

# Asia-16 Illicit Tobacco Indicator 2014

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Prepared by International Tax and Investment Center  
and Oxford Economics  
January 2016



# Disclaimer

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The Asia-16 Illicit Tobacco Indicator 2014 Report (the “Report”) on the illicit tobacco trade in 16 selected Asian markets (including Australia) 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 E at the end of this Report.

# Contents

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Introduction.....	2
About us.....	3
Authors.....	4–5
Foreword.....	6–7
Glossary of Terms.....	8–9
Scope & Methodology.....	10–11
Executive Summary.....	12–22
Overview.....	14–15
Asia-16.....	16
ASEAN.....	17
Trends in Illicit Consumption.....	18–21
Map of Asia-16 Markets.....	22
Asia-16 Regional Overview.....	23–39
Market Summaries.....	40–169
Annex A: Methodology for estimating illicit trade.....	170–201
Annex B: Methodology for estimating tax losses.....	202–209
Annex C: Comparison with other estimates.....	210–229
Annex D: Overview of data sources.....	230–246
Annex E: Report terms of reference.....	247–249

# Introduction

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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-16: Illicit Tobacco Indicator 2014” report is to provide policymakers and administrators with an objective and independent annual benchmark on illicit tobacco trade and its impact on government revenues.

ITIC and Oxford Economics hope that this report will help raise awareness and understanding of the growing problem of illicit trade in tobacco products. 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

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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.

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.

## Authors

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**Daniel A. Witt**  
President  
International Tax &  
Investment Center

Daniel A. Witt has been working to promote free markets and helping to lower the barriers to tax, trade, and investment in transition economies for nearly 30 years. Having worked with 85 countries, he has co-developed a unique neutral table to bring together the public sector, private sector, and academics to advance pro-investment economic policy reforms. Being among the first foreigners to discuss international tax and investment issues with the Russian Federation (1991), the Republic of Kazakhstan (1993), Vietnam (1996), Iraq (2004), Libya (2006), and Myanmar (2012), Mr. Witt is a recognized expert in newly opened-up frontier markets.

Daniel is the President of the International Tax and Investment Center (ITIC), which he helped found in September 1993. ITIC has offices in Washington, DC, USA; Moscow, Russia; Almaty and Astana, Kazakhstan; Baku, Azerbaijan; Kiev, Ukraine; Jakarta, Indonesia; Dubai, United Arab Emirates; Baghdad, Iraq; Bangkok, Thailand; Nay Pyi Taw, Myanmar; Sao Paulo, Brazil; and London, United Kingdom. ITIC is a global brand that is trusted as a reliable source of tax and investment policy and administration expertise.

Daniel is the co-founder of the Asia-Pacific Tax Forum (APTF), Eurasia Fiscal Experts' Seminar, Middle East/North Africa Tax Forum, and the Africa Tax Forum that annually bring together hundreds of government officials and legislators with industry representatives, academics, and other experts to propose tax and investment climate reforms.



**Adrian Cooper**  
Chief Executive Officer  
Oxford Economics

Adrian Cooper is responsible for coordinating and managing Oxford Economics' global economic analysis, forecasting and consultancy activities, and overseeing its team based in Oxford, London, Belfast, Paris, New York, Philadelphia, San Francisco, Chicago, Miami, Singapore, and the UAE. He has led Oxford Economics' work on a wide array of consultancy projects, ranging from policy advice to government departments in Europe, the US, Africa, and Asia to detailed analysis of the drivers of illicit trade in tobacco and their implications for tax policy (working extensively with ITIC). Adrian is also a Senior Economic Advisor to the ITIC.

Adrian spent the first seven years of his career with HM Treasury, England. During this time, he worked on the analysis of tax and other economic policy changes as part of the preparations for the UK Budget. He was also the coordinator of the government's macroeconomic forecast for two years. Adrian was educated at the University of Bristol, England, where he gained a first class degree in Economics; and at the London School of Economics and Political Science, England, where he achieved a distinction in the MSc in Economics and won the Ely Devons prize for outstanding performance in the degree examinations.

## Authors

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**Scott Livermore**

Chief Operating Officer,  
Macroeconomic and Industry  
Services  
Oxford Economics

Scott Livermore oversees the day-to-day running of Oxford Economics' macroeconomic and industry services. This involves supervising Oxford Economics' team of forecasters and taking a lead role in directing the outlook at a global level, while ensuring consistency between the individual country and sector forecasts. Scott led the Oxford Economics team that worked on the "Asia-11 Illicit Tobacco Indicator 2012" and "Asia-14 Illicit Tobacco Indicator 2013" reports, as well as the Philippine update for 2013, and takes a lead role in a number of Oxford Economics' consultancy projects. Recent examples include work looking at the relationship between cigarette ingredients and smoking quit rates; developing macroeconomic models for the governments of Abu Dhabi, Azerbaijan, Algeria, Libya, and Egypt; and analysing the economic impact of FDI in Singapore.

After completing a degree in Philosophy, Politics, and Economics at St. Edmund Hall, Oxford University, and an MSc in Economics at University College London, Scott joined Oxford Economics in 1997. During his initial five years, he worked as a country analyst for a number of European countries and participated in numerous consultancy projects for a variety of international organisations, governments and multinational companies using both Oxford Economics' Global Economic Model and bespoke economic models.



**Oliver Salmon**

Lead Economist  
Oxford Economics

Oliver Salmon is a Lead Economist working within the Asia-Pacific macro and consultancy team based in Oxford Economics' Singapore office. Oliver takes a leading role in Oxford Economics' consultancy business in the region.

Oliver has worked on a diverse range of consultancy projects since joining Oxford Economics over 5-years ago, spanning clients in both the public and private sectors. Examples of his work include a recent assessment of the scale of non-tariff measures in the automobile sector in ASEAN, estimating the size of illicit trade in tobacco across 14 Asian markets, and identifying the implications of a cap on income tax relief for charitable donations in the UK. He has also undertaken extensive analysis on impact of tax policy on economic output, such as the implications of an increase in tourism related taxes on the economy of Jordan, and the impact of an increase in Air Passenger Duty in the UK, the results of which were presented to HM Treasury. More recently, Oliver presented at the 11th APTF meeting in Hanoi on important policy considerations in tax policy design.

Oliver has a first-class undergraduate degree in Economics from the University of Nottingham, and an MSc in Economics from University College London.

# Foreword

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“Responding to the global call for action on curbing the illicit trade in tobacco products, this 3rd and latest report continues to consolidate knowledge on the subject. It indicates a reduction in illicit trade across the region for the reporting period. While acknowledging this success, it is no time for complacency. With at least 9% of regional tobacco trade illicit worrying trends remain for most economies. More regional coordination is required to support: consumer education; public/private cooperation; greater transparency in international supply chains; the implementation of collaborative enforcement measures and refinement of excise collection regimes that maximize revenue without creating incentives for criminal enterprises to profit from smuggling or this trade will continue to thrive.”

**Allen Bruford**

Former Deputy Director of the World Customs Organisation and Former Executive National Manager of the New Zealand Customs Service

“Policymakers need evidence-based studies in order to make informed decisions on combatting illicit trade and preventing the foregone tax revenue resulting from it. The results of this comprehensive study, a sequel to two previous reports, are useful guides for finance ministries and legislators alike in designing the appropriate taxes on excisable products especially tobacco. In addition, they deepen the government’s understanding of the risk that a less than optimal tax design might lead to higher funds for organised crime.”

**Benjamin Diokno**

Professor of Economics, School of Economics, University of the Philippines, and former Secretary of Budget and Management

“Illicit trade is a serious and growing problem that must be addressed—not only with regard to tobacco products—but also counterfeiting of other goods, piracy, narcotics and human trafficking. This report delivers valuable comparative data that is fundamental in highlighting the growing scale of the trade in illicit tobacco. Consequently, its database and a ranking system that benchmark performance both on a country-specific and regional basis are valuable tools we can all use to determine effective intervention to eliminate supply chain vulnerabilities that allow infiltration of illicit goods. The report serves as a blue-print for all stakeholders, including business and government, to cooperate on fighting illicit trade at the ground level.”

**Jeff Hardy**

Director of Business Action to Stop Counterfeiting and Piracy

“This latest study reports a welcome fall in illicit consumption of cigarettes but the underlying, extensive research also highlights many worrying aspects of the illicit trade, not least the enormous tax losses. Yet again the report will be of enormous assistance to industry bodies, manufacturers, governments, policy makers, tax administrators and tax economists alike.”

**Dave Hartnett**

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

“The dark side of global trade is thriving with hundreds of billions of dollars in illicit commerce – various international organizations estimate the illegal economy accounts for 8 to 15 percent of world GDP. The illegal economy poses a security threat when it begins to create criminalized markets and captured states. The United States will continue to enhance international cooperation with key partners to combat the lethal nexus of organized crime, illicit trade, corruption, and money laundering by transnational threat networks.”

**David M. Luna**

Senior Director for National Security and Diplomacy, Office of Anti-Crime Programs, U.S. Department of State and Chairman of the Charting Illicit Trade Task Force, OECD



## Foreword

“It is well known that the proceeds of trading in illicit products funds organised crime and terrorism . Illicit products whether these be tobacco, or other consumer goods affects each and every one of us. It also has a substantial impact on Governments who lose billions of dollars in tax and duty revenues. Revenue that could have been applied to new schools, hospitals and infrastructure. This study can only be helpful to create greater understanding of illicit trade so both Governments and Law Enforcement Agencies can prioritise their resources and act appropriately. Crime Stoppers International has made trading in Illicit products, like tobacco, one of its key priorities in its long term strategic plan in combatting organised crime and terrorism. There are people in communities in every country around the world that may know something about the perpetrators, we urge them to come forward.”

**Peter Price OAM**  
Vice President of Crime Stoppers International

“The Asia-16 Illicit Tobacco Indicator 2014 is a continuation of the previous reports (Asia-11 and Asia-14). This year, the methodology of the study has been further improved and refined, which is critical for any sound research aimed at supporting policy making. While waiting for public data measuring illicit trade, this report will continue to be in the center of the debate between the partisans of estimates being “too low” and “too high”. My suggestion is to use with prudence all the data made available from all sources, including data from the tobacco industry, and to confront and discuss the various approaches, including methodologies, data collection processes and sources among all relevant stakeholders. Meanwhile, the Asia-16 report remains the only data source of its kind in Asia, measuring illicit cigarette consumption and its related impacts on revenue.”

**Prof. Ernesto Savona**  
Director of Transcrime (Joint Research Centre on Transnational Crime)

“This is a sound and well-organized study which provides significant insights on the measurement of the illicit tobacco trade and its impact on the tax losses in selected Asian countries. As a rigorous reference to the research on the related topics, this report helps political operatives and policy makers to better understand the problem of Illegal behaviour associated with tobacco products before taking effective actions. Its efforts and contributions to the fight against smuggling is worthy of mention and support.”

**Dr. Chu-Wei Tseng**  
Legislator, Legislative Yuan, Taiwan  
Chair Professor for the Department of Public Finance and Taxation, Chinese University of Technology, Taiwan

“Asia 16 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



## Glossary of Terms

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# Glossary of Terms

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

**Asia-11** Group of markets consisting of Australia, Brunei, Hong Kong, Indonesia, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, and Vietnam.

**Asia-14** Group of markets consisting of Australia, Brunei, Cambodia, Hong Kong, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Taiwan, Thailand, and Vietnam.

**Asia-16** Group of markets consisting of Australia, Brunei, Cambodia, Hong Kong, Indonesia, Laos, Macao, Malaysia, Myanmar, Pakistan, Philippines, Singapore, South Korea, Taiwan, 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.

**FCTC** The WHO Framework Convention on Tobacco Control.

**FOB** Free on Board.

**FY** Fiscal Year.

**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 Incidence** The percentage share of Illicit Consumption in Total Consumption.

**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 Asia-16 markets.

**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 Domestic Sales volume in a given market.

**mn** Million.

**Non-Domestic Incidence** The percentage share of Non-Domestic in Total Consumption.

**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.

**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 Asia-16 markets.

**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

**Wholesale Smuggling** Transportation, distribution, and sale of large consignments of Contraband.

# Scope

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**This Report provides an overview of the nature of the illicit trade of cigarettes<sup>1</sup> across 16 selected Asian markets (including Australia). It establishes credible 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 and a breakdown between legal and Illicit Consumption.
- Estimate annual government revenue losses from Excise Tax, VAT/GST/sales tax, and Earmarked Taxes on cigarettes.

This year, the selected 16 markets provide for coverage of all 10 ASEAN member countries, as well as Australia, Hong Kong, Macao, Pakistan, South Korea, and Taiwan.<sup>2</sup> Other major Asian markets such as China, India, and Japan are not included due to the lack of credible Illicit Consumption data sources.

<sup>1</sup>Except Australia, where Chop-chop volumes are also included.

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

# Methodology

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**We developed an Illicit Trade Flows Model to estimate the size of Illicit Consumption and trade flows in the Asia-16 markets. A detailed methodology is contained within the Annexes accompanying this Report, a summary of which is provided below:**

- We used official statistics on duty-paid sales and In-Market Sales data to measure Legal Domestic Sales.
- We adjusted for Outflows of Legal Domestic Sales based on Empty Pack Surveys<sup>1</sup> and consumer research to give a measure of Legal Domestic Consumption.
- A variety of sources, which included Empty Pack Surveys, consumer research, retail audits, and additional corroboration by other studies, were combined to establish robust estimates of the incidence and size of Non-Domestic Inflows, to give a measure of Total Consumption.
- The Empty Pack Surveys and consumer surveys provided 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 refinement of the estimates of incidence and volume of Inflows.
- Information from surveys and estimates of Non-Domestic Legal Inflows based on passenger data and Smoking Prevalence were then used to identify illicit Inflows (i.e. Counterfeit, Contraband, and Non-Domestic Illicit with Unspecified Market Variant).
- Retail audits were primarily used to identify domestically-produced illicit cigarettes where relevant.
- Price and tax levels and structures for 2014 were used to estimate tobacco Tax Losses associated with Illicit Consumption in each market. For those markets where the fiscal year differs from the calendar year, for the purpose of providing a comparison between countries, fiscal year data were adapted to be presented on a calendar year basis also.
- Throughout this Report, figures presented in tables and charts may not add up due to rounding.

<sup>1</sup>Conducted by independent research companies and commissioned by PM or jointly by several tobacco manufacturers.





## Executive Summary

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# Executive Summary: Overview

This Report is the third release of the Asia Illicit Tobacco Indicator series, following the publications of the Asia-11 Report in 2013 and Asia-14 Report in 2014.<sup>1</sup> The availability of data on Illicit Consumption for Macao and South Korea has enabled us to expand the coverage of this year's Report to include both markets.

Major Asian markets such as China, India, and Japan are not included due to the lack of credible and reliable data on Illicit Consumption. However, it is envisaged that the market coverage will be further expanded in future research pending the availability of credible data.

## **In 2014, 9.2% of all cigarettes consumed in Asia-16<sup>2</sup> were illicit.**

- Total Consumption (legal and illicit) across Asia-16 was estimated at 835.0 billion cigarettes.
- Total legal consumption accounted for 757.7 billion cigarettes, or 90.8% of Total Consumption, of which 753.1 billion cigarettes were Legal Domestic Consumption and 4.6 billion cigarettes were Non-Domestic Legal consumption.
- Illicit Consumption accounted for the remaining 77.2 billion cigarettes.
- Pakistan, Philippines, and Vietnam accounted for more than three-quarters of all illicit cigarettes consumed in Asia-16.
- In Brunei, de-facto all cigarettes consumed were illicit. Illicit levels in Macao and Malaysia are also high, with Illicit Consumption accounting for more than one third of cigarettes consumed in each market.

## **Illicit Consumption fell by 11.7% in ASEAN<sup>3</sup> in 2014.**

- In ASEAN, the share of Illicit Consumption fell by 0.9 percentage points, from 9.1% in 2013 to 8.2% in 2014.
- Seven of the ten ASEAN markets experienced a decline in the volume of Illicit Consumption, with only Brunei, Cambodia, and the Philippines showing an increase in 2014.
- As a consequence, Illicit Consumption fell by 6.4 billion cigarettes in ASEAN, to 48.5 billion.

## **Despite falling in 2014, Illicit Consumption in Asia-11<sup>4</sup> remained higher than 2012 estimates.**

- At 10.5%, the illicit share in Total Consumption was 1.5 percentage points above the estimate for 2012 despite falling by 0.3 percentage points in 2014. This corresponds to a 4.2% drop in the volume of Illicit Consumption since 2013.
- Six markets have experienced a consistent trend in Illicit Incidence since the first Asia Illicit Tobacco Indicator report was conducted (Australia, Brunei, Hong Kong, Philippines, Singapore, and Thailand).
- Hong Kong, Singapore, and Thailand have experienced two consecutive years of decline in both Illicit Incidence and volumes. In Brunei and the Philippines, Illicit Consumption increased in both 2013 and 2014. In Australia, although the volume of Illicit tobacco consumed fell in 2013, as a share of Total Consumption, Illicit Consumption increased in both 2013 and 2014.

## **Asia-16 estimated Tax Losses from Illicit Consumption totalled USD 3.8 billion in 2014.**

- Excise Tax Losses in Australia are more than twice the value of any other market (USD 1.4 billion).
- Australia, Pakistan, and the Philippines all experienced notable increases in the value of estimated Tax Losses, offsetting the overall decline observed across other markets.
- In ASEAN, lower estimated Tax Losses in Indonesia, Singapore, and Thailand offset a large increase in the Philippines (37.7% in USD). As a consequence, total government tax revenue losses were estimated at USD 1.6 billion in 2014, falling by 5.8% in comparison with 2013 (in USD current exchange rates).<sup>5</sup>

<sup>1</sup>Asia-11: Illicit Tobacco Indicator 2012 (September 2013) and Asia-14: Illicit Tobacco Indicator 2013 (September 2014). Both reports can be downloaded at <http://www.oxfordeconomics.com/asia14>

<sup>2</sup>Asia-16: Australia, Brunei, Cambodia, Hong Kong, Indonesia, Laos, Macao, Malaysia, Myanmar, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.

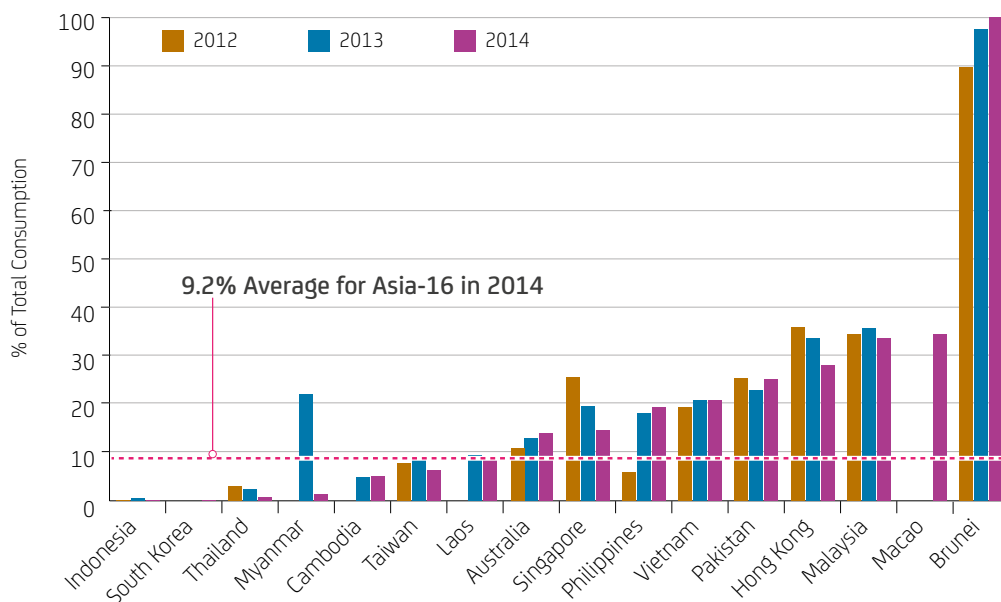
<sup>3</sup>ASEAN: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Taiwan, Thailand, and Vietnam. This is the second year that all ten ASEAN markets are incorporated within the analysis.

<sup>4</sup>Asia-11: Australia, Brunei, Hong Kong, Indonesia, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, and Vietnam. This is the third year that the Asia-11 markets are incorporated within the analysis.

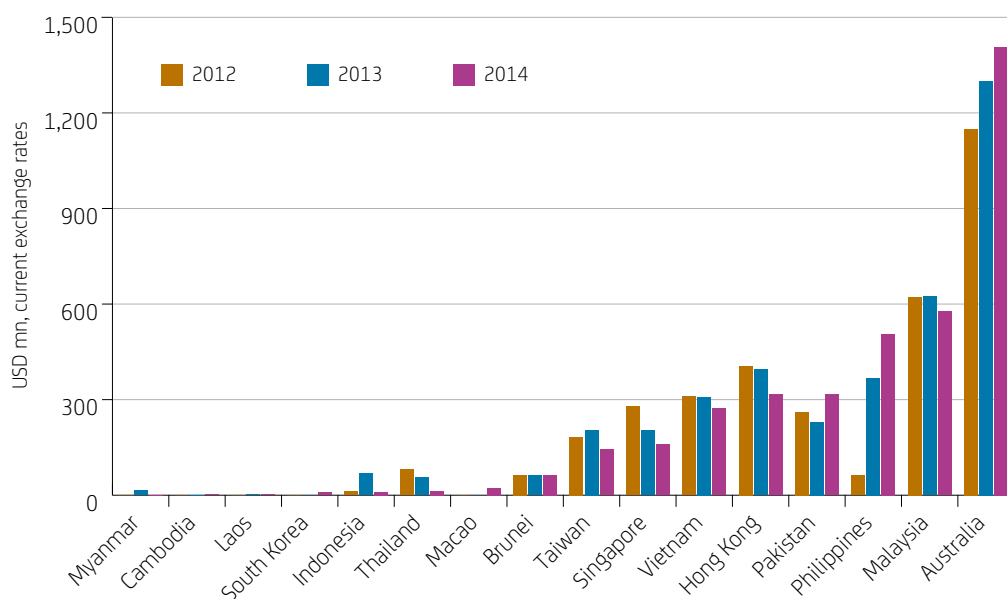
<sup>5</sup>Based on calendar year estimates.



## Asia-16: Illicit Consumption (% of Total Consumption)



## Asia-16: Estimated tobacco Tax Losses (calendar year)



Source: Oxford Economics

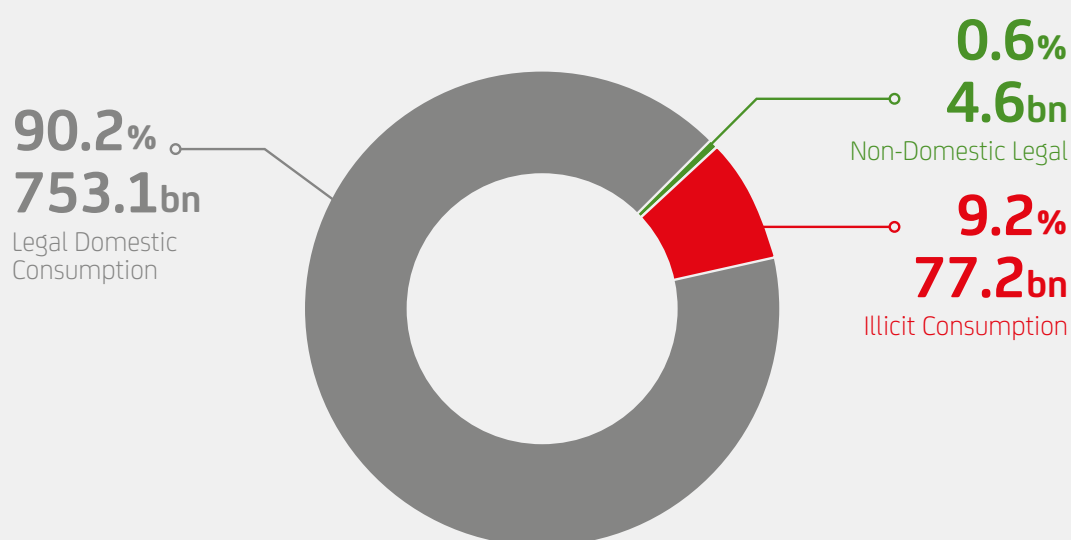
# Executive Summary: 2014 Key Figures for Asia-16

**In 2014, 9.2% of all cigarettes consumed in Asia-16 were illicit.**

- Total Consumption (legal and illicit) across Asia-16 was estimated at 835.0 billion cigarettes in 2014. Of this, 77.2 billion cigarettes were illicit (9.2%).
- Total Illicit Consumption was composed of 36.7 billion of Domestic Illicit (4.4% of Total Consumption), mostly identified in Pakistan and the Philippines, and 40.5 billion Non-Domestic Illicit cigarettes (4.8%), including Counterfeit, Contraband, and Non-Domestic with Unspecified Market Variant.<sup>1</sup>

**Total Tax Losses from Illicit Consumption were estimated at USD 3.8 billion across Asia-16 in 2014, almost 40% of which was contributed by Australia.**

## Asia-16: Composition of Cigarette Consumption 2014



	2014	
	Cigarettes bn	%
<b>Legal Domestic Consumption (LDC)</b>	<b>753.1</b>	<b>90.2</b>
Legal Domestic Sales (LDS)	755.0	–
Outflows of domestic duty-paid cigarettes	-1.9	–
<b>Total Non-Domestic (ND) Inflows</b>	<b>45.1</b>	<b>5.4</b>
Non-Domestic Legal (NDL)	4.6	0.6
Non-Domestic Illicit	40.5	4.8
<b>Domestic Illicit</b>	<b>36.7</b>	<b>4.4</b>
<b>Total Consumption</b>	<b>835.0</b>	<b>100.0</b>
<b>Total Illicit Consumption</b>	<b>77.2</b>	<b>9.2</b>

Source: Oxford Economics

<sup>1</sup>Non-Domestic Illicit includes Australian Chop-chop (unbranded loose tobacco).

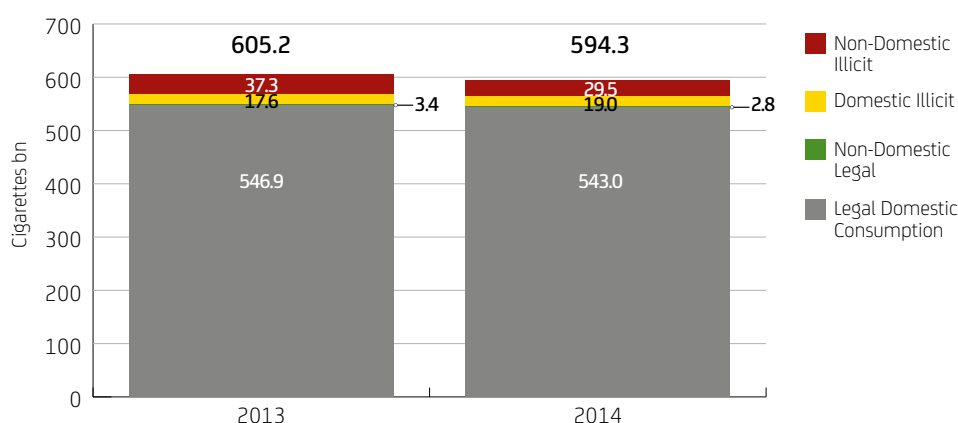
# Executive Summary: 2014 Key Figures for ASEAN

**In 2014, 8.2% of cigarettes consumed in ASEAN were illicit. The share of Illicit Consumption fell by 0.9 percentage points versus 2013.**

- Total Consumption (legal and illicit) across ASEAN was estimated at 594.3 billion cigarettes in 2014. Total Consumption fell by 1.8% versus 2013, underpinned by a decline in both Legal Domestic Sales (-0.7%) and total Non-Domestic Inflows (-20.6%).
- The volume of Non-Domestic Illicit decreased by 7.8 billion cigarettes to 29.5 billion in 2014 (equivalent to 5.0% of Total Consumption). With the exception of Brunei and Cambodia, the remaining eight ASEAN markets experienced a decline in Non-Domestic Illicit in 2014.
- However, Domestic Illicit increased in 2014 (+7.9%), partially offsetting the overall decline in Non-Domestic Illicit.

**Total government Tax Losses from Illicit Consumption fell to USD 1.6 billion in 2014, 5.8% lower than 2013.**

## ASEAN: Composition of Total Consumption (number of cigarettes)



	2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>546.9</b>	<b>90.4</b>	<b>543.0</b>	<b>91.4</b>	<b>-0.7</b>
Legal Domestic Sales (LDS)	548.4	–	544.3	–	-0.7
Outflows of domestic duty-paid cigarettes	-1.5	–	-1.3	–	-15.3
<b>Total Non-Domestic (ND) Inflows</b>	<b>40.7</b>	<b>6.7</b>	<b>32.3</b>	<b>5.4</b>	<b>-20.6</b>
Non-Domestic Legal (NDL)	3.4	0.6	2.8	0.5	-17.8
Non-Domestic Illicit	37.3	6.2	29.5	5.0	-20.9
<b>Domestic Illicit</b>	<b>17.6</b>	<b>2.9</b>	<b>19.0</b>	<b>3.2</b>	<b>7.9</b>
<b>Total Consumption</b>	<b>605.2</b>	<b>100.0</b>	<b>594.3</b>	<b>100.0</b>	<b>-1.8</b>
<b>Total Illicit Consumption</b>	<b>54.9</b>	<b>9.1</b>	<b>48.5</b>	<b>8.2</b>	<b>-11.7</b>

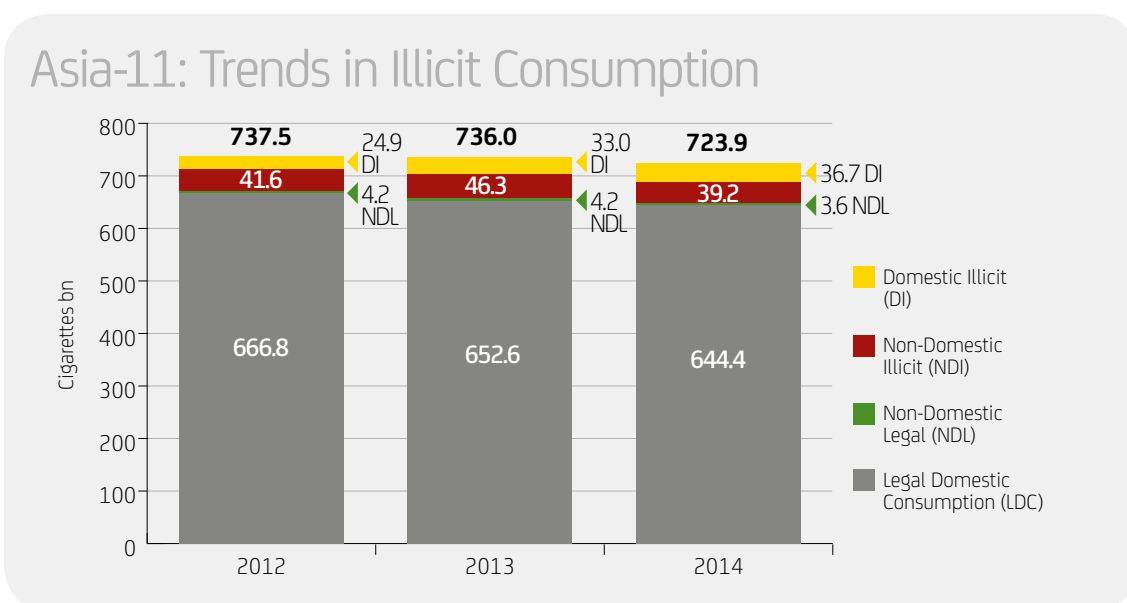
Source: Oxford Economics

# Executive Summary: Trends in Illicit Consumption

With two years of data now available, historical comparisons can be drawn in ASEAN, Asia-11, and Asia-14. For Asia-11, we now have three years of data to analyse evolving trends in Illicit Consumption.

## In Asia-11, Illicit Consumption in 2014 remains above 2012 levels despite falling by 4.2% in 2014.

- In 2014, the illicit share of Total Consumption in Asia-11 was 10.5%, falling by 0.3 percentage points. However, the illicit share of Total Consumption remains above the 9.0% estimated for 2012.
- In volume terms, Illicit Consumption amounted to 75.9 billion cigarettes. This was 14.2% higher than in 2012.
- Illicit Consumption in Asia-11 fell by a total of 3.3 billion cigarettes in 2014.
- In total, eight of the Asia-11 markets experienced a decline in the volume of Illicit Consumption in 2014, three of which have seen Illicit Consumption decline for two consecutive years (Hong Kong, Singapore, and Thailand).
- As a share of Total Consumption, Australia, Brunei, and the Philippines have all seen Illicit Consumption increase in both 2013 and 2014.
- The Philippines has experienced significant and continuous growth in Domestic Illicit following a series of sharp Excise Tax hikes. Illicit Consumption is now over three times higher than in 2012.
- In Brunei, Total Consumption was almost entirely served by illicit products since the withdrawal of the last major tobacco manufacturer in 2013.



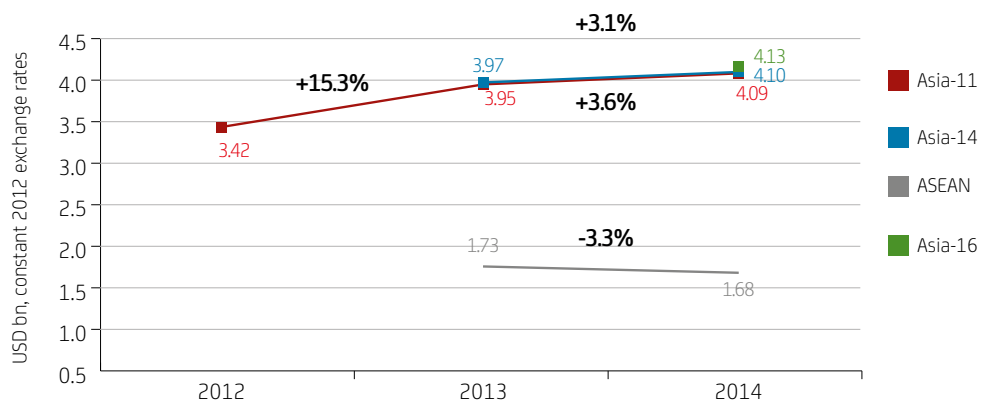
Source: Oxford Economics

# Executive Summary: Trends in Estimated Tax Losses

## Tax Losses from Illicit Consumption continued to rise in 2014, despite the decline in the volume of Total Illicit Consumption.

- Tax Losses are presented in USD to provide a comparison between markets and allow for regional aggregations. In 2014, estimated Tax Losses in Asia-11 were USD 3.8 billion. However, with many currencies depreciating against the USD since 2012, presenting the estimated Tax Losses in current exchange rates would understate the overall impact on government finances. Indeed, assuming estimated Tax Losses have remained constant, fluctuating currencies alone would imply a 6.6% decline in total estimated Tax Losses since 2012 in Asia-11. As such, we also present figures in constant 2012 exchange rates.<sup>1</sup>
- When removing the impact of fluctuating exchange rates, Tax Losses have increased for two consecutive years in Asia-11.
- In 2014, estimated tobacco Tax Losses increased by 3.6% in Asia-11 (at constant exchange rates). This was underpinned by a significant increase in estimated Tax Losses in three markets: Australia, Pakistan, and the Philippines. In each market, Excise Tax rates on cigarettes have increased in the most recent fiscal year.
- Overall, estimated Tax Losses have increased by 19.5% since 2012 (at constant exchange rates). Government Tax Losses in Australia are more than twice that of any other market, a function of the size of the market, the scale of Illicit Consumption, and the high level of Excise Taxes on cigarettes.
- In total, estimated Tax Losses were higher in 2014 than in 2012 in five markets: Australia, Indonesia, Brunei, Pakistan, and the Philippines.

### Asia-16: Estimated Tobacco Tax Losses





Source: Oxford Economics

<sup>1</sup>See Annex B for exchange rate assumptions used.

# Executive Summary: Dashboard

% of Total Consumption unless otherwise stated	Asia-16 Total 2014	Australia <sup>1</sup>			Brunei			Cambodia			Hong Kong			Indonesia			Laos			Macao			
		2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	
Legal Domestic Sales (LDS)	90.4	88.7	86.5	85.6	10.3	2.4	0.1	-	100.4	99.2	56.8	58.6	66.2	99.9	99.4	99.8	-	82.7	82.6	-	-	50.9	63.4
Outflows of domestic duty-paid cigarettes	0.2	-	-	-	-	-	-	-	5.8	4.6	0.1	-	2.5	0.2	0.2	0.1	-	0.3	0.3	-	-	2.2	1.0
Legal Domestic Consumption (LDC)	90.2	88.7	86.5	85.6	10.3	2.4	0.1	-	94.6	94.6	56.7	58.6	63.7	99.7	99.2	99.7	-	82.3	82.3	-	-	48.6	62.4
Total Non-Domestic Inflows (ND)	5.4	11.3	13.5	14.4	89.7	97.6	99.9	-	5.4	5.4	43.3	41.4	36.3	0.3	0.7	0.3	-	17.7	17.7	-	-	51.4	37.6
Non-Domestic Legal (NDL)	0.6	0.4	0.4	0.5	-	-	-	-	0.5	0.3	7.4	7.9	8.3	0.2	0.2	0.2	-	8.2	8.9	-	-	16.8	3.1
Non-Domestic Illicit	4.8	10.9	13.0	13.9	89.7	97.6	99.9	-	4.9	5.0	35.9	33.6	28.0	0.1	0.5	0.1	-	9.5	8.8	-	-	34.5	34.5
Contraband	0.7	2.5	5.1	5.8	20.0	22.0	-	-	-	0.2	28.6	28.4	25.3	0.0	0.5	0.0	-	7.0	6.6	-	-	29.4	-
Counterfeit	0.1	0.3	0.8	0.0	-	-	-	-	-	-	4.0	2.9	1.8	0.1	-	-	-	0.7	0.7	-	-	0.9	-
Non-Domestic with Unspecified Market	4.0	8.1	7.1	8.0	69.6	75.6	99.9	-	4.9	4.9	3.2	2.3	1.0	-	-	0.0	-	1.8	1.5	-	-	4.2	34.5
Domestic Illicit	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-
Total Illicit Consumption	9.2	10.9	13.0	13.9	89.7	97.6	99.9	-	4.9	5.0	35.9	33.6	28.0	0.1	0.6	0.1	-	9.5	8.8	-	-	34.5	34.5
Total Consumption (cigarettes bn)	835.0	24.7	24.8	23.1	0.4	0.3	0.3	-	8.2	8.5	5.1	5.4	4.8	302.7	310.3	314.6	-	2.9	3.0	-	-	1.1	22.9
Total Tax Losses <sup>2</sup> (USD mn)	3,819.2	1,150.5	1,292.9	1,406.8	63.1	62.0	63.9	-	1.2	1.4	405.3	395.5	315.5	11.0	67.3	10.1	-	2.4	2.3	-	-	23.1	622.0

 Increasing trend from previous year<sup>3</sup>

 Declining trend from previous year<sup>3</sup>

Source: Oxford Economics

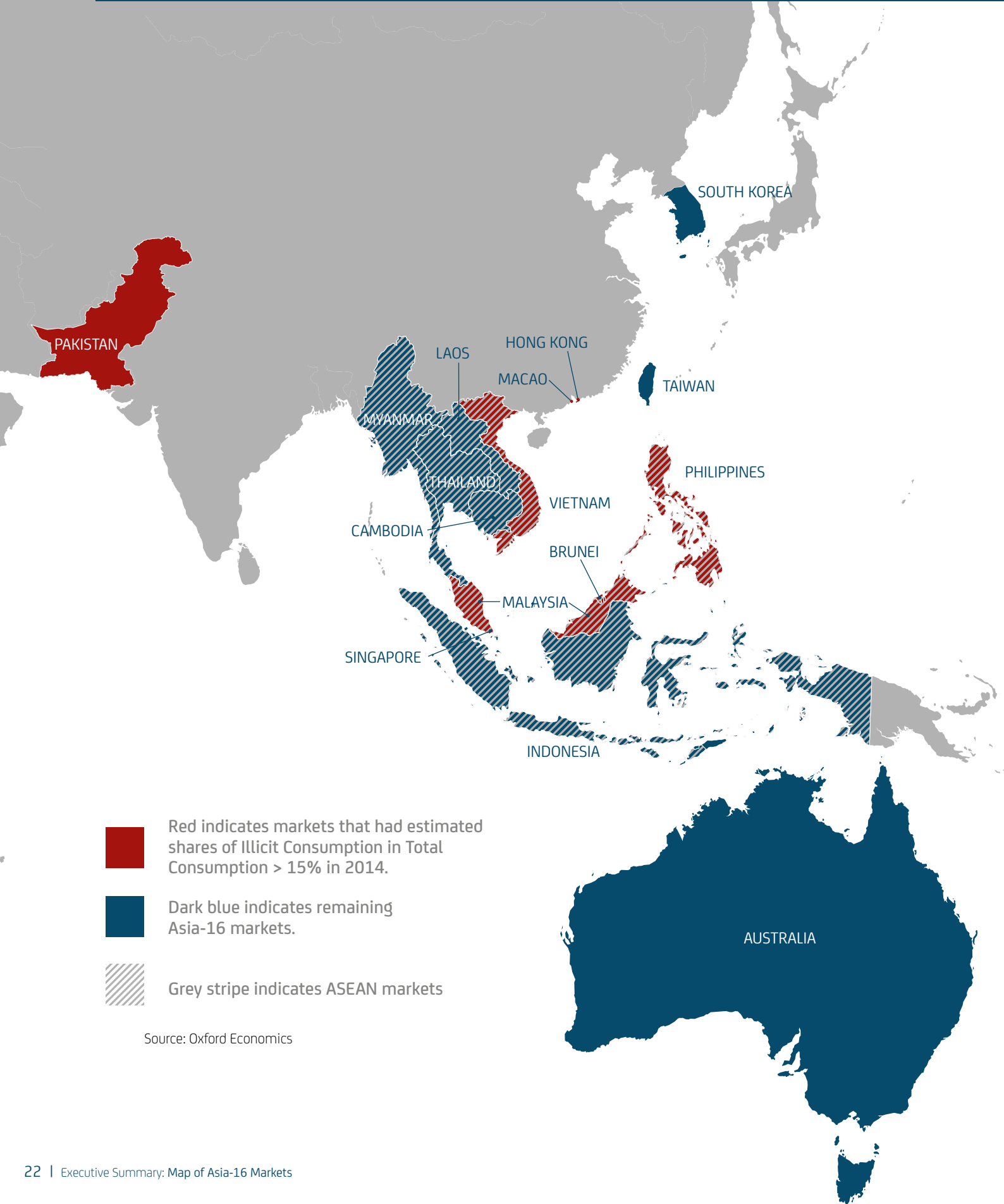
<sup>1</sup>For Australia, Legal Domestic Sales includes loose tobacco, and Non-Domestic Illicit and Tax Loss estimates include Chop-chop (unbranded loose tobacco). A conversion rate of 0.8 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on the rate applied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

<sup>2</sup>Calendar year, expressed in current exchange rates.

<sup>3</sup>Confined to Illicit Consumption and Tax Loss estimates only.

Malaysia			Myanmar			Pakistan			Philippines			Singapore			South Korea			Taiwan			Thailand			Vietnam		
2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
61.3	64.3	-	76.3	96.3	74.4	77.2	74.6	94.1	81.8	80.5	74.4	80.5	86.1	-	-	100.0	89.9	89.7	91.8	95.7	96.5	99.2	80.1	78.8	78.8	
1.0	1.1	-	-	-	-	0.0	0.0	0.1	0.1	0.1	-	0.1	0.7	-	-	0.5	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.2	0.2	
60.3	63.2	-	76.3	96.3	74.4	77.1	74.6	94.0	81.8	80.4	74.4	80.4	85.4	-	-	99.5	89.9	89.7	91.7	95.7	96.4	99.0	80.0	78.6	78.6	
39.7	36.8	-	23.7	3.7	3.7	4.3	4.3	0.4	2.0	1.0	25.6	19.6	14.6	-	-	0.5	10.1	10.3	8.3	4.3	3.6	1.0	20.0	21.4	21.4	
4.1	3.1	-	1.7	2.4	0.2	0.1	0.1	0.1	0.1	0.1	-	-	-	-	-	0.4	2.4	1.6	1.9	1.4	1.3	0.3	0.6	0.8	0.8	
35.6	33.7	-	22.0	1.3	3.5	4.2	4.2	0.3	1.8	0.9	25.6	19.6	14.6	-	-	0.1	7.7	8.7	6.4	2.9	2.3	0.7	19.4	20.7	20.7	
-	-	-	14.8	0.9	0.3	0.4	0.5	-	-	0.0	24.2	18.7	13.4	-	-	0.1	2.9	4.6	2.1	0.7	0.4	0.4	0.2	1.0	1.0	
-	-	-	0.2	-	0.0	0.1	0.1	0.2	1.8	0.7	0.0	-	0.1	-	-	-	-	-	-	0.6	0.6	0.2	-	0.0	0.0	
35.6	33.7	-	7.1	0.3	3.0	3.7	3.6	0.1	0.1	0.1	1.4	0.9	1.1	-	-	-	4.8	4.2	4.4	1.6	1.3	0.0	19.2	19.7	19.7	
-	-	-	-	-	21.9	18.6	21.1	5.6	16.3	18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35.6	33.7	-	22.0	1.3	25.4	22.8	25.2	5.9	18.1	19.4	25.6	19.6	14.6	-	-	0.1	7.7	8.7	6.4	2.9	2.3	0.7	19.4	20.7	20.7	
21.9	19.9	-	10.4	9.1	86.0	82.6	84.0	108.7	105.5	102.3	3.5	3.4	3.3	-	-	89.4	39.5	39.6	38.2	40.5	39.4	37.6	103.4	102.9	95.8	
623.5	577.1	-	13.9	0.7	260.5	230.4	315.7	61.9	367.5	506.3	277.9	202.7	159.0	-	-	8.3	182.7	205.1	143.1	80.3	55.7	13.7	309.5	308.5	272.0	

# Executive Summary: Map of Asia-16 Markets



-  Red indicates markets that had estimated shares of Illicit Consumption in Total Consumption > 15% in 2014.
-  Dark blue indicates remaining Asia-16 markets.
-  Grey stripe indicates ASEAN markets

Source: Oxford Economics





## Asia-16 Regional Overview

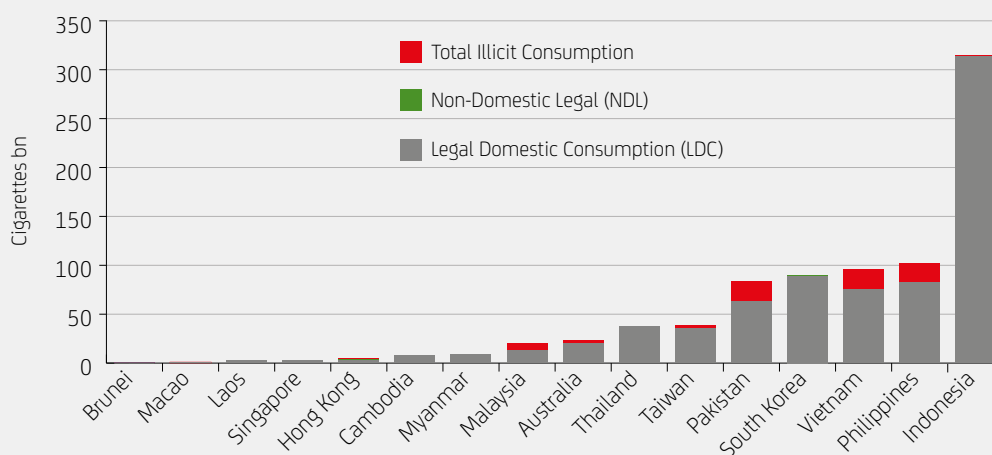
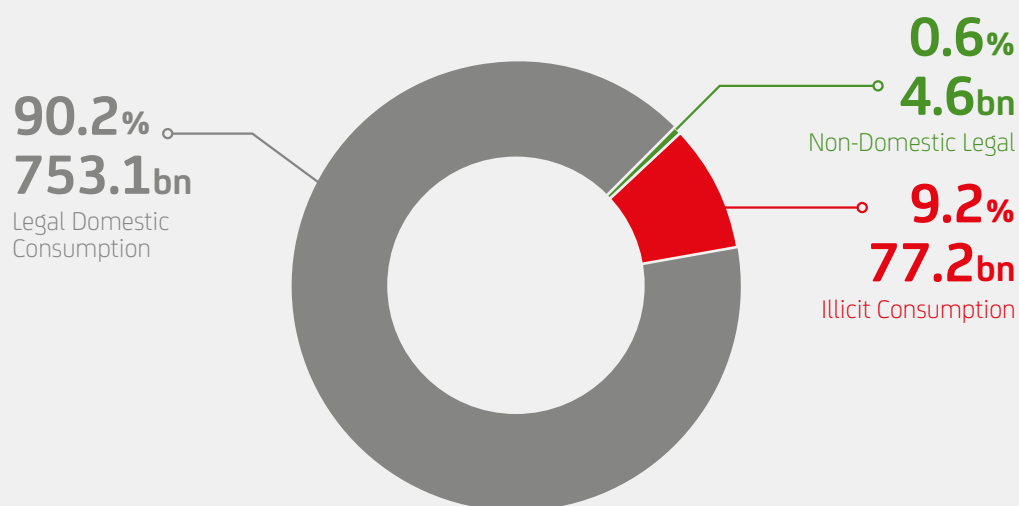
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# Asia-16 Regional Overview: Total Consumption

Total Consumption (legal and illicit) across Asia-16 was an estimated 835.0 billion cigarettes in 2014. Total cigarette consumption consists of:

- **Legal Domestic Consumption** – 753.1 billion cigarettes (90.2% of Total Consumption).
- **Non-Domestic Legal** – representing cigarettes that are brought into the market legally by consumers, which amounted to 4.6 billion cigarettes (0.6% of Total Consumption).<sup>1</sup>
- **Illicit Consumption** – 9.2% of Total Consumption or 77.2 billion cigarettes were estimated to have been illicit, consisting of consumption of Non-Domestic Illicit<sup>1</sup> (Counterfeit, Contraband, and Non-Domestic with Unspecified Market Variant) and Domestic Illicit cigarettes.

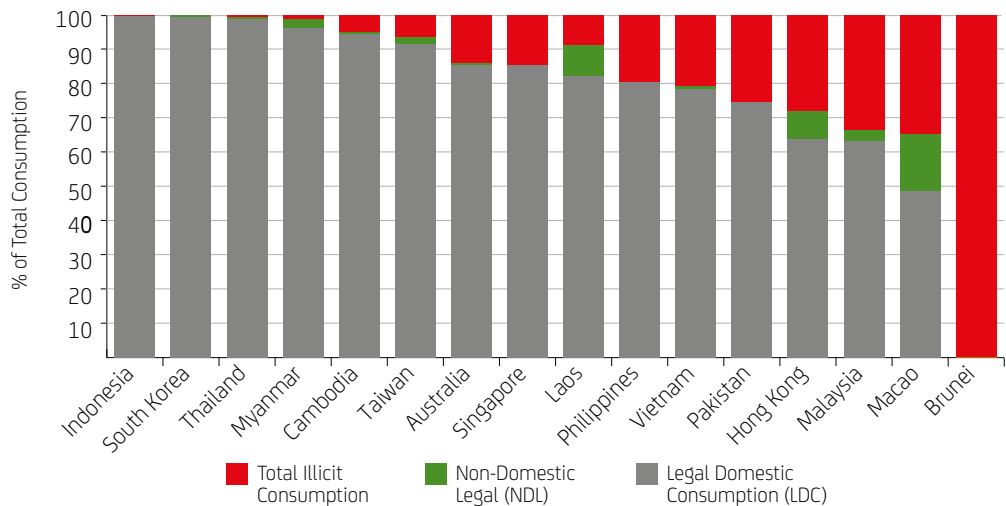
## Asia-16: Composition of cigarette consumption 2014



Source: Oxford Economics

<sup>1</sup>Non-Domestic Illicit includes Australian Chop-chop (unbranded loose tobacco).

## Asia-16: Composition of cigarette consumption 2014



Source: Oxford Economics

## Asia-16: Composition of cigarette consumption 2014

	2014	
	Cigarettes bn	%
<b>Legal Domestic Consumption (LDC)</b>	<b>753.1</b>	<b>90.2</b>
Legal Domestic Sales (LDS)	755.0	–
Outflows of domestic duty-paid cigarettes	-1.9	–
<b>Total Non-Domestic Inflows (ND)</b>	<b>45.1</b>	<b>5.4</b>
Non-Domestic Legal (NDL)	4.6	0.6
Non-Domestic Illicit	40.5	4.8
<b>Domestic Illicit</b>	<b>36.7</b>	<b>4.4</b>
<b>Total Consumption</b>	<b>835.0</b>	<b>100.0</b>
<b>Total Illicit Consumption</b>	<b>77.2</b>	<b>9.2</b>

Source: Oxford Economics

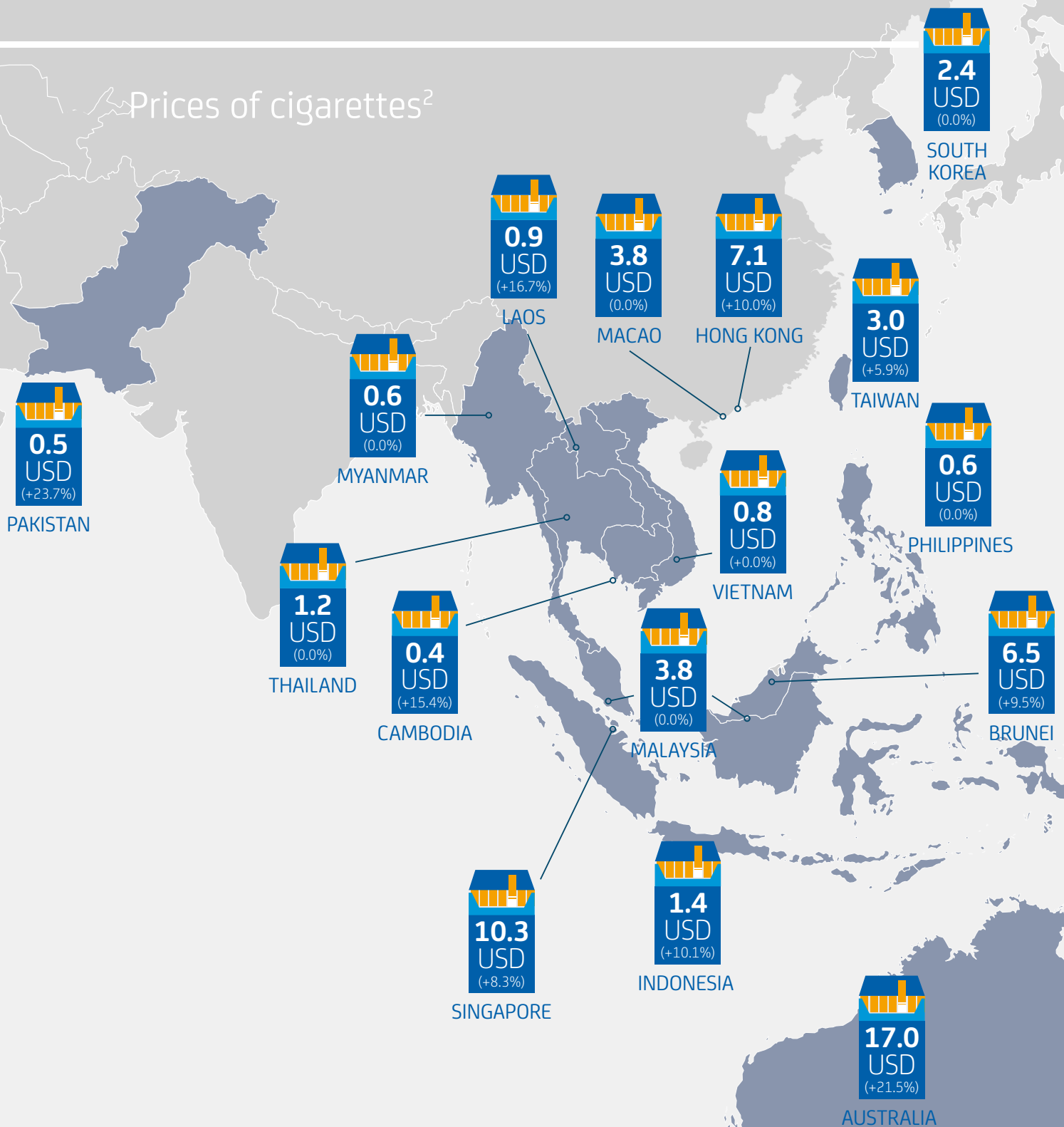
# Asia-16 Regional Overview: Prices

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- **Prices for cigarettes in Australia are the highest in the world**, with the price of the Most Sold Brand reaching USD 17.0 per pack of 20 cigarettes in 2014.<sup>1</sup> Cigarette prices have increased significantly in recent years – with the federal government embarking on a series of four annual 12.5% increases in excise duty on tobacco products. The first two were implemented in December 2013 and September 2014. As a consequence, the price of the Most Sold Brand has increased by nearly one-third since 2012 when the Asia Illicit Tobacco Indicator series commenced.
- **The price of a pack of 20 cigarettes in Australia is significantly higher than in the next highest priced markets in Asia-16, such as Singapore (USD 10.3) and Hong Kong (USD 7.1).** In both markets, Excise Tax rates were increased in 2014, by 10.2% in Singapore and by 11.7% in Hong Kong.
- **By contrast, a pack of the Most Sold Brand of cigarettes will cost consumers less than USD 1.0 in six of the Asia-16 markets.** Prices remain the lowest in Cambodia, after also registering the lowest price in the “Asia-14 Illicit Tobacco Indicator 2013” report. This is despite a 15.4% rise in the price of the Most Sold Brand following an increase in the Excise Tax rate in mid-2014.
- **Overall, the price of cigarettes rose in nine of the Asia-16 markets.** In Australia and Pakistan, prices have increased by more than one-fifth since 2013. In Australia, this was driven by the two tax increases of 12.5%, while in Pakistan there was a large Excise Tax hike implemented at the beginning of the 2014/15 fiscal year, most notably on the low-priced tax tier (+15.4%).
- **Since the Asia Illicit Tobacco Indicator research commenced, the Philippines has experienced the most significant rise in cigarettes prices.** The price of the Most Sold Brand in the Philippines has risen by 59.4% since 2012, driven by significant Excise Tax increases.

<sup>1</sup>Australian pack price based on an equivalent calculated from the actual price for a pack of 25, as a pack of 20 is not available in this market.

## Prices of cigarettes<sup>2</sup>



Source: Oxford Economics based on PM data

<sup>2</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Price per pack of 20 of the Most Sold Brand in 2014 in Brunei sourced from the WHO Report on the Global Tobacco Epidemic, 2015. Figures in brackets reflect % changes in local currency from October 2013. In the Philippines, while the price of the Most Sold Brand did not increase in 2014, prices did increase in the low price segment.

# Asia-16 Regional Overview: Illicit Consumption

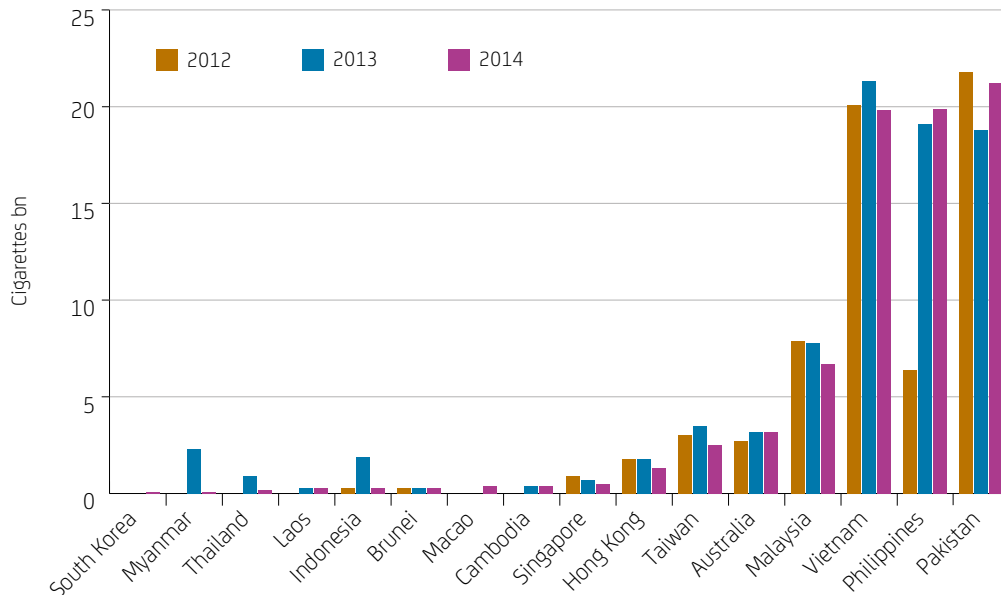
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## **Illicit Consumption in Asia-16 was estimated at 77.2 billion cigarettes, equivalent to 9.2% of Total Consumption in 2014.**

- In total, an estimated 77.2 billion illicit cigarettes were consumed across Asia-16 in 2014. This is equivalent to 9.2% of Total Consumption, composed of 40.5 billion Non-Domestic Illicit cigarettes and 36.7 billion Domestic Illicit cigarettes.
- To give this figure some perspective, it was almost equivalent to the total estimated volume of cigarettes consumed in Pakistan in 2014.
- In nine markets – Australia, Brunei, Hong Kong, Macao, Malaysia, Pakistan, Philippines, Singapore, and Vietnam – Illicit Consumption was found to be higher than the Asia-16 average.
- In Macao and Malaysia, around one in every three cigarettes consumed was estimated to be illicit. In Hong Kong, 28% of Total Consumption was estimated to be illicit. In Pakistan, Philippines, and Vietnam, around one in every five cigarettes consumed was estimated to be illicit.
- In Macao, the level of Illicit Consumption was driven by an extremely high level of Non-Domestic Illicit Inflows – accounting for 34.5% of Total Consumption – as a consequence of significant cross-border passenger flows. For the same reason, Non-Domestic Illicit Inflows remain high in Hong Kong. In both markets, the number of inbound passenger arrivals every year far exceeds the total population.
- Illicit Chop-chop in Australia accounted for 54% of the 3.2 billion illicit cigarettes (equivalents) consumed in Australia.<sup>1</sup> In total, Illicit Consumption represented 13.9% of Total Consumption in Australia in 2014. Due to a lack of robust data in other markets (e.g., Thailand), Australia was the only market for which an analysis of the RYO market was feasible.
- In total, seven markets were found to have an illicit share in Total Consumption below the Asia-16 average: Cambodia, Indonesia, Laos, Myanmar, South Korea, Taiwan, and Thailand.
- Pakistan, Philippines, and Vietnam are the largest markets in terms of the volume of illicit cigarettes consumed in 2014. In total, the three markets accounted for nearly 80% of total Illicit Consumption in Asia-16, while representing only one-third of Total Consumption.
- In the case of Pakistan and the Philippines, the high level of Illicit Consumption is driven by large and rising volumes of Domestic Illicit Consumption. In Pakistan, 17.7 billion Domestic Illicit cigarettes were consumed in 2014, an increase of 15.5% in comparison with 2013. In the Philippines, Domestic Illicit Consumption increased by 10.8% to an estimated 19.0 billion cigarettes.
- The largest decline was registered in Singapore, where the share of Illicit Consumption in Total Consumption has fallen by 11.0 percentage points (from 25.6% in 2012 to 14.6% in 2014). Over the same period, the share of Illicit Consumption has fallen by 7.8 percentage points in Hong Kong and 2.2 percentage points in Thailand.

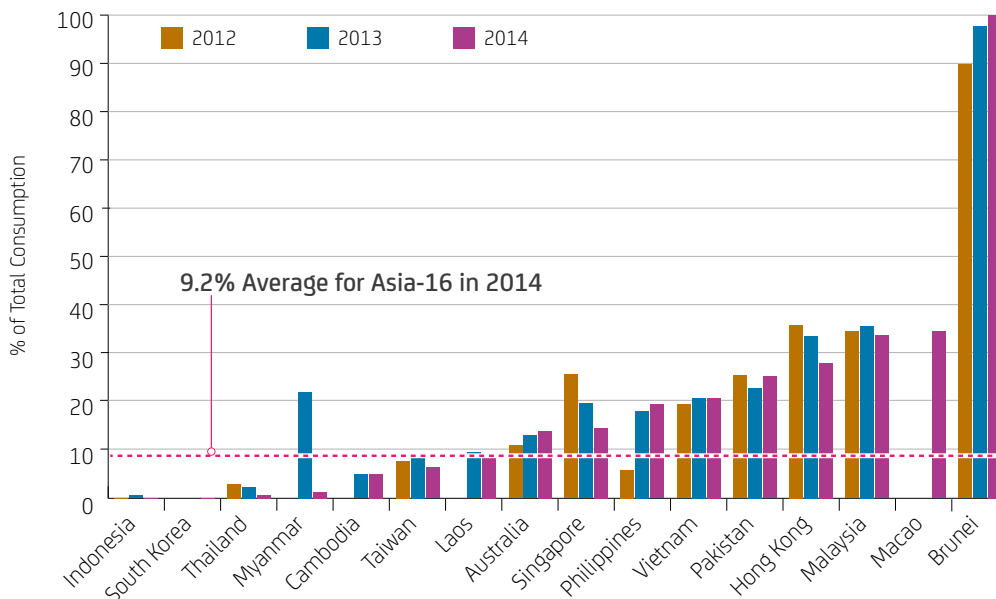
<sup>1</sup>A conversion rate of 0.8 grams per cigarette was applied to turn loose tobacco weight into cigarette equivalent, based on rates applied by the Australian Taxation Office.

## Asia-16: Illicit Consumption (number of cigarettes)



Source: Oxford Economics

## Asia-16: Illicit Consumption (% of Total Consumption)



Source: Oxford Economics

# Asia-11 Regional Overview: Trends in Illicit Consumption

This is the third year of the Asia Illicit Trade Indicator study and so this allows for a more in-depth analysis of the evolution of Illicit Consumption in the 11 markets (Asia-11) included in all three years of this research.

## Total Illicit Consumption in the Asia-11 markets declined in 2014 vs. 2013, but remained higher than 2012.

- Illicit Incidence fell in Asia-11 from 10.8% in 2013 to 10.5% in 2014. The decline was driven by Indonesia, Malaysia, Taiwan, and Vietnam, where the volume of Illicit Consumption fell by a combined 4.7 billion cigarettes.
- Singapore and Hong Kong also experienced notable declines in the share of Illicit Consumption, continuing a trend observed in 2013. In particular, the share of Illicit Consumption in Singapore fell from 25.6% in 2012 to 14.6% in 2014.
- The share of Illicit Consumption rose in five markets in 2014: Australia, Brunei, Cambodia, Pakistan, and the Philippines. In Pakistan and the Philippines, the rising share of Illicit Consumption was a result of an increase in Domestic Illicit Consumption.
- Pakistan experienced the largest increase, with Illicit Consumption rising by 2.4 billion cigarettes to 21.2 billion in 2014, a 12.9% rise from 2013. This almost fully offset a 13.8% decline in Domestic Illicit Consumption in 2013. Therefore, the volume of Illicit Consumption in 2014 remained slightly lower than 2012 (by 0.6 billion cigarettes).

## At 75.9 billion cigarettes, Illicit Consumption remains well above 2012 levels.

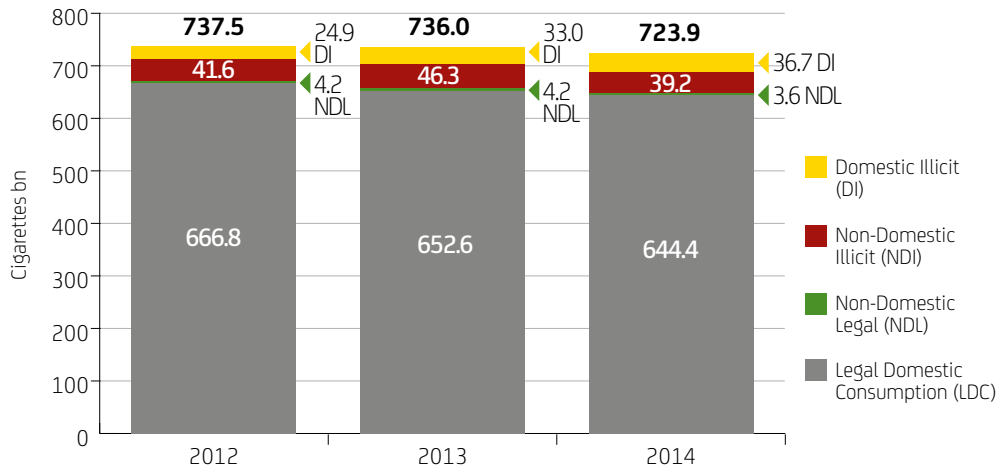
- At 10.5%, the illicit share in Total Consumption for Asia-11 as a whole remains 1.5 percentage points above the 9.0% estimated for 2012. In volume terms, this amounts to around 75.9 billion cigarettes, 14.2% higher than the 66.5 billion illicit cigarettes consumed in 2012.
- Australia, Brunei, and the Philippines have experienced an increasing trend in Illicit Incidence since 2012. In the Philippines, the illicit share of Total Consumption reached 19.4% in 2014, 1.3 percentage points higher than in 2013, and more than three times higher than in 2012. This follows a series of steep Excise Tax hikes that has led to a significant rise in domestic non-duty-paid consumption.
- Thailand, Hong Kong, and Singapore are the only markets in Asia-11 to have experienced a decline in the share of Illicit Consumption in every year since 2012.

