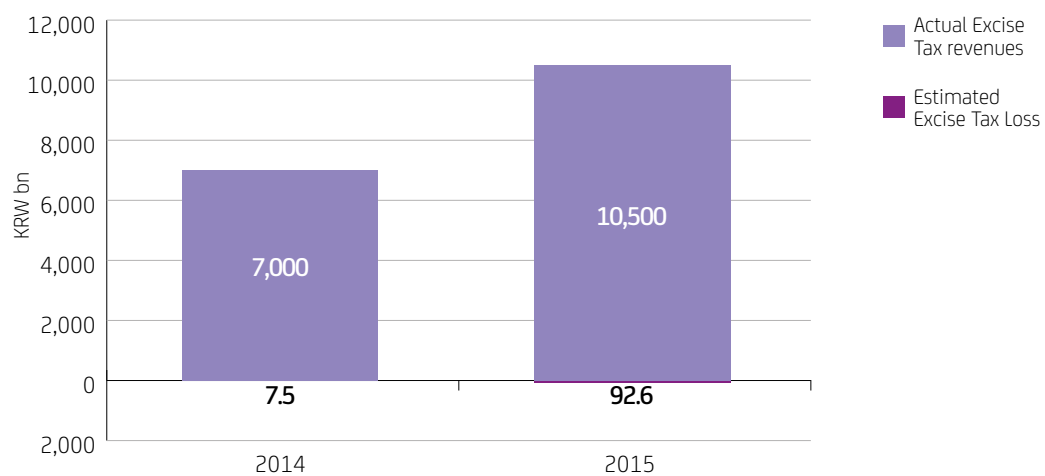
- South Korea applies a single-rate, unit-specific Excise Tax.
- In addition, VAT of 10% is also levied, as are a range of Earmarked Taxes, covering local education, public health, and waste management.
- In January 2015, the Excise Tax rate was increased for the first time in a decade, from KRW 32,050 to KRW 50,350 per thousand cigarettes. This is equivalent to an increase of 57.1% in the Excise Tax rate.
- In addition, the government re-introduced the Farmer Subsidy of KRW 250 per thousand cigarettes, increased the contribution to the Public Health Fund, and imposed a new individual consumption tax, which varies depending on the value of the cigarettes.
- Overall, when including both Excise and Earmarked Taxes, the tax on cigarettes increased by more than 120% in 2015. This led to an increase in the price of the Most Sold Brand of cigarettes of 80%.
- Actual revenues from Excise Tax on tobacco rose by 50% in 2015 despite the sharp decline in Legal Domestic Sales, with the rise in Excise Taxes more than compensating for the fall in legal sales.
- In 2015, the estimated Tax Loss from Illicit Consumption amounted to nearly KRW 105.7 billion (USD 93.4 million). This is more than 12 times larger than the estimated Tax Loss for 2014, a function of the significant increases in both Excise and Earmarked Taxes, as well as the growth in the volume of Illicit Consumption.
- Despite the significant increase in the value of estimated Tax Loss from Illicit Consumption, the share of Excise Tax Loss as a proportion of total potential Excise Tax revenues remains relatively low at just 0.9%.

South Korea: Actual government revenues and estimated Tax Loss

	2014		2015		% change in local currency 2014-2015
	KRW bn	USD mn	KRW bn	USD mn	
Actual revenue from excise duties on tobacco	7,000	9,972	10,500	9,283	50.0%
Estimated number of illicit cigarettes purchased (cigarettes mn)	113		636		463.2%
Estimated Tax Loss from Illicit Consumption	8.7	8.3	105.7	93.4	1,109.1%
Lost excise revenue	7.5	7.1	92.6	81.9	1,141.2%
Lost VAT revenue	1.3	1.2	13.1	11.6	922.4%
Excise Tax Loss as % of potential total Excise Tax revenues	0.1%		0.9%		

Source: Korea Ministry of Finance and Oxford Economics based on PM data
Includes Earmarked Taxes.

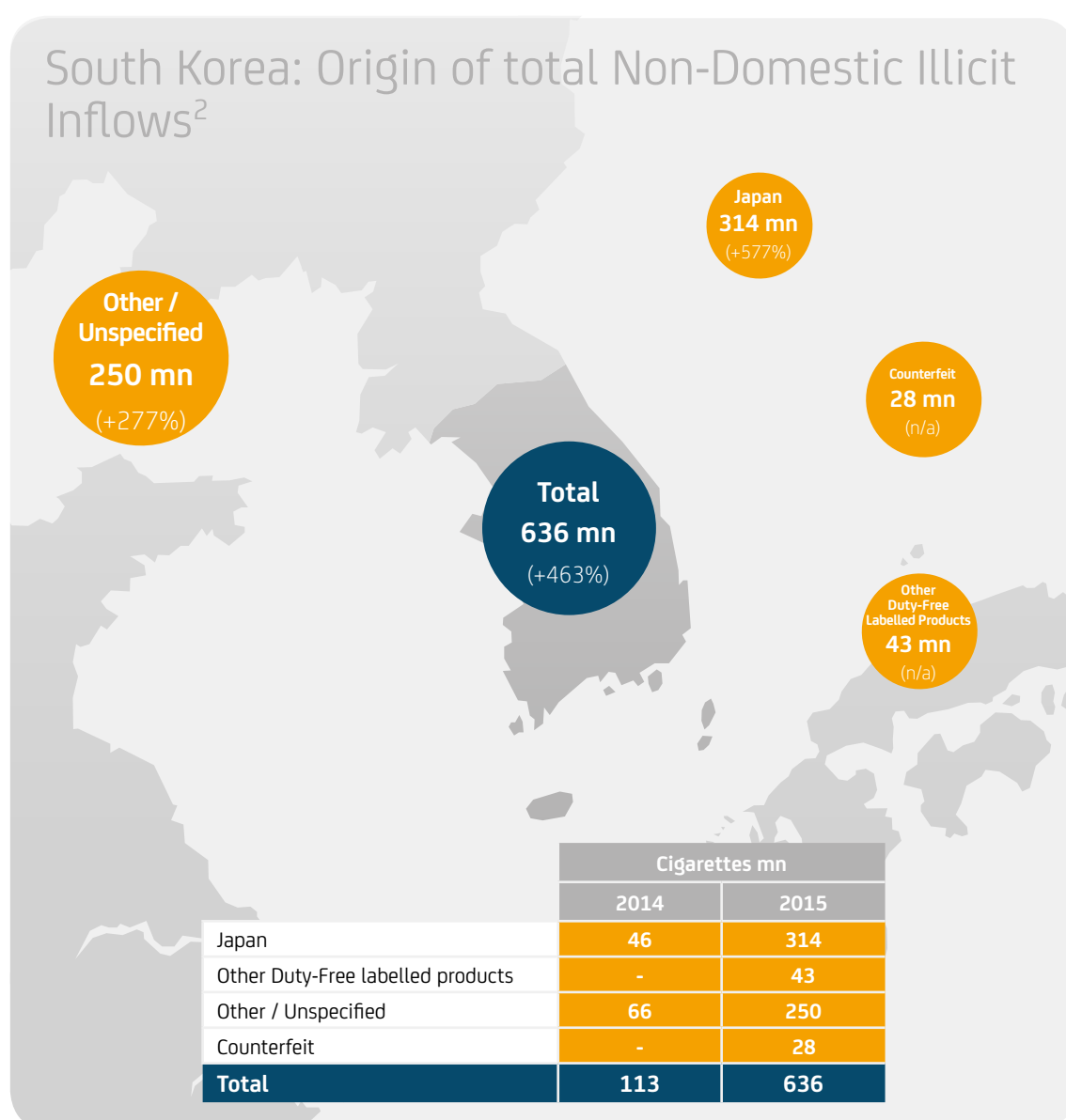
South Korea: Actual government revenues and estimated Tax Loss



Source: Korea Ministry of Finance and Oxford Economics based on PM data

South Korea: Trade Flows

- The volume of Non-Domestic Illicit cigarettes in Korea increased by more than 450% in 2015 with the implementation of the first Excise Tax increase in a decade.
- Most of the Non-Domestic Illicit Inflows were cigarettes originally identified for retail sale in Japan, accounting for nearly 50% of total Non-Domestic Illicit Inflows.
- Outflows of domestic duty-paid cigarettes to the other 16 markets have decreased substantially from 420 million sticks in 2014 to just 197 million in 2015. This represents a decline of more than 50%. Over 85% of these cigarettes were identified in the Australian market.¹
- In total, around 28 million Counterfeit products were identified in the Empty Pack Survey in 2015, whereas zero Counterfeit packs were found in the previous year.

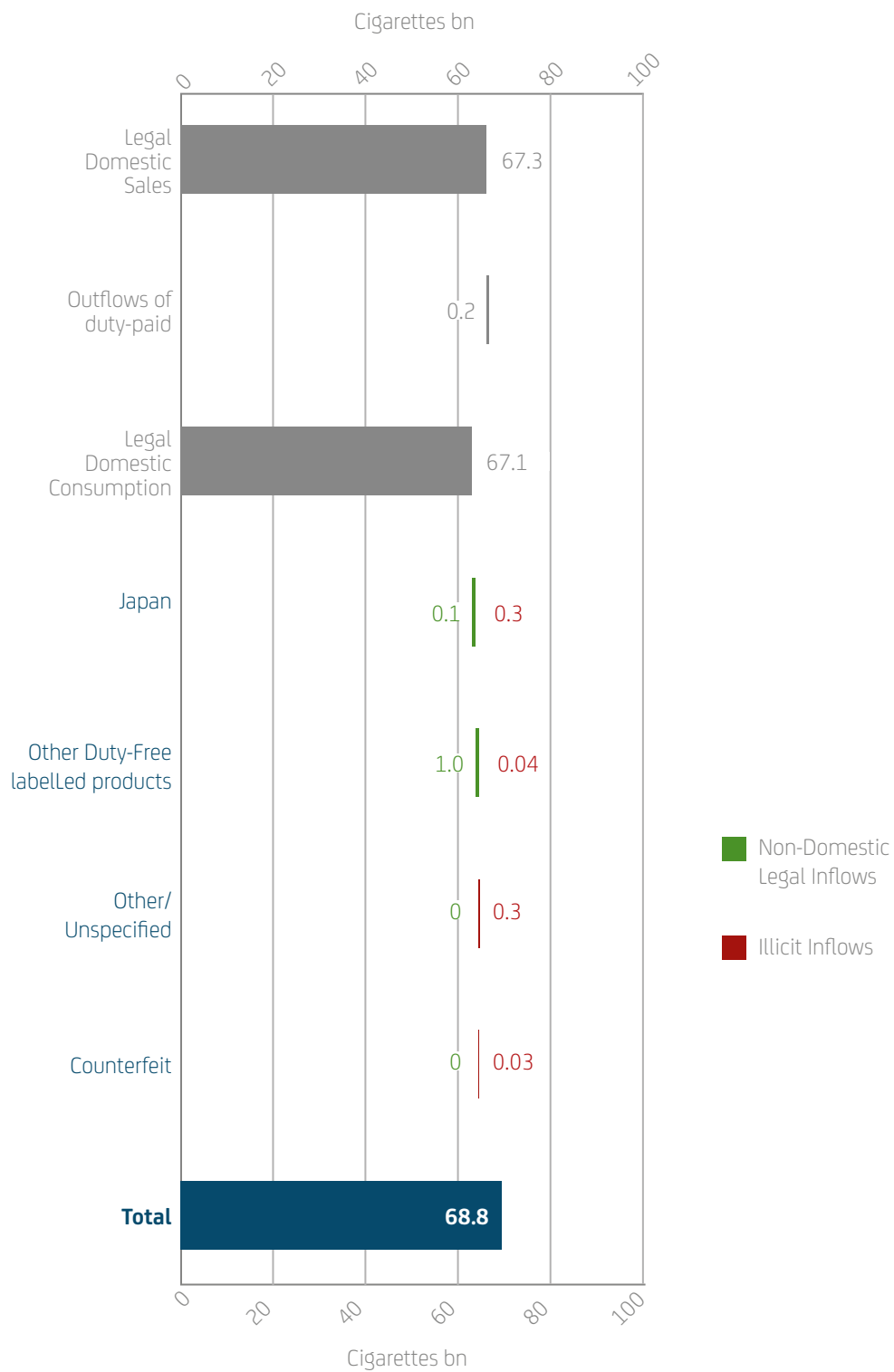


Source: IT Flows Model and Oxford Economics

¹Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

²Figures in brackets reflect % change from 2014.

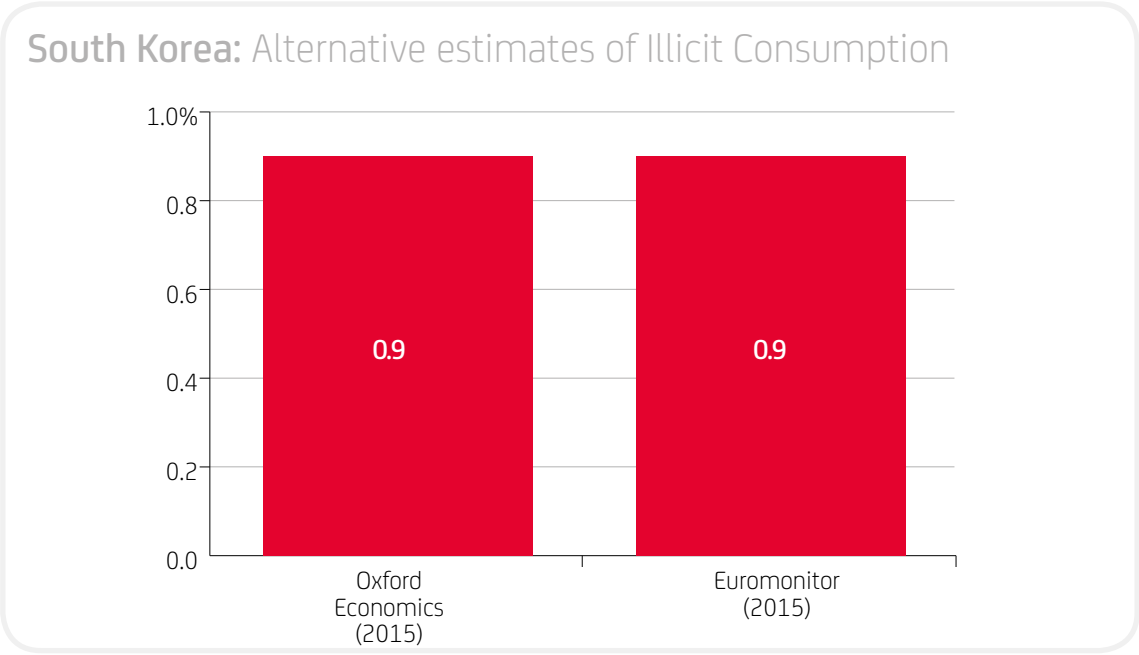
South Korea: Consumption breakdown 2015



Source: IT Flows Model and Oxford Economics

South Korea: Other Estimates

Source	Comment
Comparing consumption estimates with LDC (“bottom up” approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a “bottom up” estimate of cigarette consumption can be made, which can then be compared with LDC. Using this approach, estimated consumption is less than LDC, implying no evidence of substantial Illicit Consumption. The data on Smoking Prevalence comes from the WHO FCTC 2014 report (based on the Korea Health Statistics 2012, published by Ministry of Health and Welfare in 2013), while average daily consumption comes from OECD data for South Korea for 2012.
Euromonitor Passport, 2016	Euromonitor estimated an Illicit Incidence of 0.9% in 2015. The methodology, sampling, and coverage are unknown, however, so it is difficult to assess the robustness of this estimate.



South Korea: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Total industry volume based on distributors sales to retailers, provided by Hankook Research.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing South Korean market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 197 million cigarettes, with a large share going to Australia.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Korea Tourism Organisation.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates. Results adjusted for large presence of USA market variant cigarettes and sample reweighted.	Estimate derived from the 2015 Q4 Empty Pack Survey. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 68.8 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax, GST, and Earmarked Taxes).	See Annex B for more details.

Taiwan: Legal Domestic Sales

- Taiwan Legal Domestic Sales are estimated at 35.1 billion cigarettes for 2015, unchanged from 2014.
- Imperial Tobacco, JTI, and Taiwan Tobacco & Liquor Corporation (TTL) continued to account for over 80% of the entire legal cigarette market.
- The price of the Most Sold Brand of cigarettes in Taiwan increased by 5.6% in 2015.
- There has been no change in Excise Taxes on cigarettes since 2010.
- Prices for cigarettes are above those in China – the nominal price per pack of 20 of the Most Sold Brand at USD 3.00 in Taiwan compares with a price of USD 1.61 for the Most Sold Brand in China. Prices are also much higher than in Philippines, where a pack of the Most Sold Brand of cigarettes will cost USD 0.69.¹
- By contrast, in nominal terms cigarette prices are cheaper in Taiwan than in Hong Kong and Macao, where the Most Sold Brand costs USD 7.10 and USD 6.27 per pack respectively.

Taiwan

Legal Domestic Sales:

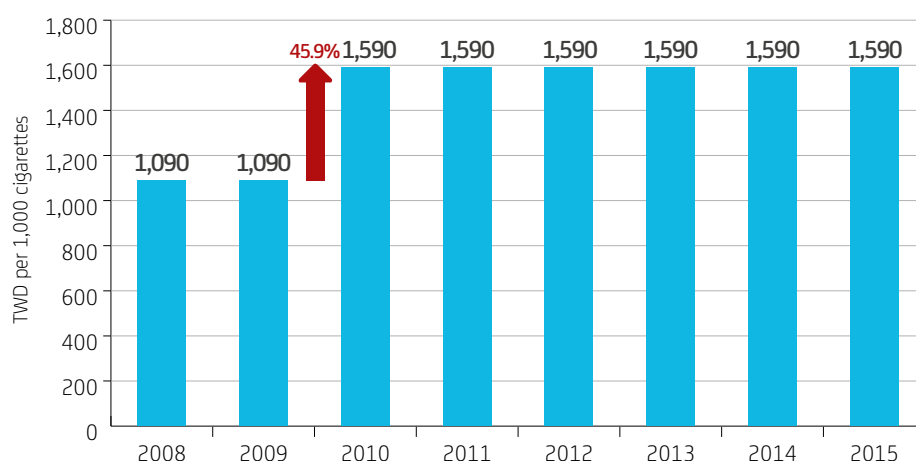
35.1
bn cigarettes

Price:

TWD **95.0**
USD **3.00**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

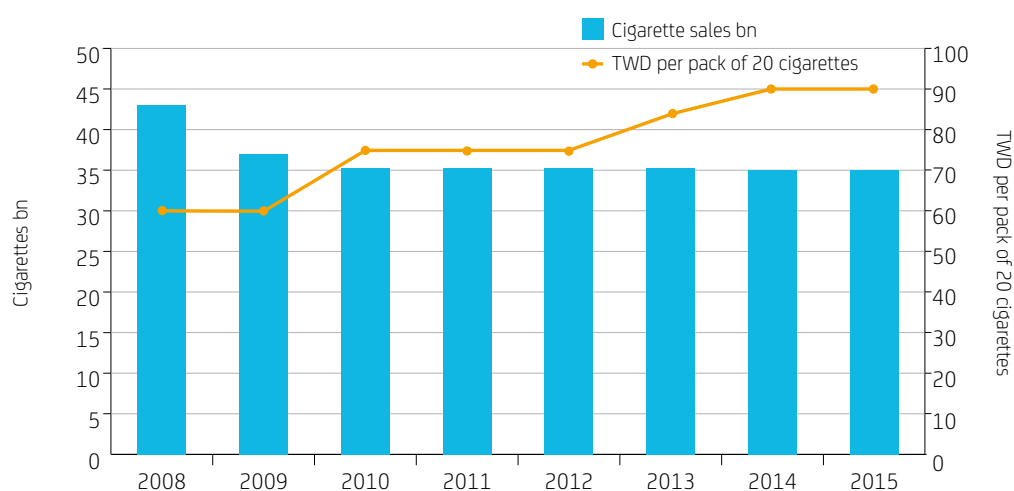
Taiwan: Excise duty applied to cigarettes²



Source: Taiwanese Ministry of Finance

²Rate applied in January of each year to the Most Sold Brand, including Earmarked Tax.

Taiwan: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of the Most Sold Brand in January of each year.

Taiwan: Cigarette Consumption

- The results from the Consumer Panel Survey¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Taiwan.
- Total Consumption (legal and illicit) is estimated at 37.5 billion cigarettes in 2015, falling by 1.9% from 2014. Of this, an estimated 93.4% or 35.0 billion cigarettes is Legal Domestic Consumption, 1.2% is Non-Domestic Legal Consumption, and 5.4% or 2.0 billion cigarettes is Illicit Consumption.
- The volume of Illicit Consumption fell by 0.5 billion cigarettes in 2015, equivalent to an 18.3% decline in comparison with 2014.
- The volume of illicit cigarettes consumed in Taiwan has now fallen for two consecutive years following the substantial decline in Illicit Consumption of 1 billion cigarettes recorded in 2014.
- As a consequence, the share of Illicit Consumption in Total Consumption fell to 5.4% in 2015, the lowest level in the four years since the first Asia Illicit Tobacco Indicator Report was conducted. This represents a decline of 3.3pp since Illicit Incidence peaked in 2013.
- Over the same period, the volume of Non-Domestic Legal consumption has experienced an even steeper decline. Overall, the volume of Non-Domestic Legal consumption has halved since 2012.
- With Legal Domestic Consumption remaining relatively stable, the decline in total Non-Domestic Inflows drove the decline in Total Consumption.

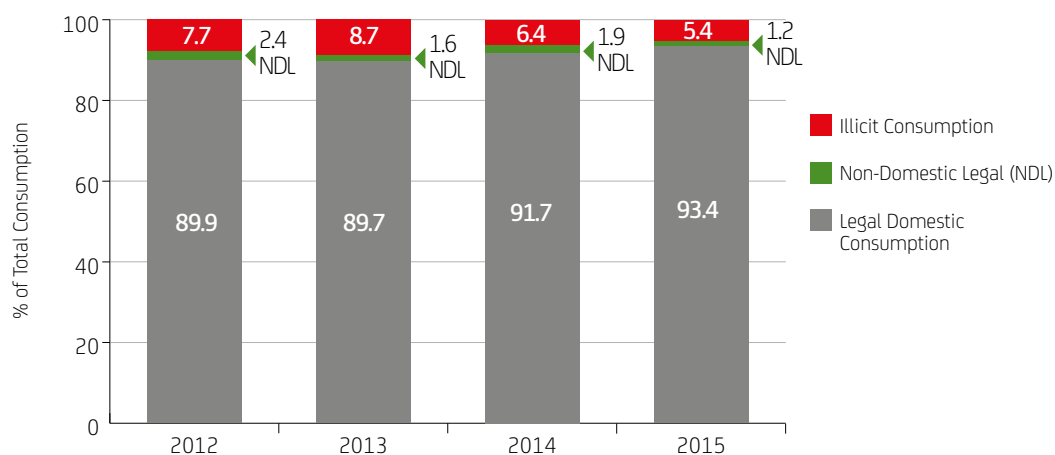
Taiwan: Composition of cigarette consumption

	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	35.5	89.9	35.5	89.7	35.0	91.7	35.0	93.4	-0.1
Legal Domestic Sales (LDS)	35.5	—	35.5	—	35.1	—	35.1	—	0.0
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	0.0	—	5.1
Total Non-Domestic Inflows (ND)	4.0	10.1	4.1	10.3	3.2	8.3	2.5	6.6	-22.0
Non-Domestic Legal (NDL)	1.0	2.4	0.6	1.6	0.7	1.9	0.5	1.2	-34.6
Non-Domestic Illicit	3.0	7.7	3.5	8.7	2.5	6.4	2.0	5.4	-18.3
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	39.5	100.0	39.6	100.0	38.2	100.0	37.5	100.0	-1.9
Total Illicit Consumption	3.0	7.7	3.5	8.7	2.5	6.4	2.0	5.4	-18.3

Source: Oxford Economics

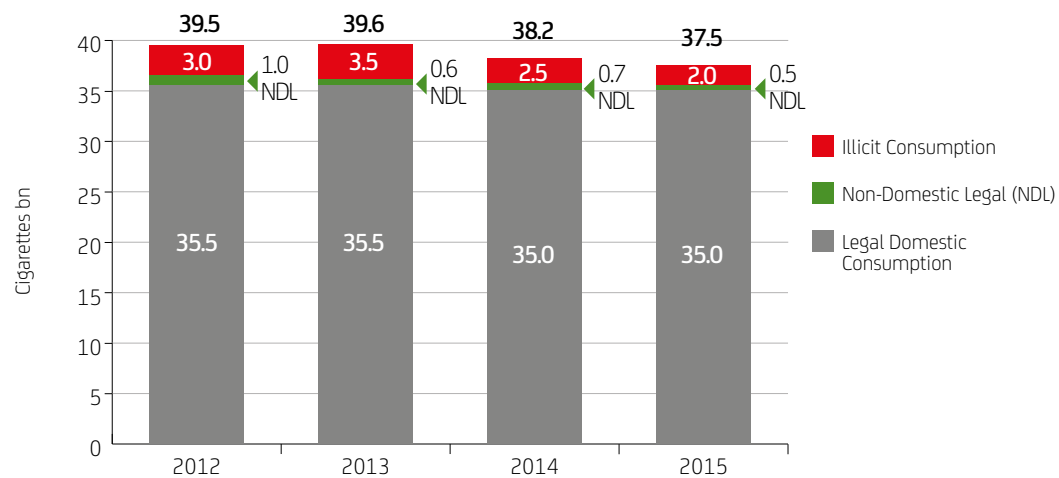
¹The Consumer Panel Survey was undertaken in 2015 H1. The topography of Taiwan (with 70% of the land-mass covered by mountainous terrain) makes it difficult to undertake an Empty Pack Survey that can be considered representative of the market. As such, a Consumer Panel Survey is employed to ensure a more complete coverage of the market (see Annex A for more details).

Taiwan: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Taiwan: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Taiwan: Government Finances

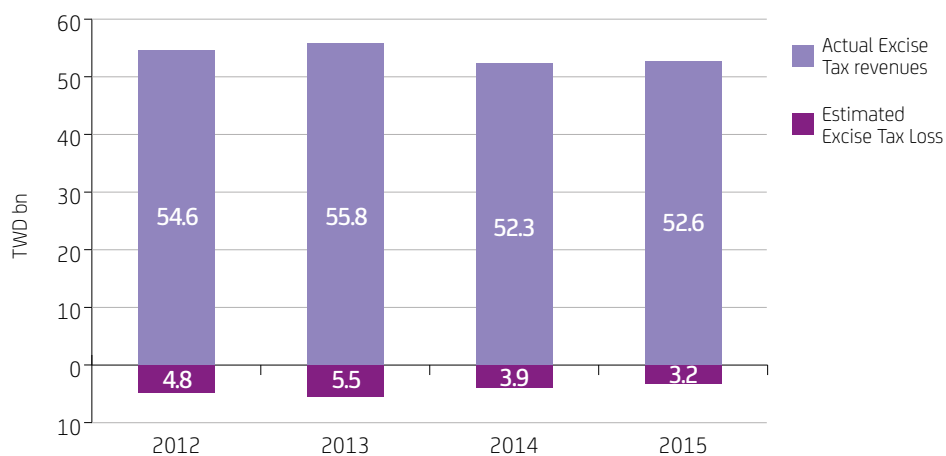
- Taiwan applies a single-rate, unit-specific Excise Tax of TWD 11.8 per pack of 20 cigarettes. Excise Tax rates have not increased since 2010.
- In addition, a tobacco health and welfare surcharge of TWD 20 per pack of cigarettes is levied, which was last raised in 2009.
- VAT is also levied at a rate of 5% on sales.
- Actual revenues from Excise Tax on cigarettes grew by 0.6% to TWD 52.6 billion in 2015, from TWD 52.3 billion in 2014.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2015 amounted to TWD 3.6 billion (USD 112 million). This represents a 17.8% decline from the previous year, which is in line with the corresponding decline in the volume of illicit cigarettes consumed.
- As a consequence, as a proportion of total potential Excise Tax revenues, the Excise Tax Loss fell by 1.3pp to just 5.7% in 2015, the lowest level in the four years since the first Asia Illicit Tobacco Indicator Report, and the second successive year in which the estimated Excise Tax Loss has fallen.

