

# Asia Illicit Tobacco Indicator 2017: Indonesia

---

Prepared by Oxford Economics  
September 2018



OXFORD  
ECONOMICS

# Disclaimer

---

The Asia Illicit Tobacco Indicator 2017 Report (the “Report”) on the illicit tobacco trade in selected Asian markets (including Australia and New Zealand) has been prepared by Oxford Economics (OE). 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.

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 OE. Financial support for the Report was provided by PM. OE assume all responsibility for the Report analysis, findings, and conclusion. The terms of reference under which OE were engaged by Philip Morris International Management SA are detailed in the Asia Illicit Tobacco Indicator 2017 Methodological Overview Report, available to download via the following link [illicittobacco.oxfordeconomics.com](http://illicittobacco.oxfordeconomics.com)

# Indonesia: Legal Domestic Sales

- Legal Domestic Sales in Indonesia are estimated at 290.8 billion in 2017, representing a 0.3% decline in comparison with 2016.<sup>1</sup>
- Three manufacturers (PT. Gudang Garam, PMPT. HM Sampoerna, and PT. Djarum) accounted for more than three-quarters of legal sales in 2017.
- The price of the Most Sold Brand of cigarettes rose by 7.8% to IDR 25,297 (USD 1.90) in 2017, based on a pack of 20 cigarettes.<sup>2</sup> This was underpinned by an increase in the tobacco tax rate applicable to the Most Sold Brand, a machine-made kretek with production volume above 2 billion cigarettes, to IDR 583 per cigarette from IDR 528 (equivalent to a 10.4% increase), as well as an increase in the VAT rate to 9.1% from 8.7% previously.
- Cigarette prices are the third most expensive in nominal terms compared with the other ASEAN markets included in the Asia Illicit Tobacco Indicator Report, based on a pack of 20 of the Most Sold Brand of cigarettes. Only in Malaysia (USD 4.02) and Singapore (USD 9.62) are equivalent cigarette prices above those in Indonesia.
- When considering the affordability of cigarettes as measured by the Relative Income Price,<sup>3</sup> cigarette prices are more expensive in comparison with Malaysia and Singapore. According to this measure, cigarette prices are the second most “expensive” in ASEAN behind Myanmar, costing approximately 5.0% of per capita income to purchase 100 packs of the Most Sold Brand of cigarettes in Indonesia.

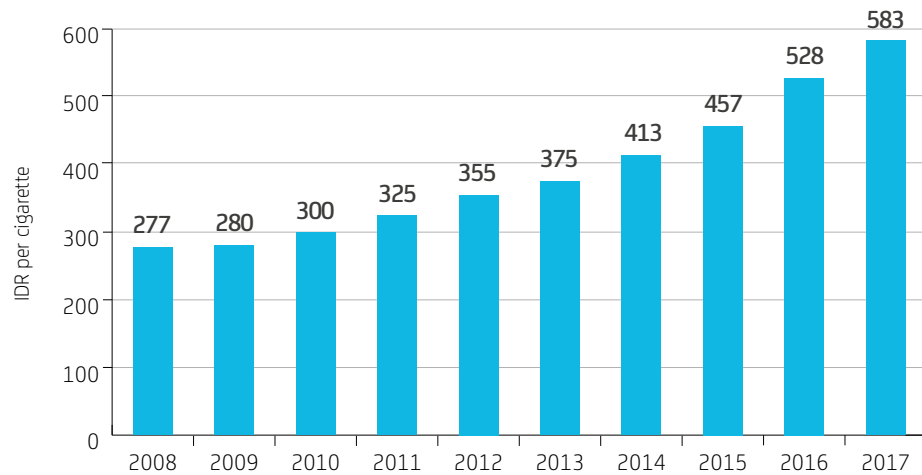


<sup>1</sup>Legal Domestic Sales is based on IMS data, adjusted to reflect the proportion of Domestic Illicit Consumption that includes under-declaration, used, and Counterfeit Excise Tax stamps. As such, our estimate of Legal Domestic Sales is lower than IMS estimates.

<sup>2</sup>Price per pack of the Most Sold Brand in October 2017, based on PM data. In Indonesia, the Most Sold Brand is a machine-made kretek, which comes in the format of 16 cigarettes per pack. The pack price of 20 is therefore derived from a pack of 16 cigarettes.

<sup>3</sup>The Relative Income Price is defined as the proportion, expressed as a percentage, of nominal GDP per capita required to purchase 100 packs of the Most Sold Brand of cigarettes (converted to a pack of 20 where applicable) in a particular market.