## Asia-11: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>666.8</b>	<b>90.4</b>	<b>652.6</b>	<b>88.7</b>	<b>644.4</b>	<b>89.0</b>	<b>-1.3</b>
Legal Domestic Sales (LDS)	668.0	—	653.6	—	645.4	—	-1.3
Outflows of domestic duty-paid cigarettes	-1.1	—	-1.1	—	-1.1	—	-0.6
<b>Total Non-Domestic Inflows (ND)</b>	<b>45.8</b>	<b>6.2</b>	<b>50.5</b>	<b>6.9</b>	<b>42.8</b>	<b>5.9</b>	<b>-15.2</b>
Non-Domestic Legal (NDL)	4.2	0.6	4.2	0.6	3.6	0.5	-13.9
Non-Domestic Illicit	41.6	5.6	46.3	6.3	39.2	5.4	-15.3
Contraband	5.0	0.7	8.2	1.1	5.5	0.8	-33.8
Counterfeit	1.0	0.1	2.5	0.3	0.9	0.1	-63.0
Non-Domestic with Unspecified Market Variant	35.4	4.8	35.5	4.8	32.8	4.5	-7.6
<b>Domestic Illicit</b>	<b>24.9</b>	<b>3.4</b>	<b>33.0</b>	<b>4.5</b>	<b>36.7</b>	<b>5.1</b>	<b>11.4</b>
<b>Total Consumption</b>	<b>737.5</b>	<b>100.0</b>	<b>736.0</b>	<b>100.0</b>	<b>723.9</b>	<b>100.0</b>	<b>-1.6</b>
<b>Total Illicit Consumption</b>	<b>66.5</b>	<b>9.0</b>	<b>79.2</b>	<b>10.8</b>	<b>75.9</b>	<b>10.5</b>	<b>-4.2</b>

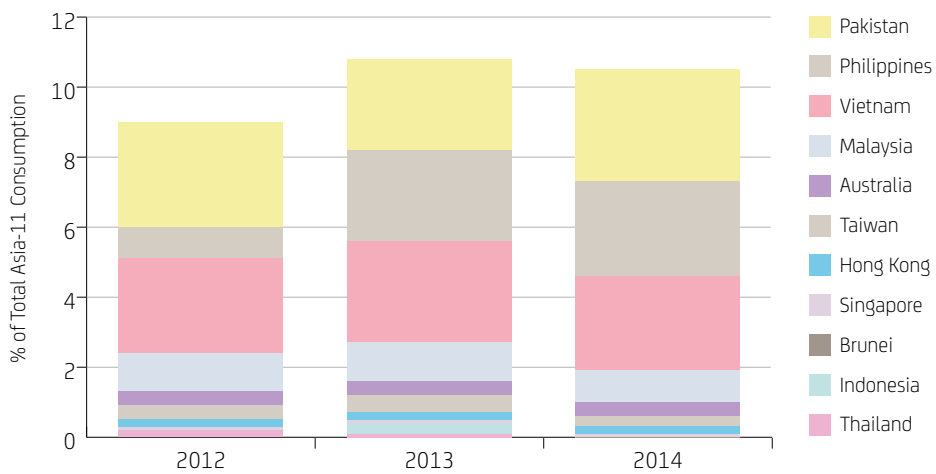


## Asia-11: Trends in Illicit Consumption



Source: Oxford Economics

## Asia-11: Breakdown of Illicit Consumption



Source: Oxford Economics

# Asia-16 Regional Overview: Composition of Illicit Consumption

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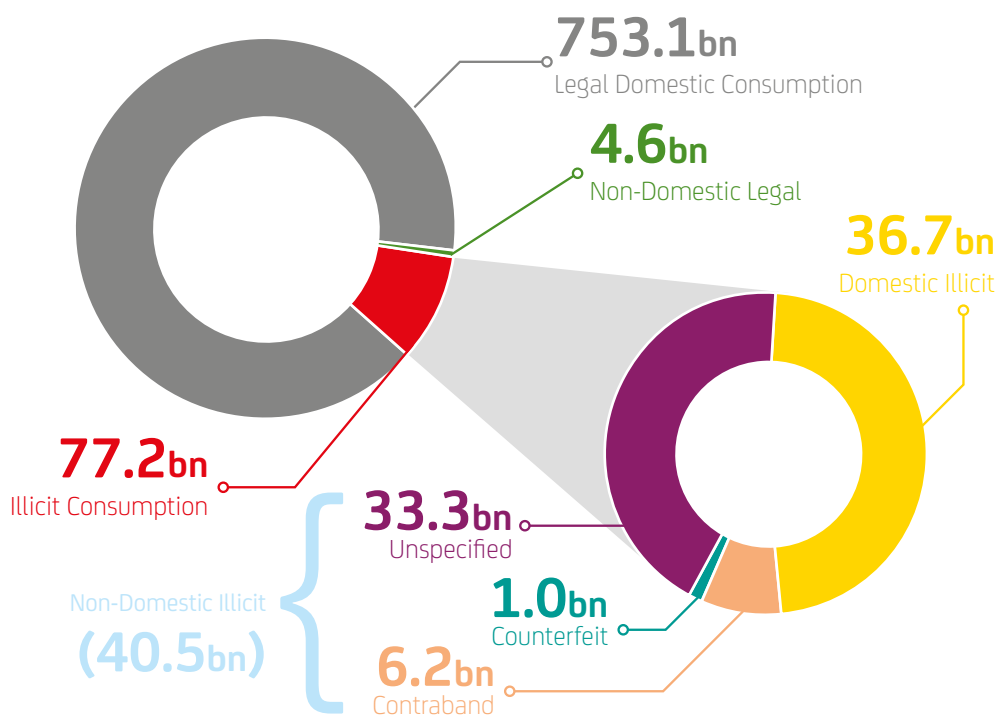
- Total Non-Domestic Illicit Consumption is composed of Non-Domestic Illicit with Unspecified Market Variant, Contraband, and Counterfeit cigarettes<sup>1</sup>:
  - **Non-Domestic Illicit with Unspecified Market Variant** – The total volume of Non-Domestic Illicit with Unspecified Market Variant across the Asia-16 markets was estimated at 33.3 billion cigarettes in 2014. Malaysia, Pakistan, and Vietnam continue to contribute the largest volume of consumption to this category in 2014, the same as in both the Asia-11 and Asia-14 reports (approximately 86% of total Unspecified Market Variant products in 2014).
  - **Contraband (tax-paid from other markets)** – Total Contraband volumes were estimated at 6.2 billion cigarettes in 2014 in the Asia-16 markets. Australia and Hong Kong were the largest destination markets for Contraband cigarettes – both high-price markets – with more than 1.2 billion Contraband cigarettes consumed in each market last year, accounting for over 40% of total Contraband consumption in 2014.
  - **Counterfeit**<sup>2</sup> – Total Counterfeit consumption was estimated at 1.0 billion cigarettes in 2014 in Asia-16. The largest market for the consumption of Counterfeit cigarettes was overwhelmingly the Philippines in 2014, accounting for around three-quarters of total Counterfeit consumption (equivalent to over 700 million cigarettes).
- The decline in Non-Domestic Illicit in 2014 was partially offset by an increase in Domestic Illicit Consumption. In total, Domestic Illicit Consumption rose by 11.4% in 2014, or 3.8 billion cigarettes.
- The contribution of Domestic Illicit would be higher if estimates from the Center for Economic & Public Policy Studies at Gadjah Mada University, Indonesia, were included.<sup>3</sup> Based on analysis of Excise Tax stamps on a sample of cigarette packets purchased, the university reported a Domestic Illicit share in Total Consumption of 11.7% in 2014, having increased from 8.5% in 2012. Incorporating this estimate into Asia-16, the share of Illicit Consumption in Total Consumption would be an estimated 13.6% in 2014, equivalent to 115.3 billion cigarettes.

<sup>1</sup>Non-Domestic Illicit with Unspecified Market Variant includes Australian Chop-chop (unbranded loose tobacco).

<sup>2</sup>Note 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, Singapore, and Taiwan. As such, Total Counterfeit volumes could be underestimated as the analysis only includes those identified by participating companies.

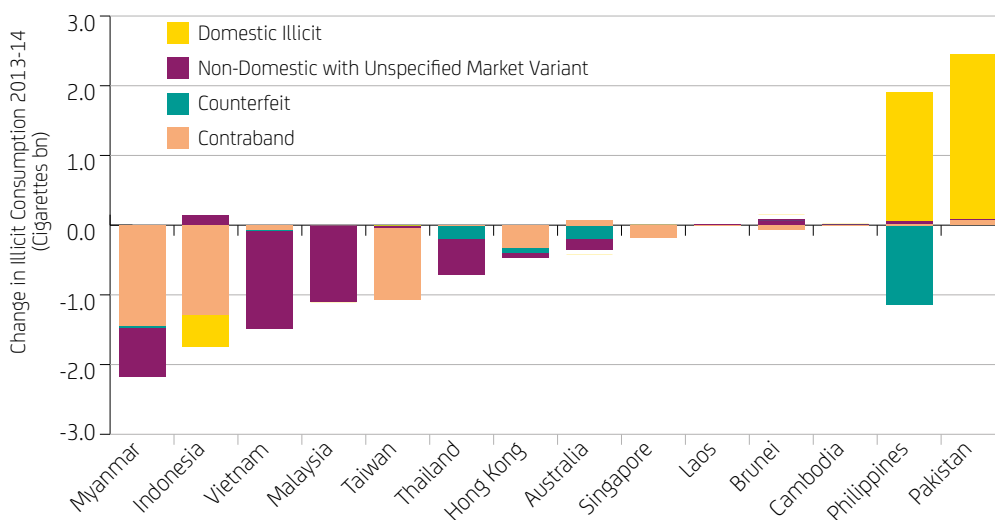
<sup>3</sup>Center for Economic & Public Policy Studies, Gadjah Mada University, Indonesia, Survey of Illegal Cigarettes 2014; Final Report, 2015. Domestic Illicit cigarettes were identified based on violations in the application (or absence) of Excise Tax stamps.

## Asia-16: Composition of cigarette consumption 2014



Source: Oxford Economics

## Asia-14: Composition of Illicit Consumption 2014 (number of cigarettes)



Source: Oxford Economics

# Asia-16 Regional Overview: Composition of Non-Domestic Illicit Consumption

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The majority of Non-Domestic cigarettes are classified as **Non-Domestic of Unspecified Market Variant**, as the packs do not bear any market or duty-free specific markings (such as health warnings or tax stamps), that would allow identification of their initial market of intended retail sale. In addition, some packs classified as Contraband or Non-Domestic with Unspecified Market Variant might actually be Counterfeit if their brand owners did not participate in the research (Empty Pack Surveys or consumer research) and therefore did not authenticate them as part of the pack analysis process.<sup>1</sup>

Of those cigarettes that are identified by the market of intended retail sale, China is the largest market for Non-Domestic Illicit Inflows.<sup>2</sup> In total, 3% of Non-Domestic Illicit cigarettes consumed in Asia-16 were intended for the Chinese market in 2014. Other large markets include Taiwan (2.5%), Korea (1.7%), and Cambodia (1.3%).

The brands having the highest contribution (as measured by volume) to the products with Unspecified Market Variant, excluding Australian Chop-chop (unbranded loose tobacco), in 2014 are illustrated here. At the Asia-16 level, the top five brands categorised as Non-Domestic of Unspecified Market Variant as identified by the Empty Pack Surveys are:

- Jet: 11.5 bn cigarettes (primarily identified in Vietnam)
- Hero: 6.2 bn (Vietnam)
- Gudang Garam: 1.6 bn (Malaysia)
- John: 1.5 bn (Malaysia)
- Pine: 1.3 bn (Pakistan)

<sup>1</sup>Note that this Report only considers Outflows to other Asia-16 markets and therefore may underestimate total Outflows from each market. Furthermore, this Report includes only Non-Domestic packs that are identified as coming from a specific market through pack markings. When the intended market is unknown, these packs are classified as Non-Domestic with Unspecified Market Variant. Therefore, the Report may underestimate the volume of illicit cigarettes attributed to some of the markets.

<sup>2</sup>Based on Analysis on Empty Pack Surveys in Asia-16 markets.



Source: Oxford Economics  
Figures in brackets represent total volume of Unspecified Market Variant cigarettes identified in 2014.

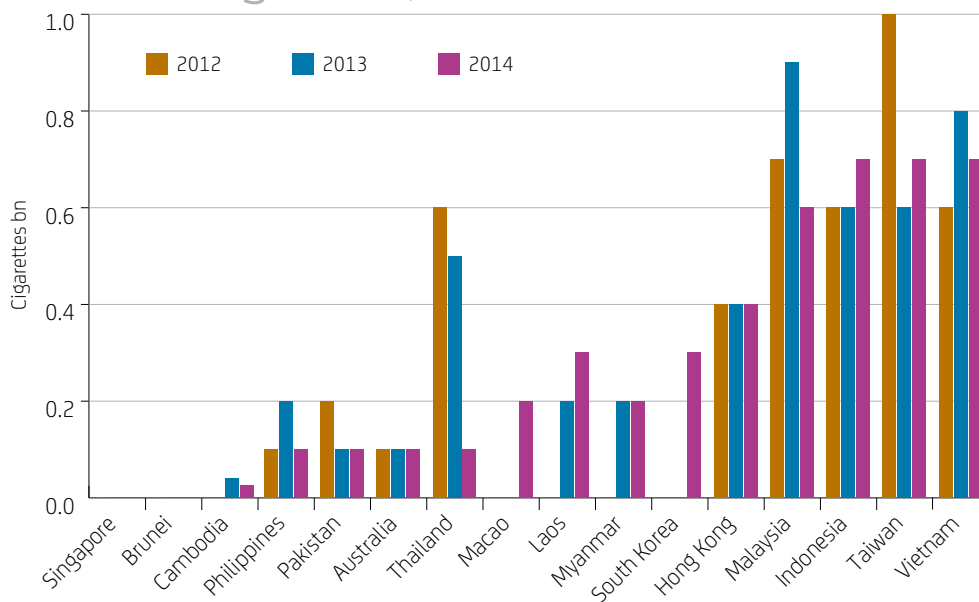
# Asia-16 Regional Overview: Non-Domestic Legal

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- Some Non-Domestic cigarettes consumed in a market may be legal, resulting from personal imports within allowed limits – for example, purchases of Duty-Free products by travellers or duty-paid products brought by tourists from their market of origin.<sup>1</sup>
- Markets with a zero duty-free personal import allowance such as Singapore and Brunei are assumed to have zero Non-Domestic Legal Inflows. In practice, some Non-Domestic Inflows may still arrive through legal channels, although in the absence of data these volumes are assumed to be negligible.
- Markets with low Non-Domestic Legal Inflows include Indonesia, Pakistan, and the Philippines.
- Markets with significant Non-Domestic Legal shares include Macao (16.8% of Total Consumption), Hong Kong (8.3% of Total Consumption, up from 7.9% in 2013), and Laos (8.9% of Total Consumption, up from 8.2% in 2013).
- Macao in particular has a very active border with China. Over 21 million people crossed the border and entered Macao from China in 2014, plus another 6.4 million travellers came from Hong Kong. This is equivalent to over 50 times the entire population of Macao. As such, Non-Domestic Legal consumption represents a significantly larger proportion of total Non-Domestic Inflows than any other Asia-16 market.
- Similarly, the Non-Domestic Legal share is also high in Hong Kong, despite the low level of duty-free personal import allowance (19 cigarettes), as there is a significant amount of cross border international passenger traffic.
- In volume terms, the level of Non-Domestic Legal Inflows is dominated by four large markets: Indonesia, Malaysia, Taiwan, and Vietnam. Together, they accounted for nearly 60% of total Non-Domestic Inflows in 2014.

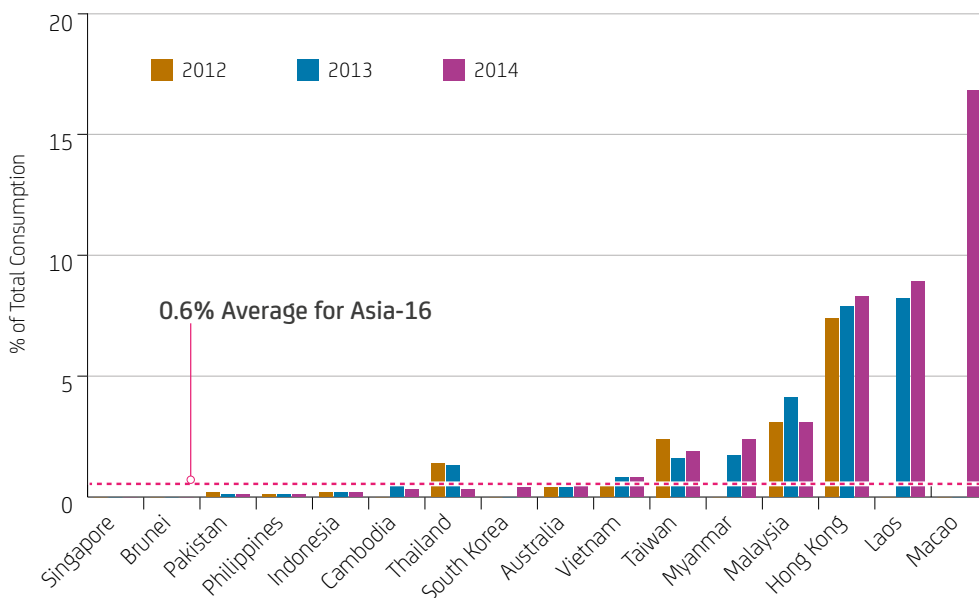
<sup>1</sup>Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin, and the passenger duty-free personal import allowance limit.

## Asia-16: Non-Domestic Legal (number of cigarettes)



Source: Oxford Economics

## Asia-16: Non-Domestic Legal (% of Total Consumption)



Source: Oxford Economics

# Asia-16 Regional Overview: Government Finances<sup>1</sup>

## **Estimated tobacco Tax Losses for the calendar year 2014 are USD 3.8 billion for the Asia-16 markets.**

- Australia accounted for the largest share of total Tax Losses in absolute terms, a function of the size of the domestic market, the scale of illicit trade, and the high-tax environment. In total, Australia accounted for around 40% of total Tax Losses in Asia-16 in 2014 (USD 1.4 billion).
- Despite experiencing a decline in the volume of Illicit Consumption in both years since the Asia Illicit Tobacco Indicator research series commenced, Malaysia remains one of the highest illicit markets. In total, one in every three cigarettes consumed originates from illicit channels. Coupled with several Excise Tax hikes, estimated Tax Losses continue to be significant as a result, with Malaysia contributing around 15%, or USD 577 million, to total Tax Losses in Asia-16 in 2014.
- Rising Domestic Illicit Consumption in Pakistan and the Philippines, underpinned by large Excise Tax hikes, has led to a significant increase in the estimated Tax Loss in each market in 2014 (+38.4% and +44.1% in local currency terms respectively).

## **Estimated Tax Losses have increased for two consecutive years in Asia-11 (in constant USD exchange rates).**

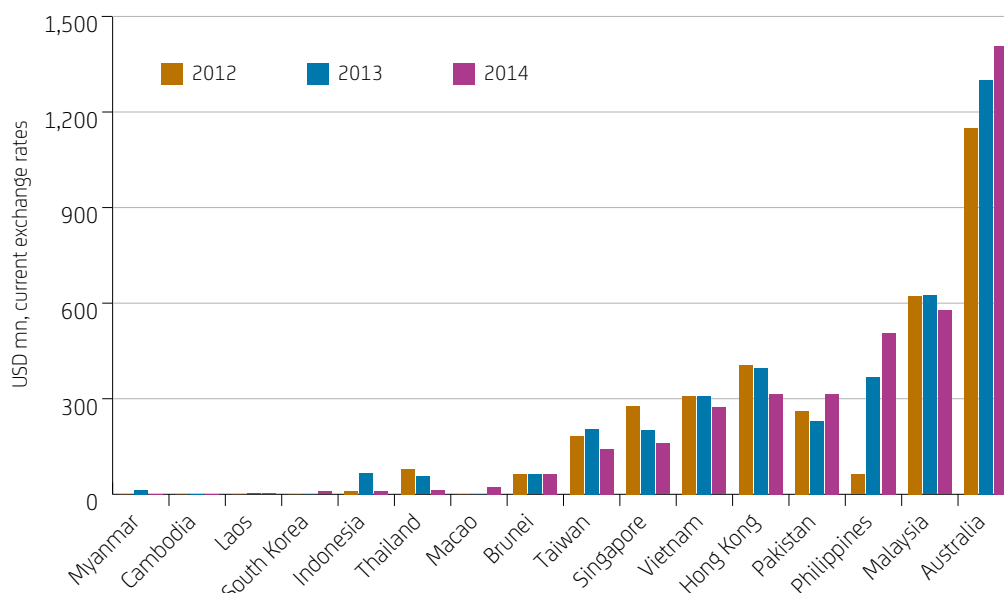
- Tax Losses are presented in USD to provide a comparison between markets and allow for regional aggregations. In 2014, estimated Tax Losses in Asia-11 were USD 3.8 billion. However, with many currencies depreciating against the USD since 2012, we also present figures in constant 2012 exchange rates to avoid understating the overall impact on government finances.<sup>2</sup> Indeed, assuming estimated Tax Losses have remained constant, fluctuating currencies alone would imply a 6.6% decline in total estimated Tax Losses since 2012 in Asia-11.
- Removing the impact of fluctuating exchange rates, Tax Losses have increased for two consecutive years. In 2014, estimated tobacco Tax Losses increased by 3.6% in Asia-11 (in constant USD exchange rates). This was underpinned by a significant increase in estimated Tax Losses in three markets: Australia, Pakistan, and the Philippines. The estimated Tax Loss in Asia-11 is USD 669 million above the USD 3.4 billion estimated in 2012 (+19.5%).
- Given the overall declining trend in Illicit Consumption since 2013, many markets have seen a fall in the estimated Tax Loss from Illicit Consumption of cigarettes. In Hong Kong, the estimated Tax Loss from Illicit Consumption fell by around one-fifth (down from USD 395 million in 2013 to USD 315 million in 2014, in current exchange rates).
- Singapore and Taiwan have also both seen Tax Losses fall in 2014, and in the case of Singapore, this occurred despite a 10.2% Excise Tax hike implemented in February 2014.
- In total, seven of the Asia-11 markets registered a decline in Tax Loss from Illicit Consumption in 2014 in local currency terms (Hong Kong, Indonesia, Malaysia, Singapore, Taiwan, Thailand, and Vietnam). In three of these markets – Hong Kong, Singapore, and Thailand – this trend continues as observed in 2013.
- Since the first Asia Illicit Tobacco Indicator report was conducted, six markets have experienced an overall decline in the level of estimated Tax Losses resulting from Illicit Consumption (in local currency terms). The largest decline was registered in Thailand (-82.2%), and then followed by Singapore (-42.0%). Australia and the Philippines have seen the largest increase in estimated Tax Losses.

<sup>1</sup>Estimates presented are based on a calendar year basis, and therefore may differ from those presented in the individual country reports, which are based on financial year (where relevant).

<sup>2</sup>See Annex B for exchange rate assumptions used.

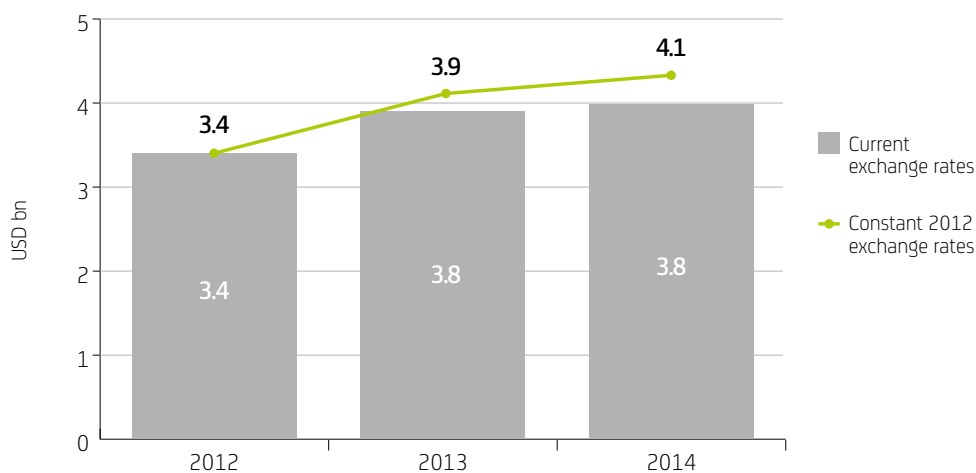


## Asia-16: Estimated Tobacco Tax Losses 2014 (calendar year)



Source: Oxford Economics

## Asia-11: Estimated Tobacco Tax Losses (calendar year)



Source: Oxford Economics





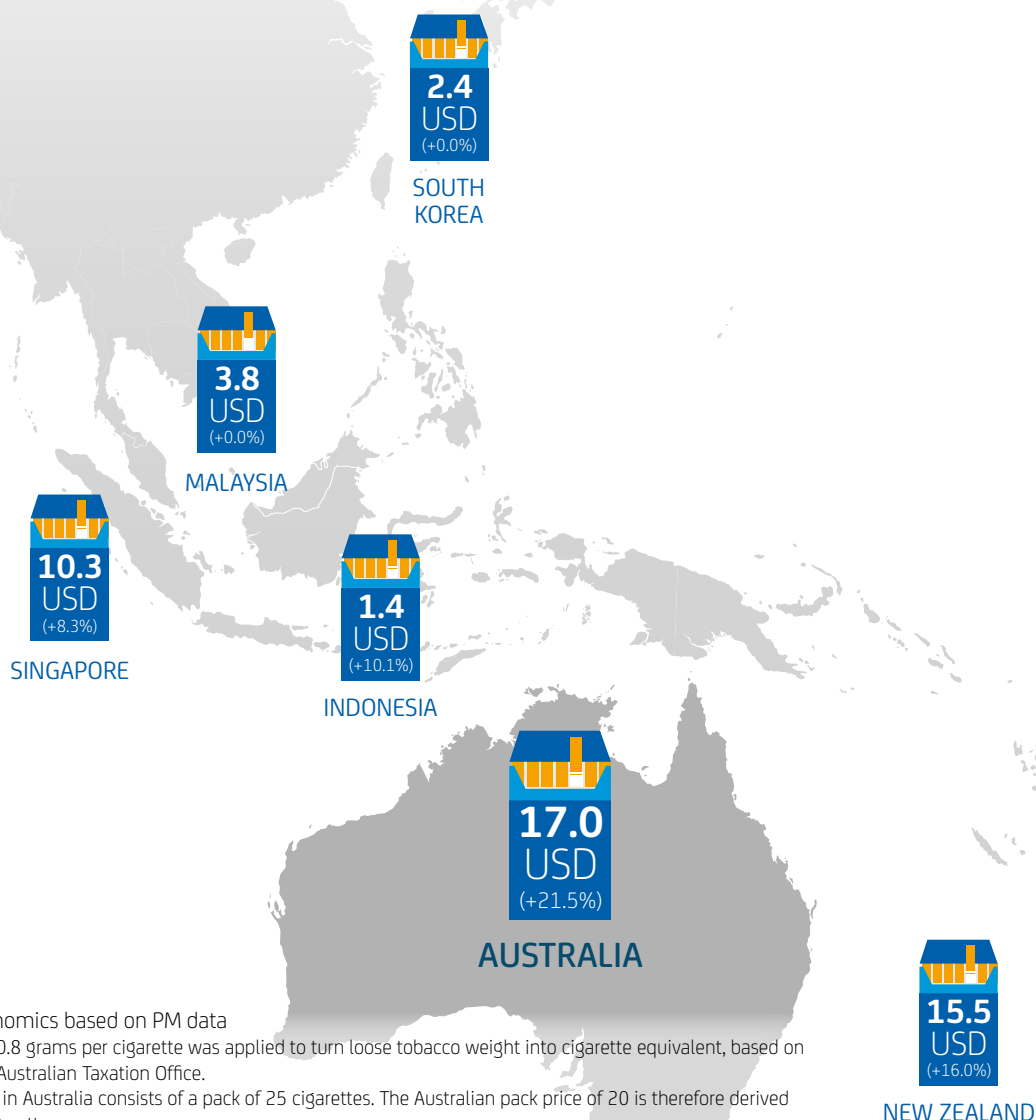
## Market Summaries

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## Australia: Legal Domestic Sales

- Australia Legal Domestic Sales of cigarettes and loose tobacco<sup>1</sup> are estimated at 19.8 billion cigarettes (or cigarette equivalents) in 2014, falling by 7.7% in comparison with 2013.
- The legal market for cigarettes is composed almost exclusively of three international manufacturers (BAT, Imperial Tobacco, and PM).
- Australian cigarette prices are the highest in the world, costing USD 17.0 per pack based on the Most Sold Brand.<sup>2</sup> In comparison, the price of a pack of cigarettes in Indonesia is less than one-tenth of the equivalent price in Australia.
- Cigarette prices are also considerably higher than in South Korea, where the price of the Most Sold Brand of cigarettes is USD 2.4 per pack. South Korea is a key source market for non-domestic cigarettes.

### Australia: Prices of cigarettes<sup>3</sup>



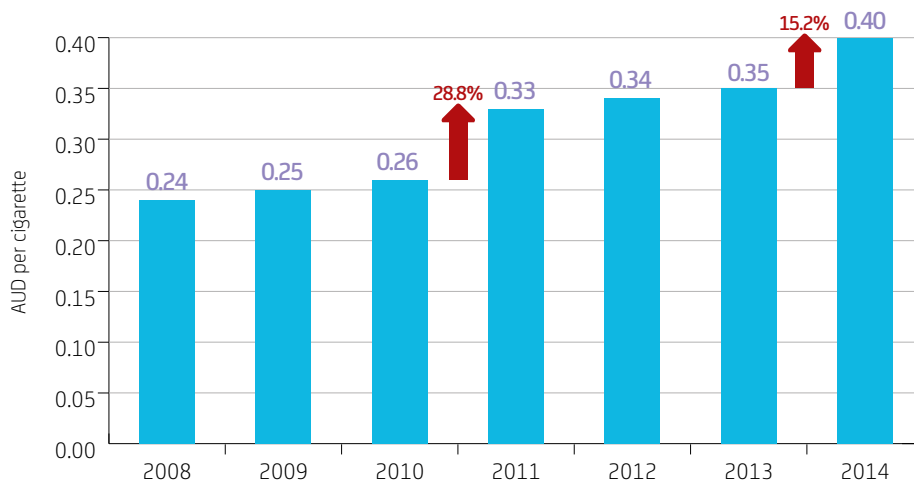
Source: Oxford Economics based on PM data

<sup>1</sup>A 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.

<sup>2</sup>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.

<sup>3</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

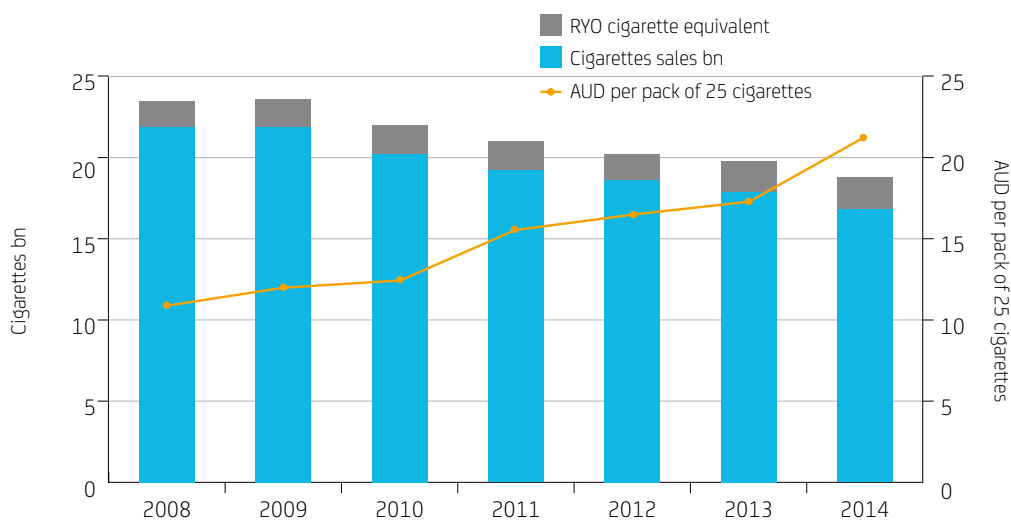
## Australia: Excise duty applied to cigarettes<sup>4</sup>



Source: Australian Taxation Office

<sup>4</sup>Rate applied in January of each year. Includes individual Excise Tax increases as well as biannual index-linked rises.

## Australia: Legal Domestic Sales and prices<sup>5</sup>



Source: Euromonitor, KPMG, and Oxford Economics

<sup>5</sup>Price per pack of 25 of the Most Sold Brand in January of each year.

# Australia: Tobacco Consumption

- The results from two Empty Pack Surveys,<sup>1</sup> combined with statistics on the volume of tobacco clearances sourced from the Australian Treasury Department<sup>2</sup> and KPMG data on Chop-chop volumes,<sup>3</sup> were used to estimate Total Consumption of cigarettes and loose tobacco in Australia.
- Total Consumption (legal and illicit) is estimated at 23.1 billion cigarettes in 2014, representing a decline of 6.7% in comparison to 2013. Of this, an estimated 85.6% or 19.8 billion cigarettes is Legal Domestic Consumption, 0.5% is Non-Domestic Legal Consumption, and 13.9% or 3.2 billion cigarettes is Illicit Consumption.<sup>4</sup>
- After rising by 0.3% in 2013, Total Consumption declined in 2014. Total Consumption is now 1.6 billion cigarettes below the level estimated for 2012.
- The total volume of Illicit Consumption was relatively stable in comparison to 2013, showing a modest decline of 0.7%. However, with Legal Domestic Consumption falling by 7.7%, the share of Illicit Consumption in Total Consumption rose by 0.9 percentage points to 13.9%, the highest level since the first report was published in 2013.
- The underlying composition of Illicit Consumption has fluctuated since the first Asia Illicit Tobacco Indicator report. The volume of Chop-chop consumed in Australia was highest in 2012, at 1.9 billion cigarette equivalents, representing nearly three-quarters of total Illicit Consumption. This ratio fell back in 2013 as Chop-chop volumes declined, before recovering partially in 2014. The split between estimates of Non-Domestic Illicit and Chop-chop was approximately 50/50 in 2014.
- The volume of Non-Domestic Illicit Consumption remains nearly twice the level experienced in 2012, despite falling by 23.2% in 2014.
- The trends in Illicit Consumption identified in this Report are consistent with a similar analysis conducted by KPMG.<sup>5</sup> The difference in the underlying estimates of Illicit Consumption are primarily driven by the use of alternative source data for Legal Domestic Sales.

## Australia: Composition of cigarette consumption<sup>6</sup>

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>21.9</b>	<b>88.7</b>	<b>21.5</b>	<b>86.5</b>	<b>19.8</b>	<b>85.6</b>	<b>-7.7</b>
Legal Domestic Sales (LDS)	21.9	—	21.5	—	19.8	—	-7.7
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	n/a
<b>Total Non-Domestic Inflows (ND)</b>	<b>2.8</b>	<b>11.3</b>	<b>3.3</b>	<b>13.5</b>	<b>3.3</b>	<b>14.4</b>	<b>-0.4</b>
Non-Domestic Legal (NDL)	0.1	0.4	0.1	0.4	0.1	0.5	9.1
Non-Domestic Illicit	0.8	3.1	1.9	7.8	1.5	6.4	-23.2
Chop-chop	1.9	7.8	1.3	5.2	1.7	7.4	33.0
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>24.7</b>	<b>100.0</b>	<b>24.8</b>	<b>100.0</b>	<b>23.1</b>	<b>100.0</b>	<b>-6.7</b>
<b>Total Illicit Consumption</b>	<b>2.7</b>	<b>10.9</b>	<b>3.2</b>	<b>13.0</b>	<b>3.2</b>	<b>13.9</b>	<b>-0.7</b>

Source: Oxford Economics

<sup>1</sup>Empty Pack Surveys were undertaken in 2014 Q2 and 2014 Q4 (see Annex A for more details).

<sup>2</sup>Retrieved from <http://treasury.gov.au/Access-to-Information/DisclosureLog/2015/1703>. Monthly data were used to produce calendar year estimates for Legal Domestic Sales. Historical figures have been restated to incorporate new data. Tobacco clearances for 2012 were adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation.

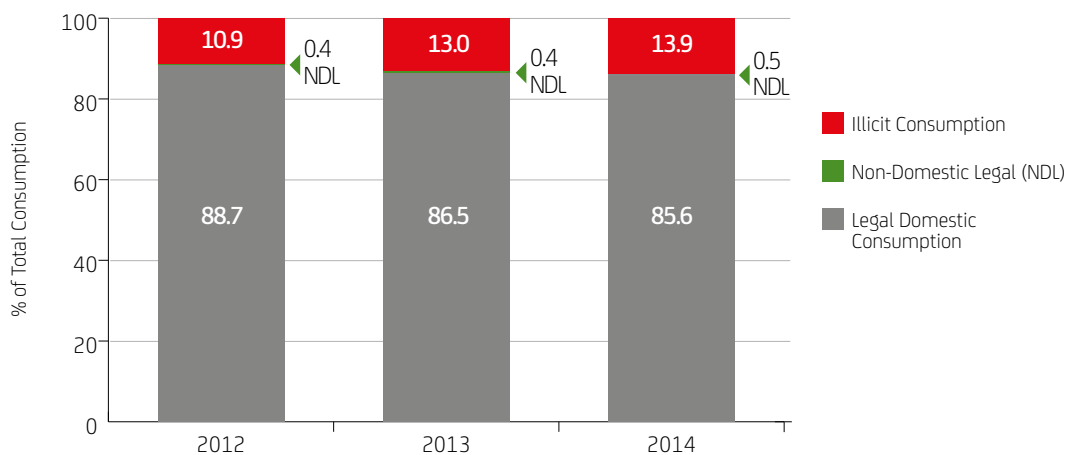
<sup>3</sup>KPMG, Illicit tobacco in Australia, 2014 Full Year Report, 30 March 2015.

<sup>4</sup>This 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.

<sup>5</sup>KPMG, Illicit tobacco in Australia, 2014 Full Year Report, 30 March 2015.

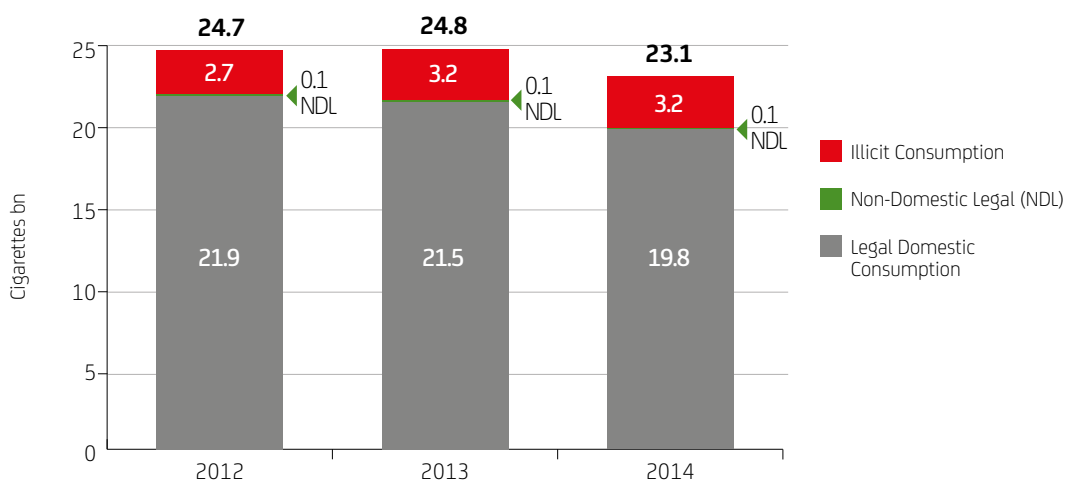
<sup>6</sup>Including loose tobacco.

## 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 weight based specific Excise Tax structure with biannual index-linked tax increases.
- In 2013, the federal government announced that it would proceed with a series of four 12.5% increases in excise duty on tobacco products. The first two increases took effect in December 2013 and September 2014, with subsequent increases scheduled for September 2015 and 2016.
- In addition, the federal 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 on tobacco products.
- Actual revenues from excise on tobacco continued to rise in the fiscal year 2013/14, despite a decline in Legal Domestic Sales. Excise Tax revenues amounted to nearly AUD 8.4 billion in 2013/14, representing an 11.2% increase from the previous fiscal year. Excise Tax revenues are now 14.0% higher than in 2011/12.
- The trend of increasing Excise Tax revenues from the sale of tobacco is also reflected in estimated Tax Losses, which increased by 16.7% in 2013/14. This is despite the volume of Illicit Consumption remaining stable, with higher Excise Taxes driving an increase in estimated Tax Losses.
- The estimated Excise Tax Loss as a share of total Excise Tax revenues climbed to 13.7% in fiscal year 2013/14.

## Australia: Actual government revenues and estimated Tax Loss<sup>1</sup>

Indicator	2011/12 fiscal year <sup>2</sup>		2012/13 fiscal year <sup>2</sup>		2013/14 fiscal year <sup>2</sup>		% change in local currency 2012/13-2013/14
	AUD mn	USD mn	AUD mn	USD mn	AUD mn	USD mn	
Actual revenue from excise duties on tobacco <sup>3</sup>	7,403	7,594	7,591	6,957	8,441	7,750	11.2%
Estimated number of illicit cigarettes purchased (cigarettes mn)	753		1,990		1,662		-16.5%
Estimated volume of illicit loose tobacco (Chop-chop) purchased (cigarette equivalents mn)	1,839		1,284		1,844		43.5%
<b>Estimated Tax Loss from Illicit Consumption<sup>3</sup></b>	<b>1,052</b>	<b>1,079</b>	<b>1,327</b>	<b>1,216</b>	<b>1,549</b>	<b>1,422</b>	<b>16.7%</b>
Lost excise revenue	894	917	1,149	1,053	1,342	1,232	16.8%
Lost sales tax revenue	158	162	178	163	207	190	16.0%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>3</sup></b>	<b>10.8%</b>		<b>13.1%</b>		<b>13.7%</b>		

Source for government revenue data: Australian Treasury Department, Australian Taxation Office, and Oxford Economics  
Estimated number of illicit cigarettes purchased adjusted for fiscal year.

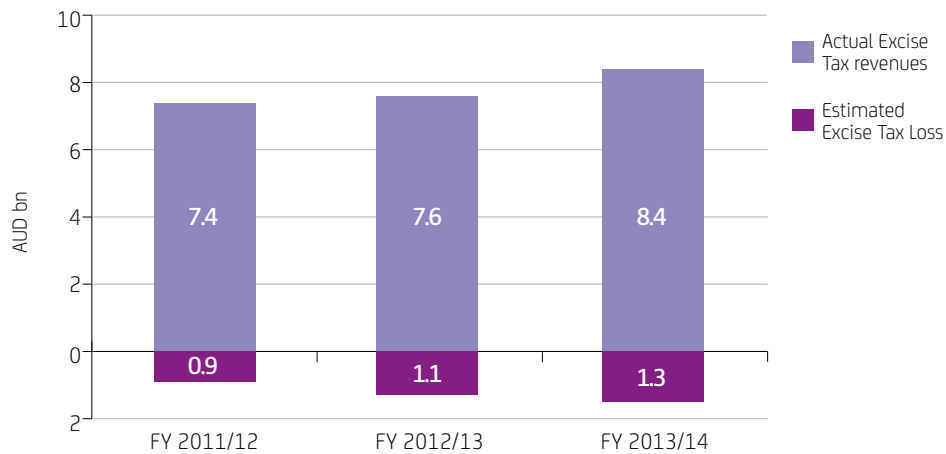
<sup>1</sup>Actual revenues for 2012-13 were adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation, according to provisions set out by the Australian Customs and Border Protection Service.

<sup>2</sup>Data for fiscal year, which runs from July to June.

<sup>3</sup>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.



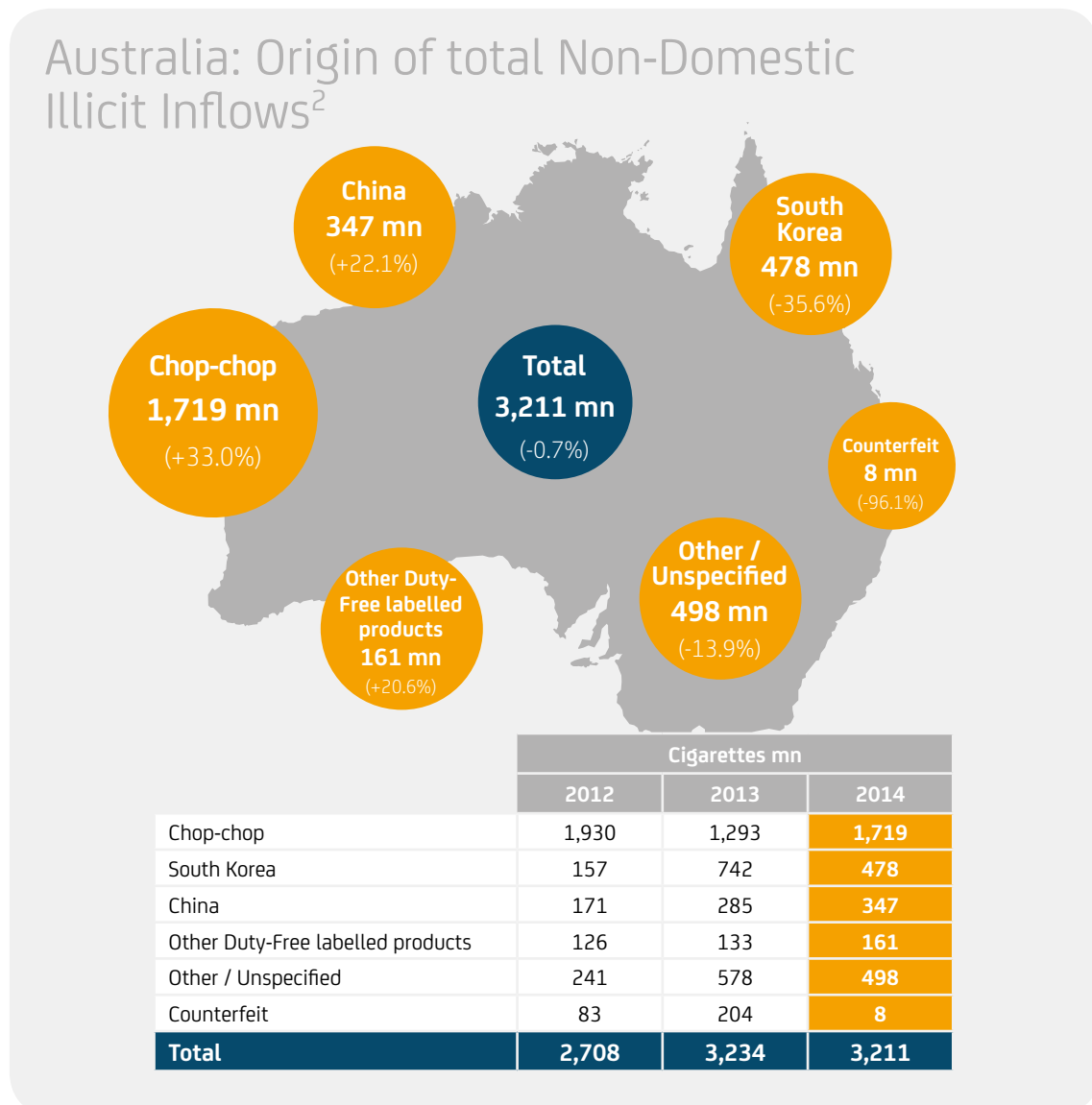
## Australia: Actual government revenues and estimated Tax Loss



Source: Australian Treasury Department, Australian Taxation Office, and Oxford Economics

## Australia: Trade Flows

- After falling in 2013, Chop-chop consumption increased in 2014 to the equivalent of 1.7 billion cigarettes (+33%). However, this remains below the volume consumed in 2012 (1.9 billion cigarette equivalents).
- By contrast, Contraband cigarette consumption experienced a notable decline, falling by 15% in comparison to 2013.
- Cigarettes intended for retail sale in South Korea remain a significant source of Non-Domestic Illicit cigarettes in Australia, despite falling by 35.6%. An estimated 478 million illicit cigarettes intended for the South Korea market were consumed in 2014, the largest single market of identified Illicit Inflows in Australia. In total, 15% of total illicit tobacco consumption is composed of cigarettes originally intended for retail sale in South Korea.
- Significant Inflows were also identified as initially intended for the Chinese market, which in contrast to South Korea, increased in volume from last year.
- Outflows of domestic duty-paid cigarettes to the other 15 markets covered are estimated to be negligible, as high domestic prices remove any incentive for individuals to take domestically bought cigarettes with them when travelling abroad.<sup>1</sup>

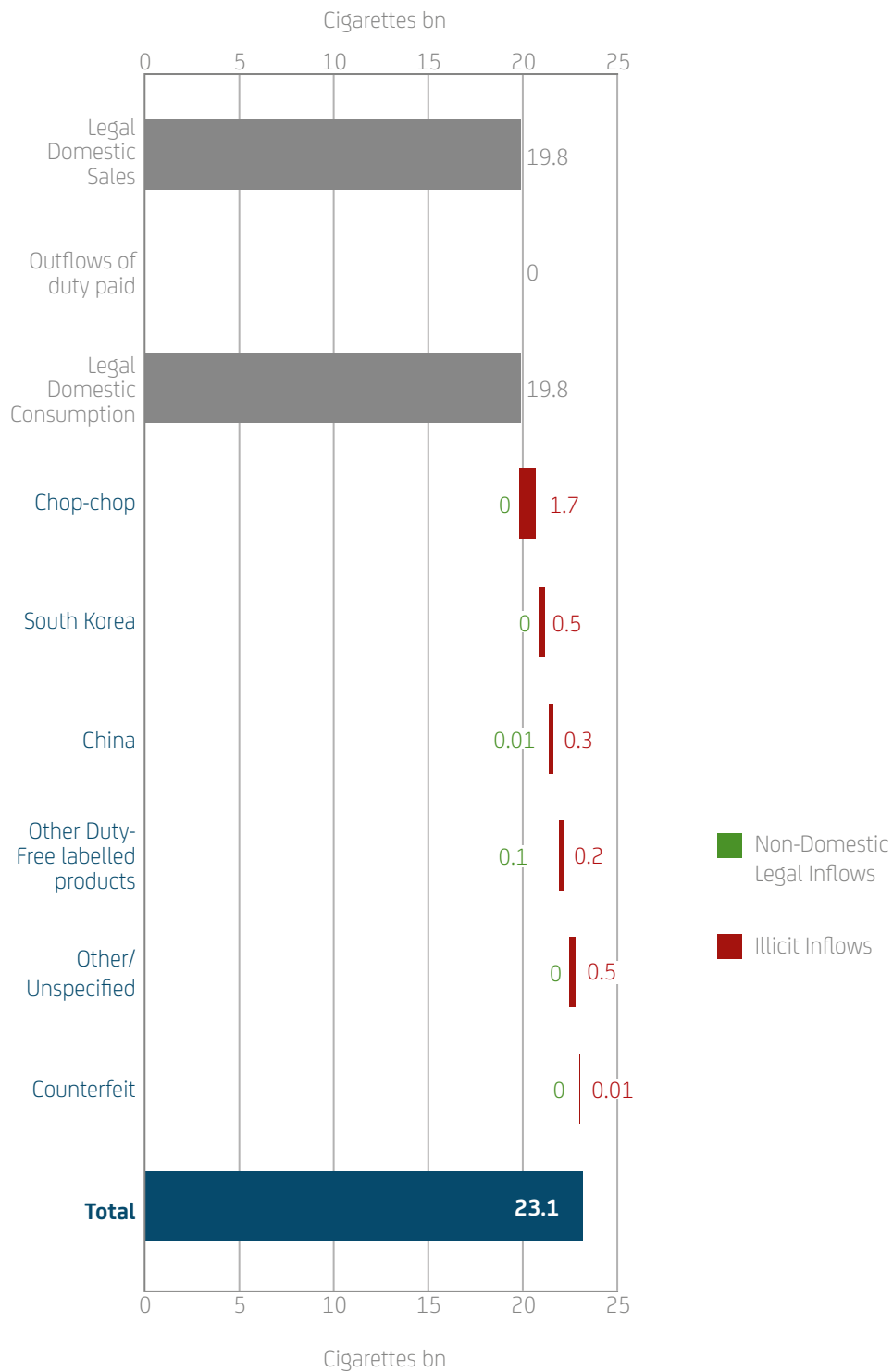


Source: IT Flows Model and Oxford Economics

<sup>1</sup>Note 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.

<sup>2</sup>Chop-chop is included within Non-Domestic Illicit Inflows for the purpose of analysing illicit trade flows in Australia. Figures in brackets reflect % changes from 2013.

## Australia: Consumption breakdown 2014

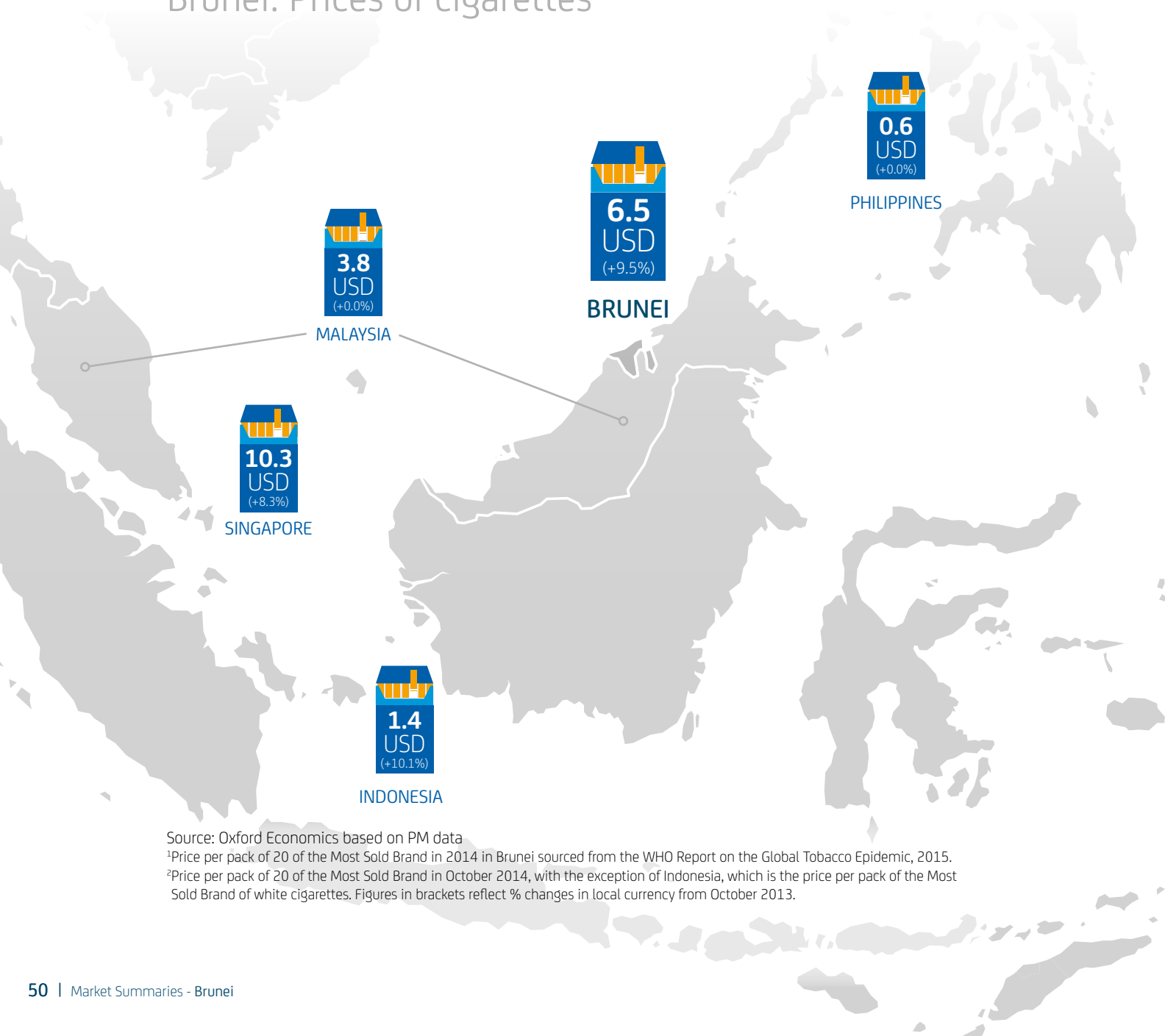


Source: IT Flows Model and Oxford Economics

## Brunei: Legal Domestic Sales

- Brunei Legal Domestic Sales are estimated at 0.2 million cigarettes for 2014, all of which were recorded in January.
- Legal Domestic Sales have experienced a significant decline in volume. In 2011, Legal Domestic Sales fell by 80.6%, from 308 million cigarettes in 2010 to just 60 million cigarettes, and have continued to decline since.
- A series of radical regulatory and fiscal measures 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.
- Prices for cigarettes are relatively high in Brunei compared with neighbouring markets. The price of the Most Sold Brand at USD 6.5 per pack<sup>1</sup> is significantly higher than in Malaysia (USD 3.8), Indonesia (USD 1.4), and the Philippines (USD 0.6).

### Brunei: Prices of cigarettes<sup>2</sup>

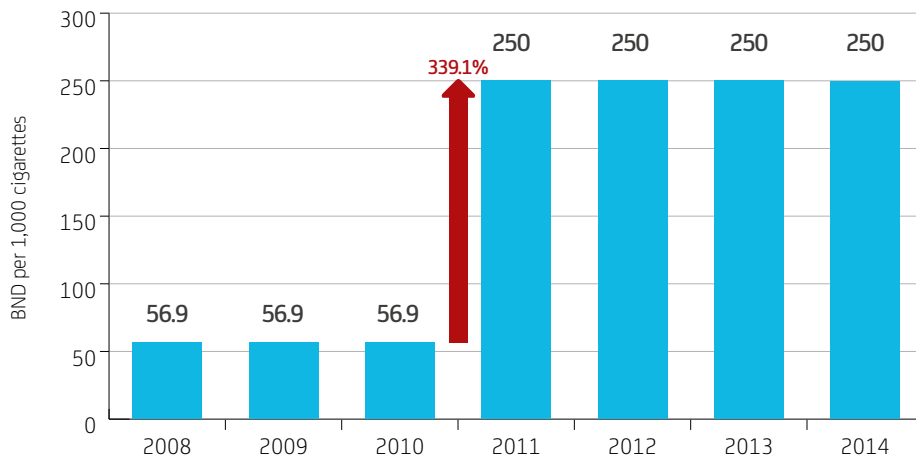


Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in 2014 in Brunei sourced from the WHO Report on the Global Tobacco Epidemic, 2015.

<sup>2</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

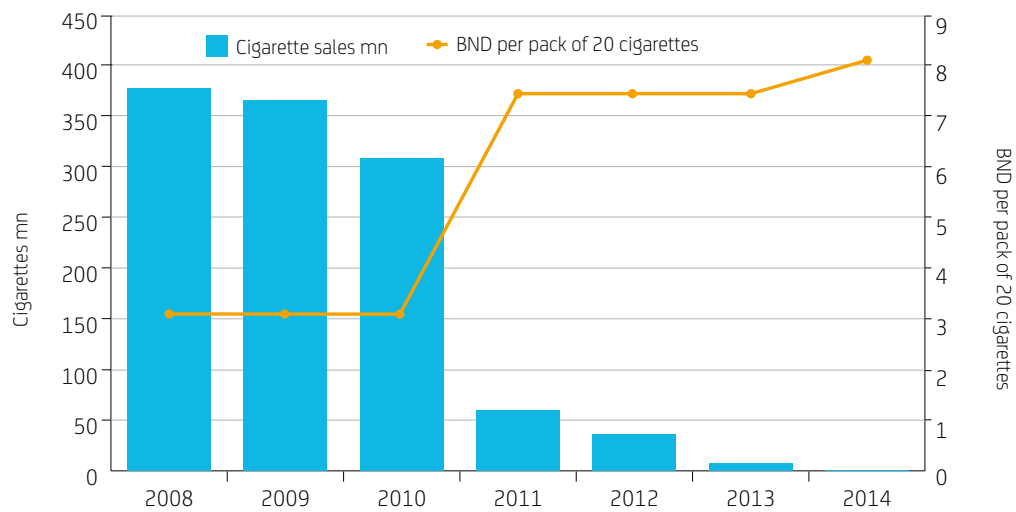
## Brunei: Excise duty applied to cigarettes<sup>4</sup>



Source: SEATCA ASEAN Tobacco Tax Report Card, May 2014 and Oxford Economics

<sup>4</sup>Rate 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 prices<sup>5</sup>



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

<sup>5</sup>Price of the Most Sold Brand in January of each year.

## Brunei: Cigarette Consumption

- IMS data on Legal Domestic Sales, combined with data on the adult population size and average adult per capita cigarette consumption, were used to estimate Total Consumption of cigarettes in Brunei.<sup>1</sup>
- Total Consumption (legal and illicit) is estimated at 324.3 million cigarettes in 2014, up 2.0% from 2013 but still over 25 million cigarettes below 2012 levels. Of this, just 0.1% or 0.2 million cigarettes constitutes Legal Domestic Consumption.
- 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 almost entirely served by illicit imports (all non-domestic cigarettes are assumed to be illicit given the zero allowance for Duty-Free personal imports in Brunei).<sup>2</sup>

### Brunei: Composition of cigarette consumption

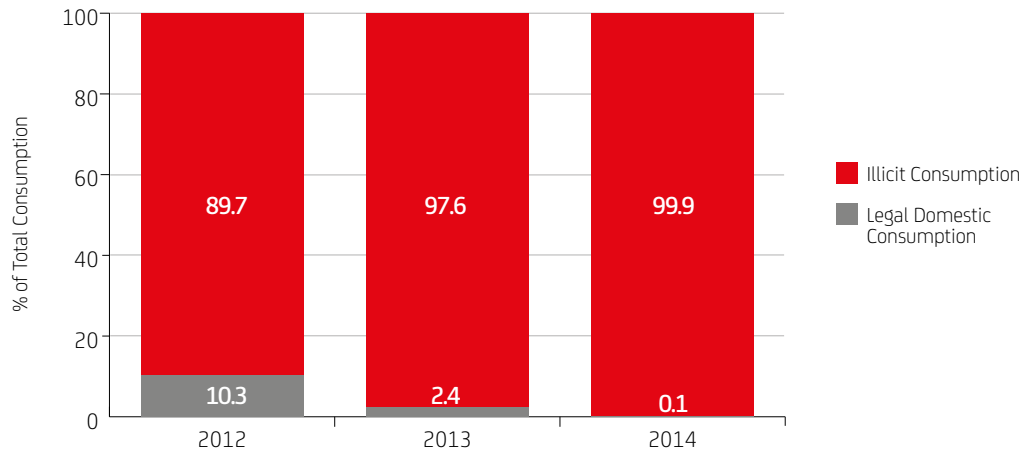
	2012		2013		2014		% change 2013-14
	Cigarettes mn	%	Cigarettes mn	%	Cigarettes mn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>36.0</b>	<b>10.3</b>	<b>7.7</b>	<b>2.4</b>	<b>0.2</b>	<b>0.1</b>	<b>-97.0</b>
Legal Domestic Sales (LDS)	36.0	—	7.7	—	0.2	—	-97.0
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	n/a
<b>Total Non-Domestic Inflows (ND)</b>	<b>315.2</b>	<b>89.7</b>	<b>310.2</b>	<b>97.6</b>	<b>324.0</b>	<b>99.9</b>	<b>4.5</b>
Non-Domestic Legal (NDL)	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	4.5
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>351.2</b>	<b>100.0</b>	<b>317.9</b>	<b>100.0</b>	<b>324.3</b>	<b>100.0</b>	<b>2.0</b>
<b>Total Illicit Consumption</b>	<b>315.2</b>	<b>89.7</b>	<b>310.2</b>	<b>97.6</b>	<b>324.0</b>	<b>99.9</b>	<b>4.5</b>

Source: Euromonitor International and Oxford Economics

<sup>1</sup>IMS data indicates a negligible volume of LDS in Brunei, and therefore is unreliable to use as a base from which to estimate Total Consumption for the year. Instead, we have used a “bottom-up” approach using the adult population size and average per capita adult cigarette consumption sourced from Euromonitor International.

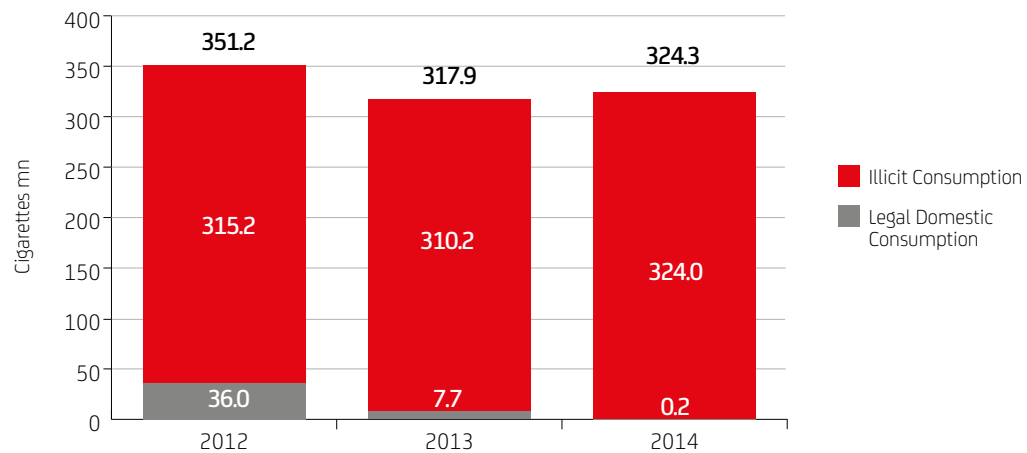
<sup>2</sup>See Annex D for more details.

## 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

- Excise Tax was substantially increased in November 2010, from BND 60 per kg of tobacco to BND 250/1,000 cigarettes (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.
- A single-rate, unit-specific Excise Tax is now imposed in Brunei. No GST or VAT is applied to cigarettes.
- We estimate the Excise Tax revenue loss associated with Illicit Consumption to be BND 81 million (USD 64 million) for 2014.
- Actual Excise Tax revenues declined significantly following the withdrawal from the market of international tobacco manufacturers. Revenues from excise duties amounted to just BND 0.2 million in 2014, a sharp decline from previous years.

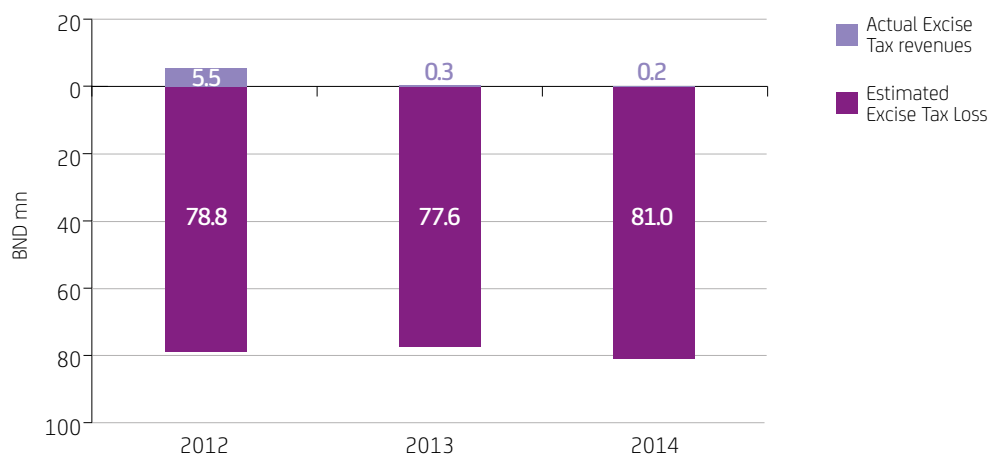
### Brunei: Actual government revenues and estimated Tax Loss

Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	BND mn	USD mn	BND mn	USD mn	BND mn	USD mn	
Actual revenue from excise duties on tobacco	5.5	4.4	0.3	0.2	0.2	0.2	-21.3%
Estimated number of illicit cigarettes purchased (cigarettes mn)	315		310		324		4.5%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>79</b>	<b>63</b>	<b>78</b>	<b>62</b>	<b>81</b>	<b>64</b>	<b>4.5%</b>
Lost excise revenue	79	63	78	62	81	64	4.5%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>93.4%</b>		<b>99.6%</b>		<b>99.7%</b>		

Source for government revenue data: WHO and Oxford Economics



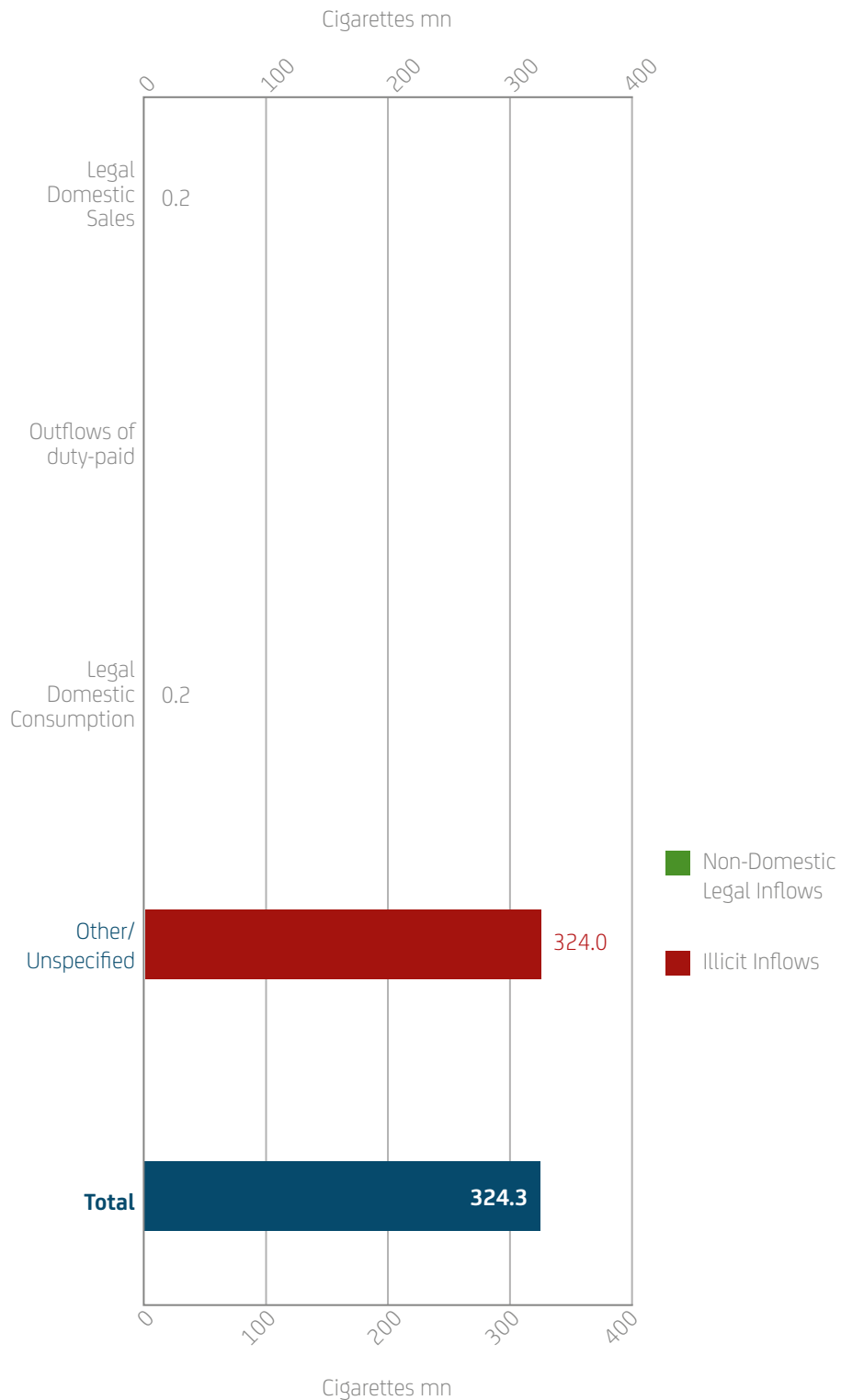
## Brunei: Actual government revenues and estimated Tax Loss



Source: WHO and Oxford Economics

# Brunei: Trade Flows

## Brunei: Consumption breakdown 2014



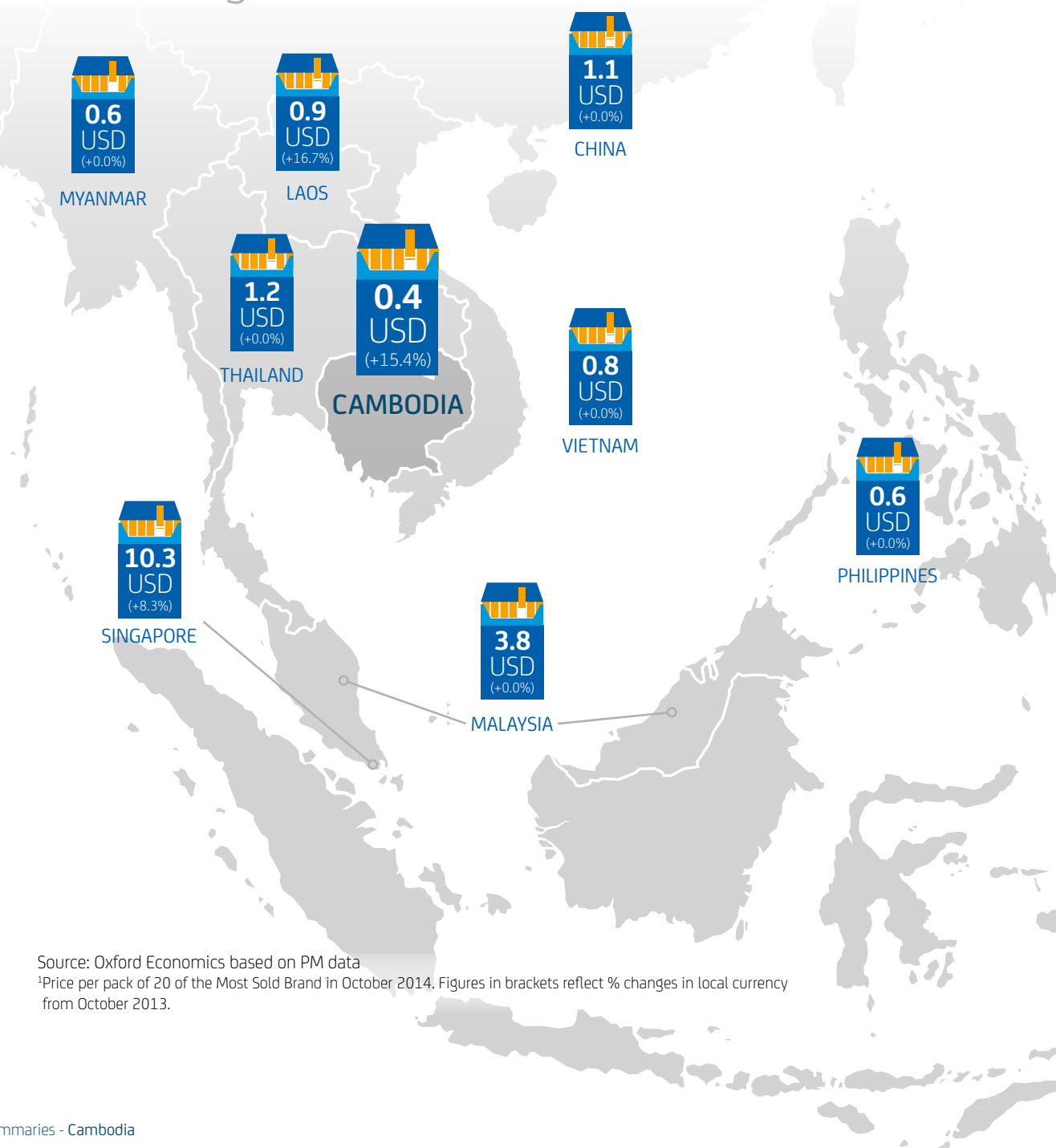
Source: IT Flows Model and Oxford Economics



# Cambodia: Legal Domestic Sales

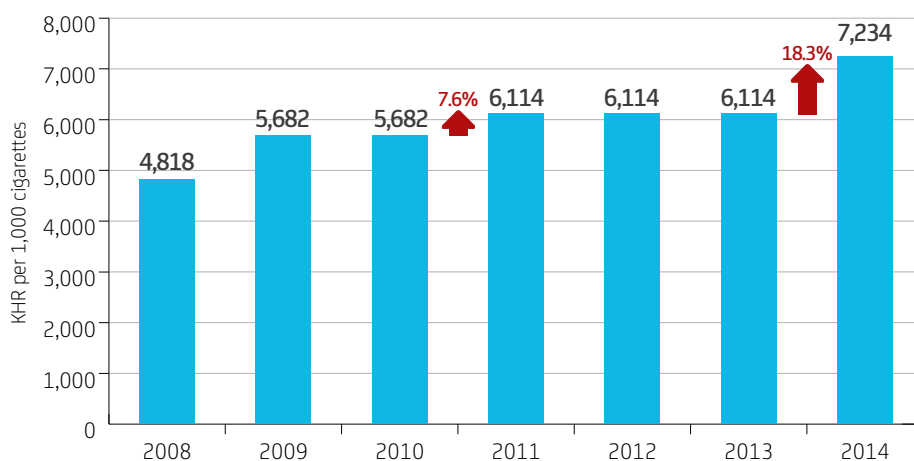
- Cambodia Legal Domestic Sales are estimated at 8.4 billion cigarettes for 2014, an increase of 2.2% from 2013.
- Four manufacturers (BAT, Vinton Tobacco, Imperial Tobacco, and Hong International) account for over 90% of Legal Domestic Sales.
- Prices for cigarettes in Cambodia are the lowest of the Asia-16 markets, despite an Excise Tax hike implemented in mid-2014 that led to an increase in the price of the Most Sold Brand of 15.4% compared with 2013.
- The price of the Most Sold Brand at USD 0.4 per pack remains much lower than neighbouring markets such as Vietnam (USD 0.8), Laos (USD 0.9), and Thailand (USD 1.2).

## Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data  
<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

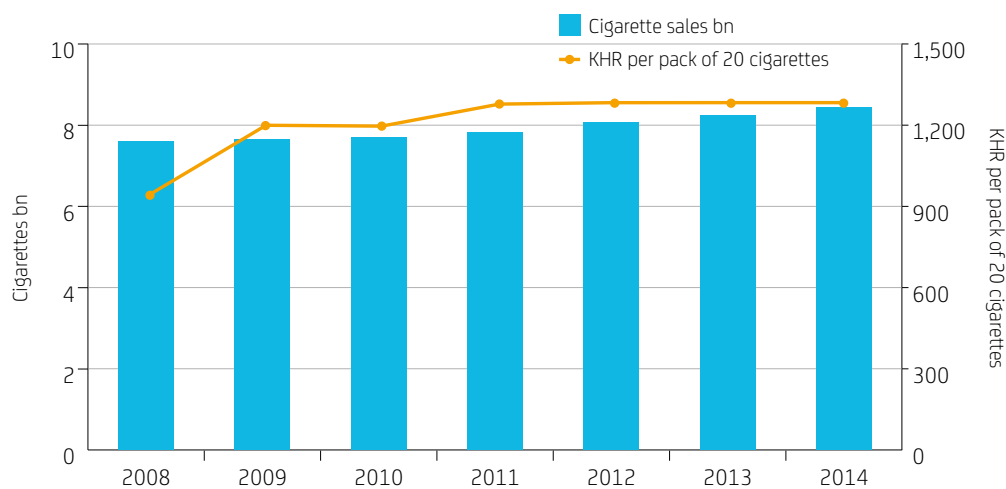
## Cambodia: Excise duty applied to cigarettes<sup>2</sup>



Source: Oxford Economics

<sup>2</sup>Rate applied in January of each year 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 prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of the Most Sold Brand in January of each year.

## Cambodia: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> 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 2014. Of this, an estimated 94.6% or 8.0 billion cigarettes is Legal Domestic Consumption, 0.3% is Non-Domestic Legal Consumption, and 5.0% or 0.4 billion cigarettes is Illicit Consumption.

### Cambodia: Composition of cigarette consumption

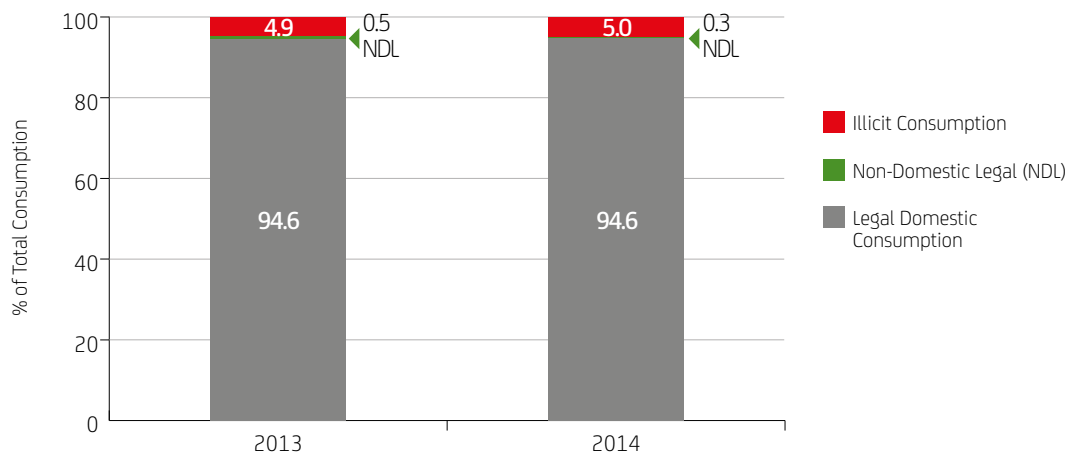
	2013 <sup>2</sup>		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>7.8</b>	<b>94.6</b>	<b>8.0</b>	<b>94.6</b>	<b>3.5</b>
Legal Domestic Sales (LDS)	8.2	—	8.4	—	2.2
Outflows of domestic duty-paid cigarettes	-0.5	—	-0.4	—	-18.1
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.4</b>	<b>5.4</b>	<b>0.5</b>	<b>5.4</b>	<b>3.5</b>
Non-Domestic Legal (NDL)	0.0	0.5	0.0	0.3	-31.0
Non-Domestic Illicit	0.4	4.9	0.4	5.0	7.1
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>8.2</b>	<b>100.0</b>	<b>8.5</b>	<b>100.0</b>	<b>3.5</b>
<b>Total Illicit Consumption</b>	<b>0.4</b>	<b>4.9</b>	<b>0.4</b>	<b>5.0</b>	<b>7.1</b>

Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q2 (see Annex A for more details).

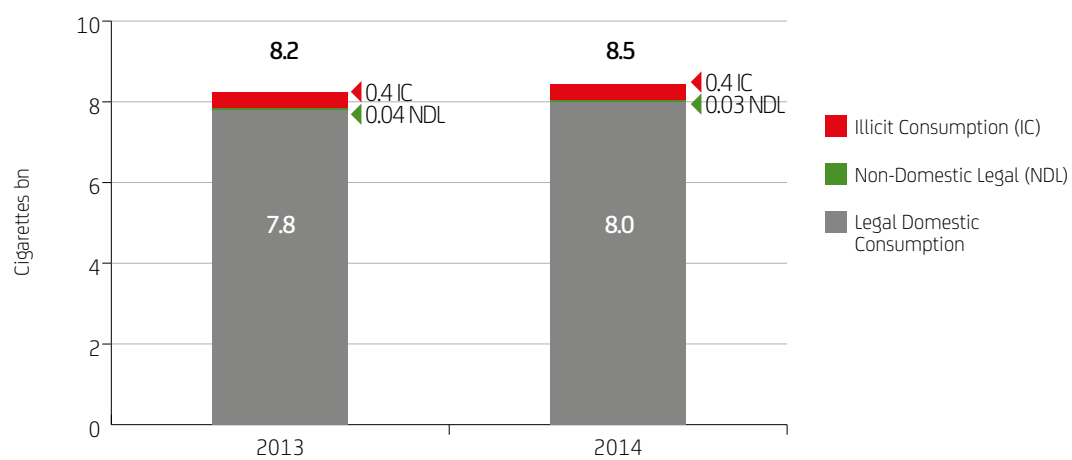
<sup>2</sup>2013 results based on 2014 Q2 Empty Pack Survey.

## 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. The rate was increased from 10% to 15% in mid-2014 and is applied 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 a tax for public lighting of 3% of the retail price (before VAT) and a tax stamp of KHR 10 per pack.
- VAT is levied at a rate of 10% on sales.
- As a consequence of the tax hike, actual revenues from excise duties on tobacco are estimated to have increased by 20.6% in 2014 despite a modest 2.2% increase in Legal Domestic Sales.
- Our estimates suggest that the Tax Loss associated with Illicit Consumption amounted to KHR 5.8 billion (USD 1.4 million) in 2014.

### Cambodia: Actual government revenues and estimated Tax Loss

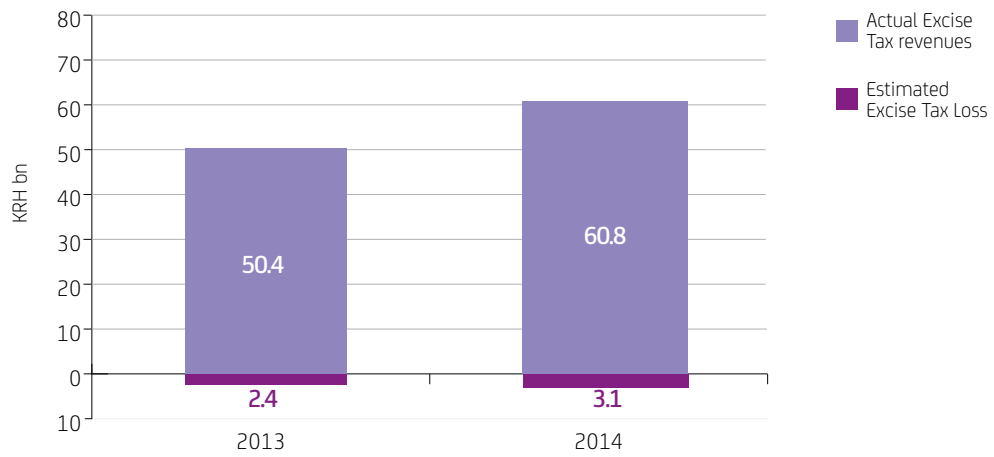
Indicator	2013		2014		% change in local currency 2013-2014
	KRH bn	USD mn	KRH bn	USD mn	
Actual revenue from excise duties on tobacco <sup>1</sup>	50.4	12.5	60.8	15.1	20.6%
Estimated number of illicit cigarettes purchased (cigarettes mn)	399		427		7.1%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>4.8</b>	<b>1.2</b>	<b>5.8</b>	<b>1.4</b>	<b>21.3%</b>
Lost excise revenue <sup>1</sup>	2.4	0.6	3.1	0.8	26.9%
Lost VAT revenue	2.4	0.6	2.7	0.7	15.5%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>1</sup></b>	<b>4.6%</b>		<b>4.8%</b>		

Source for government revenue data: Oxford Economics

<sup>1</sup>Includes tax stamp and Earmarked Taxes.



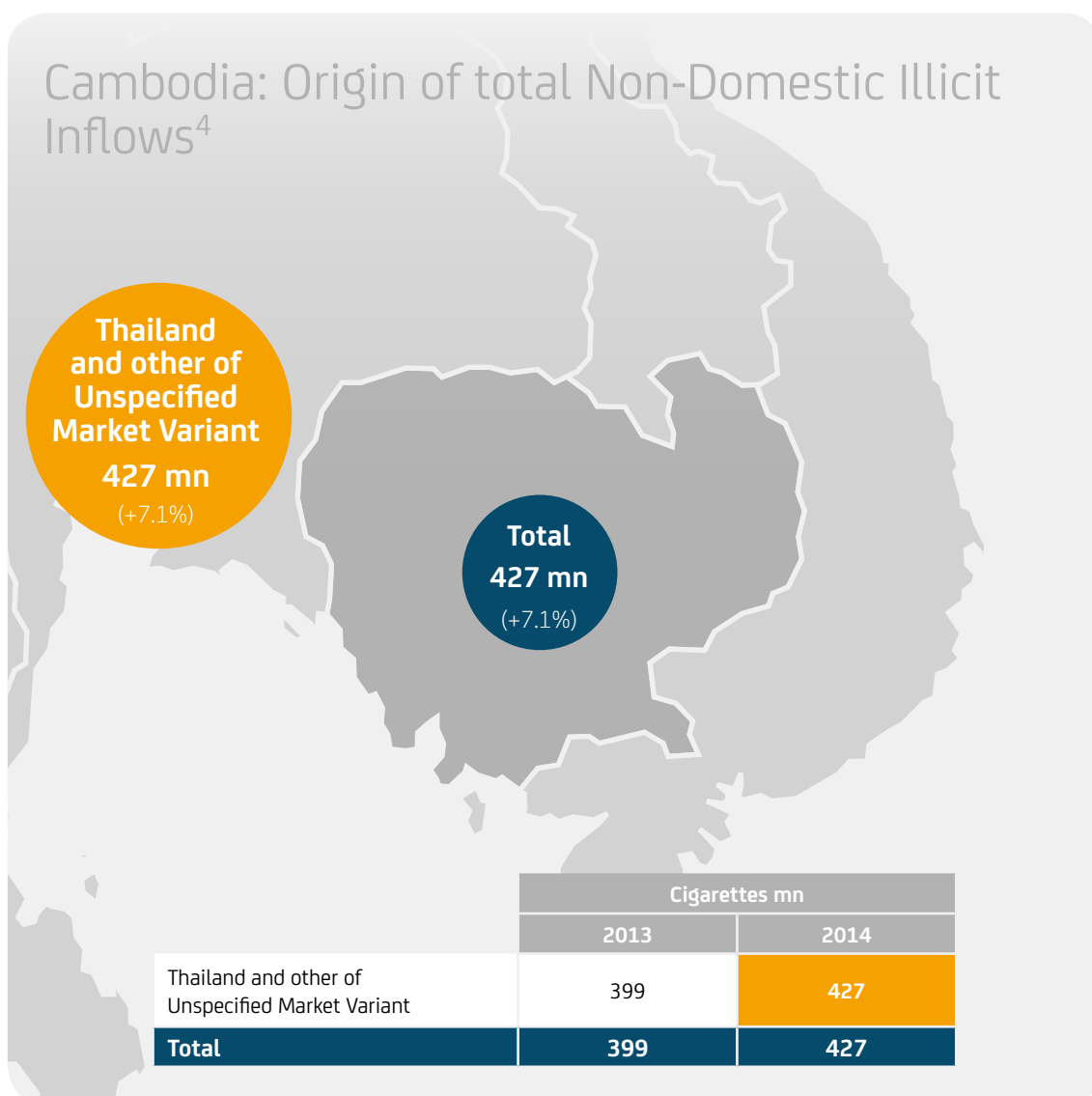
## Cambodia: Actual government revenues and estimated Tax Loss



Source: Oxford Economics

## Cambodia: Trade Flows

- The volume of Outflows of domestic duty-paid cigarettes to the other 15 markets are relatively high compared with the rest of the Asia-16 markets<sup>1</sup> as the price of a pack of cigarettes remains low in comparison with neighbouring markets, and Cambodia is known as a market of significant Outflows of cigarettes intended for retail sale in Cambodia.
- Thailand and Vietnam are the primary destination markets identified for domestically-manufactured cigarettes in Cambodia.
- For the same reason, Non-Domestic Legal Inflows<sup>2</sup> are small, with little incentive for consumers to legally bring in duty-paid cigarettes from abroad.
- The majority of Non-Domestic Illicit Inflows is designated as Unspecified Market Variant.<sup>3</sup> In total, over 97% of the volume of Non-Domestic Illicit consists of Unspecified Market Variant, with some small Inflows identified as originally intended for retail sale from across the border in Thailand.



Source: IT Flows Model and Oxford Economics

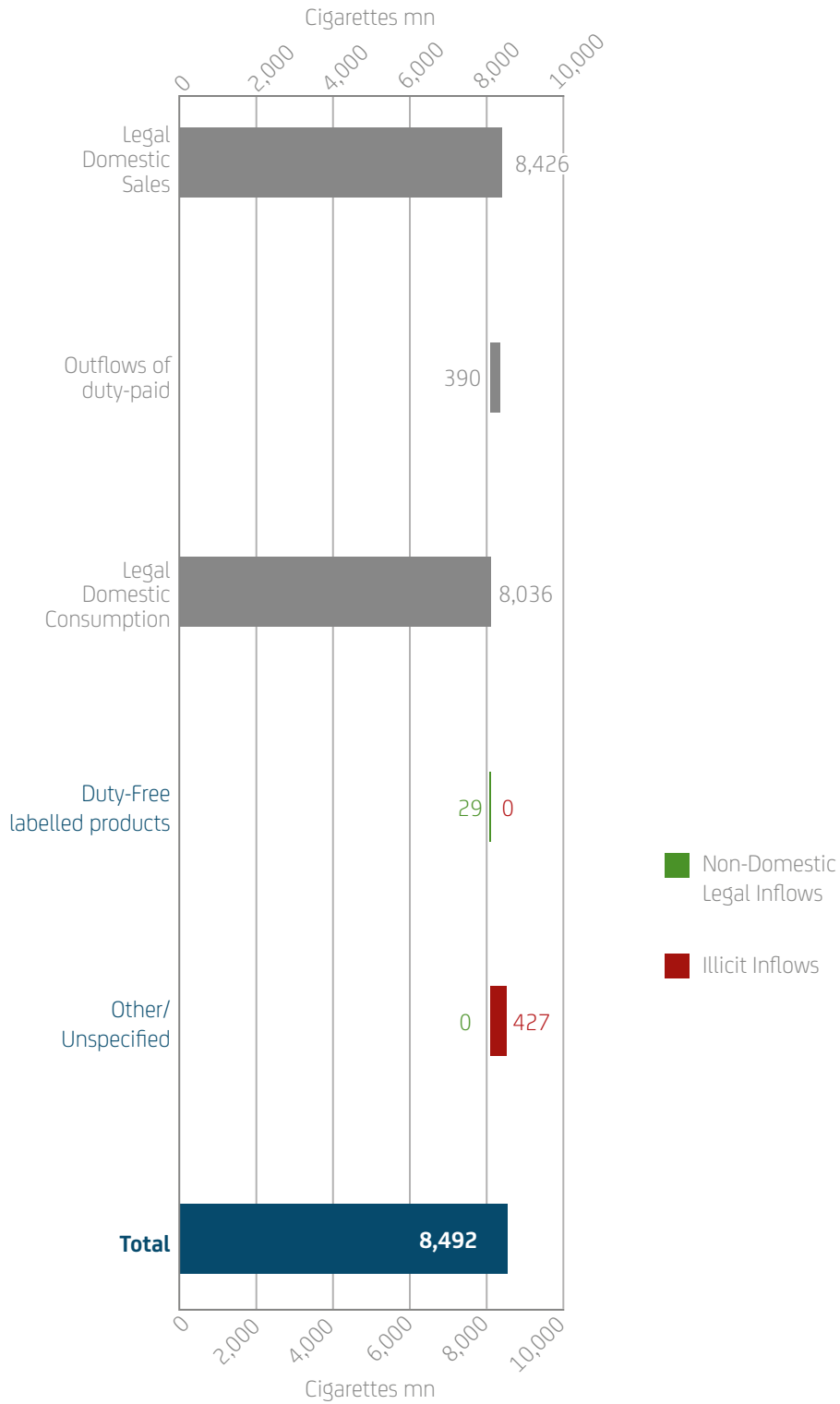
<sup>1</sup>Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 15 markets covered in this Report and may therefore be an underestimate.

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

<sup>3</sup>Unspecified 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. "Hero" and "Esse" were the primary Unspecified Market Variant brands identified in 2014.

<sup>4</sup>Figures in brackets reflect % changes from 2013.

## Cambodia: Consumption breakdown 2014

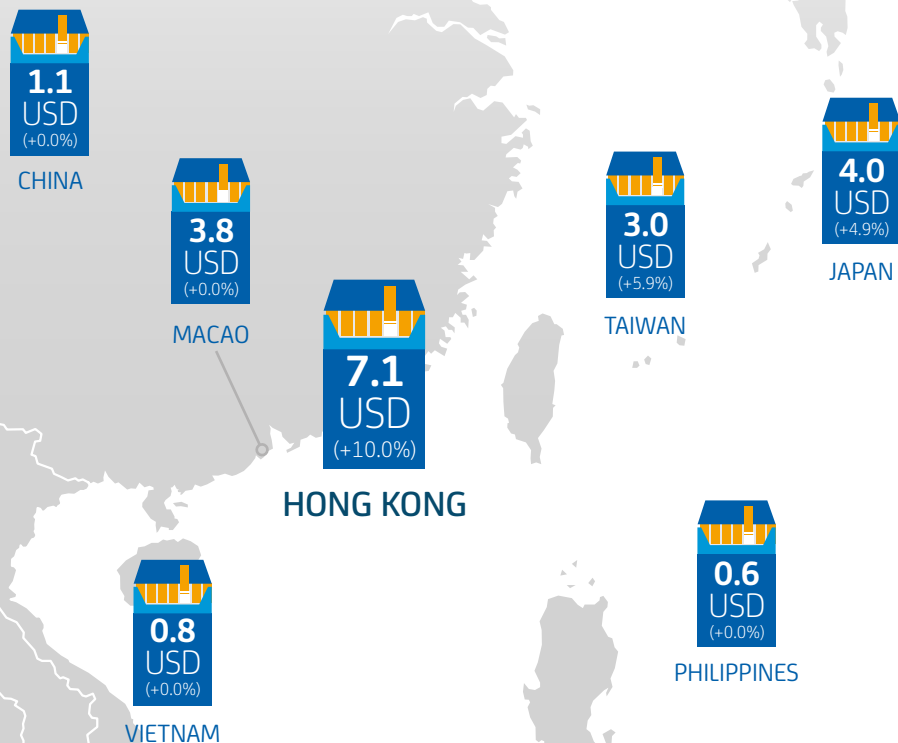


Source: IT Flows Model and Oxford Economics

## Hong Kong: Legal Domestic Sales

- Hong Kong Legal Domestic Sales, based on duty-paid volumes, are estimated at 3.1 billion cigarettes for calendar year 2014. This is slightly higher than Legal Domestic Sales in 2013 (+0.4%).
- Legal sales are primarily accounted for by four manufacturers: PM, BAT, JT, and Nanyang Brothers.
- In 2014, Excise Taxes were increased by 11.7%. As a consequence, the retail price of the Most Sold Brand of cigarettes rose by 10% in 2014.
- Cigarettes prices are relatively high in Hong Kong compared with neighbouring markets.<sup>1</sup> The price of the Most Sold Brand in 2014 was USD 7.1 per pack of 20, higher than USD 1.1 in China, USD 3.8 in Macao, and USD 3.0 in Taiwan. The price disparity grows even larger when compared with other markets in close proximity, such as Vietnam and the Philippines.
- The personal allowance limit was cut from 60 to 19 cigarettes in August 2010. Despite this, evidence from the Empty Pack Surveys continue to indicate a large presence of non-duty-paid cigarettes in Hong Kong.

## Hong Kong: Prices of cigarettes<sup>2</sup>

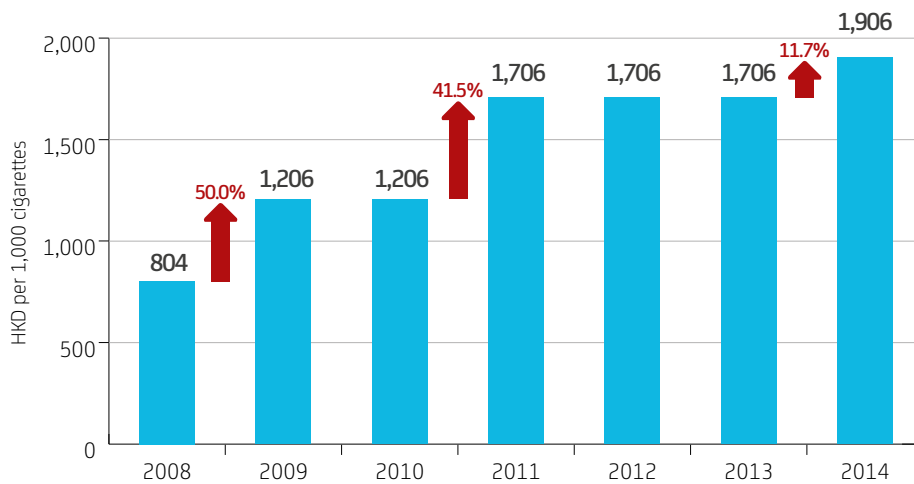


Source: Oxford Economics based on PM data

<sup>1</sup> This 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.

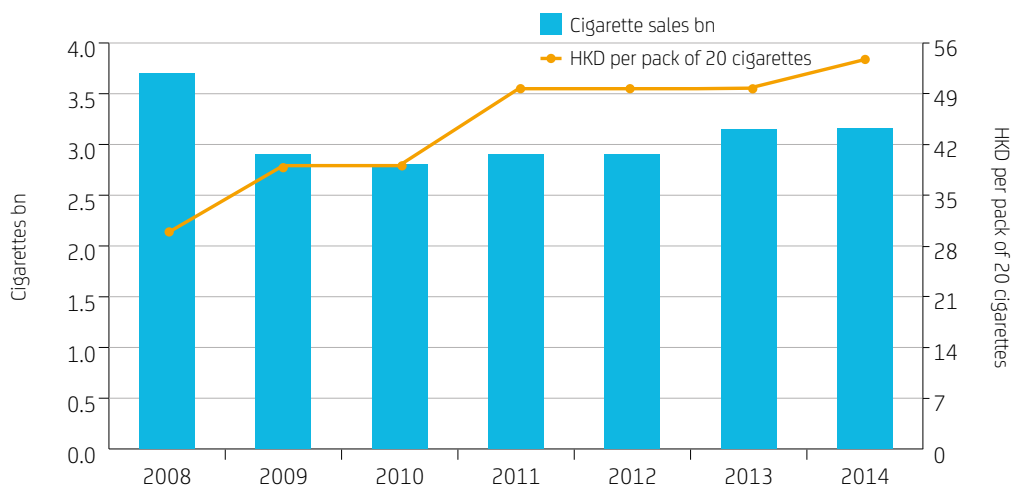
<sup>2</sup> Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

### Hong Kong: Excise duty applied to cigarettes<sup>3</sup>



Source: Hong Kong Customs & Excise Department and Oxford Economics  
<sup>3</sup>Rate applied in February of each year.

### Hong Kong: Legal Domestic Sales and prices<sup>4</sup>



Source: Oxford Economics  
<sup>4</sup>Price of the Most Sold Brand in March of each year.

# Hong Kong: Cigarette Consumption

- The results from two Empty Pack Surveys<sup>1</sup> conducted in 2014, combined with data on the volume of duty-paid cigarettes 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) is estimated at 4.8 billion cigarettes in 2014, representing an 11.1% decline in comparison with 2013. Of this, an estimated 63.7% or 3.0 billion cigarettes is Legal Domestic Consumption, 8.3% is Non-Domestic Legal Consumption, and 28% or 1.3 billion cigarettes is Illicit Consumption.
- Despite the Excise Tax increase and resulting price increase, Legal Domestic Sales remained relatively stable in 2014 compared with the previous year, in fact showing a small increase of 14 million cigarettes (+0.4%).
- Instead, the lower level of Total Consumption in Hong Kong was underpinned by a notable decline in the volume of illicit cigarettes consumed in 2014, falling by more than a quarter in just one year (equivalent to 463 million cigarettes). Illicit Consumption has now fallen for two successive years in Hong Kong, following a more modest 2.3% decline in volumes in 2013.
- As a consequence, the share of Illicit Consumption in Total Consumption fell by 5.6 percentage points to 28%, the lowest level since the first Asia Illicit Tobacco Indicator Report was conducted. The share of Illicit Consumption was at its highest in 2012 at 35.9%.
- The volume of Non-Domestic Legal Consumption has remained relatively constant at around 0.4 billion cigarettes over the last three years, with the rising share in Total Consumption in 2014 (8.3%) owing primarily to the overall decline in Total Consumption.

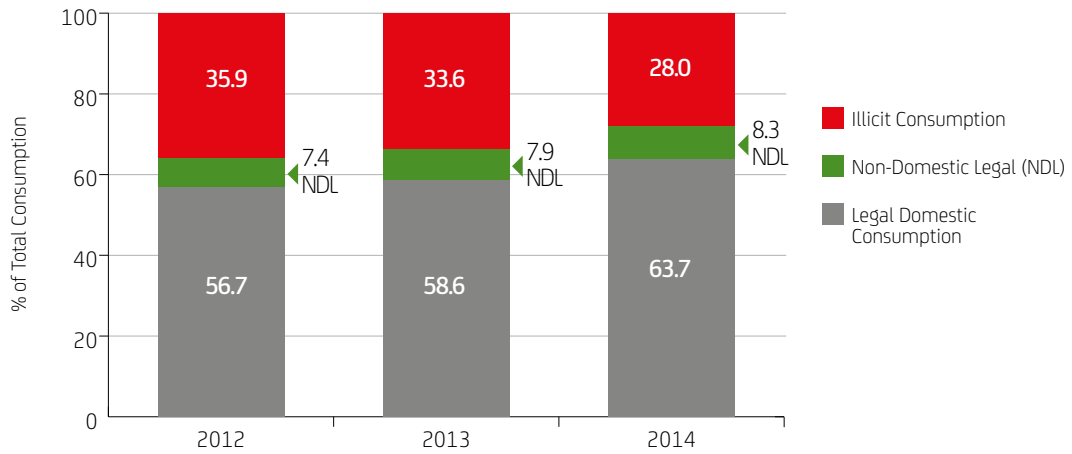
## Hong Kong: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>2.9</b>	<b>56.7</b>	<b>3.1</b>	<b>58.6</b>	<b>3.0</b>	<b>63.7</b>	<b>-3.3</b>
Legal Domestic Sales (LDS)	2.9	—	3.1	—	3.1	—	0.4
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	-0.1	—	n/a
<b>Total Non-Domestic Inflows (ND)</b>	<b>2.2</b>	<b>43.3</b>	<b>2.2</b>	<b>41.4</b>	<b>1.7</b>	<b>36.3</b>	<b>-22.1</b>
Non-Domestic Legal (NDL)	0.4	7.4	0.4	7.9	0.4	8.3	-6.6
Non-Domestic Illicit	1.8	35.9	1.8	33.6	1.3	28.0	-25.8
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>5.1</b>	<b>100.0</b>	<b>5.4</b>	<b>100.0</b>	<b>4.8</b>	<b>100.0</b>	<b>-11.1</b>
<b>Total Illicit Consumption</b>	<b>1.8</b>	<b>35.9</b>	<b>1.8</b>	<b>33.6</b>	<b>1.3</b>	<b>28.0</b>	<b>-25.8</b>

Source: Oxford Economics

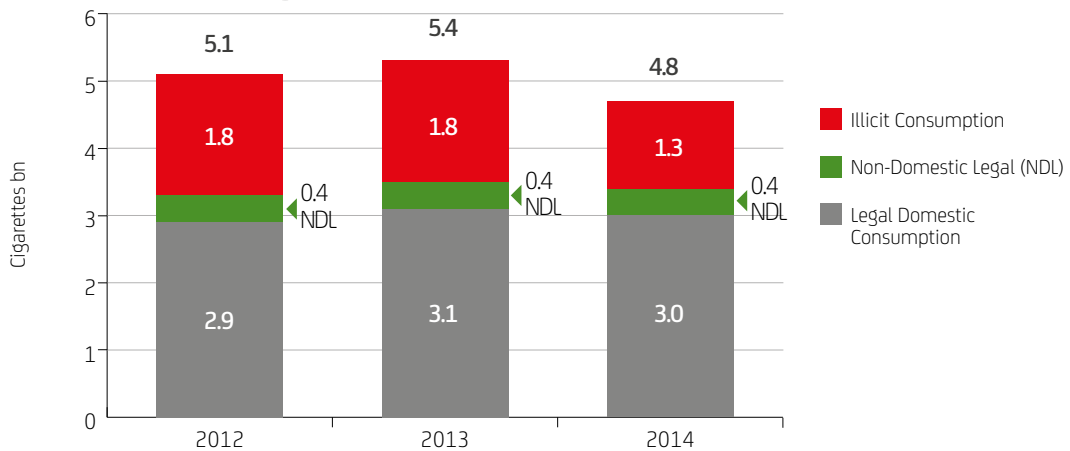
<sup>1</sup>Empty Pack Surveys were undertaken in 2014 Q2 and 2014 Q4 (see Annex A for more details).

## 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 rate, and there is no GST or VAT in place.
- Having been left unchanged since February 2011, the excise rate was increase by 11.7% to HKD 1,906 per thousand cigarettes (equivalent to HKD 38.12 per pack of 20 sticks) on 26th February 2014.
- Actual revenues from excise duties on tobacco were HKD 6.1 billion in fiscal year 2014/15, owing primarily to the increase in Excise Tax rates given the relative stability of Legal Domestic Sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2014/15 amounted to HKD 2.5 billion (USD 328 million). This represents a 21.6% decline in the Tax Loss estimated for 2013/14, equivalent to a decline of HKD 703 million.
- As a proportion of total Excise Tax revenues, the estimated Excise Tax Loss from Illicit Consumption fell to 29.5% in 2014/15, which is 9.2 percentage points lower than 2012/13, when it peaked at 38.7%, following the near one-third decline in Illicit Consumption.

## Hong Kong: Actual government revenues and estimated Tax Loss

Indicator	2012/13 fiscal year <sup>1</sup>		2013/14 fiscal year <sup>1</sup>		2014/15 fiscal year <sup>1</sup>		% change in local currency 2013/14- 2014/15
	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	3.8%
Estimated number of illicit cigarettes purchased (cigarettes mn)	1,950		1,903		1,335		-29.8%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>3.3</b>	<b>429</b>	<b>3.2</b>	<b>419</b>	<b>2.5</b>	<b>328</b>	<b>-21.7%</b>
Lost excise revenue	3.3	429	3.2	419	2.5	328	-21.7%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>38.7%</b>		<b>35.7%</b>		<b>29.5%</b>		

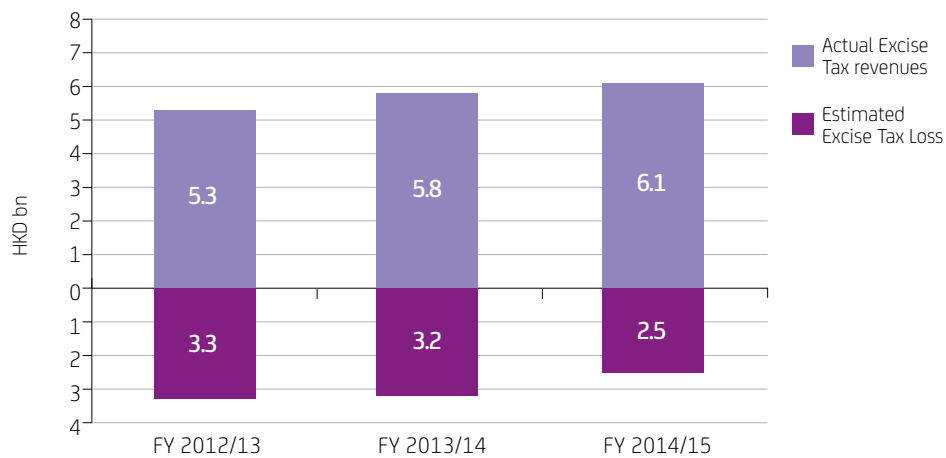
Source for government revenue data: Hong Kong Customs & Excise Department and Oxford Economics

Estimated number of illicit cigarettes purchased adjusted for fiscal year.

<sup>1</sup>Fiscal years run from April to March.



## Hong Kong: Actual government revenues and estimated Tax Loss

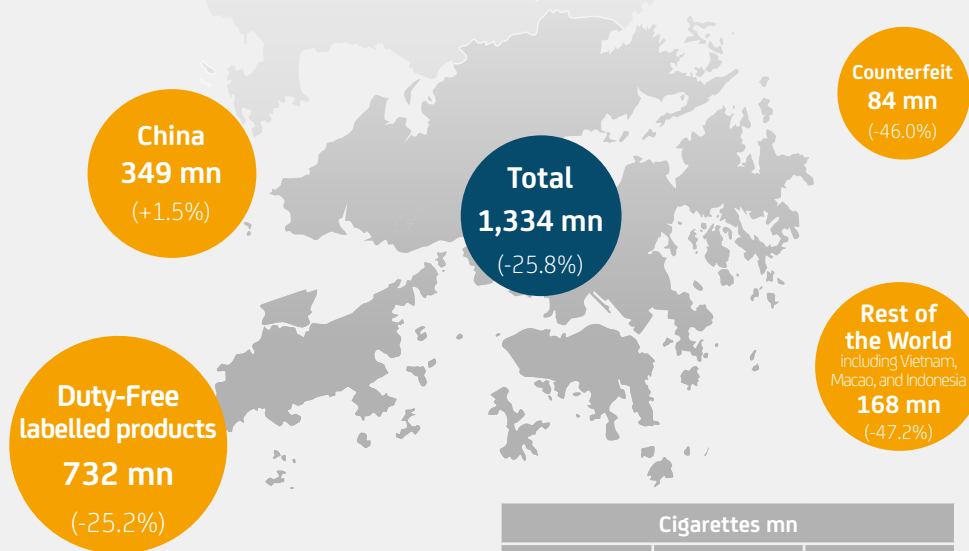


Source: Hong Kong Customs & Excise Department and Oxford Economics

# Hong Kong: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated at 117 million cigarettes, with over 85% ending up in nearby Macao.<sup>1</sup>
- 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 from abroad. Although the Non-Domestic share has declined over the last two years, more than a third of all cigarettes consumed in Hong Kong are still of Non-Domestic origin.
- Based on a personal duty-free personal import allowance of 19 cigarettes and the level of passenger traffic entering Hong Kong over the course of the year, we estimate the volume of Non-Domestic Legal Inflows at nearly 400 million cigarettes in 2014.<sup>2</sup>
- The share of Non-Domestic Legal Inflows in Total Consumption has risen for a third consecutive year, reaching 8.3% in 2014, which is one percentage point higher than 2012. In total, nearly a quarter of all Non-Domestic Inflows are estimated to arrive through legal channels, up from one-fifth in 2013.
- The remaining volume of Non-Domestic Inflows, which necessarily originate through illicit channels, are dominated by China Market Variant and Duty-Free labelled products, mainly from Vietnam, Indonesia, and Macao. China has consistently been the top market for Contraband cigarettes in Hong Kong for the past three years.
- The incidence of Counterfeit products declined for a second consecutive year in 2014, with an estimated 84 million Counterfeit cigarettes consumed in 2014. This represents a 60% decline since 2012, with the share of Counterfeit in Total Consumption falling from 4.1% in 2012 to 2.9% in 2013 and 1.8% in 2014. The volume of cigarettes of Unspecified Market Variant has also trended downwards since 2012.<sup>3</sup>

## Hong Kong: Origin of total Non-Domestic Illicit Inflows<sup>4</sup>



	Cigarettes mn		
	2012	2013	2014
Duty-Free labelled products	1,110	978	732
China	270	344	349
Other / Unspecified	250	319	168
Counterfeit	210	156	84
<b>Total</b>	<b>1,840</b>	<b>1,797</b>	<b>1,334</b>

Source: IT Flows Model and Oxford Economics

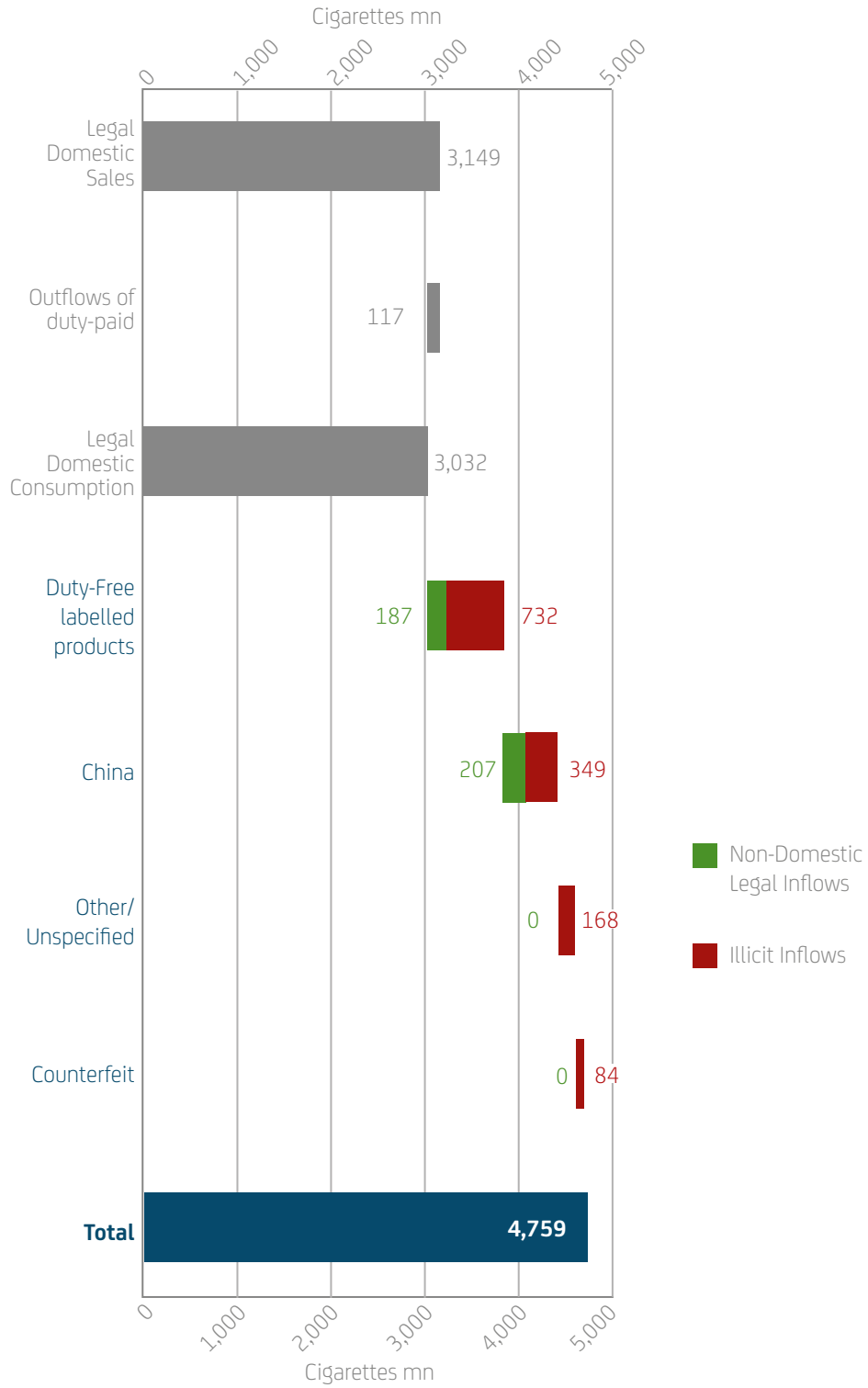
<sup>1</sup>Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 15 markets covered in this Report and may therefore be an underestimate.

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

<sup>3</sup>Unspecified 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", "Esse", and "Golden Deer" were the top three Unspecified Market Variant brands identified in 2014.

<sup>4</sup>Figures in brackets reflect % changes from 2013.

## Hong Kong: Consumption breakdown 2014

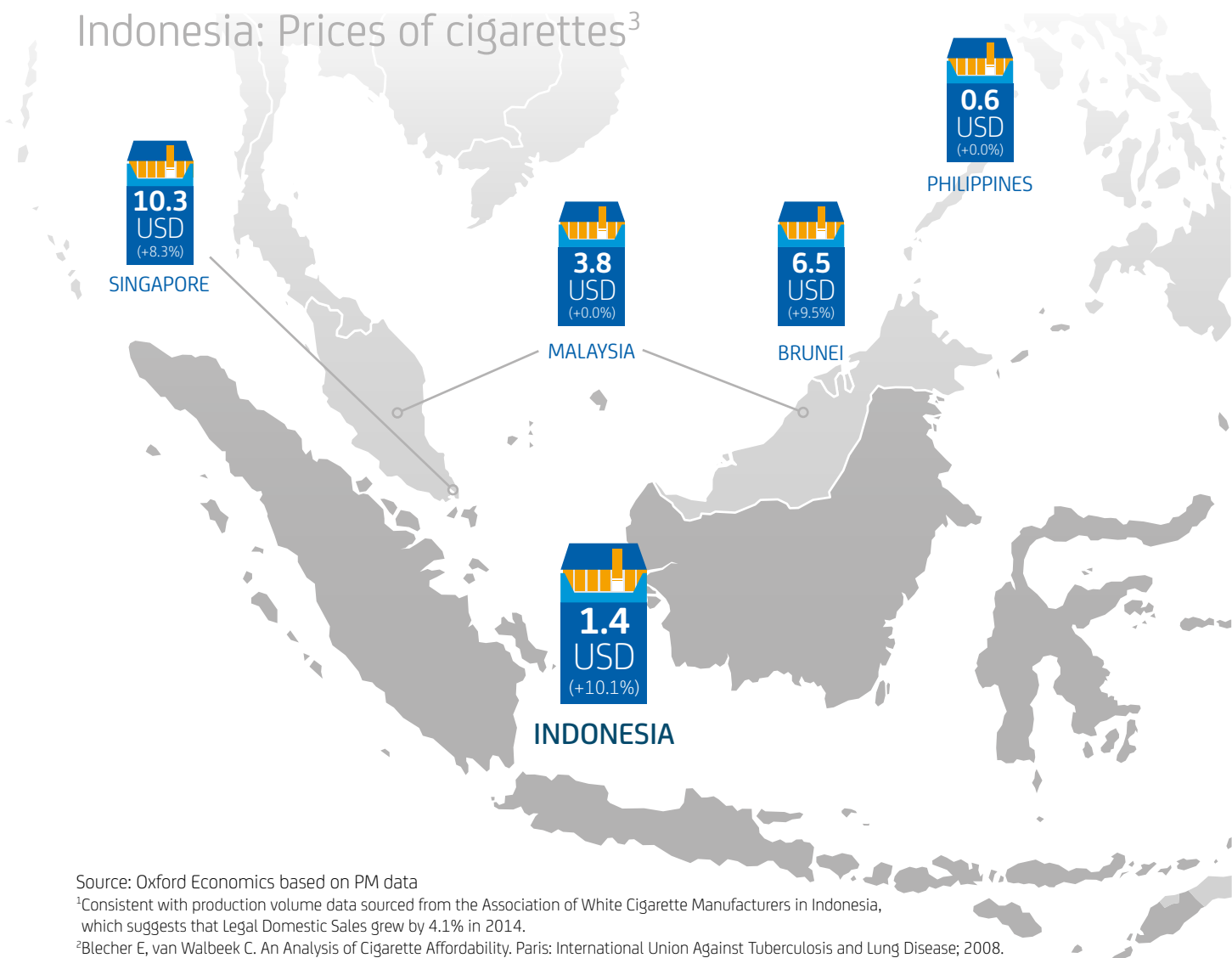


Source: IT Flows Model and Oxford Economics

## Indonesia: Legal Domestic Sales

- Legal Domestic Sales in Indonesia are estimated at 314 billion cigarettes for 2014, rising by 1.8% in comparison with 2013.<sup>1</sup> Indonesia is the largest market in the Asia-16 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.
- New government regulation requiring all cigarette manufacturers to display on-pack pictorial health warnings was introduced in June 2014.
- Prices for white cigarettes in Indonesia are relatively lower in compared with its neighbouring markets. The price of the Most Sold Brand at USD 1.4 per pack compares with USD 3.8 in Malaysia, USD 6.5 in Brunei, and USD 10.3 in Singapore.
- However, when comparing the affordability of cigarettes with neighbouring countries, as measured by the Relative Income Price (i.e. the proportion of per capita income needed to buy 100 cigarettes packets),<sup>2</sup> prices are the fourth highest of the Asia-16 markets and higher than in Brunei, Malaysia, and the Philippines.
- Cigarette prices increased in 2014 following the introduction of a regional Earmarked Tax.

### Indonesia: Prices of cigarettes<sup>3</sup>



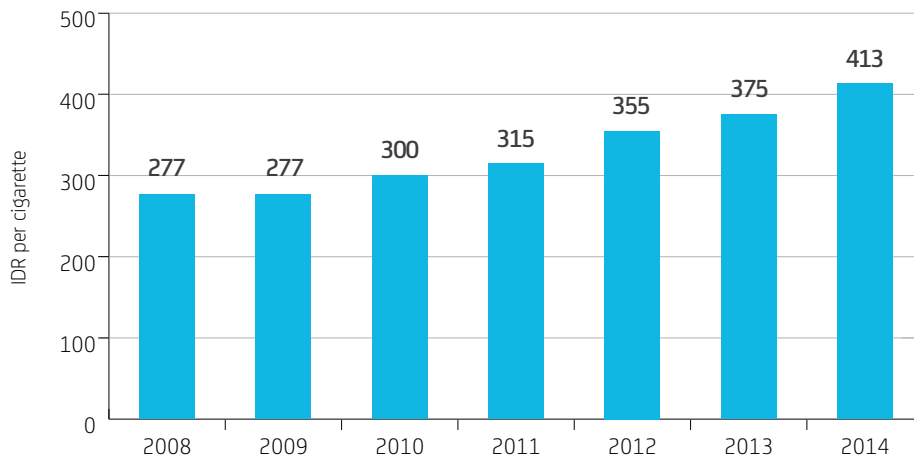
Source: Oxford Economics based on PM data

<sup>1</sup>Consistent with production volume data sourced from the Association of White Cigarette Manufacturers in Indonesia, which suggests that Legal Domestic Sales grew by 4.1% in 2014.

<sup>2</sup>Blecher E, van Walbeek C. An Analysis of Cigarette Affordability. Paris: International Union Against Tuberculosis and Lung Disease; 2008.

<sup>3</sup>Price per pack of 20 of the Most Sold Brand in October 2014 with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes (the Most Sold Brand in Indonesia is currently the machine-made kretek brand "Sampoerna A Mild"). Figures in brackets reflect % changes in local currency from October 2013.

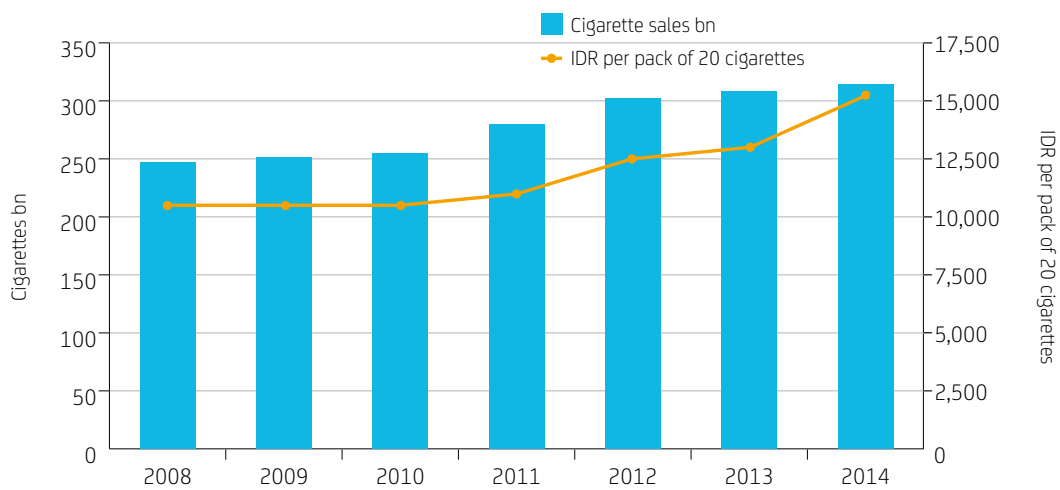
## Indonesia: Excise duty applied to cigarettes<sup>4</sup>



Source: Indonesian Directorate General of Customs & Excise and Oxford Economics

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

## Indonesia: Legal Domestic Sales and prices<sup>5</sup>



Source: Oxford Economics

<sup>5</sup>Price 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.

# Indonesia: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> and IMS data on Legal Domestic Sales were combined to estimate Total Consumption of cigarettes in Indonesia.
- Total Consumption (legal and illicit) is estimated at 314.6 billion cigarettes in 2014, representing an increase of 1.4% from 2013. This is the second year that Total Consumption has grown, although the pace of growth has receded following the 2.5% growth recorded in 2013.
- Of this, an estimated 99.7% or 313.6 billion cigarettes is Legal Domestic Consumption, 0.2% is Non-Domestic Legal Consumption, and the remaining 0.1% or 0.3 billion cigarettes is Illicit Consumption.
- After rising to 0.6% in 2013, the share of Illicit Consumption in Total Consumption fell back to just 0.1% in 2014, the same level recorded in 2012. Non-Domestic Legal Consumption has retained a constant share in Total Consumption since 2012.
- It must be noted that this analysis includes estimates of Non-Domestic Illicit only. A recent study published by the Center for Economic & Public Policy Studies at Gadjah Mada University, Indonesia, based on the analysis of Excise Tax stamps on the samples of cigarette packets purchased, reported a Domestic Illicit share in Total Consumption of 11.7%.<sup>2</sup>
- Based on this estimate of Domestic Illicit, Total Consumption of cigarettes in 2014 would rise to an estimated 325.3 billion, of which 11.8% or 38.3 billion cigarettes is considered illicit.

## Indonesia: Composition of cigarette consumption

	2012 <sup>3</sup>		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>301.8</b>	<b>99.7</b>	<b>307.8</b>	<b>99.2</b>	<b>313.6</b>	<b>99.7</b>	<b>1.9</b>
Legal Domestic Sales (LDS)	302.5	—	308.3	—	314.0	—	1.8
Outflows of domestic duty-paid cigarettes	-0.7	—	-0.5	—	-0.4	—	-31.3
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.9</b>	<b>0.3</b>	<b>2.1</b>	<b>0.7</b>	<b>1.0</b>	<b>0.3</b>	<b>-53.2</b>
Non-Domestic Legal (NDL)	0.6	0.2	0.6	0.2	0.7	0.2	7.7
Non-Domestic Illicit	0.3	0.1	1.4	0.5	0.3	0.1	-79.9
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.5</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>-100</b>
<b>Total Consumption</b>	<b>302.7</b>	<b>100.0</b>	<b>310.3</b>	<b>100.0</b>	<b>314.6</b>	<b>100.0</b>	<b>1.4</b>
<b>Total Illicit Consumption</b>	<b>0.3</b>	<b>0.1</b>	<b>1.9</b>	<b>0.6</b>	<b>0.3</b>	<b>0.1</b>	<b>-84.9</b>

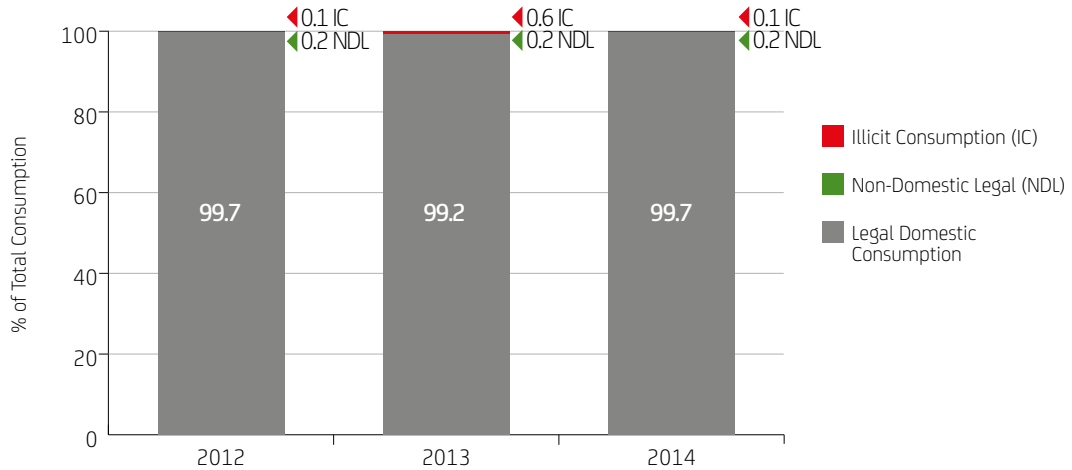
Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q4 (see Annex A for more details).

<sup>2</sup>Center for Economic & Public Policy Studies, Gadjah Mada University, Indonesia, Survey of Illegal Cigarettes 2014; Final Report, 2015. Domestic Illicit cigarettes were identified based on violations in the application (or absence) of Excise Tax stamps.

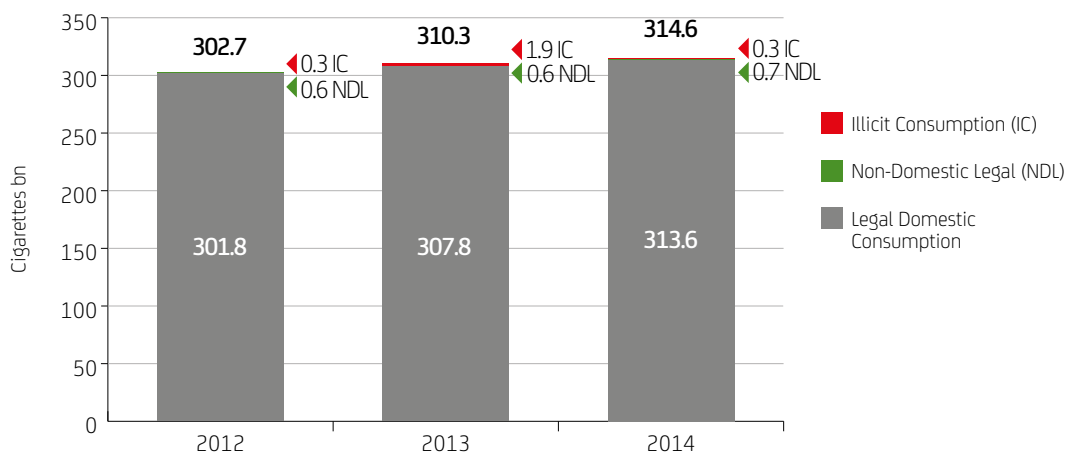
<sup>3</sup>2012 results based on 2011 Q2 Empty Pack Survey.

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



Source: Oxford Economics

## Indonesia: Composition of cigarette consumption (number of cigarettes)



Source: Oxford Economics

# Indonesia: Government Finances

- Indonesia has one of the most complex excise 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 300 million and 2 billion cigarettes, and below 300 million cigarettes), and the price (various price levels).
- Further steps were taken by the government to reduce the complexity of the Excise Tax regime in 2013, with the multi-tiered system reduced from 15 tiers to 13 after the previous reduction from 19 tiers to 15 in January 2012.
- A weighted-average tax increase of 5.6% (around 9% on a simple average) was announced in late 2012 and implemented in 2013.
- An Earmarked Tax (a regional tax equivalent to 10% of Excise Tax) was implemented on 1st January 2014.
- VAT is also applied to sales at a rate of 8.4% of the banderole price.<sup>1</sup>
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2014 amounted to IDR 120 billion (USD 10.1 million). This represents a substantial decline in the Tax Loss from IDR 704 billion (USD 67.3 million) estimated for 2013, realigning with estimates for 2012.
- When including estimates of Domestic Illicit from the Center for Economic & Public Policy Studies at Gadjah Mada University, the estimated Tax Loss from Illicit Consumption in 2014 would increase to between IDR 1,068 billion (USD 90 million) and IDR 1,218 (USD 103 million).<sup>2</sup>

## Indonesia: Actual government revenues and estimated Tax Loss

Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	IRD bn	USD mn	IRD bn	USD mn	IRD bn	USD mn	
Actual revenue from excise duties on tobacco <sup>3</sup>	90,549	9,630	103,568	9,900	112,540	9,485	8.7%
Estimated number of illicit cigarettes purchased (cigarettes mn)	301		1,896		287		-84.9%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>103</b>	<b>11.0</b>	<b>704</b>	<b>67.3</b>	<b>120</b>	<b>10.1</b>	<b>-83.0%</b>
Lost excise revenue <sup>3</sup>	87	9.2	593	56.7	101	8.6	-82.9%
Lost VAT revenue	17	1.8	111	10.6	18	1.5	-83.5%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>3</sup></b>	<b>0.1%</b>		<b>0.6%</b>		<b>0.1%</b>		

Source for government revenue data: Indonesian Directorate General of Customs and Excise, Ministry of Finance, and Oxford Economics

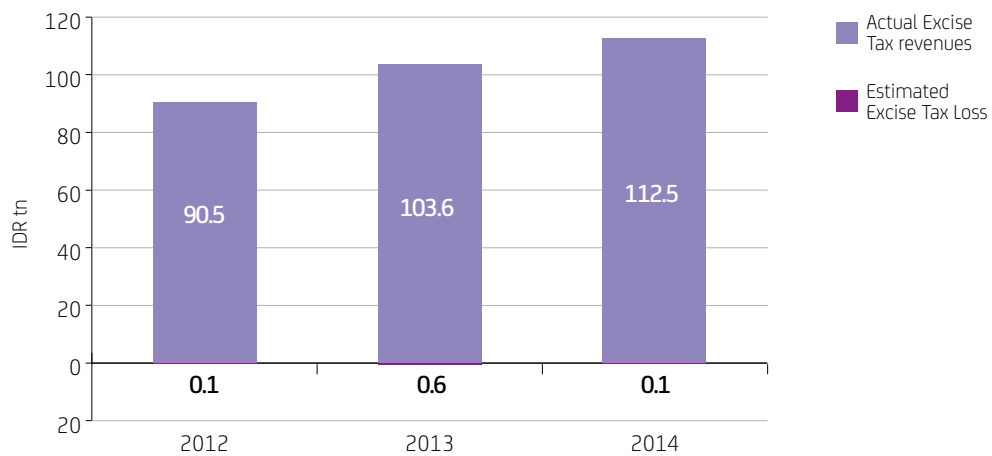
<sup>1</sup>The banderole price is an estimation of the price of a pack of cigarettes sold to the end consumer. When placing an order for Excise Tax stamps, manufacturers also submit the banderole price. In theory, the banderole price should reflect the actual retail selling price. However, due to the 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.

<sup>2</sup>Center for Economic & Public Policy Studies, Gadjah Mada University, Indonesia, Survey of Illegal Cigarettes 2014; Final Report, 2015. Lower and upper-bound estimates are presented by the authors for estimated Tax Losses from Domestic Illicit Consumption.

<sup>3</sup>Includes Earmarked Taxes.



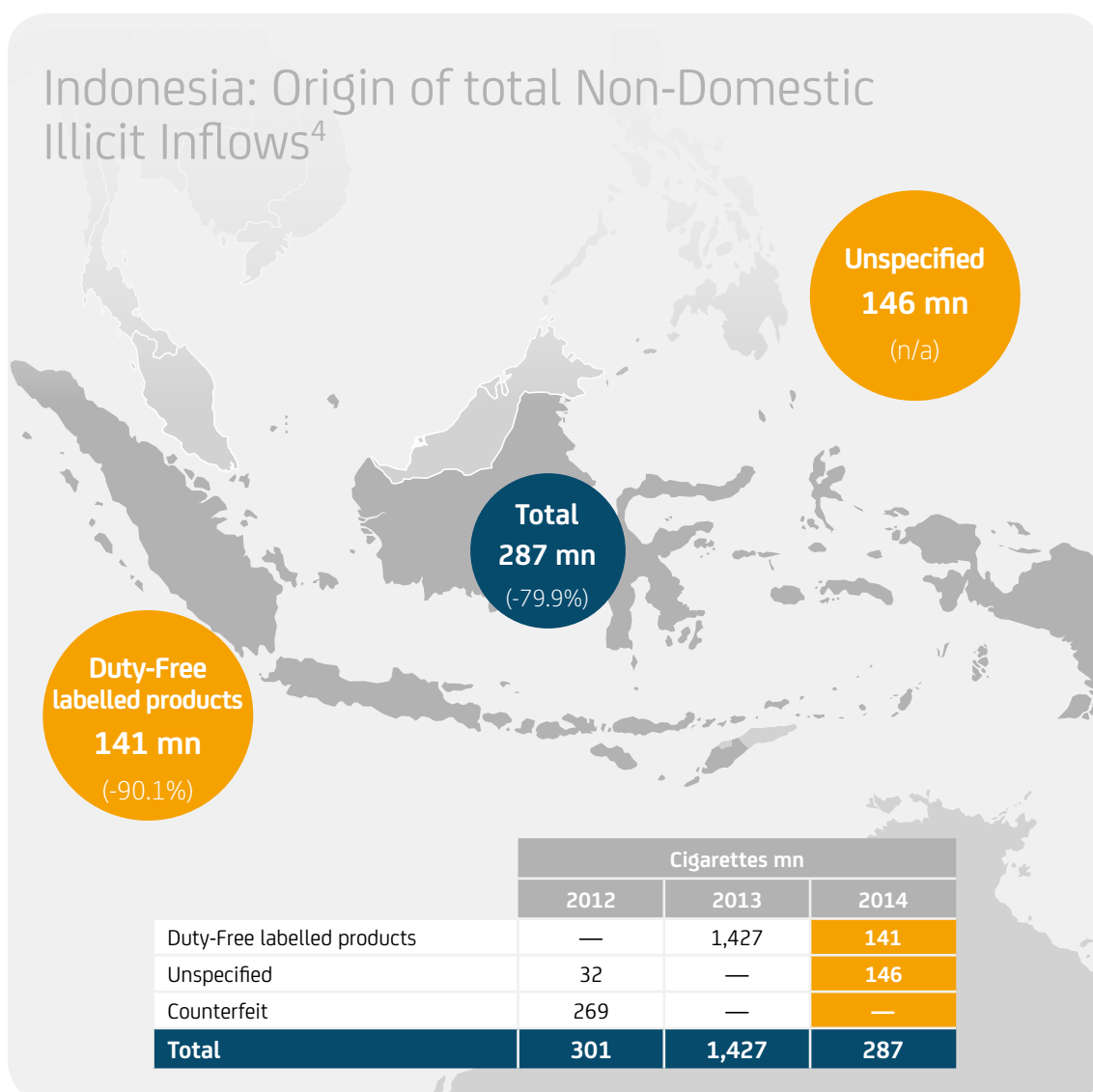
## Indonesia: Actual government revenues and estimated Tax Loss



Source: Indonesian Directorate General of Customs and Excise, Ministry of Finance, and Oxford Economics

## Indonesia: Trade Flows

- Non-Domestic Illicit Inflows of cigarettes in Indonesia are broadly split evenly between Duty-Free labelled products and Unspecified Market Variant products.<sup>1</sup> This contrasts against results from the 2013 Empty Pack Survey, where all Non-Domestic Illicit products identified were bearing labelling for products destined for retail in Duty-Free channels.
- There were no Counterfeit products identified in Indonesia according to the Empty Pack Survey, a finding consistent with 2013, although a small volume equal to 269 million cigarettes (0.1% of Total Consumption) was present in 2012.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated at around 351 million cigarettes, with around 70% ending up in Singapore and a further 20% destined for Australia.<sup>2</sup> The volume of Outflows of duty-paid cigarettes has steadily declined since 2012, despite the increased market coverage of the Illicit Tobacco Indicator research.
- Given the sharp decline in the share of Non-Domestic cigarettes present in Total Consumption, the majority of Non-Domestic Inflows are estimated to be legal personal imports.<sup>3</sup>



Source: IT Flows Model and Oxford Economics

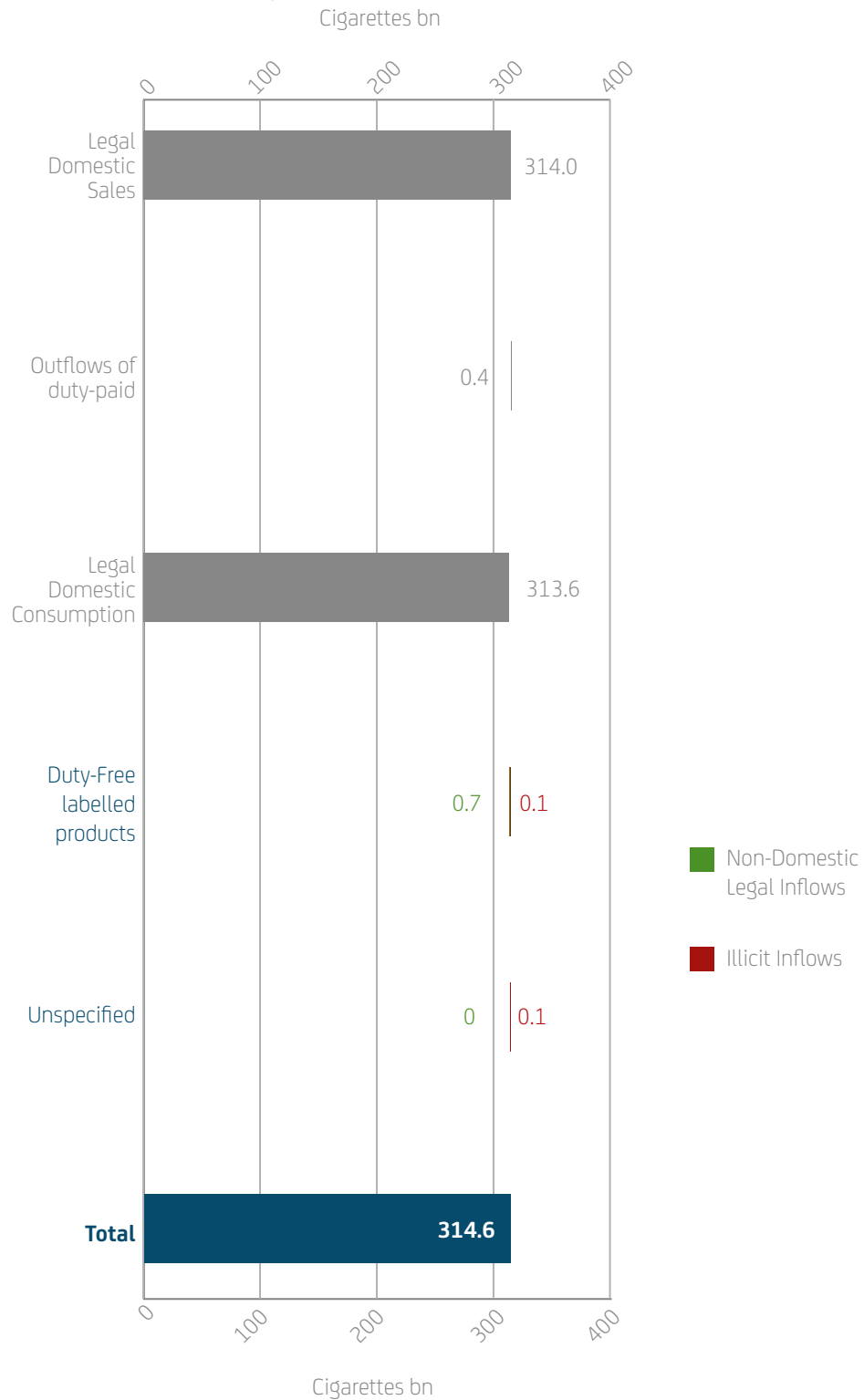
<sup>1</sup>Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such, the intended market is not known.

<sup>2</sup>Note 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.

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

<sup>4</sup>Figures in brackets reflect % changes from 2013.