Taiwan: Actual government revenues and estimated Tax Loss

	2012		2013		2014		2015		% change in local currency 2014-2015
	TWD bn	USD mn	TWD bn	USD mn	TWD bn	USD mn	TWD bn	USD mn	
Actual revenue from excise duties on tobacco	54.6	1,844	55.8	1,873	52.3	1,722	52.6	1,649	0.6%
Estimated number of illicit cigarettes purchased (cigarettes bn)	3.0		3.5		2.5		2.0		-18.3%
Estimated Tax Loss from Illicit Consumption	5.4	183	6.1	205	4.3	143	3.6	112	-17.8%
Lost excise revenue	4.8	163	5.5	185	3.9	129	3.2	100	-18.3%
Lost VAT revenue	0.6	20	0.6	20	0.4	14	0.4	12	-13.4%
Excise Tax Loss as % of potential total Excise Tax revenues	8.1%		9.0%		7.0%		5.7%		

Source: Taiwanese Ministry of Finance and Oxford Economics based on PM data
Includes Earmarked Taxes.

Taiwan: Actual government revenues and estimated Tax Loss

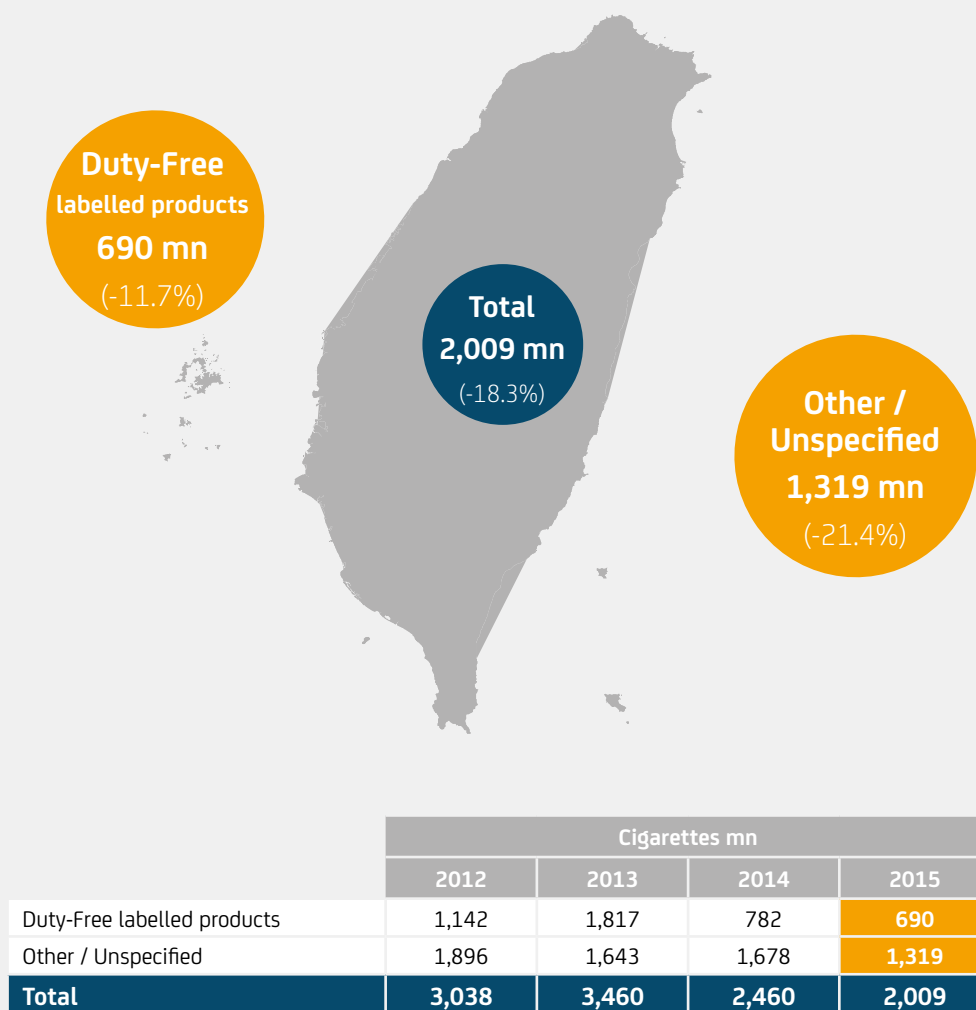


Source: Taiwanese Ministry of Finance and Oxford Economics based on PM data

Taiwan: Trade Flows

- Illicit cigarettes in Taiwan consist primarily of Unspecified Market Variant products.¹ However, the volume of Unspecified Market Variant cigarettes entering Taiwan has declined by 21.4% in comparison with 2014. This has contributed to the overall decline in the volume of Illicit Consumption in 2015.
- “Asali”, “M.M”, and “RGD” were the top three Unspecified Market Variant brands identified in 2015.
- No Counterfeit products were identified in Taiwan, an observation consistent with the analysis undertaken in previous years.
- Although increasing in respect to previous years, Outflows of domestic duty-paid cigarettes to the other 16 markets included in this Report are estimated to be extremely low.²

Taiwan: Origin of total Non-Domestic Illicit Inflows³



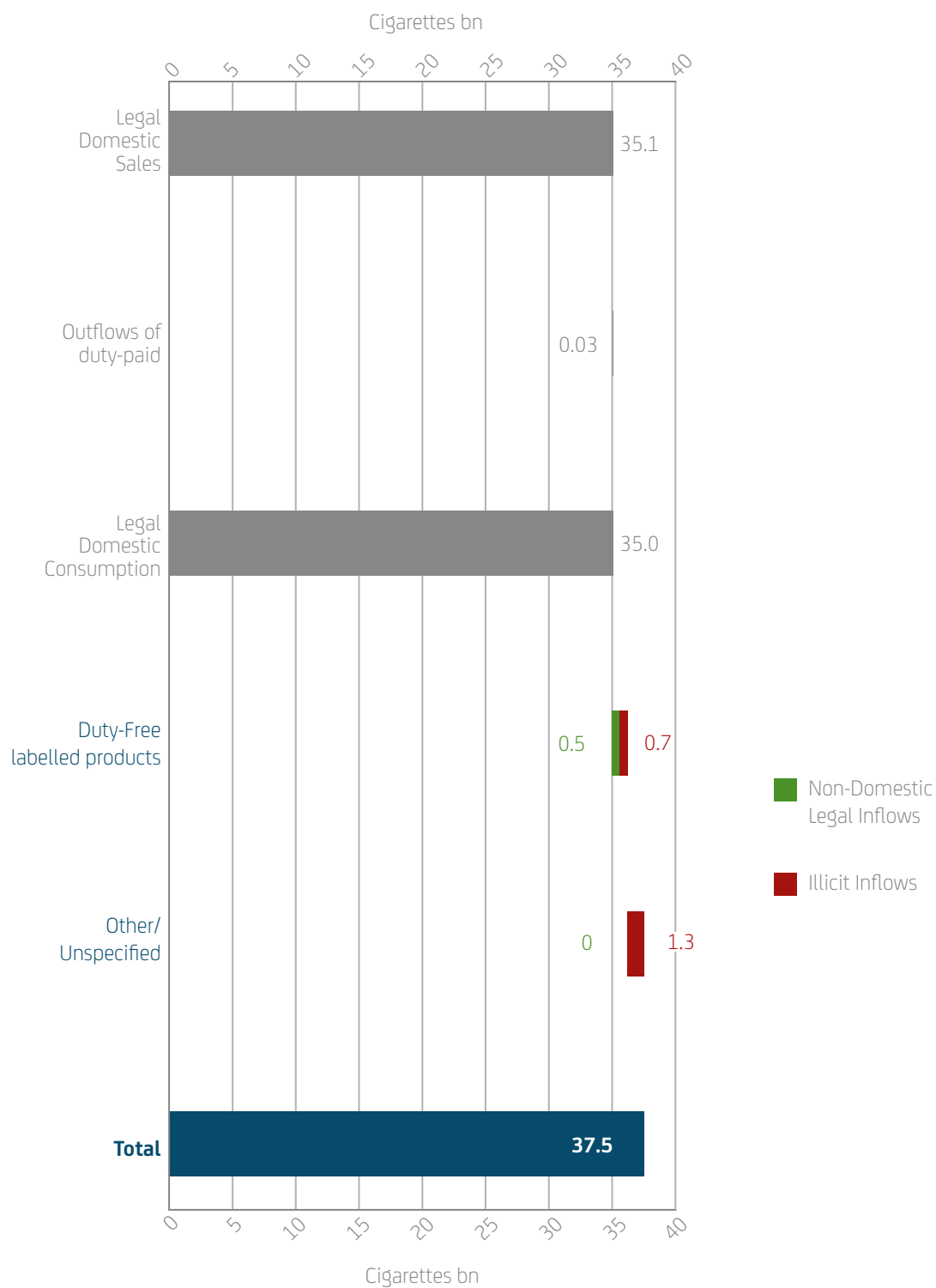
Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Figures in brackets reflect % change from 2014.

Taiwan: Consumption breakdown 2015



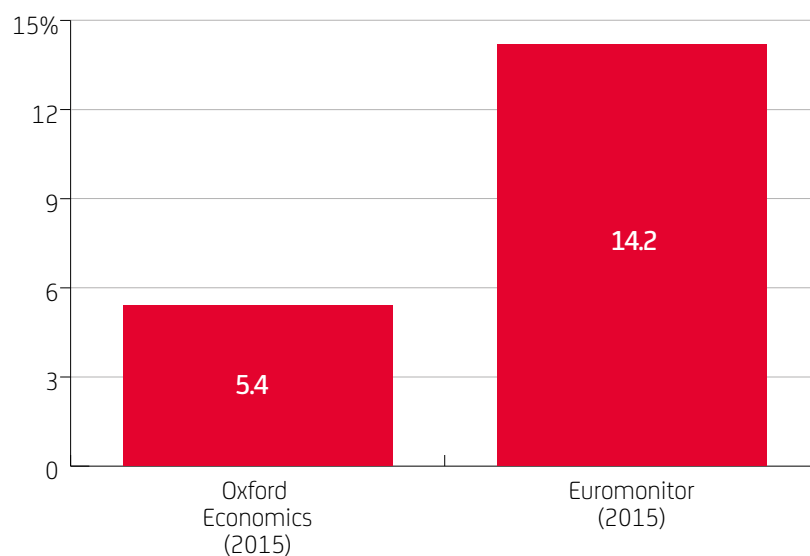
Source: IT Flows Model and Oxford Economics

Taiwan: Other Estimates

Taiwan

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus population data sourced from the Directorate-General of Budget, Accounting and Statistics, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. Using this approach, estimated consumption is less than LDC, implying no evidence of substantial Illicit Consumption. The data on Smoking Prevalence comes from the Health Promotion Administration for 2015, while average daily consumption comes from consumer survey data for Taiwan for 2013.
Euromonitor Passport, 2016	Euromonitor estimated an Illicit Incidence of 14.2% in 2015. The methodology, sampling, and coverage are unknown, however, so it is difficult to assess the robustness of this estimate.

Taiwan: Alternative estimates of Illicit Consumption



Taiwan: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual shipments for PM brands and PM estimates for other companies based on Nielsen Retail Audit.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Taiwanese market-specific labelling (e.g., health warnings, tax stamps, etc.).	Limited number of Taiwan domestic Market Variant cigarettes identified in other markets.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Limited Outflows of duty-paid cigarettes so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Tourism Bureau, M.O.T.C Republic of China (Taiwan).
Non-Domestic Illicit	Consumer Panel Survey.	Based on Consumer Panel Survey plus OE estimates.	Estimate derived from the 2015 H1 Consumer Survey. Illicit cigarettes in Taiwan consist mostly of cheap cigarettes (believed to smuggled in from neighbouring markets), but Taiwan Duty-Free are also significant. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes. Based on market intelligence, cheap cigarettes identified in Taiwan are assumed to be produced abroad.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 37.5 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax, GST, and Earmarked Taxes).	See Annex B for more details.

Thailand: Legal Domestic Sales

- Legal Domestic Sales in Thailand are estimated at 37.7 billion cigarettes for 2015, up by 1.1% from 2014.
- The Thailand Tobacco Monopoly retains the largest market share, with more than 70% of Legal Domestic Sales, followed by PM with a share of 23%.
- In 2015, the government introduced the Thailand Sports Act which came into effect at the end of the first quarter. The new legislation established an Earmarked Tax, equivalent to 2% of the Excise Tax paid, for sports and recreation in Thailand.
- Apart from the new Earmarked Tax, Excise Taxes have not increased since 2012 in Thailand.
- The price of the Most Sold Brand was 5.3% higher in 2015 in comparison with 2014.
- At USD 1.13 per pack of 20 cigarettes (which is equivalent to THB 40.0 per pack), nominal cigarette prices in Thailand are higher than most neighbouring markets including Cambodia (USD 0.37 per pack of 20 cigarettes), Laos (USD 0.87), and Myanmar (USD 0.47).¹
- The exception is Malaysia, where nominal cigarette prices remain three times higher than in Thailand.

Thailand

Legal Domestic Sales:

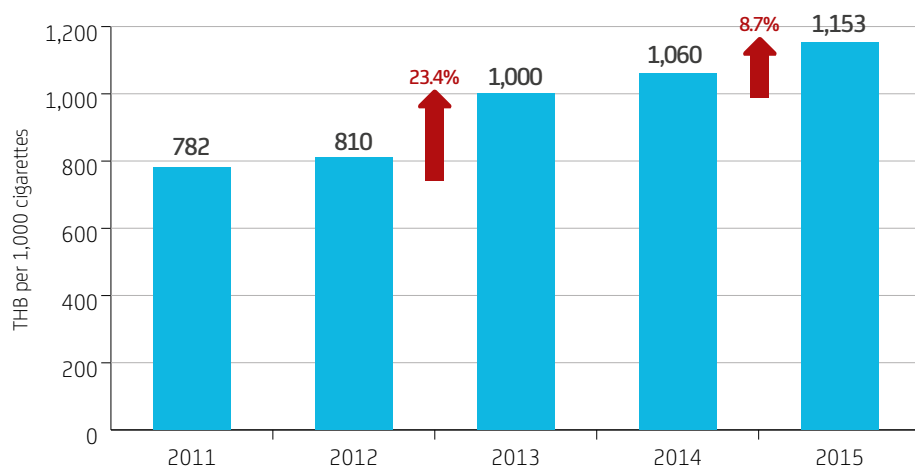
37.7
bn cigarettes

Price:

THB **40.0**
USD **1.13**

¹Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

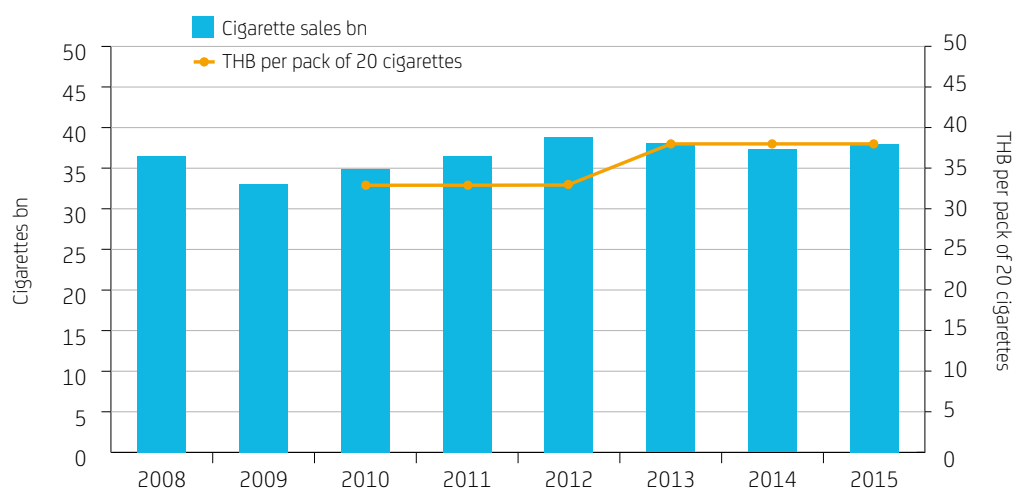
Thailand: Excise duty applied to cigarettes²



Source: Thailand Excise Department and Oxford Economics

²Rate applied in January of each year to SMS (Most Sold Brand from 2013), including Earmarked Taxes.

Thailand: Legal Domestic Sales and prices³



Source: Oxford Economics based on PM data

³Price of SMS (Most Sold Brand from 2013) in January of each year.

Thailand: Cigarette Consumption

- The results from the Empty Pack Survey¹ and IMS data on Legal Domestic Sales were used to estimate Total Consumption of cigarettes in Thailand.
- Total Consumption (legal and illicit) is estimated at 38.6 billion cigarettes in 2015, increasing by 2.6% in comparison with 2014. Of this, an estimated 97.6% or 37.7 billion cigarettes is Legal Domestic Consumption, 0.5% is Non-Domestic Legal Consumption, and 1.9% or 0.7 billion cigarettes is Illicit Consumption.
- Legal Domestic Consumption increased by 1.2% in 2015, having fallen each year since the first Asia Illicit Tobacco Indicator Report.
- Non-Domestic Inflows also increased in 2015, with both Non-Domestic Legal (+46.3%) and Non-Domestic Illicit Consumption (+200.7%) showing an increase in comparison with 2014.
- In both instances, the rise in 2015 contrasts with the declining trend experienced in the preceding three years since the first Asia Illicit Tobacco Indicator Report was conducted.
- The volume of Illicit Consumption has increased sharply, to 735 million cigarettes in 2015 from 244 million in 2014, representing an increase of more than 200%. However, the Illicit Incidence remains relatively low at 1.9% in 2015.
- Despite the rise in 2015, the volume of Illicit Consumption remains below levels recorded in 2012 and 2013.
- There also exists a large RYO market in Thailand, estimated at around 28 billion cigarettes in 2012 (around 40% of total legal consumption).² However due to insufficient data, it is not possible to robustly estimate the current volume of Illicit Consumption in the RYO market. As such, the figures presented here reflect the market for manufactured cigarettes only.

Thailand: Composition of cigarette consumption

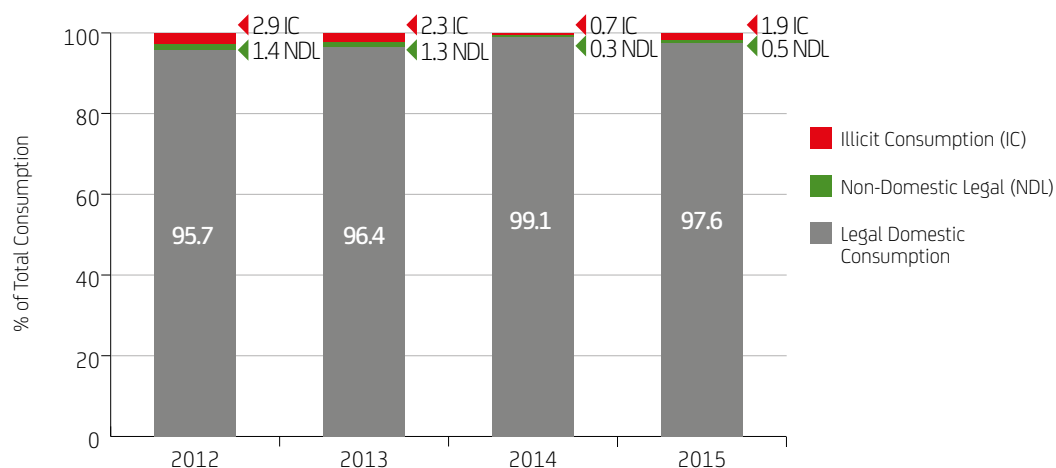
	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	38.8	95.7	38.0	96.4	37.2	99.0	37.7	97.6	1.2
Legal Domestic Sales (LDS)	38.8	–	38.0	–	37.3	–	37.7	–	1.1
Outflows of domestic duty-paid cigarettes	0.0	–	0.0	–	-0.1	–	0.0	–	-40.6
Total Non-Domestic Inflows (ND)	1.7	4.3	1.4	3.6	0.4	1.0	0.9	2.4	147.6
Non-Domestic Legal (NDL)	0.6	1.4	0.5	1.3	0.1	0.3	0.2	0.5	46.3
Non-Domestic Illicit	1.2	2.9	0.9	2.3	0.2	0.7	0.7	1.9	200.7
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	40.5	100.0	39.4	100.0	37.6	100.0	38.6	100.0	2.6
Total Illicit Consumption	1.2	2.9	0.9	2.3	0.2	0.7	0.7	1.9	200.7

Source: Oxford Economics

¹The Empty Pack Survey was undertaken in 2015 Q4 (see Annex A for more details).

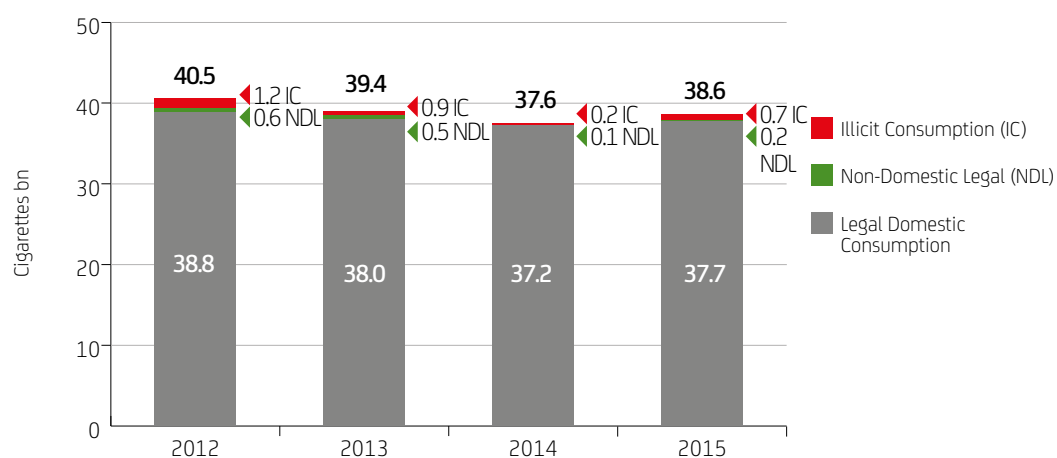
²Source: Thailand Excise department and Oxford Economics. Latest available data for 2012. A conversion rate of 0.75 grams per stick was applied to convert loose tobacco weight into 1 sick of cigarette equivalent. (Source: European Commission).

Thailand: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Thailand: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Thailand: Government Finances

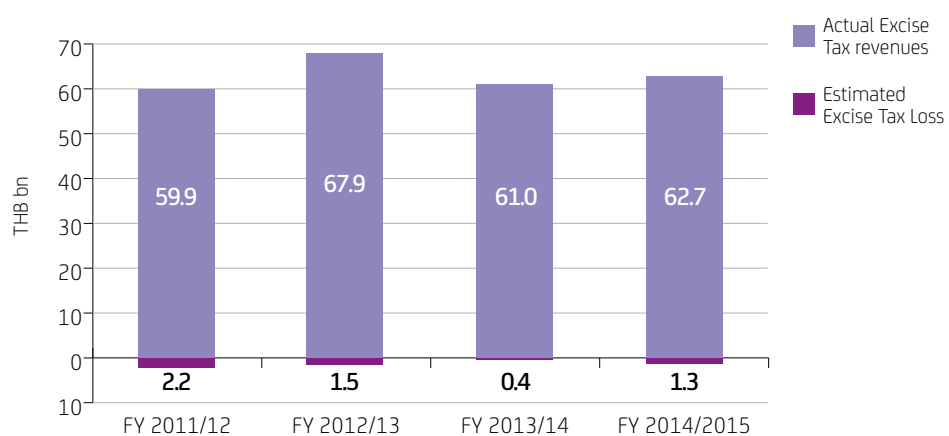
- Thailand applies an ad valorem rate of 87% on the tax-inclusive net ex-factory price for locally manufactured cigarettes and imports (on the tax-inclusive CIF and import-duty price) or a specific rate of THB 1 per gram, whichever is greater.
- For the majority of RYO (non-native), an ad valorem rate of 10% is levied on the same tax-inclusive base or a specific rate of THB 0.01 per gram, whichever is higher.
- As the ad valorem tax base is tax-inclusive, the effective ad valorem rate for cigarettes is 669% while that of RYO is significantly lower at 11%. Excise tax on the majority of RYO is therefore minimal, less than 1% of the cost of the Most Sold Brand, which is a super low-priced brand.
- In addition, VAT at 7% is also levied, as are a range of Earmarked Taxes (Health tax, Provincial tax, TV tax, and a Sports tax).
- After increasing in August 2012, Excise Taxes applied to cigarettes in Thailand have remained unchanged for the last three years.
- However, the National Legislative Assembly passed the Thailand Sports Act which introduced a new Earmarked Tax on cigarettes in 2015. The new legislation established a 2% tax earmarked for sports and recreation in Thailand.
- We estimate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2014/15 amounted to THB 1.5 billion (USD 43.7 million). This represents a 238.6% increase in the Tax Loss from the THB 0.4 billion (USD 13.4 million) recorded for 2013/14.
- The estimated Excise Tax Loss as a share of total potential Excise Tax revenues rose to 2.1% in 2014/15, representing a significant increase from the previous year. In fiscal year 2011/12, it peaked at 3.5%, the highest level recorded since the first Asia Illicit Tobacco Indicator Report.

Thailand: Actual government revenues and estimated Tax Loss

	2011/12 fiscal year		2012/13 fiscal year		2013/14 fiscal year		2014/15 fiscal year		% change in local currency 2013/14- 2014/15
	THB bn	USD mn	THB bn	USD mn	THB bn	USD mn	THB bn	USD mn	
Actual revenue from excise duties on tobacco	59.9	1,922	67.9	2,229	61.0	1,892	62.7	1,875	2.8%
Estimated number of illicit cigarettes purchased (cigarettes bn)	1.2		0.9		0.2		0.8		219.9%
Estimated Tax Loss from Illicit Consumption	2.4	75.8	1.7	56.0	0.4	13.4	1.5	43.7	238.6%
Lost excise revenue	2.2	68.7	1.5	50.7	0.4	12.1	1.3	39.8	240.9%
Lost VAT revenue	0.2	7.1	0.2	5.4	0.0	1.3	0.1	3.9	217.0%
Excise Tax Loss as % of potential total Excise Tax revenues	3.5%		2.2%		0.6%		2.1%		

Source: Thailand Fiscal Policy Office and Oxford Economics based on PM data
 Estimated number of illicit cigarettes purchased adjusted for fiscal year.
 Fiscal years run from October to September.
 Includes Earmarked Taxes.