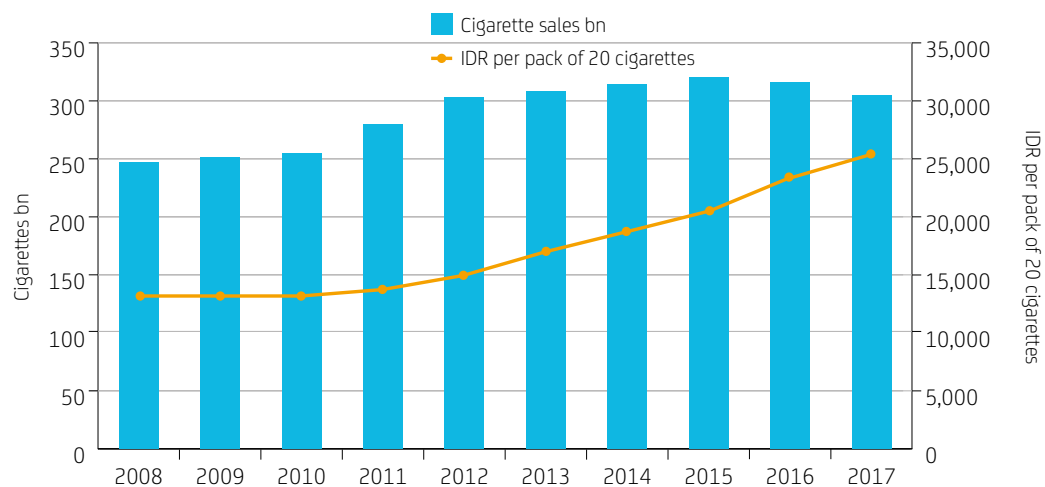
## Indonesia: Tobacco tax applied to cigarettes<sup>4</sup>



Source: Indonesian Directorate General of Customs & Excise

<sup>4</sup>Rate applied in October of each year to 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 based on PM data

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

# Indonesia: Cigarette Consumption

- The results from the Empty Pack Survey and IMS data on Legal Domestic Sales were combined with estimates from the Economics and Business Research and Development Agency of Gadjah Mada University (UGM), to estimate Total Consumption of cigarettes in Indonesia.<sup>1</sup>
- Total Consumption, including legal and illicit, was estimated at 322.1 billion cigarettes in 2017. An estimated 90.2% of this, equivalent to 290.5 billion cigarettes, was composed of Legal Domestic Consumption. The remainder was primarily composed of Domestic Illicit Consumption.
- Non-Domestic Inflows, both legal and illicit, more than doubled in volume in 2017 compared with 2016. However, at 0.7 billion cigarettes, they again accounted for a very small share of Total Consumption (around 0.2%).
- The Empty Pack Survey methodology, which is mostly suited to the measurement of Inflows of Non-Domestic cigarettes, under estimates the true volume of Illicit Consumption in Indonesia. This is due to the presence of domestically manufactured cigarettes where excise and duty has not been paid, or has been under-declared (i.e., cigarette packets with incorrect Excise Tax stamps affixed according to the appropriate tax tier of the cigarettes). As such, our analysis supplements the Empty Pack Survey with the findings of an ongoing biennial academic survey on Illicit Consumption of cigarettes conducted in Indonesia.<sup>2</sup>
- The most recent publicly available version of this survey reported a Domestic Illicit Incidence of 7.0% in 2018.<sup>3</sup> This represents a significant decline in comparison with 2016, the last time the survey was conducted, and indicates that Illicit Consumption has peaked in Indonesia after rising from 6.2% in 2010 to 8.5% in 2012, 11.7% in 2014 and finally 12.1% in 2016.
- When including an estimate for Domestic Illicit Consumption (derived from an average of the 2016 and 2018 research by Satriawan et al.),<sup>4</sup> total Illicit Consumption was estimated at 31.4 billion cigarettes in 2017. This was over one-fifth lower than the previous year, in line with the decline in Domestic Illicit Consumption.
- Illicit Incidence declined to 9.7% in 2017, the first time that it has been in single figures since the first Asia Illicit Tobacco Indicator Report was conducted in 2012. However, despite this significant improvement, the Director General of Customs and Excise in Indonesia continues to challenge his department to reduce Illicit Consumption, targeting an Illicit Incidence rate of below 4%.<sup>5</sup>

