

Policy Brief

Raising and Simplifying the Cigarette Excise Tax in Indonesia: Simulated Revenue Gains and Public Health Benefits

The main objective of the cigarette excise tax simulation is to provide evidence on the potential impacts of future excise tax reform on cigarette consumption, government revenue, smoking prevalence, and the number of premature deaths averted due to smoking. The simulation results aim to help policymakers anticipate the potential “what-if” outcomes of alternative cigarette tax reform scenarios.

As of 2025, the Indonesian government imposes three tax components on a pack of cigarettes: (i) excise taxes, calculated by multiplying the excise tax tariff per stick by the number of sticks per pack; (ii) local taxes, set at 10% of total excise taxes per pack; and (iii) value-added tax (VAT) on tobacco products, set at 9.9%. Currently, excise tax tariffs are structured into eight tiers, based on cigarette type (white cigarettes and kreteks—traditional Indonesian clove cigarettes), production method (machine-rolled or hand-rolled), and manufacturers’ production scale.

The following are three suggested policy reform scenarios:

- 1 Uniform annual increases:** Increasing excise tax tariffs by 10% per year for machine-rolled cigarettes and by 20% per year for hand-rolled cigarettes over the next two years.
- 2 Machine-rolled tier simplification:** Simplifying the excise structure by merging machine-rolled cigarette tiers (SPM 1 with SKM 1, and SPM 2 with SKM 2) in the first year, followed by annual excise tax increases of 10% for machine-rolled cigarettes and 20% for hand-rolled cigarettes in both the first and second years.
- 3 Hand-rolled tier simplification:** Simplifying the excise structure by merging hand-rolled cigarette tiers (SKT/SPT 1A with SKT/SPT 1B, and SKT/SPT 2 with SKT/SPT 3) in the first year, followed by annual excise tax increases of 10% for machine-rolled cigarettes and 20% for hand-rolled cigarettes in both the first and second years.

The simulation assumes that the local tax rate (10%) and VAT (9.9%) remain constant. It also assumes that excise tax increases induce consumer down-trading from higher-taxed to lower-taxed cigarette tiers. The effects of price changes are simulated using own-price, cross-price, and income elasticities, assuming full pass-through of taxes to consumers. Net-of-tax prices are assumed to increase in line with inflation. The results of each scenario are compared both with one another and with a no-tax-reform scenario, in which neither the excise tax structure nor tariff are changed. The simulation model is constructed based on the approach developed by the Economics for Health team at Johns Hopkins University¹.

Results

Impact of excise tariffs increases and tier simplification on revenues

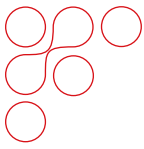
Based on the assumed changes in specific cigarette excise taxes from 2025 to 2027, **Figure 1** and **Figure 2** present the projected impacts on prices, consumption, and government revenue from cigarettes. Among the three proposed scenarios, Scenario 3, which simplifies the tier structure from eight to six by eliminating two hand-rolled cigarette tiers, generates the largest increases in cigarette prices, the greatest reductions in consumption, and the highest revenue gains. The second-largest impact is observed under Scenario 2, which simplifies the machine-rolled cigarette tiers. By contrast, the smallest effect arises under Scenario 1, which applies a 10% excise increase for machine-rolled cigarettes and a 20% increase for hand-rolled cigarettes without structural reform.

Compared with these reform scenarios, the no-tax-reform scenario shows virtually no change. Cigarette prices, consumption, and government revenue remain essentially unchanged, with the small increase in prices, slight decline in consumption, and minimal changes in revenue largely reflecting model assumptions and limitations rather than meaningful policy effects. In Indonesia, stagnant smoking prevalence, difficulties in meeting revenue targets, and persistent cigarette affordability are largely driven by wide gaps across excise tiers². These gaps create substantial price differentials between products, allowing smokers to downtrade to cheaper alternatives when taxes rise³. Narrowing these gaps by raising excise tax tariffs in lower-tier

¹ FJ. Tesche et al., *Modeling the Impacts of Tobacco Taxes: A Tobaccconomics Toolkit* (Tobaccconomics, Institute for Health Research and Policy, University of Illinois Chicago, n.d.), htantargolongantps://www.economicsforhealth.org/

² Rong Zheng, “Cigarette Affordability in Indonesia: 2002 - 2017,” *World Bank Organization*, ahead of print, May 2018, <http://hdl.handle.net/10986/3002>