## Indonesia: Consumption breakdown 2014

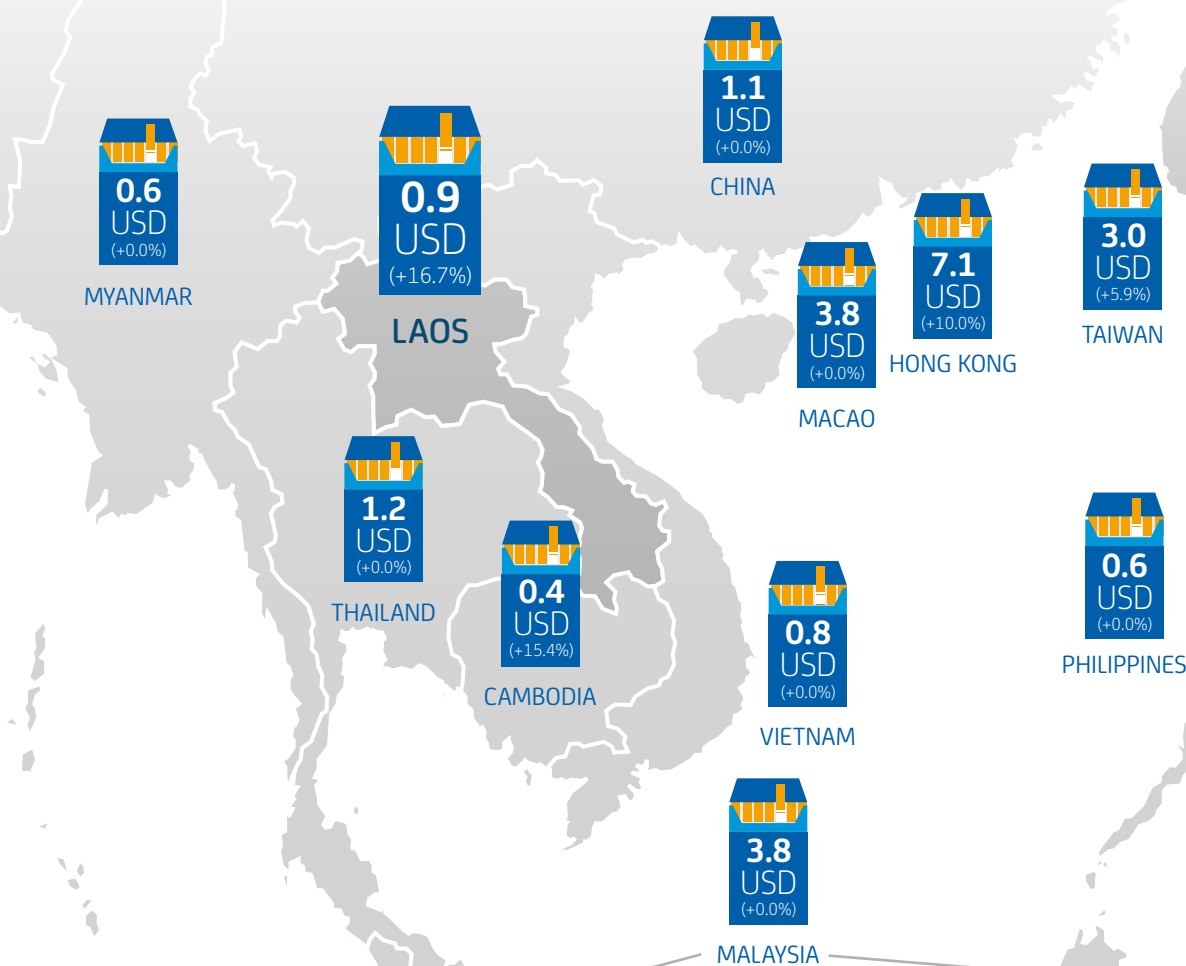


Source: IT Flows Model and Oxford Economics

## Laos: Legal Domestic Sales

- Laos Legal Domestic Sales are estimated at 2.5 billion cigarettes for 2014. This represents an increase of 2.9% since 2013. Legal Domestic Sales have been steadily rising by around 3% per annum for the last three years.
- Two manufacturers (Imperial Tobacco and Lao-China Tobacco Company) account for nearly all Legal Domestic Sales in Laos.
- The price of the Most Sold Brand in Laos is USD 0.9 per pack. This is lower than in Thailand (USD 1.2), but higher in comparison with other neighbouring markets such as Vietnam (USD 0.8), Myanmar (USD 0.6), and Cambodia (USD 0.4).

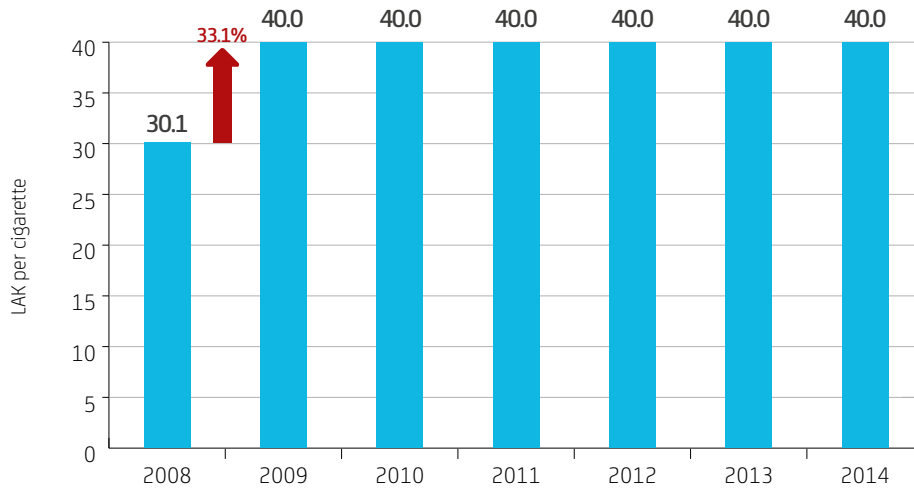
### Laos: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

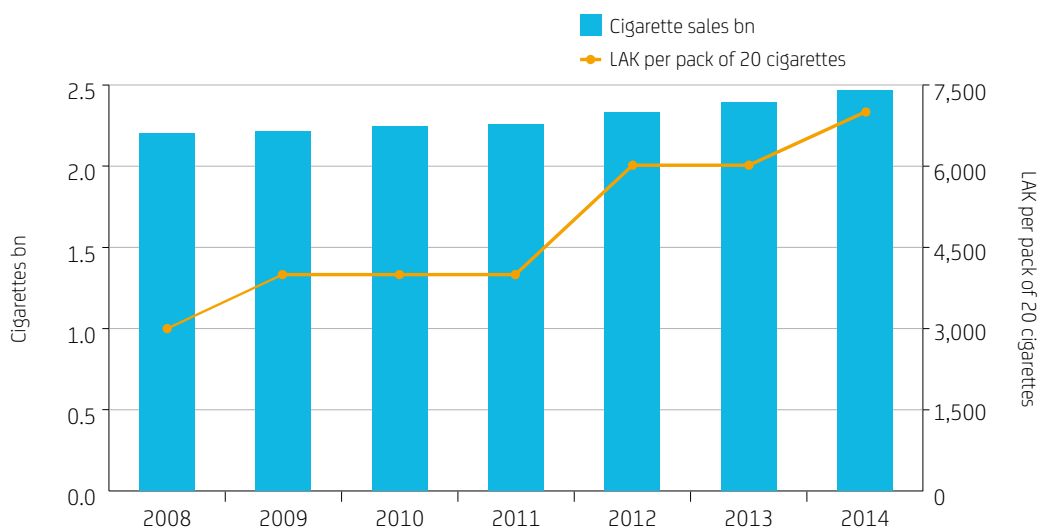
## Laos: Excise duty applied to cigarettes<sup>2</sup>



Source: Oxford Economics

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

## Laos: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of the Most Sold Brand in January of each year.

## Laos: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> 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 3.0 billion cigarettes in 2014. Of this, an estimated 82.3% or 2.5 billion cigarettes is Legal Domestic Consumption, 8.9% is Non-Domestic Legal Consumption, and 8.8% or 262 million cigarettes is Illicit Consumption.

### Laos: Composition of cigarette consumption

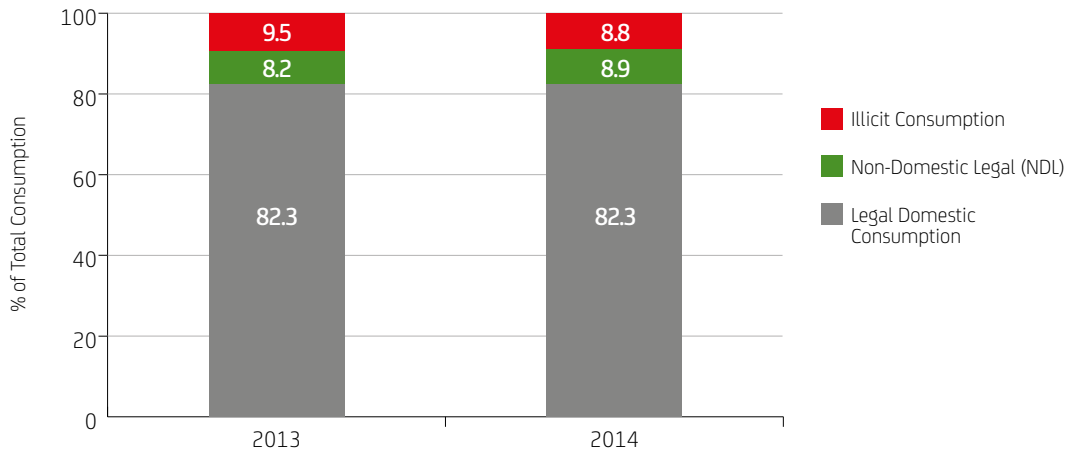
	2013 <sup>2</sup>		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>2.4</b>	<b>82.3</b>	<b>2.5</b>	<b>82.3</b>	<b>3.0</b>
Legal Domestic Sales (LDS)	2.4	—	2.5	—	2.9
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	-12.2
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.5</b>	<b>17.7</b>	<b>0.5</b>	<b>17.7</b>	<b>3.0</b>
Non-Domestic Legal (NDL)	0.2	8.2	0.3	8.9	12.2
Non-Domestic Illicit	0.3	9.5	0.3	8.8	-4.9
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>2.9</b>	<b>100.0</b>	<b>3.0</b>	<b>100.0</b>	<b>3.0</b>
<b>Total Illicit Consumption</b>	<b>0.3</b>	<b>9.5</b>	<b>0.3</b>	<b>8.8</b>	<b>-4.9</b>

Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q1 (see Annex A for more details).

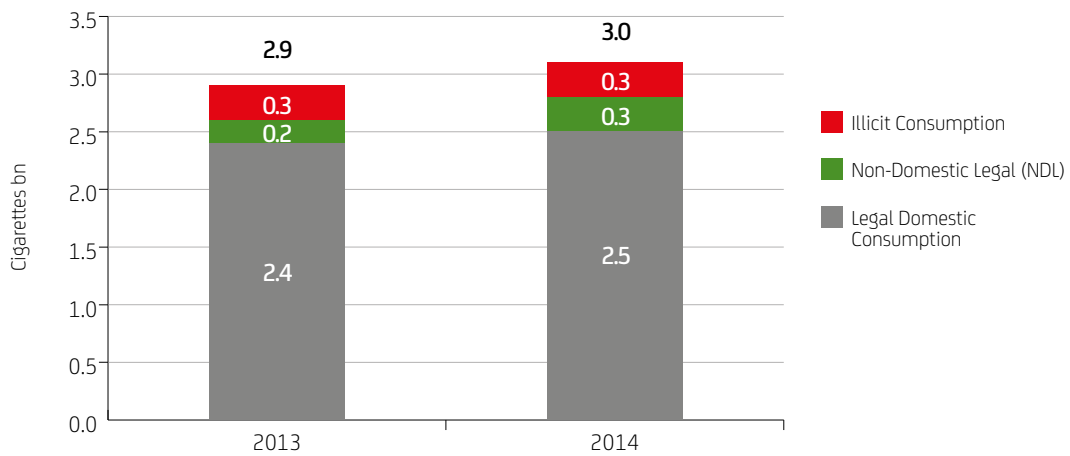
<sup>2</sup>2013 results based on 2014 Q1 Empty Pack Survey.

## 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 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 Tax 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 2014 amounted to LAK 18.8 billion (USD 2.3 million).

### Laos: Actual government revenues and estimated Tax Loss

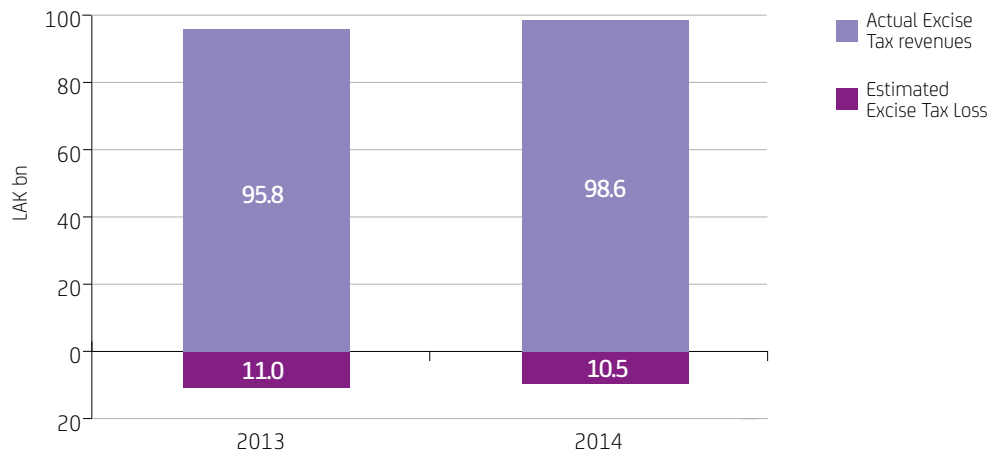
Indicator	2013		2014		% change in local currency 2013 - 2014
	LAK bn	USD mn	LAK bn	USD mn	
Actual revenue from excise duties on tobacco <sup>1</sup>	95.8	12.2	98.6	12.2	2.9%
Estimated number of illicit cigarettes purchased (cigarettes mn)	275		262		-4.9%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>18.5</b>	<b>2.4</b>	<b>18.8</b>	<b>2.3</b>	<b>1.5%</b>
Lost excise revenue <sup>1</sup>	11.0	1.4	10.5	1.3	-4.9%
Lost VAT revenue	7.5	1.0	8.3	1.0	10.9%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>1</sup></b>	<b>10.3%</b>		<b>9.6%</b>		

Source for government revenue data: Oxford Economics based on PM data

<sup>1</sup>Includes tax stamp.



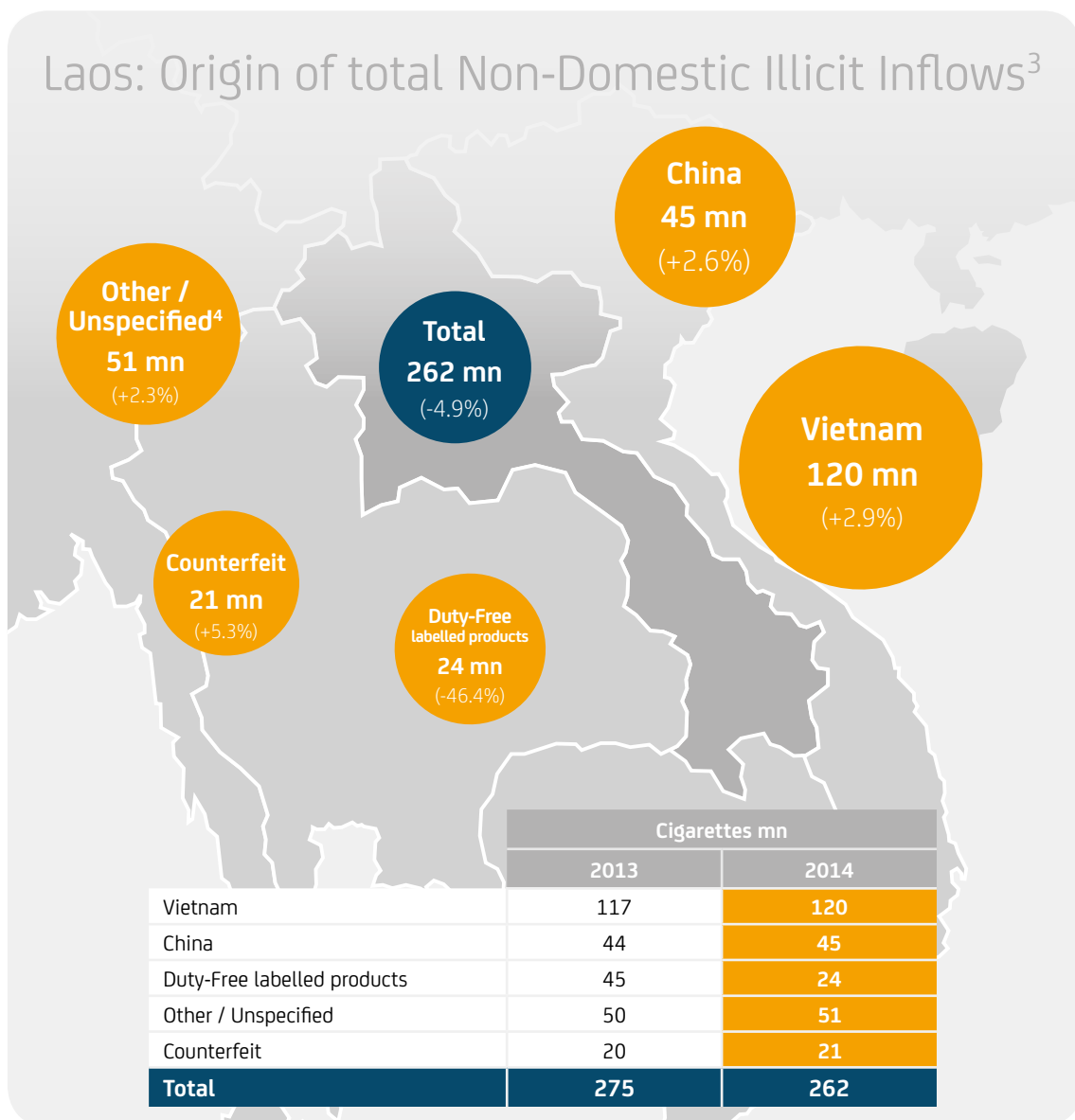
## Laos: Actual government revenues and estimated Tax Loss



Source: Oxford Economics based on PM data

## Laos: Trade Flows

- Non-Domestic Legal Inflows<sup>1</sup> are relatively large in Laos, with an estimated 265 million cigarettes (8.9% of Total Consumption) coming through legal non-duty-paid channels, primarily from neighbouring markets Thailand and Vietnam.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be very low.<sup>2</sup>
- Vietnam and China are the primary origin markets for Non-Domestic Illicit cigarette consumption in Laos. Inflows from Vietnam alone accounted for over 40% of total Non-Domestic Illicit Consumption in 2014.
- There are also small amounts of Counterfeit products present in Laos, amounting to 21 million cigarettes in 2014.



Source: IT Flows Model and Oxford Economics

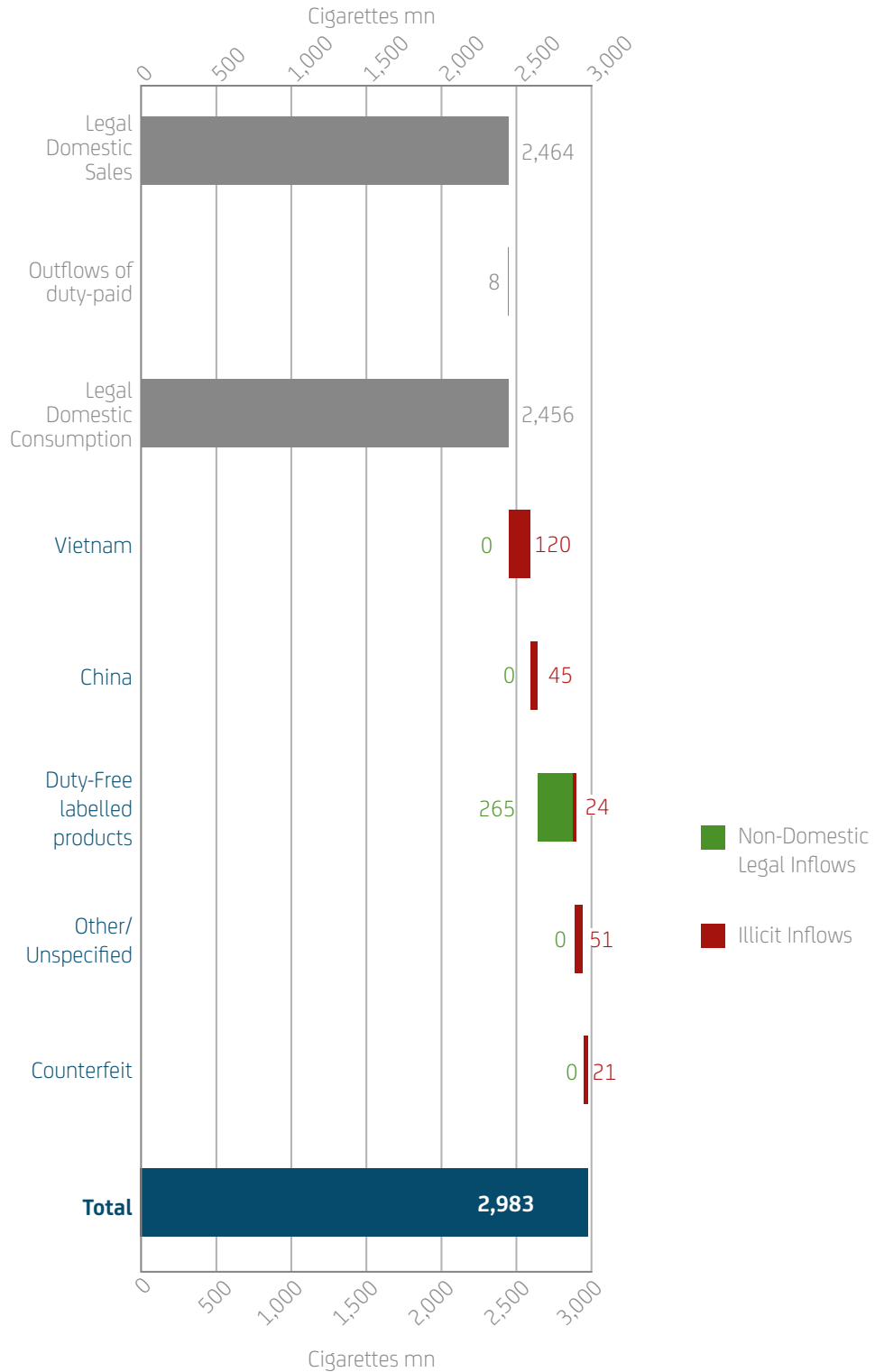
<sup>1</sup>Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin, and the passenger duty-free personal import allowance limit.

<sup>2</sup>Note 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.

<sup>3</sup>Figures in brackets reflect % changes from 2013.

<sup>4</sup>Unspecified 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. "Esse" was the primary Unspecified Market Variant brand identified in 2014.

## Laos: Consumption breakdown 2014



Source: IT Flows Model and Oxford Economics

## Macao: Legal Domestic Sales

- Macao Legal Domestic Sales are estimated at 545 million cigarettes in 2014. This represents a 1.4% decline from 2013.
- The legal market for cigarettes is dominated by four manufacturers (accounting for nearly 80% of Legal Domestic Sales), namely PM, JT, BAT, and Nanyang Brothers, with some additional presence of various Chinese brands and small local manufacturers.
- Cigarette prices are relatively high in Macao, costing USD 3.8 per pack based on the Most Sold Brand in 2014. This is more than three times higher than China.
- In comparison with Hong Kong, however, where a pack of cigarettes costs USD 7.1 for the Most Sold Brand, cigarette prices are relatively inexpensive.

### Macao: Prices of cigarettes<sup>1</sup>



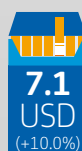
CHINA



JAPAN



TAIWAN



HONG KONG



MACAO



PHILIPPINES

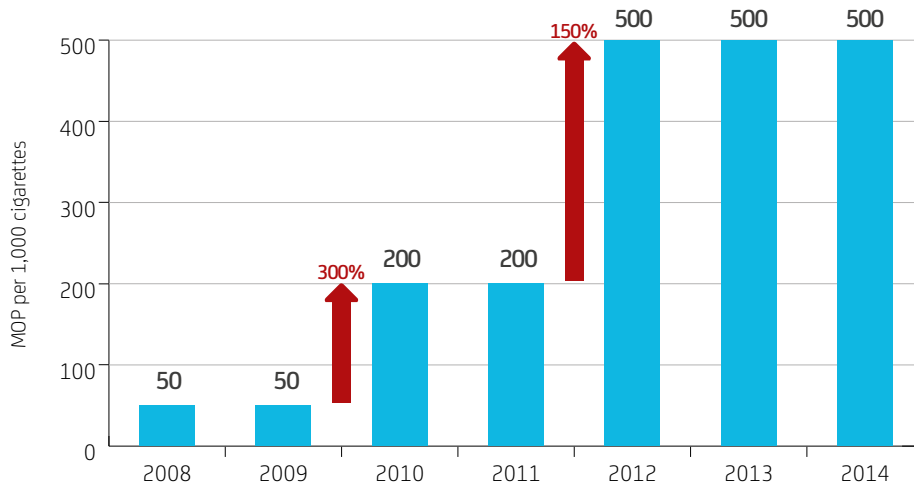


VIETNAM

Source: Oxford Economics based on PM data

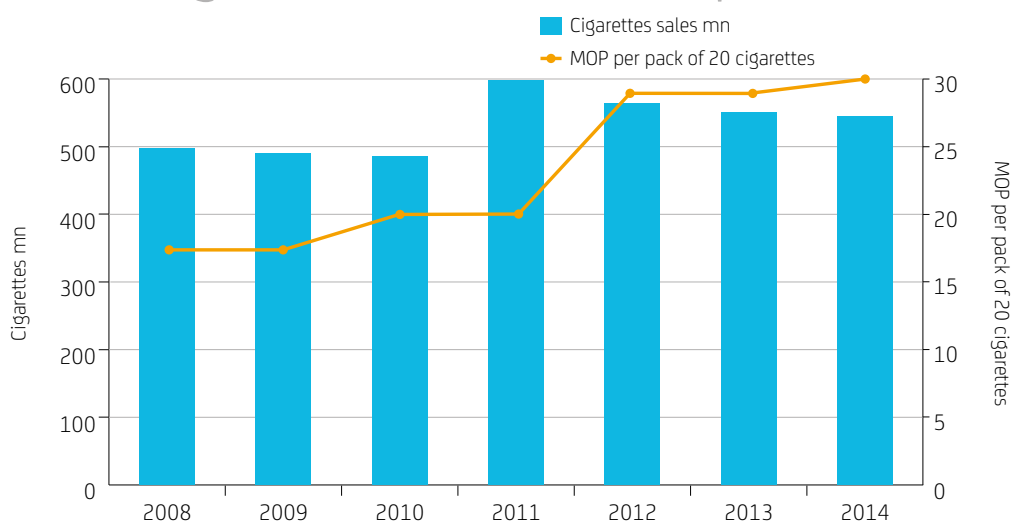
<sup>1</sup> Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013. Recent regulatory changes in 2015 are not reflected in this Report.

## Macao: Excise duty applied to cigarettes<sup>2</sup>



Source: Macao government  
<sup>2</sup>Rate applied in January of each year.

## Macao: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics  
<sup>3</sup>Price per pack of the Most Sold Brand in January of each year.

## Macao: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> and IMS data on Legal Domestic Sales were used to estimate total tobacco consumption in Macao.
- Total Consumption (legal and illicit) is estimated at nearly 1.1 billion cigarettes in 2014. Of this, an estimated 48.6% or 521 million cigarettes is Legal Domestic Consumption, 16.8% is Non-Domestic Legal, and 34.5% or 370 million cigarettes is Illicit Consumption.
- Given the very active border and high frequency of international passenger traffic, more than half of all cigarettes consumed in Macao are of Non-Domestic origin. Around one-third of these Inflows are estimated to originate through legal channels, with the remainder considered to be illicit.

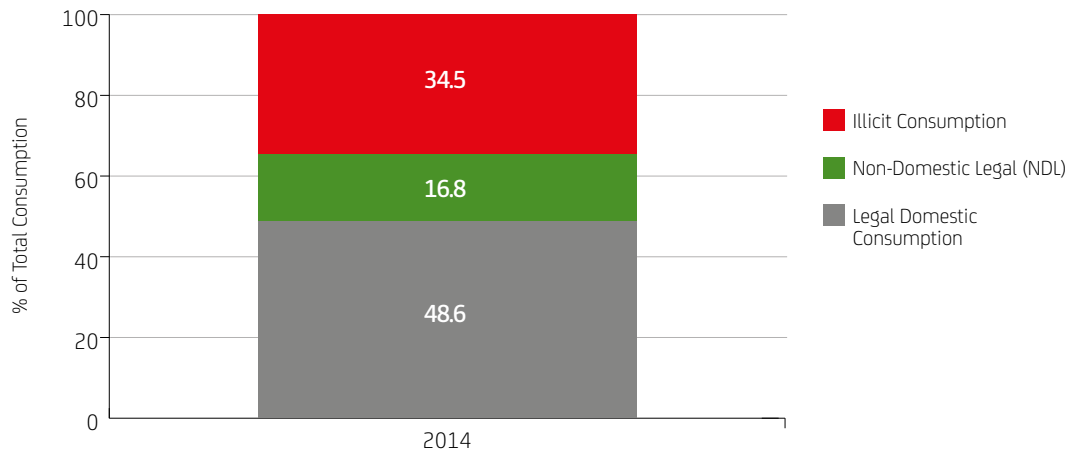
### Macao: Composition of cigarette consumption

	2014	
	Cigarettes bn	%
<b>Legal Domestic Consumption (LDC)</b>	<b>0.5</b>	<b>48.6</b>
Legal Domestic Sales (LDS)	0.5	—
Outflows of domestic duty-paid cigarettes	0.0	—
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.6</b>	<b>51.4</b>
Non-Domestic Legal (NDL)	0.2	16.8
Non-Domestic Illicit	0.4	34.5
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>
<b>Total Consumption</b>	<b>1.1</b>	<b>100.0</b>
<b>Total Illicit Consumption</b>	<b>0.4</b>	<b>34.5</b>

Source: Oxford Economics

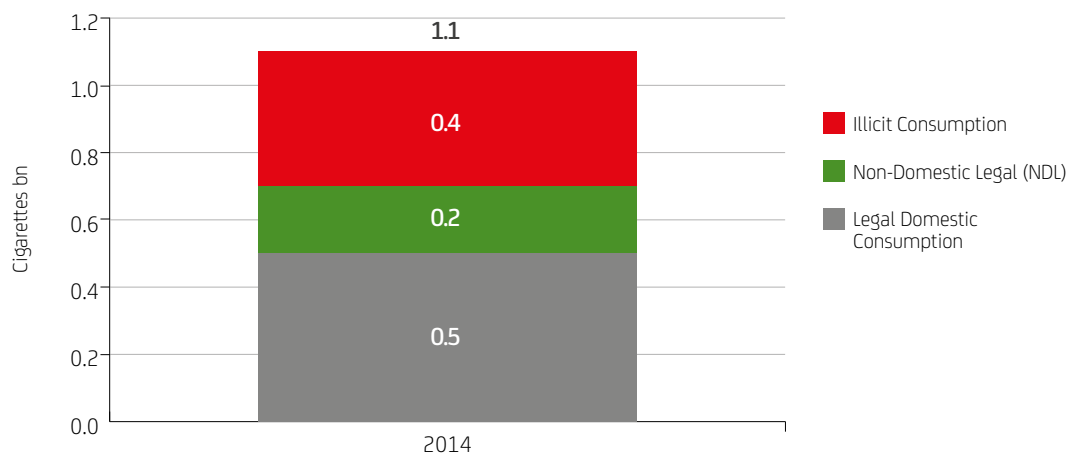
<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q2 (see Annex A for more details).

## 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 applies a single unit-specific excise structure with a rate of MOP 500 per thousand cigarettes. There is no GST or VAT in place.
- Excise Taxes have been increased three times in the last seven years. In each case, the tax hike was significant, ranging from 150% to 300%.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2014 amounted to MOP 185 million (USD 23.1 million). This represents over 40% of the total potential Excise Tax revenues.

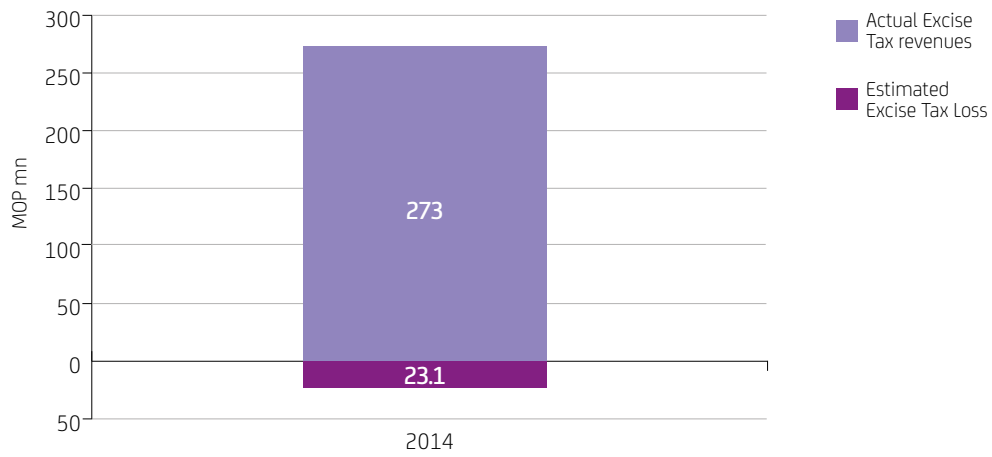
### Macao: Actual government revenues and estimated Tax Loss

Indicator	2014	
	MOP mn	USD mn
Actual revenue from excise duties on tobacco	273	34.1
Estimated number of illicit cigarettes purchased (cigarettes mn)	370	
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>185</b>	<b>23.1</b>
Lost excise revenue	185	23.1
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>40.4%</b>	

Source for government revenue data: Oxford Economics



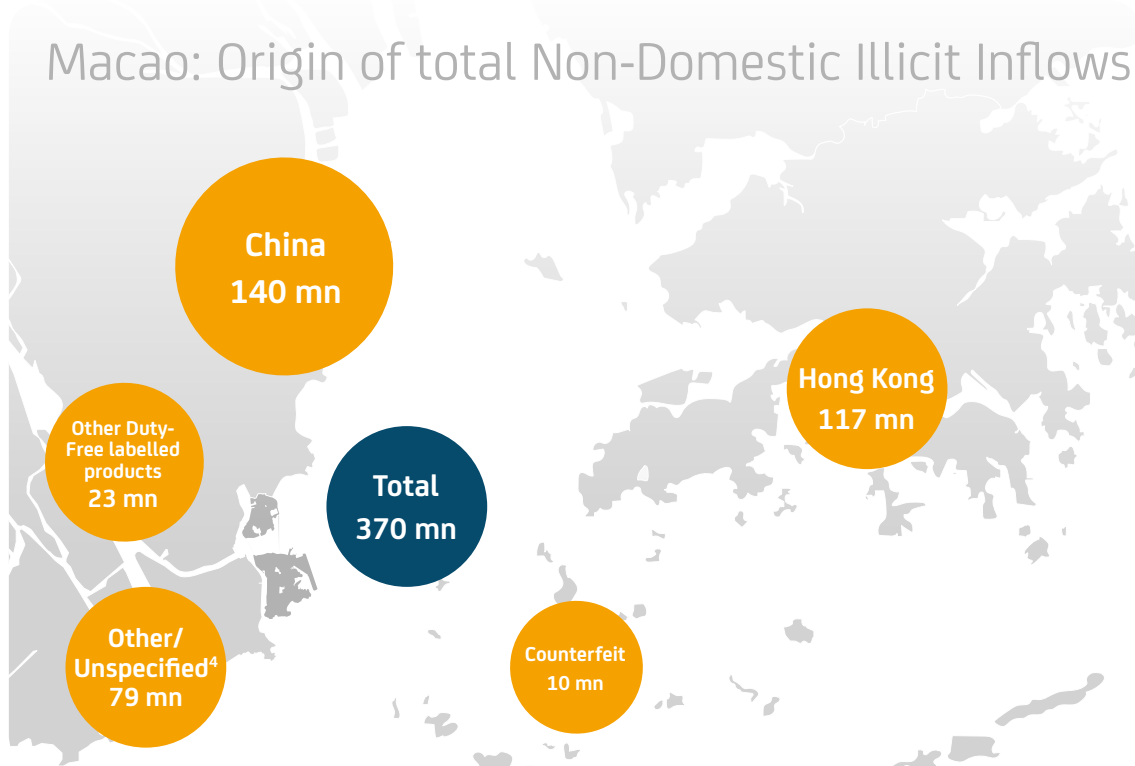
## Macao: Actual government revenues and estimated Tax Loss



Source for government revenue data: Oxford Economics

## Macao: Trade Flows

- Macao has an extremely active border with China. In 2014, over 21.2 million people travelled to Macao from China alone. Another 6.4 million people visited from Hong Kong. To give these figures some perspective, this is equivalent to nearly 50 times the population of Macao.
- However, the average length of stay of international visitors is relatively short, less than two nights, and over half of all visitors choose to make the trip on the same day.
- The duty-free personal import allowance in 2014 was 100 cigarettes per trip. However, given that the majority of visitors spend very little time in Macao, it is unrealistic to assume that all inbound adult smokers carry the full duty-free personal import allowance with them when estimating the volume of Non-Domestic Legal, particularly with the recent restrictions on smoking in Macao's casinos.<sup>1</sup>
- Instead, we assume that inbound adult smokers carry with them Duty-Free products equivalent to one pack (20 cigarettes) per day in Macao. This restriction applies to inbound foreign visitors only, with domestic adult smokers returning from trips abroad bringing the full personal allowance back. Based on this approach, we estimate the volume of Non-Domestic Legal Inflows to be 180 million cigarettes in 2014.<sup>2</sup> This is equivalent to around 16.8% of Total Consumption.
- The remaining volume of Non-Domestic Inflows is considered to originate from illicit channels, primarily from China and Hong Kong.
- In addition, a small proportion of Counterfeit products were identified in the Empty Pack Survey, with total volumes estimated at 10 million cigarettes in 2014.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated at 24 million cigarettes, most of which were identified in Hong Kong.<sup>3</sup>



Source: IT Flows Model and Oxford Economics

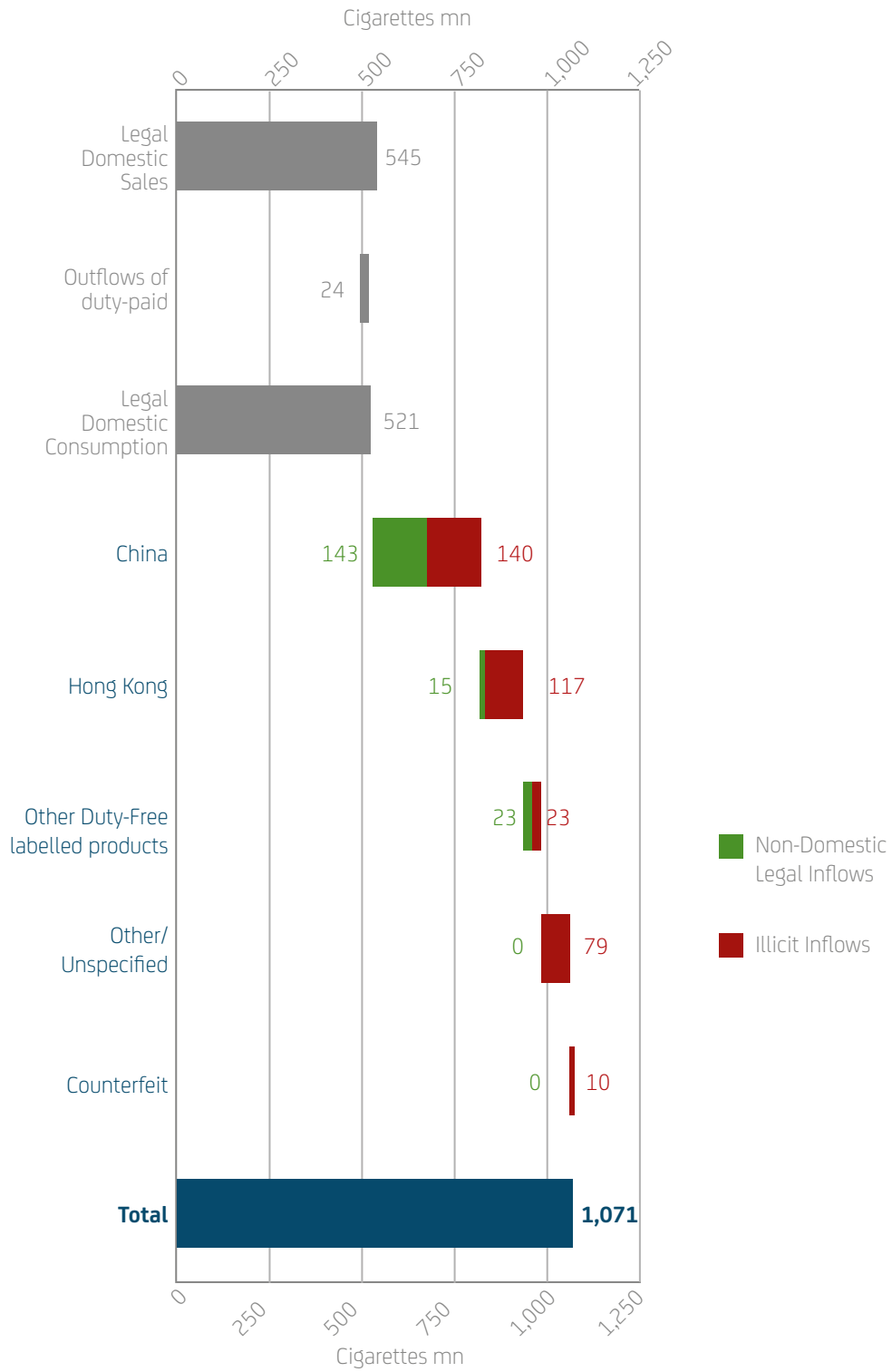
<sup>1</sup>In January 2013, the government of Macao introduced a partial smoking ban, requiring all casinos to designate at least 50% of their property's public area to be smoke free. This was extended in October 2014, prohibiting smoking from mass gaming floors.

<sup>2</sup>Estimated using passenger data, Smoking Prevalence in tourists' country/market of origin, and the passenger duty-free personal import allowance limit (capped to one pack per day for inbound foreign visitor arrivals).

<sup>3</sup>Note 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.

<sup>4</sup>Unspecified 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 2014.

## Macao: Consumption breakdown 2014



Source: IT Flows Model and Oxford Economics

## Malaysia: Legal Domestic Sales

- Malaysia Legal Domestic Sales are estimated at 12.8 billion cigarettes for 2014. Legal Domestic Sales have continued to trend downward in 2014, realising a decline of 12.3% compared with 2012 and 4.6% compared with 2013.
- BAT, JTI, and PM continue to dominate the market, accounting for almost 98% of Legal Domestic Sales.
- The 2014 price of the Most Sold Brand of USD 3.8 per pack is higher than most of the neighbouring markets, notably Indonesia (USD 1.4), Vietnam (USD 0.8), and Thailand (USD 1.2), but significantly lower than Singapore (USD 10.3) and Brunei (USD 6.5).
- The specific component of Excise Taxes was increased consecutively in September 2013 (+12.6%) and again in November 2014 (+12.1%).

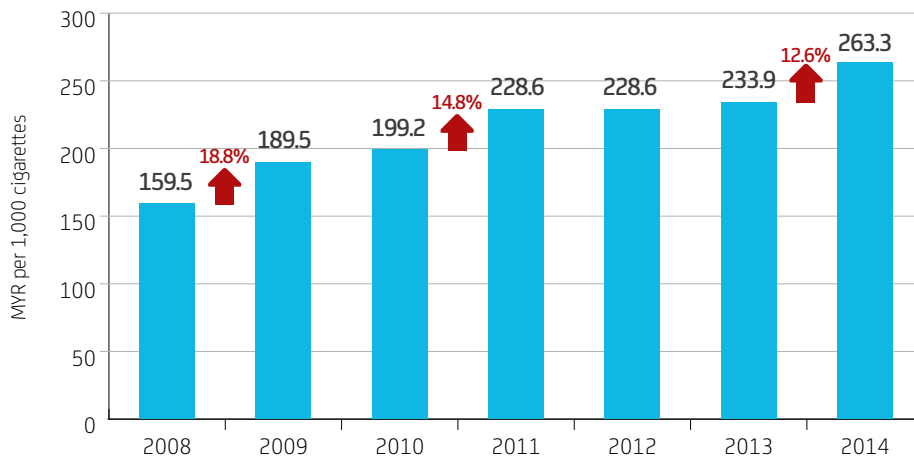
### Malaysia: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

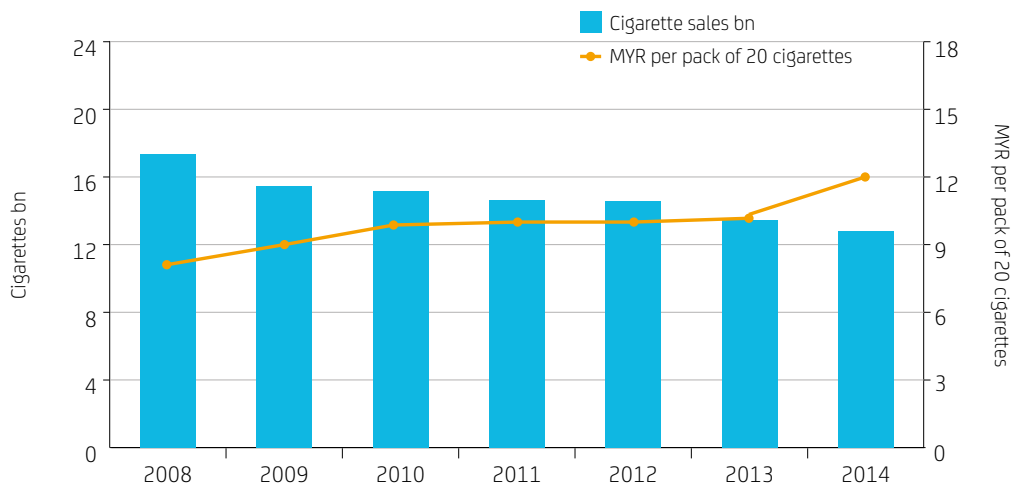
## Malaysia: Excise duty applied to cigarettes<sup>2</sup>



Source: Malaysia Customs & Excise Department and Oxford Economics

<sup>2</sup>Rate applied in January of each year to the Most Sold Brand.

## Malaysia: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of the Most Sold Brand in January of each year.

# Malaysia: Cigarette Consumption

- The results from three Empty Pack Surveys conducted in 2014<sup>1</sup> 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 19.9 billion cigarettes in 2014, down 9.2% from 2013. Of this, an estimated 63.2% or 12.6 billion cigarettes is Legal Domestic Consumption, 3.1% is Non-Domestic Legal Consumption, and 33.7% or 6.7 billion cigarettes is Illicit Consumption.
- Total Consumption of cigarettes in Malaysia has declined for three consecutive years, driven by declines in both Legal Domestic Sales and Illicit Consumption.
- In 2014, Total Consumption was around 13.1% lower than 2012, equivalent to nearly 3.0 billion cigarettes.
- After experiencing a small decline in volumes in 2013, Illicit Consumption fell by 1.1 billion cigarettes or 14.1% in 2014. As a consequence, the share of Illicit Consumption in Total Consumption fell to 33.7%, the lowest level in three years and nearly 2 percentage points lower than the peak of 35.6% recorded in 2013.
- In 2014, anti-illicit trade enforcement was strengthened by the Royal Malaysia Customs (RMC). According to RMC, 7,694 retail outlets were raided over the period 1st January 2014 to 31st March 2015, resulting in 1,504 arrests.
- Non-Domestic Legal Inflows also declined, falling from nearly 0.9 billion cigarettes in 2013 to just over 0.6 billion in 2014.
- The share of Non-Domestic Legal Inflows in Total Consumption fell to 3.1%, the same level as experienced in 2012.

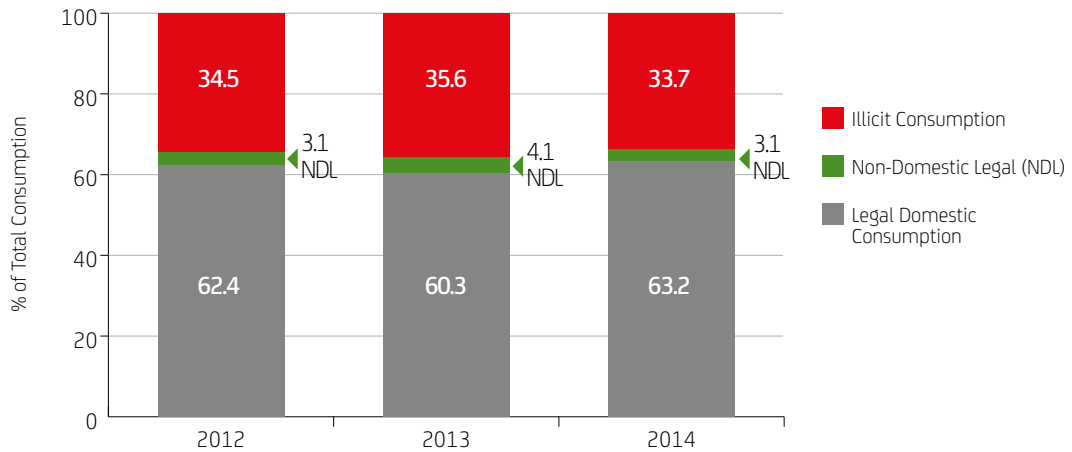
## Malaysia: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>14.3</b>	<b>62.4</b>	<b>13.2</b>	<b>60.3</b>	<b>12.6</b>	<b>63.2</b>	<b>-4.8</b>
Legal Domestic Sales (LDS)	14.6	—	13.4	—	12.8	—	-4.6
Outflows of domestic duty-paid cigarettes	-0.2	—	-0.2	—	-0.2	—	5.0
<b>Total Non-Domestic Inflows (ND)</b>	<b>8.6</b>	<b>37.6</b>	<b>8.7</b>	<b>39.7</b>	<b>7.3</b>	<b>36.8</b>	<b>-15.9</b>
Non-Domestic Legal (NDL)	0.7	3.1	0.9	4.1	0.6	3.1	-31.3
Non-Domestic Illicit	7.9	34.5	7.8	35.6	6.7	33.7	-14.1
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>22.9</b>	<b>100.0</b>	<b>21.9</b>	<b>100.0</b>	<b>19.9</b>	<b>100.0</b>	<b>-9.2</b>
<b>Total Illicit Consumption</b>	<b>7.9</b>	<b>34.5</b>	<b>7.8</b>	<b>35.6</b>	<b>6.7</b>	<b>33.7</b>	<b>-14.1</b>

Source: Oxford Economics

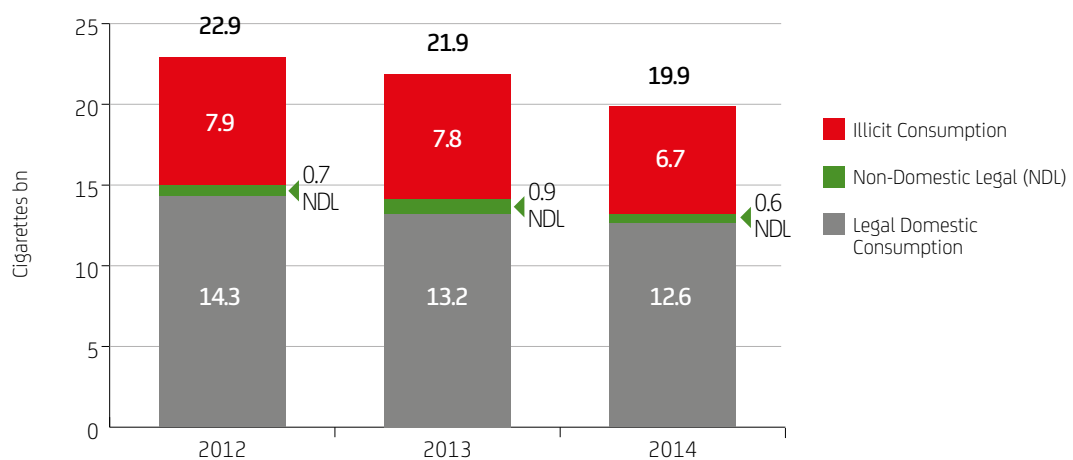
<sup>1</sup>Empty Pack Surveys were undertaken in 2014 Q2, 2014 Q3, and 2014 Q4 (see Annex A for more details).

## 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 mixed Excise Tax system. In addition to the specific component of MYR 280 per thousand cigarettes, a small ad valorem component of 20% is applied.
- The specific part of the Excise Tax was increased in October 2013 from MYR 220 to MYR 250 per thousand cigarettes (+13.6%), and again in November 2014 from MYR 250 to MYR 280 per thousand cigarettes (+12.0%).
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2014 amounted to MYR 1.9 billion (USD 577 million). After rising marginally in 2013 (by around MYR 50 million), the estimated Tax Loss in 2014 is 3.9% lower than the MYR 2.0 billion (USD 624 million) estimated for last year.
- With actual revenues from Legal Domestic Sales growing by 20.9% following Excise Tax increases implemented at the end of 2013 and 2014, the share of Excise Tax revenue losses in total potential Excise Tax receipts fell to 31.2% in 2014.

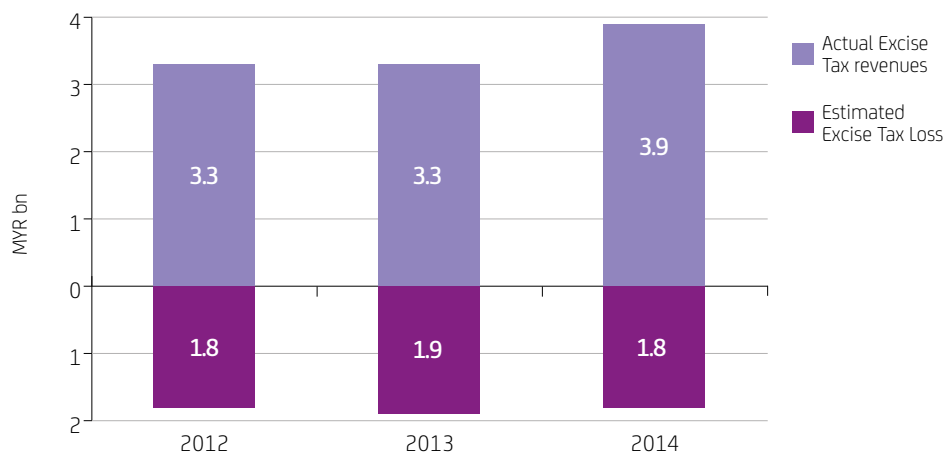
### Malaysia: Actual government revenues and estimated Tax Loss

Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	MYR mn	USD mn	MYR mn	USD mn	MYR mn	USD mn	
Actual revenue from excise duties on tobacco	3,269	1,059	3,257	1,100	3,938	1,203	20.9%
Estimated number of illicit cigarettes purchased (cigarettes mn)	7,920		7,809		6,707		-14.1%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>1,918</b>	<b>622</b>	<b>1,965</b>	<b>624</b>	<b>1,889</b>	<b>577</b>	<b>-3.9%</b>
Lost excise revenue	1,810	587	1,851	587	1,784	545	-3.6%
Lost sales tax revenue	108	35	114	36	105	32	-7.9%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>35.6%</b>		<b>36.2%</b>		<b>31.2%</b>		

Source for government revenue data: Malaysian Ministry of Finance and Oxford Economics



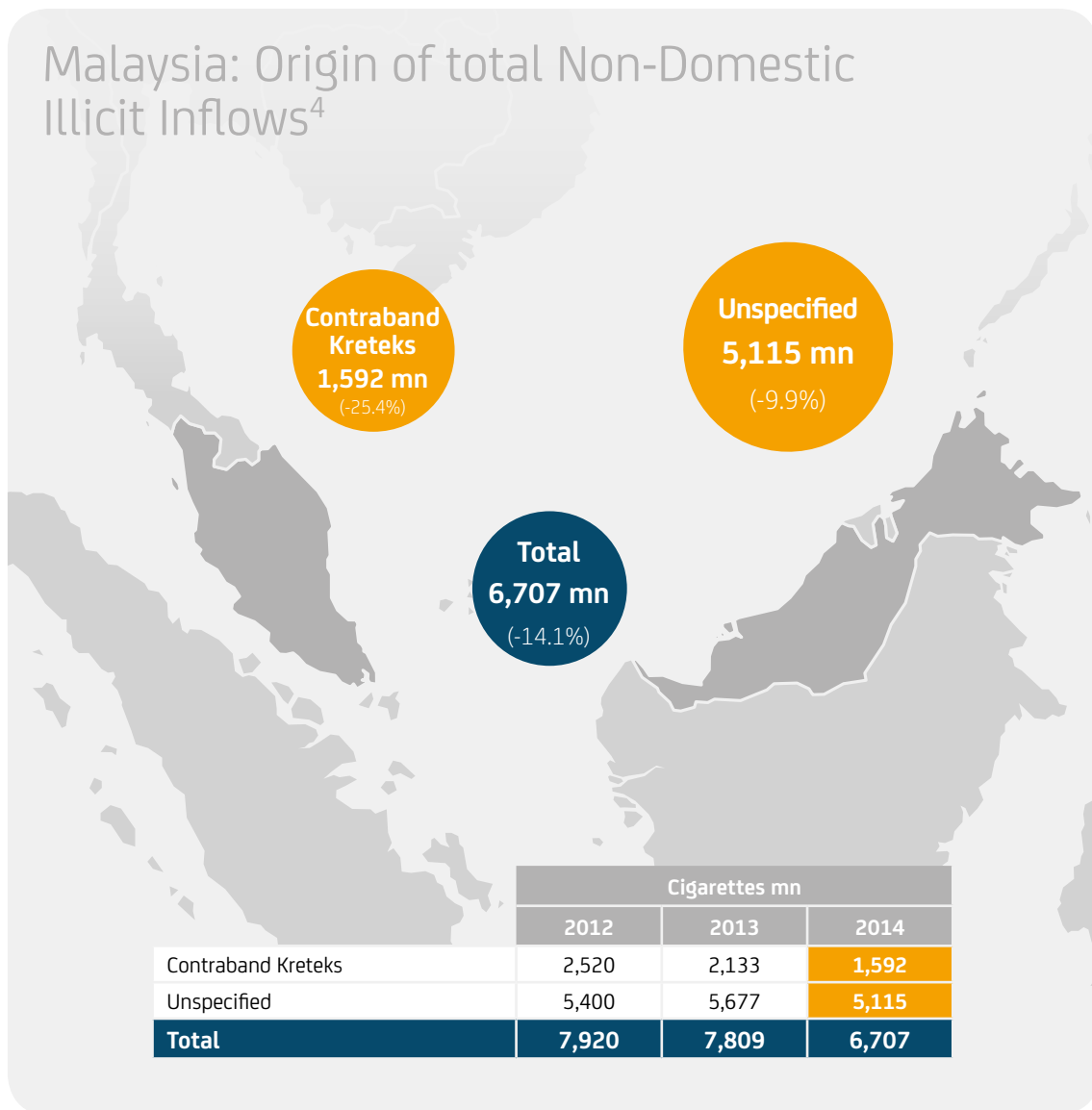
## Malaysia: Actual government revenues and estimated Tax Loss



Source: Malaysian Ministry of Finance and Oxford Economics

## Malaysia: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated at 0.2 billion cigarettes. The large majority of these Outflows are destined for high-price markets including Singapore (75% of total Outflows) and Australia (15%).<sup>1</sup>
- Non-Domestic Illicit Inflows<sup>2</sup> primarily consist of Unspecified Market Variant,<sup>3</sup> representing 76% of Total Illicit Consumption in 2014. However, the consumption of Unspecified Market Variant products has declined by 9.9% since 2013.
- The volume of Contraband kreteks declined by 25.4% in 2014. As a consequence, the share of Contraband kreteks in Total Illicit Consumption has fallen for consecutive years.



Source: IT Flows Model and Oxford Economics

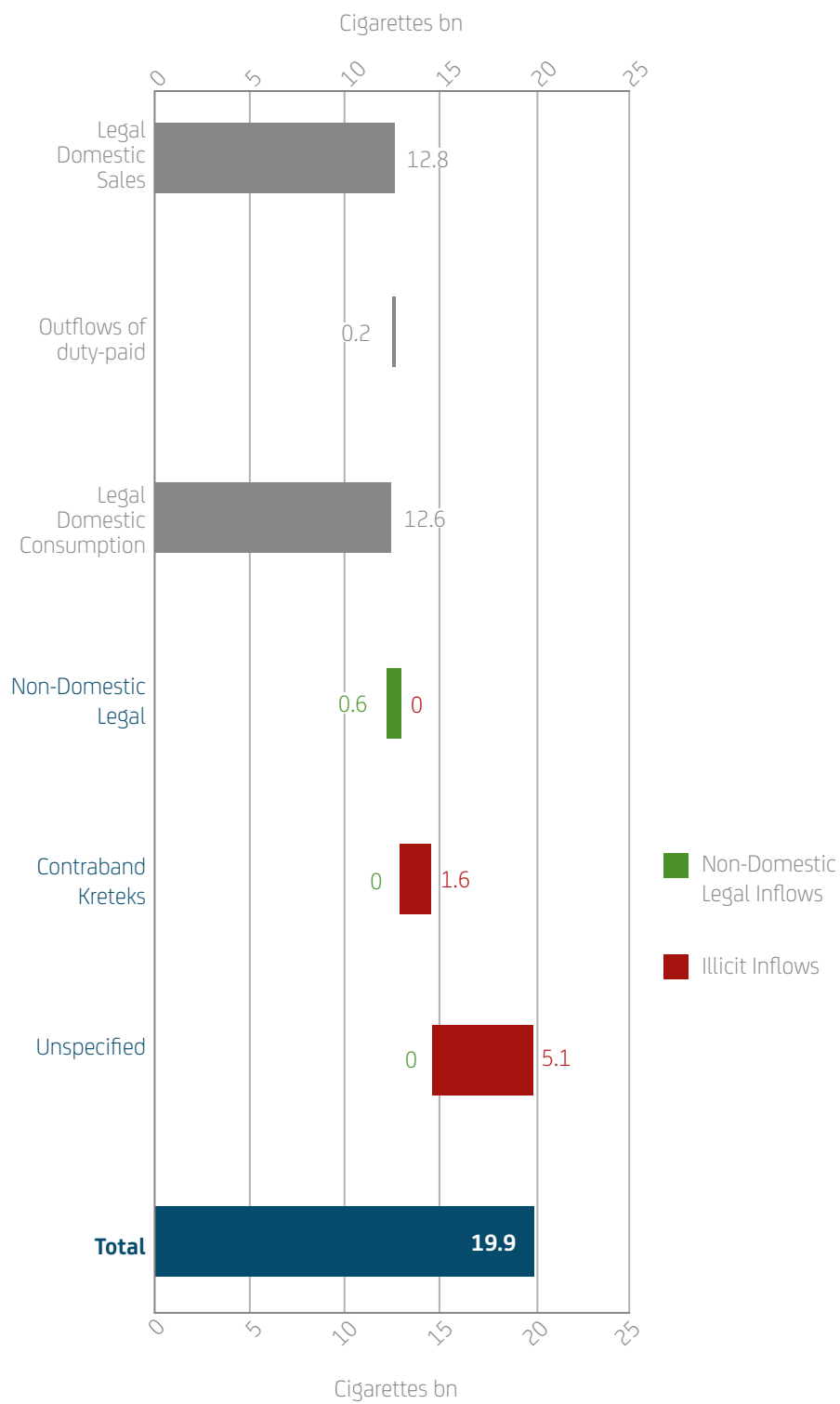
<sup>1</sup>Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 15 markets covered in this Report and may therefore be an underestimate.

<sup>2</sup>Empty Pack Survey: 3.1% of total cigarettes identified as Malaysia Duty Non Paid (MDNP) with genuine pink banderole (a security feature for imported packs of duty-free).

<sup>3</sup>Unspecified 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. "Gudang Garam", "John", "Canyon", and "Vess" were the top three Unspecified Market Variant brands identified in 2014.

<sup>4</sup>Figures in brackets reflect % change from 2013.

## Malaysia: Consumption breakdown 2014

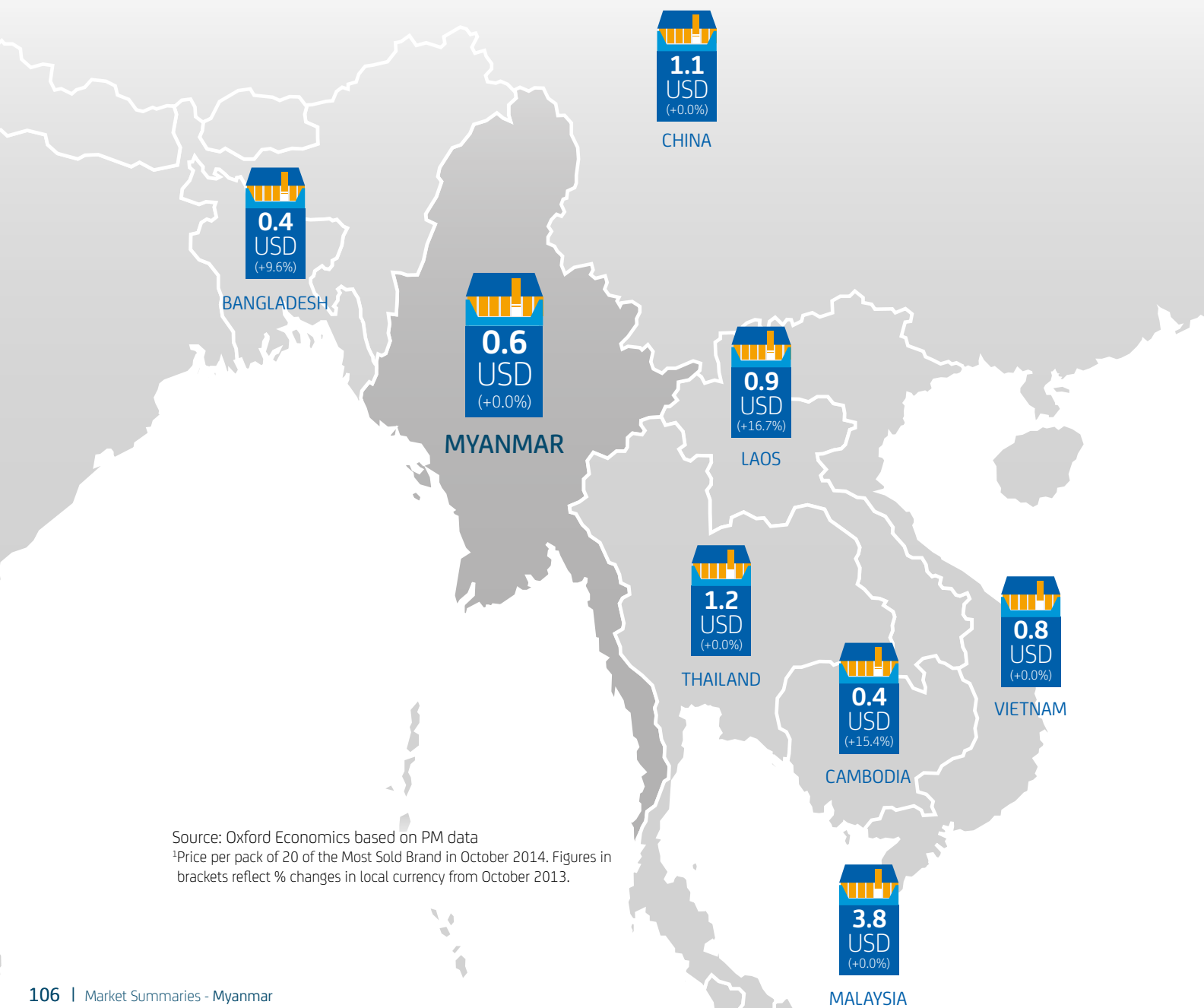


Source: IT Flows Model and Oxford Economics

# Myanmar: Legal Domestic Sales

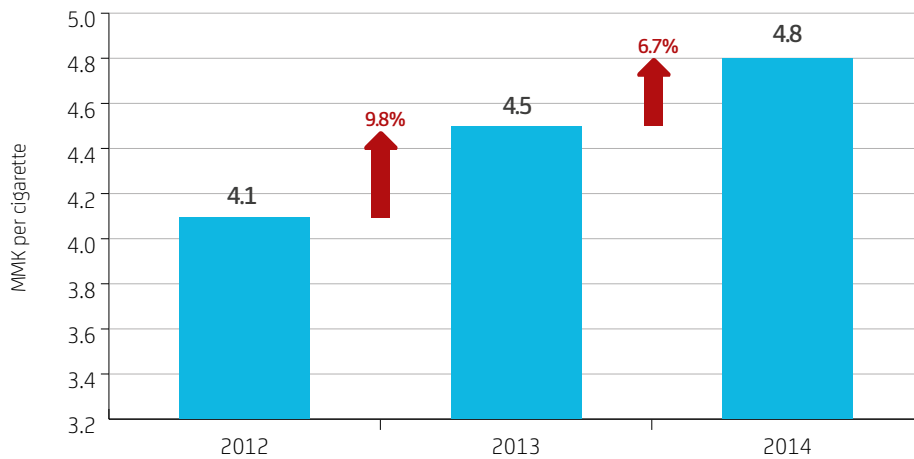
- Myanmar Legal Domestic Sales are estimated at 8.7 billion cigarettes for 2014, a 10.1% increase in comparison with 2013.
- Despite the re-entry of international tobacco manufacturers into Myanmar via local business partners in manufacturing and distribution, Virginia Tobacco (previously known as Rothmans of Pall Mall Myanmar (RPM)) remains the dominant manufacturer in the market, accounting for the large majority of Legal Domestic Sales.
- The price of the Most Sold Brand of cigarettes was USD 0.6 in 2014, showing no change from 2013.
- Prices are among the lowest across the Asia-16 markets. Only in Cambodia (USD 0.4) and Bangladesh (USD 0.4) is the price of the Most Sold Brand of cigarettes lower than in Myanmar.

## Myanmar: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data  
<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

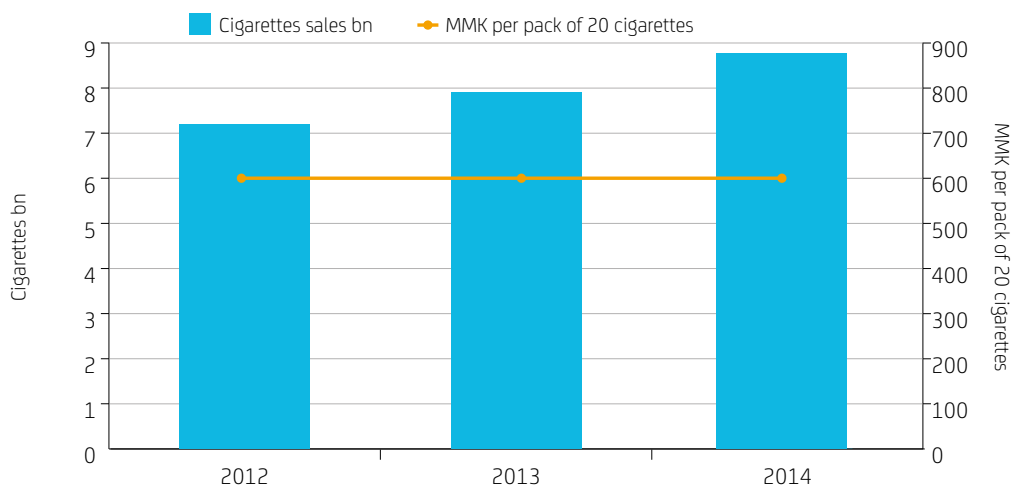
## Myanmar: Excise duty applied to cigarettes<sup>2</sup>



Source: Oxford Economics

<sup>2</sup>Estimated effective rate applied in January of each year to the Most Sold Brand, i.e. commercial taxes on input material and 100% of the net ex-factory selling price.

## Myanmar: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of the Most Sold Brand in January of each year.

## Myanmar: Cigarette Consumption

- The results of the Empty Pack Survey,<sup>1</sup> combined with internal estimates on Legal Domestic Sales, were used to estimate Total Consumption of cigarettes in Myanmar.
- Total Consumption (legal and illicit) is estimated at 9.1 billion cigarettes in 2014. Of this, an estimated 96.3% or 8.7 billion cigarettes is Legal Domestic Consumption, 2.4% is Non-Domestic Legal Consumption, and 1.3% or 114 million cigarettes is Illicit Consumption.
- The volume of total Illicit Consumption fell from 2.3 billion cigarettes in 2013 to 114 million cigarettes in 2014, representing a 95% decline in one year.
- As a consequence, Total Consumption fell by nearly 13% despite a 10.1% rise in Legal Domestic Sales.
- The significant decline in Illicit Consumption estimated for 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.
- However, this alone cannot fully explain the significant decline in Illicit Consumption from 2013 to 2014 and it is recognised that the Empty Pack Survey undertaken in Myanmar is limited in coverage compared with other markets in Asia-16. This increases the margin for error in the final estimates. However, there is a lack of alternative sources of information for Myanmar. Annex C provides more detail on the advantages and disadvantages of different methods of estimating illicit cigarette consumption.