## Indonesia: Composition of cigarette consumption

	2012		2013		2014		2015		2016		2017		% change 2016-17
	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	Cigarettes bn	%	
<b>Legal Domestic Consumption (LDC)</b>	<b>282.9</b>	<b>91.3</b>	<b>284.7</b>	<b>89.3</b>	<b>286.2</b>	<b>88.0</b>	<b>293.4</b>	<b>87.8</b>	<b>291.3</b>	<b>87.8</b>	<b>290.5</b>	<b>90.2</b>	<b>-0.3</b>
Legal Domestic Sales (LDS)	283.6	—	285.2	—	286.6	—	293.8	—	291.6	—	290.8	—	-0.3
Outflows of domestic duty-paid cigarettes	-0.7	—	-0.5	—	-0.4	—	-0.4	—	-0.3	—	-0.4	—	24.5
<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>0.8</b>	<b>0.2</b>	<b>0.3</b>	<b>0.1</b>	<b>0.7</b>	<b>0.2</b>	<b>130.8</b>
Non-Domestic Legal (NDL)	0.6	0.2	0.6	0.2	0.7	0.2	0.5	0.2	0.3	0.1	0.2	0.1	-14.4
Non-Domestic Illicit	0.3	0.1	1.5	0.5	0.3	0.1	0.2	0.1	0.0	0.0	0.5	0.2	1,237
<b>Domestic Illicit</b>	<b>26.2</b>	<b>8.5</b>	<b>32.2</b>	<b>10.1</b>	<b>38.1</b>	<b>11.7</b>	<b>39.9</b>	<b>11.9</b>	<b>40.3</b>	<b>12.1</b>	<b>30.9</b>	<b>9.6</b>	<b>-23.3</b>
<b>Total Consumption</b>	<b>310.0</b>	<b>100.0</b>	<b>318.9</b>	<b>100.0</b>	<b>325.3</b>	<b>100.0</b>	<b>334.1</b>	<b>100.0</b>	<b>331.9</b>	<b>100.0</b>	<b>322.1</b>	<b>100.0</b>	<b>-3.0</b>
<b>Total Illicit Consumption</b>	<b>26.5</b>	<b>8.6</b>	<b>33.6</b>	<b>10.6</b>	<b>38.4</b>	<b>11.8</b>	<b>40.1</b>	<b>12.0</b>	<b>40.3</b>	<b>12.2</b>	<b>31.4</b>	<b>9.7</b>	<b>-22.2</b>

Source: UGM and Oxford Economics

<sup>1</sup>The Empty Pack Survey was undertaken in 2017 Q4. 2012 results were based on the 2011 Q2 Empty Pack Survey. Given that a proportion of Domestic Illicit Consumption includes cigarettes with incorrect, used, or Counterfeit Excise Tax stamps affixed, it was necessary to adjust the estimate of Legal Domestic Sales based on IMS data, which likely includes these cigarettes in the calculation. Estimates of the share of Domestic Illicit obtained from Satriawan et al. Economics and Business Research and Development Agency (EBReDA), Universitas Gadjah Mada, Yogyakarta, Indonesia. Unpublished Report, 2018. See Report methodology for more details.

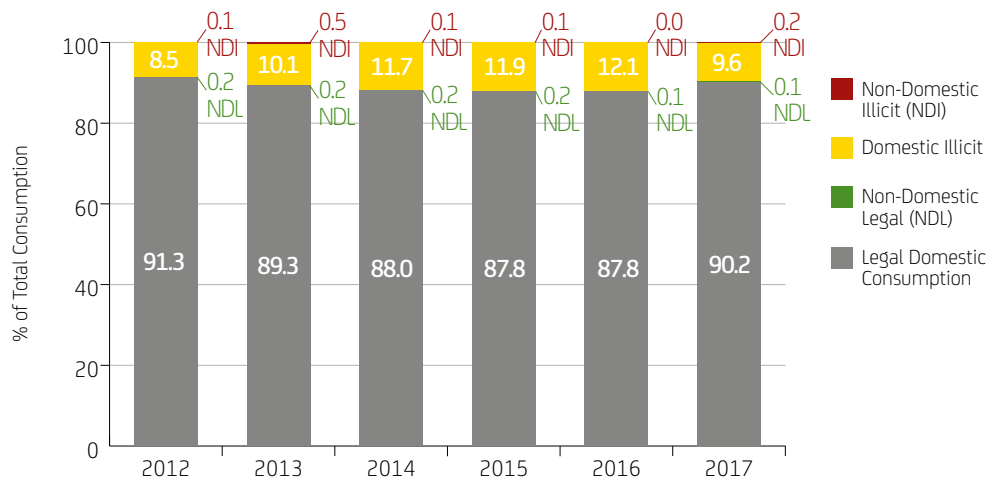
<sup>2</sup>ibid.

<sup>3</sup>Given that the UGM research on Domestic Illicit is biennial, estimates of Domestic Illicit in the intervening years are based on interpolating between years (applicable for 2013, 2015, and 2017 estimates). Estimates for 2015 and 2016 have been revised in this Report based on newly available data on the breakdown of Domestic Illicit Consumption.