³ Vid Adrison and Estelle Dauchy, “The Impact of Tax and Price Reforms on Companies’ Prices in a Complex Cigarette Tax System,” *Applied Economics* 56, no. 57 (2024): 7892–911, <https://doi.org/10.1080/00036846.2023.2289905>; Risky Hartono et al., *Strategi Pengendalian Prevalensi Perokok: Tantangan Downtrading & Alternatif Produk* (PKJS-UI, 2025), https://protc.id/wp-content/uploads/2025/10/Policy-Brief-PKJS-UI_Strategi-Pengendalian-Prevalensi-Perokok_-Tantangan-Downtrading-dan-Alternatif-Produk.pdf.



hand-rolled categories by a higher margin than in machine-rolled categories reduces opportunities for downtrading. This leads to noticeable declines in consumption while simultaneously increasing government revenue. Simplifying the excise structure further amplifies these effects by compressing price dispersion and strengthening the overall effectiveness of tobacco tax policy.

Figure 1. Impact of excise tax tariff increases and tier simplification on average price and consumption

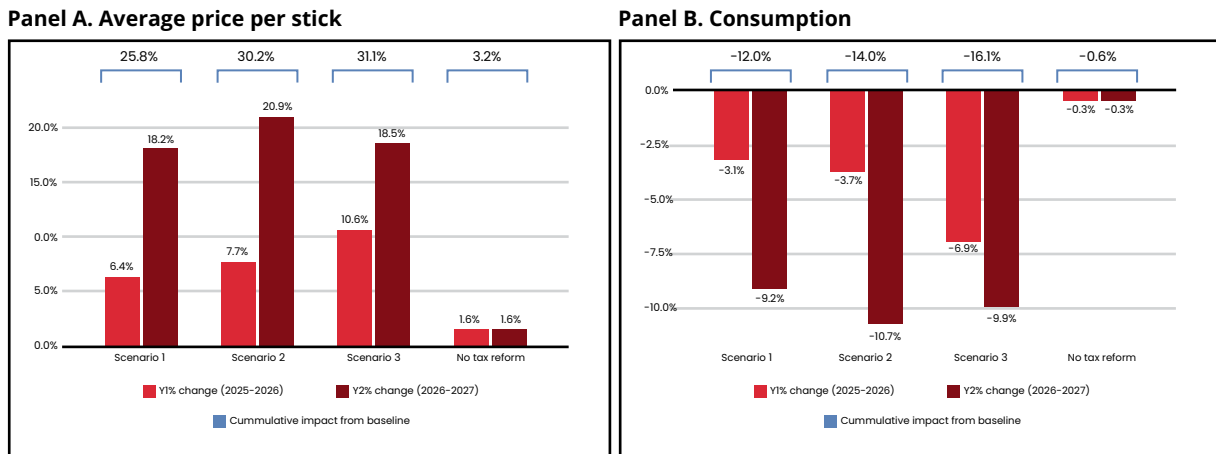


Figure 1 presents the projected impact of excise tax increases and tier simplification on average cigarette prices (Panel A) and consumption (Panel B) under three reform scenarios and no tax reform scenario over two consecutive years (2025-2026; Y1 and 2026-2027; Y2).

In Panel A, average cigarette prices would increase under all scenarios. Between 2025 and 2026, average prices would rise by 6.4% under Scenario 1 (IDR 100 per stick), 7.7% under Scenario 2 (IDR 120 per stick), and **10.6% under Scenario 3 (IDR 166 per stick)**. Between 2026 and 2027, average price increases would accelerate to 18.2% (IDR 302 per stick), 20.9% (IDR 351 per stick), and **18.5% (IDR 320 per stick)** under Scenarios 1, 2, and 3, respectively, with **Scenario 3 producing the largest cumulative average price increase** over the two-year period. Under the no-tax-reform scenario, average cigarette prices are projected to increase by 1.6% annually, driven solely by the inflation assumption built into the model.

In Panel B, cigarette consumption would decline across all scenarios. From 2025 to 2026, consumption would decrease by 3.1% under Scenario 1 (9.8 billion sticks), 3.7% under Scenario 2 (11.9 billion sticks), and **6.9% under Scenario 3 (21.9 billion sticks)**. Between 2026 and 2027, the reductions would deepen to **9.2% (28.1 billion sticks)**, 10.7% (32.8 billion sticks), and 9.9% (29.2 billion sticks), respectively, with **Scenario 3 yielding the greatest cumulative reduction in consumption** over the two years. Under the no-tax reform scenario, consumption is projected to decline by 0.3% in both periods, which is driven by the inflation and price elasticity assumption of the model.