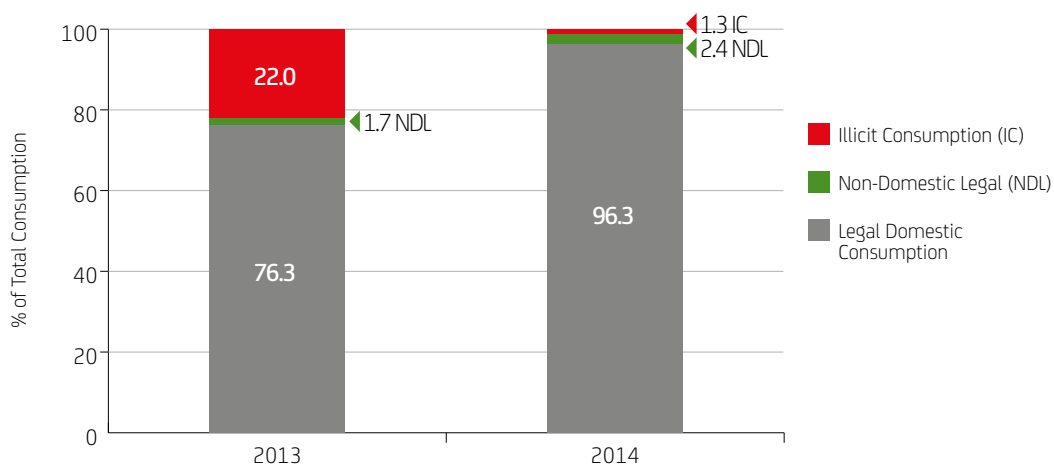
### Myanmar: Composition of cigarette consumption

	2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>7.9</b>	<b>76.3</b>	<b>8.7</b>	<b>96.3</b>	<b>10.1</b>
Legal Domestic Sales (LDS)	7.9	—	8.7	—	10.1
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	n/a
<b>Total Non-Domestic Inflows (ND)</b>	<b>2.5</b>	<b>23.7</b>	<b>0.3</b>	<b>3.7</b>	<b>-86.4</b>
Non-Domestic Legal (NDL)	0.2	1.7	0.2	2.4	25.6
Non-Domestic Illicit	2.3	22.0	0.1	1.3	-95.0
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>10.4</b>	<b>100.0</b>	<b>9.1</b>	<b>100.0</b>	<b>-12.8</b>
<b>Total Illicit Consumption</b>	<b>2.3</b>	<b>22.0</b>	<b>0.1</b>	<b>1.3</b>	<b>-95.0</b>

Source: Oxford Economics

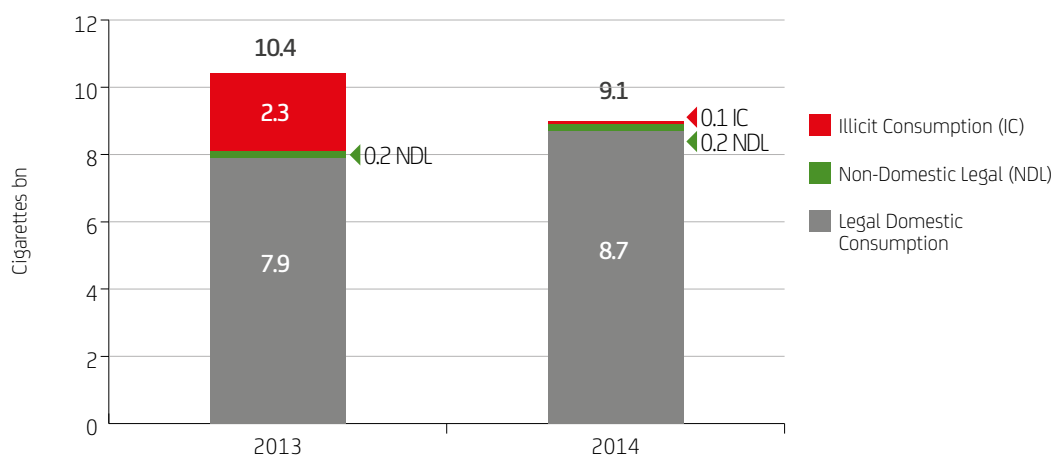
<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q4. Oxford Economics estimates on Legal Domestic Sales based on information provided by PM (see Annex A for more details).

## 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 100% is applied to 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).
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2014/15 amounted to MMK 685 million (USD 0.7 million), representing a sharp decline in the estimated Tax Loss resulting from Illicit Consumption.
- At the same time, with Legal Domestic Sales growing, actual revenues from the commercial tax on tobacco are estimated to have increased by 17.4% in 2014/15.

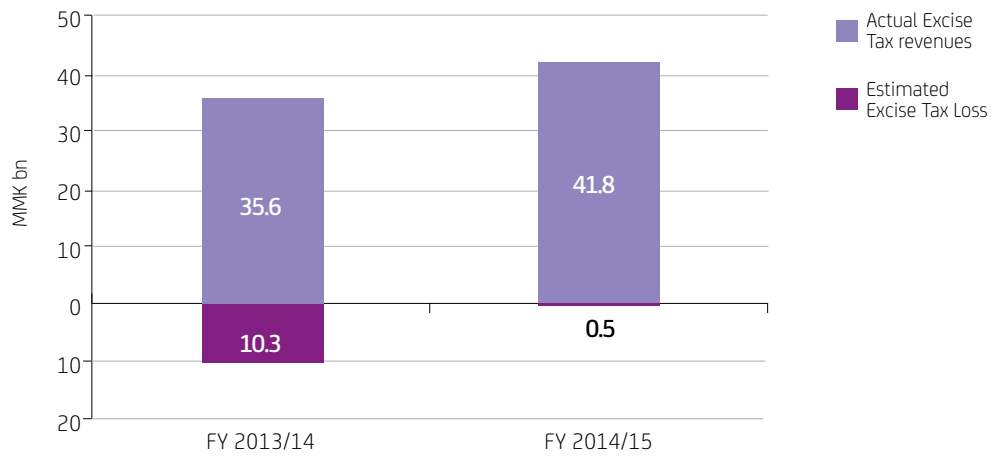
### Myanmar: Actual government revenues and estimated Tax Loss

Indicator	2013/14 fiscal year <sup>1</sup>		2014/15 fiscal year <sup>1</sup>		% change in local currency 2013/14-2014/15
	MMK bn	USD mn	MMK bn	USD mn	
Actual revenue from commercial tax duties on tobacco	35.6	37.0	41.8	42.0	17.4%
Estimated number of illicit cigarettes purchased (cigarettes mn)	2,283		114		-95.0%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>13.0</b>	<b>13.5</b>	<b>0.7</b>	<b>0.7</b>	<b>-94.7%</b>
Lost commercial (excise) tax revenue	10.3	10.7	0.5	0.5	-94.7%
Lost commercial (general) tax revenue	2.7	2.8	0.1	0.1	-95.0%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>22.4%</b>		<b>1.3%</b>		

Source for government revenue data: Oxford Economics  
Estimated number of illicit cigarettes purchased adjusted for fiscal year.  
<sup>1</sup>Fiscal years run from April to March.



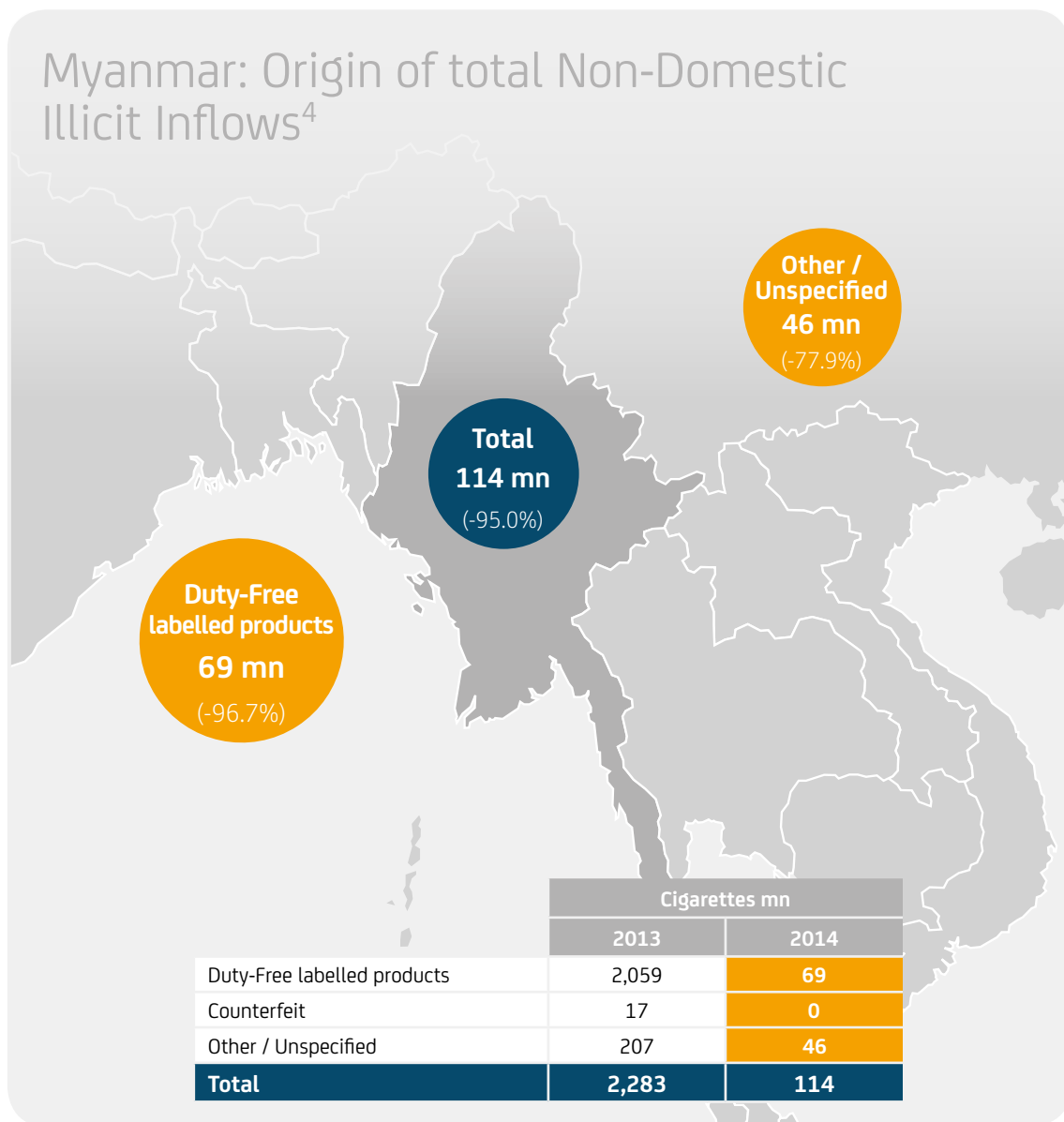
## Myanmar: Actual government revenues and estimated Tax Loss



Source: Oxford Economics

# Myanmar: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be negligible.<sup>1</sup>
- Non-Domestic Legal Inflows<sup>2</sup> are also small in Myanmar due to the relatively undeveloped tourism market, with only 1.1 million inbound tourists in 2014.
- Duty-Free labelled products account for the majority of Non-Domestic Illicit volumes identified – nearly two-thirds – with a small volume originally intended for retail sale in China, and additional Inflows of Unspecified Market Variant also identified.<sup>3</sup>
- No Counterfeit products were identified in Myanmar in 2014. In 2013, a small volume of Counterfeit products, equivalent to just 17 million cigarettes, were found in the Empty Pack Survey.



Source: IT Flows Model and Oxford Economics

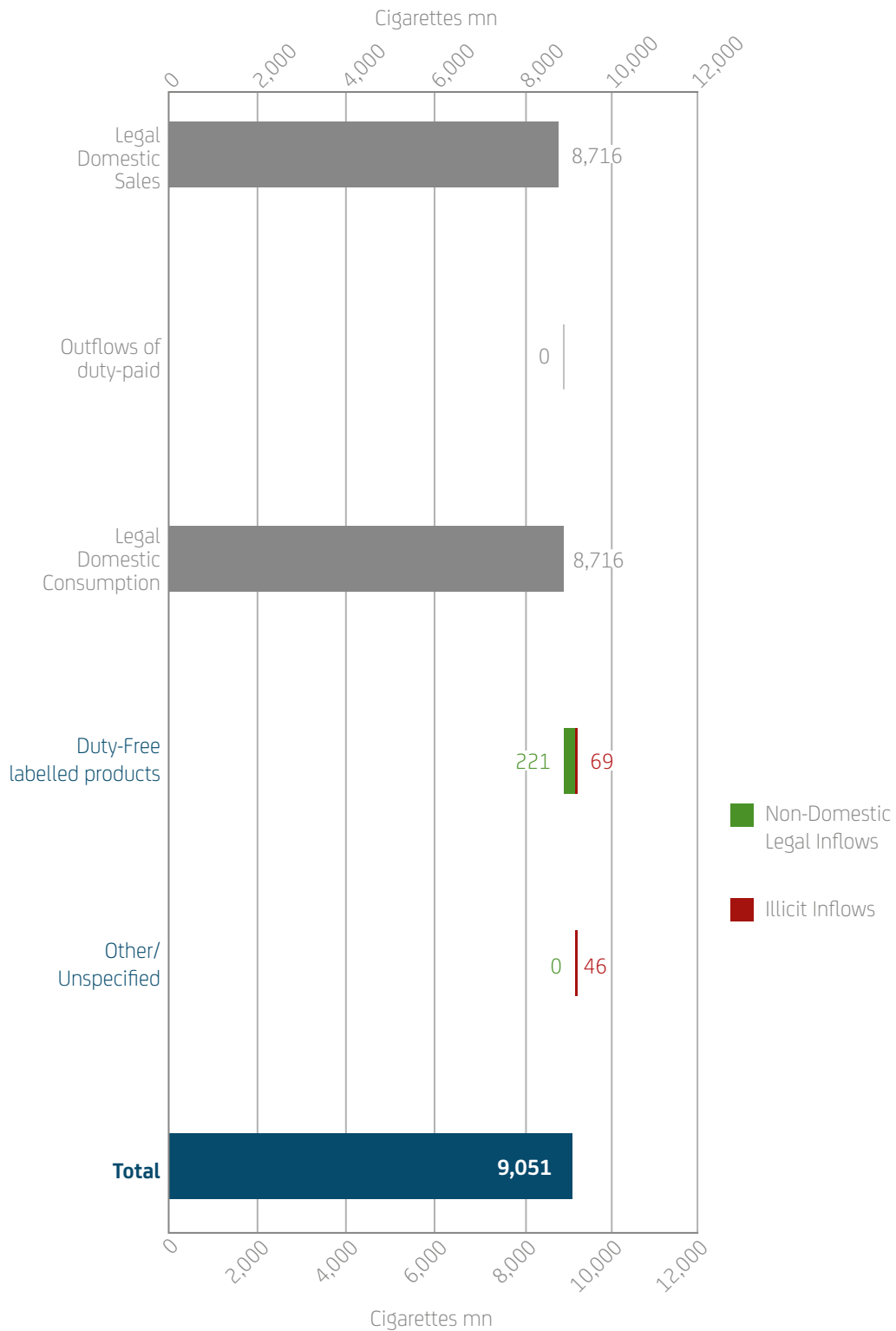
<sup>1</sup>Note that estimated Outflows of duty-paid cigarettes are based only on identified Inflows in the other 15 markets covered in this Report and may therefore be an underestimate.

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

<sup>3</sup>Unspecified 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.

<sup>4</sup>Figures in brackets reflect % changes from 2013.

## Myanmar: Consumption breakdown 2014

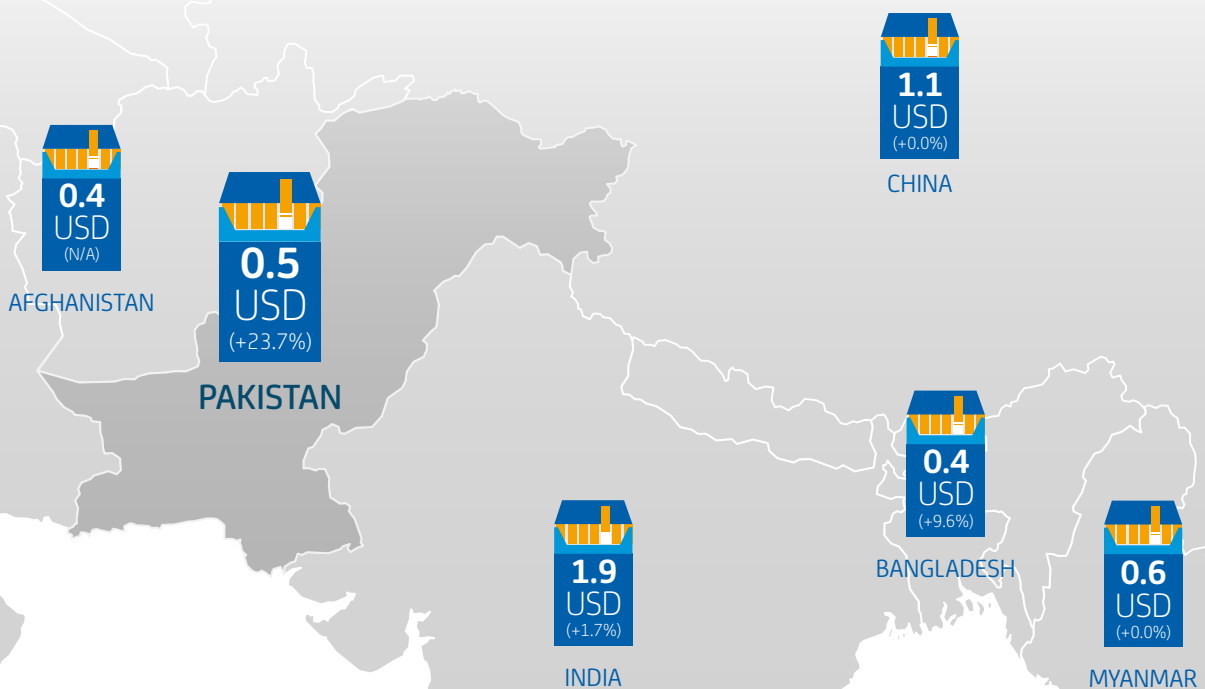


Source: IT Flows Model and Oxford Economics

## Pakistan: Legal Domestic Sales

- Pakistan Legal Domestic Sales are estimated at 62.7 billion cigarettes for 2014. Legal Domestic Sales have been in gradual decline in recent years, falling by 0.5% in 2013 and a further 1.6% in 2014.
- Based on data from the Federal Board of Revenue in 2014/15, BAT and PM together contribute over 99% of total tax revenues from cigarette sales in Pakistan.
- Cigarette prices are relatively low in Pakistan but have risen sharply in recent years, driven by consecutive increases in Excise Taxes. In 2014, prices rose by 23.7%, the largest percentage price increase realised across the Asia-16 markets.
- Despite this, the price of the Most Sold Brand at USD 0.5 per pack is lower than neighbouring India (USD 1.9) and China (USD 1.1), as well as the United Arab Emirates (USD 2.7). By contrast, cigarette prices are higher in Pakistan than in Afghanistan, where the Most Sold Brand costs USD 0.4 per pack.

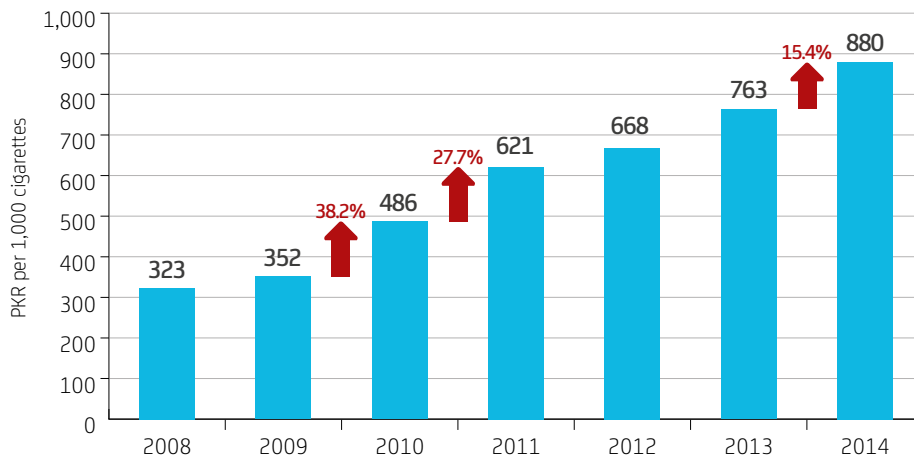
### Pakistan: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013. Afghanistan data sourced from WHO Report on the Global Tobacco Epidemic, 2015.

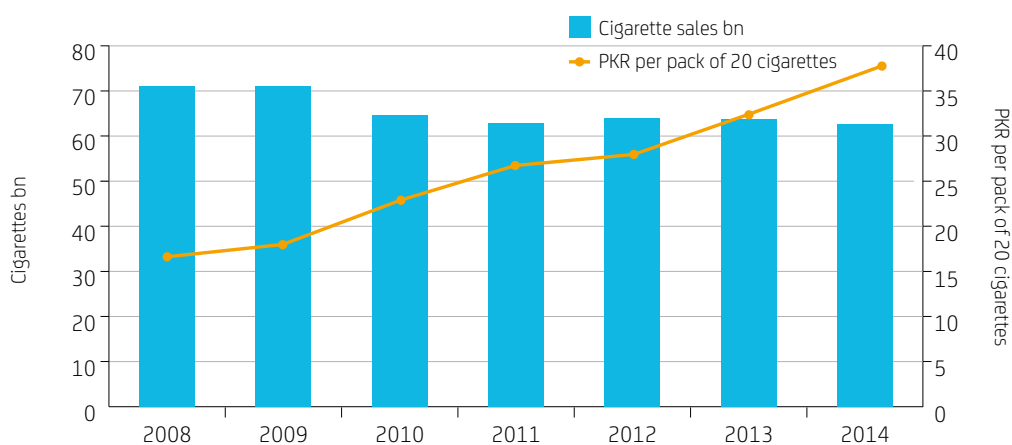
## Pakistan: Excise duty applied to cigarettes<sup>2</sup>



Source: Pakistan Customs & Excise Department and Oxford Economics

<sup>2</sup>Rate applied in January of each year to the Most Sold Brand.

## Pakistan: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Legal Domestic Sales based on calendar year. Price of the Most Sold Brand in January of each year.

# Pakistan: Cigarette Consumption

- The results from the Empty Pack Survey and Nielsen Retail Audit<sup>1</sup> 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 84.0 billion cigarettes in 2014, up 1.7% from 2013 despite a decline in Legal Domestic Sales. Of this, an estimated 74.6% or 62.7 billion cigarettes is Legal Domestic Consumption, 0.1% is Non-Domestic Legal Consumption, and 25.2% or 21.2 billion cigarettes is Illicit Consumption.
- The volume of Illicit Consumption rose by 12.9% in 2014 after the decline in 2013, driven by a sharp rise in the presence of domestic duty non-paid cigarettes in the market. As a consequence, the share of Illicit Consumption in Total Consumption rose to 25.2%, reaching similar level as in 2012.
- Domestic Illicit volumes increased by 15.5%, from 15.3 billion cigarettes in 2013, to 17.7 billion cigarettes in 2014, however remain below the estimated 18.8 billion domestic Illicit cigarettes consumed in 2012.
- Non-Domestic Illicit Consumption also rose for a second successive year, although the growth rate in 2014 was at 1.4%, compared with the 14.8% growth in 2013.
- With the volume of Non-Domestic Legal remaining at low levels, the rise in Illicit Consumption more than offset a decline in Legal Domestic Sales, leading to an overall rise in Illicit Consumption in 2014. However, Total Consumption is 2.3% (2.0 billion cigarettes) lower than the level estimated in 2012.

## Pakistan: Composition of cigarette consumption

	2012 <sup>2</sup>		2013 <sup>3</sup>		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>64.0</b>	<b>74.4</b>	<b>63.7</b>	<b>77.1</b>	<b>62.7</b>	<b>74.6</b>	<b>-1.6</b>
Legal Domestic Sales (LDS)	64.0	—	63.7	—	62.7	—	-1.6
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	1.9
<b>Total Non-Domestic Inflows (ND)</b>	<b>3.2</b>	<b>3.7</b>	<b>3.5</b>	<b>4.3</b>	<b>3.6</b>	<b>4.3</b>	<b>1.7</b>
Non-Domestic Legal (NDL)	0.2	0.2	0.1	0.1	0.1	0.1	16.7
Non-Domestic Illicit	3.0	3.5	3.4	4.2	3.5	4.2	1.4
<b>Domestic Illicit</b>	<b>18.8</b>	<b>21.9</b>	<b>15.3</b>	<b>18.6</b>	<b>17.7</b>	<b>21.1</b>	<b>15.5</b>
<b>Total Consumption</b>	<b>86.0</b>	<b>100.0</b>	<b>82.6</b>	<b>100.0</b>	<b>84.0</b>	<b>100.0</b>	<b>1.7</b>
<b>Total Illicit Consumption</b>	<b>21.8</b>	<b>25.4</b>	<b>18.8</b>	<b>22.8</b>	<b>21.2</b>	<b>25.2</b>	<b>12.9</b>

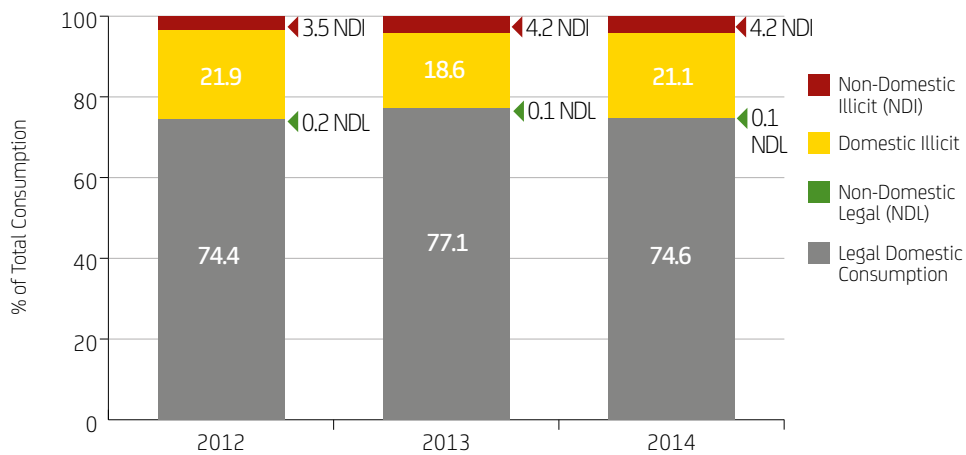
Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q1, while the retail audit provides data for each month in 2014 (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.

<sup>2</sup>2012 results for Non-Domestic Illicit based on 2011 Q4 Empty Pack Survey.

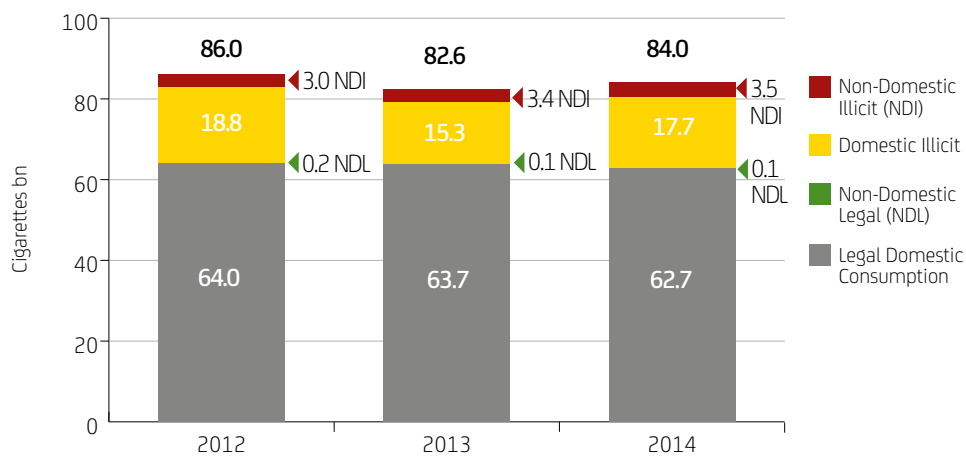
<sup>3</sup>2013 results for Non-Domestic Illicit based on 2014 Q1 Empty Pack Survey.

## 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

- In June 2013, the three-tiered mixed Excise Tax system was replaced by a simplified dual-tier specific 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 2014/15 fiscal year, excise duty was increased by the equivalent of 13% for the high-priced tax tier and by 23% 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 15.8% in fiscal year 2014/15, despite a declining trend in Legal Domestic Sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2014/15 amounted to PKR 36.3 billion (USD 358 million).
- The estimated Tax Loss rose by 38.4% compared with the 2013/14 fiscal year, a combination of the higher level of Illicit Consumption as well as the Excise Tax increase.
- As a consequence, the Excise Tax revenue loss as a share of total potential Excise Tax revenues in 2014 pushed above 25% again, after falling back to 22.1% in 2013.

### Pakistan: Actual government revenues and estimated Tax Loss

Indicator	2012/13 fiscal year <sup>1</sup>		2013/14 fiscal year <sup>1</sup>		2014/15 fiscal year <sup>1</sup>		% change in local currency 2013/14- 2014/15
	PKR bn	USD mn	PKR bn	USD mn	PKR bn	USD mn	
Actual revenue from excise duties on tobacco	61.7	632	70.7	684	81.9	807	15.8%
Estimated number of illicit cigarettes purchased (cigarettes mn)	22,763		18,778		21,385		13.9%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>26.9</b>	<b>275</b>	<b>26.2</b>	<b>253</b>	<b>36.3</b>	<b>358</b>	<b>38.4%</b>
Lost excise revenue	20.9	214	20.1	194	27.9	275	38.6%
Lost VAT revenue	5.9	61	6.1	59	8.4	83	38.1%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>25.3%</b>		<b>22.1%</b>		<b>25.4%</b>		

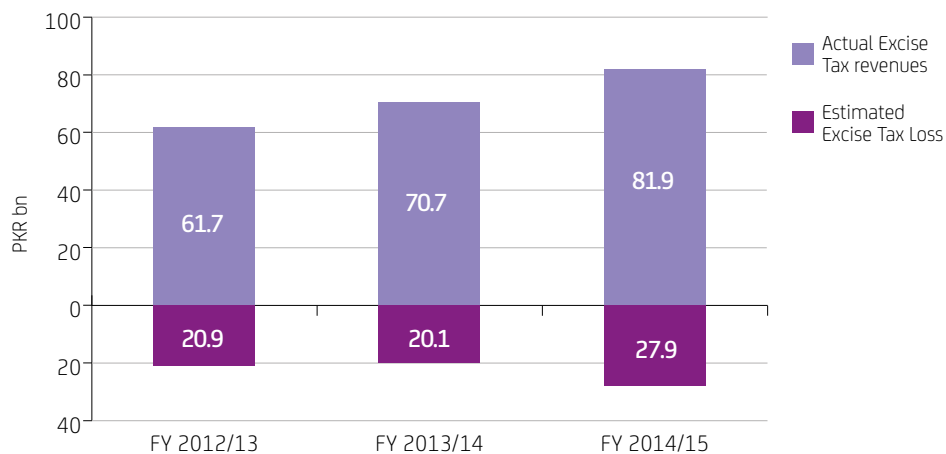
Source for government revenue data: Pakistan Federal Board of Revenue and Oxford Economics

Estimated number of illicit cigarettes purchased adjusted for fiscal year.

<sup>1</sup>Fiscal years run from July to June.



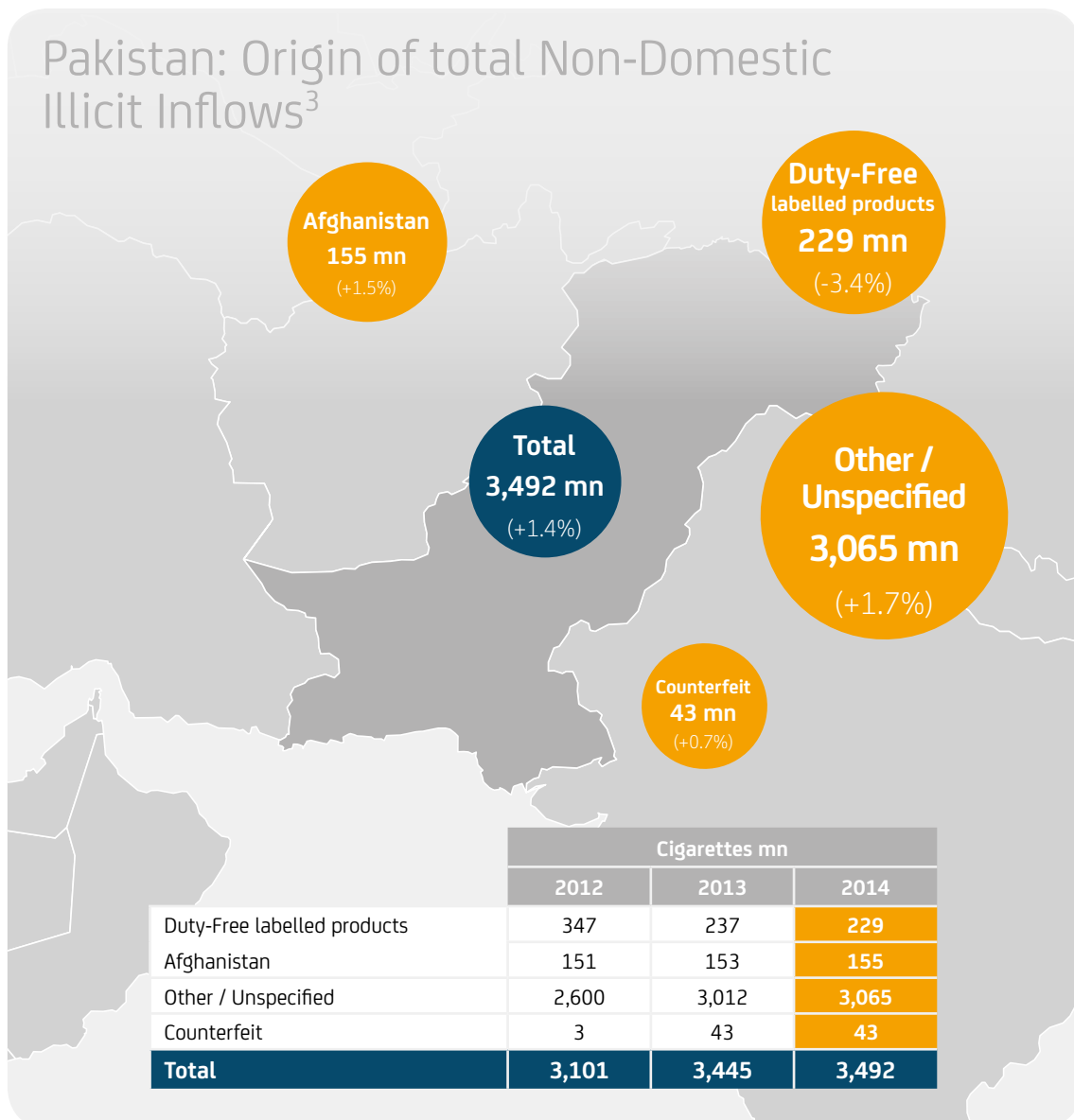
## Pakistan: Actual government revenues and estimated Tax Loss



Source: Pakistan Federal Board of Revenue and Oxford Economics

## Pakistan: Trade Flows

- Domestic Illicit Consumption again accounted for a significant proportion of Total Illicit Consumption in 2014, contributing 83.5% to the volume of Illicit Consumption. This is a slight increase on the 2013 share, as growth in Domestic Illicit Consumption outstripped growth in Non-Domestic Illicit Consumption.
- Domestic Illicit has consistently accounted for over four-fifths of Illicit Consumption since the Asia illicit Tobacco Indicator research commenced.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be very low, less than 10 million cigarettes in 2014.<sup>1</sup>
- Unspecified Market Variant products overwhelmingly constitute the largest proportion of Non-Domestic Illicit cigarettes in Pakistan.<sup>2</sup> Over 3 billion cigarettes were designated as Unspecified Market Variant in 2014.
- A small volume of Counterfeit products were also present in Pakistan.



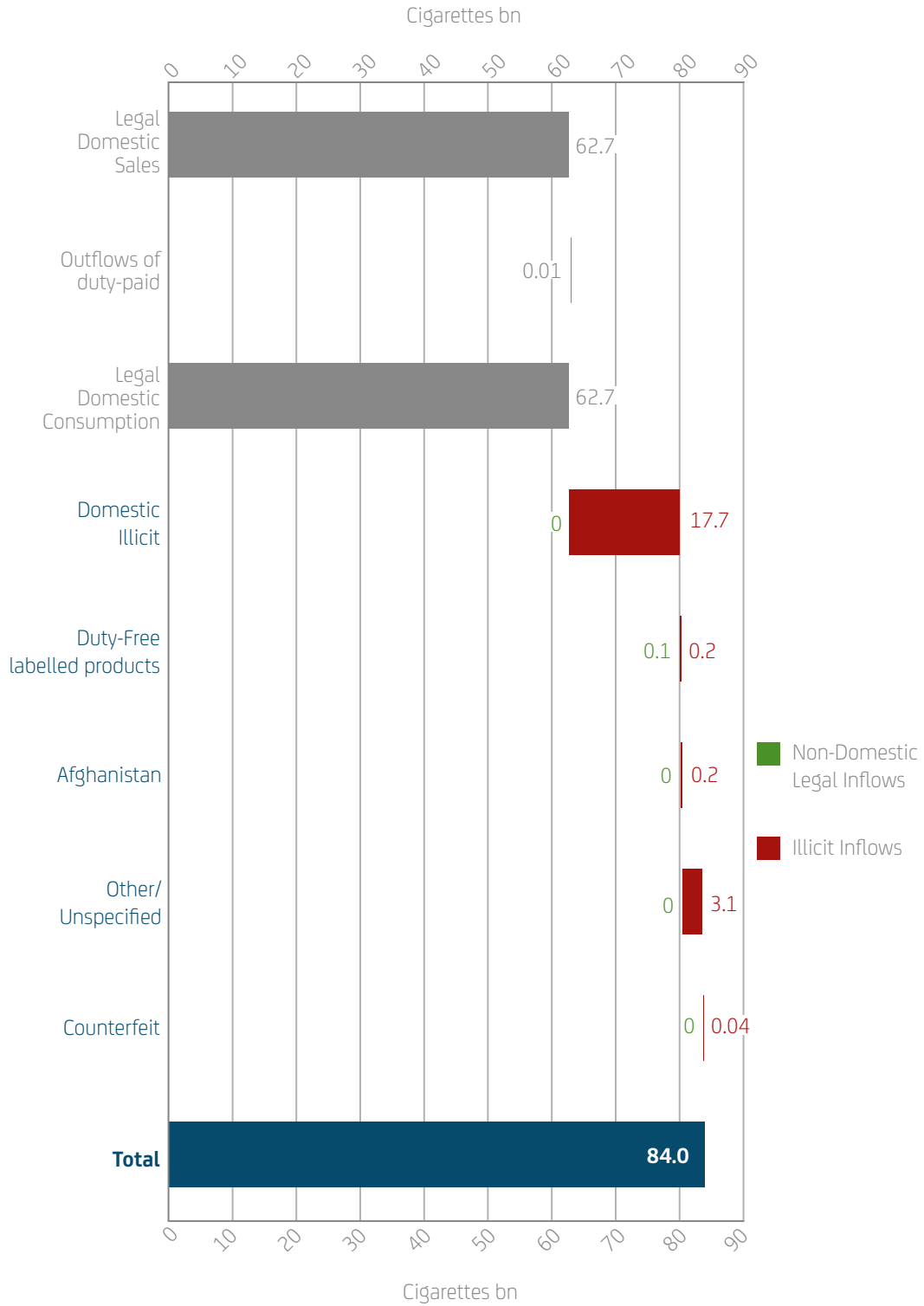
Source: IT Flows Model and Oxford Economics

<sup>1</sup>Note 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.

<sup>2</sup>Unspecified 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. "Pine", was the top Unspecified Market Variant brand identified in 2014.

<sup>3</sup>Figures in brackets reflect % changes from 2013.

## Pakistan: Consumption breakdown 2014

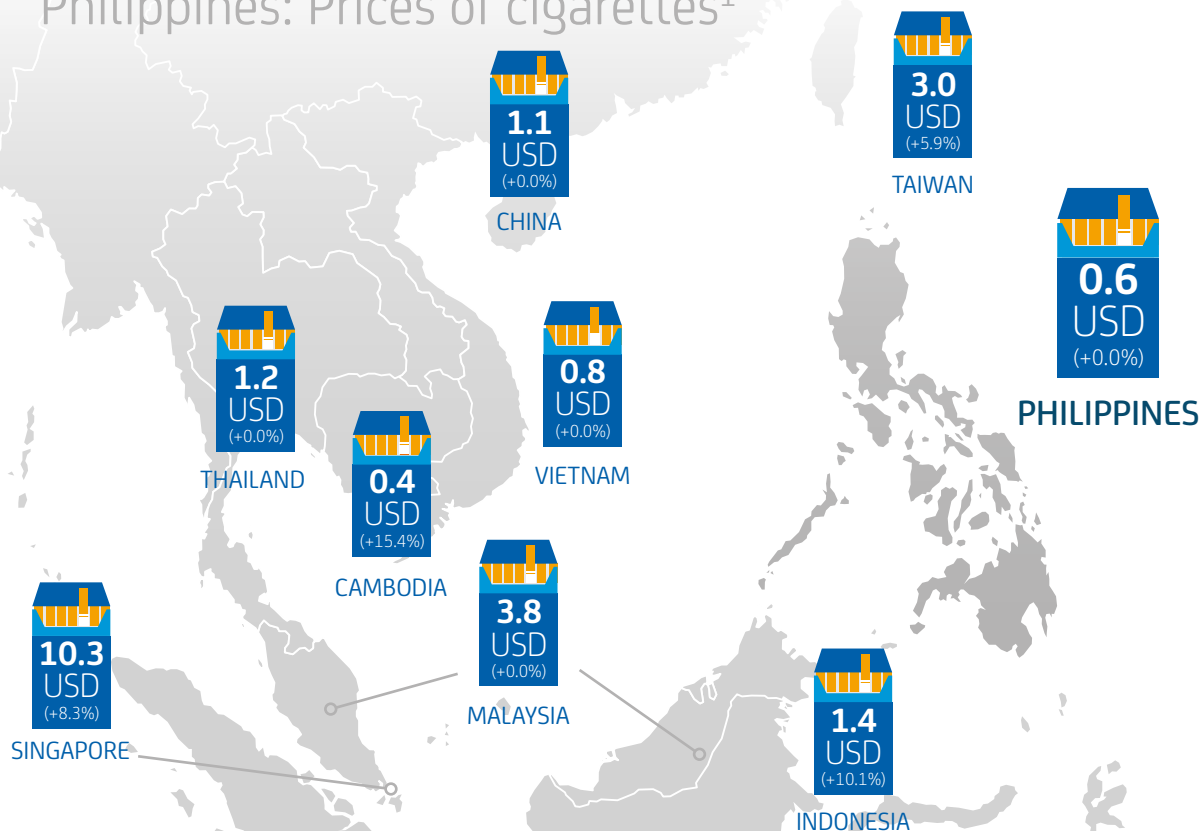


Source: IT Flows Model and Oxford Economics

# Philippines: Legal Domestic Sales

- Philippines Legal Domestic Sales are estimated at 82.3 billion cigarettes in 2014. This represents a decline of 4.6% from 2013.
- PM continue to dominate the market, accounting for 83% of Legal Domestic Sales, with Mighty Corporation accounting for nearly 12% of legal sales.
- Excise rates on the majority of cigarettes have risen significantly in 2013 and 2014. In January 2014, excise rates were increased to PHP 17 per pack of Low-tax tier cigarettes (+41.7%) and PHP 27 per pack of High-tax tier cigarettes (+8.0%).
- This Excise Tax hike led to an increase in the price of cigarettes in the Low-tax tier in 2014, with the price per pack of 20 of the cheapest brand rising by 22%. The price of the Most Sold Brand remained unchanged until November 2014, when it increased by 24%.
- Back in January 2013, a much larger tax increase was implemented, with excise rates rising by 341% on cigarettes in the Low-tax tier. At the same time, the Excise Tax system was restructured with the number of tax tiers reduced from four to two.
- The 2013 tax increase led to a 59% rise in the pack price of the Most Sold Brands in both the “low price” and “premium price” segments, while the price of the Most Sold Brand in the “super low price” segment increased by 131%.
- Despite successive Excise Tax hikes, the price of the Most Sold Brand remains relatively low in the Philippines (USD 0.6) compared with other neighbouring markets such as Malaysia (USD 3.8), Indonesia (USD 1.4), and Vietnam (USD 0.8).

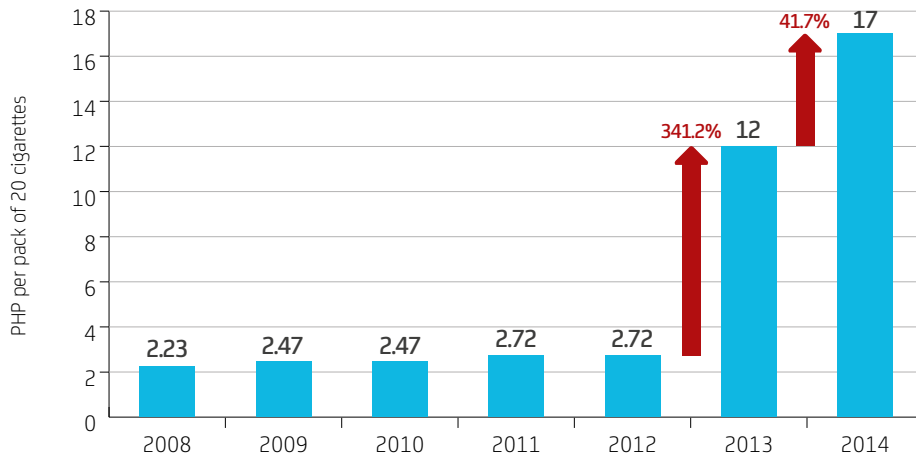
## Philippines: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

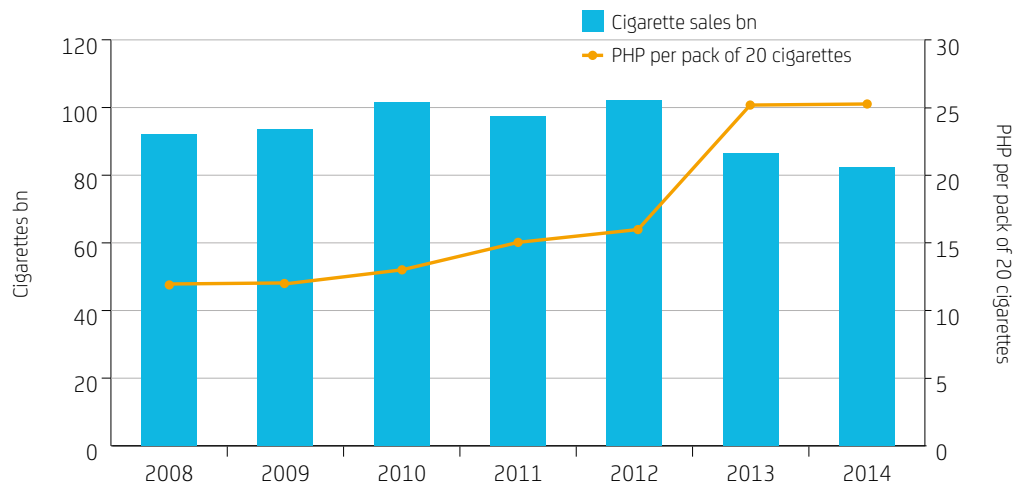
<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

## Philippines: Excise duty applied to cigarettes<sup>2</sup>



Source: Philippines Senate Tax Study and Research Office  
<sup>2</sup>Rate applied in January of each year to the Most Sold Brand.

## Philippines: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics  
<sup>3</sup>Price of the Most Sold Brand in January of each year.

# Philippines: Cigarette Consumption

- The results from the Empty Pack Survey and the Nielsen Retail Audit,<sup>1</sup> combined with data on withdrawals and shipments from PM, were used to estimate Total Consumption of cigarettes in the Philippines.
- Total Consumption (legal and illicit) is estimated at 102.3 billion cigarettes in 2014, down 3.1% from 2013, and the lowest level since the first Asia Illicit Tobacco Indicator report was conducted.
- Legal Domestic Consumption is estimated at 82.3 billion cigarettes or 80.4% of Total Consumption, 0.1% is Non-Domestic Legal, and the remaining 19.4% or 19.9 billion cigarettes is Illicit Consumption.
- The volume of Illicit Consumption rose by 4.1% in 2014. Domestic Illicit volumes rose by 10.8%, from 17.1 billion cigarettes in 2013 to 19.0 billion in 2014. However, this was partially offset by a 55.3% decline in Non-Domestic Illicit Inflows from 1.9 billion cigarettes to 0.9 billion.
- The Illicit share in Total Consumption rose to 19.4% in 2014, the highest level since the first Asia Illicit Tobacco Indicator report was conducted, and 1.3 percentage points above the 2013 estimate.
- In line with the amendment of the National Internal Revenue Code of 1997,<sup>2</sup> it is anticipated that the affixture of tax stamps introduced on 1st December 2014 will “further improve tax administration” and “deter over-removals and mis-declaration of removals.”

## Philippines: Composition of cigarette consumption

	2012 <sup>3</sup>		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>102.2</b>	<b>94.0</b>	<b>86.3</b>	<b>81.8</b>	<b>82.3</b>	<b>80.4</b>	<b>-4.6</b>
Legal Domestic Sales (LDS)	102.2	—	86.3	—	82.3	—	-4.6
Outflows of domestic duty-paid cigarettes	-0.1	—	-0.1	—	-0.1	—	-16.9
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.4</b>	<b>0.4</b>	<b>2.1</b>	<b>2.0</b>	<b>1.0</b>	<b>1.0</b>	<b>-52.0</b>
Non-Domestic Legal (NDL)	0.1	0.1	0.2	0.1	0.1	0.1	-9.1
Non-Domestic Illicit	0.3	0.3	1.9	1.8	0.9	0.9	-55.3
<b>Domestic Illicit</b>	<b>6.1</b>	<b>5.6</b>	<b>17.1</b>	<b>16.3</b>	<b>19.0</b>	<b>18.6</b>	<b>10.8</b>
<b>Total Consumption</b>	<b>108.7</b>	<b>100.0</b>	<b>105.5</b>	<b>100.0</b>	<b>102.3</b>	<b>100.0</b>	<b>-3.1</b>
<b>Total Illicit Consumption</b>	<b>6.4</b>	<b>5.9</b>	<b>19.1</b>	<b>18.1</b>	<b>19.9</b>	<b>19.4</b>	<b>4.1</b>

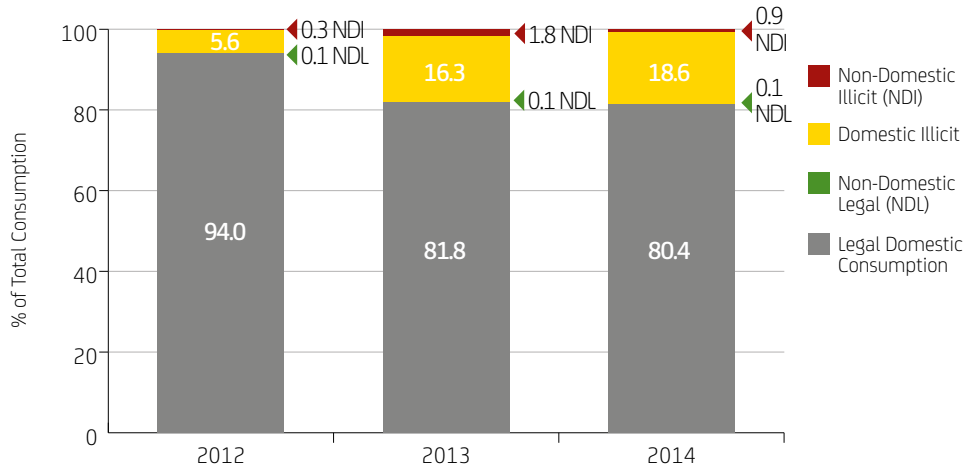
Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q2, while the retail audit provides monthly data in 2014 (see Annex A for more details). By comparing sales based on the retail audit with manufacturers' withdrawals for Low-tax tier cigarettes sourced from the Philippines Bureau of Internal Revenue (Domestic manufacturers' withdrawals concerns domestic duty-paid cigarettes), this Report estimated the volume of domestically-produced cigarettes where the appropriate excise rates were not paid.

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

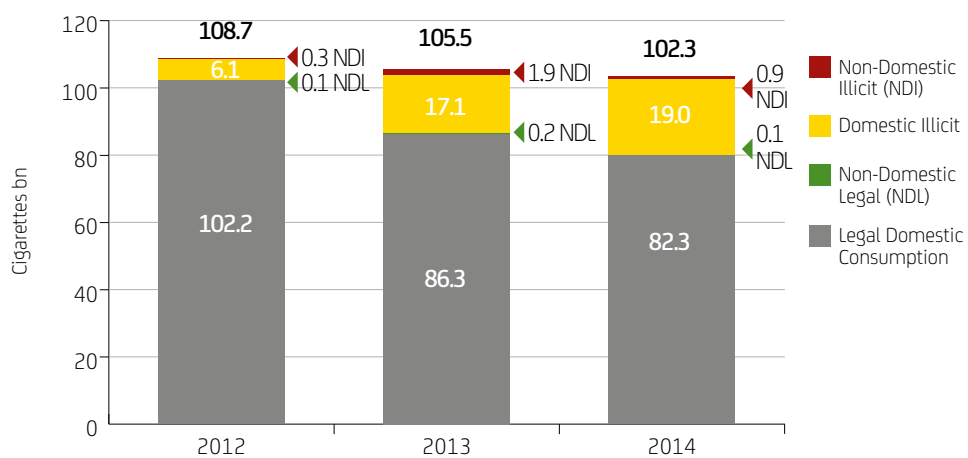
<sup>3</sup>2012 results based on 2011 Q4 Empty Pack Survey.

## 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 applies a two-tiered specific Excise Tax on cigarettes.
- On 1st January 2014, excise rates were increased to PHP 17 per pack of 20 cigarettes with a net retail price<sup>1</sup> (NRP) not exceeding PHP 11.50 (Low-tax tier cigarettes) and PHP 27 per pack of 20 cigarettes with an NRP above PHP 11.50 (High-tax tier cigarettes). This represents an increase of 41.7% and 8.0% respectively.
- The Excise Tax system was simplified in January 2013 through a reduction in the number of tax tiers from four to two. Excise 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 Low-tax tier cigarettes (as defined in 2012), 231% on the Mid-tax tier and 108% on the High-tax tier. These tax tiers accounted for nearly all Legal Domestic Sales in 2012.
- Excise rates 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, in line with projected inflation.
- In addition, VAT is levied at a rate of 12% on the retail price of sales.
- As a consequence of the increase in Excise Tax rates in 2014, revenues from excise duties of tobacco increased by 5.6% despite a decline of 4.6% in Legal Domestic Sales over the same period.
- Our estimates indicate that the tax revenue loss associated with the Illicit Consumption of cigarettes in 2014 amounted to PHP 22.5 billion (USD 506 million). Excluding revenues from VAT, the Excise Tax Loss as a share of total potential Excise Tax revenues was 20.5%, above the 15.3% estimated for 2013.
- Estimated Tax Losses have increased by 44.1% since 2013, driven by the increase in Excise Tax rates, particularly in the Low-tax tier segment. The total Tax Loss is now over eight times the value estimated in 2012.

## Philippines: Actual government revenues and estimated Tax Loss

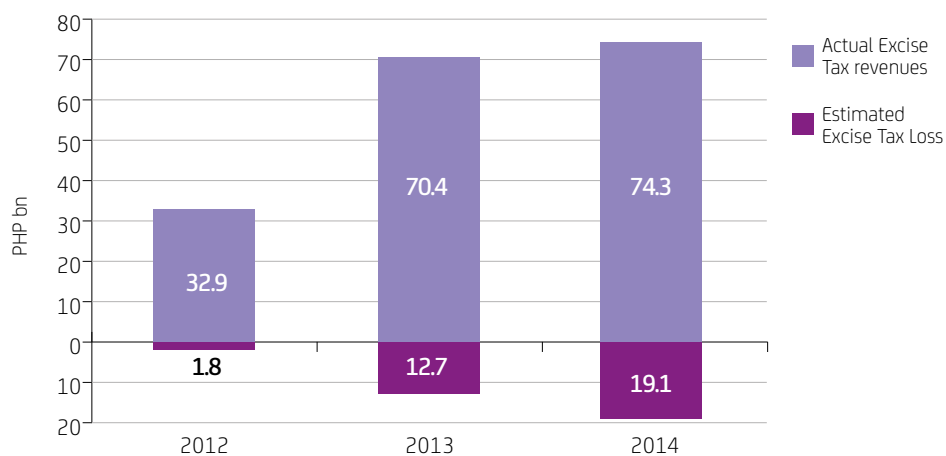
Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	PHP bn	USD mn	PHP bn	USD mn	PHP bn	USD mn	
Actual revenue from excise duties on tobacco	32.9	780	70.4	1,658	74.3	1,674	5.6%
Estimated number of illicit cigarettes purchased (cigarettes mn)	6,400		19,096		19,874		4.1%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>2.6</b>	<b>62</b>	<b>15.6</b>	<b>368</b>	<b>22.5</b>	<b>506</b>	<b>44.1%</b>
Lost excise revenue	1.8	42	12.7	300	19.1	431	50.4%
Lost VAT revenue	0.8	19	2.9	68	3.3	75	16.1%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>5.2%</b>		<b>15.3%</b>		<b>20.5%</b>		

Source for government revenue data: Philippines Bureau of Internal Revenue (BIR), the Senate Tax Study and Research Office (STSRO), and Oxford Economics

<sup>1</sup>Retail selling price net of excise and VAT.



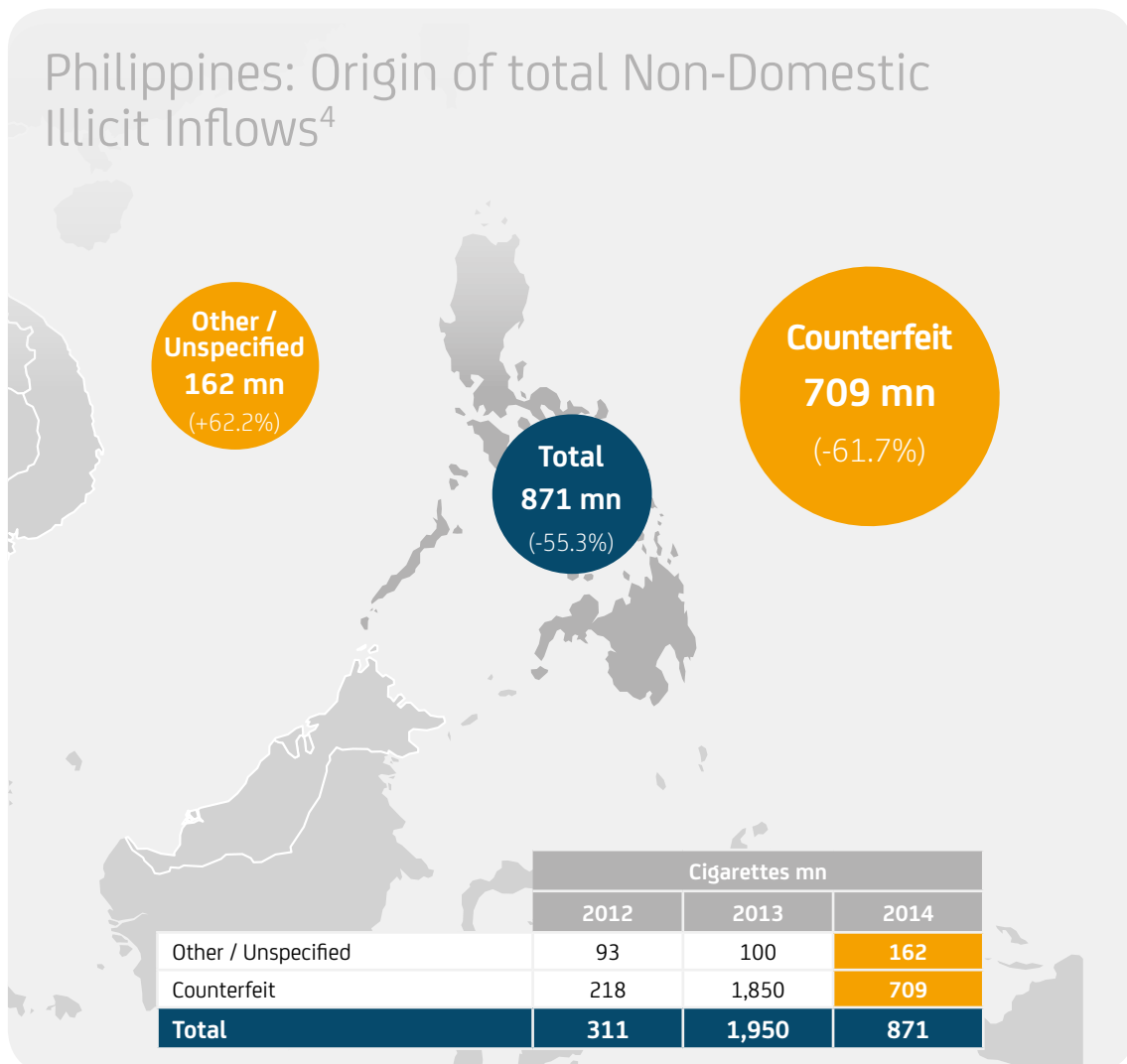
## Philippines: Actual government revenues and estimated Tax Loss



Source: Philippines Bureau of Internal Revenue (BIR), the Senate Tax Study and Research Office (STSRO), and Oxford Economics

## Philippines: Trade Flows

- Illicit cigarettes consist primarily of domestic non-tax paid cigarettes. The Non-Domestic share in Total Illicit Consumption was 4.4% in 2014, down from 10.2% in 2013.
- The volume of Non-Domestic Illicit fell by more than half, from 1,950 million cigarettes in 2013 to 871 million in 2014. However, it remains nearly three times higher than the estimated volumes for 2012.
- The decline in Non-Domestic Illicit has been driven by a sharp decline in Counterfeit cigarettes, offsetting the rise in Contraband products, primarily consisting of Unspecified Market Variant products.<sup>1</sup>
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be very low.<sup>2</sup>
- Non-Domestic Legal Inflows<sup>3</sup> are small in the Philippines as the price of a pack of cigarettes remains relatively low compared with neighbouring markets, thereby reducing the incentive for consumers to legally bring in tax-paid cigarettes from other markets.
- Overall, Domestic Illicit Consumption is estimated to have accounted for 18.6% of Total Consumption or 19.0 billion cigarettes in 2014, compared with 17.1 billion cigarettes in 2013 and 6.1 billion in 2012.



Source: IT Flows Model and Oxford Economics

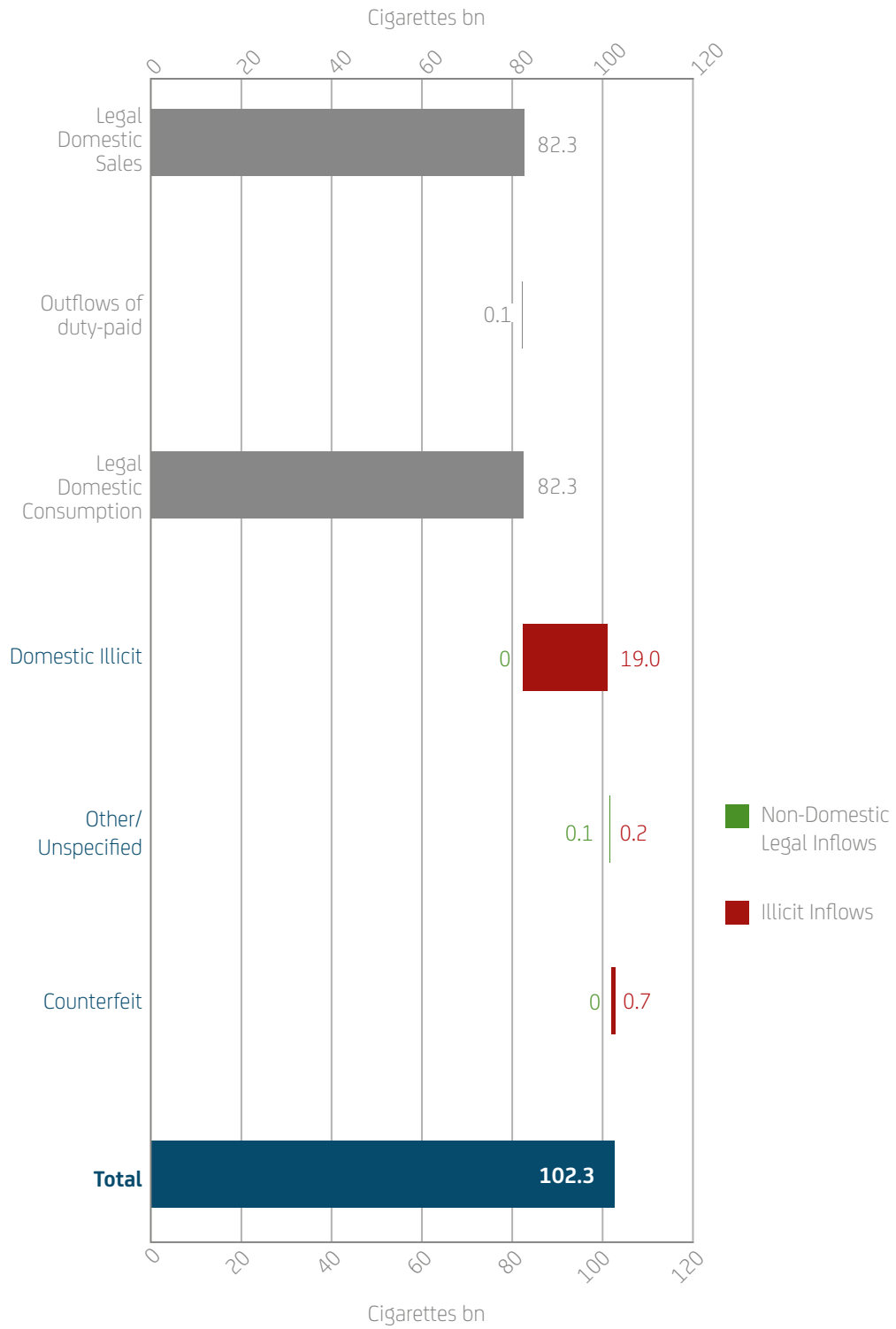
<sup>1</sup>Unspecified Market Variant refers to cigarette packs that do not bear specific market labelling or Duty-Free labelling. As such, the intended market is not known. The brand "Cannon" was the main Unspecified Market Variant brand identified in 2014.

<sup>2</sup>Note 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.

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

<sup>4</sup>Figures in brackets reflect % changes from 2013.

## Philippines: Consumption breakdown 2014

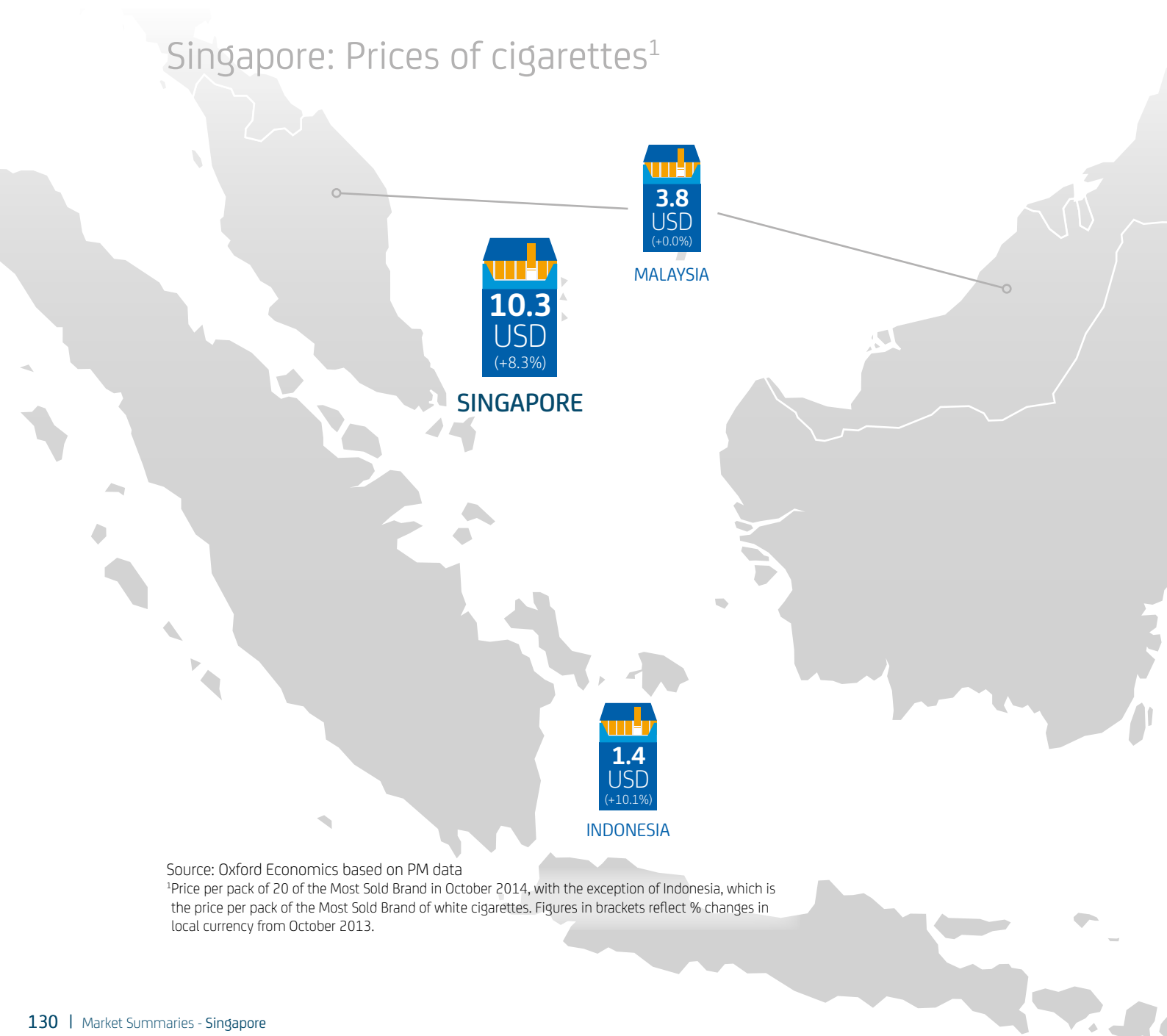


Source: IT Flows Model and Oxford Economics

## Singapore: Legal Domestic Sales

- Legal Domestic Sales in Singapore are estimated at 2.8 billion cigarettes for 2014, an increase of 4.9% from 2013. Legal Domestic Sales have continued to rise after registering growth of 4.5% in the previous year.
- BAT, JTI, and PM continue to dominate the legal market, accounting for more than 90% of Legal Domestic Sales.
- Growth in Legal Domestic Sales accelerated slightly in 2014 compared with the previous year, despite an increase in the price of the Most Sold Brand of 8.3% following the Excise Tax hike from SGD 352 per thousand cigarettes to SGD 388 (+10.2%) implemented in February 2014.
- Excluding Australia, cigarette prices in Singapore are the highest of the Asia-16 markets. The price of the Most Sold Brand at USD 10.3 per pack is significantly higher than the Most Sold Brand available in neighbouring Malaysia (USD 3.8) and Indonesia (USD 1.4).