<sup>4</sup>See <https://republika.co.id/berita/ekonomi/korporasi/18/08/02/pctqb1383-sri-mulyani-jumlah-rokok-ilegal-turun-drastis>.

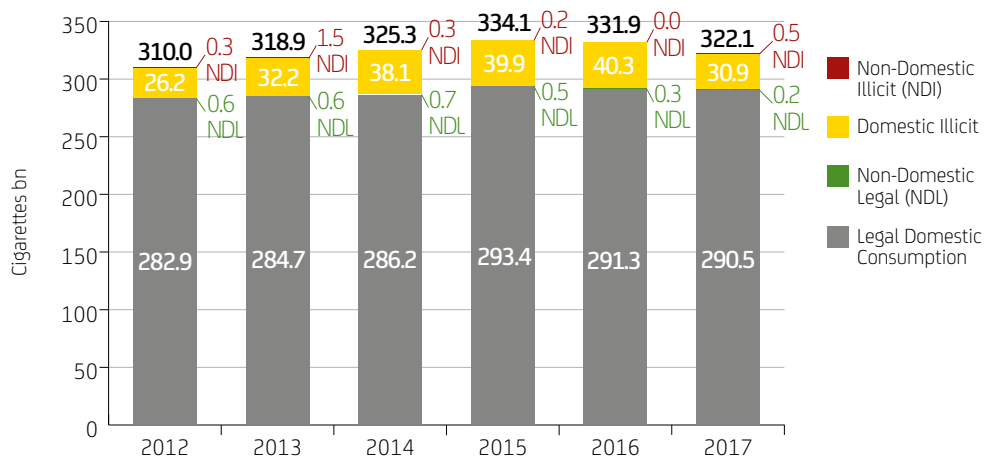
<sup>5</sup>ibid.

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



Source: UGM and Oxford Economics

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



Source: UGM and Oxford Economics

# Indonesia: Government Finances

- Indonesia applies one of the most complex Excise Tax systems for tobacco products in the world, composed of a multi-tiered specific structure where the final rate depended on three variables: the cigarette type (hand-rolled kretek, machine-made kretek, or machine-made white cigarettes), the manufacturer's production volume, and the banderole price.<sup>1</sup> In 2017, there were 12 different tiers for the purpose of defining the relevant Excise Tax liability.
- In recent years however, the government has taken gradual steps to reduce the complexity of this system. This process began in 2012 when there were 19 different tiers. On 1st January 2018, the system was further simplified with the removal of two more tiers, while the Ministry of Finance has outlined a roadmap to further reduce the number of applicable tiers to just 5 by 2021.<sup>2</sup> One of the primary objectives promulgated by Ministry of Finance representatives for simplifying the structure is to reduce incentives for illicit trade (e.g., through the misclassification and under-declaration of Excise Tax liabilities by domestic manufacturers).
- At the same time the government has steadily increased Excise Tax rates. In 2017, the rate was increased by approximately 10.5% based on a weighted average of the different tiers, while a further 10.8% average hike was implemented at the beginning of 2018.
- In addition to Excise Tax, an Earmarked Tax (a regional tax which is equivalent to 10% of Excise Tax) was implemented on 1st January 2014, while VAT is also applied to the banderole price at a rate of 9.1%.
- Government revenues from tobacco taxation rose by an estimated 7.2% to IDR 162.5 trillion in 2017. Revenues are up by nearly 80% over the six-year period of the Asia Illicit Tobacco Indicator research programme. With Legal Domestic Sales registering a slight decline, the rise in government revenues may be underpinned by better compliance of those manufacturers previously under-declaring tobacco tax liabilities in previous years, in addition to the rise in the Excise Tax rate.
- The Tax Loss from Illicit Consumption was estimated at IDR 13.3 trillion in 2017. This represents an increase of 3.5% in comparison with the previous year, with higher Excise Tax rates more than offsetting the decline in the volume of illicit cigarettes consumed.