Figure 2. Impact of excise tax tariff increases and tier simplification on excise and total government revenue from cigarettes (including local tax and VAT)

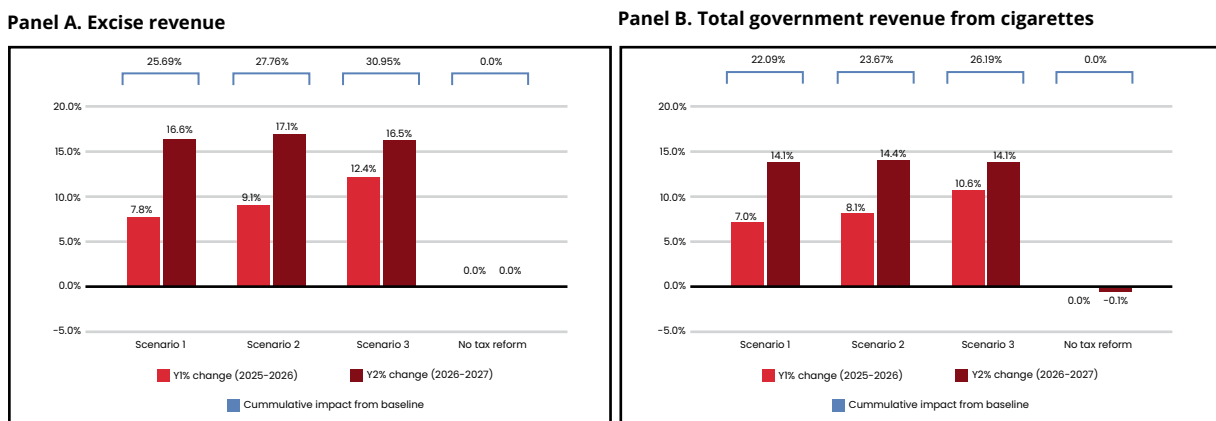
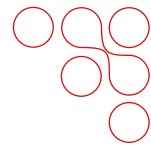


Figure 2 presents the projected percentage changes in cigarette excise revenue (Panel A) and total government revenue from cigarettes, including excise tax, local tax, and VAT (Panel B), under three hypothetical reform scenarios over two consecutive years (2025-2026; Y1 and 2026-2027; Y2).



In Panel A, all scenarios would generate positive growth in excise revenue. Between 2025 and 2026, excise revenue would increase by 7.8% under Scenario 1 (IDR 15.33 trillion), 9.1% under Scenario 2 (IDR 17.7 trillion), and 12.4% under **Scenario 3 (IDR 24.13 trillion)**. Between 2026 and 2027, revenue growth would rise further to 16.6% (IDR 35.1 trillion), 17.1% (IDR 36.5 trillion), and **16.5% (IDR 36.3 trillion)** under Scenarios 1, 2, and 3, respectively. Across the two periods, **Scenario 3 would accumulate the highest total excise revenue.**

In Panel B, total government revenue would also increase under all scenarios. From 2025 to 2026, total revenue would rise by 7.0% under Scenario 1 (IDR 16.8 trillion), 8.1% under Scenario 2 (IDR 19.4 trillion), and **10.6% under Scenario 3 (IDR 25.2 trillion)**. Between 2026 and 2027, the projected increases would reach **14.1% (IDR 36.2 trillion)**, 14.4% (IDR 37.2 trillion), and 14.1% (IDR 37.4 trillion), respectively. Overall, **Scenario 3 would yield the greatest cumulative government revenue** across the projection period. In contrast, under the no-tax-reform scenario, excise revenue would remain stagnant at 0.0% growth in both periods (Panel A). Total government revenue would similarly show no growth in Y1, and would marginally decline by 0.1% in Y2 due to market share changes driven by price, cross-price, and income elasticities (Panel B).

Public health benefits of excise tax tariffs increase and tier simplification

Consistent with the projected changes in consumption and government revenue, Scenario 3, which combines excise tax increases with tier simplification for hand-rolled cigarettes, would generate the greatest public health gains. Under this scenario, adult smoking prevalence would decline by 1.6%, with an estimated 292,324 premature deaths averted.

Scenarios 2 and 1 would yield similar but more modest effects, with smoking prevalence declining by 1.1% and 0.9%, and approximately 211,581 and 176,710 premature deaths averted, respectively. By contrast, the no-tax-reform scenario would not deliver public health gains, as smoking prevalence remains largely unchanged and no premature deaths are averted.