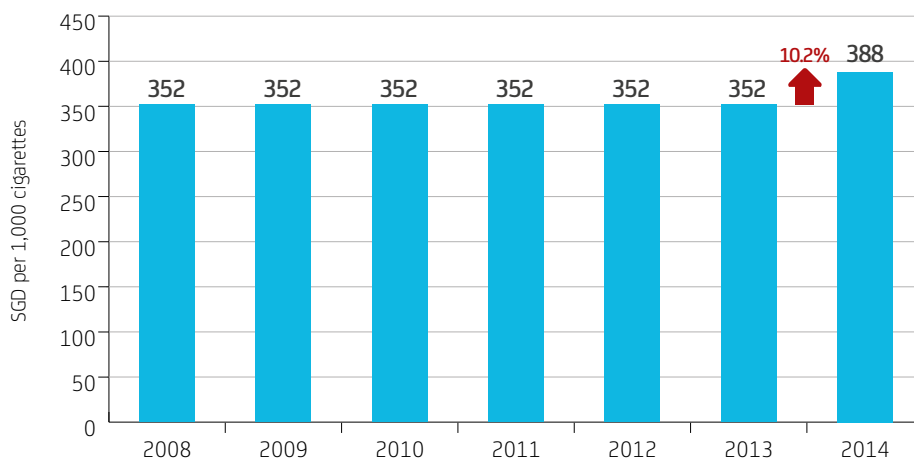
### Singapore: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

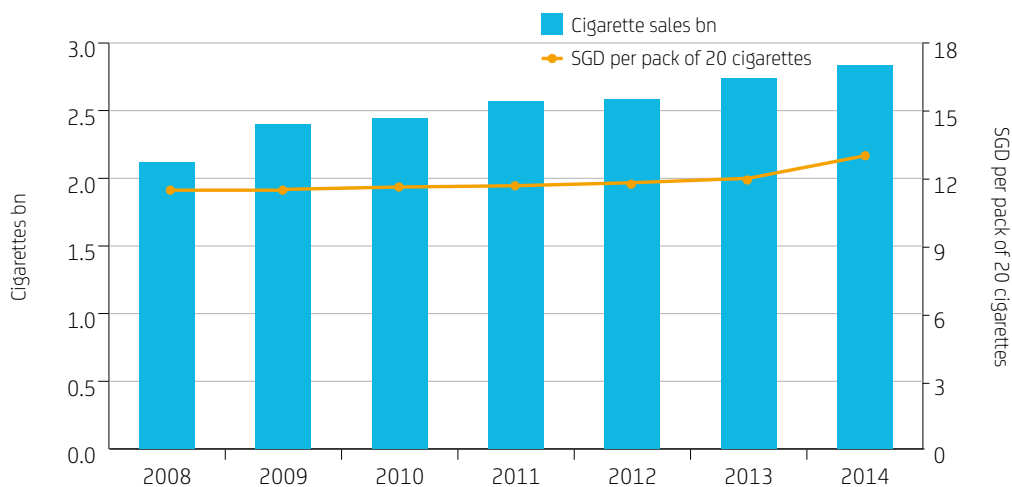
<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

## Singapore: Excise duty applied to cigarettes<sup>2</sup>



Source: Singapore Customs  
<sup>2</sup>Rate applied in February of each year.

## Singapore: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics  
<sup>3</sup>Price of the Most Sold Brand in March of each year.

## Singapore: Cigarette Consumption

- The results from two Empty Pack Surveys<sup>1</sup> 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 3.3 billion cigarettes in 2014, down 1.9% from 2013. Of this, an estimated 85.4% or 2.8 billion cigarettes is Legal Domestic Consumption. There is no Non-Domestic Legal Consumption due to the zero Duty-Free allowance for inbound arrivals. The remaining 14.6% of Total Consumption is therefore all Illicit Consumption.
- The share of Illicit Consumption in Total Consumption fell by 5 percentage points in comparison with 2013 and 11 percentage points in comparison with 2012.
- The volume of Illicit Consumption has declined significantly over the last two years. In 2012, Illicit Consumption was estimated at around 0.9 billion cigarettes. This fell to 0.7 billion cigarettes in 2013, representing a decline of 26.2%. In 2014, it fell by a further 26.7% to 0.5 billion cigarettes.
- Overall, this represents a 45.9% reduction in Illicit Consumption in Singapore since 2012.
- Over the same period, Legal Domestic Consumption has increased by 8.8%, partially offsetting the impact of falling Illicit Consumption. As a consequence, Total Consumption fell both in 2013 and 2014 (in total, falling by 5.2% since 2012).

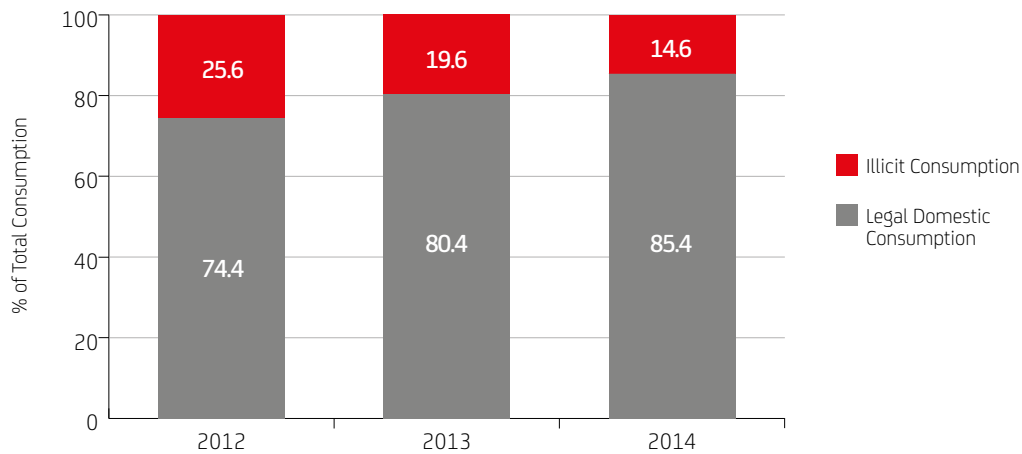
### Singapore: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>2.6</b>	<b>74.4</b>	<b>2.7</b>	<b>80.4</b>	<b>2.8</b>	<b>85.4</b>	<b>4.2</b>
Legal Domestic Sales (LDS)	2.6	—	2.7	—	2.8	—	4.9
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	987.6
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.9</b>	<b>25.6</b>	<b>0.7</b>	<b>19.6</b>	<b>0.5</b>	<b>14.6</b>	<b>-26.7</b>
Non-Domestic Legal (NDL)	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	-26.7
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>3.5</b>	<b>100.0</b>	<b>3.4</b>	<b>100.0</b>	<b>3.3</b>	<b>100.0</b>	<b>-1.9</b>
<b>Total Illicit Consumption</b>	<b>0.9</b>	<b>25.6</b>	<b>0.7</b>	<b>19.6</b>	<b>0.5</b>	<b>14.6</b>	<b>-26.7</b>

Source: Oxford Economics

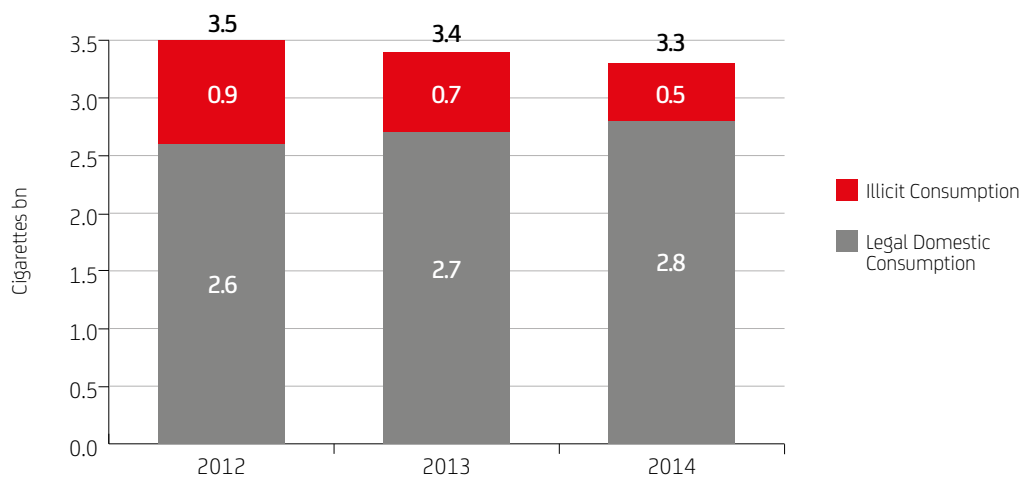
<sup>1</sup>The Empty Pack Surveys were undertaken in 2014 Q2 and 2014 Q4 (see Annex A for more details).

## 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. After no tax increases since 2005, the Excise Tax was increased to SGD 388 per thousand cigarettes in February 2014 from SGD 352 per thousand cigarettes (+10.2%).
- A 7% GST is also levied on all retail sales of cigarettes.
- Following the tax hike implemented in February 2014, Excise Tax revenues collected on tobacco products amounted to SGD 1.2 billion in fiscal year 2014/15, an increase of 17.7% compared with 2013/14, underpinned by the growth of 4.9% recorded for Legal Domestic Sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2014/15 amounted to SGD 203 million (USD 157 million). This represents a 22.8% decline in the Tax Loss of SGD 262 million (USD 208 million) estimated for 2013/14.
- The level of Tax Loss associated with Illicit Consumption in 2014/15 was the lowest since the Asia Illicit Tobacco Indicator research began.
- As a consequence of the declining trend in illicit cigarette consumption in Singapore, the share of estimated Excise Tax revenue loss in total potential Excise Tax revenue has fallen by more than 11 percentage points in the last three years, from 24.3% in 2012/13 to 13.1% in 2014/15.

### Singapore: Actual government revenues and estimated Tax Loss

Indicator	2012/13 fiscal year <sup>1</sup>		2013/14 fiscal year <sup>1</sup>		2014/15 fiscal year <sup>1</sup>		% change in local currency 2013/14- 2014/15
	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	17.7%
Estimated number of illicit cigarettes purchased (cigarettes mn)	883		674		477		-29.2%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>345</b>	<b>278</b>	<b>262</b>	<b>208</b>	<b>203</b>	<b>157</b>	<b>-22.8%</b>
Lost excise revenue	311	250	239	190	185	144	-22.6%
Lost VAT revenue	34	28	23	19	18	14	-24.7%
<b>Excise Tax Loss as % of potential total Excise Tax revenues</b>	<b>24.3%</b>		<b>18.6%</b>		<b>13.1%</b>		

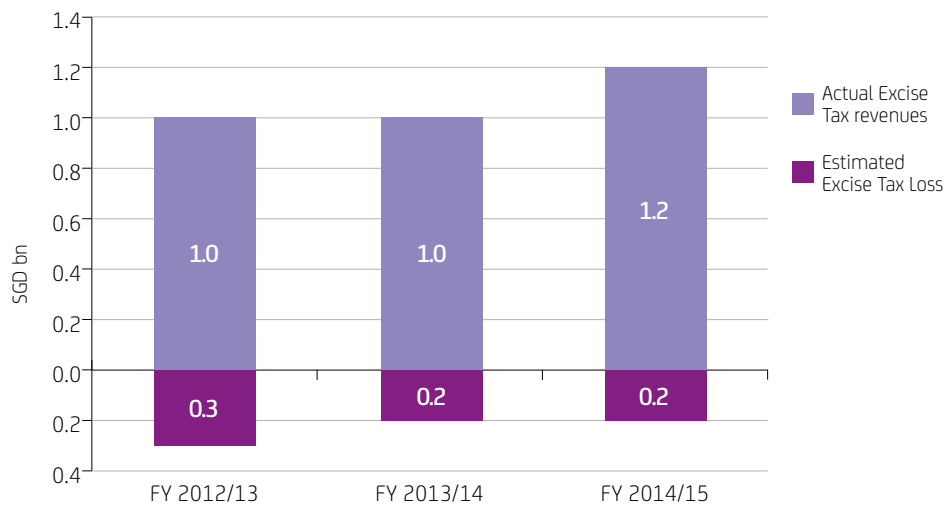
Source for government revenue data: Singapore Customs and Oxford Economics

Estimated number of illicit cigarettes purchased adjusted for fiscal year.

<sup>1</sup>Fiscal years run from April to March.



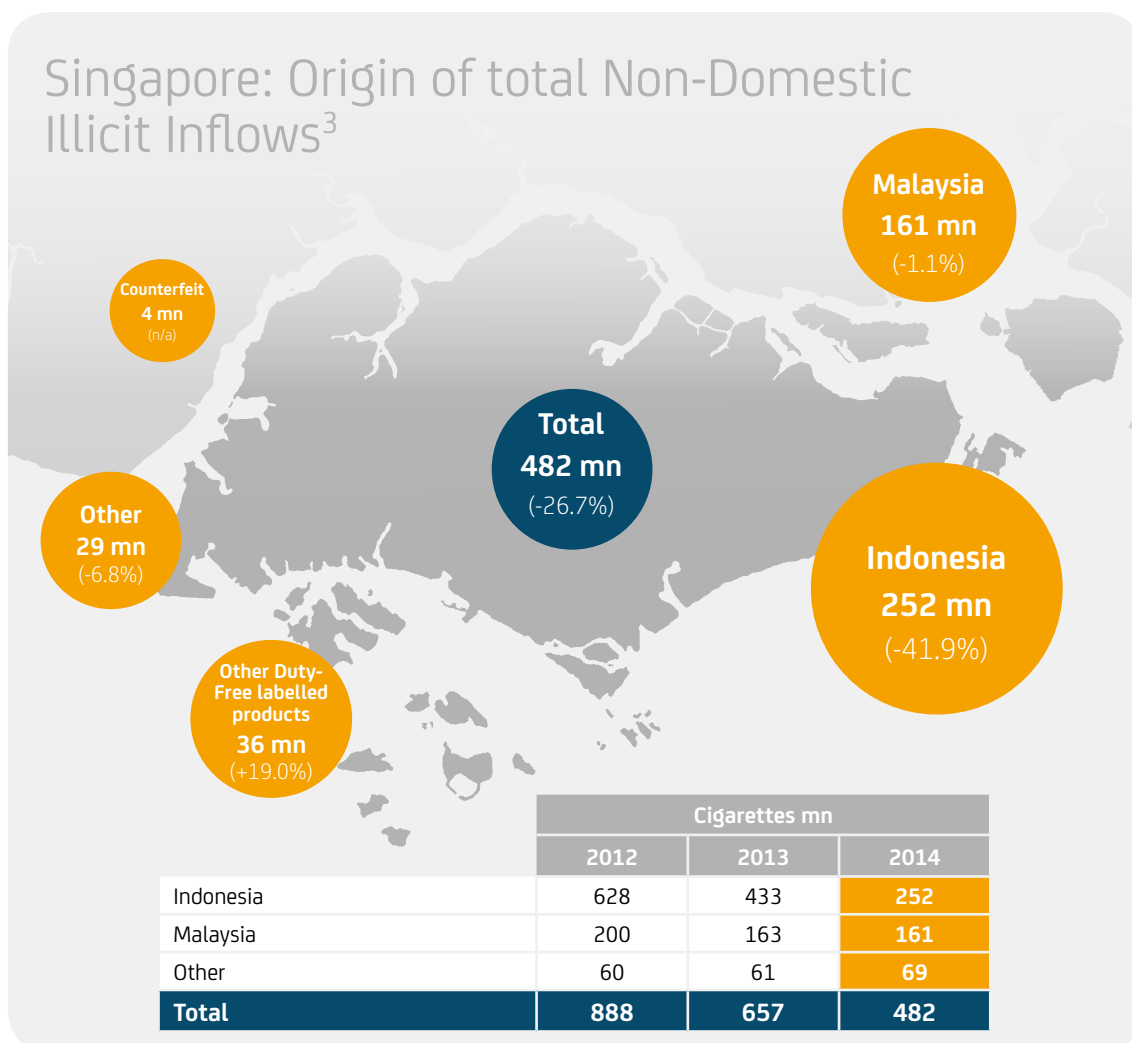
## Singapore: Actual government revenues and estimated Tax Loss



Source: Singapore Customs and Oxford Economics

## Singapore: Trade Flows

- The market for illicit cigarettes in Singapore is almost entirely composed of Contraband products, with no Domestic Illicit production. Close proximity markets remain the primary origin for illicit cigarettes, with approximately 53% in 2014 coming from Indonesia and 33% from Malaysia. In 2013, 66% of illicit cigarettes originated from Indonesia and 25% from Malaysia.
- A small volume of Counterfeit cigarettes was also identified in the Empty Pack Surveys in 2014 – equivalent to 4 million cigarettes – in contrast to 2013, when no Counterfeit products were present in Singapore.
- Similarly, a small volume equal to less than 10% of Non-Domestic Illicit Inflows was identified as Unspecified Market Variant.<sup>1</sup> This is consistent with findings from 2012 and 2013.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be very low as the cost of cigarettes in Singapore is the highest in ASEAN, reducing the incentive for individuals to take legal domestic cigarettes with them when travelling within the region.<sup>2</sup>
- Non-Domestic Legal Inflows of cigarettes are assumed to be negligible given the zero personal allowance for imports of Duty-Free cigarettes in Singapore.



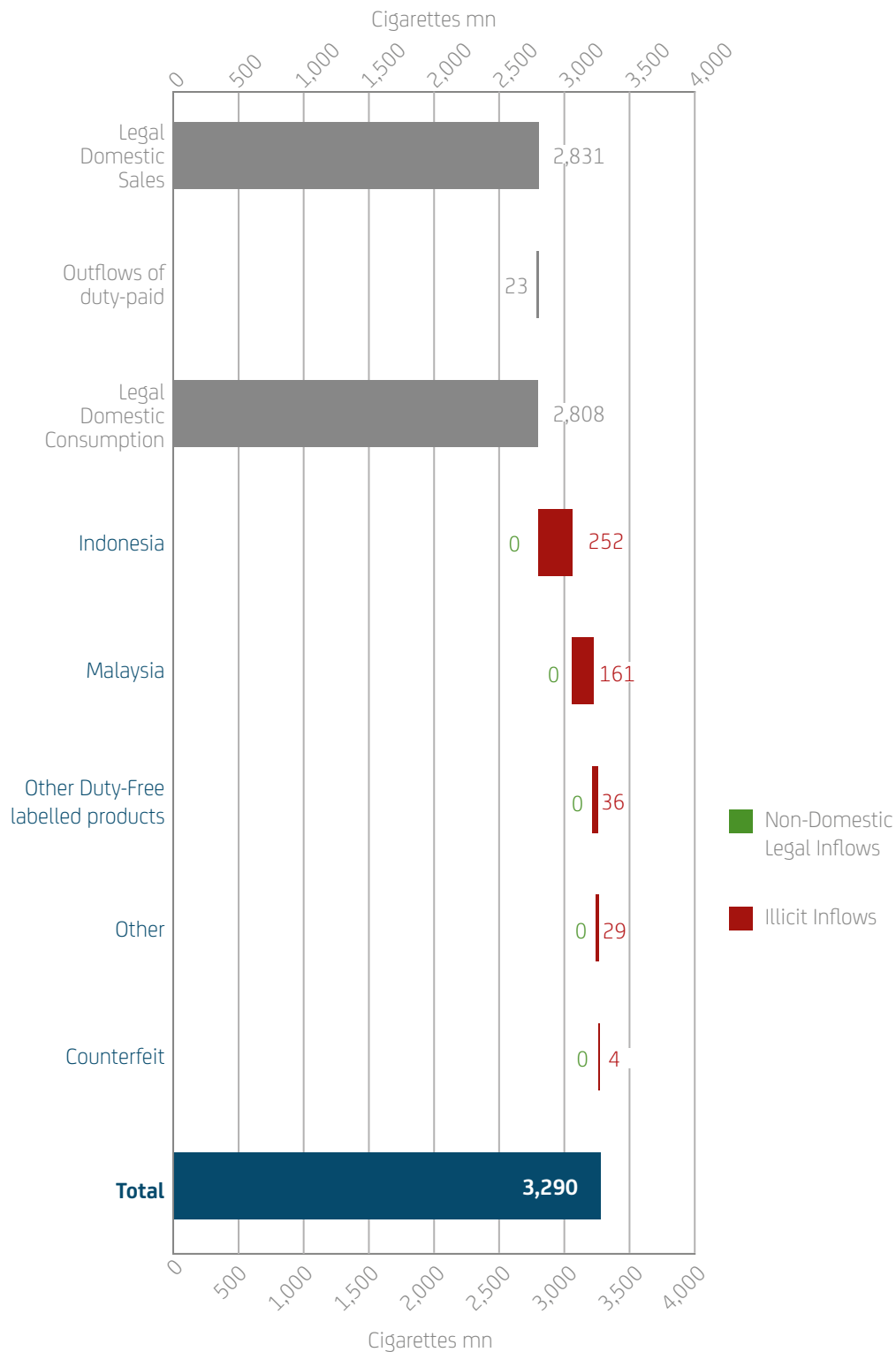
Source: IT Flows Model and Oxford Economics

<sup>1</sup>Unspecified 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. “Moon Mountain” was the primary Unspecified Market Variant brand identified in 2014.

<sup>2</sup>Note 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.

<sup>3</sup>Figures in brackets reflect % changes from 2013.

## Singapore: Consumption breakdown 2014

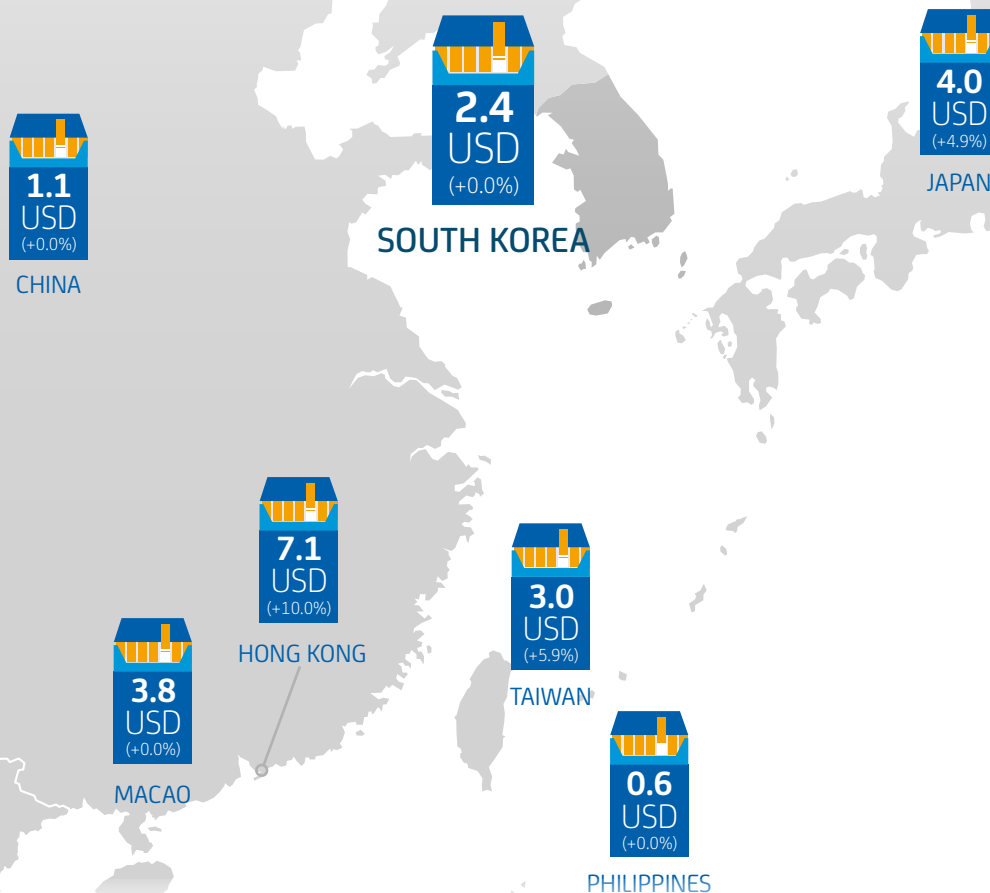


Source: IT Flows Model and Oxford Economics

## South Korea: Legal Domestic Sales

- Legal Domestic Sales in South Korea are estimated at 89.4 billion cigarettes for 2014, an increase of 1.2% compared with 2013.
- While Legal Domestic Sales have been in steady decline since 2009, they increased slightly in 2014 as consumers increased purchases ahead of a large tax driven price increase implemented in January 2015.
- KT&G is the dominant manufacturer in the market, accounting for nearly 62% of Legal Domestic Sales in 2014. The remaining proportion of Legal Domestic Sales is primarily made up of PM, BAT, and JTI.
- The price of a pack of the Most Sold Brand of cigarettes is USD 2.4 in South Korea, over twice the equivalent price of the Most Sold Brand in China (USD 1.1). However, when compared with other markets such as Taiwan (USD 3.0), Hong Kong (USD 7.1), Macao (USD 3.8), and Japan (USD 4.0), cigarette prices are lower.

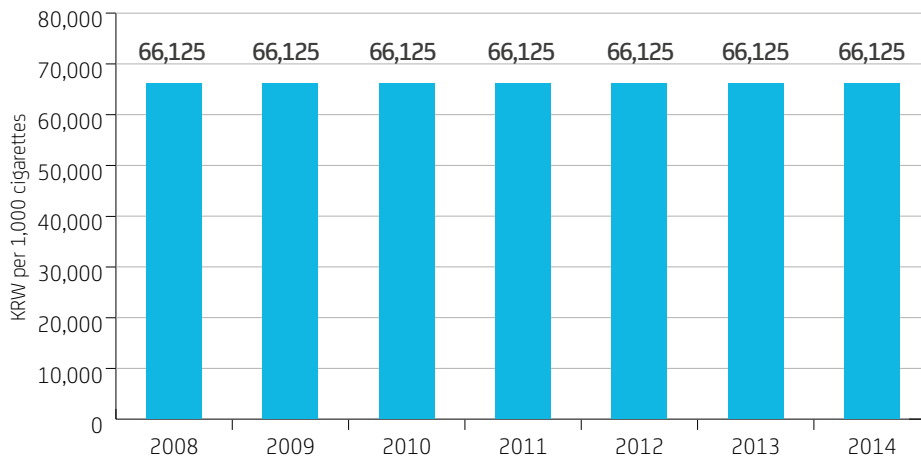
### South Korea: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup> Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

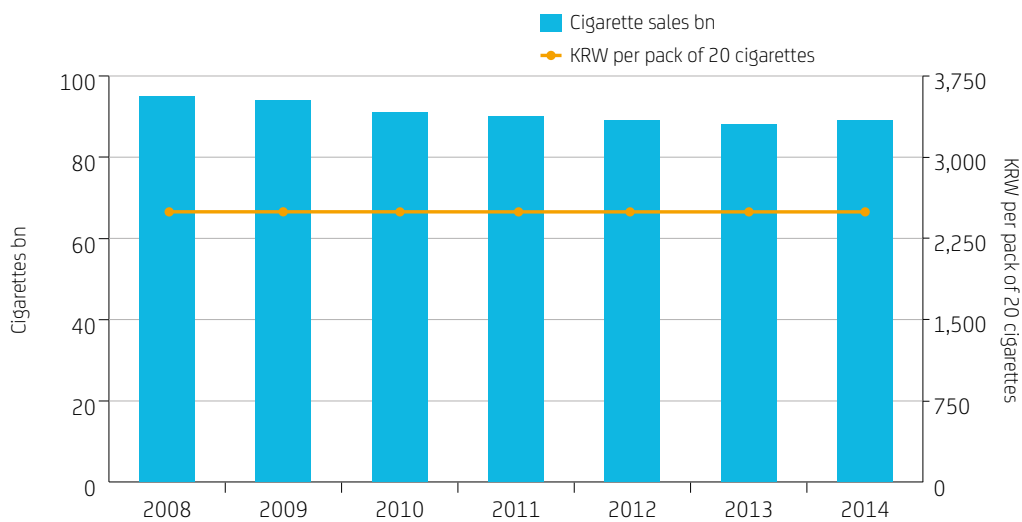
## South Korea: Excise duty applied to cigarettes<sup>2</sup>



Source: South Korea government

<sup>2</sup>Rate applied in January of each year, including Earmarked Taxes (education, health, and green taxes).

## South Korea: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price per pack of the Most Sold Brand in January of each year.

## South Korea: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> 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 89.4 billion cigarettes in 2014. Of this, an estimated 99.5% is Legal Domestic Consumption, 0.4% is Non-Domestic Legal Consumption, and just 0.1% or 0.1 billion cigarettes is Illicit Consumption.

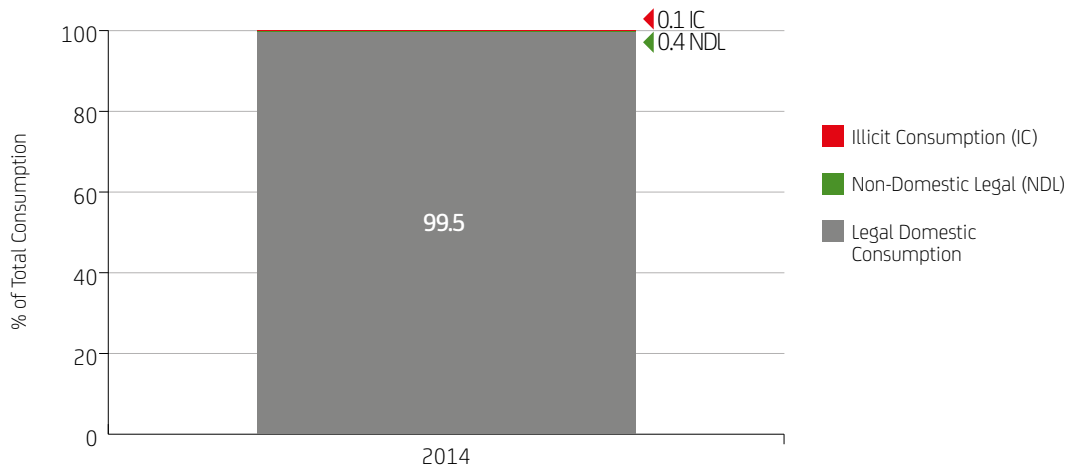
### South Korea: Composition of cigarette consumption

	2014	
	Cigarettes bn	%
<b>Legal Domestic Consumption (LDC)</b>	<b>89.0</b>	<b>99.5</b>
Legal Domestic Sales (LDS)	89.4	–
Outflows of domestic duty-paid cigarettes	-0.4	–
<b>Total Non-Domestic Inflows (ND)</b>	<b>0.4</b>	<b>0.5</b>
Non-Domestic Legal (NDL)	0.3	0.4
Non-Domestic Illicit	0.1	0.1
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>
<b>Total Consumption</b>	<b>89.4</b>	<b>100.0</b>
<b>Total Illicit Consumption</b>	<b>0.1</b>	<b>0.1</b>

Source: Oxford Economics

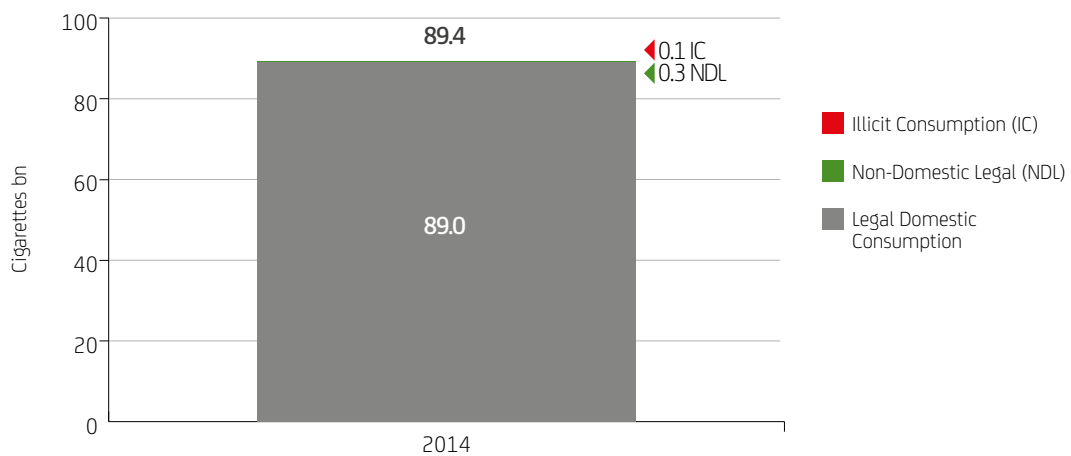
<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q4 (see Annex A for more details).

### 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 equal to KRW 641 per pack of 20 cigarettes.
- In addition, VAT of 10% is also levied, as are a range of Earmarked Taxes, (education tax, public health fund, and green fund). When including the Earmarked Taxes, the total excise rate is equal to KRW 1,323 per pack of 20 cigarettes.
- In 2014, estimated Tax Losses as a result from Illicit Consumption amounted to just KRW 8.7 billion (USD 8.3 million). Given the very low level of Illicit Consumption, the estimated Excise Tax Loss as a proportion of total potential Excise Tax revenues is negligible.

### South Korea: Actual government revenues and estimated Tax Loss

Indicator	2014	
	KRW bn	USD mn
Actual revenue from excise duties on tobacco <sup>1</sup>	5,953	5,653
Estimated number of illicit cigarettes purchased (cigarettes mn)	113	
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>8.7</b>	<b>8.3</b>
Lost excise revenue <sup>1</sup>	7.5	7.1
Lost GST revenue	1.3	1.2
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>1</sup></b>	<b>0.1%</b>	

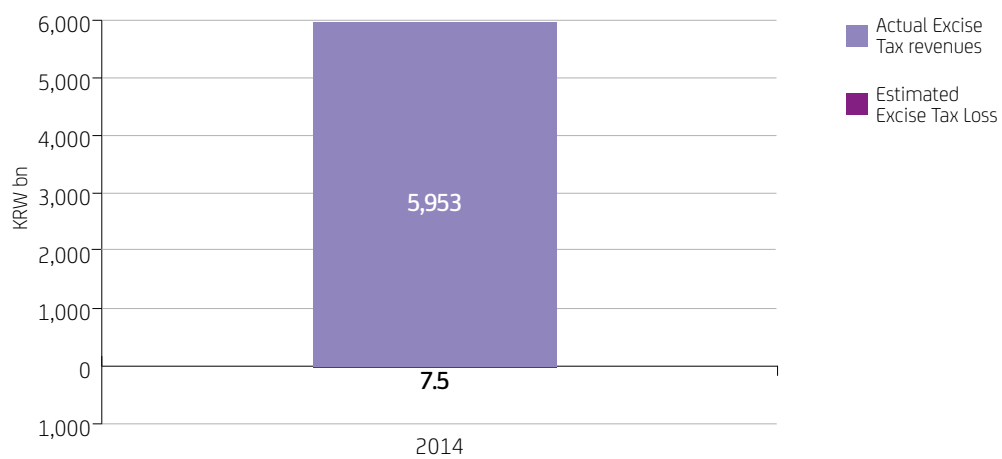
Source for government revenue data: Korea Tobacco Association and Oxford Economics

Actual revenues estimated based on Legal Domestic Sales.

<sup>1</sup>Includes Earmarked Taxes.



## South Korea: Actual government revenues and estimated Tax Loss



Source for government revenue data: Korea Tobacco Association and Oxford Economics  
Actual revenues estimated based on Legal Domestic Sales.

## South Korea: Trade Flows

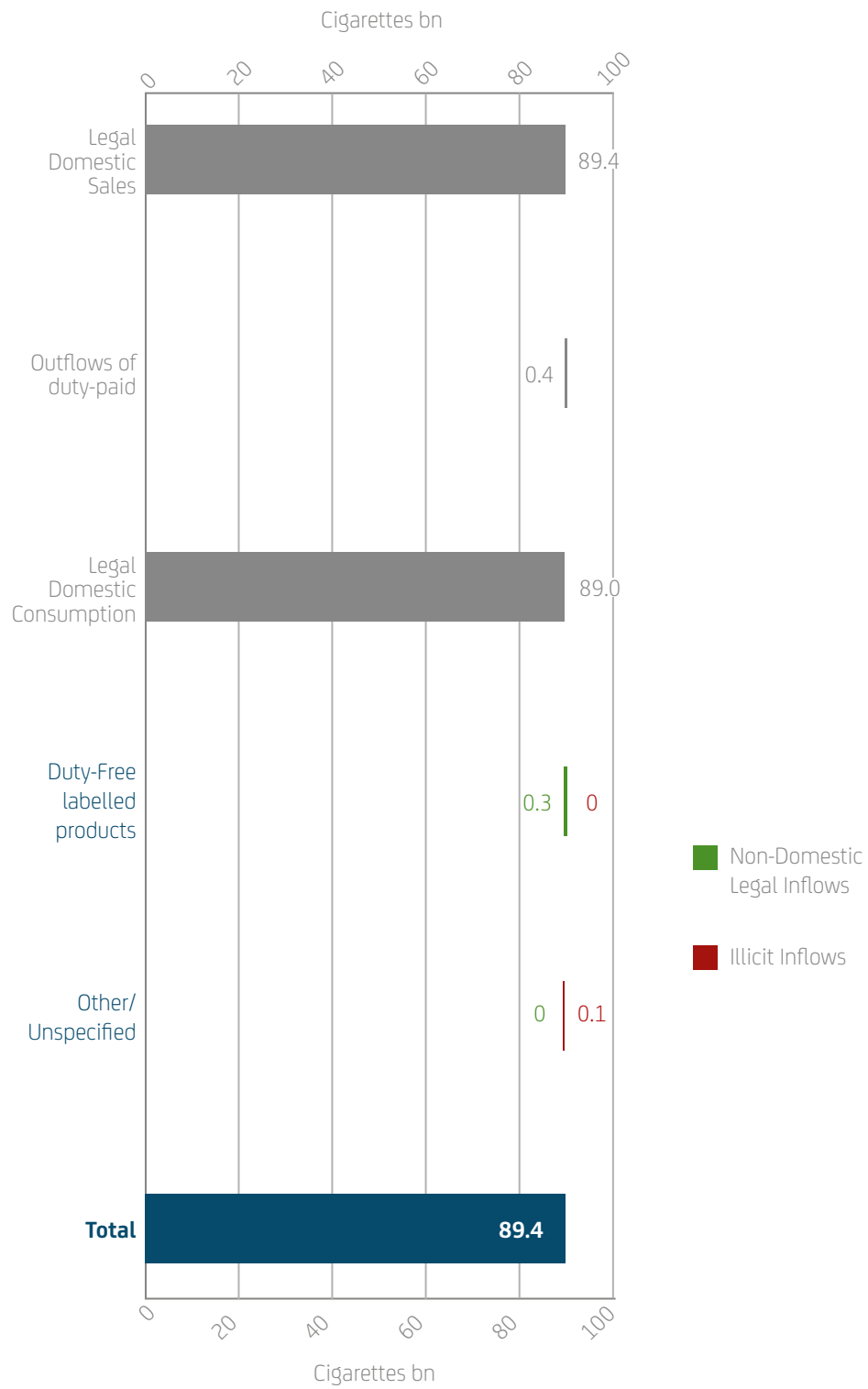
- Illicit cigarettes in South Korea consist entirely of Contraband products.
- There were no Counterfeit products identified in the Empty Pack Survey.
- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be around 400 million cigarettes. Over 90% of these cigarettes end up in Australia.<sup>1</sup>



Source: IT Flows Model and Oxford Economics

<sup>1</sup>Note 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.

## South Korea: Consumption breakdown 2014

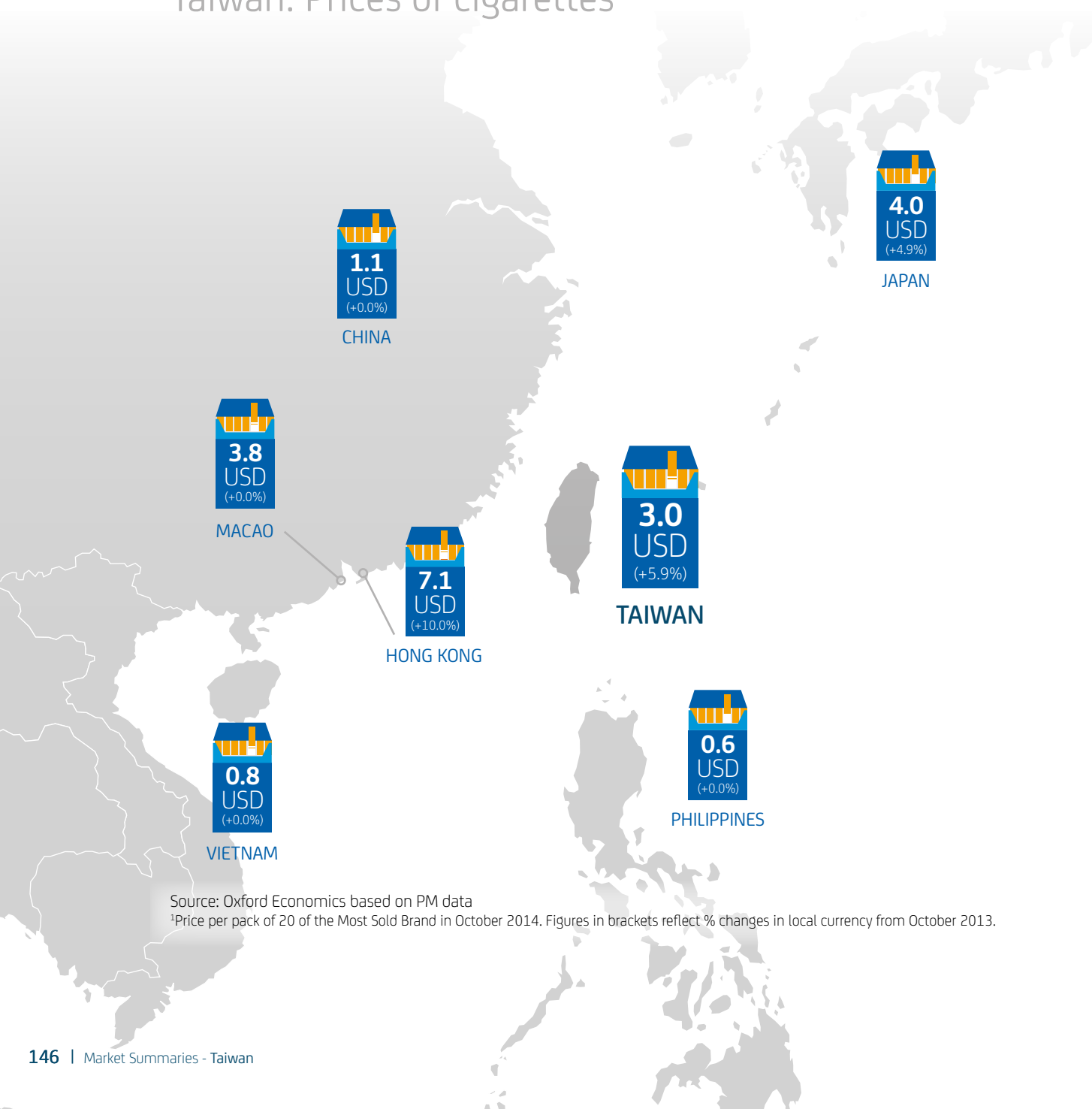


Source: IT Flows Model and Oxford Economics

## Taiwan: Legal Domestic Sales

- Taiwan Legal Domestic Sales are estimated at 35.1 billion cigarettes for 2014, representing a 1.1% decline from 2013 after remaining broadly flat for the previous four years.
- Imperial Tobacco, JTI, and Taiwan Tobacco & Liquor Corporation (TTL) continued to account for over 80% of the cigarette market.
- Prices for cigarettes are well above those in China – the price of the Most Sold Brand is USD 3.0 in Taiwan, compared with a price of USD 1.1 for the Most Sold Brand in China. Prices are also much higher than in the Philippines, where a pack of the Most Sold Brand of cigarettes costs USD 0.6.
- By contrast, cigarette prices are cheaper in Taiwan than in Japan, where the Most Sold Brand costs USD 4.0 per pack.

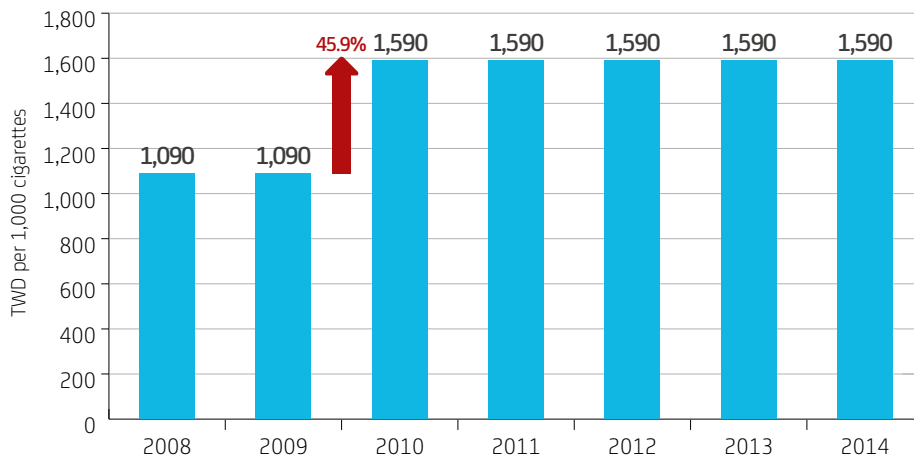
### Taiwan: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014. Figures in brackets reflect % changes in local currency from October 2013.

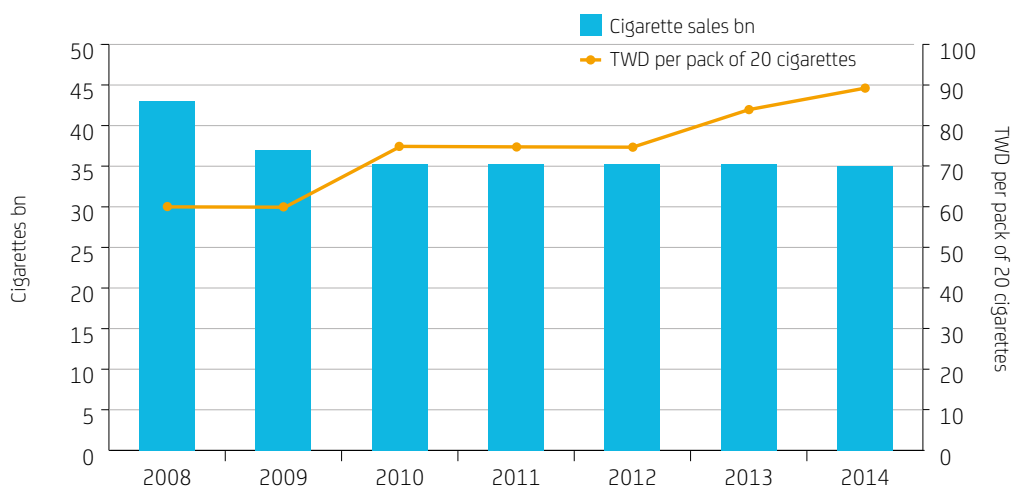
## Taiwan: Excise duty applied to cigarettes<sup>2</sup>



Source: Taiwanese Ministry of Finance

<sup>2</sup>Rate applied in January of each year, including Earmarked Taxes.

## Taiwan: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of the Most Sold Brand in January of each year.

# Taiwan: Cigarette Consumption

- The results from the Consumer Panel Survey<sup>1</sup> 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 38.2 billion cigarettes in 2014, falling by 3.4% from 2013 after remaining relatively stable in the previous year. Of this, an estimated 91.7% or 35.0 billion cigarettes is Legal Domestic Consumption, 1.9% is Non-Domestic Legal Consumption, and 6.4% or 2.5 billion cigarettes is Illicit Consumption.
- The volume of Illicit Consumption fell by 1.0 billion cigarettes in 2014 (equivalent to 2.3% of Total Consumption), reversing the 0.5 billion rise in Illicit Consumption that occurred in 2013.
- As a consequence, the share of Illicit Consumption in Total Consumption fell to 6.4%, the lowest level since the Asia Illicit Tobacco Indicator research commenced in 2012.
- The decline in Illicit Consumption more than offset a small rise in Non-Domestic Legal Consumption, ensuring that Total Consumption (-3.4%) fell by more than Legal Domestic Sales (-1.1%) in 2014.

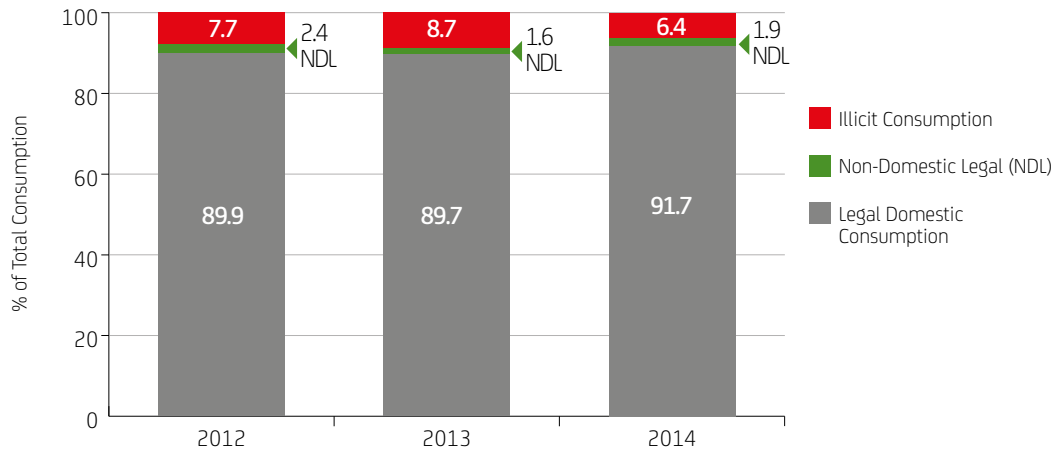
## Taiwan: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>35.5</b>	<b>89.9</b>	<b>35.5</b>	<b>89.7</b>	<b>35.0</b>	<b>91.7</b>	<b>-1.2</b>
Legal Domestic Sales (LDS)	35.5	—	35.5	—	35.1	—	-1.1
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	0.0	—	389.5
<b>Total Non-Domestic Inflows (ND)</b>	<b>4.0</b>	<b>10.1</b>	<b>4.1</b>	<b>10.3</b>	<b>3.2</b>	<b>8.3</b>	<b>-22.3</b>
Non-Domestic Legal (NDL)	1.0	2.4	0.6	1.6	0.7	1.9	14.4
Non-Domestic Illicit	3.0	7.7	3.5	8.7	2.5	6.4	-28.9
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>39.5</b>	<b>100.0</b>	<b>39.6</b>	<b>100.0</b>	<b>38.2</b>	<b>100.0</b>	<b>-3.4</b>
<b>Total Illicit Consumption</b>	<b>3.0</b>	<b>7.7</b>	<b>3.5</b>	<b>8.7</b>	<b>2.5</b>	<b>6.4</b>	<b>-28.9</b>

Source: Oxford Economics

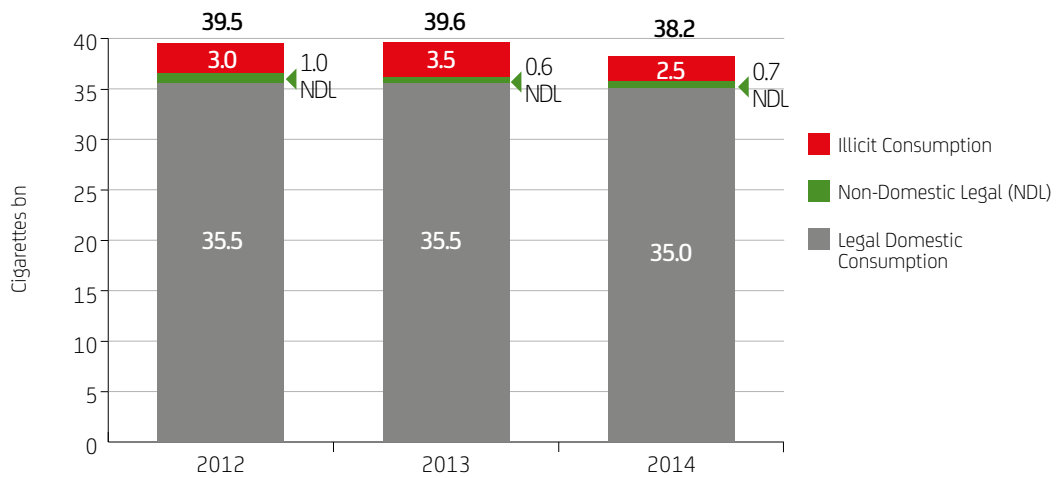
<sup>1</sup>The Consumer Panel Survey was undertaken in 2014 H1 (see Annex A for more details). The topography of Taiwan (with 70% of the land mass covered by mountainous terrain) makes it difficult to undertake an Empty Pack Survey that can be considered representative of the market. As such, a Consumer Panel Survey is employed to ensure a more complete coverage of the market.

### 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. The Excise Tax rate has not increased since 2010.
- In addition, a health surcharge of TWD 20 per pack is levied, which was last raised in 2009.
- VAT is levied at a rate of 5% on sales.
- Our estimates indicate that the Tax Loss associated with the Illicit Consumption of cigarettes in 2014 amounted to TWD 4.3 billion (USD 143 million). This represents a 28.8% decline compared with 2013 following the notable fall in the volume of Illicit Consumption.
- As a consequence, as a proportion of total potential Excise Tax revenues, Excise Tax Losses fell by two percentage points to just 7% in 2014. This is the lowest level since the Asia Illicit Tobacco Indicator research began.

### Taiwan: Actual government revenues and estimated Tax Loss

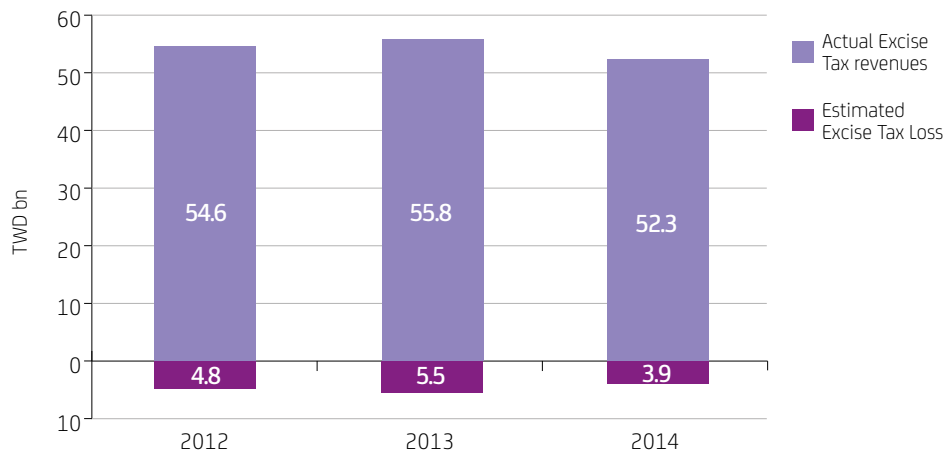
Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	TWD bn	USD mn	TWD bn	USD mn	TWD bn	USD mn	
Actual revenue from excise duties on tobacco <sup>1</sup>	54.6	1,844	55.8	1,873	52.3	1,722	-6.2%
Estimated number of illicit cigarettes purchased (cigarettes mn)	3,038		3,460		2,460		-28.9%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>5.4</b>	<b>183</b>	<b>6.1</b>	<b>205</b>	<b>4.3</b>	<b>143</b>	<b>-28.8%</b>
Lost excise revenue <sup>1</sup>	4.8	163	5.5	185	3.9	129	-28.9%
Lost VAT revenue	0.6	20	0.6	20	0.4	14	-28.0%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>1</sup></b>	<b>8.1%</b>		<b>9.0%</b>		<b>7.0%</b>		

Source for government revenue data: Taiwanese Ministry of Finance and Oxford Economics

<sup>1</sup>Includes Earmarked Taxes.



## Taiwan: Actual government revenues and estimated Tax Loss

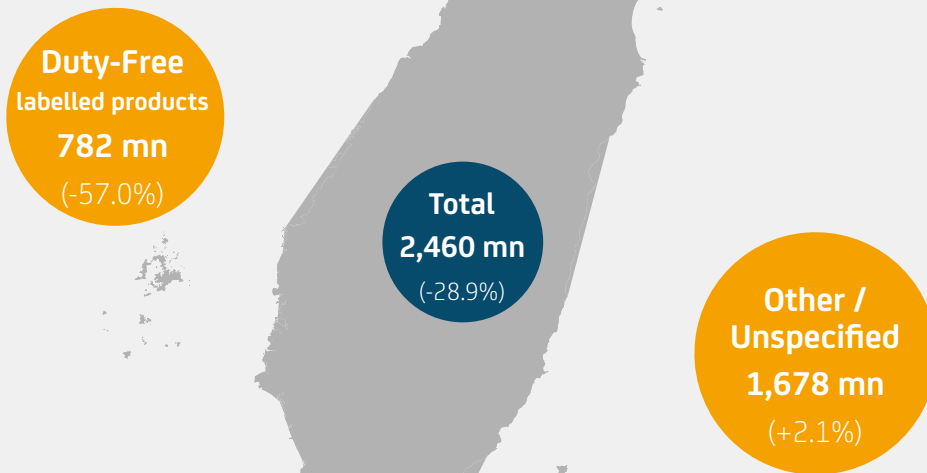


Source: Taiwanese Ministry of Finance and Oxford Economics

## Taiwan: Trade Flows

- Illicit cigarettes consist primarily of Unspecified Market Variant products.<sup>1</sup> The volume of Unspecified Market Variant cigarettes entering Taiwan is very similar to that identified in 2013, although lower than the share estimated in 2012.
- The decline in the volume of Illicit Consumption in 2014 was primarily driven by a significant (more than 50%) fall in Duty-Free labelled products compared with last year. In total, an estimated 782 million illicit Duty-Free labelled cigarettes were consumed in Taiwan.
- As a consequence, over two-thirds of the volume of total Illicit Consumption consists of products with an unspecified initial market of destination.
- No Counterfeit products are identified in Taiwan. This is consistent with analysis undertaken for 2012 and 2013.
- Although increasing in respect to previous years, Outflows of domestic duty-paid cigarettes to the other markets are estimated to be extremely low.<sup>2</sup>

### Taiwan: Origin of total Non-Domestic Illicit Inflows<sup>3</sup>



	Cigarettes mn		
	2012	2013	2014
Duty-Free labelled products	1,142	1,817	782
Other / Unspecified	1,896	1,643	1,678
<b>Total</b>	<b>3,038</b>	<b>3,460</b>	<b>2,460</b>

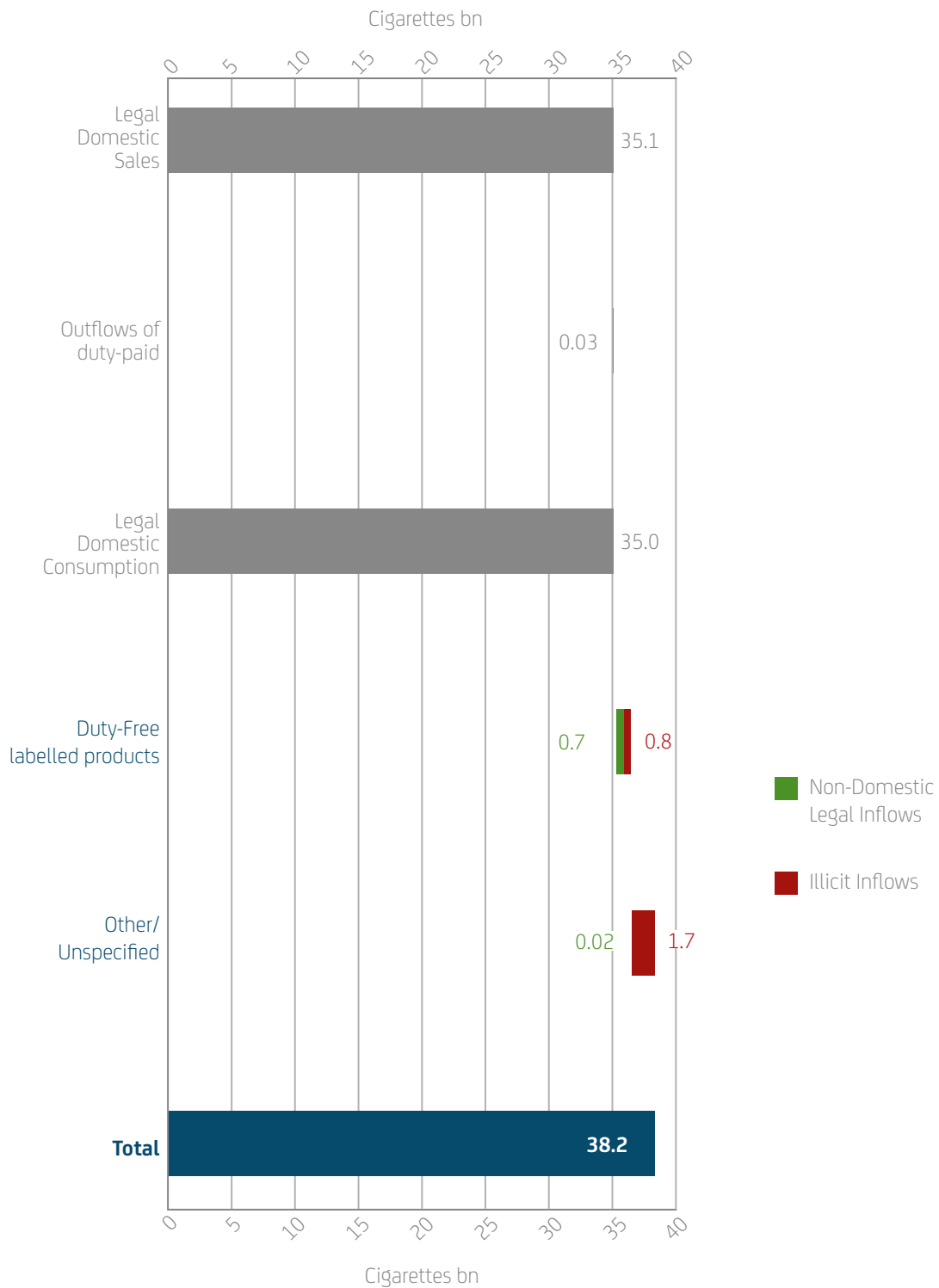
Source: IT Flows Model and Oxford Economics

<sup>1</sup>Unspecified 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. "RGD", "Asali", and "Halo" were the top 3 Unspecified Market Variant brands identified in 2014.

<sup>2</sup>Note 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.

<sup>3</sup>Figures in brackets reflect % changes from 2013.

## Taiwan: Consumption breakdown 2014

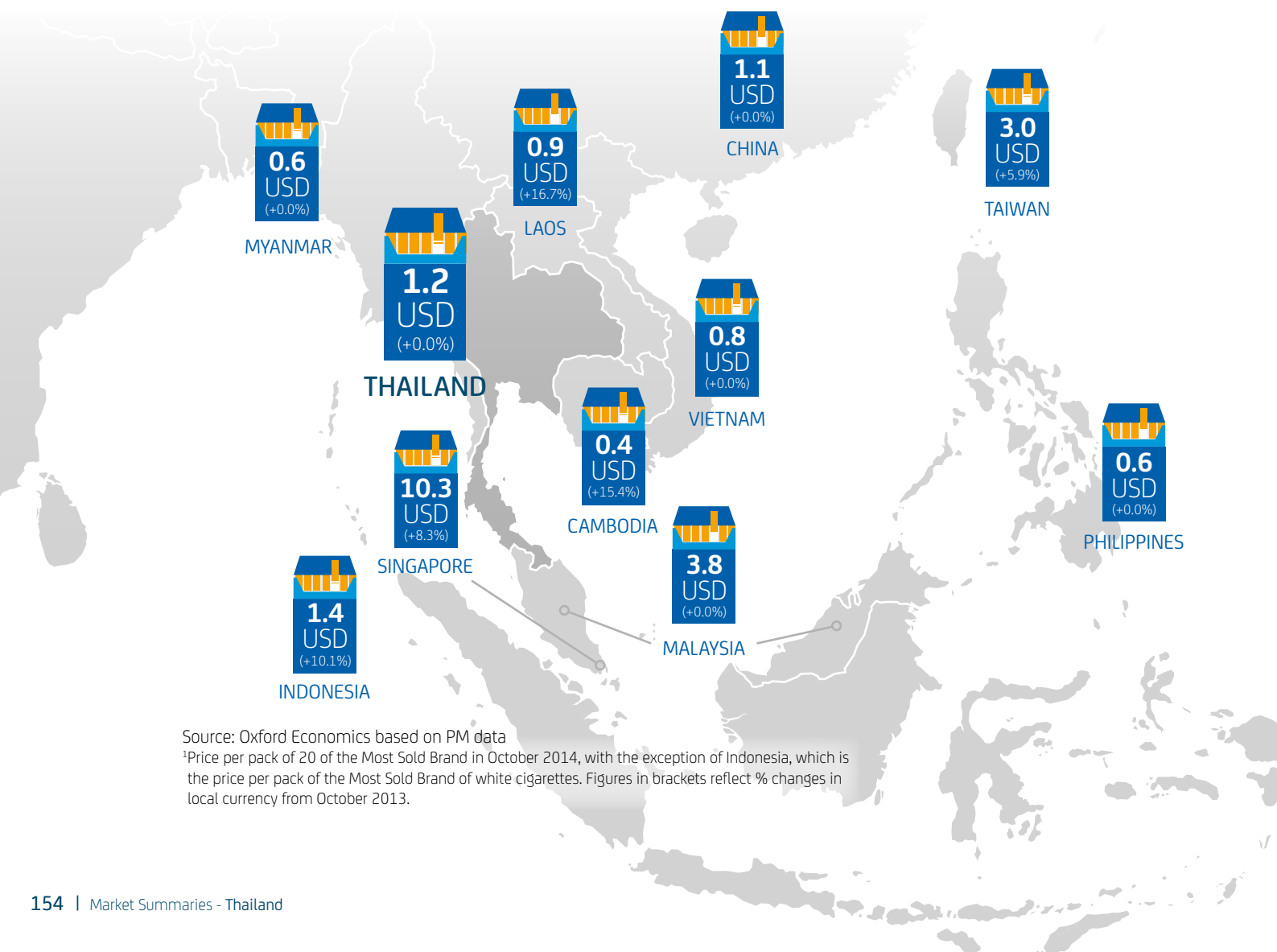


Source: IT Flows Model and Oxford Economics

## Thailand: Legal Domestic Sales

- Thailand Legal Domestic Sales are estimated at 37.3 billion cigarettes for 2014, down 2.0% from 2013. Legal Domestic Sales have been on a downward trend for two consecutive years.
- The Thailand Tobacco Monopoly retains the largest market share of more than 70%, followed by PM.
- After increasing Excise Taxes in August 2012, and introducing a specific tax of THB 1 per gram of tobacco, there was no new Excise Tax legislation introduced in 2013 or 2014.
- As a consequence, the price of the Most Sold Brand remained the same in 2014.
- At USD 1.2 per pack (which is THB 38), cigarette prices in Thailand are significantly above most neighbouring markets including Cambodia (USD 0.4), Laos (USD 0.9) and, Myanmar (USD 0.6).
- The exception is in Malaysia, where cigarette prices are more than three times higher than in Thailand.

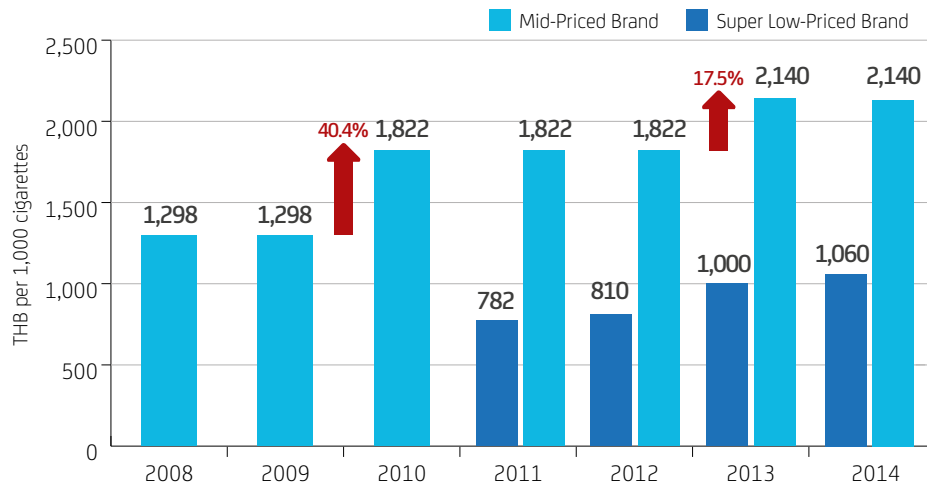
## Thailand: Prices of cigarettes<sup>1</sup>



Source: Oxford Economics based on PM data

<sup>1</sup>Price per pack of 20 of the Most Sold Brand in October 2014, with the exception of Indonesia, which is the price per pack of the Most Sold Brand of white cigarettes. Figures in brackets reflect % changes in local currency from October 2013.

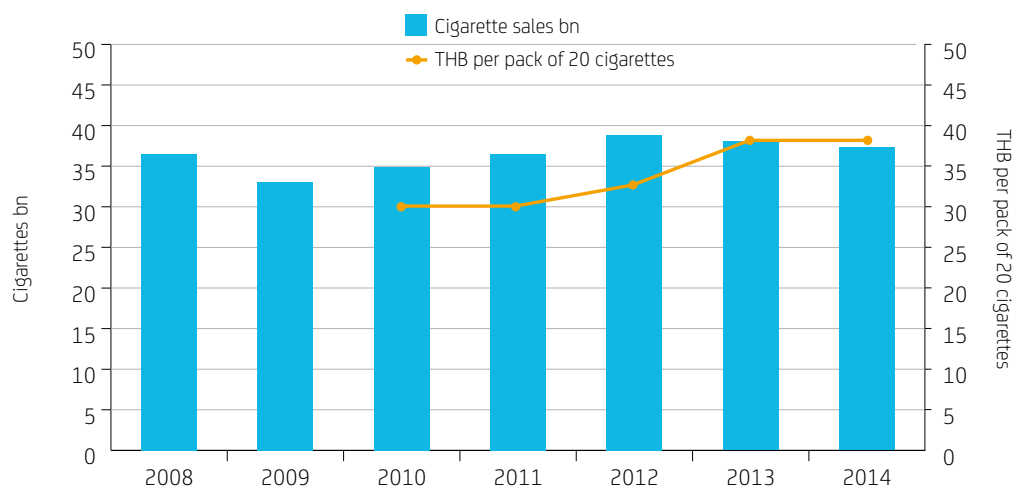
## Thailand: Excise duty applied to cigarettes<sup>2</sup>



Source: Thailand Excise Department and Oxford Economics

<sup>2</sup>Rate applied in January of each year to the Most Sold Brand, including Earmarked Taxes. In 2014 the most sold brand changed from the "Mid-Priced" to the "Super Low-Priced" category.

## Thailand: Legal Domestic Sales and prices<sup>3</sup>



Source: Oxford Economics

<sup>3</sup>Price of SMS (the Most Sold Brand from 2013) in January of each year.