## Indonesia: Actual government revenues and estimated Tax Loss<sup>3</sup>

	2012		2013		2014		2015		2016		2017		% change in local currency 2016-17
	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	IDR tn	USD bn	
Actual revenue from tobacco tax duties on tobacco	90.5	9.6	103.6	9.9	112.5	9.5	153.4	11.5	151.6	11.4	162.5	12.1	7.2%
Estimated number of illicit cigarettes purchased (cigarettes bn)	26.5		33.6		38.4		40.1		40.3		31.4		-22.2%
<b>Estimated Tax Loss from Illicit Consumption</b>	<b>3.7</b>	<b>0.4</b>	<b>6.1</b>	<b>0.6</b>	<b>8.3</b>	<b>0.7</b>	<b>10.9</b>	<b>0.8</b>	<b>12.9</b>	<b>1.0</b>	<b>13.3</b>	<b>1.0</b>	<b>3.5%</b>
Lost tobacco tax revenue	3.1	0.3	5.1	0.5	7.0	0.6	9.1	0.7	10.8	0.8	11.3	0.8	4.7%
Lost VAT tax revenue	0.6	0.1	1.0	0.1	1.3	0.1	1.7	0.1	2.1	0.2	2.0	0.2	-3.0%
<b>Excise Tax Loss as % of potential total tobacco tax revenues</b>	<b>3.3%</b>		<b>4.7%</b>		<b>5.9%</b>		<b>5.6%</b>		<b>6.6%</b>		<b>6.5%</b>		

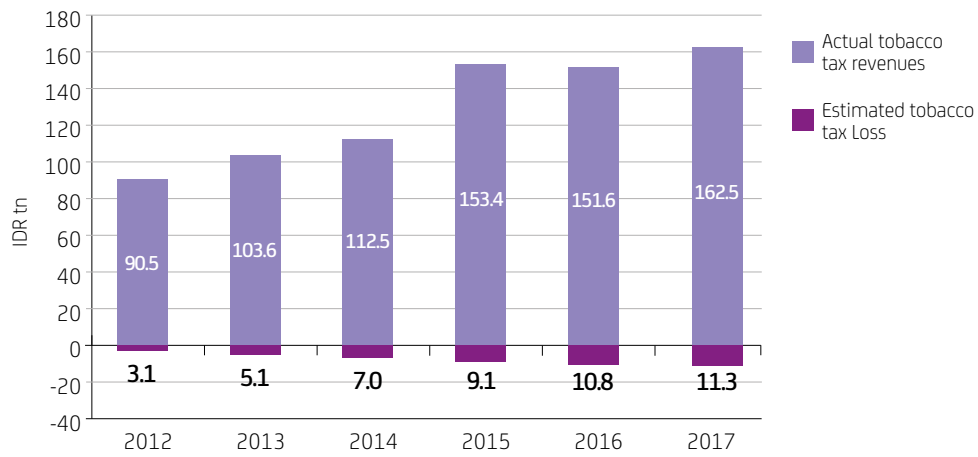
Source for government revenue data: Indonesian Ministry of Finance and Oxford Economics based on PM data. Includes Earmarked Taxes.

<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.

<sup>2</sup>Ministry of Finance Decree No. 146/2017 ([www.jdih.kemenkeu.go.id/fullText/2017/146-PMK.010-2017Per.pdf](http://www.jdih.kemenkeu.go.id/fullText/2017/146-PMK.010-2017Per.pdf))

<sup>3</sup>These estimates represent a lower-bound estimate of the true value of Excise Tax Loss in Indonesia. Analysis by Satriawan et al. (2018) indicate a large portion of Domestic Illicit Consumption is composed of under-declaration of Excise Tax liability by domestic manufacturers. However, the data is not available to estimate the level of tax gap for these cigarettes (i.e., the difference between the actual tax liability of cigarettes and the tax paid according to the inappropriate Excise Tax stamp affixed). We therefore exclude this proportion of Domestic Illicit Consumption from the analysis of Excise Tax Loss, including only those cigarettes packets with used, counterfeit, or no Excise Tax stamps present.