Policy recommendations

1. Increase cigarette excise taxes while simplifying the tax structure.

Indonesia should continue to raise cigarette excise tax tariffs and progressively simplify the multi-tier excise system. Simplification reduces opportunities for down-trading and strengthens the revenue and public health benefits of tax increases.

2. Prioritize larger excise tax increases for hand-rolled cigarettes.

Excise tax increases for hand-rolled cigarettes should be higher than those for machine-rolled products, given their high affordability and role in facilitating down-trading, which weakens incentives to quit smoking. Initial tier simplification efforts should focus on hand-rolled cigarette categories.

3. Consider comprehensive tier simplification to maximize impact.

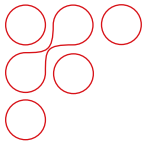
Starting excise tier simplification with hand-rolled cigarettes, followed by further consolidation across machine-rolled tiers, can deliver stronger and more sustained reductions in consumption while increasing government revenue.

4. Strengthen tobacco control through complementary non-price measures.

Excise tax reforms should be accompanied by robust non-price tobacco control policies, including implementation of smoke-free environments, plain packaging, stricter marketing and advertising restrictions, and enhanced enforcement to eliminate illicit trade.

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Supplementary Materials to Policy Brief:

Raising and Simplifying the Cigarette Excise Tax in Indonesia: Simulated Revenue Gains and Public Health Benefits

1. Baseline and suggested excise tax tariff for 2025–2027

The following **Table 1.1** presents the baseline excise tax tariff per stick in Indonesia as of 2025, along with the proposed tariff levels for the subsequent two years under three suggested excise tax reform scenarios.

Table 1.1. Cigarette excise tax tariff 2025-2027 (IDR per stick)

Tier segment	2025 (baseline)	2026	2027
Scenario 1			
SPM 1	1.336	1.470	1.617
SKM 1	1.231	1.354	1.490
SPM 2	794	873	961
SKM 2	746	821	903
SKT/SPT 1A	483	580	696
SKT/SPT 1B	378	454	544
SKT/SPT 2	223	268	321
SKT/SPT 3	122	146	176
Scenario 2			
SPM 1	1.336	1.470	1.617
SKM 1	1.231	1.470	1.617
SPM 2	794	873	961
SKM 2	746	873	961
SKT/SPT 1A	483	580	696
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Abbreviation:

- SKM : *Sigaret Kretek Mesin* (machine-made clove cigarettes)
- SKT : *Sigaret Kretek Tangan* (hand-rolled clove cigarettes)
- SPM : *Sigaret Putih Mesin* (machine-made white cigarettes, without cloves)
- SPT : *Sigaret Putih Tangan* (hand-rolled white cigarettes, without cloves)

2. Simulation Results: Projected Price, Consumption, and Government Revenue

Tabel 2.1 presents a summary of simulation results showing the projected average cigarette price per stick, total quantity consumed, excise revenue, and total government revenue from cigarettes (Including Excise, Local Tax, and VAT) in Indonesia from 2025 to 2027 under three hypothetical policy scenarios combining excise tax increases and tier simplification as well as a no excise tax reform scenario.

Table 2.1 Price, Consumption, and Revenue Projections

	Average price per stick	Total Quantity Consumed (billion sticks)	Excise Revenue (IDR million)	Total Revenue (IDR million)
Scenario 1				
2025 (baseline)	Rp1.561	317,8	Rp195.357	Rp239.995
2026	Rp1.661 (↑6,4%)	308,1 (↓3,1%)	Rp210.685 (↑7,8%)	Rp256.777 (↑7,0%)
2027	Rp1.963 (↑18,2%)	279,9 (↓9,2%)	Rp245.750 (↑16,6%)	Rp292.955 (↑14,1%)
Scenario 2				
2025 (baseline)	Rp1.561	317,8	Rp195.357	Rp239.995
2026	Rp1.681 (↑7,7%)	305,9 (↓3,7%)	Rp213.083 (↑9,1%)	Rp259.402 (↑8,1%)
2027	Rp2.032 (↑20,9%)	273,1 (↓10,7%)	Rp249.623 (↑17,1%)	Rp296.640 (↑14,4%)
Skenario 3				
2025 (baseline)	Rp1.561	317,8	Rp195.357	Rp239.995
2026	Rp1.727 (↑10,6%)	295,9 (↓6,9%)	Rp219.489 (↑12,4%)	Rp265.513 (↑10,6%)
2027	Rp2.047 (↑18,5%)	266,7 (↓9,9%)	Rp255.797 (↑16,5%)	Rp302.953 (↑14,1%)
No excise tax reform scenario				
2025 (baseline)	Rp1.561	317,8	Rp195.357	Rp239.995
2026	Rp1.585 (↑1,6%)	319,9 (↓0,3%)	Rp195.358 (0,0%)	Rp235.119 (↓0,0%)
2027	Rp1.610 (↑1,6%)	315,9 (↓0,3%)	Rp195.314 (0,0%)	Rp234.970 (↓0,1%)