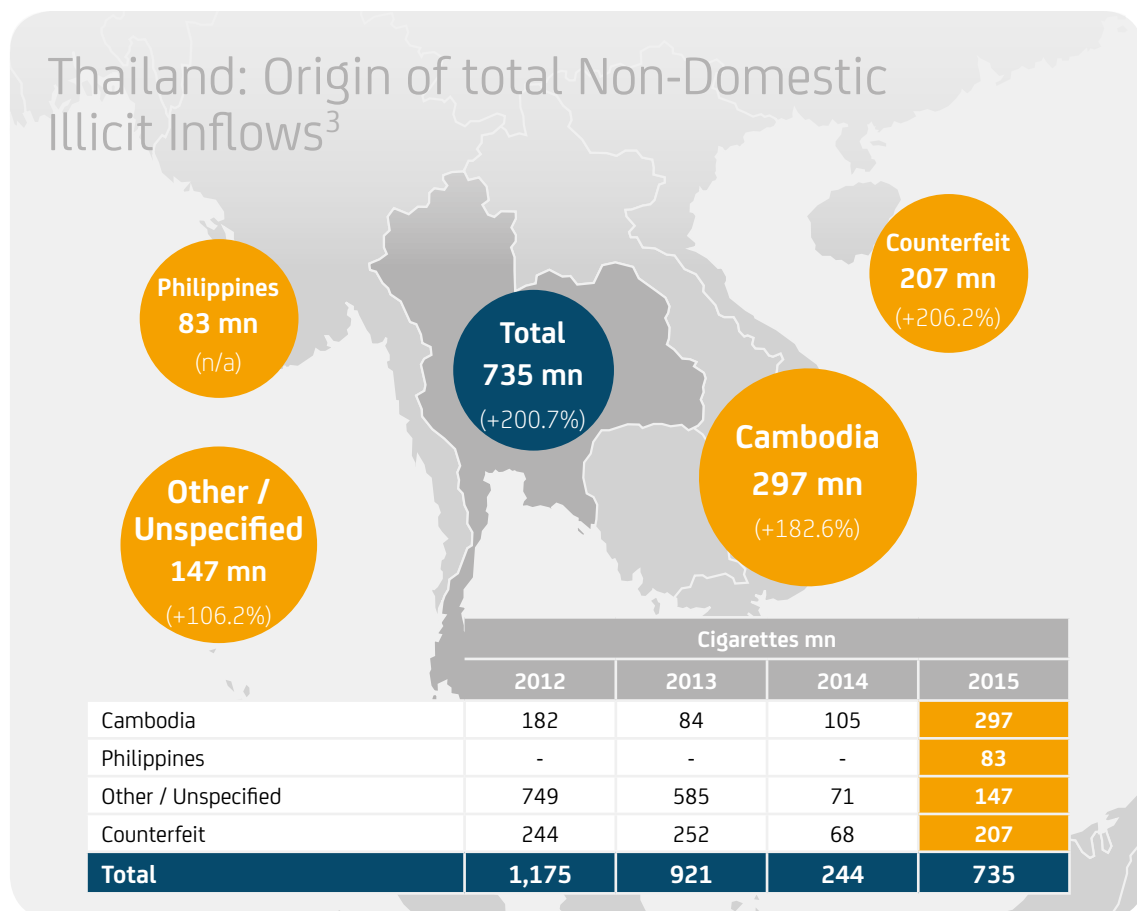
Thailand: Actual government revenues and estimated Tax Loss



Source: Thailand Fiscal Policy Office and Oxford Economics based on PM data

Thailand: Trade Flows

- Non-Domestic Inflows increased by 147.6% in 2015, with both Non-Domestic Legal Inflows (+46.3%) and Non-Domestic Illicit Inflows (+200.7%) both contributing to the increase.
- Counterfeit products accounted for over 28% of total Illicit Consumption. Volumes have significantly increased in 2015, rising to 207 million in comparison with just 68 million in 2014 (equivalent to an increase of 206.2%).
- Non-Domestic Illicit Inflows with intended retail sale in Cambodia also increased significantly, rising to an estimated 297 million cigarettes in 2015, the highest level recorded since the first Asia Illicit Tobacco Indicator Report was conducted.
- Other Non-Domestic Illicit cigarettes identified in Thailand include notable volumes with intended final retail sale in Indonesia and Philippines, and cigarettes of Unspecified Market Variant.¹
- The volume of Unspecified Market Variant cigarettes was, however, much reduced from previous years. In both 2012 and 2013, more than half of all Non-Domestic Illicit Inflows were of Unspecified Market Variant, whereas in 2014 and 2015, the share has fallen to below 10%.
- “American Legend” was the main Unspecified Market Variant brand identified, accounting for three-quarters of the total volumes in 2015.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated to be low, with over three-quarters of Outflows identified in Empty Pack Surveys conducted in Laos and Australia.²



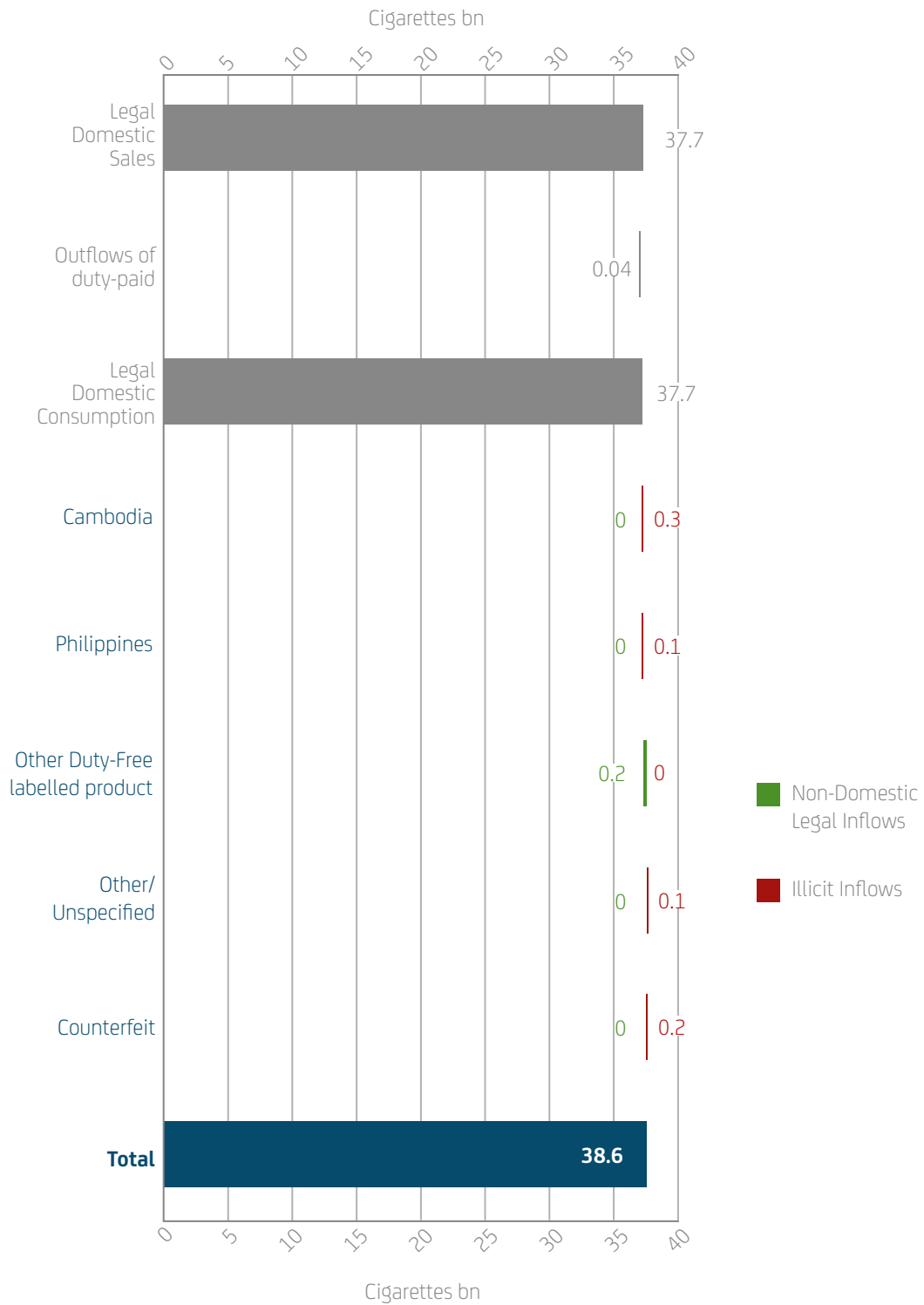
Source: IT Flows Model and Oxford Economics

¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 16 markets covered in this Report and may therefore be an underestimate.

³Figures in brackets reflect % change from 2014.

Thailand: Consumption breakdown 2015

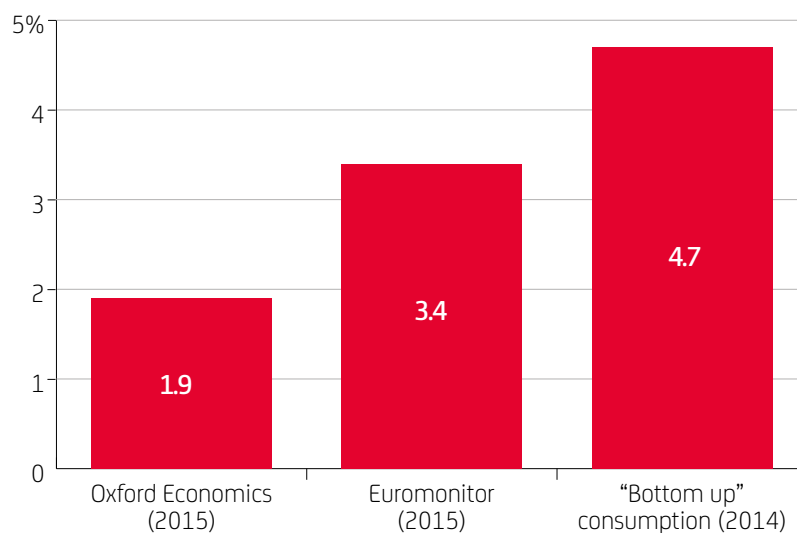


Source: IT Flows Model and Oxford Economics

Thailand: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on Smoking Prevalence and average daily consumption of cigarettes, plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 4.7%, or around 1.8 billion cigarettes (based on 2014 LDC). The data on Smoking Prevalence comes from the WHO FCTC 2014 2104 (based on the Health and Welfare Survey 2013), while average daily consumption comes from consumer survey data for Thailand for 2012.
Euromonitor Passport, 2016	Euromonitor estimates an Illicit Incidence of 3.4% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

Thailand: Alternative estimates of Illicit Consumption



Thailand: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Actual shipments for PM brands and PM estimates for other manufacturers.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Thailand market-specific labelling (e.g., health warnings, tax stamps, etc.).	Limited number of Thai domestic Market Variant cigarettes identified in other markets.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Limited estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Ministry of Tourism and Sports, UNWTO, and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2015 Q4 Empty Pack Survey. Counterfeit products account for around 28% of total Illicit Consumption but these are assumed to be produced abroad. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes. Based on anecdotal evidence, illicit production is more likely to take place across the border than in Thailand.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 38.6 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise tax, GST, and Earmarked Taxes).	See Annex B for more details.

Vietnam: Legal Domestic Sales

- Vietnam Legal Domestic Sales are estimated at 72.8 billion cigarettes for 2015.¹
- The state-owned tobacco company Vinataba has the largest market share at nearly 42%, followed by BAT (32.4%) and local provincial firms.
- Legal Domestic Sales fell by 3.6% in 2015.
- Legal Domestic Sales has now fallen for three consecutive years since the first Asia Illicit Tobacco Indicator Report was conducted.
- Prices for cigarettes have risen in recent years, including a 5.9% increase in 2015, but remain low in nominal terms compared with many nearby markets. The price of the Most Sold Brand of USD 0.80 per pack of 20 cigarettes is lower than in China (USD 1.61 per pack), Laos (USD 0.87), and Thailand (USD 1.13).²

Vietnam

Legal Domestic Sales:

72.8
bn cigarettes

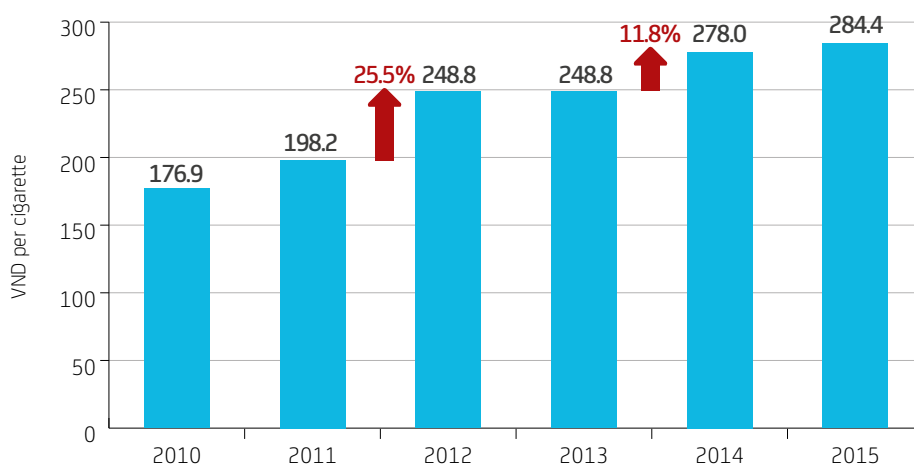
Price:

VND **18,000**
USD **0.80**

¹An increase in Excise Taxes implemented in January 2016 led to substantial “trade loading” in 2015. This Report addresses these factors by providing adjusted estimates for Legal Domestic Sales in 2015.

²Price per pack of 20 of the Most Sold Brand in October 2015, based on PM data.

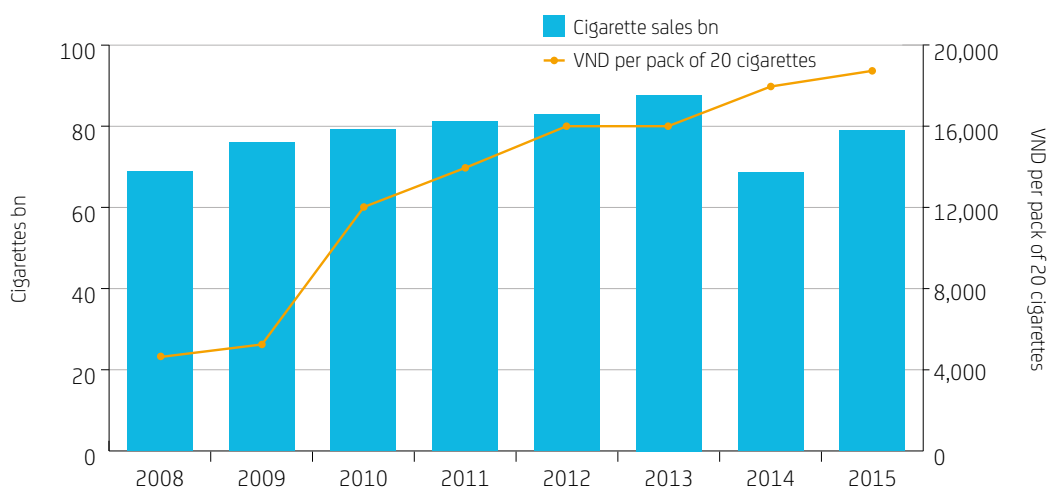
Vietnam: Excise duty applied to cigarettes³



Source: Vietnam Tobacco Association and Oxford Economics

³Rate applied in January of each year to the Most Sold Brand, including Earmarked Tax. The increase in the excise duty in 2014 was driven by an increase in retail prices implemented in mid-2013.

Vietnam: Legal Domestic Sales and prices⁴



Source: Oxford Economics based on PM data

⁴Price of the Most Sold Brand in January of each year.

Vietnam: Cigarette Consumption

- The results from the Empty Pack Survey¹ were combined with IMS data on Legal Domestic Sales to estimate Total Consumption of cigarettes in Vietnam.
- Total Consumption (legal and illicit) is estimated at 95.5 billion cigarettes in 2015.
- Of this, Legal Domestic Consumption was estimated at 72.5 billion cigarettes or 76.0% of Total Consumption, Non-Domestic Legal Consumption at 0.8%, and Illicit Consumption at 23.2% or 22.2 billion cigarettes.
- Illicit Consumption has risen by 4.2% in comparison with 2013 (the last year during which an Empty Pack Survey was conducted). This represents an increase of around 900 million illicit cigarettes consumed.
- At 23.2%, Illicit Incidence now stands at the highest level since the beginning of the Asia Illicit Tobacco Indicator series.
- Since the first Asia Illicit Tobacco Indicator Report, the rising level of Illicit Consumption observed in Vietnam has partially offset the impact of falling Legal Domestic Sales on Total Consumption. Since 2012, Legal Domestic Sales in Vietnam has fallen by 12.0%, while Total Consumption has fallen by a more moderate 7.6%.

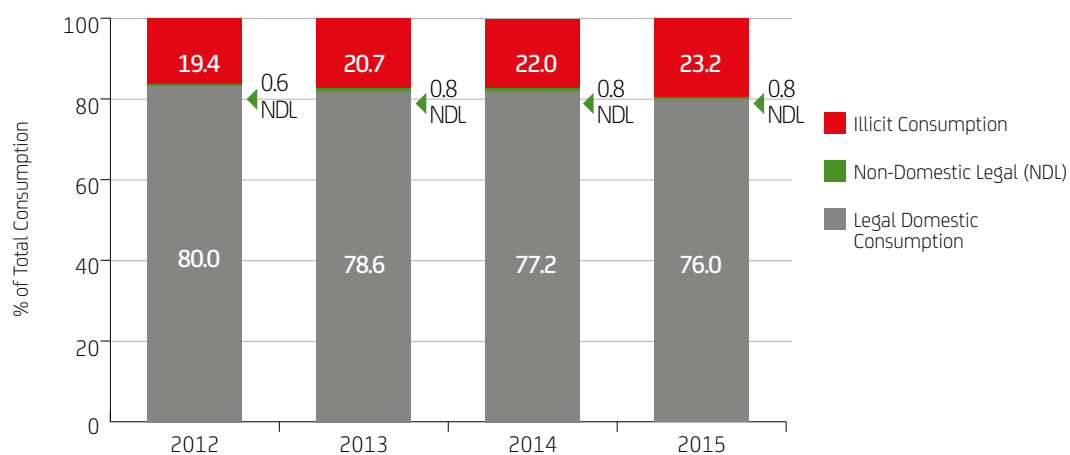
Vietnam: Composition of cigarette consumption

	2012		2013		2014		2015		% change 2014-15
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
Legal Domestic Consumption (LDC)	82.7	80.0	80.8	78.6	75.3	77.2	72.5	76.0	-3.7
Legal Domestic Sales (LDS)	82.8	—	81.0	—	75.5	—	72.8	—	-3.6
Outflows of domestic duty-paid cigarettes	-0.1	—	-0.2	—	-0.2	—	-0.3	—	43.7
Total Non-Domestic Inflows (ND)	20.7	20.0	22.0	21.4	22.2	22.8	22.9	24.0	3.5
Non-Domestic Legal (NDL)	0.6	0.6	0.8	0.8	0.7	0.8	0.8	0.8	3.9
Non-Domestic Illicit	20.1	19.4	21.3	20.7	21.4	22.0	22.2	23.2	3.5
Domestic Illicit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Total Consumption	103.4	100.0	102.9	100.0	97.5	100.0	95.5	100.0	-2.1
Total Illicit Consumption	20.1	19.4	21.3	20.7	21.4	22.0	22.2	23.2	3.5

Source: Oxford Economics

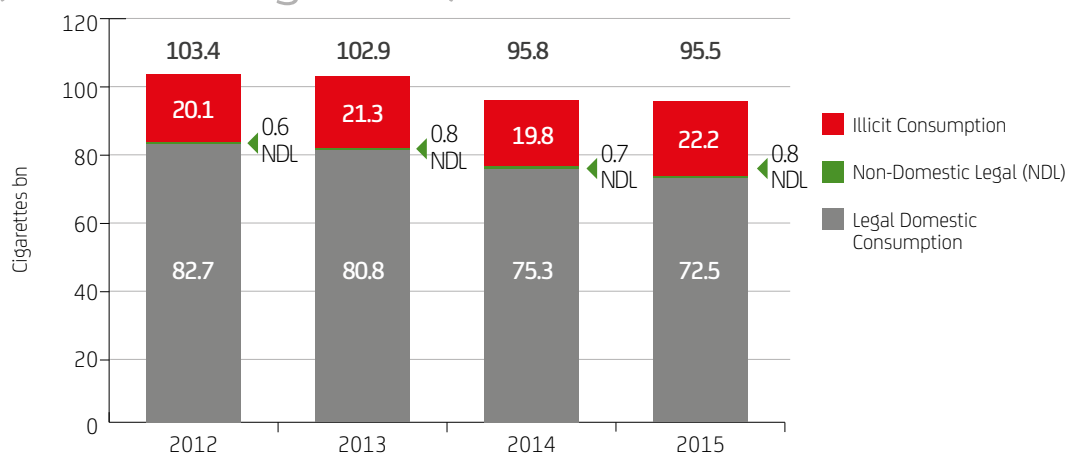
¹The Empty Pack Survey was undertaken in 2015 Q4. 2014 results based on the average of the 2013 Q4 and 2015 Q4 Empty Pack Surveys (see Annex A for more details).

Vietnam: Composition of cigarette consumption (% of Total Consumption)



Source: Oxford Economics

Vietnam: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

Vietnam: Government Finances

- Vietnam applies an ad valorem Excise Tax rate of 65% of the net ex-factory price (domestic cigarettes) or CIF value (imported cigarettes). A health tax of 1% is also applied, which became effective from May 2013.
- In addition, for imported cigarettes, the Most Favoured Nation (MFN) import duty rate of 135% of the CIF value is applied.
- VAT is also imposed at a rate of 10%.
- There was no change in the Excise Tax rate implemented in 2015, although increases in the retail price of cigarettes drove a corresponding increase in Excise Taxes due to the ad valorem tax structure. However, this was offset by a decline in Legal Domestic Sales. As a consequence, estimated actual revenues from Excise Tax on tobacco fell by 7.5% in 2015.
- We estimate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2015 amounted to VND 4.3 trillion (USD 200 million).
- As a proportion of total potential Excise Tax revenues, the Excise Tax Loss was 23.4% in 2015, 2.6pp higher than estimated in 2013 (the last year during which an Empty Pack Survey was conducted). This is the highest level recorded since the first Asia Illicit Tobacco Indicator Report.

Vietnam: Actual government revenues and estimated Tax Loss

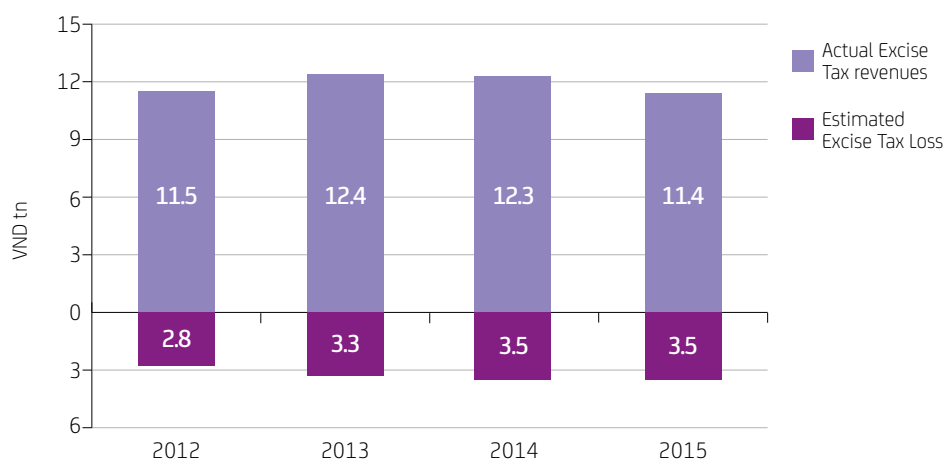
	2012		2013		2014		2015		% change in local currency 2014-2015
	VND tn	USD mn	VND tn	USD mn	VND tn	USD mn	VND tn	USD mn	
Actual revenue from excise duties on tobacco	11.5	551	12.4	594	12.3	580	11.4	523	-7.5%
Estimated number of illicit cigarettes purchased (cigarettes bn)	20.1		21.3		21.4		22.2		3.5
Estimated Tax Loss from Illicit Consumption	3.5	169	4.1	196	4.4	207	4.3	200	-0.7%
Lost excise revenue	2.8	134	3.3	156	3.5	165	3.5	159	-0.7%
Lost VAT revenue	0.7	35	0.8	40	0.9	42	0.9	41	-0.9%
Excise Tax Loss as % of potential total Excise Tax revenues	19.6%		20.8%		22.1%		23.4%		

Source: Oxford Economics based on Vietnam Tobacco Association and PM estimates

Includes Earmarked Taxes.

2014 estimates of Illicit Consumption based on the average of the 2013 Q4 and 2015 Q4 Empty Pack Surveys (see Annex A for more details). The estimated Tax Loss presented in this Report probably underestimates the true level of Tax Loss in Vietnam, as the large majority of illicit cigarettes consumed fall into the high price market segment.

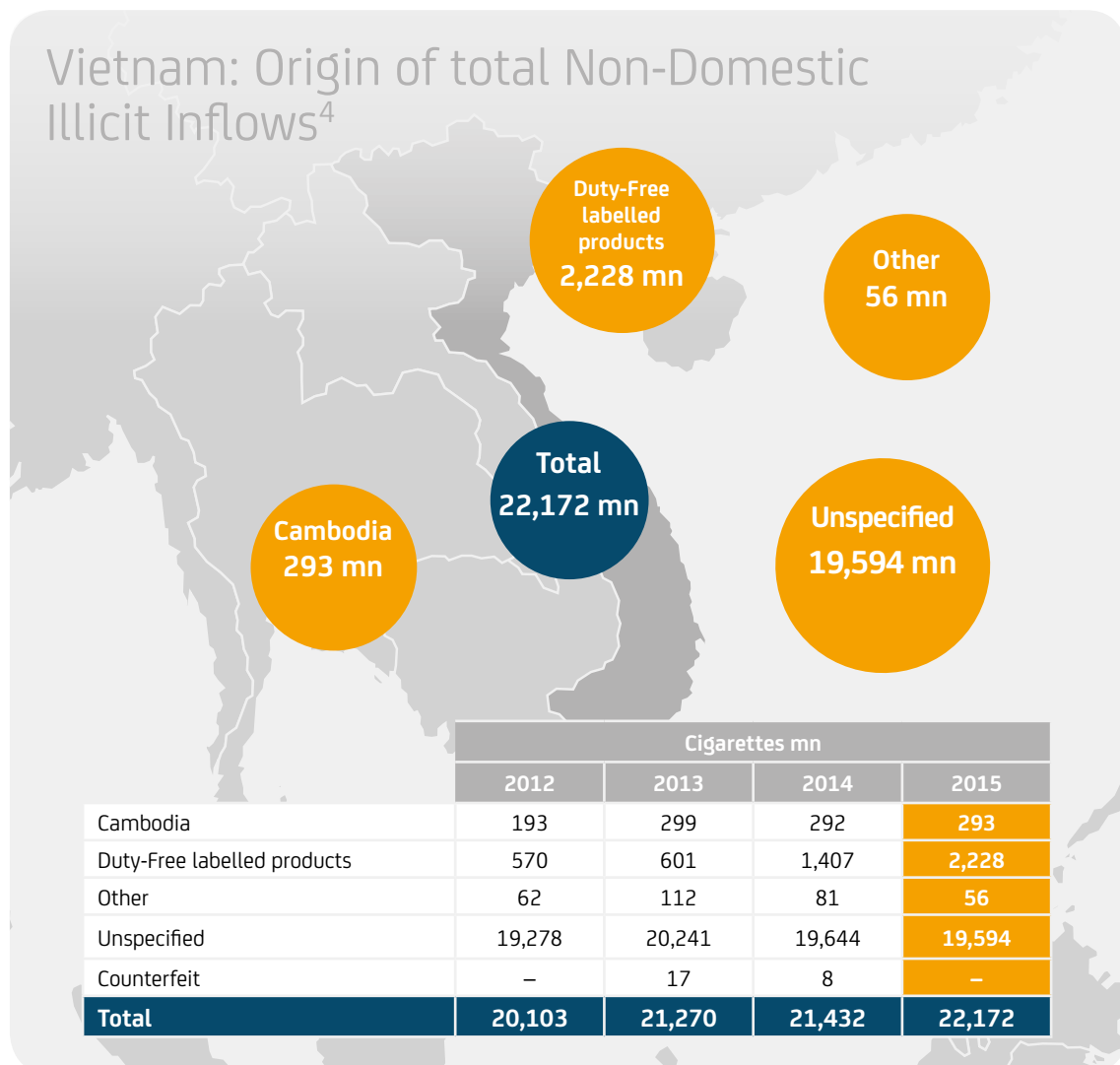
Vietnam: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on Vietnam Tobacco Association and PM estimates

Vietnam: Trade Flows

- Non-Domestic Illicit Inflows in Vietnam are primarily designated as Unspecified Market Variant.¹ In total, nearly 90% of total Illicit Inflows, or 19.6 billion cigarettes, were unidentifiable by market of intended final retail sale. Among them, “Jet” and “Hero” were the primary Unspecified Market Variant brands identified, accounting for 96% of total volumes in 2015.
- Of the remaining volume of illicit cigarettes consumed in Vietnam, 2.2 billion cigarettes were Duty-Free labelled products, while 293 million cigarettes were originally intended for retail sale across the border in Cambodia.
- The Empty Pack Survey identified no Counterfeit cigarettes in the sample for 2015.
- Outflows of domestic duty-paid cigarettes to the other 16 markets are estimated at 275 million in 2015, representing an increase of 43.7% from the 191 million cigarettes estimated in 2014. More than half of these Outflows were identified in the Empty Pack Survey conducted in Laos.²
- Nearly 60% of all Duty-Free labelled products are estimated to arrive through legal channels.³ In total, the share of Non-Domestic Legal in Total Consumption was 0.8% in 2015.