## Indonesia: Actual government revenues and estimated tobacco tax Loss

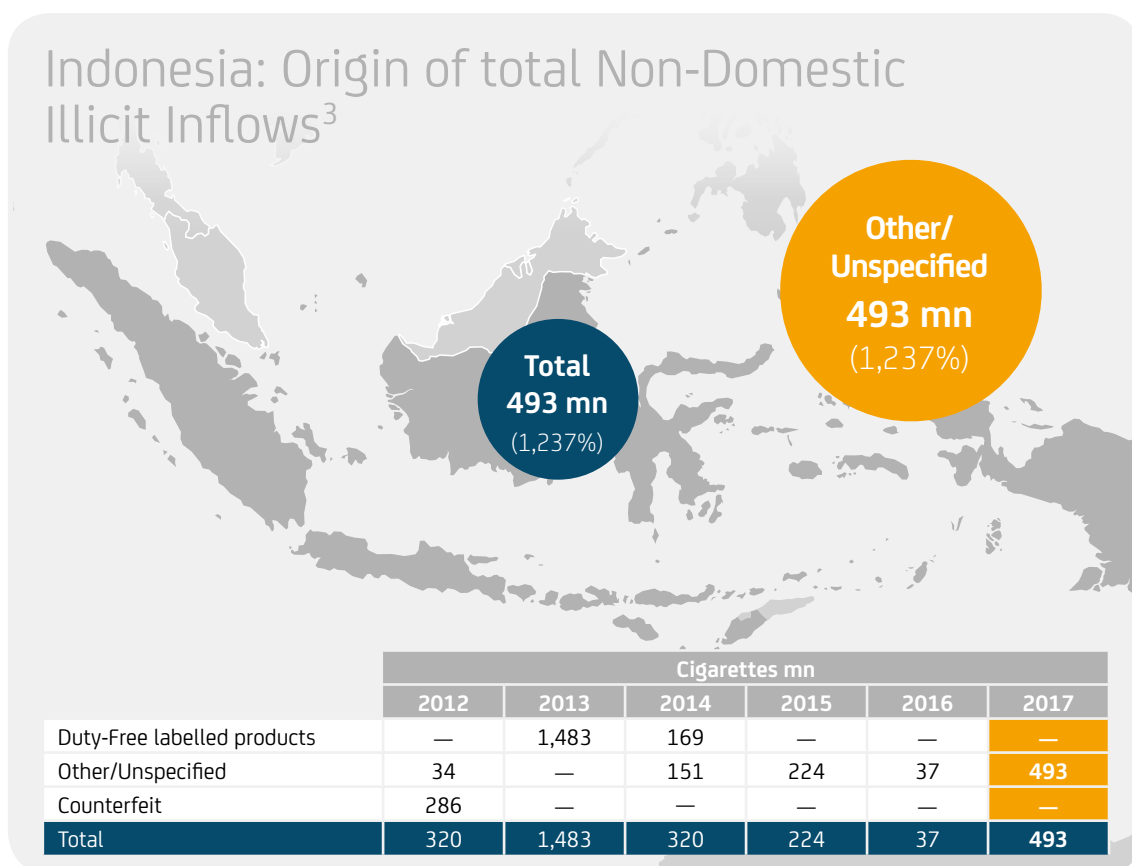


Source: Indonesian Ministry of Finance and Oxford Economics based on PM data



# Indonesia: Trade Flows

- Illicit Consumption of cigarettes in Indonesia is almost entirely composed of Domestic Illicit. This is driven by the complex Excise Tax system, which classified cigarettes into 12 different tax tiers in 2017 according to the cigarette type, production level, and price, providing the opportunity and incentive for domestic manufacturers to under-declare their Excise Tax liabilities to authorities.
- By comparison, Non-Domestic Illicit represented a very small proportion of total Illicit Consumption, equivalent to just over 1.5%. Since the beginning of the Asia Illicit Tobacco Indicator research programme, the share of Non-Domestic Illicit has never risen above 5% of total Illicit Consumption.
- Nearly all Non-Domestic Illicit Inflows identified were composed of Unspecified Market Variant cigarettes in 2017.<sup>1</sup>
- Based on analysis of the Empty Pack Survey, the highest level of Non-Domestic Incidence was found in Pekanbaru in central Sumatra (4.1%), followed by Surakarta in central Java (3.7%). Both cities experienced a significant increase in Non-Domestic Inflows in comparison with 2016.
- In recent years, enforcement against illicit cigarettes has become a priority for the Directorate General of Customs and Excise, dedicating increased resources towards surveillance and monitoring, market research, and active enforcement. As a consequence, seizures have steadily increased from 635 reported cases in 2013 to 2,200 in 2016. And according to public statements made by the Director General of Customs and Excise, the 2016 figures were surpassed in the first nine months of 2017.<sup>2</sup>
- Customs officials have also recognised the need to improve communication with the wider community, lending their support to an industry-led initiative aimed at increasing public awareness of the social and economic consequences of Illicit Consumption of tobacco, targeting both retailers and the general public.