# Thailand: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> 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 37.6 billion cigarettes in 2014, down 4.7% from 2013. Of this, an estimated 99.0% or 37.2 billion cigarettes is Legal Domestic Consumption, 0.3% is Non-Domestic Legal Consumption, and 0.7% or 0.2 billion cigarettes is Illicit Consumption.
- Continuing the trend from 2013, the decline in Total Consumption is a combination of both lower Legal Domestic Sales and lower levels of Illicit Consumption. As a consequence, Total Consumption has fallen by an estimated 2.9 billion cigarettes since 2012, equivalent to a 7.2% decline.
- In particular, the volume of Illicit Consumption continued to decline in 2014, from 921 million cigarettes in 2013 to just 244 million in 2014.
- There also exists a large RYO market in Thailand, estimated at around 28 billion cigarettes in 2012 (around 40% of total legal consumption).<sup>2</sup> Due to insufficient data, however, it is not possible to robustly estimate the scale 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

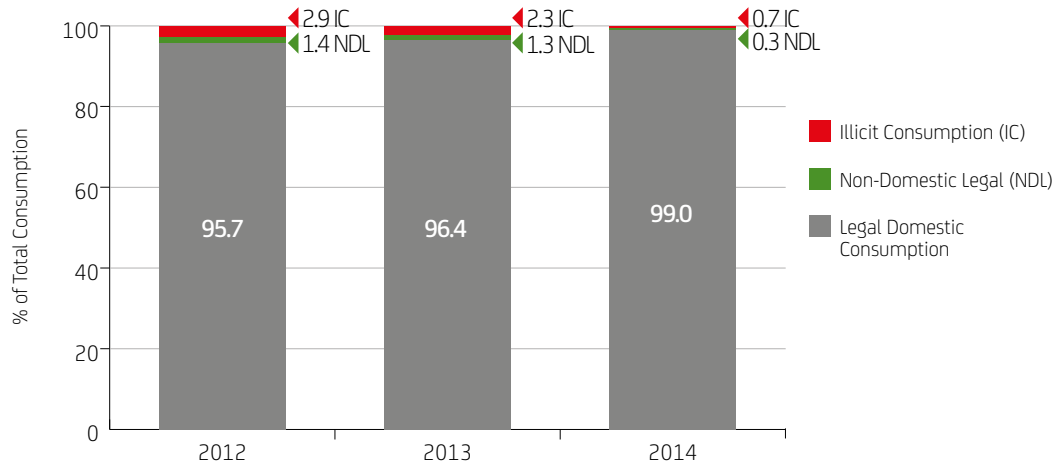
	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>38.8</b>	<b>95.7</b>	<b>38.0</b>	<b>96.4</b>	<b>37.2</b>	<b>99.0</b>	<b>-2.0</b>
Legal Domestic Sales (LDS)	38.8	—	38.0	—	37.3	—	-2.0
Outflows of domestic duty-paid cigarettes	0.0	—	0.0	—	-0.1	—	44.6
<b>Total Non-Domestic Inflows (ND)</b>	<b>1.7</b>	<b>4.3</b>	<b>1.4</b>	<b>3.6</b>	<b>0.4</b>	<b>1.0</b>	<b>-74.1</b>
Non-Domestic Legal (NDL)	0.6	1.4	0.5	1.3	0.1	0.3	-75.1
Non-Domestic Illicit	1.2	2.9	0.9	2.3	0.2	0.7	-73.5
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>40.5</b>	<b>100.0</b>	<b>39.4</b>	<b>100.0</b>	<b>37.6</b>	<b>100.0</b>	<b>-4.7</b>
<b>Total Illicit Consumption</b>	<b>1.2</b>	<b>2.9</b>	<b>0.9</b>	<b>2.3</b>	<b>0.2</b>	<b>0.7</b>	<b>-73.5</b>

Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q4 (see Annex A for more details).

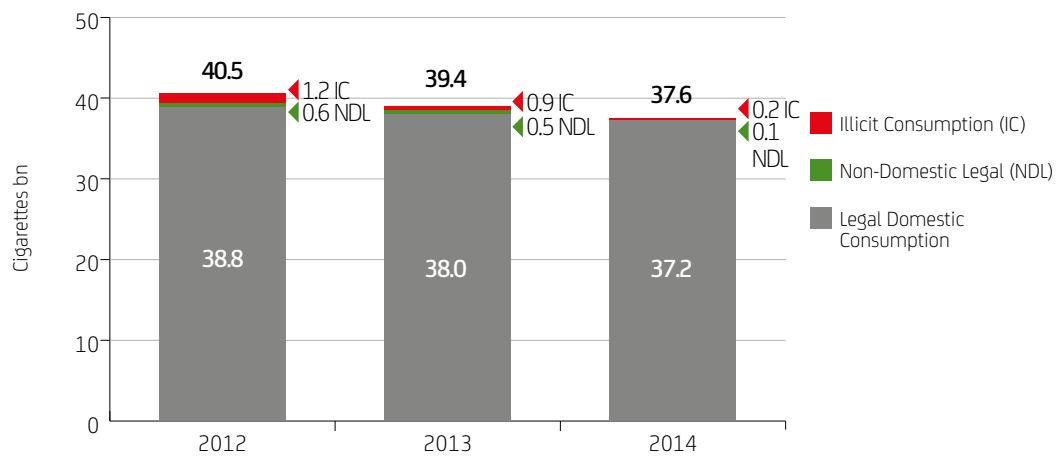
<sup>2</sup>Source: Thailand Excise Department and Oxford Economics. Latest available data for 2012. A conversion rate of 0.75 grams per stick was applied to convert loose tobacco weight into 1 cigarette equivalent (source: European Commission).

## 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

- After increasing in August 2012, taxes applied to cigarettes remained unchanged in 2013 and 2014.
- 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 that 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, and a TV tax).
- We estimate that the Tax Loss associated with the Illicit Consumption of cigarettes in fiscal year 2013/14 amounted to THB 0.4 billion (USD 13 million). This represents a 74.7% reduction in the Tax Loss of THB 1.7 billion (USD 56 million) estimated for 2012/13 following the sharp decline in the volume of Illicit Consumption.
- As a consequence, the estimated Excise Tax Loss as a share of total Excise Tax revenue is just 0.6%, representing a significant decline from previous years. In the fiscal year 2011/12, it stood at 3.2%.

### Thailand: Actual government revenues and estimated Tax Loss

Indicator	2011/12 fiscal year <sup>1</sup>		2012/13 fiscal year <sup>1</sup>		2013/14 fiscal year <sup>1</sup>		% change in local currency 2012/13-2013/14
	THB mn	USD mn	THB mn	USD mn	THB mn	USD mn	
Actual revenue from excise duties on tobacco <sup>2</sup>	64,307	2,055	72,916	2,394	65,476	2,031	-10.2%
Estimated number of illicit cigarettes purchased (cigarettes mn)	1,161		912		236		-74.2%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>2,373</b>	<b>76</b>	<b>1,707</b>	<b>56</b>	<b>432</b>	<b>13</b>	<b>-74.7%</b>
Lost excise revenue <sup>2</sup>	2,151	69	1,544	51	391	12	-74.7%
Lost VAT revenue	222	7	163	5	41	1	-74.5%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>2</sup></b>	<b>3.2%</b>		<b>2.1%</b>		<b>0.6%</b>		

Source for government revenue data: Thailand Excise Department and Oxford Economics

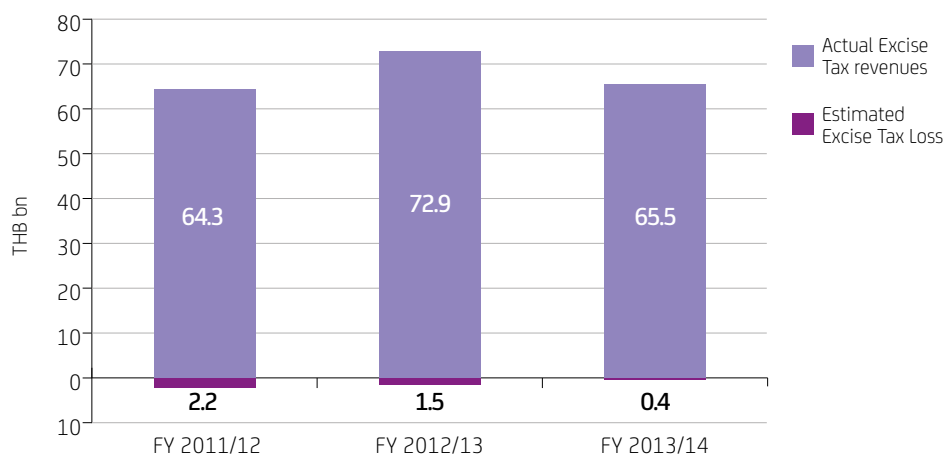
Estimated number of illicit cigarettes purchased adjusted for fiscal year.

<sup>1</sup>Fiscal years run from October to September.

<sup>2</sup>Includes Earmarked Taxes.



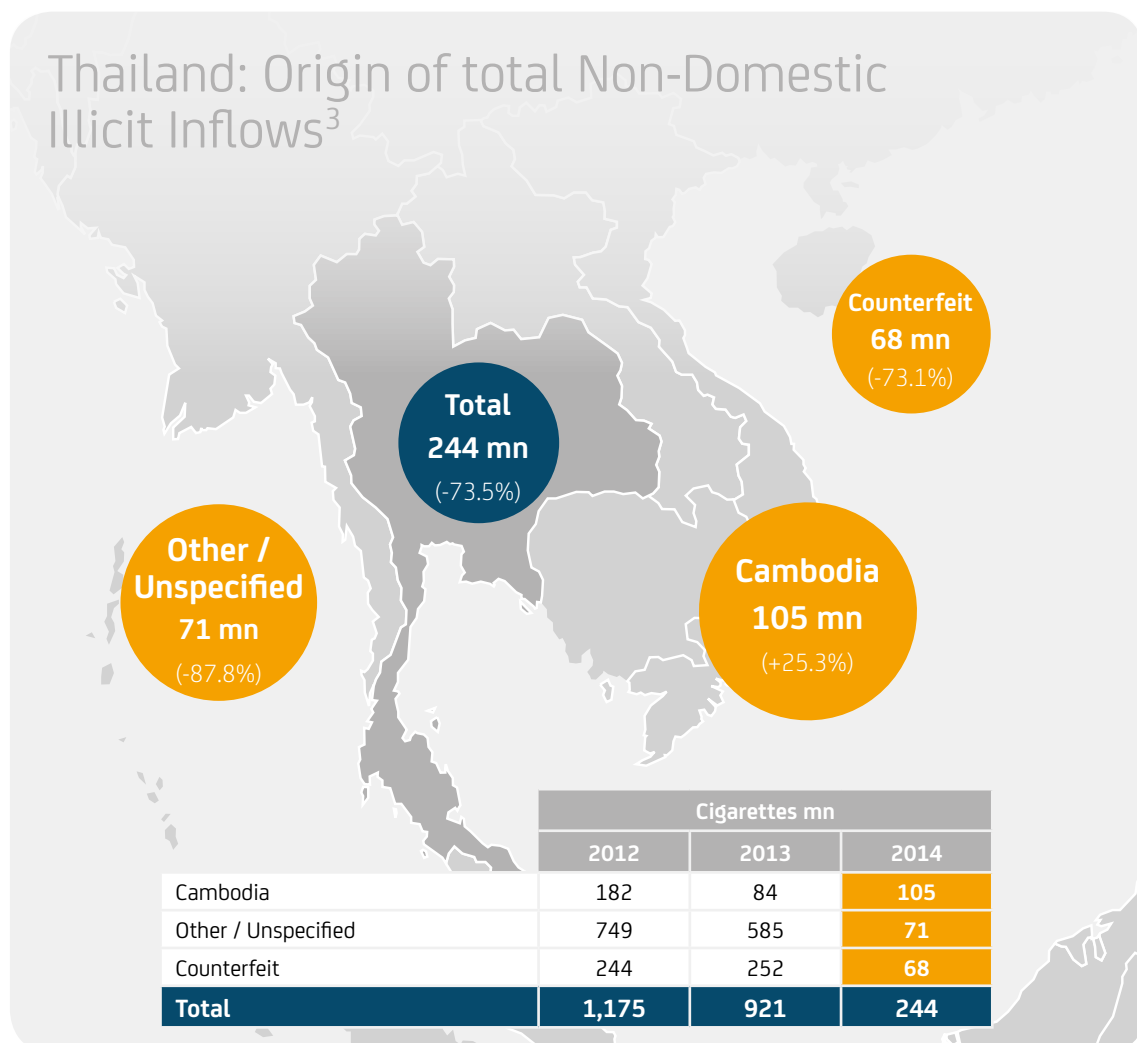
## Thailand: Actual government revenues and estimated Tax Loss



Source: Thailand Excise Department and Oxford Economics

## Thailand: Trade Flows

- Outflows of domestic duty-paid cigarettes to the other 15 markets are estimated to be low, with some volumes identified in neighbouring Laos and Cambodia, as well as further afield in Australia.<sup>1</sup>
- Counterfeit products account for approximately one-third of Illicit Consumption, although volumes are much reduced from 2013, when an estimated 252 million Counterfeit cigarettes were identified, compared with just 68 million in 2014.
- Other Non-Domestic Illicit cigarettes identified in Thailand include a significant proportion of cigarettes originally intended for retail sale in Cambodia (consistent with historical observations), as well as small volumes from Japan and other cigarettes of Unspecified Market Variant.<sup>2</sup>
- The volume of Unspecified Market Variant cigarettes is much reduced, however, 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 it contributed less than 10%.



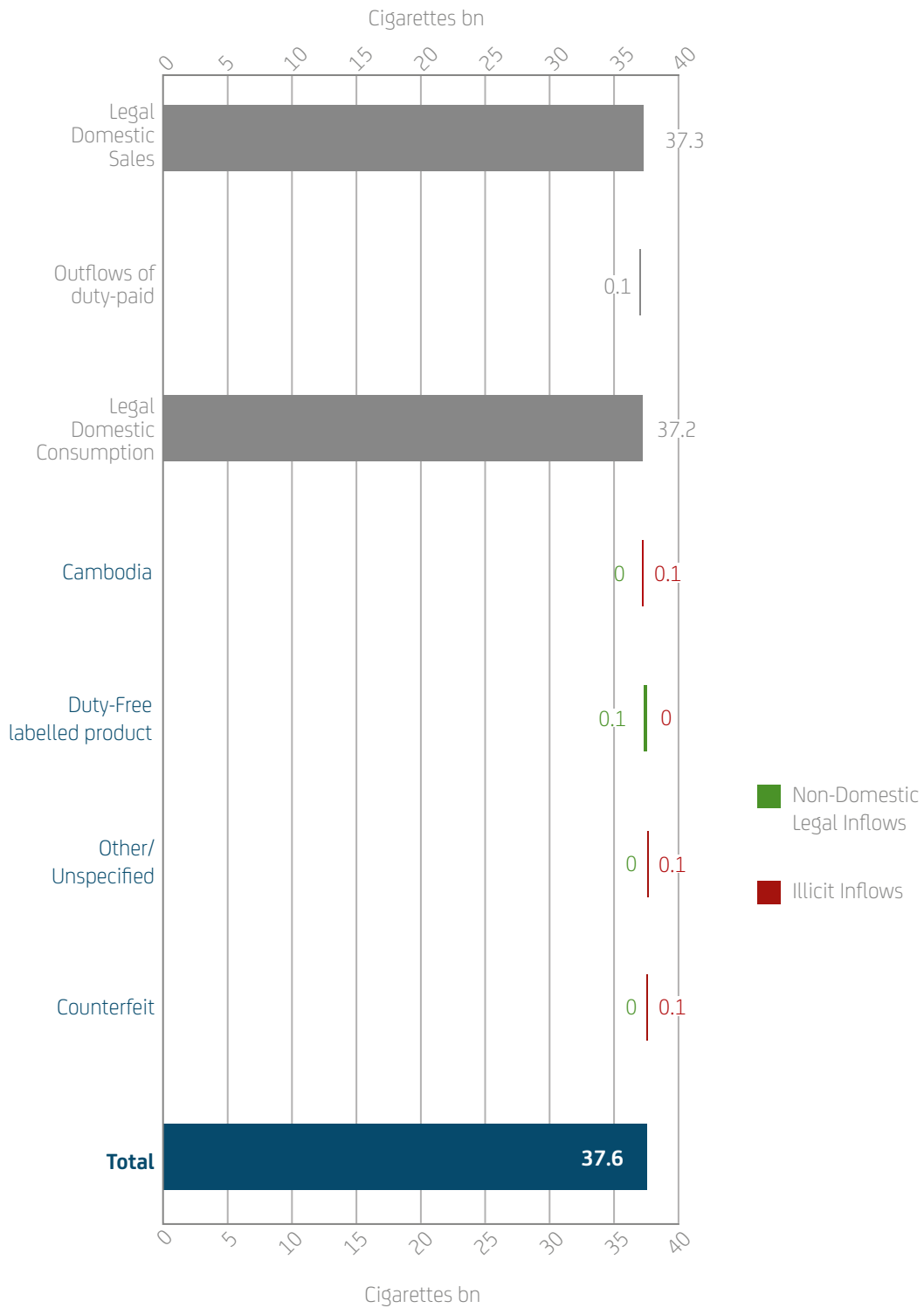
Source: IT Flows Model and Oxford Economics

<sup>1</sup>Note 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.

<sup>2</sup>Unspecified 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.

<sup>3</sup>Figures in brackets reflect % changes from 2013.

## Thailand: Consumption breakdown 2014

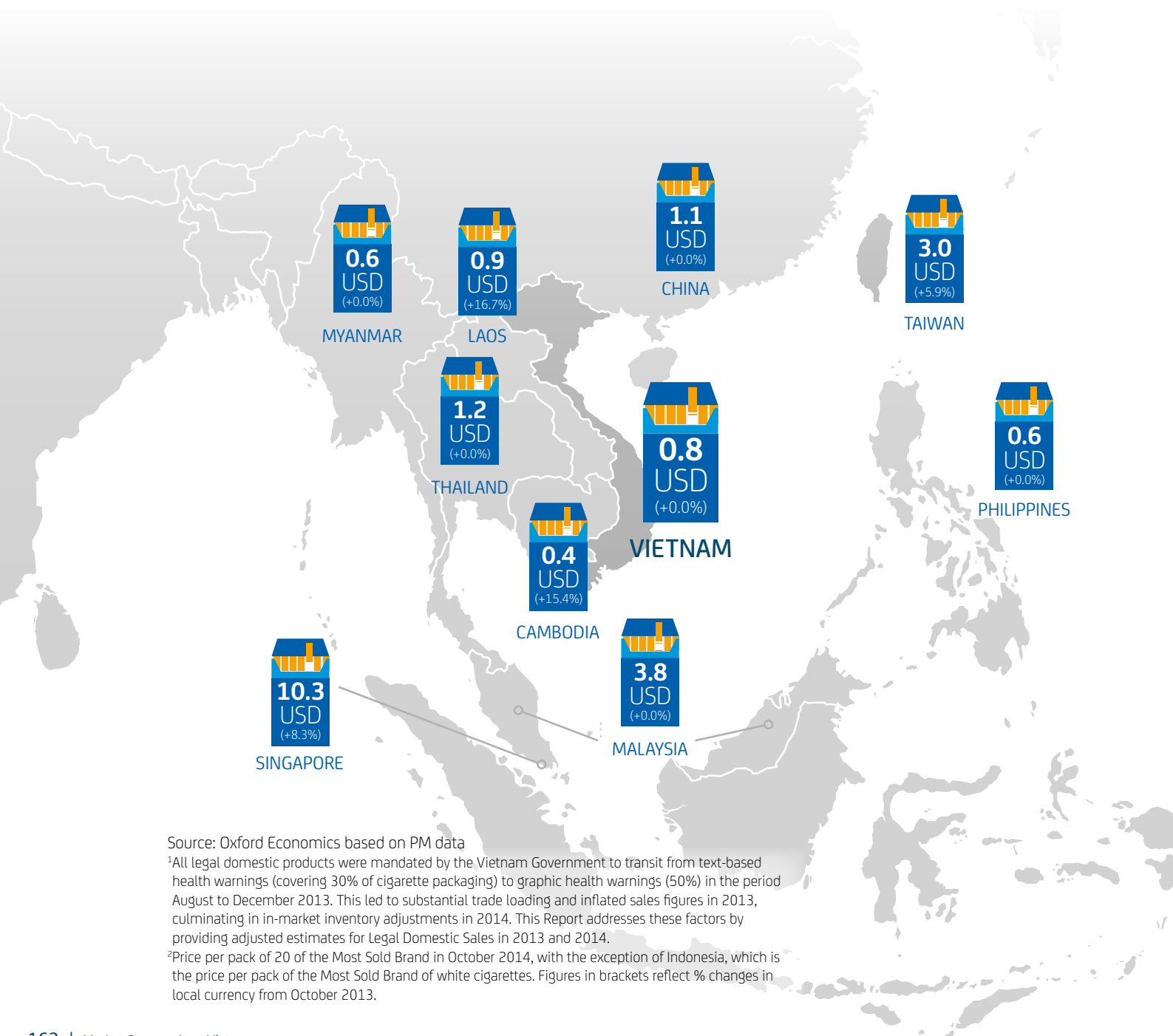


Source: IT Flows Model and Oxford Economics

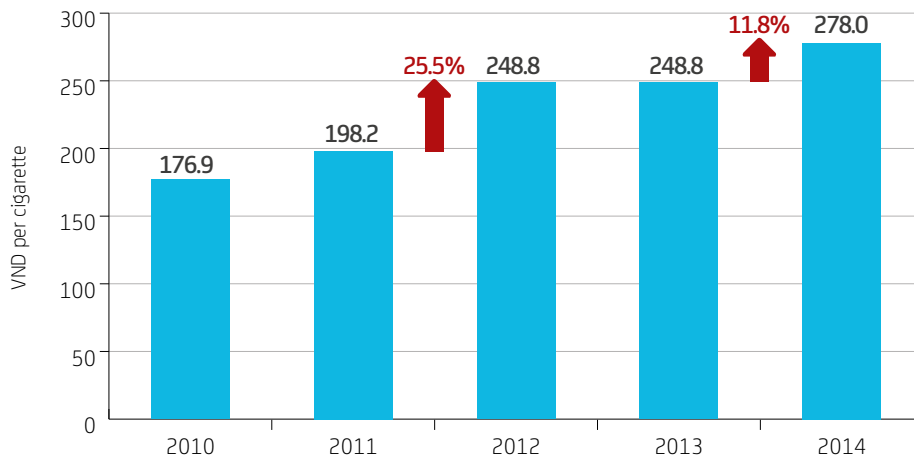
## Vietnam: Legal Domestic Sales

- Vietnam Legal Domestic Sales are estimated at 75.5 billion cigarettes for 2014.<sup>1</sup>
- The state-owned tobacco company Vinataba has the largest market share at nearly 47%, followed by BAT and local provincial firms.
- Legal Domestic Sales declined by 6.9% in 2014.
- Prices for cigarettes have risen in recent years, but remain relatively low compared with many nearby markets. The price of the Most Sold Brand of USD 0.8 per pack of 20 cigarettes is lower than in China (USD 1.1), Laos (USD 0.9), and Thailand (USD 1.2).

## Vietnam: Prices of cigarettes<sup>2</sup>



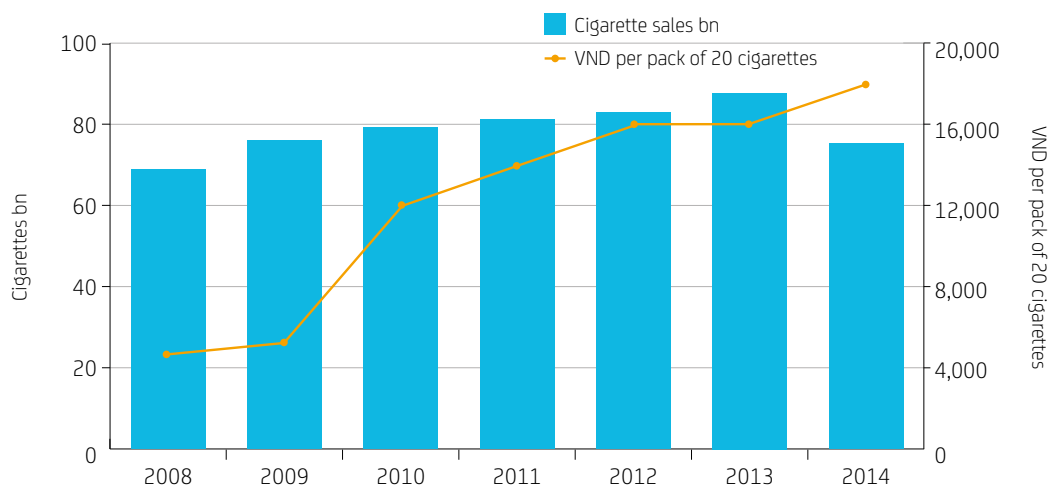
### Vietnam: Excise duty applied to cigarettes<sup>3</sup>



Source: Vietnam Tobacco Association and Oxford Economics

<sup>3</sup>Rate applied in January of each year to the Most Sold Brand, including Earmarked Tax in 2014. The increase in the excise duty in 2014 was driven by an increase in the net ex-factory price implemented in mid-2013.

### Vietnam: Legal Domestic Sales and prices<sup>4</sup>



Source: Oxford Economics

<sup>4</sup>Price of the Most Sold Brand in January of each year.

# Vietnam: Cigarette Consumption

- The results from the Empty Pack Survey<sup>1</sup> 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 95.8 billion cigarettes in 2014, falling by 6.9% versus 2013. The declining trend is in line with Nielsen Retail Audit data, which estimates that Total Consumption fell by 8.2% in 2014.<sup>2</sup>
- Legal Domestic Consumption was estimated at 75.3 billion cigarettes or 78.6% of Total Consumption, Non-Domestic Legal Consumption at 0.8%, and Illicit Consumption at 20.7% or 19.8 billion cigarettes.
- The illicit share in Total Consumption remained unchanged in 2014 (given the use of the same underlying source data) and was 1.3 percentage points higher than the 19.4% estimated in the first Asia Illicit Tobacco Indicator report.
- The high level of Illicit Consumption in Vietnam is corroborated by analysis of Nielsen Retail Audit data, which indicates an incidence of illicit cigarettes of 21.2% of Total Consumption in 2014.<sup>3</sup>

## Vietnam: Composition of cigarette consumption

	2012		2013		2014		% change 2013-14
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>82.7</b>	<b>80.0</b>	<b>80.8</b>	<b>78.6</b>	<b>75.3</b>	<b>78.6</b>	<b>-6.8</b>
Legal Domestic Sales (LDS)	82.8	—	81.0	—	75.5	—	-6.9
Outflows of domestic duty-paid cigarettes	-0.1	—	-0.2	—	-0.2	—	-13.7
<b>Total Non-Domestic Inflows (ND)</b>	<b>20.7</b>	<b>20.0</b>	<b>22.0</b>	<b>21.4</b>	<b>20.5</b>	<b>21.4</b>	<b>-6.9</b>
Non-Domestic Legal (NDL)	0.6	0.6	0.8	0.8	0.7	0.8	-4.4
Non-Domestic Illicit	20.1	19.4	21.3	20.7	19.8	20.7	-6.9
<b>Domestic Illicit</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>n/a</b>
<b>Total Consumption</b>	<b>103.4</b>	<b>100.0</b>	<b>102.9</b>	<b>100.0</b>	<b>95.8</b>	<b>100.0</b>	<b>-6.8</b>
<b>Total Illicit Consumption</b>	<b>20.1</b>	<b>19.4</b>	<b>21.3</b>	<b>20.7</b>	<b>19.8</b>	<b>20.7</b>	<b>-6.9</b>

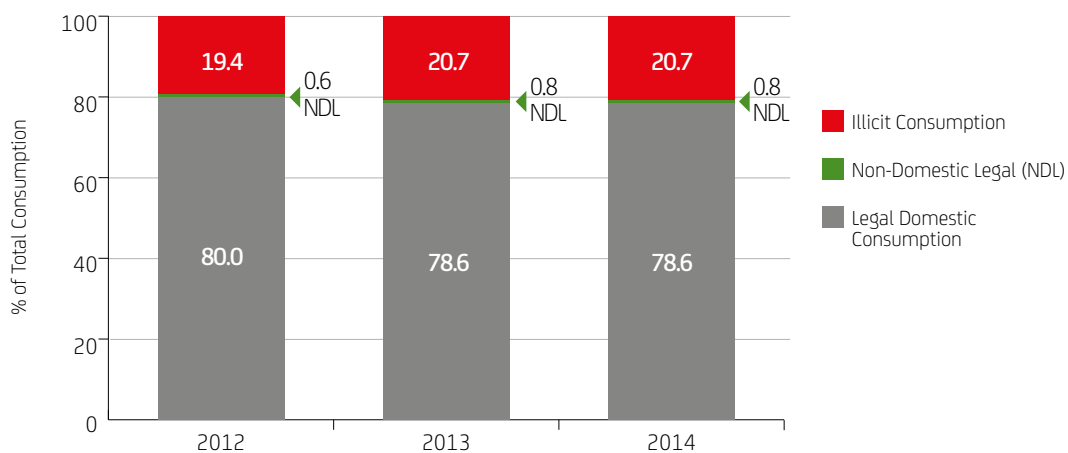
Source: Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2013 Q4 (see Annex A for more details).

<sup>2</sup>The Nielsen Retail Audit provides an independent measurement of sales to consumers based on a statistically representative sample of retail outlets.

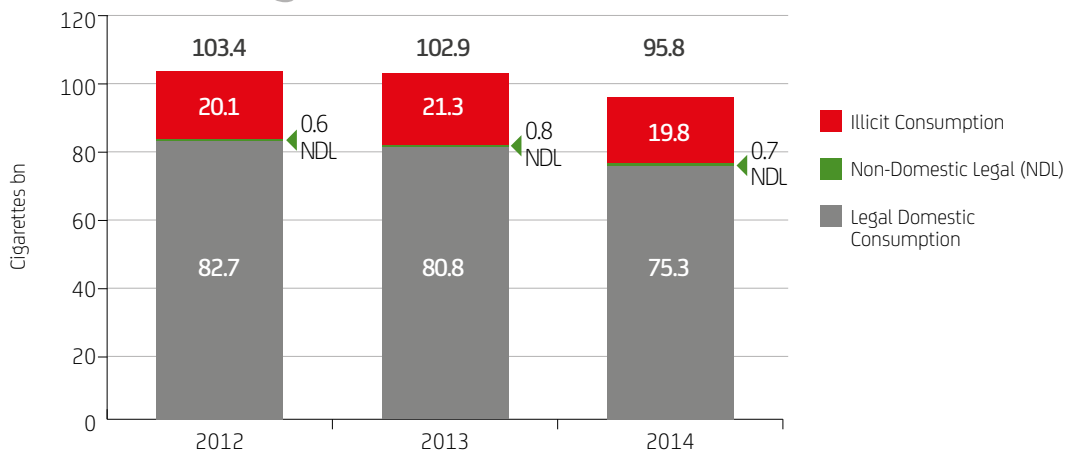
<sup>3</sup>Pack characteristics are used to classify cigarettes as either "local" or "imported" products. Imported brands are subsequently classified as either legitimate or illicit based on PM market intelligence (legally imported products must have an "imported cigarette stamp" from the Vietnam Ministry of Finance affixed to the pack).

## 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 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%.
- The Tax Loss associated with Illicit Consumption was estimated at VND 5.8 trillion (USD 272 million) in 2014.

### Vietnam: Actual government revenues and estimated Tax Loss

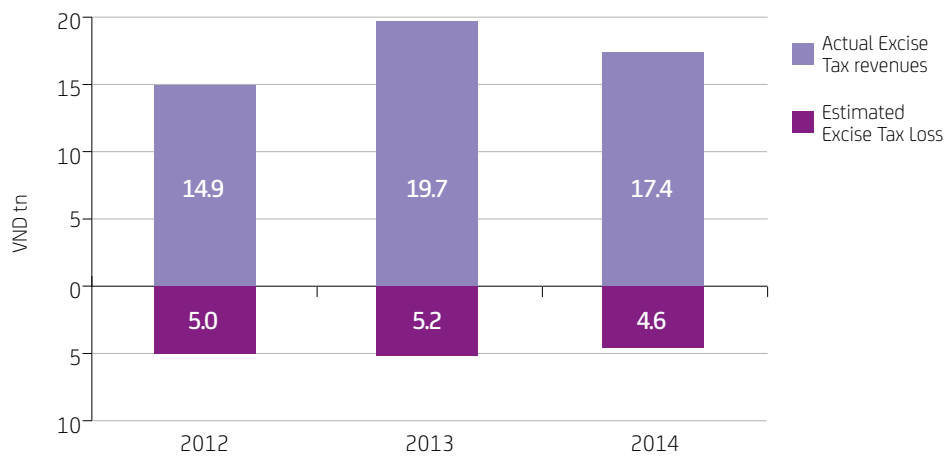
Indicator	2012		2013		2014		% change in local currency 2013 - 2014
	VND bn	USD mn	VND bn	USD mn	VND bn	USD mn	
Actual revenue from excise duties on tobacco <sup>1</sup>	14,910	715	19,682	940	17,445	825	-11.4%
Estimated number of illicit cigarettes purchased (cigarettes mn)	20,103		21,270		19,792		-6.9%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>6,455</b>	<b>309</b>	<b>6,457</b>	<b>308</b>	<b>5,753</b>	<b>272</b>	<b>-10.9%</b>
Lost excise revenue <sup>1</sup>	4,995	239	5,166	247	4,574	216	-11.4%
Lost VAT revenue	1,460	70	1,291	62	1,179	56	-8.7%
<b>Excise Tax Loss as % of potential total Excise Tax revenues<sup>1</sup></b>	<b>25.1%</b>		<b>20.8%</b>		<b>20.8%</b>		

Source for government revenue data: Vietnam Tobacco Association and Oxford Economics

<sup>1</sup>includes Earmarked Taxes.



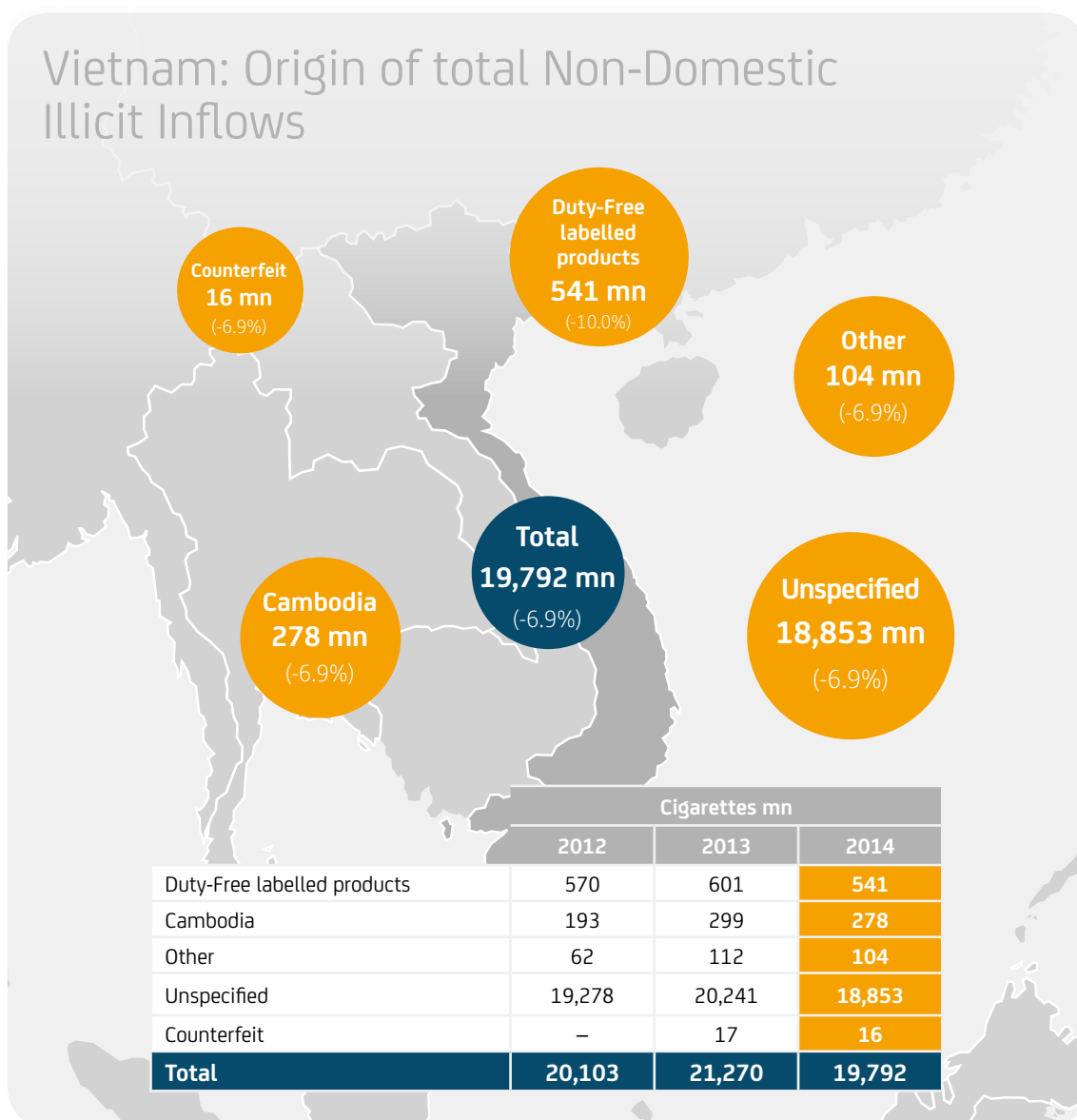
## Vietnam: Actual government revenues and estimated Tax Loss



Source: Vietnam Tobacco Association and Oxford Economics

## Vietnam: Trade Flows

- Non-Domestic Illicit Inflows are primarily designated as Unspecified Market Variant.<sup>1</sup> In total, over 95% of total illicit Inflows, or 18.9 billion cigarettes, were unidentifiable by specific market.
- Of the remaining volume of illicit cigarettes consumed in Vietnam, 541 million cigarettes are Duty-Free labelled products, while 278 million cigarettes were originally intended for retail sale from across the border in Cambodia.
- The IT Flows Model identified 16 million Counterfeit cigarettes. The share of Counterfeit cigarettes in Total Consumption was insignificant at 0.1%.
- Outflows of Domestic duty-paid cigarettes to the other 15 markets are estimated at 191 million cigarettes in 2014, nearly two-thirds of which were identified in Laos.<sup>2</sup>
- Nearly 60% of all Duty-Free labelled products were estimated to arrive through legal channels.<sup>3</sup> In total, the share of Non-Domestic Legal in Total Consumption was 0.8% in 2014.



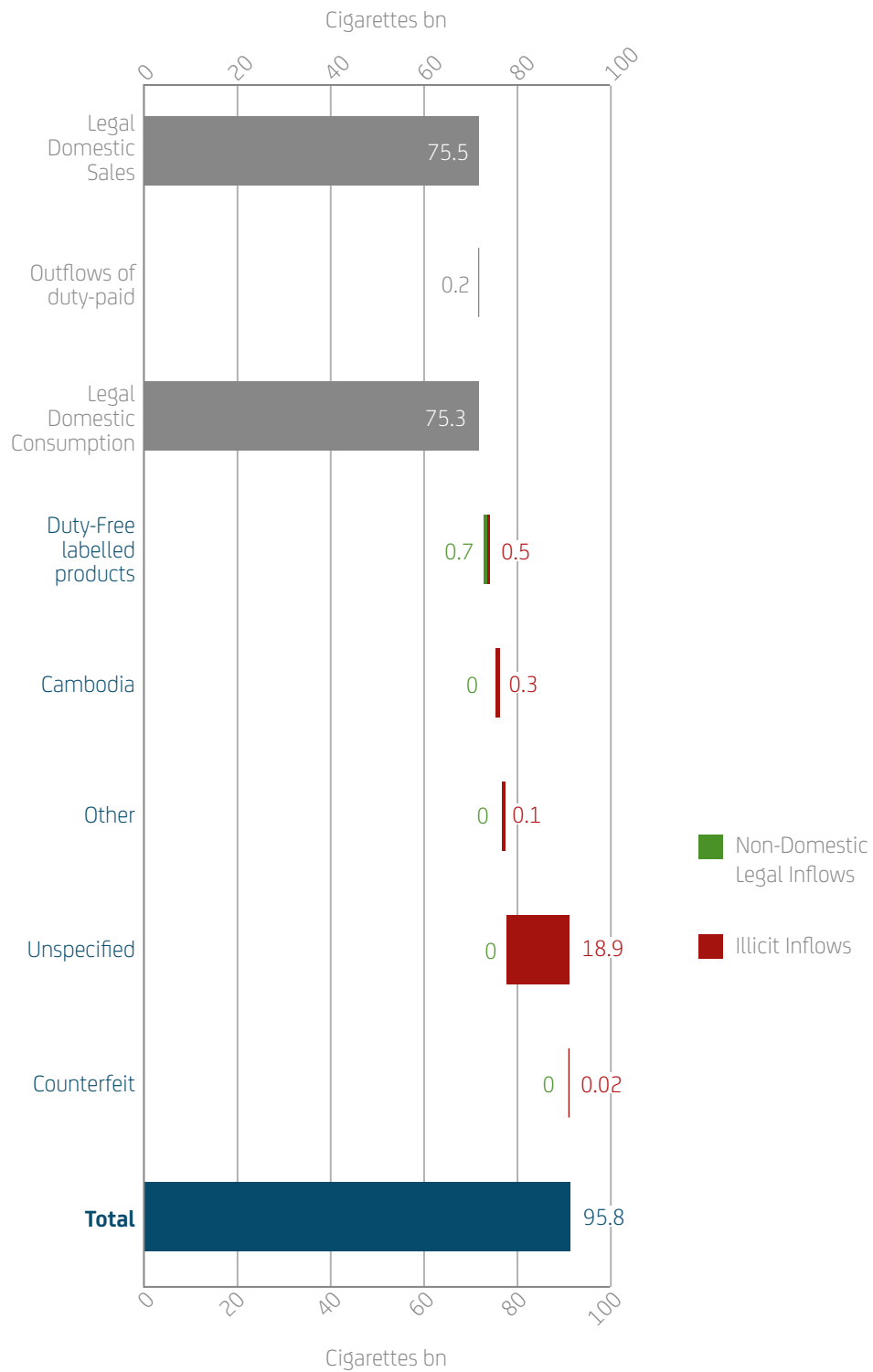
Source: IT Flows Model and Oxford Economics

<sup>1</sup>Unspecified 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. “Jet”, “Hero”, and “Esse” were the top three Unspecified Market Variant brands identified in 2014.

<sup>2</sup>Note 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.

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

## Vietnam: Consumption breakdown 2014



Source: IT Flows Model and Oxford Economics



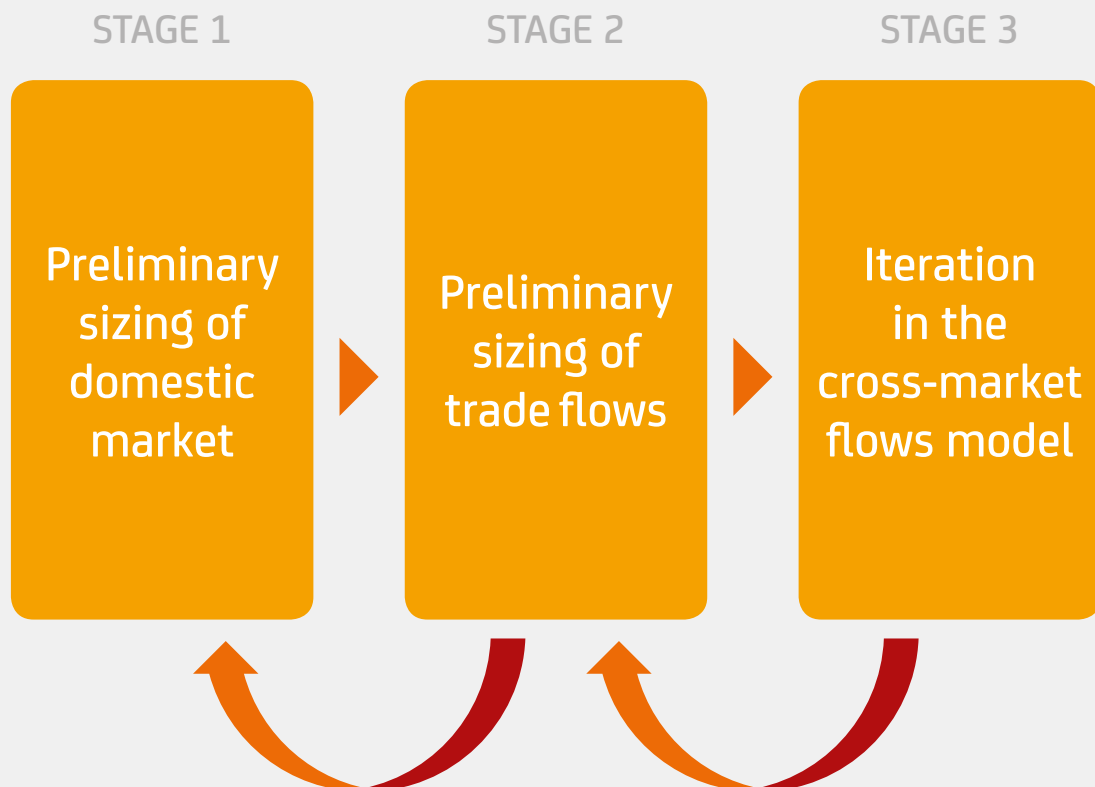
## **Annex A:** Methodology for estimating illicit trade

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## Methodology: Overview

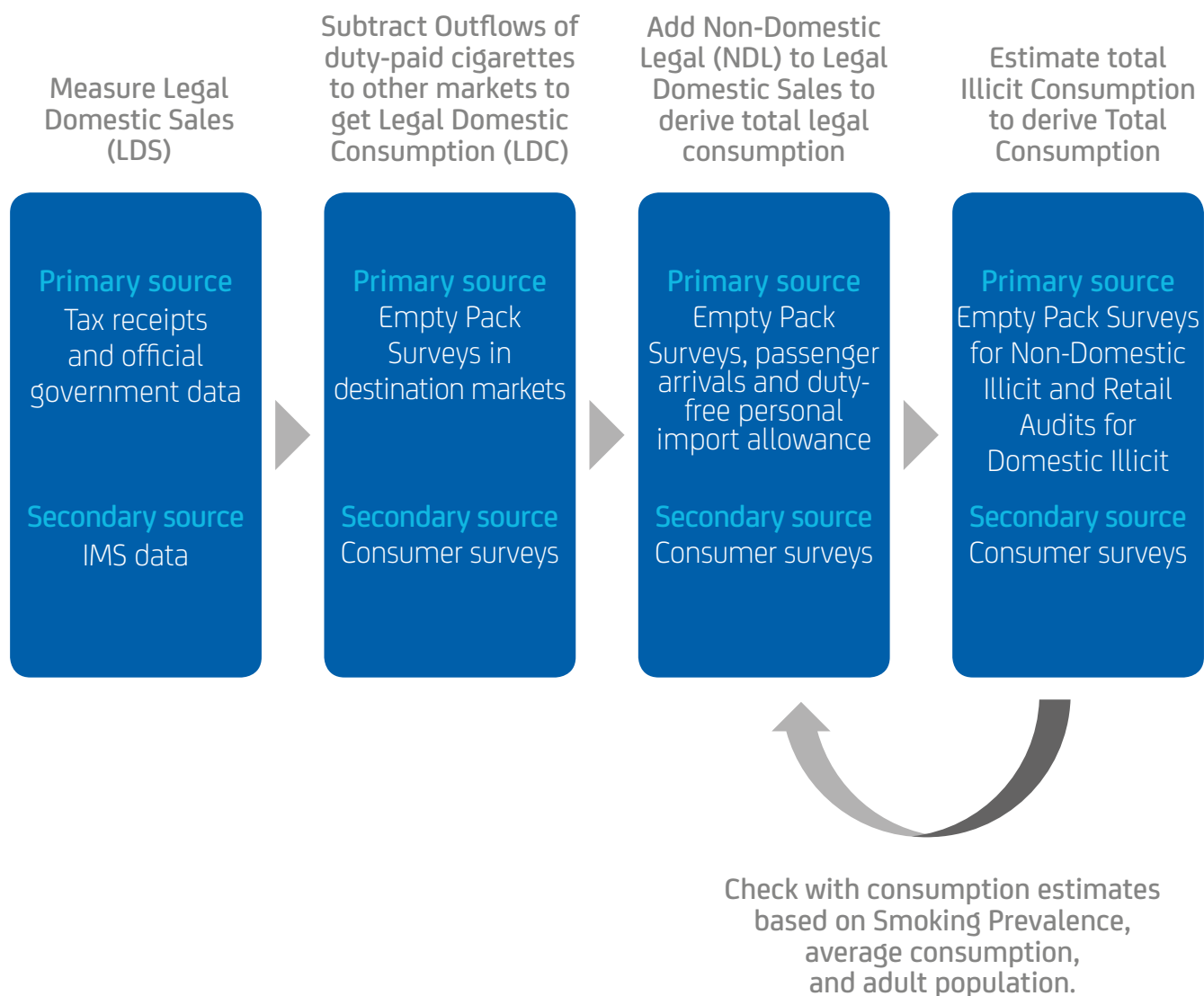
- Oxford Economics have developed a methodology for quantifying Illicit Consumption of cigarettes and the associated Tax Losses in a selected group of 16 Asian markets.<sup>1</sup> Our approach combines multiple data sources and a custom-built analytical model of cigarette flows.
- Oxford Economics have developed an **Illicit Tobacco (IT) Flows Model** to estimate Illicit Consumption and trade flows between Asia-16 markets. 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



<sup>1</sup>The methodology has been developed to cover the market for manufactured cigarettes only, with the exception of Australia which includes 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:

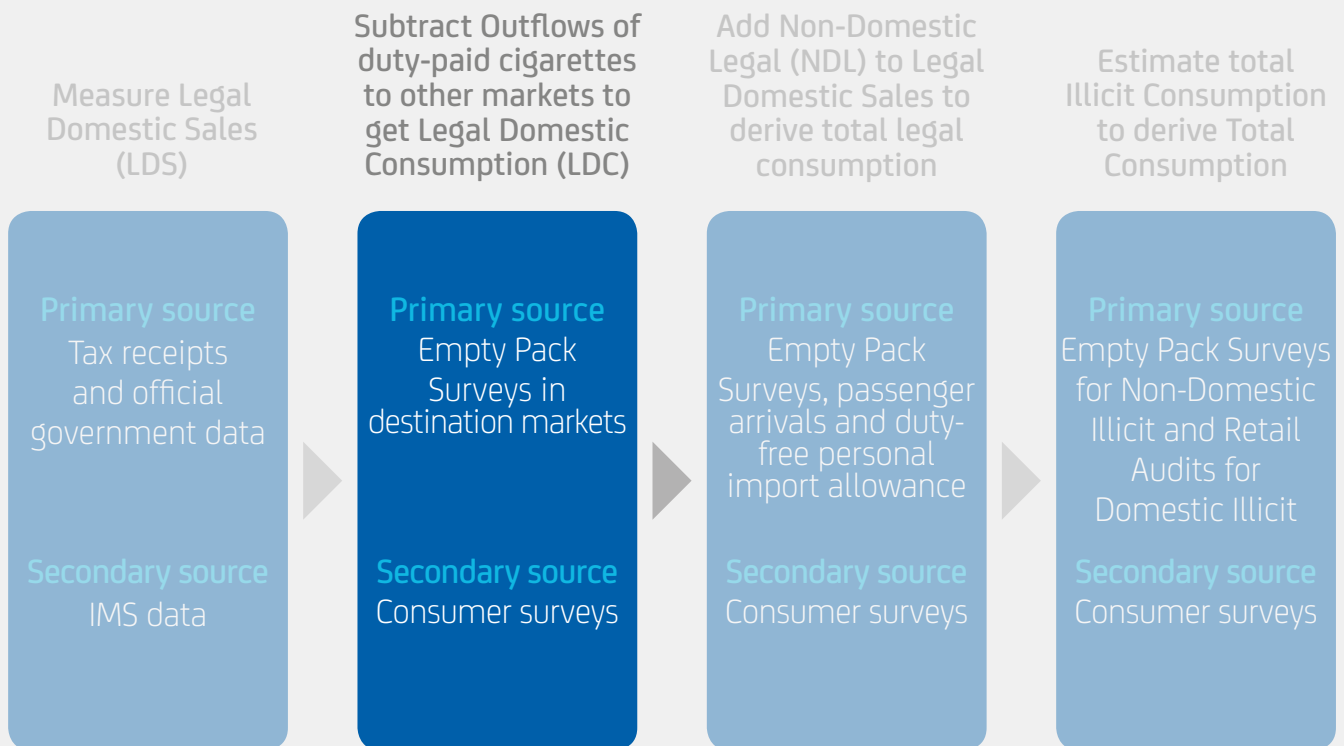
## Stage 1 – Legal Domestic Sales

Country/market	Methodology for estimating LDS
Australia	Actual volume of tobacco clearances recorded by the Australian Taxation Office and Border Protection Service (Customs), adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation in 2012. Sourced from the Australian Treasury Department.
Brunei	Actual shipments for PM brands and PM estimates for other manufacturers based on IDS Retail Audit.
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.
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	Actual shipments for PM brands. Industry Volume based on PM estimate and Bureau of Internal Revenues Statement of Manufactures' Ex-factory Withdrawals adjusted for PM shipments.
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 new Graphic Health Warning legislation in 2013.



# Methodology:

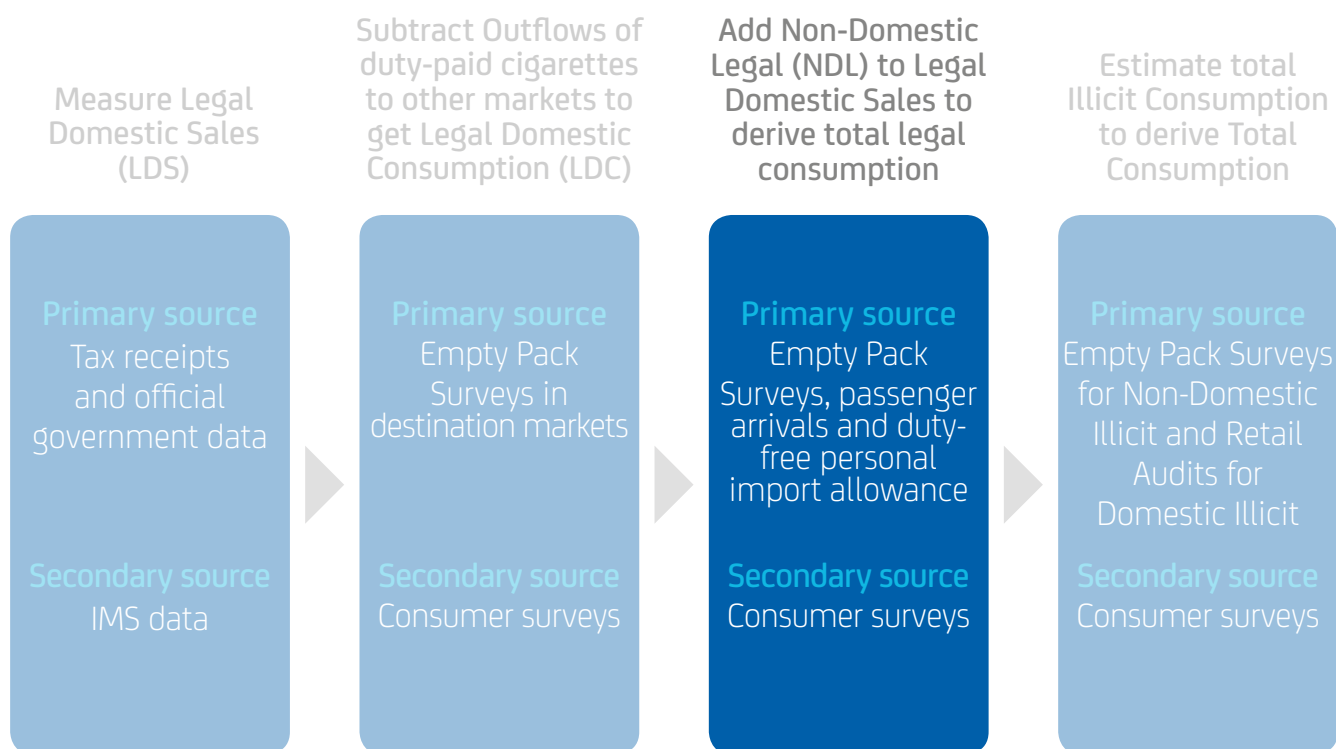
## Stage 1 – Legal Domestic Consumption



- In order to estimate Legal Domestic Consumption, Legal Domestic Sales data is adjusted to account for Outflows of legal sales to other markets.
- **Outflows of duty-paid cigarettes are estimated based on identified Inflows by Market Variant in the other 15 markets covered in this analysis.**
- This Report only considers Outflows to other Asia-16 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.
- 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 of 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 country/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**, 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' country/market of origin, and the passenger duty-free personal import allowance limit. Estimates are based on the total number of inbound visitors in 2014, 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,<sup>1</sup> Smoking Prevalence data were sourced from the WHO, OECD, and national surveys, and population data were taken from the UN (see Annex D for individual market sources).
- This approach yields an upper-bound estimate for Non-Domestic Legal Inflows of Duty-Free and duty-paid cigarettes from other markets. However, inbound visitors can bring volumes of cigarettes over and above the prescribed 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.

<sup>1</sup>The 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 instance where official statistics are not publically available for calendar year 2014, it was necessary to use the forecasts implied by the OE Tourism Model.

# Methodology:

## Stage 1 – Non Domestic Legal

- By calculating the theoretical maximum legal volume of Duty-Free and duty-paid cigarettes from other markets, the methodology uses a conservative approach to estimate the volume Non-Domestic Legal consumption that probably yields an upper-bound estimate of the actual volume. In practice, not all passengers will take advantage of the duty-free personal import allowance limit, and for some markets additional concessions may apply, for example for military personnel or when exchanging gift items. In most markets, however, the theoretical maximum volume of legal Duty-Free and duty-paid cigarettes 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 theoretical maximum volume of legal Duty-Free and duty-paid cigarettes from other markets are as follows:

- **Step 1: Calculating adult tourist numbers** – data are collected for 2014 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 Asia-16 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 theoretical maximum volume of legal Duty-Free and duty-paid cigarettes 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 which 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. Since it can be reasonably assumed 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 under-estimate 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 which is 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 duty-free personal import allowance** – for each market (including those returning residents), the estimated number of adult smoking tourists is multiplied by the duty-free personal import allowance limit (e.g. 50 cigarettes in Australia) to estimate the theoretical maximum volume of legal Duty-Free and duty-paid cigarettes from other markets associated with each market providing tourists in 2014.<sup>2</sup>
- **Step 4: Aggregation** – the individual market estimates from step 3 above are aggregated into a total estimated theoretical maximum level of legal personal imports of cigarettes.

<sup>2</sup>With the exception of Macao, where the estimated volume of Non-Domestic Legal assumes that inbound adult smokers carry one pack (20 cigarettes) per day into Macao.

# Methodology:

## Stage 1 – Non Domestic Legal

Country/ market	Inbound visitor arrivals 2014 (mn)	Source	Outbound resident departures 2014 (mn)	Source	Duty-free personal import allowance (cigarettes)
Australia	6.9	Australian Bureau of Statistics	9.1	Australian Bureau of Statistics	50
Brunei	n/a	n/a	n/a	n/a	0
Cambodia	4.5	Cambodia Ministry of Tourism	1.0	Cambodia Ministry of Tourism	400
Hong Kong	60.8	Hong Kong Tourism Board	84.5	Hong Kong Tourism Board	19
Indonesia	9.4	Indonesia National Statistics (BPS)	8.0	UNWTO and OE Tourism Model	200
Laos	4.2	Laos Tourism Development Department	3.3	Laos Tourism Development Department	200
Macao <sup>1</sup>	31.5	Macao Government Tourist Office	0.3	UNWTO and OE Tourism Model	100
Malaysia <sup>2</sup>	n/a	n/a	n/a	n/a	200
Myanmar	3.1	Myanmar Ministry of Hotels and Tourism	0.4	Myanmar Ministry of Hotels and Tourism	400
Pakistan	1.0	UNWTO and OE Tourism Model	3.0	UNWTO and OE Tourism Model	200
Philippines	4.8	Philippines Department of Tourism	5.1	UNWTO and OE Tourism Model	400
Singapore	n/a	n/a	n/a	n/a	0
South Korea	14.2	Korea Tourism Organisation	16.1	Korea Tourism Organisation	200
Taiwan	9.9	Tourism Bureau, M.O.T.C Republic of China (Taiwan)	11.8	Tourism Bureau, M.O.T.C Republic of China (Taiwan)	200
Thailand	25.7	Thailand Department of Tourism and OE Tourism Model	6.6	UNWTO and OE Tourism Model	200
Vietnam	7.9	Vietnam Ministry of Culture, Sports & Tourism	2.1	UNWTO and OE Tourism Model	200

<sup>1</sup>Inbound foreign visitors spend less than two nights per trip on average in Macao, therefore the estimated volume of Non-Domestic Legal assumes that inbound adult smokers carry one pack (20 cigarettes) per day into Macao. Returning domestic resident smokers are assumed to bring the full duty-free personal import allowance with them on return to Macao.

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

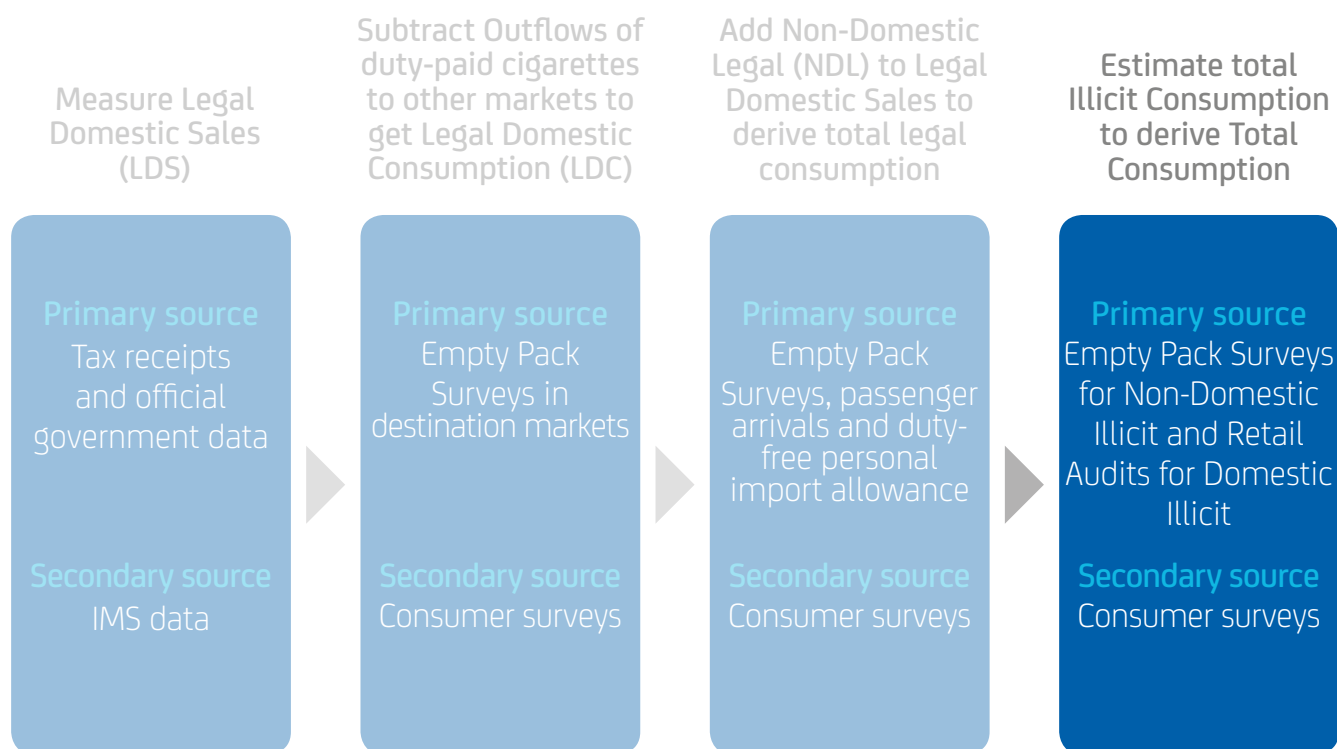
# Methodology:

## Stage 1 – Non Domestic Legal

Country/ market	Adult Smoking Prevalence (% daily smokers, 15 years old and above, unless otherwise stated)	Source
Australia	15.6	WHO FCTC 2014 (Australian Bureau of Statistics, Australian Health Survey: Updated Results, 2011-12)
Brunei	15.6 (aged 18+)	WHO FCTC 2014 (National Institute of Statistics, Ministry of Planning, National Health and Nutritional Status Survey, 2009-11)
Cambodia	18.7	WHO FCTC 2014 (National Adult Tobacco Survey of Cambodia, 2011)
Hong Kong	10.8	Hong Kong Census and Statistics Department, Thematic Household Survey No 53, 2013 (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)
Pakistan	14.6 (current smokers, 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 (Ministry of Health and Welfare, Korea Health Statistics, 2012)
Taiwan	16.4 (aged 18+)	Department of Health and the National Health Service, 2014 (Not a signatory of WHO FCTC)
Thailand	16.6	WHO FCTC 2014 (National Statistical Office, 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 Asia-16 markets were Empty Pack Surveys.** Commissioned by the participating tobacco manufacturers, Empty Pack Surveys are conducted by independent research companies in each individual market (e.g. Ipsos, Nielsen, and MSIIntelligence).
- 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 cigarette 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, for example the presence of tax stamps, graphic health warnings etc.).
- 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 flows (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 theoretical maximum legal duty-free and duty-paid cigarettes 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 companies to conduct Empty Pack surveys in each individual market.
- The sampling plan in each market is designed by the independent research companies in conjunction with the participating manufacturers (to leverage their knowledge of the market).
- The coverage of each market is tailored to the size of the market, the level of Non-Domestic Incidence, and the manufacturers share of the legal market.
- Population data is used to weight the results of each city/region to ensure a fully representative sample is collected.

### Field work

- The independent research companies randomly collect discarded cigarette packs from streets and public bins according to the designated sampling plan without bias.
- Homes and workplaces are not covered. Locations such as sports stadium, large cultural events, and train stations, which could be considered unrepresentative of the population, are excluded.
- The empty packs are sent to a central repository for analysis by experts at the independent research company.

### Pack analysis

- Packs are sorted by manufacturer and brand, and by domestic and non-domestic origin. Individual pack characteristics are used to determine the origin 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.
- The participating manufacturers review their packs in order to identify the presence of Counterfeit products, e.g. according to inks, paper, or other pack characteristics.
- Individual cigarette packs are bagged and labelled and the results inputted into a final data sheet which is provided to Oxford Economics for analysis.

# Methodology:

## Stage 1 – Illicit Consumption

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- **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 included (see Annex C for further information):
  - **Retail audits:** Pakistan and the Philippines (for estimation of Domestic Illicit).
  - **Other surveys:** Australia 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 (see Annex D).
- 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).





# Methodology:

## Stage 1 – Empty Pack Surveys

Country/ market	Date conducted	Research company	Sample Size (packs)	Non- Domestic Incidence	Research methodology
Australia	2014 Q2, Q4	MSIntelligence Participating companies PM, BAT, and Imperial Tobacco	12,000 / 12,000	10.3% / 6.7%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 16 largest cities by population were selected for both surveys covering 75.2% of total population. City samples weighted according to population size. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Cambodia	2014 Q2	Ipsos Marketing Participating company PM	1,800	5.4%	Random selection from streets and easy access bins. 7 cities were selected covering 14% of total population. City samples weighted according to population size.
Hong Kong	2014 Q2, Q4	MSIntelligence Participating company PM for Q2 survey Participating companies PM, BAT, Imperial Tobacco, JT, Nanyang Brothers, and Ever Fortune Tobacco for Q4 survey	5,000 / 5,000	34.2% / 38.4%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 18 districts in 3 regions were selected for both surveys, covering nearly 100% of total population. District samples weighted according to population size. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Indonesia	2014 Q4	MSIntelligence Participating company PM	5,000	0.3%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. Sampling plan consisted of 22 largest cities and 2 focus cities. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).

# Methodology:

## Stage 1 – Empty Pack Surveys

Country/ market	Date conducted	Research company	Sample Size (packs)	Non- Domestic Incidence	Research methodology
Laos	2014 Q1	MSIntelligence Participating companies PM and Imperial Tobacco	1,000	17.4%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 4 largest cities by population were selected covering 6.4% of total population. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Macao	2014 Q2	MSIntelligence Participating company PM	1,000	51.4%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 20 areas of 6 districts were selected. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Malaysia	2014 (Mar-May), 2014 (Jun-Aug), 2014 (Oct-Dec)	Nielsen on behalf of Royal Malaysian Customs	44,000 / 44,000 / 44,000	Illicit Incidence at 35.8% / 32.3% / 32.8%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 14 states were selected for each survey. Validation of security features carried out by Lembah Sari (government appointed sole vendor for security markings).
Myanmar	2014 Q4	MSIntelligence Participating company PM	600	3.7%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. The largest city by population was selected (20 neighbourhoods covered). Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Pakistan	2014 Q1	Foresight Research Participating company PM	15,973	4.3%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 36 cities (urban) and 60 villages (rural) were selected. Results weighted to reflect national population.

# Methodology:

## Stage 1 – Empty Pack Surveys

Country/ market	Date conducted	Research company	Sample Size (packs)	Non- Domestic Incidence	Research methodology
Philippines	2014 Q2	MSIntelligence Participating company PM	5,000	1.0%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 20 largest cities by population were selected covering 17% of total population. Excludes locations that may not be considered representative of consumption (e.g. sports events, cultural events, and train stations).
Singapore	2014 Q2, Q4	TNS Participating companies PM, BAT, and JTI	12,084 / 12,399	Genuine Non- Domestic 16.3% / 13.0%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 25 areas (e.g. Bedok, Kallang) in 5 districts (e.g. central, east) were selected. 10 routes in each area were covered. Collections made from road side bins, hawker centres, shopping centres, construction sites, night markets etc.
South Korea	2014 Q4	Ipsos Marketing Participating company PM	1,500	0.5%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 2 cities were selected covering 27% of total population. City samples weighted according to population size.
Taiwan	2014 (Feb- May)	TNS Participating companies BAT, Imperial Tobacco Limited, JTI, PM, and TTL	11,898 collected packs from panel of 2,000 smokers	8.4%	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.
Thailand	2014 Q4	Nielsen Participating company PM	10,000	1.0%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 25 largest cities by population were selected covering 32.5% of total population. City samples weighted according to population size.
Vietnam	2013 Q4	Ipsos Marketing Participating company PM	10,000	27.2%	Random sample of empty packs that were discarded by smokers in streets and easy access public bins. 15 largest cities by population were selected covering 15.5% of total population. City samples weighted according to population size.

# Methodology:

## Stage 1 – Retail Audits

Country/ market	Research company	Sample Size (stores)	Research methodology
Philippines	Nielsen	5,149	<p>Continuous, independent measurement of sales to consumers based on a statistically representative sample of retail outlets (market coverage was 79% as of September 2014).</p> <p>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.</p> <p>Sales volume is calculated as follows: Sales Volume = Beginning Inventory + Purchases – Ending Inventory</p>
Pakistan	Nielsen	5,577	<p>Continuous, independent measurement of sales to consumers based on a statistically representative sample of retail outlets.</p> <p>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> <p>Sales Volume = Beginning Inventory + Purchases – Ending Inventory</p>

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

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

Cambodia City/Region	Number of Packs			ND Incidence (%)		
	2012	2013 <sup>1</sup>	2014	2012	2013 <sup>1</sup>	2014
Battambang	-	200	200	-	4.2	4.2
Phnom Penh	-	1,000	1,000	-	5.4	5.4
Poi Pet	-	100	100	-	6.6	6.6
Preah Sihanouk	-	100	100	-	5.5	5.5
Siem Reap	-	200	200	-	8.1	8.1
Sisophon	-	100	100	-	2.6	2.6
Takhmao	-	100	100	-	3.0	3.0
<b>Total</b>	<b>-</b>	<b>1,800</b>	<b>1,800</b>	<b>-</b>	<b>5.4</b>	<b>5.4</b>

<sup>1</sup>The Empty Pack Survey was undertaken in 2014 Q2.

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

Hong Kong City/Region	Number of Packs			ND Incidence (%)		
	2012	2013	2014	2012	2013	2014
Hong Kong Island - Central & Western	356	400	400	42.7	37.8	32.3
Hong Kong Island - Eastern	832	800	800	39.4	42.2	40.0
Hong Kong Island - Southern	394	400	400	43.7	39.5	29.7
Hong Kong Island - Wan Chai	216	300	300	43.4	38.6	39.4
Islands	200	300	300	42.0	42.3	40.4
Kowloon City	534	500	500	42.2	38.0	34.6
Kwai Tsing	722	700	700	41.1	42.0	33.8
Kwun Tong	880	900	900	43.1	42.8	36.9
North	430	400	400	43.7	50.5	31.0
Sai Kung	618	600	600	46.9	42.9	34.2
Sha Tin	892	900	900	43.3	39.7	38.5
Sham Shui Po	538	500	500	42.2	38.2	38.8
Tai Po	420	400	400	43.3	38.8	41.3
Tsuen Wan	430	400	400	43.9	41.8	37.8
Tuen Mun	690	700	700	43.3	43.1	33.6
Kwng Tai Sin	594	600	600	45.9	39.8	38.0
Yau Tsim Mong	436	400	400	37.5	46.0	30.4
Yuen Long	818	800	800	45.5	41.1	39.9
<b>Total</b>	<b>10,000</b>	<b>10,000</b>	<b>10,000</b>	<b>43.0</b>	<b>41.4</b>	<b>36.4</b>

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

Indonesia City/Region	Number of Packs			ND Incidence (%)		
	2012 <sup>1</sup>	2013	2014	2012 <sup>1</sup>	2013	2014
Cimahi	150	-	-	0.0	-	-
Balikpapan	-	111	111	-	0.0	0.0
Bandar Lampung (Tanjungkarang)	300	133	133	0.0	0.0	0.0
Bandung	1,000	290	290	0.0	0.0	0.0
Banjarmasin	150	130	130	0.0	0.0	0.0
Batam	200	139	139	7.7	22.2	9.4
Bekasi	1,000	283	283	0.0	0.0	0.0
Bogor	300	115	115	0.5	0.0	0.0
Denpasar	150	95	95	0.0	0.0	0.0
Depok	500	211	211	0.0	0.0	0.0
Jakarta	2,500	1,164	1,164	0.1	0.0	0.0
Makassar (Ujungpandang)	500	282	282	0.0	0.0	0.0
Malang	300	99	99	0.0	0.0	0.0
Medan	1,000	319	319	0.1	0.0	0.0
Padang	300	121	121	0.0	0.0	0.0
Palembang	500	219	219	0.0	0.6	0.0
Pekanbaru	300	134	134	0.0	0.9	0.0
Pontianak	150	117	117	0.0	0.0	0.0
Samarinda	150	145	145	0.0	0.0	0.0
Semarang	500	184	184	0.0	0.0	0.5
Surabaya	1,000	335	335	0.1	0.0	0.2
Surakarta	150	-	-	0.0	-	-
Tangerang	500	218	218	0.0	0.0	0.0
Tangerang Selatan [South Tangerang]	-	156	156	0.0	0.0	0.0
<b>Total</b>	<b>11,600</b>	<b>5,000</b>	<b>5,000</b>	<b>0.2</b>	<b>0.7</b>	<b>0.3</b>

Laos City/Region	Number of Packs			ND Incidence (%)		
	2012	2013 <sup>2</sup>	2014	2012	2013 <sup>2</sup>	2014
Luang Prabang (Louangphrabang)	-	100	100	-	11.0	11.0
Pakse	-	200	200	-	18.0	18.0
Savannakhet	-	200	200	-	27.5	27.5
Vientiane	-	500	500	-	16.4	16.4
<b>Total</b>	<b>-</b>	<b>1,000</b>	<b>1,000</b>	<b>-</b>	<b>18.4</b>	<b>18.4</b>

<sup>1</sup>The Empty Pack Survey was undertaken in 2011 Q4.