Source: IT Flows Model and Oxford Economics.

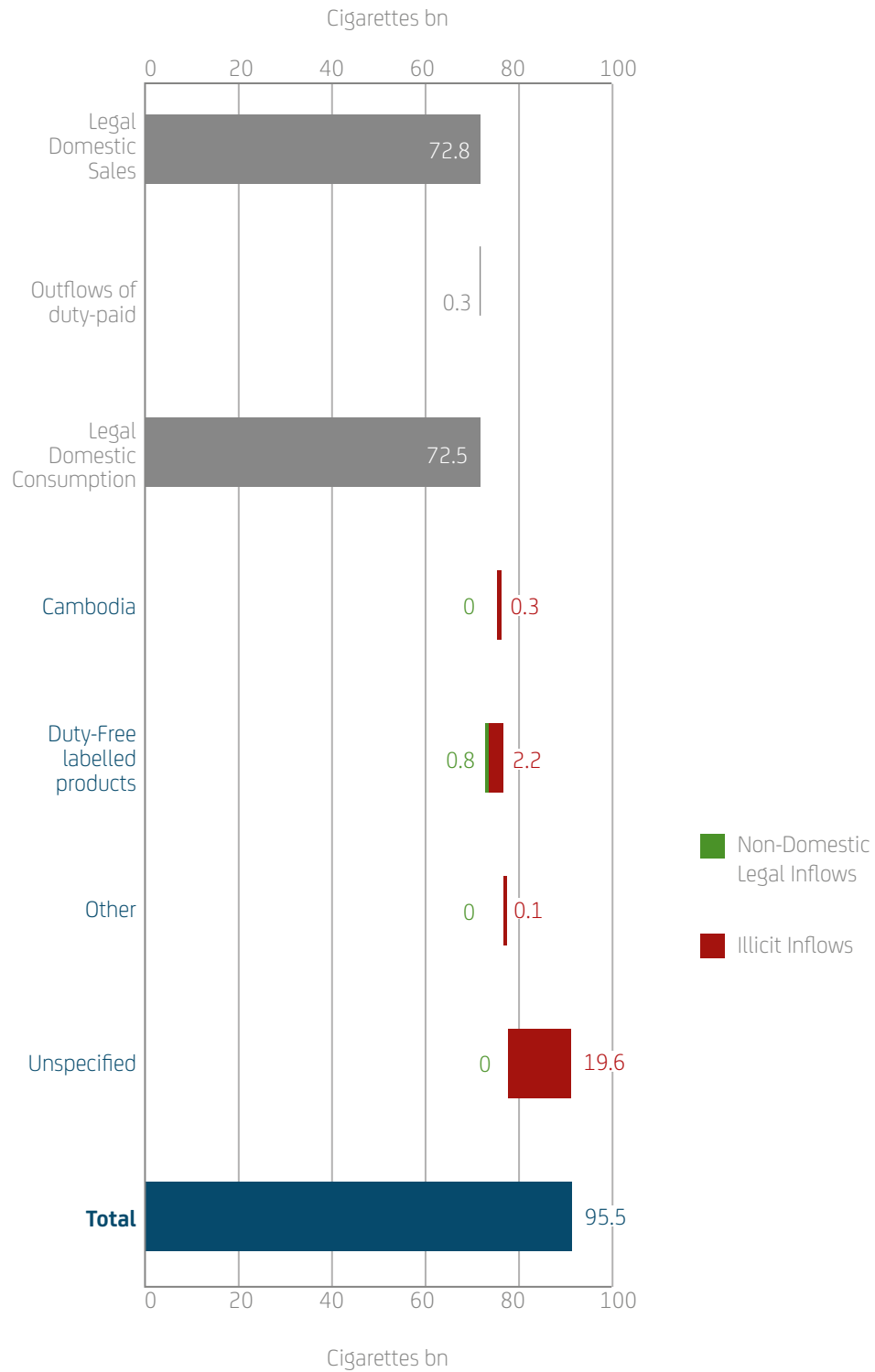
¹Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such the intended market is not known.

²Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 15 markets covered in this Report and may therefore be an underestimate.

³Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin, and the passenger duty-free personal import allowance limit.

⁴2014 estimates of Illicit Consumption based on the average of the 2013 Q4 and 2015 Q4 Empty Pack Surveys (see Annex A for more details).

Vietnam: Consumption breakdown 2015

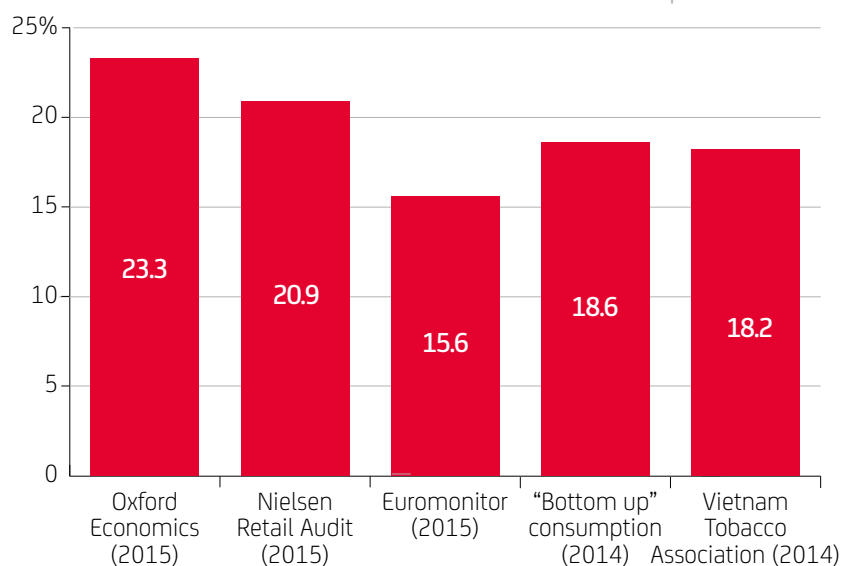


Source: IT Flows Model and Oxford Economics

Vietnam: Other Estimates

Source	Comment
Comparing consumption estimates with LDC ("bottom up" approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a "bottom up" estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 18.6%, or around 15.8 billion cigarettes (based on 2014 LDC). The source for annual cigarette consumption per adult is Euromonitor, 2014 (available via www.tobaccoatlas.org).
Vietnam Tobacco Association	The Vietnam Tobacco Association estimates an Illicit Incidence of 18.2% in 2014 (15.5 billion cigarettes based on 2014 Legal Domestic Sales).
Euromonitor Passport, 2016	Euromonitor estimated an Illicit Incidence of 15.6% in 2015. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Nielsen Retail Audit	PM analysis of retail audit data suggests an Illicit Incidence of 20.9% in 2015.

Vietnam: Alternative estimates of Illicit Consumption



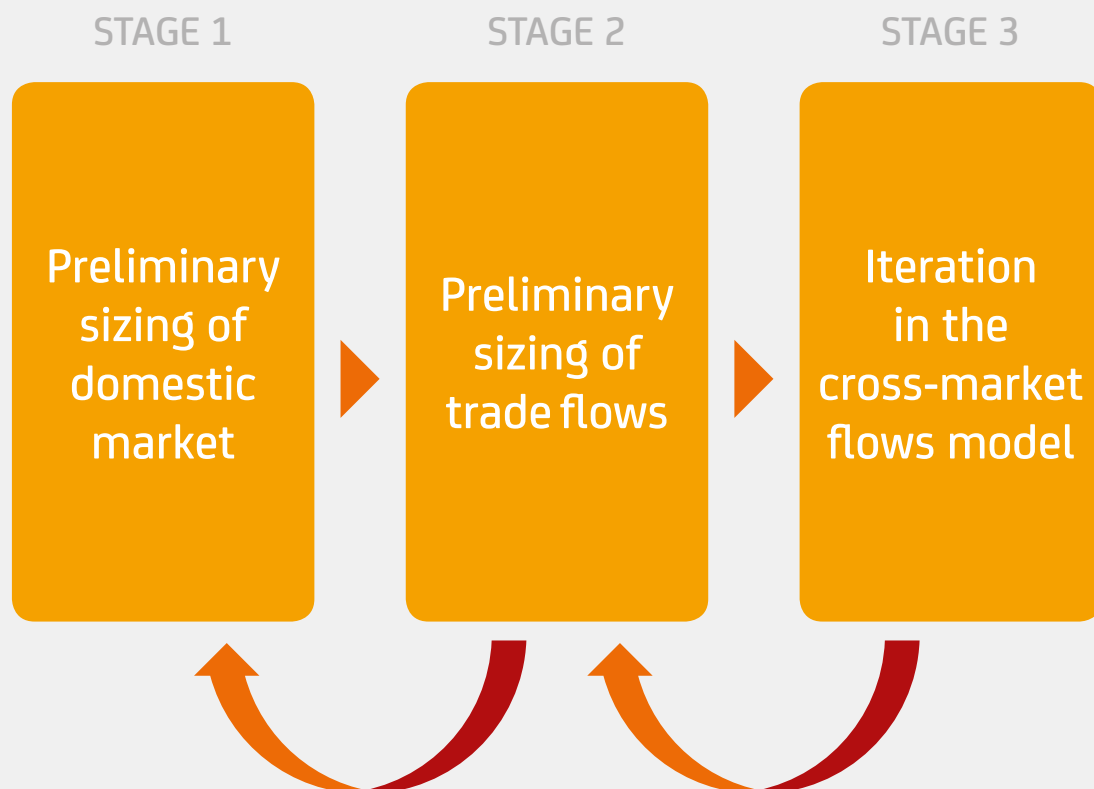
Vietnam: Data Sources

	Primary source	Calculation	Comments
Legal Domestic Sales (LDS)	Total industry based on Vietnam Tobacco Association and key company breakdown based on PM estimates, adjusted to reflect loading production driven by the Excise Tax increase implemented in January 2016.	—	—
Outflows of domestic duty-paid cigarettes	Empty Pack Survey data in other 16 markets included in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Vietnamese market-specific labelling (e.g., health warnings, tax stamps, etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 275 million cigarettes, with over half going to Laos.
Legal Domestic Consumption (LDC)	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other 16 markets included in this Report.
Total Non-Domestic Inflows (ND)	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
Non-Domestic Legal (NDL)	—	Estimated using passenger data, smoking rates, and passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Vietnam Ministry of Culture, Sports & Tourism, UNWTO, and OE Tourism Model.
Non-Domestic Illicit	Empty Pack Survey.	Based on Empty Pack Surveys plus OE estimates.	Estimate derived from the 2015 Q4 Empty Pack Survey. Vietnam is a large market for illicit imports. A significant share is classified as Non-Domestic with Unspecified Market Variant. See Annex A for more details.
Domestic Illicit	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
Total Illicit Consumption	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
Total Consumption	—	Legal Domestic Sales minus Outflows of domestic duty-paid cigarettes, plus estimated Non-Domestic Legal consumption, plus estimated Illicit Consumption.	The IT Flows Model estimate of consumption is 95.5 billion cigarettes for 2015.
Total Tax Loss	—	Total Illicit Consumption multiplied by the weighted average tax rates (Excise Tax, GST, and Earmarked Taxes).	See Annex B for more details.

Methodology: Overview

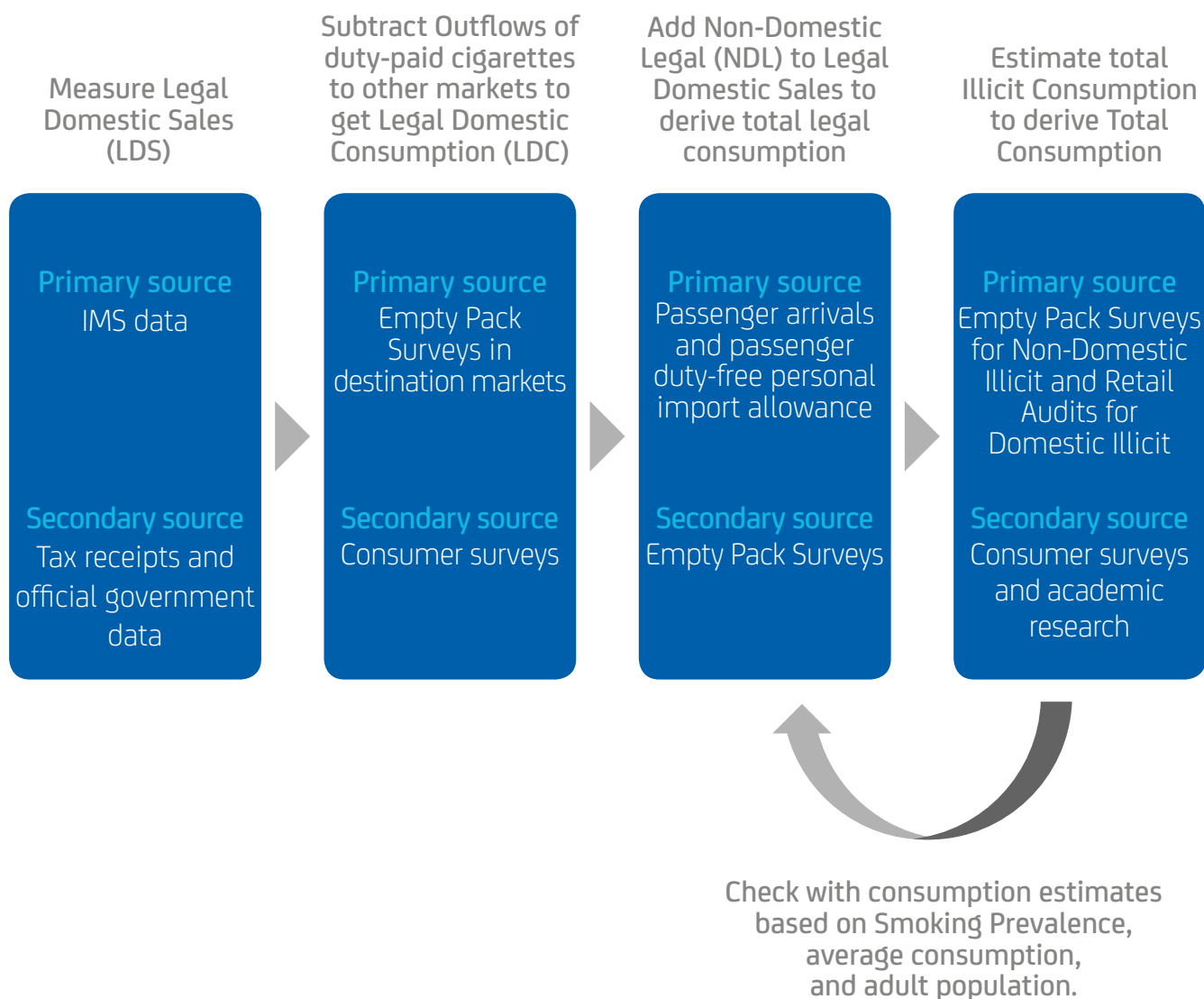
- Oxford Economics have developed a methodology for quantifying Illicit Consumption of cigarettes and the associated Tax Loss in a selected group of 17 Asian markets.¹ Our approach combines multiple data sources and a custom-built analytical model of cigarette flows.
- Oxford Economics have developed an **Illicit Tobacco (IT) Flows Model** to estimate Illicit Consumption and trade flows between the 17 markets included in this Report. Primarily based on market-specific Legal Domestic Sales and Empty Pack Survey source data, the IT Flows Model then “iterates” to ensure consistency between Inflows and Outflows both at the market and regional level, leading to a refinement of estimates of the volume of non-domestic flows by market.
- The methodology initially builds an estimate of Total Consumption of cigarettes from data on Legal Domestic Sales in each market. This incorporates estimates of Outflows of domestic duty-paid cigarettes, Inflows of Non-Domestic Legal cigarettes and estimates of Illicit Consumption (**Stage One**).
- It then maps trade flows for each market (**Stage Two**) and iterates with minor adjustments to ensure that there is consistency of estimates of different components of cigarette consumption in each market and consistency of modelled trade flows between markets (**Stage Three**).

Three stages that underpin the IT Flows Model



¹The methodology has been developed to cover the market for manufactured cigarettes only, with the exception of Australia and New Zealand, which include estimates for the OTP market.

Methodology: Stage 1 – Preliminary sizing of domestic market



Methodology:

Stage 1 – Legal Domestic Sales



- The starting point underpinning the modelling process is an estimate for Legal Domestic Sales for each market.
- Estimates for each market were based on a variety of sources depending on the availability of data.
- For a number of markets, the government publishes official statistics on Legal Domestic Sales that are widely accepted by all relevant stakeholders and market participants. Where available, these estimates of Legal Domestic Sales have been incorporated within the modelling process.
- In the remaining markets where a widely accepted Legal Domestic Sales figure does not exist, estimates are composed using Legal Domestic Sales for PM (IMS) based on actual shipments (reflecting sales to the market as opposed to production volumes, which may differ depending on inventory management) and estimates for non-PM brands based on industry exchange, retail audit data or other in-market intelligence.

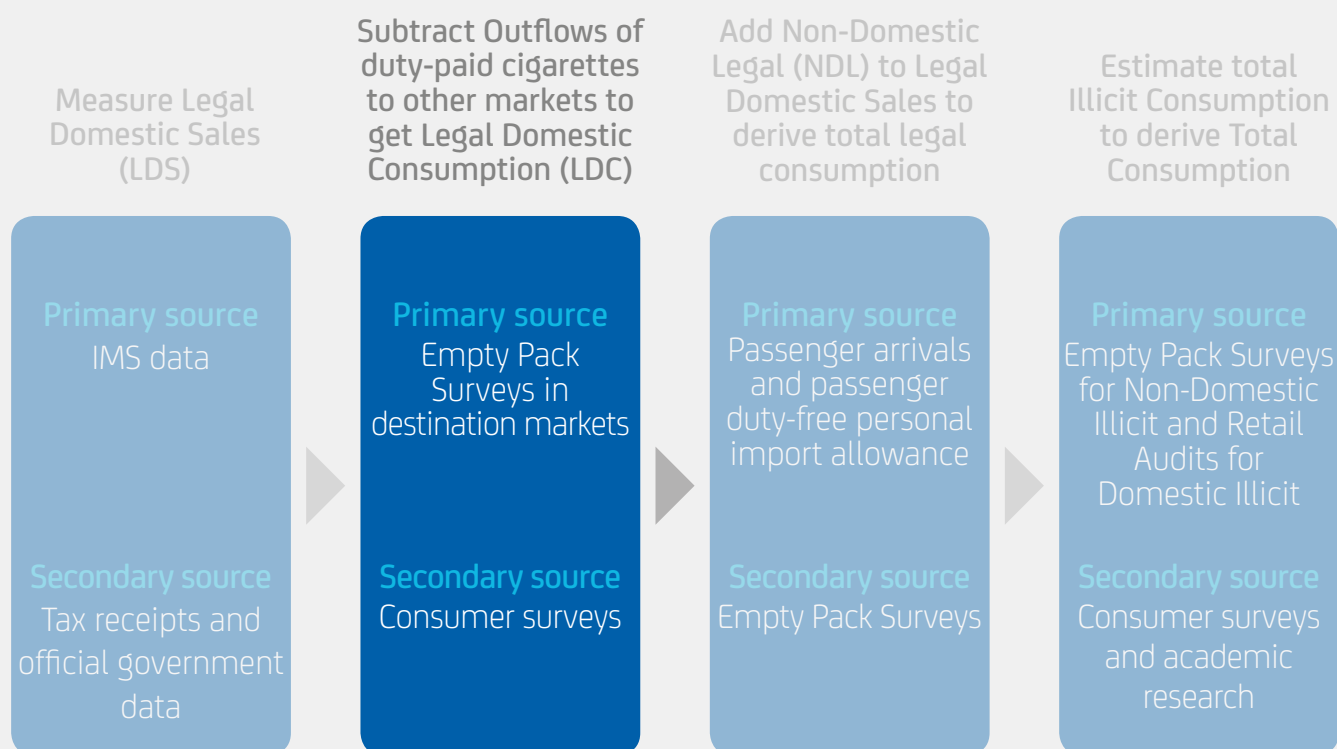
Methodology:

Stage 1 – Legal Domestic Sales

Market	Methodology for estimating LDS
Australia	Actual volumes of tobacco clearances recorded by the Australian Taxation Office and Border Protection Service (Customs) were used, adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation in 2012 (sourced from the Australian Treasury Department).
Brunei	PM estimates based on IDS Retail Audit. Estimates suggest there were zero LDS in 2015.
Cambodia	Total industry volume based on PM and distributor estimates.
Hong Kong	Sales of Duty-Paid Tobacco, sourced from the Hong Kong Customs & Excise Department.
Indonesia	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit.
Laos	Total industry volume based on PM and distributor estimates.
Macao	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit.
Malaysia	Distributor-to-trade volume based on Confederation of Malaysian Tobacco Manufacturers (CMTM) for top 3 companies (PM, BAT, and JTI), and PM estimates on others based on Nielsen Retail Audit.
Myanmar	Total industry volume based on PM estimates.
New Zealand	For manufactured cigarettes, Industry volumes are based on ex-factory sales to the trade, sourced from InfoView Technologies Pty Ltd. data. For RYO volumes, data on annual tobacco returns filed by manufacturers and importers with the New Zealand Ministry of Health was used.
Pakistan	Actual shipments for PM and BAT brands based on industry exchange (PM volume is based on tax-paid shipments, and BAT volume is based on factory clearance).
Philippines	Industry volume based on Bureau of Internal Revenue Statement of Manufactures' Ex-factory Withdrawals, adjusted for actual shipments for PM. While withdrawals reflect the volume of cigarettes manufactured and therefore duty-paid, shipments reflect actual volumes sent to distributors and retailers for retail, and is therefore a better measure of sales.
Singapore	Tobacco Association of Singapore for PM, BAT, and JTI and estimates based on Nielsen Retail Audit for other companies.
South Korea	Total industry volume based on distributors sales to retailers, provided by Hankook Research.
Taiwan	Actual shipments for PM brands and PM estimates for other companies based on Nielsen Retail Audit.
Thailand	Actual shipments for PM brands and PM estimates for other manufacturers.
Vietnam	Total industry based on Vietnam Tobacco Association and key company breakdown based on PM estimates, adjusted to reflect loading production driven by the Excise Tax increase implemented in January 2016.

Methodology:

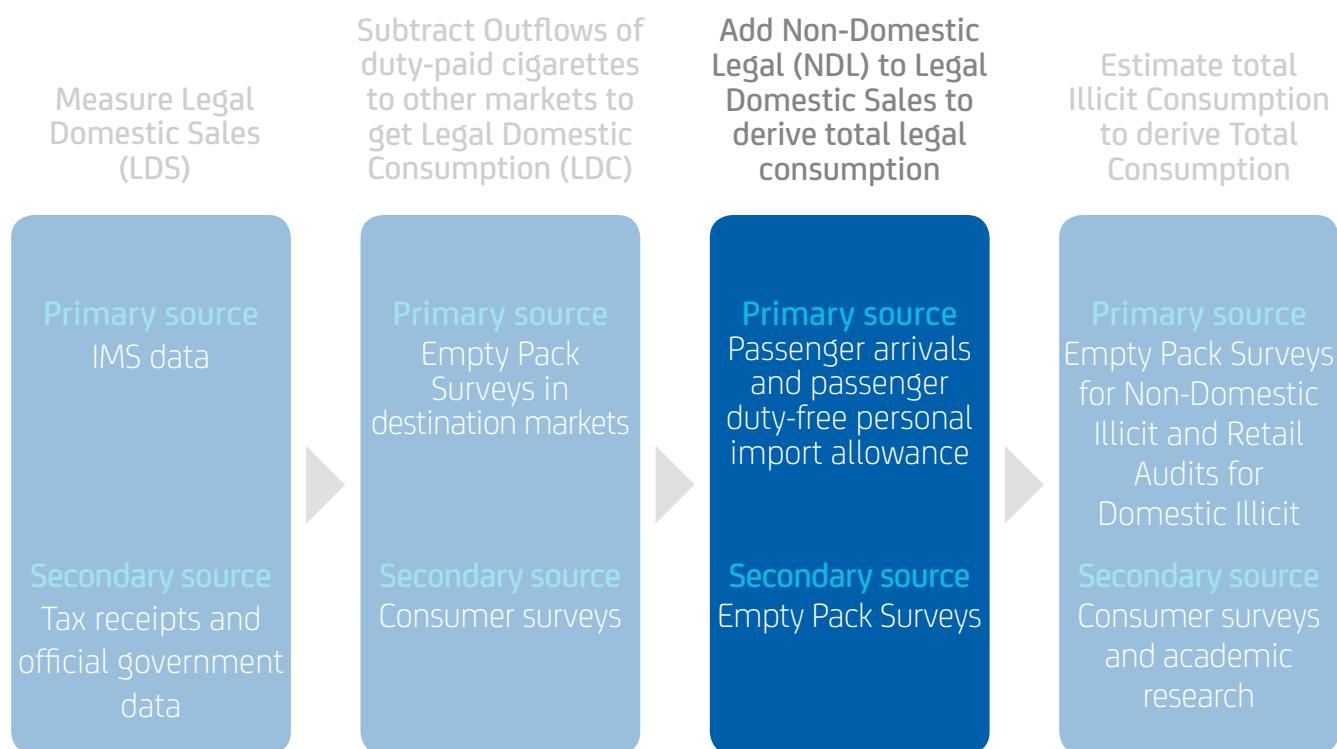
Stage 1 – Legal Domestic Consumption



- In order to estimate Legal Domestic Consumption, Legal Domestic Sales data is adjusted to account for Outflows of legal sales to other markets.
- Rather than capture “registered” exports, which will be classified within Legal Domestic Sales data in the destination market, this Report is attempting to capture “unregistered” exports i.e., cigarettes carried across borders either legally, via the passenger duty-free personal import allowance, or illegally.
- **Outflows of duty-paid cigarettes from each market are estimated based on identified Inflows by origin market in the other 16 markets covered in this analysis.**
- This report only considers Outflows to other markets, and therefore it is recognised that the figures presented may underestimate total Outflows from each market. Furthermore, only packs that are identified as coming from a specific market through pack markings are attributed as a Market Variant. Cigarettes where the market of intended retail is unknown, such as packs produced for export with generic pack markings, or cigarettes of Unspecified Market Variant, are not considered as part of this analysis.
- In practice, a number of cigarette packets collected as part of the Empty Pack Surveys do not bear specific market labelling or Duty-Free labelling. They are considered as Non-Domestic or Unspecified Market Variant.
- For the reasons outlined above, **the estimated volume of Outflows of legal sales to other markets is likely to under-represent the true volume of Outflows.**

Methodology:

Stage 1 – Non-Domestic Legal



- **A non-domestic pack found in a given market is not necessarily an illicit pack.** For example, such a pack may be there legally as a result of purchases of Duty-Free products by travellers from airport Duty-Free shops or duty-paid products brought by tourists from their market of origin. In such cases, an estimate needs to be made of the theoretical maximum volume of legal Duty-Free and duty-paid cigarettes from other markets for a given market, and this can then be netted off from the estimated volumes of non-domestic cigarettes found.
- The approach used in this report is to estimate the theoretical maximum volume of legal Duty-Free and duty-paid cigarettes from other markets using passenger data, Smoking Prevalence in tourists' market of origin, and the passenger duty-free personal import allowance limit. **Estimates are based on the total number of inbound visitors in 2015, disaggregated by origin market, as well as the total number of outbound resident departures** (assuming residents who embark on a trip return within the same calendar year). Data for tourist numbers were taken from official government statistics (subject to availability) or the OE Tourism Model,¹ Smoking Prevalence data were sourced from the WHO or national statistics, and population data were taken from the UN.
- This approach yields an upper-bound estimate for Non-Domestic Legal Inflows of Duty-Free cigarettes from other markets. However, inbound visitors can bring volumes of cigarettes over and above the prescribed passenger duty-free personal import allowance into a market, choosing to declare the excess with customs and pay the appropriate duty at the border. Such volumes are likely to be low. Due to a lack of available data, however, they are not covered in this analysis.