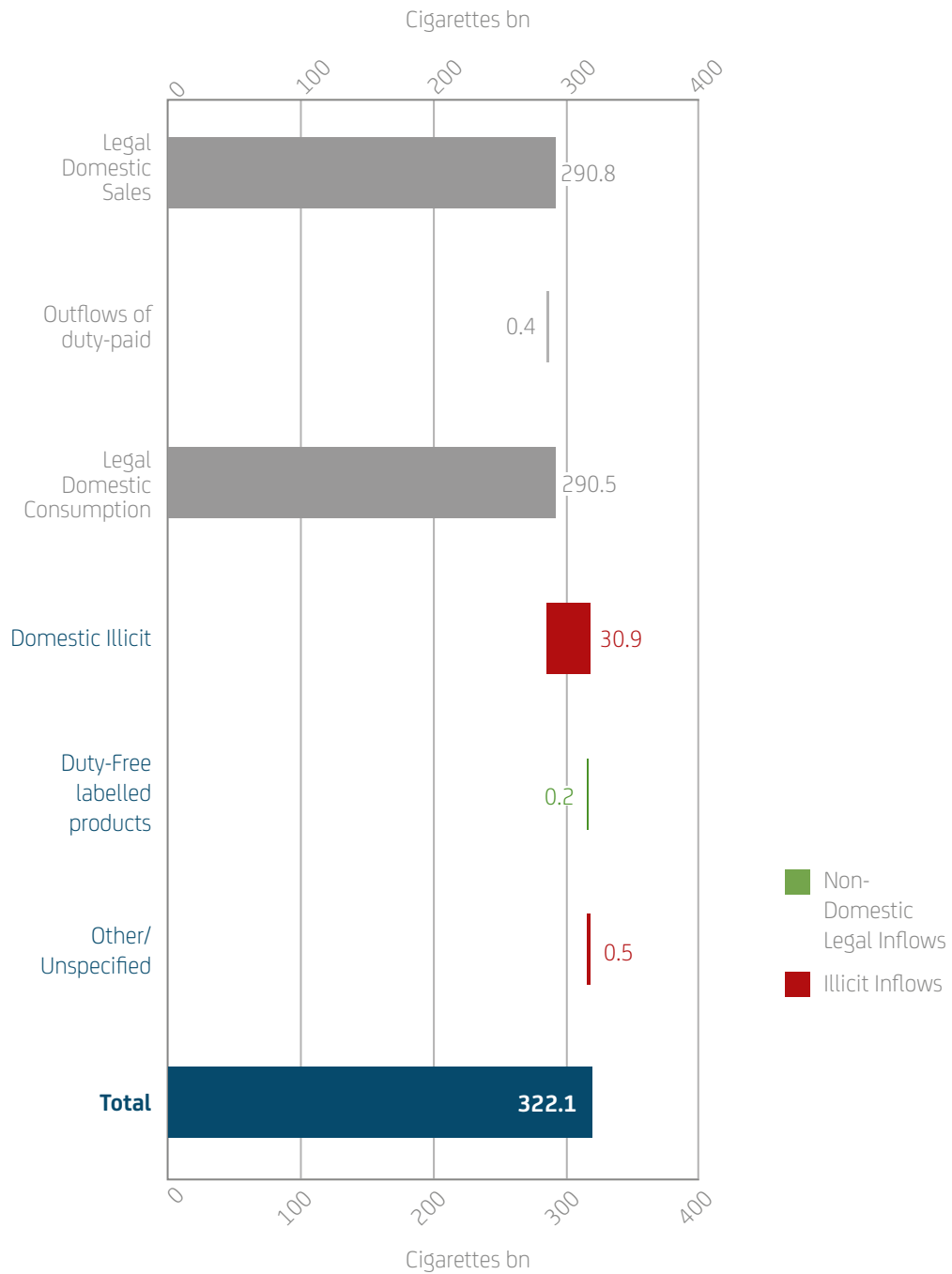
Source: IT Flows Model and Oxford Economics

<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>See <http://ekonomi.metrotvnews.com/makro/ybjM8XjN-penindakan-rokok-ilegal-2017-melampaui-target-bea-cukai>

<sup>3</sup>Figures in brackets reflect % change from 2016.