<sup>2</sup>The Empty Pack Survey was undertaken in 2014 Q1.



# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

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

## Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

Malaysia City/Region	Number of Packs			ND Incidence (%)		
	2012	2013	2014	2012	2013	2014
Johor	9,000	9,000	9,000	29.4	26.8	19.5
Kedah	9,000	9,000	9,000	25.4	29.6	14.9
Kelantan	9,000	9,000	9,000	30.8	40.3	29.5
Melaka	9,000	9,000	9,000	33.9	34.0	37.8
Negeri Sembilan	9,000	9,000	9,000	38.7	34.3	37.3
Pahang	9,000	9,000	9,000	27.5	30.8	41.0
Perak	9,000	9,000	9,000	28.4	33.6	28.9
Perlis	9,000	9,000	9,000	37.3	32.4	13.0
Pulau Pinang	9,000	9,000	9,000	23.6	33.6	36.3
Sabah	12,000	12,000	12,000	81.5	76.2	74.0
Sarawak	12,000	12,000	12,000	62.9	63.5	64.6
Selangor	9,000	9,000	9,000	34.7	37.9	36.9
Terengganu	9,000	9,000	9,000	37.0	37.6	26.0
WP Kuala Lumpur	9,000	9,000	9,000	21.6	22.3	21.1
<b>Total</b>	<b>132,000</b>	<b>132,000</b>	<b>132,000</b>	<b>34.5</b>	<b>35.7</b>	<b>33.7</b>

Myanmar City/Region	Number of Packs			ND Incidence (%)		
	2012	2013	2014	2012	2013	2014
Rangoon	-	600	600	-	23.7	3.7
<b>Total</b>	<b>-</b>	<b>600</b>	<b>600</b>	<b>-</b>	<b>23.7</b>	<b>3.7</b>

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

Pakistan City/Region	Number of Packs			ND Incidence (%)		
	2012 <sup>1</sup>	2013 <sup>2</sup>	2014	2012 <sup>1</sup>	2013 <sup>2</sup>	2014
Praia Central Punjab	-	3,279	3,279	-	1.8	1.8
North Punjab & KPK	-	4,198	4,198	-	3.6	3.6
Sindh	-	4,496	4,496	-	6.6	6.6
South Punjab & Balochistan	-	4,000	4,000	-	5.8	5.8
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	-	-
<b>Total</b>	<b>22,000</b>	<b>15,973</b>	<b>15,973</b>	<b>3.7</b>	<b>4.2</b>	<b>4.2</b>

<sup>1</sup>The Empty Pack Survey was undertaken in 2011 Q4.

<sup>2</sup>The Empty Pack Survey was undertaken in 2014 Q1.

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

Philippines City/Region	Number of Packs			ND Incidence (%)		
	2012 <sup>1</sup>	2013	2014	2012 <sup>1</sup>	2013	2014
Antipolo	245	400	200	0.4	2.8	1.0
Bacolod	193	300	150	0.5	1.1	0.7
Bacoor	0	300	150	0.0	2.3	0.0
Cagayan de Oro	214	400	200	0.0	1.6	0.5
Calcoocan (Kalookan)	533	800	400	0.0	0.6	0.7
Cebu	309	600	300	0.0	1.1	0.0
Dasmariñas {Dasmariñas}	215	400	200	1.4	2.3	1.6
Davao	304	800	400	0.0	1.2	0.0
General Santos (Dadiangas)	0	200	100	0.0	4.3	0.0
Las Piñas {Las Pinas}	206	300	150	0.0	2.6	1.8
Makati	197	300	150	0.0	1.9	0.8
Manila	642	1,000	500	0.6	1.3	1.1
Muntinlupa	0	300	150	0.0	4.1	1.4
Parañaque {Paranaque}	213	400	200	0.5	2.9	1.6
Pasig	237	400	200	0.0	0.9	0.5
Quezon City	1,035	1,600	800	0.4	2.4	1.0
San Jose del Monte	0	300	150	0.0	1.6	0.7
Taguig (Tagig)	237	400	200	0.4	2.5	3.2
Valenzuela	220	400	200	0.0	1.5	1.6
Zamboanga	0	400	200	0.0	2.3	3.4
<b>Total</b>	<b>5,000</b>	<b>10,000</b>	<b>5,000</b>	<b>0.4</b>	<b>1.9</b>	<b>1.0</b>

Singapore City/Region	Number of Packs			ND Incidence (%)		
	2012	2013	2014	2012	2013	2014
Central	3,825	3,603	11,212	30.4	21.2	16.6
East	1,159	1,233	3,578	22.8	16.8	10.7
North	1,607	1,505	4,721	23.8	21.4	16.5
North East	2,716	2,560	8,015	24.0	14.8	12.8
West	3,152	2,951	9,356	23.1	22.0	15.7
<b>Total</b>	<b>12,460</b>	<b>11,851</b>	<b>24,483</b>	<b>25.5</b>	<b>19.6</b>	<b>14.6</b>

South Korea City/Region	Number of Packs			ND Incidence (%)		
	2012	2013	2014	2012	2013	2014
Seoul	-	-	1,000	-	-	0.5
Busan	-	-	500	-	-	0.4
<b>Total</b>	<b>-</b>	<b>-</b>	<b>1,500</b>	<b>-</b>	<b>-</b>	<b>0.5</b>

<sup>1</sup>The Empty Pack Survey was undertaken in 2011 Q4.

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

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

<sup>2</sup>Consumer Panel Survey.

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

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

# Methodology: Stage 1 – Empty Pack Survey Results for Asia-16

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

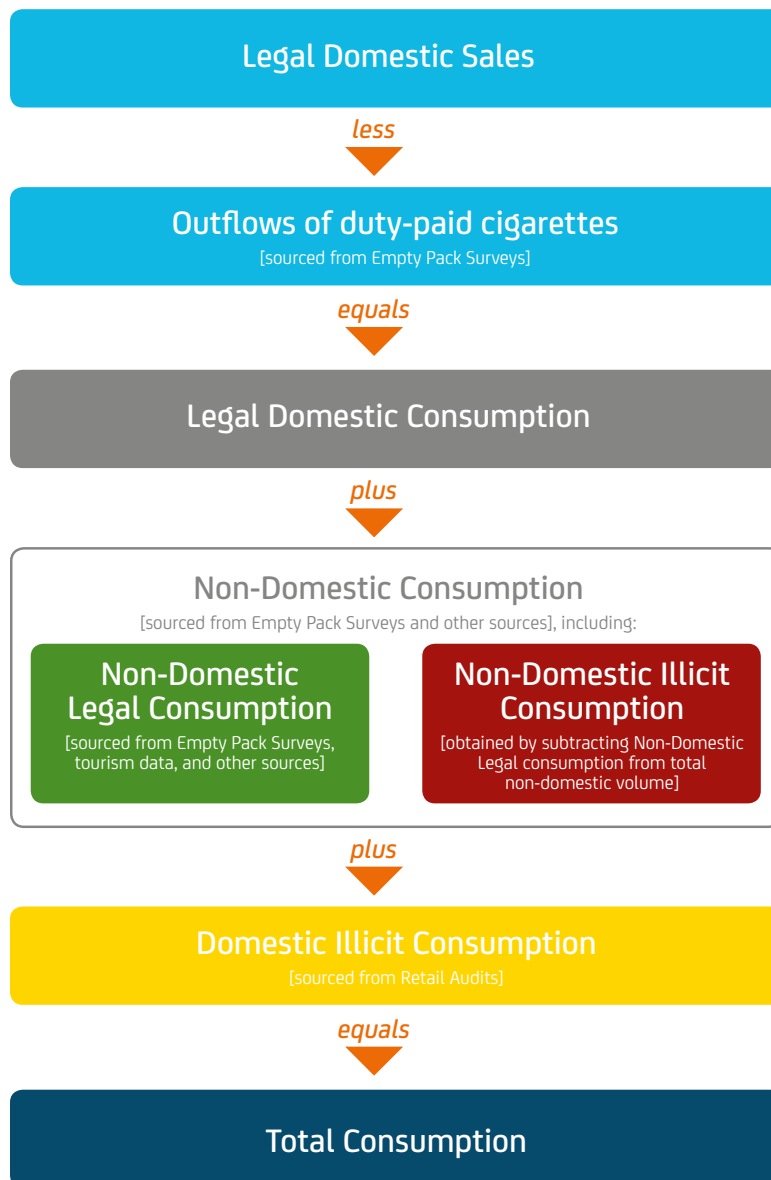
<sup>1</sup>The Empty Pack Survey was undertaken in 2011 Q4.

<sup>2</sup>The Empty Pack Survey was undertaken in 2013 Q4.

# Methodology:

## Stage 1 – Total Consumption

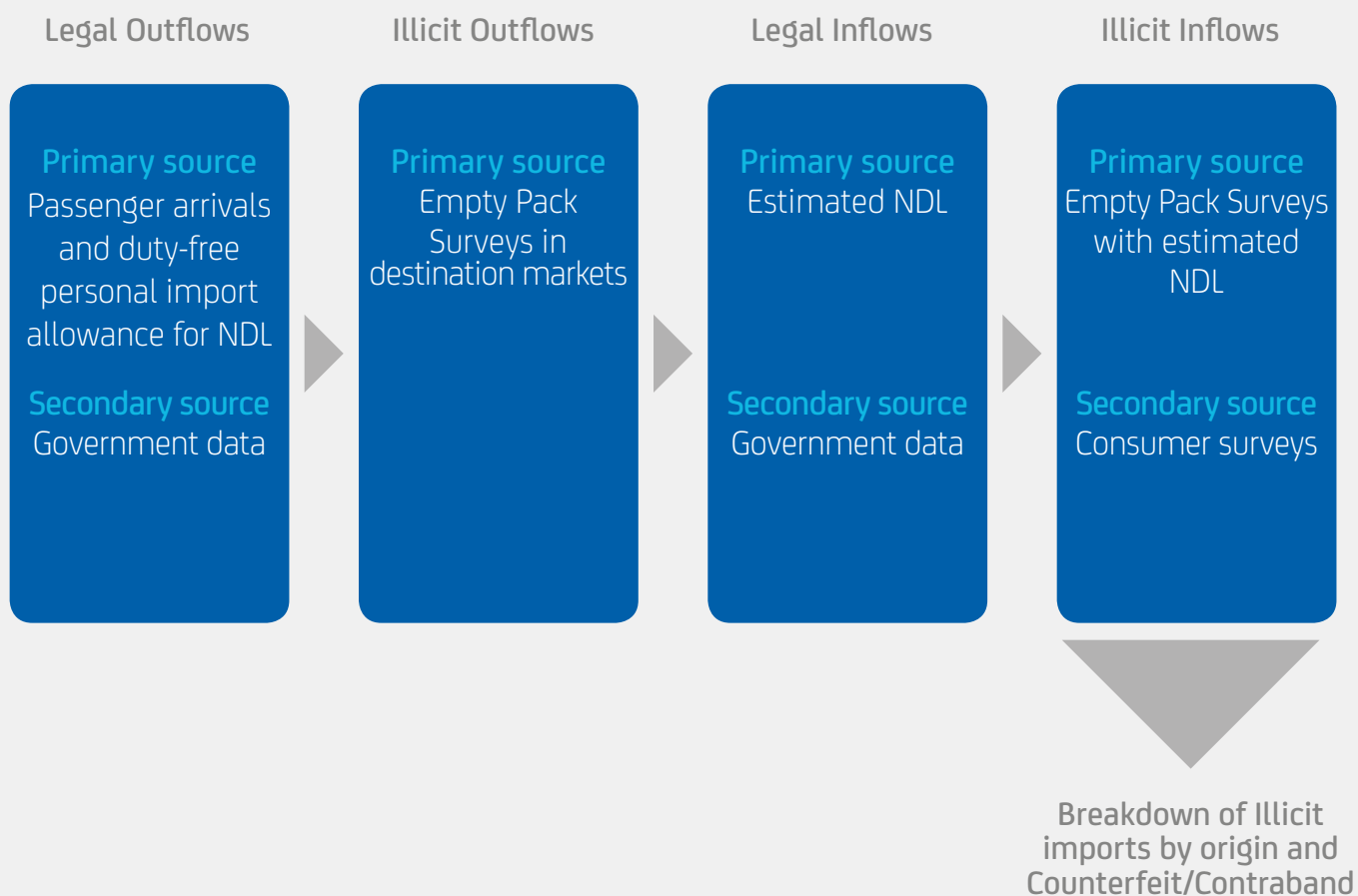
- **In the IT Flows Model, Total Consumption** estimates are built up as follows, starting with data on Legal Domestic Sales of cigarettes in each market, incorporating estimates of Outflows of domestic duty-paid cigarettes, Inflows of Non-Domestic Legal cigarettes and finally, estimates of Illicit Consumption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



- Finally, this estimate is compared to estimates of Total Consumption derived from adult population and average daily cigarette consumption.

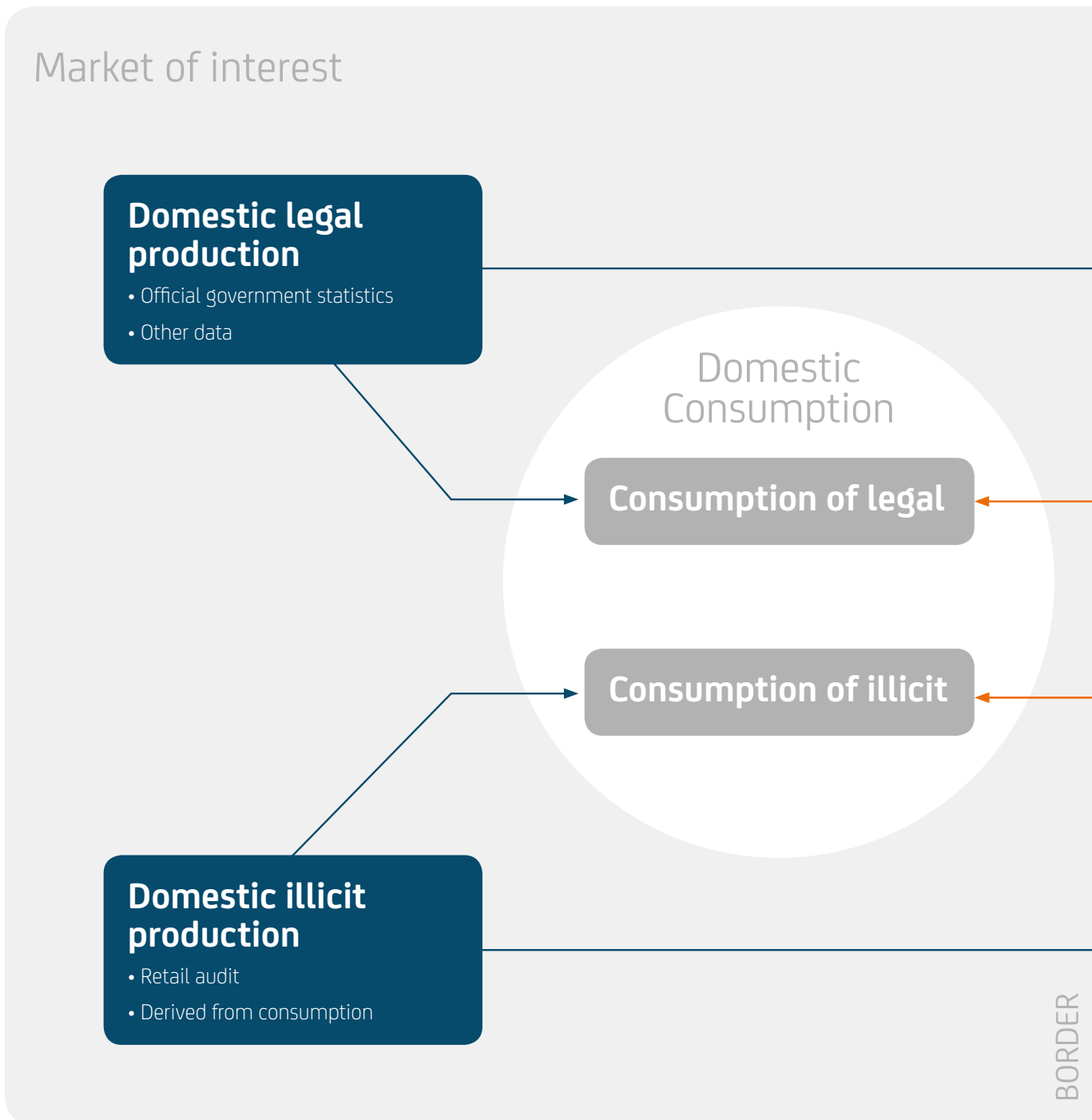


## Methodology: Stage 2 – Preliminary sizing of trade flows

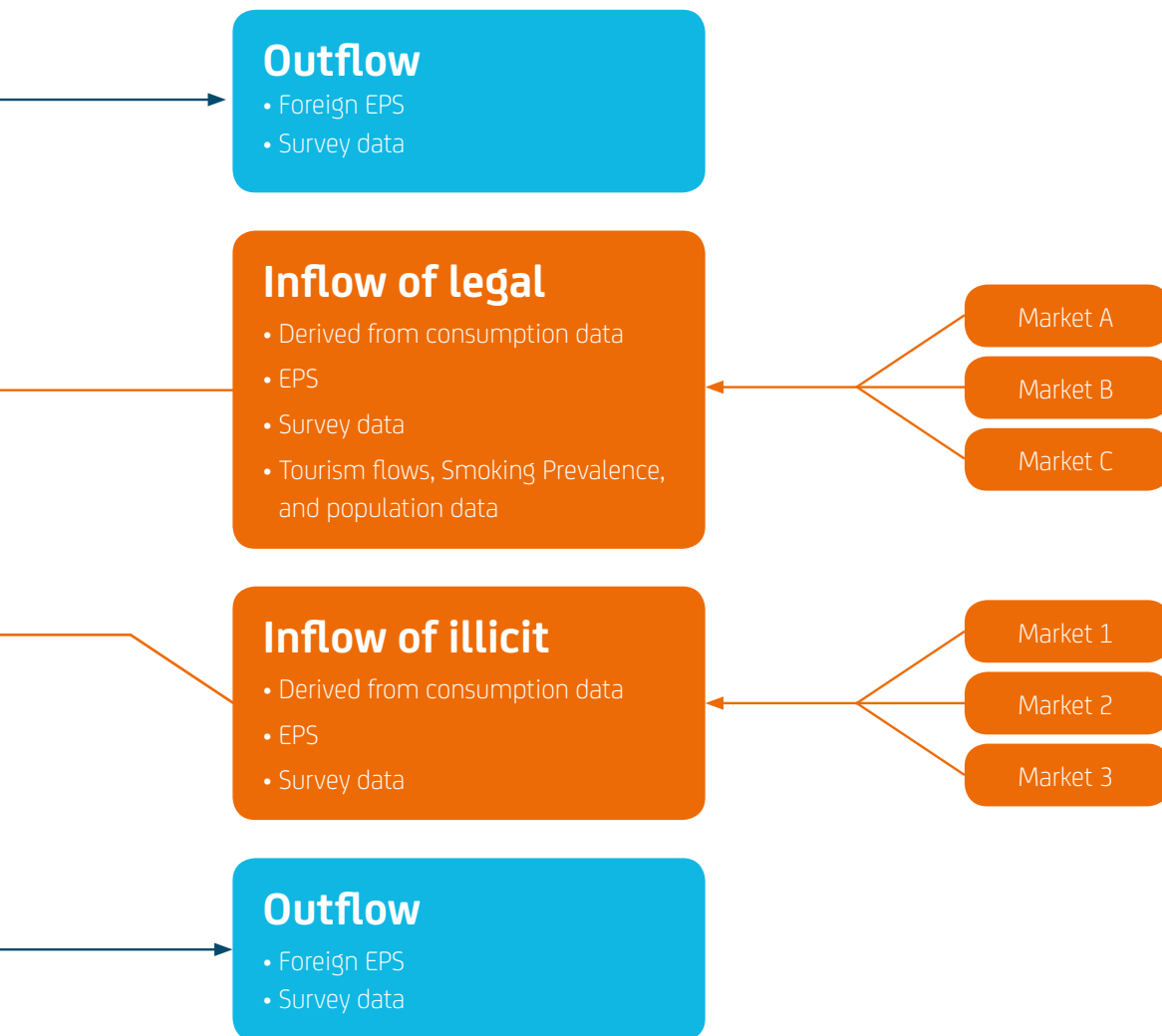


- Once initial estimates of Total Consumption by market are established, **Stage 2** of the modelling process involves the aggregation of legal Outflows and Inflows of cigarettes (exports and imports) as calculated in stage 1 to check for discrepancies in cross-market and intra-Asia 16 net trade flows.
- 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





## **Annex B:** Methodology for estimating Tax Losses

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## Methodology: Estimating Tax Losses

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- 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, 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 2014, 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, 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 brand's relevant rate by its corresponding LDS volume, and the sum of the results is then divided by 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 the results is then divided by the total LDS volume for the market. Again, the exception to this is in Cambodia and Laos, where the VAT 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-14 Illicit Tobacco Indicator 2014 report, 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 tax, and Earmarked Taxes) applied to the Most Sold Brand in each market.

## Methodology: Estimating Tax Losses 2014

Country / market	Excise Tax structure 2014 <sup>1</sup>	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	2014 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

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

# Methodology: Estimating Tax Losses 2014

Country / market	Excise Tax structure 2014 <sup>2</sup>	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 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	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 tax, public health fund, and green fund 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 227,600/'000 cigarettes	Based on weighted-average VAT rate of VND 59,550/'000 cigarettes	Health surcharge of 1% of net ex-factory price (VND 3,500/'000 cigarettes)

<sup>2</sup>Based 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 Losses 2013

Country / market	Excise Tax structure 2013 <sup>1</sup>	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

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



# Methodology: Estimating Tax Losses 2013

Country / market	Excise Tax structure 2013 <sup>1</sup>	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 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 239,200/'000 cigarettes	Based on weighted-average VAT rate of VND 60,700/'000 cigarettes	Health surcharge of 1% of net ex-factory price (VND 3,700/'000 cigarettes)

<sup>1</sup>Based on calendar year, with the exception of Myanmar (Apr-Mar), Pakistan (July-June), Singapore (April-March), and Thailand (October-September) which are based on financial year.

## Methodology: Estimating Tax Losses 2012

Country / market	Excise Tax structure 2012 <sup>1</sup>	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 OTP prior and post the February and August 2012 Excise Tax increases	Based on the GST applied to Most Sold Brand of cigarettes and OTP	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	Based on the VAT applied to Most Sold Brand	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

<sup>1</sup>Based on calendar year, with the exception of Australia (July-June), Hong Kong (April-March), Pakistan (July-June), Singapore (April-March), and Thailand (October-September) which are based on financial year.

## Methodology: Estimating Tax Losses

Country / market	Exchange rate assumption 2012 (Local currency/USD) <sup>2</sup>	Exchange rate assumption 2013 (Local currency/USD) <sup>2</sup>	Exchange rate assumption 2014 (Local currency/USD) <sup>2</sup>	Source
Australia	0.96	1.09	1.09	Wall Street Journal/ Haver Analytics
Brunei	1.25	1.25	1.27	International Monetary Fund/ Haver Analytics
Cambodia	N/A	4,027	4,037	International Monetary Fund/ Haver Analytics
Hong Kong	7.76	7.76	7.75	Hong Kong Monetary Authority/ Haver Analytics
Indonesia	9,403	10,461	11,865	Bank of Indonesia/ Haver Analytics
Laos	N/A	7,846	8,049	International Monetary Fund/ Haver Analytics
Macao	N/A	N/A	7.986	International Monetary Fund/ Haver Analytics
Malaysia	3.09	3.15	3.27	Bank Negara Malaysia/ Haver Analytics
Myanmar	N/A	962.5	996.9	International Monetary Fund/ Haver Analytics
Pakistan	97.6	103.4	101.4	International Monetary Fund/ Haver Analytics
Philippines	42.23	42.45	44.40	Bangko Sentral ng Pilipinas/ Haver Analytics
Singapore	1.24	1.26	1.29	Monetary Authority of Singapore/ Haver Analytics
South Korea	N/A	N/A	1,053	International Monetary Fund/ Haver Analytics
Taiwan	29.62	29.77	30.36	Central Bank of China/ Haver Analytics
Thailand	31.30	30.46	32.23	Bank of Thailand/ Haver Analytics
Vietnam	20,859	20,933	21,148	International Monetary Fund/ Haver Analytics

Source for exchange rate data: All exchange rate data collected via Haver Analytics

<sup>2</sup>Based on calendar year, with the exception of Australia (July-June), Hong Kong (April-March), Myanmar (April-March), Pakistan (July-June), Singapore (April-March), and Thailand (October-September), which are based on financial year average.



## Annex C: Comparison with other estimates

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## Annex C: Other studies

Sources	Advantages	Disadvantages
<p><b>Empty Pack Surveys (EPS)</b> – This involves collecting discarded empty cigarette packs and noting their Market Variant.</p>	<ul style="list-style-type: none"> <li>– Approach is (in principle) easily comparable across markets.</li> <li>– Avoids the problem of under-reporting of smoking by consumers in consumer surveys as estimates are based on physical evidence.</li> <li>– Cost effective.</li> </ul>	<ul style="list-style-type: none"> <li>– May not be able to fully distinguish between legal and illegal packs in all cases (a problem shared with other methodologies).</li> <li>– 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.</li> <li>– Does not cover homes, workplaces, or rural areas in many cases.</li> </ul>
<p><b>Passer-by surveys</b> – 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.</p>	<ul style="list-style-type: none"> <li>– Direct method of assessing consumption patterns.</li> </ul>	<ul style="list-style-type: none"> <li>– 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.</li> <li>– Expensive.</li> </ul>
<p><b>Pack swap</b> – Variant of the above where consumers are asked to exchange their cigarette packs for a reward.</p>	<ul style="list-style-type: none"> <li>– Direct method of assessing consumption patterns.</li> <li>– Can collect social and demographic data to adjust sample to be representative.</li> <li>– Can cover rural areas also.</li> </ul>	<ul style="list-style-type: none"> <li>– Relies on self-reporting of smoking habits to some extent.</li> <li>– Smokers may still be reluctant to take part due to legal risks/embarrassment.</li> <li>– 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.</li> <li>– Expensive.</li> </ul>
<p><b>Telephone interviews</b> – Interviewers conduct telephone surveys, asking about smoking habits, including their purchases of illegal tobacco.</p>	<ul style="list-style-type: none"> <li>– Can choose targeted respondents randomly, less risk of unrepresentative sample.</li> </ul>	<ul style="list-style-type: none"> <li>– Downward bias from under-reporting of smoking behaviour still likely to be a risk.</li> <li>– Consumers may not know for sure if cigarettes they have smoked are illegal.</li> <li>– In poor countries, telephone survey unlikely to be representative due to low level of telephone connections.</li> </ul>

## Annex C: Other studies – continued

Sources	Advantages	Disadvantages
<p><b>Comparing consumption estimates with legal sales (“bottom-up” approach)</b> – 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.</p>	<ul style="list-style-type: none"> <li>– Simple and direct approach of estimating consumption.</li> <li>– Normally relatively easy to collect data on legal sales.</li> <li>– Provides an estimate of total Illicit Consumption including Bootlegging.</li> </ul>	<ul style="list-style-type: none"> <li>– Smoking Prevalence data may be distorted downward by under-reporting, especially in countries with social stigma against smoking.</li> </ul>
<p><b>Surveys/audits of retailers</b> – This approach relies on the analysis of the inventory books of point-of-sale units belonging to a panel of retailers.</p>	<ul style="list-style-type: none"> <li>– Direct collection of data at the retail level, may bypass problem of under-reporting of smoking behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>– Sample of retailers might be unrepresentative, especially if retail industry is very fragmented.</li> <li>– Retailers may not display illicit stock.</li> <li>– May miss channels of distribution other than legitimate retail.</li> </ul>
<p><b>Comparing import and export data</b> – 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.</p>	<ul style="list-style-type: none"> <li>– Taxes on exports are rare, so little incentive to under-report at the exporter end.</li> <li>– Data available from the UN COMTRADE database.</li> </ul>	<ul style="list-style-type: none"> <li>– 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).</li> <li>– 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).</li> <li>– Only provides an indication on large-scale smuggling and not Bootlegging, so inappropriate for markets where the latter is a problem.</li> <li>– 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.</li> </ul>

## Annex C: Other studies – continued

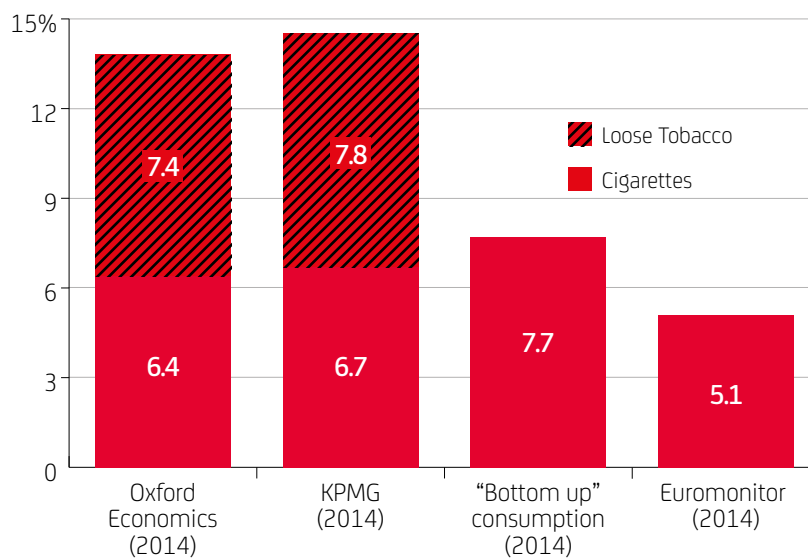
Sources	Advantages	Disadvantages
<p><b>Extrapolating from seizures data</b> – This method scales up reported seizures of illicit tobacco products to produce an estimate of overall illicit trade. A scaling factor of 10 is sometimes used; Joossens &amp; Raw (2002) suggest a possible seizure/interception 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"> <li>– Uses actual data about the illicit market.</li> </ul>	<ul style="list-style-type: none"> <li>– 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.</li> <li>– 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.</li> <li>– Joossens &amp; Raw’s suggested 10% interception rate is for European markets – for Asian markets, which are far more diverse, interception rates could vary substantially.</li> </ul>
<p><b>Econometric estimates</b> – 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"> <li>– Could avoid under-reporting problem of consumption survey approaches; should include all forms of illicit.</li> </ul>	<ul style="list-style-type: none"> <li>– 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?).</li> </ul>

## Annex C: Other estimates

### Australia

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 7.7%, or around 1.4 billion cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).
KPMG, Illicit tobacco in Australia, 2014 Full Year Report, 30 March 2015 ( <a href="http://tinyurl.com/nldqjyz">http://tinyurl.com/nldqjyz</a> )	Analysis by KPMG of a survey of consumers carried out by Roy Morgan Research suggests an illicit share of 14.5% of Total Consumption.
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 5.1% in 2014. 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 <a href="http://www.cancervic.org.au/downloads/plainfacts/CommtsDeloitte18_11_11_2_.pdf">http://www.cancervic.org.au/downloads/plainfacts/CommtsDeloitte18_11_11_2_.pdf</a>	An estimate by Quit Victoria based on the 2010 National Drug Strategy suggests an illicit share 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



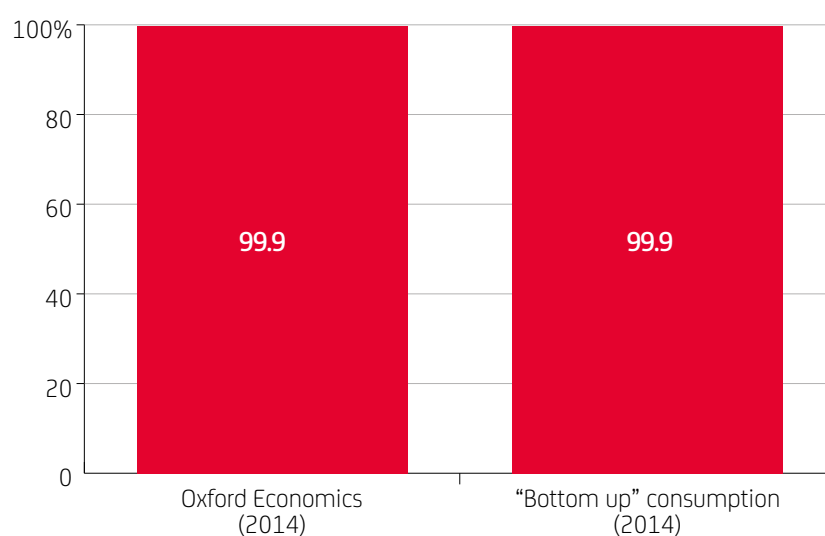


## Annex C: Other estimates

### Brunei

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 99.9%, or around 325 million cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).

#### Brunei: Alternative estimates of Illicit Consumption

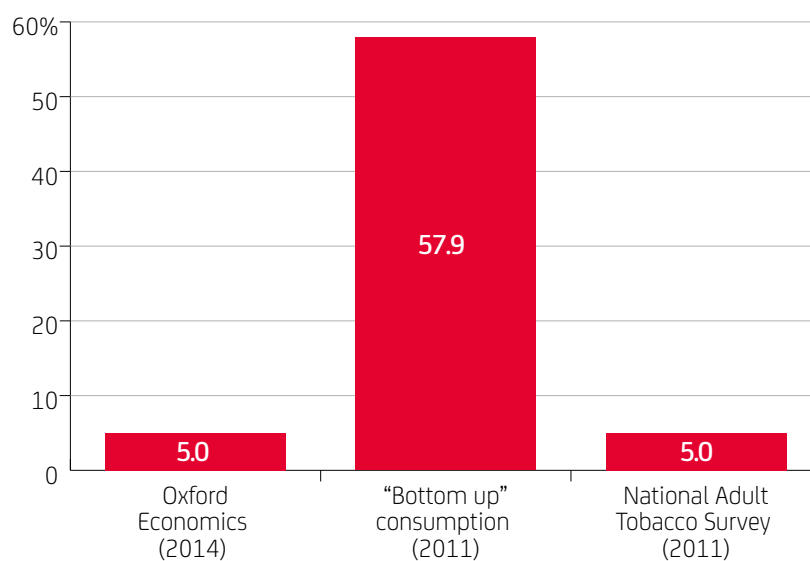


## Annex C: Other estimates

### Cambodia

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 57.9% in 2011, or around 10.5 billion cigarettes (based on 2011 legal sales). The source for Smoking Prevalence and average daily cigarette consumption come from the WHO FCTC 2014 report.
National Adult Tobacco Survey of Cambodia (2011). Retrieved via <a href="http://seatca.org/dmdocuments/2011%20NATSC_final%20Aug%202011_extracted%20version.pdf">http://seatca.org/dmdocuments/2011%20NATSC_final%20Aug%202011_extracted%20version.pdf</a>	95% of cigarette packs examined by the National Adult Survey of Cambodia interviewers while interviewing current smokers displayed a domestic tax stamp.

#### Cambodia: Alternative estimates of Illicit Consumption

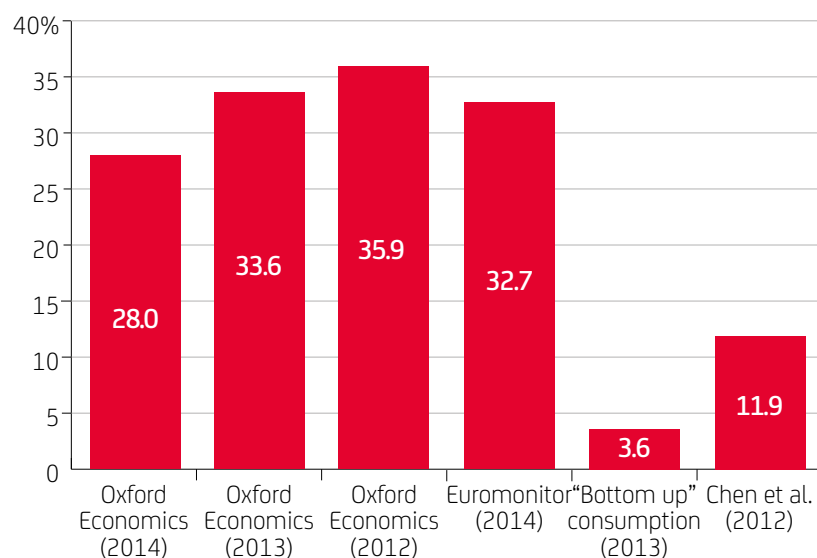


## Annex C: Other estimates

### Hong Kong

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 3.6% in 2013, or around 117 million cigarettes (based on 2013 legal sales). The source for Smoking Prevalence and average daily cigarette consumption is the Hong Kong Thematic Household Survey Report No. 53, compiled by the Census and Statistics Department, 2013.
Chen J, McGhee SM, Townsend J, et al. Tob Control, 2014. Retrieved via <a href="http://www.ncbi.nlm.nih.gov/pubmed/25566812">http://www.ncbi.nlm.nih.gov/pubmed/25566812</a>	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, 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, 2015	Euromonitor estimates an illicit share of 32.7% in 2014. 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

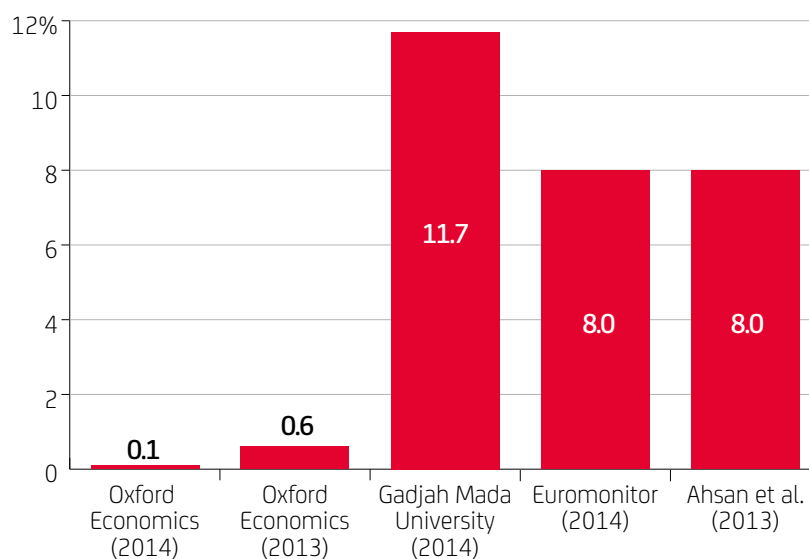


## Annex C: Other estimates

### Indonesia

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. Using this approach, estimated consumption is less than legal sales, implying no evidence of substantial illicit share. The source for Smoking Prevalence and average daily cigarette consumption is the Global Adult Tobacco Survey 2011.
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 8.0% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Satriawan, E., Adji, A., (2015). Survey of Illegal Cigarettes 2014 (Center for Economic & Public Policy Studies, Gadjah Mada University)	Estimates Illicit Consumption at 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. Globalization and Health 2014. Retrieved via <a href="http://www.globalizationandhealth.com/content/10/1/75">http://www.globalizationandhealth.com/content/10/1/75</a>	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 share in Total Consumption of 8% in 2013.

#### Indonesia: Alternative estimates of Illicit Consumption

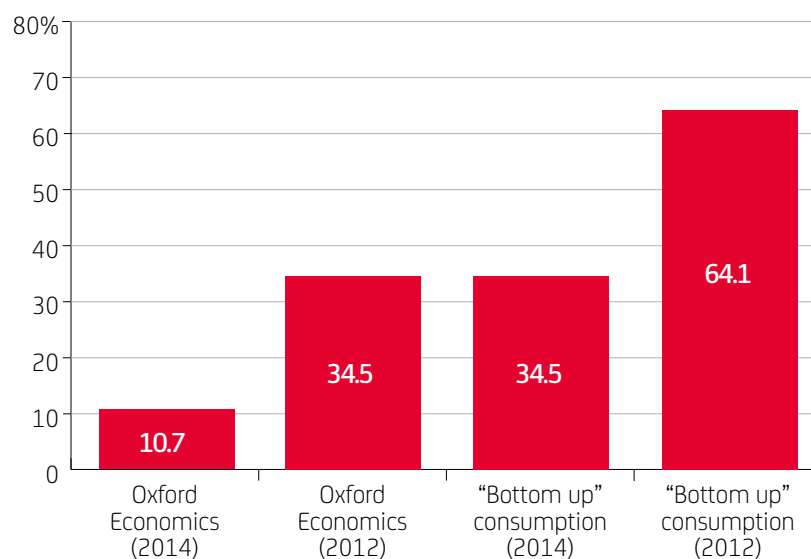


## Annex C: Other estimates

### Laos

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 64.1%, or around 4.2 billion cigarettes (based on 2012 legal sales). The source for Smoking Prevalence and average daily cigarette consumption data is the National Adult Tobacco Survey 2012.
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 34.5%, or around 1.3 billion cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).

#### Laos: Alternative estimates of Illicit Consumption

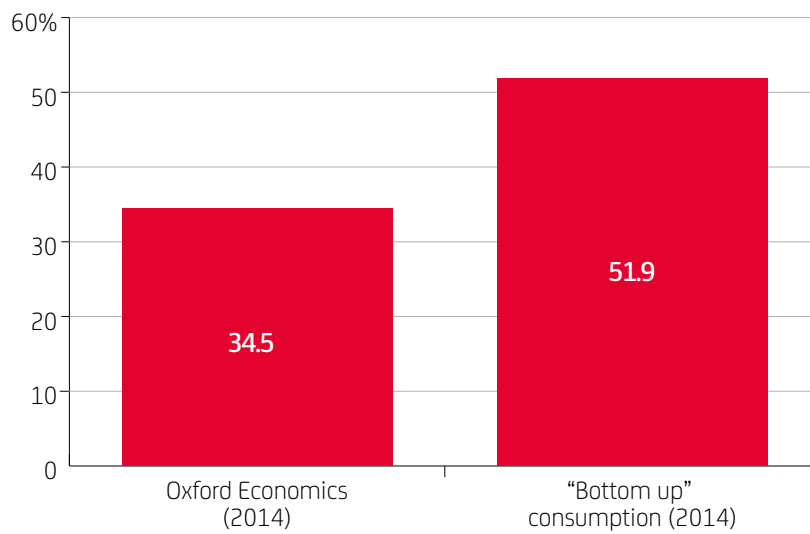


## Annex C: Other estimates

### Macao

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 51.9%, or around 1.3 billion cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ), however in the absence of data specific to Macao, we use average consumption for China.

#### Macao: Alternative estimates of Illicit Consumption

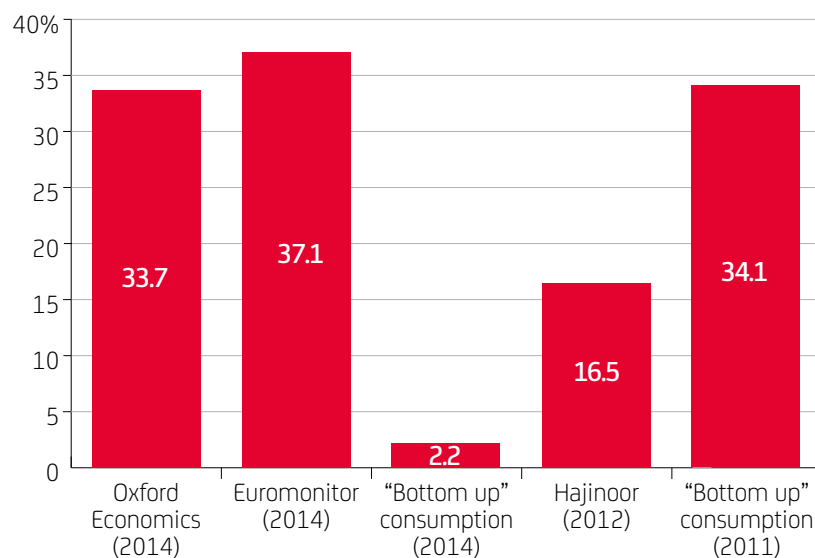


## Annex C: Other estimates

### Malaysia

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 34.1%, or around 7.6 billion cigarettes (based on 2011 legal sales). The source for Smoking Prevalence and daily cigarettes consumption is the Global Adult Tobacco Survey 2011.
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 2.2%, or around 290 million cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).
Hajinoor, M S. (2012). Under-involicing of Cigarette Imports in Malaysia: A good Indicator for Smuggling?	An academic estimate by Hajinoor (2012) using a “bottom up” approach to compare consumption estimates with legal sales suggests an illicit share of 16.5% (2.9 billion cigarettes), but the data used is much older (2006) and the share of illicit trade is believed to have increased since then. The industry estimate for illicit trade quoted in this article for 2006 was 21%.
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 37.1% in 2014. The methodology, sampling and coverage are unknown, so it is difficult to assess the robustness of this estimate.

### Malaysia: Alternative estimates of Illicit Consumption

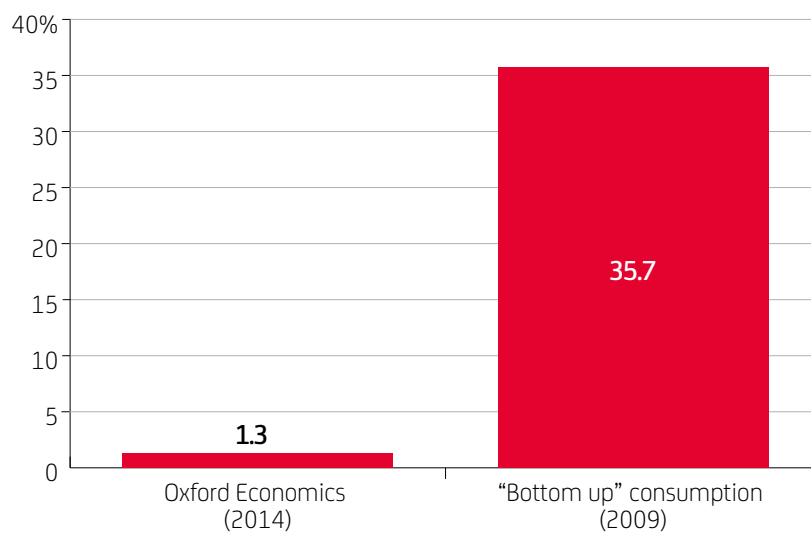


## Annex C: Other estimates

### Myanmar

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 35.7%, or around 2.2 billion cigarettes (based on 2009 legal sales). The source for Smoking Prevalence and average daily cigarette consumption come from the WHO FCTC 2014 report.

#### Myanmar: Alternative estimates of Illicit Consumption



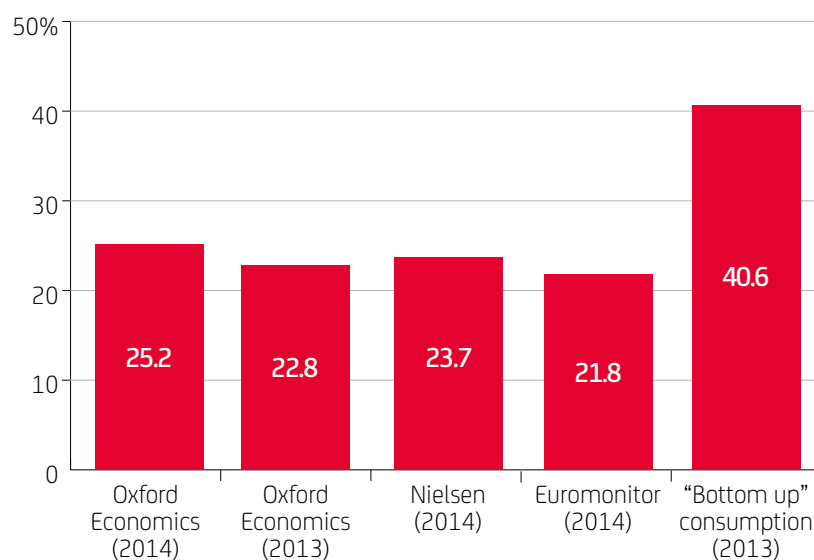


## Annex C: Other estimates

### Pakistan

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 40.6%, or around 43.6 billion cigarettes (based on 2013 legal sales). The source for Smoking Prevalence and daily cigarette consumption data is the Pakistan Demographic & Health Survey, 2012-13.
Nielsen (2015), The Challenge of Illicit Trade in Cigarettes: Impact and Solutions for Pakistan. Retrieved via <a href="http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf">http://customnews.pk/wp-content/uploads/2015/09/Illicit-Tobacco-Trade.pdf</a>	Based on analysis of the retail audit conducted in 2014, Nielsen find an illicit share of 23.7% in Total Consumption.
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 21.8% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

#### Pakistan: Alternative estimates of Illicit Consumption

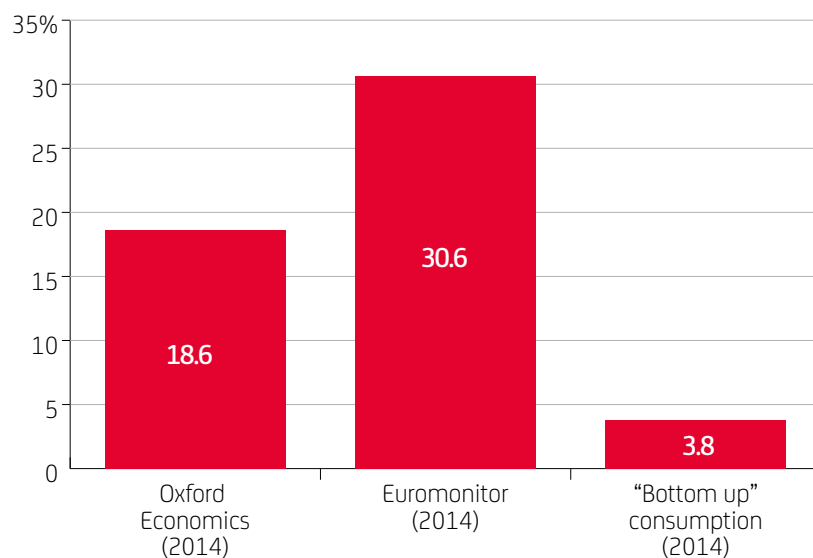


## Annex C: Other estimates

### Philippines

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 3.8%, or around 3.2 billion cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 30.6% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

#### Philippines: Alternative estimates of Illicit Consumption

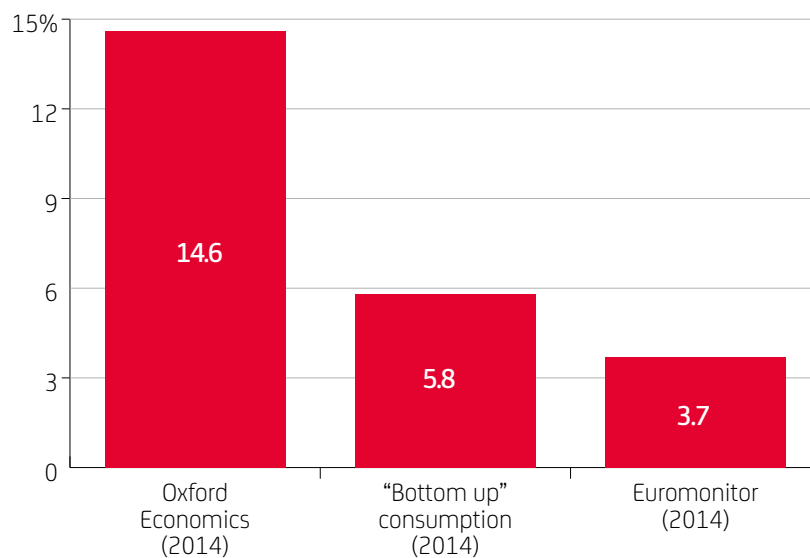


## Annex C: Other estimates

### Singapore

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 5.8%, or around 180 million cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 3.7% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

#### Singapore: Alternative estimates of Illicit Consumption

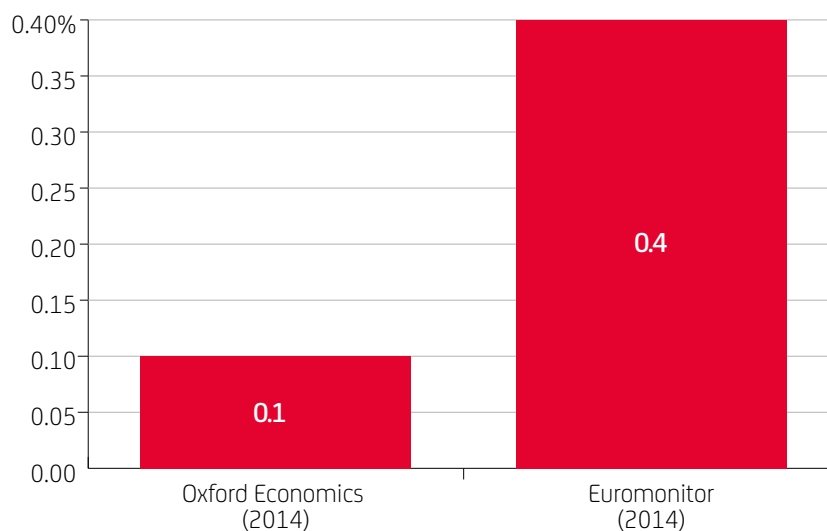


## Annex C: Other estimates

### South Korea

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. Using this approach, estimated consumption is less than legal sales, implying no evidence of substantial illicit share. The data on Smoking Prevalence comes from 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, 2015	Euromonitor estimated an illicit share of 0.4% in 2014. The methodology, sampling, and coverage are unknown, however, so it is difficult to assess the robustness of this estimate.

#### South Korea: Alternative estimates of Illicit Consumption

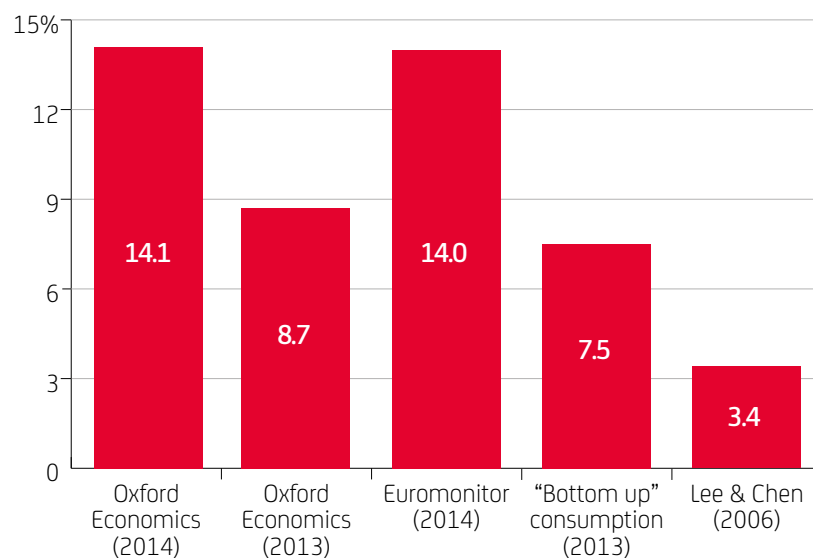


## Annex C: Other estimates

### Taiwan

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 7.5%, or around 7.0 billion cigarettes (based on 2013 legal sales). The data on Smoking Prevalence comes from the National Health Surveillance Survey 2013, while average daily consumption comes from consumer survey data for Taiwan for 2013.
Euromonitor Passport, 2015	Euromonitor estimated an illicit share of 14.0% in 2014. The methodology, sampling, and coverage are unknown, however, so it is difficult to assess the robustness of this estimate.
Lee & Chen survey (2006). Retrieved via <a href="http://eurpub.oxfordjournals.org/content/19/1/23">http://eurpub.oxfordjournals.org/content/19/1/23</a>	A consumer survey by Lee & Chen survey (2006) suggested one-third of respondents had used illicit cigarettes, and 20% used them regularly. Applying the average daily consumption of 15 cigarettes produces an illicit share of 3.4% or 1.3 billion cigarettes. This estimate is based on much older data than the Consumer Panel Survey that forms the basis of the OE estimate of Illicit Consumption.

### Taiwan: Alternative estimates of Illicit Consumption

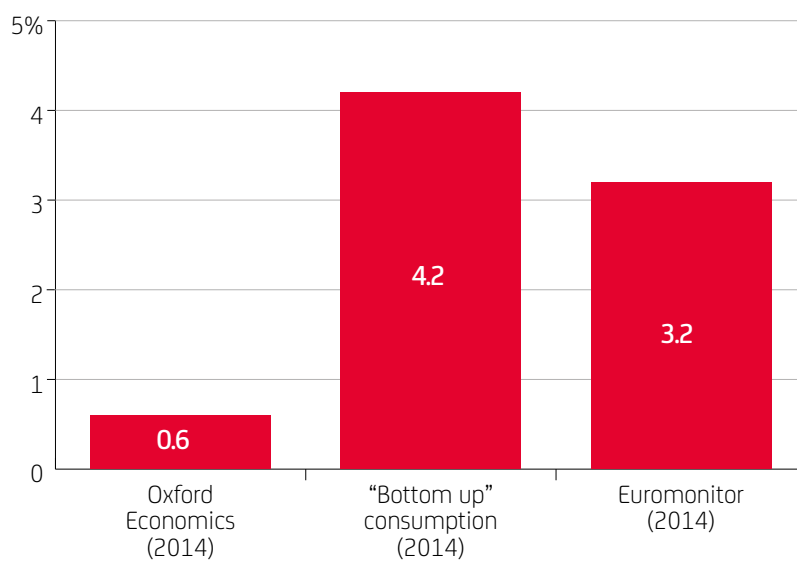


## Annex C: Other estimates

### Thailand

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 4.2%, or around 1.6 billion cigarettes (based on 2014 legal sales). The data on Smoking Prevalence comes from the The Health and Welfare Survey 2013, while average daily consumption comes from consumer survey data for Taiwan for 2012.
Euromonitor Passport, 2015	Euromonitor estimates an illicit share of 3.2% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.

#### Thailand: Alternative estimates of Illicit Consumption

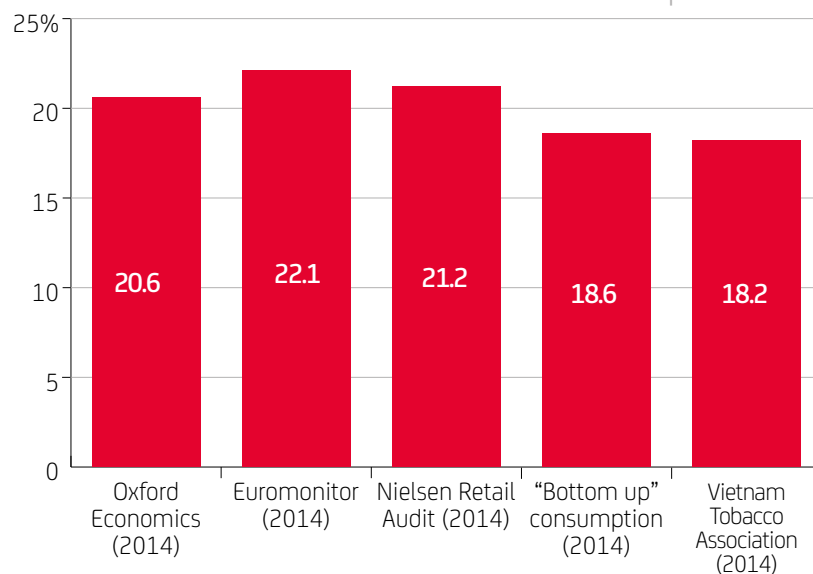


## Annex C: Other estimates

### Vietnam

Source	Comment
Comparing consumption estimates with legal sales (“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 legal sales. This approach yields an estimate for the illicit share of 18.6%, or around 15.9 billion cigarettes (based on 2014 legal sales). The source for annual cigarette consumption per adult is Euromonitor (available via <a href="http://www.tobaccoatlas.org">www.tobaccoatlas.org</a> ).
Vietnam Tobacco Association	The Vietnam Tobacco Association estimates an illicit share of 18.2% in 2014 (15.5 billion cigarettes based on 2014 Legal Domestic Sales).
Euromonitor Passport, 2015	Euromonitor estimated an illicit share of 22.1% in 2014. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Nielsen Retail Audit	PM analysis of 2014 retail audit data suggests an illicit share in Total Consumption of 21.2% in 2014.

#### Vietnam: Alternative estimates of Illicit Consumption





## Annex D: Overview of data sources

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## Annex D: Australia

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual volume of tobacco clearances recorded by the Australian Taxation Office and Border Protection Service (Customs), adjusted to account for tobacco products destroyed following the introduction of plain packaging legislation in 2012. Sourced from the Australian Treasury Department.	—	Includes legal Other Tobacco Products sales.
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Australian market-specific labelling (e.g. health warnings, tax stamps etc.).	Zero Outflows identified from Australia.
<b>Legal Domestic Consumption (LDC)</b>	—	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.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Surveys and KPMG.	Based on Empty Pack Survey plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2014 Q2 and 2014 Q4. An estimate for loose tobacco (Chop-chop) has been added based on the study by KPMG (2015).
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 23.1 billion cigarettes for 2014.

## Annex D: Brunei

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands and PM estimates for other manufacturers based on IDS Retail Audit.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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.
<b>Legal Domestic Consumption (LDC)</b>	—	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.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	The personal import/ duty-free personal import allowance for Brunei is zero.
<b>Non-Domestic Illicit</b>	—	OE estimates.	Difference between LDS and “bottom up” estimates of Total Consumption assumed illicit.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit</b>	—	Total Consumption minus Legal Domestic Consumption.	—
<b>Total Consumption</b>	“Bottom up” estimates of Total Consumption based on average cigarette consumption per capita (Euromonitor) and adult population.	—	The IT Flows Model estimate of consumption is 324 million cigarettes for 2014.

## Annex D: Cambodia

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Total industry volume based on PM and distributor estimates.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 390 million cigarettes, with a large share going to Vietnam and Thailand.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q2 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 2014.

## Annex D: Hong Kong

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Sales of Duty-Paid Tobacco, sourced from the Hong Kong Customs & Excise Department.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 116 million cigarettes, with large majority destined for Macao.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Surveys.	Based on Empty Pack Survey plus OE estimates.	Estimates derived from the average of Empty Pack Surveys conducted in 2014 Q2 and 2014 Q4.
<b>Domestic Illicit</b>	—	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.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	Estimates derived from the average of Empty Pack Surveys conducted in 2014 Q2 and 2014 Q4.
<b>Total Consumption</b>	—	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 4.8 billion cigarettes for 2014.

## Annex D: Indonesia

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 351 million cigarettes, with a large share going to Singapore.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q4 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes. No supplementary analysis of domestic packs in 2014 Empty Pack Survey.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 314.6 billion cigarettes for 2014.

## Annex D: Laos

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Total industry volume based on PM and distributor estimates.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Laos market-specific labelling (e.g. health warnings, tax stamps etc.).	Negligible number of Laos domestic Market Variant cigarettes identified in other Asia-16 markets.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Negligible estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q1 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 3.0 billion cigarettes for 2014.

## Annex D: Macao

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands and PM estimates for other manufacturers based on Nielsen Retail Audit.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 Asia-16 markets, almost entirely in Hong Kong.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Inbound adult smokers assumed to carry one pack (20 cigarettes) per day spent in Macao. Returning domestic adult smokers assumed to carry the full duty-free personal import allowance.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q2 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 1.1 billion cigarettes for 2014.

## Annex D: Malaysia

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Distributor to trade volumes 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.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Malaysian market-specific labelling (e.g. health warnings, tax stamps etc.).	Some Malaysia variant cigarettes are identified in other Asia-16 markets, particularly in Singapore, but Outflows to elsewhere are limited as Malaysia is a relatively high-cost market.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Based on Empty Pack Surveys.	1.4% 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).
<b>Non-Domestic Illicit</b>	Empty Pack Surveys.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the average of three waves of Empty Pack Survey conducted in 2014.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes. Anecdotal evidence suggests the Counterfeit domestic brand cigarettes identified are produced outside Malaysia.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 19.9 billion cigarettes for 2014.



## Annex D: Myanmar

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Total industry volume based on PM estimates.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets .	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Myanmar market-specific labelling (e.g. health warnings, tax stamps etc.).	Negligible Outflows identified from Myanmar.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Negligible estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q4 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 2014.

## Annex D: Pakistan

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM and BAT brands based on industry exchange.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Pakistan market-specific labelling (e.g. health warnings, tax stamps etc.).	Negligible number of Pakistan Market Variant cigarettes identified in other Asia-16 markets.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Negligible estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus Pakistan retail audit and OE estimates.	Estimate based on the 2014 Q1 Empty Pack Survey. Estimated illicitly imported Non-Domestic cigarettes are relatively modest as a share of consumption. Significant Unspecified Market Variant element in Non-Domestic Illicit cigarettes.
<b>Domestic Illicit</b>	Nielsen Retail Audit.	Based on augmentation of retail audit.	Illicit cigarettes in Pakistan are mostly domestically produced with a greater than 80% share for domestically produced illicit in Total Illicit Consumption.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 84.0 billion cigarettes for 2014.

## Annex D: Philippines

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands. Industry volume based on PM estimate and Bureau of Internal Revenues Statement of manufacturers' Ex-Factory Withdrawals, adjusted for PM shipments.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify Philippine domestic variant cigarettes based on market-specific labelling (e.g. health warnings, tax stamps etc.).	Limited Philippine domestic Market Variant cigarettes found in other Asia-16 markets suggest a low amount of Outflows of domestic duty-paid to Asia-16 markets.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets and therefore, be underestimated.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Philippine Department of Tourism and the OE Tourism Model.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Estimates derived from the Empty Pack Survey conducted in 2014 Q2 plus Oxford Economics estimates.	Estimated illicitly imported Non-Domestic cigarettes are relatively low in comparison to Domestic Illicit.
<b>Domestic Illicit</b>	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 the Philippines are believed to be mostly domestically produced (17.6%) based on local market intelligence.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 102.3 billion cigarettes for 2014.

## Annex D: Singapore

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Tobacco Association of Singapore for PM, BAT, and JTI and estimates for other companies based on Nielsen Retail Audit.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Singaporean market-specific labelling (e.g. health warnings, tax stamps etc.).	Negligible Outflows identified from Singapore in other Asia-16 Empty Pack Surveys.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Negligible estimated Outflows of duty-paid cigarettes, so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	This is assumed zero as Singapore prohibits the import of cigarettes without paying duty.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimates derived from the weighted-average of Empty Pack Surveys conducted in 2014 Q2 and 2014 Q4.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 3.3 billion cigarettes for 2014.

## Annex D: South Korea

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Total industry volume based on distributors sales to retailers, provided by Hankook Research.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 420 million cigarettes, with around 90% going to Australia.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q4 Empty Pack Survey.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 89.5 billion cigarettes for 2014.

## Annex D: Taiwan

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands and PM estimates for other companies based on Nielsen Retail Audit.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 markets used to identify the presence of packs bearing Taiwanese market-specific labelling (e.g. health warnings, tax stamps etc.).	Negligible number of Taiwan domestic Market Variant cigarettes identified in other Asia-16 markets.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Negligible estimated Outflows of duty-paid cigarettes so Legal Domestic Sales and Legal Domestic Consumption closely aligned.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the Tourism
<b>Non-Domestic Illicit</b>	Consumer Panel Survey.	Based on Consumer Panel Survey plus OE estimates.	Illicit cigarettes in Taiwan consist mostly of cheap cigarettes (believed to smuggled in from neighbouring markets), but Taiwan Duty-Free are also significant.
<b>Domestic Illicit</b>	—	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.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 38.2 billion cigarettes for 2014.

## Annex D: Thailand

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Actual shipments for PM brands and PM estimates for other manufacturers.	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 Asia-16 markets.
<b>Legal Domestic Consumption (LDC)</b>	—	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.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate based on the 2014 Q4 Empty Pack Survey. Counterfeit products account for around 27.7% of total Illicit Consumption but these are assumed to be produced abroad.
<b>Domestic Illicit</b>	—	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.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 37.6 billion cigarettes for 2014.

## Annex D: Vietnam

	Primary source	Calculation	Comments
<b>Legal Domestic Sales (LDS)</b>	Total industry based on Vietnam Tobacco Association and key company breakdown based on PM estimates, adjusted to reflect loading production driven by the new Graphic Health Warning legislation in 2013.	—	Estimates for Legal Domestic Sales are adjusted to account for substantial trade loading ahead of the introduction of legislation on graphic health warnings in 2013.
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other Asia-16 markets.	Empty Pack Survey data in other Asia-16 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 222 million cigarettes, with a large share going to Laos.
<b>Legal Domestic Consumption (LDC)</b>	—	Legal Domestic Sales minus Outflows of legal sales.	Outflows of duty-paid cigarettes refer only to Outflows to other Asia-16 markets.
<b>Total Non-Domestic Inflows (ND)</b>	—	Sum of Non-Domestic Legal and Non-Domestic Illicit.	—
<b>Non-Domestic Legal (NDL)</b>	—	Estimated using passenger data, smoking rates, and personal import allowance.	Maximum theoretical amount an individual can carry across a border.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Vietnam is a large market for illicit imports. A significant part is classified as Non-Domestic with Unspecified Market Variant and is mostly comprised of Jet and Hero brands.
<b>Domestic Illicit</b>	—	Zero under-declaration of domestically produced cigarettes.	There is assumed to be no under-declaration of domestically produced cigarettes.
<b>Total Illicit Consumption</b>	—	Sum of Non-Domestic Illicit and Domestic Illicit.	—
<b>Total Consumption</b>	—	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 95.8 billion cigarettes for 2014.





**Annex E:**  
Report terms of reference

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# Methodology: Report terms of reference

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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 Oxford Economics (OE) and the International Tax and Investment Center (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 study and the publication of the report “Asia-14: Illicit Tobacco Indicator 2013” in September 2014.
- OE and ITIC will be in charge of the Asia Illicit Trade Assessment Year III (scope: full year 2014), 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 the illicit consumption in terms of volume and level.
  - Estimate the annual government revenue losses from illicit trade.
  - For these estimations and the relevant markets, provide a comparison with the results of the Asia Illicit Trade Assessment Year I and Asia Illicit Trade Assessment Year II.<sup>1</sup>
- On a regional perspective:
  - Provide 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 and Asia Illicit Trade Assessment Year II.

## 1.3 Scope

- Markets covered in the Asia Illicit Trade Assessment Year II.<sup>2</sup>
- Additional markets: Macao and South Korea.

<sup>1</sup>Asia-11: Illicit Tobacco Indicator 2012 (ITIC / OE, September 2013) and Asia-14: Illicit Tobacco Indicator 2013 (ITIC / OE, September 2014).

<sup>2</sup>Australia, Brunei, Cambodia, Hong Kong, Indonesia, Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Taiwan, Thailand, and Vietnam.

#### 1.4 Methodology

- Compile, analyse and validate existing market research on illicit trade covering 2014 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)
- 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 interviews, 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-16), 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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