¹The OE Tourism Model is the only global econometric model of world travel and covers over 50,000 indicators of travel, demographics, and economics that are forecast 10 years into the future. In the cases where official statistics are not publicly available for calendar year 2015, it was necessary to use the forecasts implied by the OE Tourism Model.

Methodology:

Stage 1 – Non-Domestic Legal

- By calculating an estimate for Non-Domestic Legal Inflows of Duty-Free cigarettes from other markets, the methodology uses a conservative approach to estimating the volume of Non-Domestic Legal consumption that probably yields an upper bound estimate of the actual volume. In practise, not all passengers will take advantage of the passenger duty-free personal import allowance limit, while for some markets additional concessions may apply, for example for military personnel, or when exchanging gift items. In most markets, however, the volume of Non-Domestic Legal Inflows from other markets represents a relatively small proportion of Total Consumption and so these factors will have a minimal distortionary effect.
- In some special cases, non-domestic packs are assumed to be illicit – for example in Singapore and Brunei, where personal imports of cigarettes without payment of duty are not permitted. In this instance, while it is recognised that passengers may still bring in products and pay the appropriate duty at the border, these volumes are assumed to be negligible in the absence of available data to suggest otherwise.

The steps involved in estimating the volume of Non-Domestic Legal Inflows from other markets are as follows:

- **Step 1: Calculating adult tourist numbers** – data are collected for 2015 on total inbound foreign visitor arrivals (including overnight and same-day visitors), disaggregated by the main origin markets with a residual “rest of the world” category defined as total foreign visitor arrivals minus the sum of foreign visitors from the main origin markets. Where available, some official government statistics data allow for a more granular analysis of inbound foreign visitor arrivals by origin market (in 11 of the 17 markets, data was obtained for 30+ origin markets). In each market, the analysis incorporates the most detailed breakdown available in order to produce a robust estimate of the volume of Non-Domestic Legal Inflows from other markets. For the purpose of this report, the number of adult tourists is estimated in each case by scaling the total number of tourists by the share of the population in each market is aged 15 years or above, sourced from the UN. Implicit within this assumption, and in the absence of alternative and consistent data on the demographic composition of international tourists, is that the demographic composition of international tourists broadly reflects that of the origin market as a whole. Using the reasonable assumption that both families with small children and the very old travel less often, by scaling the total number of tourists by origin market demographic characteristics, our calculations will likely underestimate both the number of adult tourists and the Smoking Prevalence (Smoking Prevalence generally declines as people get older).
- As well as estimating Inflows from inbound foreign visitor arrivals, it is also necessary to include Duty-Free volumes arriving from outbound resident departures as they return home. For the purpose of this report, data is sourced on the number of outbound resident departures, based on the implicit assumption that all tourists embark on a return trip within the period under analysis. Again, the number of adult tourists is estimated in each case by scaling the total number of tourists by the share of the population in each market aged 15 years or above, sourced from the UN.
- **Step 2: Scaling for Smoking Prevalence** – for each market providing adult tourists (both inbound and outbound), Smoking Prevalence data is collected and used to estimate the number of adult visitors who are smokers. This again assumes that the composition of visitors in terms of Smoking Prevalence is the same as in the wider population.
- **Step 3: Applying the passenger duty-free personal import allowance** – for each market (including those returning residents), the estimated number of adult smoking tourists is multiplied by the passenger duty-free personal import allowance limit (e.g., 50 cigarettes in Australia) to estimate the volume of Non-Domestic Legal Inflows from other markets associated with each market providing tourists in 2015.²
- **Step 4: Aggregation** – the individual market estimates from step 3 above are aggregated into a total estimated volume of Non-Domestic Legal Inflows of cigarettes.

²With the exception of Macao, where in the first half of the year before the passenger duty-free personal import allowance was reduced to 19 cigarettes, the estimated volume of Non-Domestic Legal Inflows assumes that inbound adult smokers carry one pack (20 cigarettes) per day into Macao.

Methodology:

Stage 1 – Non-Domestic Legal

Market	Inbound visitor arrivals 2015 (mn)	Source	Outbound resident departures 2015 (mn)	Source	Duty-free personal import allowance (cigarettes)
Australia	7.4	Australian Bureau of Statistics	9.5	Australian Bureau of Statistics	50
Brunei	n/a	n/a	n/a	n/a	0
Cambodia	4.8	Cambodia Ministry of Tourism	1.2	Cambodia Ministry of Tourism	400
Hong Kong	59.3	Hong Kong Tourism Board	89.1	Hong Kong Tourism Board	19
Indonesia	9.8	UNWTO and OE Tourism Model	8.3	UNWTO and OE Tourism Model	200
Laos	4.7	Laos Tourism Development Department	3.1	Laos Tourism Development Department	200
Macao ¹	30.7	Macao Statistics and Census Service	1.5	Macao Statistics and Census Service	19
Malaysia ²	n/a	n/a	n/a	n/a	200
Myanmar	3.4	Myanmar Ministry of Hotels and Tourism	0.6	UNWTO and OE Tourism Model	400
New Zealand	3.1	Statistics New Zealand	2.4	Statistics New Zealand	50
Pakistan	1.1	UNWTO and OE Tourism Model	2.0	UNWTO and OE Tourism Model	200
Philippines	5.1	Philippines Department of Tourism	5.1	UNWTO and OE Tourism Model	400
Singapore	n/a	n/a	n/a	n/a	0
South Korea	13.2	Korea Tourism Organisation	19.3	Korea Tourism Organisation	200
Taiwan	10.4	Tourism Bureau, M.O.T.C Republic of China (Taiwan)	13.2	Tourism Bureau, M.O.T.C Republic of China (Taiwan)	200
Thailand	29.9	Ministry of Tourism and Sports	6.8	UNWTO and OE Tourism Model	200
Vietnam	7.9	Vietnam Ministry of Culture, Sports & Tourism	2.4	UNWTO and OE Tourism Model	400

¹In Macao, the passenger duty-free personal import allowance limit was reduced in 2015 from 100 sticks per person to 19 sticks. Before the change in legislation, with inbound foreign visitors spending less than two nights per trip on average in Macao, this report assumes that inbound adult smokers carried one pack (20 cigarettes) per day into Macao to estimate the volume of Non-Domestic Legal Inflows. Returning domestic resident smokers were assumed to bring the full passenger duty-free personal import allowance with them on return to Macao.

²The Empty Pack Survey in Malaysia identifies the genuine volume of cigarettes meant for the Malaysian duty-free market due to the presence of a "pink banderol" security mark.

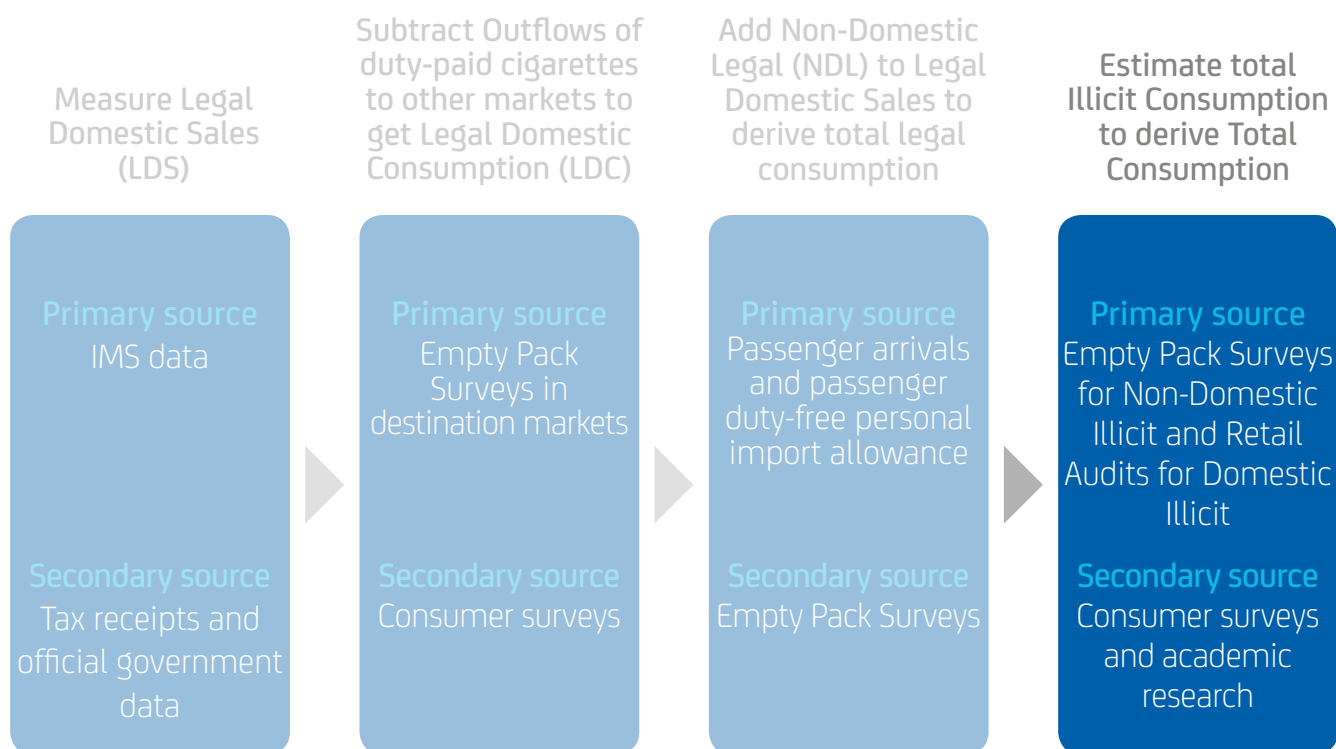
Methodology:

Stage 1 – Non-Domestic Legal

Market	Adult Smoking Prevalence (% daily smokers, aged 15 and above, unless otherwise stated)	Source
Australia	15.6	WHO FCTC 2014 (Australian Health Survey Updated Results, 2011–12)
Brunei	15.6 (aged 18+)	WHO FCTC 2014 (National Health and Nutritional Status Survey, 2009–11)
Cambodia	18.7	WHO FCTC 2014 (National Adult Tobacco Survey of Cambodia, 2011)
Hong Kong	10.6	Census and Statistics Department, Thematic Household survey No. 59, 2016 (Party to WHO FCTC Convention but no reporting requirement)
Indonesia	29.2	WHO Report on the Global Tobacco Epidemic, 2013 (Global Adult Tobacco Survey, 2011) (Not a signatory of WHO FCTC)
Laos	24.4	WHO FCTC 2014 (National Adult Tobacco Survey, 2012)
Macao	17.3 (aged 14+)	Statistics and Census Service, 2008 (Party to WHO FCTC convention but no reporting requirement)
Malaysia	20.9	WHO FCTC 2014 (Global Adult Tobacco Survey Malaysia, 2011)
Myanmar	16.7 (aged 15–64)	WHO FCTC 2014 (WHO NCD STEPS Survey, 2009)
New Zealand	15.5	WHO FCTC 2014 (New Zealand Health Survey, 2012–13)
Pakistan	14.6 (aged 15–49)	WHO FCTC 2014 (Pakistan Demographic & Health Survey, 2012–13)
Philippines	22.5	WHO FCTC 2014 (Global Adult Tobacco Survey Philippines, 2009)
Singapore	13.3 (aged 18–69)	WHO FCTC 2014 (National Health Surveillance Survey, 2013)
South Korea	22.9 (aged 19+)	WHO FCTC 2014 (Korea Health Statistics, 2012)
Taiwan	17.1 (aged 18+)	Health Promotion Board, 2015 (Not a signatory of WHO FCTC)
Thailand	16.6	WHO FCTC 2014 (The Health and Welfare Survey, 2013)
Vietnam	19.5	WHO FCTC 2014 (Global Adult Tobacco Survey Vietnam, 2010)

Methodology:

Stage 1 – Illicit Consumption



- **The primary sources for estimating Illicit Consumption in the 17 markets included in this Report were Empty Pack Surveys.** Commissioned by the participating tobacco manufacturers, Empty Pack Surveys are conducted by independent research agencies in each individual market (e.g., Ipsos, Nielsen, MS Intelligence, and Global Vox Populi).
- The approach involves the collection of a large sample of discarded cigarette packets from streets and public bins in randomly selected locations in each market. These cigarettes packets are then analysed by experts in order to identify if they are of domestic or non-domestic origin (based on the individual characteristics of each pack).
- Empty Pack Surveys therefore provide an estimate of the non-domestic share in Total Consumption of cigarettes for each individual market. Volume estimates for non-domestic inflows (legal and illicit) can be generated by applying the shares data to Legal Domestic Consumption. From this, an estimate of **Non-Domestic Illicit Consumption** can be derived by subtracting the volume of Non-Domestic Legal Inflows from other markets.
- In relying on the collection of physical evidence, Empty Pack Surveys are not vulnerable to potential consumer bias that often accompanies interview-based sampling methods (see Annex C for a review of the advantages and disadvantages of alternative methodologies).

Methodology:

Stage 1 – Illicit Consumption

Survey design

- Participating manufacturers commission independent research agencies to conduct Empty Pack Surveys.
- The participating manufacturer(s) and research agency will agree upon the sampling plan – including the sample size and choice of population centres – for each market. The sampling plan will vary by market according to factors including the overall size and population density of the market, and the participating manufacturer(s) share of the legal market.
- Once agreed, the sampling plan will be executed by the research agency. The number of packs required for collection in each population center is designed to be proportional to its population size, in order to ensure the sample is statistically representative of the market.
- Collection dates are chosen to avoid public holidays or special events that may bias the results. The purpose of the research is not known by collectors prior to undertaking the field work.

Field work

- The chosen population centres are divided into five sectors (North, South, East, West, and Centre). The research agency will randomly select neighbourhoods in each sector to survey. Locations such as sports stadium, large cultural events, and train stations, which could be considered unrepresentative of the population, are excluded.
- The number of neighbourhoods selected in each population centre depends on the quota of empty packs required from that population centre. The same number of empty packs are collected in each neighbourhood, subject to a minimum of 30.
- In each neighbourhood, the research agency selects a starting point from which the collectors follow a fixed route to ensure all areas within a 250m radius are surveyed.
- Collectors are instructed to collect as many discarded cigarette packs from streets and public bins as possible, covering all manufacturers and all brands without bias. Homes and workplaces are not covered. Supervisors are present during the field work to ensure collectors follow the requirements as instructed.
- If collectors are unable to reach the quota in a particular neighbourhood, then the radius from the starting point is extended to 500m and collectors will revisit the neighbourhood as many times as necessary until the quota is fulfilled.

Pack analysis

- Empty packs are shipped to a central data entry location, where they are bagged, cleaned, and the details of each pack recorded. Data collected on each pack include the manufacturer and brand, as well as the intended market of final retail sale (i.e., domestic or non-domestic, including Duty Free variants). Individual pack characteristics are used to determine the intended market of final retail sale of each pack, e.g., the presence of tax stamps, graphic health warnings, or other market specific pack characteristics.
- Packs with no discernible markings allowing appropriate identification are labelled as Unspecified Market Variant.
- Product experts at the participating manufacturer(s) review their own packs in order to identify the presence of Counterfeit products, e.g., according to inks, paper, or other specific pack characteristics.
- The final results are provided in excel format to Oxford Economics for further analysis.

Methodology:

Stage 1 – Illicit Consumption

- In each market, EPS results are analysed to identify any outliers considered inconsistent with specific market intelligence or consumer behaviour, such as a larger presence of high-priced variant cigarettes in a particular market. In such instances, the results are adjusted and the remainder of the survey is reweighted accordingly.
- **For some markets, other sources were also used to estimate Illicit Consumption.** This was necessary in cases where the Empty Pack Surveys were considered insufficiently representative or where they would be unlikely to fully capture a key element of Illicit Consumption such as Domestic Illicit or illicit loose tobacco volumes. In these markets, Empty Pack Survey estimates were combined with other estimates to produce a “hybrid” estimate of Illicit Consumption.
- Alternative sources used for estimates of Illicit Consumption include the following:
 - **Retail audits:** Pakistan and Philippines (for estimation of Domestic Illicit).
 - **Academic research:** Indonesia (for estimation of Domestic Illicit).
 - **Other surveys:** Australia and New Zealand for the estimation of RYO loose tobacco consumption, and Taiwan where the topography (with 70% of the land-mass covered by mountainous terrain) makes it difficult to undertake an Empty Pack Survey that can be considered representative of the market.
 - **We also sought to corroborate our estimates of Illicit Consumption where possible** by reference to other studies and estimates including “bottom up” estimates of consumption and other academic studies.
- Market-variant cigarettes identified in the Empty Pack Surveys of other markets are used to estimate the outflow of Legal Domestic Sales (see Stage 2).
- **For some markets, there is insufficient data available to estimate the full scale of Illicit Consumption.** In Thailand, the report excludes the large RYO segment of the market (estimated at around 40% of Total Consumption).

Methodology:

Stage 1 – Empty Pack Surveys

Market	Date conducted	Research company	Sample size (packs)	Non-Domestic Incidence	Research methodology
Australia	2015 Q2, Q4	MSIntelligence Participating companies PM, BAT, and Imperial Tobacco	12,000 / 12,000	6.6% / 10.0%	16 largest cities were selected for both surveys covering 75.2% of the total population.
Brunei	2015 Q2	Global Vox Populi Participating company PM	2,000	100.0%	4 largest cities were selected covering 61.4% of the total population.
Cambodia	2015 Q2	Nielsen Participating company PM	1,800	7.7%	7 largest cities were selected covering 14.0% of the total population.
Hong Kong	2015 Q2, Q4	MSIntelligence Participating companies PM, BAT, JT, Nanyang Brothers, and Ever Fortune Tobacco	5,000 / 5,000	38.1% / 36.2%	18 districts in 3 regions were selected for both surveys.
Indonesia	2015 Q4	Global Vox Populi Participating company PM	10,000	0.2%	50 largest cities were selected covering 17.3% of the total population.
Laos	2015 Q2	Global vox populi Participating company PM	1,000	26.3%	4 largest cities were selected covering 6.4% of the total population.
Macao	2015 Q2, Q4	MSIntelligence Participating company PM	1,000 / 1,000	42.3% / 49.9%	20 areas in 6 districts were selected for both surveys.
Malaysia	2015 Q2, Q3, Q4	Nielsen on behalf of Royal Malaysian Customs	51,000 / 51,000 / 51,000	Average Illicit Incidence at 36.9%	14 states were selected for each survey covering 99.4% of the total population. Validation of security features carried out by Lembah Sari (government-appointed sole vendor for security markings).
Myanmar	2015 Q4	Global Vox Populi Participating company PM	3,000	2.4%	10 largest cities were selected covering 15.3% of the total population.
New Zealand	2015 Q2, Q4	MSIntelligence Participating company PM and Imperial Tobacco (Q2 only)	1,999 / 2,000	8.4% / 9.0%	5 largest cities were selected for both surveys covering 56.4% of the total population.
Pakistan	2015 Q2	Foresight Research Participating company PM	15,973	7.2%	36 cities (urban) and 60 villages (rural) were selected covering 97.6% of the total population.

Methodology:

Stage 1 – Empty Pack Surveys

Market	Date conducted	Research company	Sample size (packs)	Non-Domestic Incidence	Research methodology
Philippines	2015 Q2, Q4	MSIntelligence Participating company PM	5,000 / 5,000	2.0% / 1.8%	20 largest cities were selected for both surveys covering 17% of the total population.
Singapore	2015 Q2, Q4	TNS Participating companies PM, BAT and JTI	14,027 / 14,238	Genuine Non-Domestic 14% / 15%	32 locations in 5 districts were selected for both surveys.
South Korea	2015 Q4	Global Vox Populi Participating company PM, JTI, BAT, KT&G	2,500	3.3%	6 largest cities were selected covering 43.8% of the total population.
Thailand	2015 Q4	Nielsen Participating company PM	9,880	2.1%	28 largest cities were selected covering 15.4% of the total population.
Vietnam	2015 Q4	Ipsos Marketing Participating company PM	10,000	31.5%	15 largest cities were selected covering 14.7% of the total population.

Methodology:

Stage 1 – Consumer Surveys

Market	Date conducted	Research company	Sample size (packs)	Non-Domestic Incidence	Research methodology
Taiwan	2015 (Mar-Jun)	TNS Participating companies BAT, Imperial Tobacco Limited, JTI, PM, and TTL	13,911 collected packs from a panel of 2,416 smokers	6.5%	Empty cigarette packs were collected from a smoker panel with each smoker asked to collect all the cigarette packs they smoked and finished over the subsequent 7 days. Samples were collected from 19 cities in 4 regions. Samples weighted based on the smoker area distribution from government data.
New Zealand	2015	Colmar Brunton Participating companies BAT, Imperial Tobacco Limited, and PM	2,040 respondents	n/a	Colmar Brunton conducted 2,040 interviews with tobacco users aged 19 years and over. 1,000 interviews were conducted via computer-assisted telephone and 1,040 via online interviews. Respondents were asked a range of questions covering awareness and usage of illicit tobacco. Final results were weighted to be representative of product usage (manufactured cigarettes and RYO), regional disparity, and age/gender.

Methodology:

Stage 1 – Retail Audits

Market	Research company	Sample size (stores)	Research methodology
Philippines	Nielsen	5,436	<p>Continuous, independent measurement of sales to consumers based on a statistically representative sample of retail outlets. Includes supermarkets, grocery/convenience stores, sari-sari stores, market stores, and bakeries. Outlets are visited on a monthly basis, with surveyors recording actual receipts of the last 30 days as well as inventory stocks. Sales volume is calculated as follows:</p> $\text{Sales Volume} = \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory}$
Pakistan	Nielsen	5,682	<p>Continuous, independent measurement of sales to consumers based on a statistically representative sample of retail outlets. Includes supermarkets, general stores, kiriyana stores, pan shops, corner shops/hawkers/kiosks and HORECA/eating places. Outlets are visited on a weekly basis, with surveyors recording the retailers purchases and inventory stocks. Sales volume is calculated as follows:</p> $\text{Sales Volume} = \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory}$

Methodology: Stage 1 – Empty Pack Survey Results

Australia City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Adelaide	800	1,600	1,600	1,600	2.1	9.9	6.3	8.6
Brisbane	1,200	2,400	2,400	2,400	1.3	13.2	9.6	6.4
Cairns	300	600	600	600	6.2	12.6	6.0	10.7
Canberra-Queanbeyan	300	600	600	600	0.8	5.5	3.6	4.7
Darwin	300	600	600	600	3.7	12.5	0.9	7.7
Geelong	300	600	600	600	2.7	2.2	4.4	7.8
Gold Coast-Tweed	400	800	800	800	1.4	9.1	5.4	10.2
Hobart	300	600	600	600	0.2	9.6	3.1	7.2
Melbourne	2,500	5,000	5,000	5,000	4.7	5.9	8.2	8.8
Newcastle	400	800	800	800	0.8	4.5	4.6	9.5
Perth	1,000	2,000	2,000	2,000	2.2	6.5	9.0	8.7
Sunshine Coast	300	600	600	600	0.5	5.7	5.5	5.8
Sydney	3,000	6,000	6,000	6,000	8.9	14.5	11.7	8.8
Toowoomba	300	600	600	600	0.5	2.9	2.3	8.9
Townsville	300	600	600	600	3.1	16.6	1.3	6.4
Wollongong	300	600	600	600	1.4	8.3	4.6	7.9
Total	12,000	24,000	24,000	24,000	4.3	9.8	8.5	8.3

Brunei City/Region	Number of Packs				ND Incidence (%)			
	2012 ¹	2013	2014	2015	2012 ¹	2013	2014	2015
Bandar Seri Begawan	2,289	1,400	-	1,400	90.6	99.0	-	100.0
Kuala Belait	731	300	-	300	88.8	99.7	-	100.0
Seria	516	100	-	100	85.7	99.0	-	100.0
Tutong	464	200	-	200	92.2	99.5	-	100.0
Total	4,000	2,000	-	2,000	89.8	99.1	-	100.0

Cambodia City/Region	Number of Packs				ND Incidence (%)			
	2012	2013 ²	2014	2015	2012	2013 ²	2014	2015
Battambang	-	200	200	135	-	4.2	4.2	3.7
Phnom Penh	-	1,000	1,000	1,195	-	5.4	5.4	6.6
Poi Pet	-	100	100	86	-	6.6	6.6	2.9
Preah Sihanouk	-	100	100	86	-	5.5	5.5	14.8
Siem Reap	-	200	200	162	-	8.1	8.1	20.7
Sisophon	-	100	100	59	-	2.6	2.6	3.8
Takhmao	-	100	100	77	-	3.0	3.0	5.0
Total	-	1,800	1,800	1,800	-	5.4	5.4	7.7

¹The Empty Pack Survey was undertaken in 2011 Q3.

²The Empty Pack Survey was undertaken in 2014 Q2.