## Indonesia: Consumption breakdown 2017

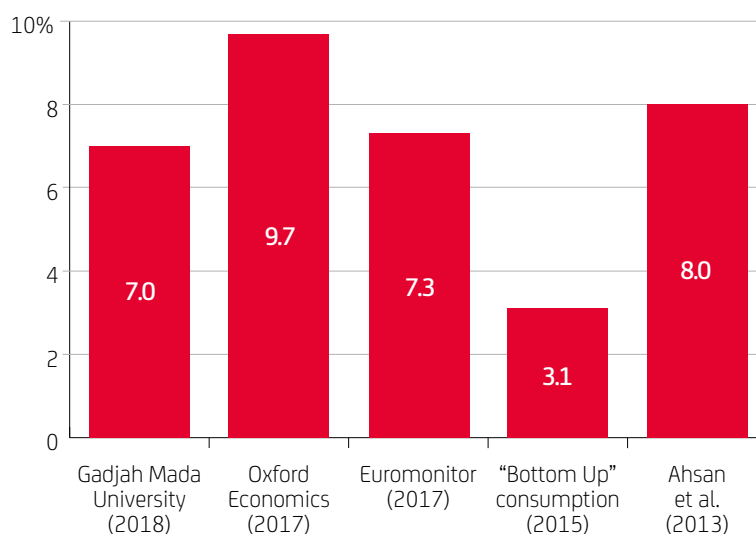


Source: IT Flows Model, UGM, and Oxford Economics

# Indonesia: Other Estimates

Source	Comment
Comparing consumption estimates with LDC (“bottom up” approach)	Using data on average annual cigarette consumption per adult (age 15 and above), plus UN population data, a “bottom up” estimate of cigarette consumption can be made, which can then be compared with LDC. This approach yields an estimate for the Illicit Incidence of 3.1%, or around 9.4 billion cigarettes (based on 2015 LDC). The source Smoking Prevalence is the WHO Report on the global tobacco epidemic, 2017 (based on the WHO age-standardised daily Smoking Prevalence in 2015), and average daily cigarette consumption comes from consumer survey data for 2017.
Euromonitor Passport, 2018	Euromonitor estimates an Illicit Incidence of 7.3% in 2017. The methodology, sampling, and coverage are unknown, so it is difficult to assess the robustness of this estimate.
Satriawan et al. Economics and Business Research and Development Agency (EBReDA), Universitas Gadjah Mada, Yogyakarta, Indonesia. Unpublished Report, 2018	Satriawan et al. (2018) estimate an Illicit Incidence of 7.04% in 2018 (via <a href="https://republika.co.id/berita/ekonomi/korporasi/18/08/02/pctqb1383-sri-mulyani-jumlah-rokok-ilegal-turun-drastis">https://republika.co.id/berita/ekonomi/korporasi/18/08/02/pctqb1383-sri-mulyani-jumlah-rokok-ilegal-turun-drastis</a> ), based on the identification of Excise Tax stamp violations in a sample of cigarette packets. The sampling methodology involved the forensic analysis of newly purchased cigarette packets from wholesale, large, and small retail vendors, located in a randomly selected sample of both rural and urban areas within 16 provinces in Indonesia.
Ahsan et al. “Illicit cigarette consumption and government revenue loss in Indonesia. Globalization and Health 2014”, Retrieved via <a href="http://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-014-0075-7">http://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-014-0075-7</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 Incidence of 8% in 2013.

## Indonesia: Alternative estimates of Illicit Consumption



# Indonesia: Data Sources

	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, adjusted for the proportion of Domestic Illicit Consumption where the incorrect Excise Tax stamp was affixed (under-declaration, used, and Counterfeit), based on research by Satriawan, et al. (2018).	—	—
<b>Outflows of domestic duty-paid cigarettes</b>	Empty Pack Survey data in other markets covered in this Report.	Empty Pack Survey data in other markets used to identify the presence of packs bearing Indonesian market-specific labelling (e.g., health warnings, tax stamps etc.).	Outflows of domestic duty-paid cigarettes to other markets are estimated at around 369 million cigarettes, with around two-thirds identified in 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 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 passenger duty-free personal import allowance.	Maximum theoretical amount an individual can carry across a border. Passenger data from the UNWTO and OE Tourism Model.
<b>Non-Domestic Illicit</b>	Empty Pack Survey.	Based on Empty Pack Survey plus OE estimates.	Estimate derived from the 2017 Q4 Empty Pack Survey. See Report methodology for more details.
<b>Domestic Illicit</b>	—	Satriawan et al. Economics and Business Research and Development Agency (EBReDA), Universitas Gadjah Mada, Yogyakarta, Indonesia. Unpublished Report, 2018.	The large majority of illicit cigarettes are domestically manufactured in Indonesia.
<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 322.1 billion cigarettes for 2017.
<b>Total Tax Loss</b>	—	Total Illicit Consumption (excluding Domestic Illicit Consumption resulting from under-declaration of tobacco tax where the data is not sufficient to estimate the tax gap) multiplied by the weighted average tax rates (Excise Tax and VAT).	See Report methodology for more details.

**OXFORD ECONOMICS  
(HEADQUARTERS)**

Abbey House, 121 St Aldates  
Oxford, OX1 1HB, UK

**Email:** [mailbox@oxfordeconomics.com](mailto:mailbox@oxfordeconomics.com)

**Tel:** +44 1865 268900

**LONDON**

Broadwall House, 21 Broadwall  
London, SE1 9PL, UK

**NEW YORK**

5 Hanover Square, 8th Floor  
New York, NY 10004, USA

**SINGAPORE**

6 Battery Road  
#38-05  
Singapore 049909

[illicitobacco.oxfordeconomics.com](mailto:illicitobacco.oxfordeconomics.com)

[www.oxfordeconomics.com](http://www.oxfordeconomics.com)