Methodology: Stage 1 – Empty Pack Survey Results

Hong Kong City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Hong Kong Island - Central & Western	400	400	400	400	33.7	37.8	32.3	33.7
Hong Kong Island - Eastern	800	800	800	800	41.4	42.2	40.0	41.4
Hong Kong Island - Southern	400	400	400	400	34.7	39.5	29.7	34.0
Hong Kong Island - Wan Chai	300	300	300	300	32.7	38.6	39.4	32.7
Islands	300	300	300	300	39.0	42.3	40.4	39.0
Kowloon City	500	500	500	500	36.6	38.0	34.6	36.6
Kwai Tsing	700	700	700	700	36.6	42.0	33.8	36.0
Kwun Tong	900	900	900	900	33.9	42.8	36.9	33.9
North	400	400	400	400	36.8	50.5	31.0	36.8
Sai Kung	600	600	600	600	36.4	42.9	34.2	36.4
Sha Tin	900	900	900	900	37.7	39.7	38.5	37.7
Sham Shui Po	500	500	500	500	34.3	38.2	38.8	34.3
Tai Po	400	400	400	400	37.4	38.8	41.3	37.4
Tsuen Wan	400	400	400	400	37.7	41.8	37.8	37.7
Tuen Mun	700	700	700	700	39.3	43.1	33.6	39.3
Krwg Tai Sin	600	600	600	600	36.0	39.8	38.0	36.0
Yau Tsim Mong	400	400	400	400	44.2	46.0	30.4	44.2
Yuen Long	800	800	800	800	38.7	41.1	39.9	38.7
Total	10,000	10,000	10,000	10,000	37.1	41.4	36.4	37.2

Methodology: Stage 1 – Empty Pack Survey Results

Indonesia City/Region	Number of Packs				ND Incidence (%)			
	2012 ¹	2013	2014	2015	2012 ¹	2013	2014	2015
Cimahi	150	-	-	-	0.0	-	-	-
Balikpapan	-	111	111	100	-	0.0	0.0	0.0
Bandar Lampung	300	133	133	200	0.0	0.0	0.0	0.0
Bandung	1,000	290	290	700	0.0	0.0	0.0	0.0
Banjarmasin	150	130	130	150	0.0	0.0	0.0	1.0
Batam	200	139	139	250	7.7	22.2	9.4	12.3
Bekasi	1,000	283	283	500	0.0	0.0	0.0	0.0
Bogor	300	115	115	250	0.5	0.0	0.0	0.0
Denpasar	150	95	95	200	0.0	0.0	0.0	0.0
Depok	500	211	211	400	0.0	0.0	0.0	0.0
Jakarta	2,500	1,164	1,164	900	0.1	0.0	0.0	0.1
Makassar (Ujungpandang)	500	282	282	300	0.0	0.0	0.0	0.0
Malang	300	99	99	200	0.0	0.0	0.0	0.0
Medan	1,000	319	319	500	0.1	0.0	0.0	0.0
Padang	300	121	121	200	0.0	0.0	0.0	1.5
Palembang	500	219	219	400	0.0	0.6	0.0	0.0
Pekanbaru	300	134	134	200	0.0	0.9	0.0	1.2
Pontianak	150	117	117	150	0.0	0.0	0.0	0.0
Samarinda	150	145	145	200	0.0	0.0	0.0	0.0
Semarang	500	184	184	400	0.0	0.0	0.5	0.2
Surabaya	1,000	335	335	700	0.1	0.0	0.2	0.0
Surakarta	150	-	-	-	0.0	-	-	-
Tangerang	500	218	218	500	0.0	0.0	0.0	0.0
Tangerang Selatan	-	156	156	300	-	0.0	0.0	0.0
Banda aceh	-	-	-	150	-	-	-	0.0
Banjar	-	-	-	50	-	-	-	0.0
Banjarbaru	-	-	-	100	-	-	-	0.0
Baubau	-	-	-	50	-	-	-	0.0
Bengkulu	-	-	-	100	-	-	-	0.0
Bontang	-	-	-	50	-	-	-	0.0
Cilegon	-	-	-	100	-	-	-	0.0
Gorontalo	-	-	-	100	-	-	-	0.0
Gunungsitoli	-	-	-	50	-	-	-	0.0
Jambi	-	-	-	150	-	-	-	0.0
Kendari	-	-	-	100	-	-	-	0.9
Kotamobagu	-	-	-	50	-	-	-	0.0
Magelang	-	-	-	50	-	-	-	0.0
Manado	-	-	-	100	-	-	-	0.0
Metro	-	-	-	50	-	-	-	0.0
Mojokerto	-	-	-	50	-	-	-	0.0
Pagaralam	-	-	-	50	-	-	-	0.0
Palangkaraya	-	-	-	100	-	-	-	1.0
Palopo	-	-	-	50	-	-	-	0.0
Palu	-	-	-	150	-	-	-	0.0
Pangkalpinang	-	-	-	100	-	-	-	0.0
Sawahlunto	-	-	-	50	-	-	-	5.3
Singkawang	-	-	-	50	-	-	-	0.0
Subulussalam	-	-	-	50	-	-	-	0.0
Sungai penuh	-	-	-	50	-	-	-	0.0
Tanjungpinang	-	-	-	100	-	-	-	17.3
Tarakan	-	-	-	100	-	-	-	0.0
Yogyakarta	-	-	-	150	-	-	-	0.0
Total	11,600	5,000	5,000	10,000	0.2	0.7	0.3	0.2

¹The Empty Pack Survey was undertaken in 2011 Q4.

Methodology: Stage 1 – Empty Pack Survey Results

Laos City/Region	Number of Packs				ND Incidence (%)			
	2012	2013 ¹	2014	2015	2012	2013 ¹	2014	2015
Luang Prabang (Louangphrabang)	-	100	100	100	-	11.0	11.0	23.0
Pakse	-	200	200	200	-	18.0	18.0	33.5
Savannakhet	-	200	200	200	-	27.5	27.5	24.0
Vientiane	-	500	500	500	-	16.4	16.4	24.6
Total	-	1,000	1,000	1,000	-	18.4	18.4	26.3

Macao City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Praia Mand	-	-	50	100	-	-	58.0	44.0
Sai Van	-	-	50	100	-	-	66.0	39.0
ZonaDaSe	-	-	50	100	-	-	56.0	52.0
Patane	-	-	50	100	-	-	54.0	48.0
Conselho	-	-	50	100	-	-	56.0	43.0
Parque	-	-	50	100	-	-	46.0	42.0
Tamag	-	-	50	100	-	-	48.0	45.0
Ilha Verde	-	-	50	100	-	-	56.0	47.0
Hipodromo	-	-	50	100	-	-	58.0	39.0
AreiaPreta	-	-	50	100	-	-	46.0	43.0
FaiChiKei	-	-	50	100	-	-	56.0	42.0
Portas Cerco	-	-	50	100	-	-	45.5	44.0
Porto Exteri	-	-	50	100	-	-	42.0	42.0
Dynasty	-	-	50	100	-	-	50.0	39.0
NAPE W	-	-	50	100	-	-	62.0	52.0
NAPE E	-	-	50	100	-	-	52.0	59.0
Coloane	-	-	50	100	-	-	41.4	55.0
Pac On	-	-	50	100	-	-	44.0	53.0
NovoVilada	-	-	50	100	-	-	50.0	49.0
Ctr Vilada	-	-	50	100	-	-	40.0	45.0
Total	-	-	1,000	2,000	-	-	51.4	46.1

²The Empty Pack Survey was undertaken in 2014 Q1.

Methodology: Stage 1 – Empty Pack Survey Results

Malaysia City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2016
Johor	3,000	3,000	3,000	4,750	29.4	26.8	19.5	20.5
Kedah	3,000	3,000	3,000	3,000	25.4	29.6	14.9	25.1
Kelantan	3,000	3,000	3,000	3,000	30.8	40.3	29.5	28.9
Melaka	3,000	3,000	3,000	3,000	33.9	34.0	37.8	30.7
Negeri Sembilan	3,000	3,000	3,000	3,000	38.7	34.3	37.3	29.1
Pahang	3,000	3,000	3,000	3,000	27.5	30.8	41.0	44.5
Perak	3,000	3,000	3,000	3,000	28.4	33.6	28.9	26.5
Perlis	3,000	3,000	3,000	3,000	37.3	32.4	13.0	2.7
Pulau Pinang	3,000	3,000	3,000	3,000	23.6	33.6	36.3	36.3
Sabah	4,000	4,000	4,000	4,000	81.5	76.2	74.0	79.6
Sarawak	4,000	4,000	4,000	4,000	62.9	63.5	64.6	75.5
Selangor	3,000	3,000	3,000	8,000	34.7	37.9	36.9	35.1
Terengganu	3,000	3,000	3,000	3,000	37.0	37.6	26.0	41.3
WP Kuala Lumpur	3,000	3,000	3,000	3,250	21.6	22.3	21.1	28.5
Total	44,000	44,000	44,000	51,000	34.5	35.7	33.7	36.9

Myanmar City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2016	2012	2013	2014	2016
Rangoon	-	600	600	1,500	-	23.7	3.7	2.1
Bago	-	-	-	100	-	-	-	0.0
Lashio	-	-	-	100	-	-	-	4.0
Mandalay	-	-	-	500	-	-	-	5.3
Mawlamyaing	-	-	-	100	-	-	-	3.0
Monywa	-	-	-	100	-	-	-	0.0
Myitkyina	-	-	-	100	-	-	-	4.0
Naypyitaw	-	-	-	200	-	-	-	0.0
Patheingyi	-	-	-	100	-	-	-	0.0
Taunggyi	-	-	-	200	-	-	-	0.0
Total	-	600	600	3,000	-	23.7	3.7	2.4

Methodology: Stage 1 – Empty Pack Survey Results

New Zealand City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015 ⁵
Auckland	-	-	-	2,128	-	-	-	9.0
Wellington	-	-	-	702	-	-	-	9.7
Christchurch	-	-	-	636	-	-	-	8.2
Hamilton	-	-	-	326	-	-	-	6.2
Napier	-	-	-	208	-	-	-	7.6
Total	-	-	-	4,000	-	-	-	8.7

Pakistan City/Region	Number of Packs				ND Incidence (%)			
	2012 ¹	2013 ²	2014	2015	2012 ¹	2013 ²	2014	2015
Praia Central Punjab	-	3,279	3,279	3,279	-	1.8	1.8	5.4
North Punjab & KPK	-	4,198	4,198	4,198	-	3.6	3.6	4.3
Sindh	-	4,496	4,496	4,496	-	6.6	6.6	10.4
South Punjab & Balochistan	-	4,000	4,000	4,000	-	5.8	5.8	9.2
Bahāwalpur	700	-	-	-	1.8	-	-	-
Faisalabad	1,900	-	-	-	1.5	-	-	-
Gujrānwāla	1,000	-	-	-	1.9	-	-	-
Hyderābād	1,400	-	-	-	5.1	-	-	-
Islāmābād	700	-	-	-	7.6	-	-	-
Jhang Maghiāna	700	-	-	-	0.5	-	-	-
Karāchi	4,400	-	-	-	5.2	-	-	-
Lahore	3,400	-	-	-	4.8	-	-	-
Mardan	800	-	-	-	6.4	-	-	-
Multān	1,400	-	-	-	1.9	-	-	-
Peshāwar	1,200	-	-	-	7.7	-	-	-
Quetta	900	-	-	-	8.3	-	-	-
Rāwalpindi	1,400	-	-	-	6.0	-	-	-
Sargodha	700	-	-	-	2.8	-	-	-
Siālkot	700	-	-	-	2.8	-	-	-
Sukkur	700	-	-	-	2.0	-	-	-
Total	22,000	15,973	15,973	15,973	3.7	4.2	4.2	7.2

¹The Empty Pack Survey was undertaken in 2011 Q4.

²The Empty Pack Survey was undertaken in 2014 Q1.

Methodology: Stage 1 – Empty Pack Survey Results

Philippines City/Region	Number of Packs				ND Incidence (%)			
	2012 ¹	2013	2014	2015	2012 ¹	2013	2014	2015
Antipolo	245	400	200	400	0.4	2.8	1.0	3.2
Bacolod	193	300	150	300	0.5	1.1	0.7	0.0
Bacoor	-	300	150	300	-	2.3	0.0	2.4
Cagayan de Oro	214	400	200	400	0.0	1.6	0.5	1.0
Calcoocan (Kalookan)	533	800	400	800	0.0	0.6	0.7	1.0
Cebu	309	600	300	600	0.0	1.1	0.0	0.9
Dasmariñas (Dasmariñas)	215	400	200	400	1.4	2.3	1.6	0.8
Davao	304	800	400	800	0.0	1.2	0.0	2.3
General Santos (Dadiangas)	-	200	100	200	-	4.3	0.0	0.0
Las Piñas (Las Pinas)	206	300	150	300	0.0	2.6	1.8	2.1
Makati	197	300	150	300	0.0	1.9	0.8	1.1
Manila	642	1,000	500	1,000	0.6	1.3	1.1	2.1
Muntinlupa	-	300	150	300	-	4.1	1.4	0.7
Parañaque (Paranaque)	213	400	200	400	0.5	2.9	1.6	2.8
Pasig	237	400	200	400	0.0	0.9	0.5	2.1
Quezon City	1,035	1,600	800	1,600	0.4	2.4	1.0	1.6
San Jose del Monte	-	300	150	300	-	1.6	0.7	1.0
Taguig (Tagig)	237	400	200	400	0.4	2.5	3.2	0.8
Valenzuela	220	400	200	400	0.0	1.5	1.6	2.8
Zamboanga	-	400	200	400	-	2.3	3.4	10.0
Total	5,000	10,000	5,000	10,000	0.4	1.9	1.0	1.9

Singapore City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Central	3,825	3,603	11,212	9,610	30.4	21.2	16.6	14.8
East	1,159	1,233	3,578	2,827	22.8	16.8	10.7	14.9
North	1,607	1,505	4,721	3,957	23.8	21.4	16.5	14.6
North East	2,716	2,560	8,015	5,370	24.0	14.8	12.8	13.2
West	3,152	2,951	9,356	6,501	23.1	22.0	15.7	14.5
Total	12,460	11,851	24,483	28,265	25.5	19.6	14.6	14.4

¹The Empty Pack Survey was undertaken in 2011 Q4.

Methodology: Stage 1 – Empty Pack Survey Results

South Korea City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Seoul	-	-	1,000	1,150	-	-	0.5	3.4
Busan	-	-	500	401	-	-	0.4	3.8
Daegu	-	-	-	287	-	-	-	2.4
Daejeon	-	-	-	176	-	-	-	2.3
Gwangju	-	-	-	173	-	-	-	4.6
Incheon	-	-	-	313	-	-	-	3.2
Total	-	-	1,500	2,500	-	-	0.5	3.3

Taiwan City/Region	Number of Samples ¹				ND Incidence ¹ (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Taipei City	92	118	80	114	10.4	15.4	11.8	10.4
New Taipei City	205	236	255	197	10.1	6.7	5.1	10.1
Keelung City	92	63	98	80	7.9	6.7	4.7	7.9
Yilan County	45	68	68	80	4.4	4.9	3.3	4.4
Taoyuan County	198	188	229	174	9.1	5.7	3.4	9.1
Hsinchu City	28	26	25	80	4.9	4.2	1.9	4.9
Hsinchu County	45	56	54	80	5.8	18.1	5.3	5.8
Miaoli County	69	17	54	80	10.9	25.8	5.0	10.9
Taichung City	188	198	215	189	9.8	11.8	5.6	9.8
Changhua County	137	165	151	144	20.4	15.0	7.4	20.4
Nantou County	99	41	34	80	10.2	16.9	5.8	10.2
Yunlin County	112	55	23	80	11.9	10.9	13.7	11.9
Chiayi City	35	23	21	80	9.1	11.4	11.9	9.1
Chiaya County	75	54	62	80	11.9	9.6	10.7	11.9
Tainan City	176	198	168	211	8.4	10.2	16.5	8.4
Kaohsiung City	193	308	305	427	10.5	10.4	15.3	10.5
Pingtung County	83	94	115	80	4.8	11.5	12.5	4.8
Taitung County	78	68	20	80	23.4	8.8	9.3	23.4
Hualien County	50	24	23	80	5.5	0.5	0.7	5.5
Total	2,000	2,000	2,000	2,416	10.1	10.3	8.4	6.5

¹Consumer Panel Survey.

Methodology: Stage 1 – Empty Pack Survey Results

Thailand City/Region	Number of Packs				ND Incidence (%)			
	2012	2013	2014	2015	2012	2013	2014	2015
Buri Ram	-	-	289	-	-	-	3.5	-
Chanthaburi	120	100	-	120	28.0	12.0	-	5.0
Chiang Mai	200	200	952	200	0.0	0.0	0.1	2.0
Chiang Rai	-	-	448	-	-	-	0.9	-
Chon Buri	200	200	556	200	8.5	2.5	0.2	1.5
Hat Yai	200	200	-	200	18.9	29.4	-	42.6
Kalasin	-	-	330	-	-	-	0.9	-
Khlong Luang	120	100	-	120	0.7	0.0	-	0.0
Khon Kaen	200	200	541	200	0.0	1.3	0.7	0.0
Krathum baen	120	100	-	120	1.7	0.0	-	3.3
Krung Therp (Bangkok)	4,960	5,200	1,259	4,960	3.5	3.5	1.4	1.1
Lampang	200	200	367	200	0.0	0.0	0.0	0.5
Nakhon Pathom	200	200	163	200	0.0	0.5	0.6	1.5
Nakhon Ratchasima	300	300	502	300	1.0	4.7	2.2	0.7
Nakhon Sawan	120	100	-	120	0.8	0.0	-	0.0
Nakhon Si Thammarat	200	200	194	200	2.0	2.5	3.6	1.5
Nonthanburi	300	300	383	300	4.7	3.0	0.8	1.0
Pak kret	200	200	-	200	1.5	1.5	-	0.5
Pathum Thani	-	-	363	-	-	-	0.0	-
Pattaya	120	100	-	120	27.2	6.0	-	1.7
Phitsanulok	120	100	-	120	1.5	2.0	-	0.0
Phra Nakhon Si Ayutthaya	120	100	175	120	0.0	3.0	0.6	0.8
Phra Pradaeng	200	200	-	200	28.3	2.5	-	3.0
Phuket	-	-	262	-	-	-	1.1	-
Ratchaburi	120	100	152	120	0.8	1.0	0.7	3.3
Rayong	120	100	214	120	15.0	6.0	0.5	2.5
Roi Et	-	-	281	-	-	-	0.7	-
Sakon Nakhon	-	-	243	-	-	-	1.2	-
Samut Prakan	300	400	520	300	4.3	1.5	2.2	3.3
Samut Sakhon	-	-	230	-	-	-	1.3	-
Si Racha	200	200	-	200	1.0	1.0	-	0.9
Songkhla	120	100	586	120	8.6	13.6	0.9	18.3
Surat Thani	200	200	302	200	0.0	0.5	0.0	0.0
Thanya Buri	200	200	-	200	3.0	2.5	-	0.0
Ubon Ratchathani	120	100	317	120	1.7	3.0	3.8	1.7
Udon Thani	300	300	371	300	1.0	4.7	0.0	0.3
Total	9,880	10,000	10,000	9,880	4.3	3.6	1.0	2.1

Methodology: Stage 1 – Empty Pack Survey Results

Vietnam City/Region	Number of Packs				ND Incidence (%)			
	2012 ¹	2013	2014 ²	2015	2012 ¹	2013	2014 ²	2015
Bien Hoa	500	500	500	500	34.1	25.3	25.3	27.9
Buon Ma Thout	200	200	200	200	31.9	29.2	29.2	23.7
Can Tho	500	500	500	500	75.5	67.3	67.3	67.7
Da Nang	500	500	500	500	9.0	4.7	4.7	4.8
Ha Long	200	200	200	200	7.0	3.0	3.0	11.0
Ha Noi	2,000	2,000	2,000	2,000	7.2	5.2	5.2	10.9
Hai Phong	500	500	500	500	15.4	3.8	3.8	11.8
Hue	300	300	300	300	11.0	16.7	16.7	17.0
Long Xuyen	200	200	200	200	72.5	67.9	67.9	66.1
Nha Trang	300	300	300	300	8.2	12.3	12.3	16.1
Qui Nhon	200	200	200	200	16.9	11.4	11.4	9.0
Rach Gia	200	200	200	200	72.6	73.0	73.0	80.7
Thanh Pho Ho Chi Minh	4,000	4,000	4,000	4,000	45.0	37.4	37.4	43.0
Vinh	200	200	200	200	6.5	2.0	2.0	6.0
Vung Tau	200	200	200	200	28.6	65.2	65.2	29.5
Total	10,000	10,000	10,000	10,000	32.3	27.2	27.2	31.5

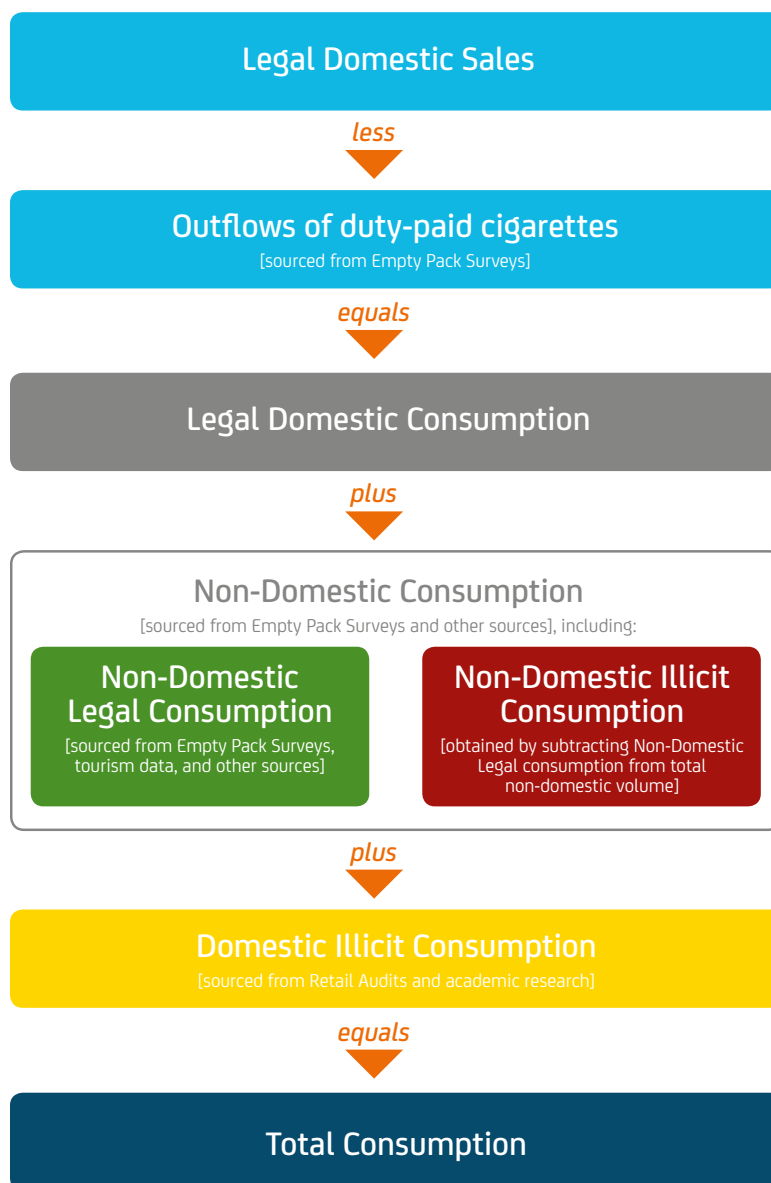
¹The Empty Pack Survey was undertaken in 2011 Q4.

²The Empty Pack Survey was undertaken in 2013 Q4.

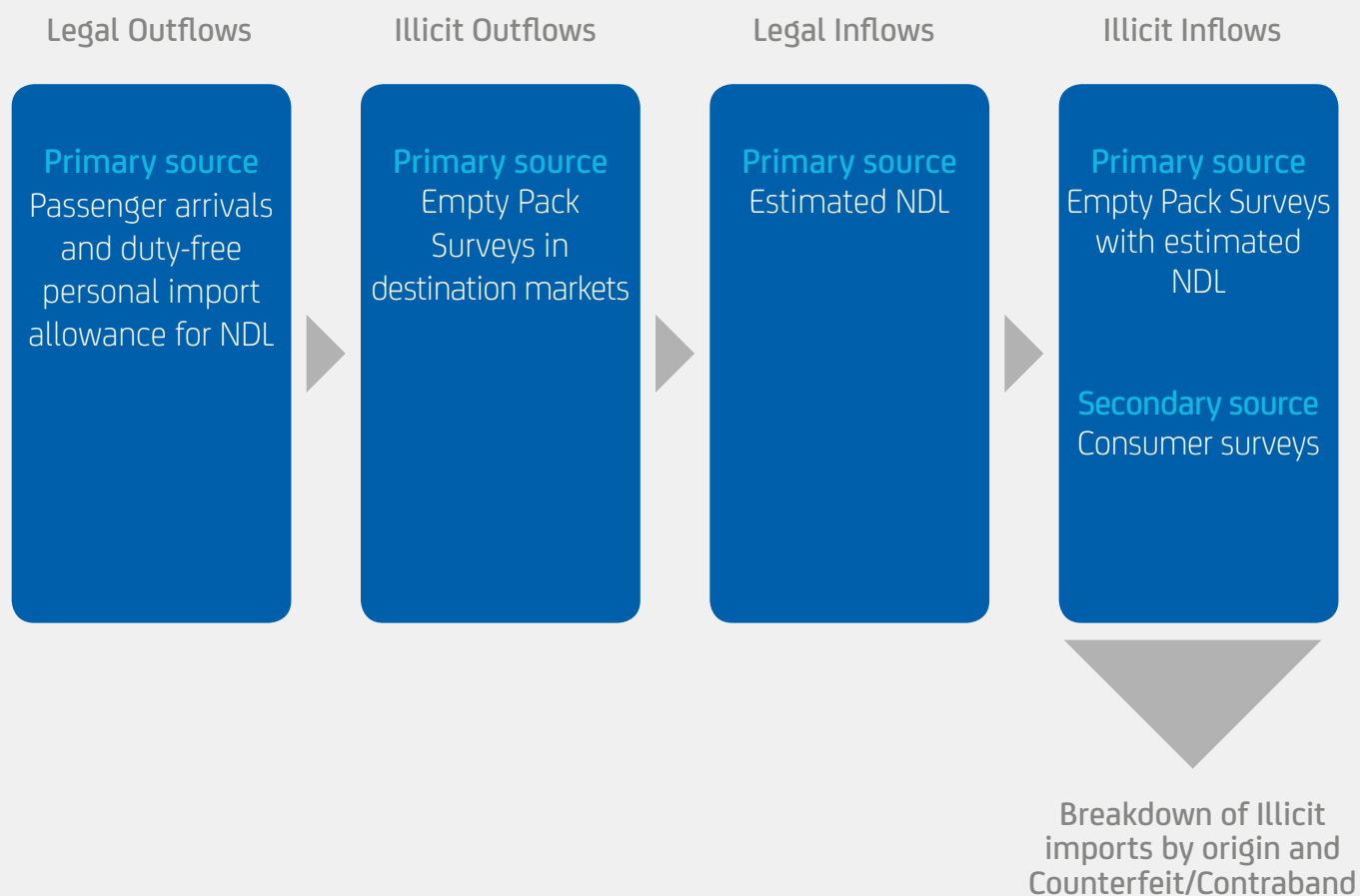
Methodology:

Stage 1 – Total Consumption

- **In the IT Flows Model, Total Consumption** estimates are built up as follows, starting with data on Legal Domestic Sales of cigarettes in each market, incorporating estimates of Outflows of domestic duty-paid cigarettes, Inflows of Non-Domestic Legal cigarettes and finally, estimates of Illicit Consumption (both Domestic Illicit and Non-Domestic Illicit).

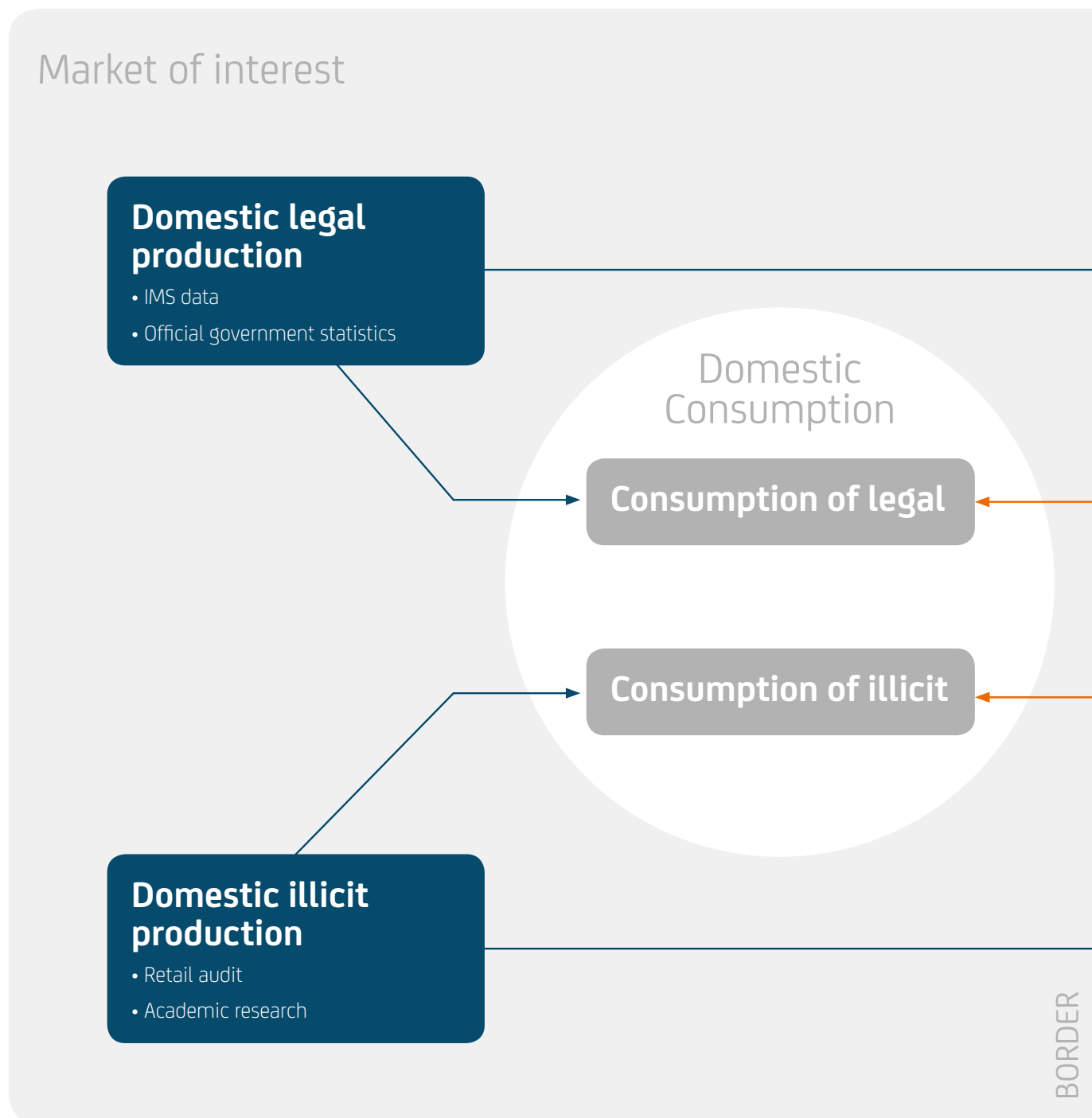


Methodology: Stage 2 – Preliminary sizing of trade flows

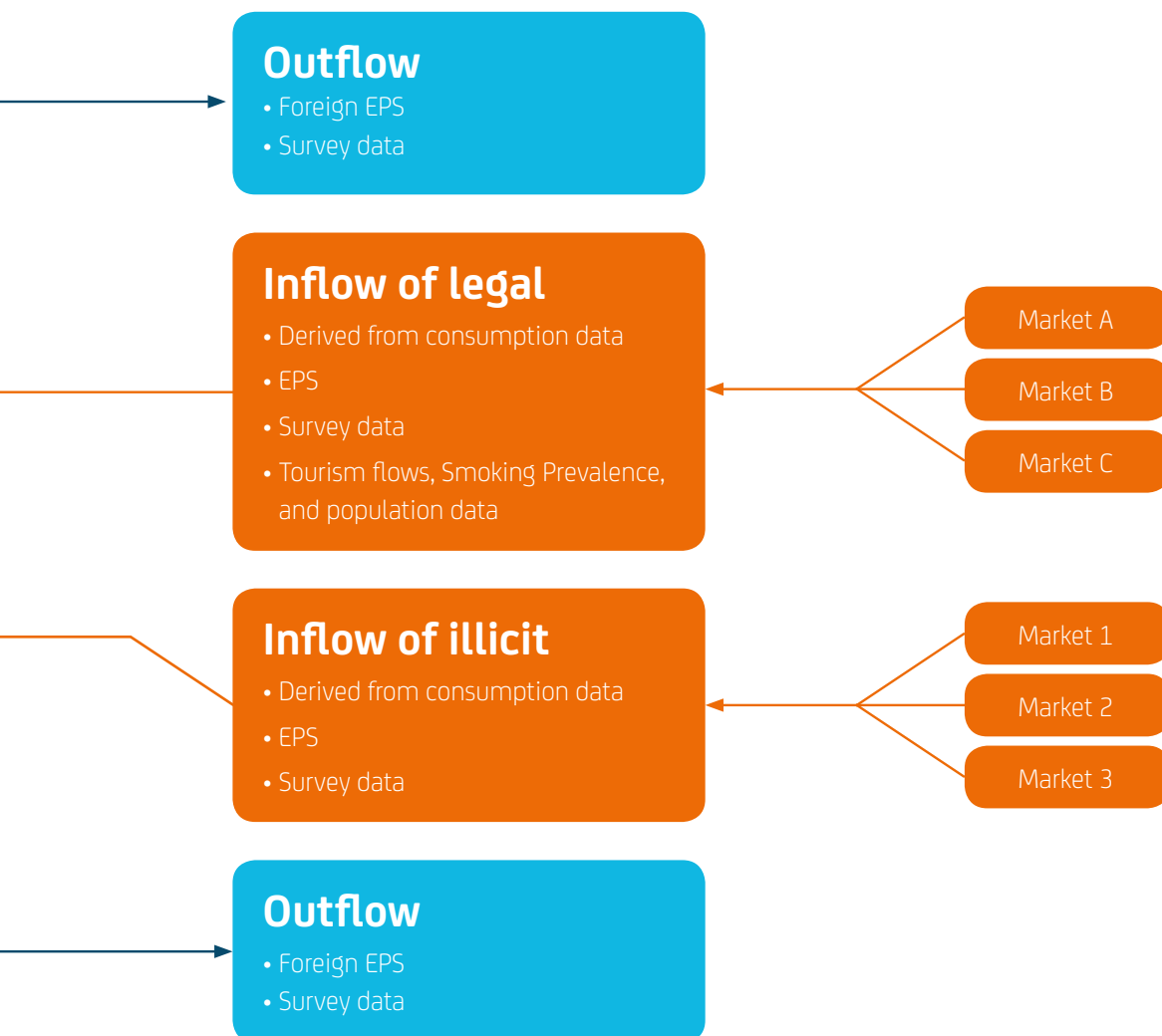


- Once initial estimates of Total Consumption by market are established, **Stage 2** of the modelling process involves the aggregation of legal Outflows and Inflows of cigarettes (exports and imports) as calculated in Stage 1 to check for discrepancies in cross-market trade flows.
- The final stage of the modelling process, **Stage 3**, involves minor adjustments to the estimates of legal and illicit Outflows and Inflows to ensure that bilateral trade flows balance between markets and the net impact at the regional level is consistent.

Methodology: Stage 3 – Iteration through IT Flows Model



Other markets



Methodology: Estimating Tax Loss

- Illicit cigarettes are consumed as an alternative to legal duty-paid cigarettes. Independent of the IT Flows Model, estimating the value of Tax Loss due to the Illicit Consumption of cigarettes is key to the scope of the Report.
- By Tax Loss, this report is specifically trying to capture the impact of Illicit Consumption on indirect taxes only i.e., Excise Tax, Earmarked Tax, and sales tax (GST/VAT, etc.). It is recognised that the erosion of legitimate business resulting from Illicit Consumption may lead to additional revenue losses through direct taxes, e.g., corporate tax and income tax. However, data limitations prevent a robust estimate of the impact on direct taxes and so we restrict the analysis to indirect taxes.
- The aim is to estimate the value of tax revenue that would have been generated for the government had the volume of Illicit Consumption been legally purchased in the domestic market, and therefore subject to the appropriate tax system in place. Given illicit cigarettes often retail at much lower prices than legal duty-paid cigarettes, it is recognised that if the illicit products were not available in the market, Total Consumption would likely fall as smokers would either reduce their consumption of cigarettes or switch to low-value, lower-tax alternatives. However, the purpose of the report is to provide an ex-post analysis of actual consumption volumes (legal and illicit) in 2015, which are therefore used as a base for estimating the value of Tax Loss due to the Illicit Consumption of cigarettes.
- Different markets apply very different tax systems, depending on their own specific goals and requirements. Some systems are relatively complex. This is the case in Indonesia, for example, which operates a multi-tiered specific tax system that varies depending on the cigarette type and production volume, and also in Malaysia, which operates a mixed tax system that combines both specific and ad valorem elements.
- By contrast, some markets operate very simple systems. For example, both Brunei and Taiwan charge a single specific rate on all cigarettes regardless of production volume or retail price.
- The first step to estimating the Tax Loss resulting from Illicit Consumption is understanding the individual tax system in place in each market, including not only Excise Tax but also applicable VAT/GST or other sales taxes, as well as any additional Earmarked Taxes that may be chargeable.
- For markets with multi-tiered or ad valorem excise systems, a weighted-average tax rate (including Excise and Earmarked Taxes) was derived by multiplying each tier's relevant rate by its corresponding LDS volume, and then dividing the sum of the results by the total LDS volume. The exception to this is in Cambodia and Laos, where the Excise and Earmarked Tax rates are based on the Most Sold Brand due to data limitations.
- For markets with VAT/GST or other sales-tax systems in place, the weighted-average rate is derived by applying the relevant % standard rate to the retail price of each brand and then multiplying the resulting unit rate by the brand's corresponding LDS volume. The sum of this is then divided by the total LDS volume for the market. Again, the exception to this is in Cambodia and Laos, where the VAT/GST rate is based on the Most Sold Brand due to data limitations.
- Above weighted-average tax rates were then multiplied by the estimated volume of Illicit Consumption from the IT Flows Model to derive the total Tax Loss. Implicit within this calculation is the assumption that the distribution of Illicit Consumption by market segment is similar to that of LDS.
- The methodology employed to estimate the value of Tax Loss associated with Illicit Consumption of cigarettes is the same as that used in the "Asia-16 Illicit Tobacco Indicator 2015" and "Asia-14 Illicit Tobacco Indicator 2014" Reports, but represents a small deviation from that used in the "Asia-11 Illicit Tobacco Indicator 2013" Report, which was based on the rate of tax (Excise Tax, VAT/GST or other sales taxes, and Earmarked Taxes) applied to the Most Sold Brand in each market.

Methodology: Estimating Tax Loss 2015

Market	Excise Tax structure 2015 ¹	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Australia	Single-tier specific with biannual index-linked tax increase (de facto)	2014/15 weighted-average excise rate of AUD 453.0/'000 for cigarettes and AUD 568.4/kg tobacco for OTP, reflecting biannual indexation	Weighted-average GST rate of AUD 77.8/'000 for cigarettes and AUD 99.1/kg tobacco for OTP	N/A
Brunei	Single-tier specific	2015 excise rate of BND 250/'000 cigarettes	N/A	N/A
Cambodia	Single-tier ad valorem rate of 15% of the ex-factory selling price, defined as 65% of the retail price before VAT and any discount	2015 excise rate on Most Sold Brand of KHR 5,823.6/'000 cigarettes.	Based on VAT rate applied to Most Sold Brand of KHR 6,818.2/'000 cigarettes	Public lighting tax (3% of Most Sold Brand retail price excluding VAT) of KHR 1,985.9/'000 and tax stamp of KHR 500/'000 cigarettes
Hong Kong	Single-tier specific	2015/16 excise rate of HKD 1,906/'000 cigarettes	N/A	N/A
Indonesia	Multi-tier specific based on cigarette type, production volume and retail price (13 tiers)	2015 weighted-average excise rate of IDR 392,000/'000 cigarettes	Based on weighted-average VAT rate of IDR 74,400/'000 cigarettes	N/A
Laos	Single-tier ad valorem rate of 60% of the ex-factory price sanctioned by law, although lower in practice	2015 excise rate on Most Sold Brand of LAK 14,998/'000 cigarettes	Based on VAT rate applied to Most Sold Brand of LAK 31,818/'000 cigarettes	Tax stamp of LAK 25,000/'000 cigarettes
Macao	Single-tier specific	2015 weighted-average excise rate of MOP 891.7/'000 cigarettes. Incorporates impact of tax hike implemented in mid-2015	N/A	N/A
Malaysia	Mixed but predominantly specific tax system	2015 weighted-average excise rate of MYR 302.2/'000 cigarettes	Based on weighted-average sales tax rate of MYR 32.7/'000 cigarettes	N/A

¹Based on calendar year, with the exception of Australia (July-June), Brunei (April-March), and Hong Kong (April-March), which are based on financial year.

Methodology: Estimating Tax Loss 2015

Market	Excise Tax structure 2015 ²	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Myanmar	Ad valorem commercial tax: — 5%–50% on (CIF + import duty) of imported input material — 100% on ex-factory price of cigarettes — 5% on cigarettes invoice price at each trading level	2015/16 weighted-average excise rate of MMK 6,700/000 cigarettes	Based on a weighted-average commercial tax on trading of MMK 1,200/000 cigarettes	N/A
New Zealand	Single-tier specific with biannual index-linked tax increase (de facto)	2015/16 weighted-average excise rate of NZD 453.0/000 for cigarettes and NZD 568.4/kg tobacco for OTP, reflecting biannual indexation	Weighted-average GST rate of NZD 77.8/000 for cigarettes and NZD 99.1/kg tobacco for OTP	N/A
Pakistan	Three-tier mixed system simplified to a two-tier specific structure from June 2013	2015/16 weighted-average excise rate of PKR 1,641/000 cigarettes	Based on weighted-average GST rate of PKR 392.7/000 cigarettes	N/A
Philippines	Two-tier specific	2015 weighted-average excise rate of PHP 1,160/000 cigarettes	Based on weighted-average VAT rate of PHP 216.5/000 cigarettes	N/A
Singapore	Single-tier specific	2015/16 excise rate of SGD 388/000 cigarettes	Based on weighted-average GST rate of SGD 37.0/000 cigarettes	N/A
South Korea	Single-tier specific	2015 excise rate of KRW 50,350/000 cigarettes. Incorporates impact of tax hike implemented in January 2015	Based on weighted-average VAT rate of KRW 20,603/000 cigarettes	Education, Health and Green taxes combined of KRW 95,370/000 cigarettes. Includes new individual consumption tax and farmer subsidy
Taiwan	Single-tier specific	2015 excise rate of TWD 590/000 cigarettes	Based on weighted-average VAT rate of TWD 187.5/000 cigarettes	Health surcharge of TWD 1,000/000 cigarettes
Thailand	Both ad valorem and specific rates are calculated and the greater of the two rates apply	2014/15 weighted-average excise rate of THB 1,621.6/000 cigarettes	Based on weighted-average VAT rate of THB 174.5/000 cigarettes	Health, TV, and Provincial taxes combined of THB 144.6/000 cigarettes
Vietnam	Single-tier ad valorem rate of 65% of the net ex-factory price	2015 weighted-average excise rate of VND 153,669/000 cigarettes	Based on weighted-average VAT rate of VND 40,093/000 cigarettes	Health surcharge of 1% of net ex-factory price (VND 2,364/000 cigarettes)

²Based on calendar year, with the exception of Myanmar (April–March), New Zealand (July–June), Pakistan (July–June), Singapore (April–March), and Thailand (October–September), which are based on financial year.

Methodology: Estimating Tax Loss 2014

Market	Excise Tax structure 2014 ³	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Australia	Single-tier specific with biannual index-linked tax increase (de facto)	2013/14 weighted-average excise rate of AUD 384.6/'000 for cigarettes and AUD 480.8/kg tobacco for OTP, reflecting biannual indexation	Weighted-average GST rate of AUD 60.8/'000 for cigarettes and AUD 71.7/kg tobacco for OTP	N/A
Brunei	Single-tier specific	2014 excise rate of BND 250/'000 cigarettes	N/A	N/A
Cambodia	Single-tier ad valorem rate of 15% of the ex-factory selling price, defined as 65% of the retail price before VAT and any discount	2014 excise rate on Most Sold Brand of KHR 4,880/'000 cigarettes. Incorporates impact of tax hike implemented in mid-2014	Based on VAT rate applied to Most Sold Brand of KHR 6,365/'000 cigarettes	Public lighting tax (3% of Most Sold Brand retail price excluding VAT) of KHR 1,854/'000 and tax stamp of KHR 500/'000 cigarettes
Hong Kong	Single-tier specific	2014/15 excise rate of HKD 1,906/'000 cigarettes	N/A	N/A
Indonesia	Multi-tier specific based on cigarette type, production volume and retail price (13 tiers)	2014 weighted-average excise rate of IDR 354,000/'000 cigarettes	Based on weighted-average VAT rate of IDR 63,900/'000 cigarettes	N/A
Laos	Single-tier ad valorem rate of 60% of the ex-factory price sanctioned by law, although lower in practice	2014 excise rate on Most Sold Brand of LAK 14,998/'000 cigarettes	Based on VAT rate applied to Most Sold Brand of LAK 31,818/'000 cigarettes	Tax stamp of LAK 25,000/'000 cigarettes
Macao	Single-tier specific	2014 excise rate of MOP 500/'000 cigarettes	N/A	N/A
Malaysia	Mixed but predominantly specific tax system	2013 weighted-average excise rate of MYR 266.0/'000 cigarettes	Based on weighted-average sales tax rate of MYR 15.7/'000 cigarettes	N/A

³Based on calendar year, with the exception of Australia (July-June), Brunei (April-March), and Hong Kong (April-March), which are based on financial year.

Methodology: Estimating Tax Loss 2014

Market	Excise Tax structure 2014 ⁴	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Myanmar	Ad valorem commercial tax: 5%–50% on (CIF + import duty) of imported input material 100% on ex-factory price of cigarettes 5% on cigarettes invoice price at each trading level	2014/15 weighted-average excise rate of MMK 4,800/'000 cigarettes	Based on a weighted-average commercial tax of trading of MMK 1,200/'000 cigarettes	N/A
Pakistan	Three-tier mixed system simplified to a two-tier specific structure from June 2013	2014/15 weighted-average excise rate of PKR 1,303/'000 cigarettes	Based on weighted-average GST rate of PKR 392.7/'000 cigarettes	N/A
Philippines	Two-tier specific	2014 weighted-average excise rate of PHP 963/'000 cigarettes	Based on weighted-average VAT rate of PHP 168/'000 cigarettes	N/A
Singapore	Single-tier specific	2014/15 excise rate of SGD 388/'000 cigarettes	Based on weighted-average GST rate of SGD 37.0/'000 cigarettes	N/A
South Korea	Single-tier specific	2014 excise rate of KRW 32,050/'000 cigarettes	Based on weighted-average VAT rate of KRW 11,350/'000 cigarettes	Education, Health and Green taxes combined of KRW 34,075/'000 cigarettes
Taiwan	Single-tier specific	2014 excise rate of TWD 590/'000 cigarettes	Based on weighted-average VAT rate of TWD 176.8/'000 cigarettes	Health surcharge of TWD 1,000/'000 cigarettes
Thailand	Both ad valorem and specific rates are calculated and the greater of the two rates apply	2013/14 weighted-average excise rate of THB 1,533/'000 cigarettes	Based on weighted-average VAT rate of THB 176.1/'000 cigarettes	Health, TV, and Provincial taxes combined of THB 124.4/'000 cigarettes
Vietnam	Single-tier ad valorem rate of 65% of the net ex-factory price	2014 weighted-average excise rate of VND 160,109/'000 cigarettes	Based on weighted-average VAT rate of VND 41,839/'000 cigarettes	Health surcharge of 1% of net ex-factory price (VND 2,463/'000 cigarettes)

⁴Based on calendar year, with the exception of Myanmar (April–March), Pakistan (July–June), Singapore (April–March), and Thailand (October–September), which are based on financial year.

Methodology: Estimating Tax Loss 2013

Market	Excise Tax structure 2013 ⁵	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Australia	Single-tier specific with biannual index-linked tax increase. (de facto)	2012/13 weighted-average excise rate of AUD 351.0/'000 for cigarettes and AUD 438.8/kg tobacco for OTP, reflecting biannual indexation	Weighted-average GST rate of AUD 56.2/'000 for cigarettes and AUD 64.6/kg tobacco for OTP	N/A
Brunei	Single-tier specific	2013 excise rate of BND 250/'000 cigarettes	N/A	N/A
Cambodia	Single-tier ad valorem rate of 10% of the ex-factory selling price, defined as 65% of the retail price before VAT and any discount	2013 excise rate on Most Sold Brand of KHR 3,841/'000 cigarettes	Based on VAT rate applied to Most Sold Brand of KHR 5,909/'000 cigarettes	Public lighting tax (3% of Most Sold Brand retail price excluding VAT) of KHR 1,773/'000 cigarettes and tax stamp of KHR 500/'000 cigarettes
Hong Kong	Single-tier specific	2013/14 weighted-average excise rate incorporating Excise Tax increase in February 2014 (HKD 1,706.8/'000 cigarettes)	N/A	N/A
Indonesia	Multi-tier specific based on cigarette type, production volume and retail price (13 tiers)	2013 weighted-average excise rate of IDR 312,760/'000 cigarettes	Based on weighted-average VAT rate of IDR 58,410/'000 cigarettes	N/A
Laos	Single-tier ad valorem rate of 60% of the ex-factory price sanctioned by law, although lower in practice	2013 excise rate on Most Sold Brand of LAK 14,998/'000 cigarettes	Based on VAT rate applied to Most Sold Brand of LAK 27,273/'000 cigarettes	Tax stamp of LAK 25,000/'000 cigarettes
Malaysia	Mixed but predominantly specific tax system	2013 weighted-average excise rate of MYR 237.0/'000 cigarettes	Based on weighted-average sales tax rate of MYR 14.6/'000 cigarettes	N/A

⁵Based on calendar year, with the exception of Australia (July-June), Brunei (April-March), and Hong Kong (April-March), which are based on financial year.

Methodology: Estimating Tax Loss 2013

Market	Excise Tax structure 2013 ⁶	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Basis for fiscal year Earmarked Tax Loss estimation
Myanmar	Ad valorem commercial tax: – 5%–50% on (CIF + import duty) of imported input material – 100% on ex-factory price of cigarettes – 5% on cigarettes invoice price at each trading level	2013/14 weighted-average excise rate of MMK 4,500/'000 cigarettes	Based on a weighted-average commercial tax on trading of MMK 1,200/'000 cigarettes	N/A
Pakistan	Three-tier mixed system simplified to a two-tier specific structure from June 2013	2013/14 weighted-average excise rate of PKR 1,071/'000 cigarettes	Based on weighted-average GST rate of PKR 323.9/'000 cigarettes	N/A
Philippines	Two-tier specific	2013 excise rates of PHP 600/'000 cigarettes (Low-tax tier rate) for Domestic Illicit and PHP 1,250/'000 cigarettes (High-tax tier rate) for Non-Domestic Illicit	VAT rate of PHP 136.6/'000 cigarettes (based on Most Sold Brand) for Domestic Illicit and PHP 273.2/'000 cigarettes (based on premium price brand) for Non-Domestic Illicit	N/A
Singapore	Single-tier specific	2013/14 weighted-average excise rate incorporating Excise Tax increase in February 2014 (SGD 354.9/'000 cigarettes)	Based on weighted-average GST rate of SGD 34.8/'000 cigarettes	N/A
Taiwan	Single-tier specific	2013 excise rate of TWD 590/'000 cigarettes	Based on weighted-average VAT rate of TWD 174.6/'000 cigarettes	Health surcharge of TWD 1,000/'000 cigarettes
Thailand	Both ad valorem and specific rates are calculated and the greater of the two rates apply	2012/13 weighted-average excise rate of THB 1,567/'000 cigarettes	Based on weighted-average VAT rate of THB 178.7/'000 cigarettes	Health, TV, and Provincial taxes combined of THB 124.5/'000 cigarettes
Vietnam	Single-tier ad valorem rate of 65% of the net ex-factory price	2013 weighted-average excise rate of VND 151,821/'000 cigarettes	Based on weighted-average VAT rate of VND 39,633/'000 cigarettes	Health surcharge of 1% of net ex-factory price (VND 1,551/'000 cigarettes)

⁶Based on calendar year, with the exception of Pakistan (July-June), Singapore (April-March), and Thailand (October-September), which are based on financial year.

Methodology: Estimating Tax Loss 2012

Market	Excise Tax structure 2012 ⁷	Basis for fiscal year Excise Tax Loss estimation	Basis for fiscal year VAT/GST/sales Tax Loss estimation	Earmarked Tax
Australia	Single-tier specific (de facto)	Average excise rate for cigarettes and roll-your-own prior and post the February and August 2012 Excise Tax increases	Based on the GST applied to Most Sold Brand of cigarettes and roll-your-own	N/A
Brunei	Single-tier specific	2012 excise rate	N/A	N/A
Hong Kong	Single-tier specific	2012 excise rate	N/A	N/A
Indonesia	Multi-tier specific	2012 excise rates per tier - reflecting annualised tax tier shares	Based on the VAT applied to Most Sold Brand	N/A
Malaysia	Single-tier mixed	2012 excise rate on Most Sold Brand	Based on the sales tax applied to Most Sold Brand	N/A
Pakistan	Multi-tier mixed	Average excise rates per tax tier prior and post the July 2012 Excise Tax increase – reflecting annualised tax tier shares	Based on the average VAT rate taking into account the annualised tax tier shares	N/A
Philippines	Multi-tier specific	2012 excise rates per tier – reflecting annualised tax tier shares	Based on VAT average of Marlboro and Most Sold Brand	N/A
Singapore	Single-tier specific	2012 excise rate	Based on the VAT applied to Most Sold Brand	N/A
Taiwan	Single-tier specific	2012 excise rate	Based on the VAT applied to Most Sold Brand	Health surcharge
Thailand	Single-tier ad valorem	Average excise rates for Most Sold Brand prior and post August 2012 Excise Tax increase	Average excise rate for Most Sold Brand prior and post August	Health, TV, and Provincial tax on Most Sold Brand
Vietnam	Single-tier ad valorem	2012 excise rate on Most Sold Brand	Based on the VAT applied to Most Sold Brand	N/A

⁷Based on calendar year, with the exception of Australia (July-June), Brunei (April-March), Hong Kong (April-March), Pakistan (July-June), Singapore (April-March), and Thailand (October-September), which are based on financial year.

Methodology: Estimating Tax Loss

Market	Exchange rate assumption 2012 (Local currency/ USD) ⁸	Exchange rate assumption 2013 (Local currency/ USD) ⁸	Exchange rate assumption 2014 (Local currency/ USD) ⁸	Exchange rate assumption 2015 (Local currency/ USD) ⁸	Source
Australia	0.96	1.09	1.09	1.19	Reserve Bank of Australia
Brunei	1.24	1.26	1.29	1.39	International Monetary Fund
Cambodia	N/A	4,027	4,037	4,068	International Monetary Fund
Hong Kong	7.76	7.76	7.75	7.76	International Monetary Fund
Indonesia	9,403	10,461	11,865	13,389	International Monetary Fund
Laos	N/A	7,846	8,049	8,148	International Monetary Fund
Macao	N/A	N/A	7.986	7.990	International Monetary Fund
Malaysia	3.09	3.15	3.27	3.91	International Monetary Fund
Myanmar	N/A	962.5	996.9	1,218.3	International Monetary Fund
New Zealand	N/A	N/A	N/A	1.50	Reserve Bank of New Zealand
Pakistan	97.6	103.4	101.4	104.3	International Monetary Fund
Philippines	42.23	42.45	44.40	45.50	International Monetary Fund
Singapore	1.24	1.26	1.29	1.39	International Monetary Fund
South Korea	N/A	N/A	1,053	1,131	International Monetary Fund
Taiwan	29.62	29.77	30.36	31.91	Central Bank of China
Thailand	31.30	30.46	32.23	33.47	International Monetary Fund
Vietnam	20,859	20,933	21,148	21,699	International Monetary Fund

Source: All data collected via Haver Analytics

⁸Based on calendar year, with the exception of Australia (July-June), Brunei (April-March), Hong Kong (April-March), Myanmar (April-March), New Zealand (July-June), Pakistan (July-June), Singapore (April-March), and Thailand (October-September), which are based on financial year average.

Annex C: Other studies

Sources	Advantages	Disadvantages
Empty Pack Surveys (EPS) – This involves collecting discarded empty cigarette packs and noting their Market Variant.	<ul style="list-style-type: none"> – Approach is (in principle) easily comparable across markets. – Avoids the problem of under-reporting of smoking by consumers in consumer surveys as estimates are based on physical evidence. – Cost effective. 	<ul style="list-style-type: none"> – May not be able to fully distinguish between legal and illegal packs in all cases (a problem shared with other methodologies). – Risk of sampling problems, e.g., if areas sampled are unrepresentative, or illicit consumption trends are very seasonal. May be a particular problem in large and diverse markets or markets with inaccessible areas. – Does not cover homes, workplaces, or rural areas in many cases.
Passer-by surveys – Interviewers stand in areas of heavy foot traffic, ask passers-by to show their cigarette packs, and note down whether they bear tax-paid markings/domestic labelling.	<ul style="list-style-type: none"> – Direct method of assessing consumption patterns. 	<ul style="list-style-type: none"> – Legal situation with regard to purchasing illicit cigarettes may vary, affecting response rate and cross-market comparison; risk of being unrepresentative if under-sampling, e.g., of elderly, women, rural populations, foreign nationals; well known that consumers under-report even legal consumption, so risk of downward bias. – Expensive.
Pack swap – Variant of the above where consumers are asked to exchange their cigarette packs for a reward.	<ul style="list-style-type: none"> – Direct method of assessing consumption patterns. – Can collect social and demographic data to adjust sample to be representative. – Can cover rural areas also. 	<ul style="list-style-type: none"> – Relies on self-reporting of smoking habits to some extent. – Smokers may still be reluctant to take part due to legal risks/embarrassment. – May not be wholly representative, e.g., if varied response rate across social groups – weighting small samples of under-represented groups could magnify any sampling error. – Expensive.
Telephone interviews – Interviewers conduct telephone surveys, asking respondents about smoking habits, including their purchases of illegal tobacco.	<ul style="list-style-type: none"> – Can choose targeted respondents randomly, less risk of unrepresentative sample. 	<ul style="list-style-type: none"> – Downward bias from under-reporting of smoking behaviour still likely to be a risk. – Consumers may not know for sure if cigarettes they have smoked are illegal. – In poor markets, telephone survey unlikely to be representative due to low level of telephone connections.

Annex C: Other studies – continued

Sources	Advantages	Disadvantages
Comparing consumption estimates with legal sales (“bottom-up” approach) – This involves using data from consumption surveys (Smoking Prevalence rates, cigarettes smoked per day) and demographic data to produce a “bottom up” estimate of total cigarette consumption. This can then be compared with data on legal sales, and the difference (if the former is larger) can be seen as an estimate of illegal consumption.	<ul style="list-style-type: none"> – Simple and direct approach of estimating consumption. – Normally relatively easy to collect data on legal sales. – Provides an estimate of total Illicit Consumption including bootlegging. 	<ul style="list-style-type: none"> – Smoking Prevalence data may be distorted downward by under-reporting, especially in markets with social stigma against smoking.
Surveys/audits of retailers – This approach relies on the analysis of the inventory books of point-of-sale units belonging to a panel of retailers.	<ul style="list-style-type: none"> – Direct collection of data at the retail level – May bypass problem of under-reporting of smoking behaviour. 	<ul style="list-style-type: none"> – Sample of retailers might be unrepresentative, especially if retail industry is very fragmented. – Retailers may not display illicit stock. – May miss channels of distribution other than legitimate retail.
Comparing import and export data – This involves comparing a market’s recorded imports of cigarettes with recorded exports of cigarettes to that market by trading partners. If the latter is larger, this may be evidence of smuggling.	<ul style="list-style-type: none"> – Taxes on exports are rare, so little incentive to under-report at the exporter end. – Data available from the UN COMTRADE database. 	<ul style="list-style-type: none"> – Relies on assumption that “lost” tobacco exports are eventually smuggled into the market designated as the destination market (problematic with complex trade patterns involving intermediate ports, or with goods diverted offshore). – Other reasons for discrepancies besides smuggling: CIF versus FOB will tend to underestimate (can be adjusted for, though); time lags in shipping/recording (can be accounted for); mismeasurement/poor customs reporting standards (can do little about this). – Only provides an indication on large-scale smuggling and not bootlegging, so inappropriate for markets where the latter is a problem. – Does not measure consumption of domestically produced illegal cigarettes, only those imported, so not appropriate for markets where domestically produced illicit is a major problem.

Annex C: Other studies – continued

Sources	Advantages	Disadvantages
<p>Extrapolating from seizures data – This method scales up reported seizures of illicit tobacco products to produce an estimate of overall illicit trade. A scaling factor of 10 is sometimes used; Joossens & Raw (2002) suggest a possible seizure/interception rate of 10%. UNODC Globalization of Crime used interception rate of 7%, also for European trade, for wider range of Counterfeit products.</p>	<ul style="list-style-type: none"> – Uses actual data about the illicit market. 	<ul style="list-style-type: none"> – Unclear what conversion factor should be used to scale up seizures data. Interception rate is unobservable and might also vary across markets and through time as customs effort/procedures vary. As a result, estimates based on this method are likely to be subject to a high margin of error, and cross-market comparisons using this method are likely to be unreliable. – While seizures data may be useful for spotting trends in the size of the illicit market, its value for estimating the level of illicit trade may be limited. – Joossens & Raw's suggested 10% interception rate is for European markets – for Asian markets, which are far more diverse, interception rates could vary substantially.
<p>Econometric estimates – A variety of approaches are used to estimate illicit consumption using econometric modelling. For example, some authors estimate a model of cigarette consumption as a function of price, income, etc., in a context where we know illegal consumption is virtually non-existent (e.g., in isolated markets with no domestic production), i.e., where we can assume that legal sales = consumption. The model is then applied out-of-sample to predict cigarette consumption in markets where smuggling is an issue, taking the difference between the predicted value and legal sales as an estimate of Illicit Consumption. Alternatively, a model of cigarette consumption is estimated including "illicit" variables measuring incentives for engaging in illicit cigarette trade. The coefficients on these "illicit" indicators are then set to zero, with the difference between the predicted level of consumption and actual consumption taken as an estimate of total Illicit Consumption.</p>	<ul style="list-style-type: none"> – Could avoid under-reporting problem of consumption survey approaches; should include all forms of illicit. 	<ul style="list-style-type: none"> – Relatively complex approach with higher data and computational requirements compared with other approaches; relies on assumption of out-of-sample validity of estimated demand curve (what if demand functions differ in markets with smuggling?).

Glossary of Terms

ASEAN Association of South East Asian Nations, consisting of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

BAT British American Tobacco.

bn Billion.

Bootlegging Small-scale Contraband.

Chop-chop Illicit unbranded loose tobacco consumed in Australia.

CIF Cost, Insurance, and Freight.

C&C Counterfeit and Contraband.

Contraband (CB) Genuine product that has been bought in a low-tax market and which exceeds the legal border limits, or is acquired without payment of taxes for export purposes to be illegally re-sold (for financial profit) in a higher-priced market. There are generally two types of Contraband: Bootlegging and wholesale smuggling.

Counterfeit (CF) Cigarettes that are illegally manufactured and sold without permission of the trademark rights holder.

CPI Consumer Price Index.

Domestic Illicit Cigarettes that are legally produced by trademark rights holder to be illegally sold and consumed in the same market.

Duty-Free (DF) Purchases made outside the domestic market that have no state, local, or provincial taxes, import duties, or any other type of taxation added, and are subject to purchase volume restrictions.

Earmarked Tax Taxes whose revenues are reserved for a specific group or use.

EPS Empty Pack Surveys. Independent research agencies collect empty cigarette packs discarded by smokers in public places and record brands and Market Variants.

Excise Tax An indirect tax on the consumption of certain goods. Excise Taxes on cigarettes can be either specific, i.e., expressed as a monetary amount per quantity/weight of the product; ad-valorem, i.e., expressed as a proportion of the value of a product; or a combination of both. For the purpose of this Report, Earmarked Taxes levied on cigarettes are also considered as an Excise Tax.

CTC The WHO Framework Convention on Tobacco Control.

FOB Free on Board.

GST General Sales Tax (Goods and Services Tax in Australia), a tax levied on goods and services transactions.

Illicit Consumption Consumption of Non-Domestic Illicit (Counterfeit, Contraband, and Non-Domestic with Unspecified Market Variant cigarettes) and Domestic Illicit cigarettes or loose tobacco. Typically, taxes applicable in the market where illicit cigarettes/tobacco are consumed are not paid.

Illicit Whites Cigarettes that are usually produced legally in one market, primarily for smuggling. While they may also be exported legally from some countries, they are smuggled across borders during their transit to the final market of sale where they have no legal distribution and are sold without payment of tax.

IMS In-Market Sales. Primary source of Legal Domestic Sales volumes.

Inflows/Outflows Inflows of Non-Domestic product into a market/Outflows of product from a market.

IT Illicit Trade.

IT Flows Model Model developed for this Report to estimate Illicit Consumption in markets and trade flows between the 17 markets included in this Report.

ITIC International Tax and Investment Center.

JTI Japan Tobacco International.

JT Japan Tobacco.

LDC Legal Domestic Consumption is defined as Legal Domestic Sales net of Outflows.

LDS Legal Domestic Sales of genuine domestic tax-paid product through legitimate, domestic channels.

Market Variant Term used to designate the market in which a pack of cigarettes was initially intended to be sold. To be sold in a given market, a pack has to bear the required labelling (e.g., health warning) and potentially a tax stamp or a banderol. The EPS methodology (or, e.g., that of pack swap surveys) estimates the incidence of packs by Market Variant. As such, packs that do not bear the health warning and/or stamp required in the given market are considered Non-Domestic.

Most Sold Brand Cigarette brand variant with the largest annual legal sales volume in a given market.

mn Million.

Non-Domestic Illicit Counterfeit, Contraband, and imports of other illicit cigarettes.

ND Non-Domestic – product that was not originally intended for the market in which it is consumed.

NDL Non-Domestic Legal – product that is brought into the market legally by consumers, such as during a cross-border trip.

OE Oxford Economics.

OE Tourism Model A comprehensive data set of tourism metrics covering 190 countries and 20 years of detailed historical data.

OECD The Organisation for Economic Co-operation and Development.

OTP Other Tobacco Products, which are tobacco products other than manufactured cigarettes. These include “roll-your-own”/“make-your-own,” i.e., loose tobacco for the purpose of hand rolling or tubing (including Chop-chop in Australia), cigars and cigarillos, and smokeless tobacco products.

PM Philip Morris International.

pp Percentage points.

Relative Income Price (RIP) The proportion of nominal per capita income needed to purchase 100 cigarette packs.

RYO Roll-Your-Own.

Smoking Prevalence The percentage of smokers in the total adult population.

Tax Loss Government revenues that are lost due to tobacco tax (Excise Tax, including Earmarked Taxes and VAT/GST/sales tax) that is not paid on illicit cigarettes. Import duties were not considered in the Tax Loss estimates.

tn Trillion.

Total Consumption Total Consumption of legal and illicit cigarettes in a market or 17 markets included in this Report.

UN The United Nations.

Unspecified Market Variant Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. The intended market is not known.

UNWTO The World Tourism Organisation.

VAT Value-Added Tax.

WHO World Health Organisation.

Annex E: Dashboard

% of Total Consumption unless otherwise stated	Total 2015	Australia ¹				Brunei				Cambodia				Hong Kong				Indonesia			
		2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
Legal Domestic Sales (LDS)	85.4	88.7	86.5	85.6	86.1	10.3	2.4	0.1	–	–	100.4	99.2	101.4	56.8	58.6	66.2	64.5	91.5	89.4	88.1	88.2
Outflows of domestic duty-paid cigarettes	0.3	–	–	–	0.3	–	–	–	–	–	5.8	4.6	9.0	0.1	–	2.5	1.6	0.2	0.2	0.1	0.1
Legal Domestic Consumption (LDC)	85.1	88.7	86.5	85.6	85.8	10.3	2.4	0.1	–	–	94.6	94.6	92.3	56.7	58.6	63.7	62.8	91.3	89.3	88.0	88.0
Total Non-Domestic Inflows (ND)	6.3	11.3	13.5	14.4	14.2	89.7	97.6	99.9	100.0	–	5.4	5.4	7.7	43.3	41.4	36.3	37.2	0.3	0.7	0.3	0.2
Non-Domestic Legal (NDL)	0.6	0.4	0.4	0.5	0.6	–	–	–	–	–	0.5	0.3	0.9	7.4	7.9	8.3	8.0	0.2	0.2	0.2	0.2
Non-Domestic Illicit	5.8	10.9	13.0	13.9	13.6	89.7	97.6	99.9	100.0	–	4.9	5.0	6.8	35.9	33.6	28.0	29.1	0.1	0.5	0.1	0.1
Contraband	1.2	2.5	5.2	5.8	5.5	20.0	22.0	–	22.7	–	–	0.2	0.9	28.6	28.4	25.3	26.1	0.0	0.5	0.1	–
Counterfeit	0.2	0.3	0.8	0.0	0.2	–	–	–	–	–	–	–	–	4.0	2.9	1.8	1.1	0.1	–	–	–
Non-Domestic with Unspecified Market	4.4	8.1	7.1	8.0	7.9	69.6	75.6	99.9	77.3	–	4.9	4.9	5.9	3.2	2.3	1.0	1.9	–	–	0.0	0.1
Domestic Illicit	8.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8.5	10.1	11.7	11.7
Total Illicit Consumption	14.3	10.9	13.0	13.9	13.6	89.7	97.6	99.9	100.0	–	4.9	5.0	6.8	35.9	33.6	28.0	29.1	8.6	10.6	11.8	11.8
Total Consumption (cigarettes bn)	821.1	24.7	24.8	23.1	22.2	0.4	0.3	0.3	0.3	–	8.2	8.5	8.5	5.1	5.4	4.8	5.1	310.0	318.9	325.3	325.1
Total Tax Loss ² (USD mn)	4,544	1,150	1,293	1,407	1,300	63.1	62.0	63.9	59.9	–	1.2	1.4	2.1	405.3	395.5	315.5	363.3	394.8	582.0	699.9	688.3



Increasing trend from previous year³



Declining trend from previous year³

Source: Oxford Economics

¹For Australia, Legal Domestic Sales includes loose tobacco, and Non-Domestic Illicit and Tax Loss estimates include Chop-chop (unbranded loose tobacco). A conversion rate of 0.8 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on the rate applied by the Australian Taxation Office.

²Calendar year, expressed in current exchange rates.

³Confined to Illicit Consumption and Tax Loss estimates only.

% of Total Consumption unless otherwise stated	Laos				Macao				Malaysia				Myanmar				New Zealand ⁴			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
Legal Domestic Sales (LDS)	–	82.7	82.6	74.2	–	–	50.9	56.5	63.4	61.3	64.3	62.7	–	76.3	96.3	97.9	–	–	–	99.6
Outflows of domestic duty-paid cigarettes	–	0.3	0.3	0.4	–	–	2.2	2.6	1.0	1.0	1.1	1.2	–	–	–	0.3	–	–	–	6.0
Legal Domestic Consumption (LDC)	–	82.3	82.3	73.8	–	–	48.6	53.9	62.4	60.3	63.2	61.6	–	76.3	96.3	97.6	–	–	–	93.6
Total Non-Domestic Inflows (ND)	–	17.7	17.7	26.2	–	–	51.4	46.1	37.6	39.7	36.8	38.4	–	23.7	3.7	2.4	–	–	–	6.4
Non-Domestic Legal (NDL)	–	8.2	8.9	7.2	–	–	16.8	18.1	3.1	4.1	3.1	1.5	–	1.7	2.4	1.9	–	–	–	1.2
Non-Domestic Illicit	–	9.5	8.8	19.0	–	–	34.5	28.0	34.5	35.6	33.7	36.9	–	22.0	1.3	0.6	–	–	–	5.3
Contraband	–	7.0	6.6	13.2	–	–	29.4	26.8	–	–	–	–	–	14.9	0.9	0.3	–	–	–	4.8
Counterfeit	–	0.7	0.7	0.1	–	–	0.9	0.1	–	–	–	–	–	0.2	–	0.1	–	–	–	–
Non-Domestic with Unspecified Market	–	1.8	1.5	5.7	–	–	4.2	1.1	34.5	35.6	33.7	36.9	–	7.1	0.3	0.2	–	–	–	0.5
Domestic Illicit	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total Illicit Consumption	–	9.5	8.8	19.0	–	–	34.5	28.0	34.5	35.6	33.7	36.9	–	22.0	1.3	0.6	–	–	–	5.3
Total Consumption (cigarettes bn)	–	2.9	3.0	3.4	–	–	1.1	0.8	22.9	21.9	19.9	17.8	–	10.4	9.1	9.1	–	–	–	2.5
Total Tax Loss ² (USD mn)	–	2.4	2.3	5.8	–	–	23.1	25.7	622.0	623.5	577.1	561.7	–	13.0	0.7	0.4	–	–	–	69.1

⁴For New Zealand, Legal Domestic Sales includes loose tobacco, and Non-Domestic Illicit and Tax Loss estimates include illicit RYO. A conversion rate of 0.7 grams per cigarette was applied to turn weight into cigarette equivalent, based on rates applied by the Ministry of Health in their analysis of annual tobacco returns data.

Annex E: Dashboard

% of Total Consumption unless otherwise stated	Pakistan				Philippines				Singapore				South Korea				Taiwan			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
Legal Domestic Sales (LDS)	74.4	77.2	74.6	68.6	94.1	81.8	80.5	86.4	74.4	80.5	86.1	86.1	–	–	100.0	97.8	89.9	89.7	91.8	93.5
Outflows of domestic duty-paid cigarettes	–	0.0	0.0	0.0	0.1	0.1	0.1	0.2	–	0.1	0.7	0.5	–	–	0.5	0.3	0.0	0.0	0.1	0.1
Legal Domestic Consumption (LDC)	74.4	77.1	74.6	68.6	94.0	81.8	80.4	86.2	74.4	80.4	85.4	85.6	–	–	99.5	97.5	89.9	89.7	91.7	93.4
Total Non-Domestic Inflows (ND)	3.7	4.3	4.3	7.2	0.4	2.0	1.0	1.9	25.6	19.6	14.6	14.4	–	–	0.5	2.5	10.1	10.3	8.3	6.6
Non-Domestic Legal (NDL)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	–	–	–	–	–	–	0.4	1.6	2.4	1.6	1.9	1.2
Non-Domestic Illicit	3.5	4.2	4.2	7.1	0.3	1.8	0.9	1.5	25.6	19.6	14.6	14.4	–	–	0.1	0.9	7.7	8.7	6.4	5.4
Contraband	0.3	0.4	0.5	1.1	–	–	0.0	0.1	24.2	18.7	13.4	14.3	–	–	0.1	0.8	2.9	4.6	2.1	1.8
Counterfeit	0.0	0.1	0.1	0.0	0.2	1.8	0.7	1.4	0.0	–	0.1	0.0	–	–	–	0.0	–	–	–	–
Non-Domestic with Unspecified Market	3.0	3.7	3.6	6.0	0.1	0.1	0.1	–	1.4	0.9	1.1	0.1	–	–	–	0.0	4.8	4.2	4.4	3.5
Domestic Illicit	21.9	18.6	21.1	24.2	5.6	16.3	18.6	12.0	–	–	–	–	–	–	–	–	–	–	–	–
Total Illicit Consumption	25.4	22.8	25.2	31.3	5.9	18.1	19.4	13.5	25.6	19.6	14.6	14.4	–	–	0.1	0.9	7.7	8.7	6.4	5.4
Total Consumption (cigarettes bn)	86.0	82.6	84.0	86.0	108.7	105.5	102.3	96.7	3.5	3.4	3.3	3.2	–	–	89.4	68.8	39.5	39.6	38.2	37.5
Total Tax Loss ¹ (USD mn)	260.5	230.4	315.7	480.9	61.9	367.5	506.3	393.9	277.9	202.7	159.0	144.2	–	–	8.3	93.4	182.7	205.1	143.1	111.9



Increasing trend from previous year²



Declining trend from previous year²

Source: Oxford Economics

¹Calendar year, expressed in current exchange rates.

²Confined to Illicit Consumption and Tax Loss estimates only.

% of Total Consumption unless otherwise stated	Thailand				Vietnam			
	2012	2013	2014	2015	2012	2013	2014	2015
Legal Domestic Sales (LDS)	95.7	96.5	99.2	97.7	80.1	78.8	77.4	76.3
Outflows of domestic duty-paid cigarettes	0.0	0.1	0.2	0.1	0.1	0.2	0.2	0.3
Legal Domestic Consumption (LDC)	95.7	96.4	99.0	97.6	80.0	78.6	77.2	76.0
Total Non-Domestic Inflows (ND)	4.3	3.6	1.0	2.4	20.0	21.4	22.8	24.0
Non-Domestic Legal (NDL)	1.4	1.3	0.3	0.5	0.6	0.8	0.8	0.8
Non-Domestic Illicit	2.9	2.3	0.7	1.9	19.4	20.7	22.0	23.2
Contraband	0.7	0.4	0.4	1.3	0.2	1.0	1.8	2.7
Counterfeit	0.6	0.6	0.2	0.5	–	0.0	0.0	–
Non-Domestic with Unspecified Market	1.6	1.3	0.0	0.0	19.2	19.7	20.2	20.5
Domestic Illicit	–	–	–	–	–	–	–	–
Total Illicit Consumption	2.9	2.3	0.7	1.9	19.4	20.7	22.0	23.2
Total Consumption (cigarettes bn)	40.5	39.4	37.6	38.6	103.4	102.9	97.5	95.5
Total Tax Loss ¹ (USD mn)	80.3	55.7	13.7	43.7	168.6	196.4	207.2	200.4

Methodology: Report terms of reference

The Terms of Reference was agreed between Philip Morris International Management SA., an affiliate of Philip Morris International (PM), the International Tax and Investment Center (ITIC) and its partner, Oxford Economics (OE).

1.1 Project Background

- In view of developing a comprehensive set of illicit trade data overview in the Asia region, PM commissioned OE and ITIC to assess existing data on illicit trade (data from industry and any other sources available) and to estimate the volumes and related foregone revenue for the year 2012. This resulted in the commissioning of the Asia Illicit Trade Assessment Year I study and the publication of the report “Asia-11: Illicit Tobacco Indicator 2012” in September 2013.
- OE and ITIC were subsequently engaged to undertake the Asia Illicit Trade Assessment Year II and Year III studies, which led to the publications “Asia-14: Illicit Tobacco Indicator 2013” in September 2014 and “Asia-16: Illicit Tobacco Indicator 2014” in January 2016.
- OE and ITIC will be in charge of the Asia Illicit Trade Assessment Year IV (scope: full year 2015), with the following objectives.

1.2 Objectives

- For each of the selected markets:
 - Validate the existing data (industry and other sources) on illicit trade.
 - Estimate Illicit Consumption in terms of volume, incidence, and penetration.
 - Provide an overview of the main types of illicit products consumed and major sources of Inflows for each market.
 - Estimate the annual Tax Loss from illicit trade.
 - For these estimations and the relevant markets, provide a comparison with the results of the Asia Illicit Trade Assessment Year I, II and III.¹
- On a regional perspective:
 - Provide a regional overview allowing a comparative analysis between the markets.
 - Provide a sub-region analysis on the ASEAN markets.
 - Provide a comparison with the results of the Asia Illicit Trade Assessment Year I, II and III.

1.3 Scope

- Markets covered in the Asia Illicit Trade Assessment Year III.²
- Additional market: New Zealand.

¹Asia-11: Illicit Tobacco Indicator 2012 (ITIC / OE, September 2013), Asia-14: Illicit Tobacco Indicator 2013 (ITIC / OE, September 2014), and Asia-16: Illicit Tobacco Indicator 2014 (ITIC / OE, January 2016).

²Australia, Brunei, Cambodia, Hong Kong, Indonesia, Laos, Macao, Malaysia, Myanmar, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.

1.4 Methodology

- Compile, analyse and validate existing market research on illicit trade covering 2015 data. This will consist of Empty Pack Surveys and additional forms of research such as:
 - Industry market research surveys,
 - Studies commissioned by competitors, Governments, and Non-Governmental Organisations (NGOs), and
 - Alternative data sources (e.g., seizure data, assessment of smoking prevalence, etc.).
- Analyse and validate domestic duty-paid sales volumes.
- Differentiate legal and illegal non-domestic or non-duty-paid consumption where relevant (e.g., through consumer surveys, analysis of passenger data, tourism statistics). The supplier is invited to propose a method to split legal and illegal non-domestic or non-duty-paid consumption.
- Cross check with alternative data sources (e.g., seizure data, assessment of smoking prevalence levels, studies commissioned by competitors, Governments, NGOs, etc.).
- Interview external subject matter experts to cross-reference data and gather qualitative inputs. These experts can include government officials (e.g., law enforcement), researchers, and National Manufacturers' Associations.
- PM and its local affiliates will assist by providing all relevant data.

1.5 Deliverables

- The deliverables of this project will consist in a report that will include:
 - An executive summary,
 - Background information, objectives and methodology,
 - Results (as detailed in the "Objectives" paragraph) with a section at regional level (Asia-17), a section at sub-regional level (ASEAN-10), and market sections.

1.6 Expected use of results

- Oxford Economics and/or ITIC will release the results of this study publicly, and with government officials and other stakeholders.
- Public release.

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