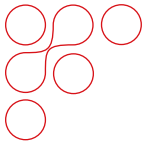
3. Model input and assumptions

3.1 Revenue projection

1. Consumption

Baseline cigarette consumption data were taken from the Ministry of Finance's 2024 figures on total cigarette production (in sticks) and subsequently disaggregated by type and tier based on their respective market shares.

Cigarette type	Quantity (in 000 sticks)	Market share
SPM 1	3.175.000	1,0%
SPM 2	6.350.000	2,0%
SKM 1	97.472.500	30,7%
SKM 2	70.167.500	22,1%
SKT/SPT 1A	18.732.500	5,9%
SKT/SPT 1B	40.640.000	12,8%



Cigarette type	Quantity (in 000 sticks)	Market share
SKT/SPT 2	14.605.000	4,6%
SKT/SPT 3	66.675.000	21,0%
Total	317.817.500	100%

2. Cigarette price

Baseline price data were obtained from Vital Strategies' 2023 cigarette price monitoring survey. Prices from 2023 were adjusted to 2024 levels using an 8.9% average market selling price increase (*Harga Transaksi Pasar*, HTP), based on the Survey of Selected Goods and Services from Statistic Indonesia (*Badan Pusat Statistik*, BPS), and subsequently adjusted to 2025 prices using the Consumer Price Index (CPI).

Cigarette type	Market price in 2025 (<i>Harga Transaksi Pasar</i> , HTP)
SPM 1	Rp2.199
SPM 2	Rp1.591
SKM 1	Rp2.175
SKM 2	Rp1.370
SKT/SPT 1A	Rp1.837
SKT/SPT 1B	RP1.444
SKT/SPT 2	Rp1.187
SKT/SPT 3	Rp898

3. Excise tax per stick

The excise tax per stick was derived from the Minister of Finance Regulation of the Republic of Indonesia Number 97 of 2024, with an additional local cigarette tax equivalent to 10% of the total excise tax rate, and a value-added tax (VAT) on tobacco products of 9.9% per stick.

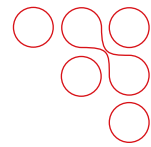
4. Price and cross-price elasticities

The own-price and cross-price elasticity estimates were drawn from a 2023 CISDI study⁴, which provides values at the product-type level (i.e., kretek and white cigarettes). As these estimates do not capture tier-level variation due to data limitations, they were assumed and calibrated using market share data from the Ministry of Finance, incorporating relevant economic assumptions to derive tier-specific elasticity estimates.

For cross-price elasticity, while the ideal approach would involve constructing a full substitution matrix across all cigarette types, data limitations restricted the analysis to substitutions between adjacent tiers only—for example, SKM 1 with SKM 2, SKM 2 with SKM 3, and so forth.

Cigarette type	Own-price elasticity	Cross-price elasticity
SPM 1	-0,13	0,05
SPM 2	-0,13	0,05
SKM 1	-0,65	0,05
SKM 2	-0,50	0,40
SKT/SPT 1A	-0,53	0,80
SKT/SPT 1B	-0,57	0,85
SKT/SPT 2	-0,63	0,90
SKT/SPT 3	-0,70	

⁴ Adrianna Bella et al., "Macroeconomic Impact of Tobacco Taxation in Indonesia," *Tobacco Control*, February 1, 2023, tc-2022-057735. <https://doi.org/10.1136/tc-2022-057735>.



5. Income elasticity

Several studies in Indonesia find that cigarette income elasticity is positive, indicating that cigarettes are a normal good, with consumption rising as income increases⁵. However, since these estimates are only available for the overall cigarettes, they cannot be directly applied across different product tiers. The income elasticity was therefore assumed and calibrated for each tier using market share data and relevant economic assumptions .

The elasticity remains generally positive and its magnitude varies substantially across tiers: premium products (SPM 1, SKM 1, and SPM 2) exhibit higher income elasticity, reflecting stronger consumption growth as incomes rise, whereas lower-priced products and hand-rolled cigarettes (SKT/SPT) show low or negative income elasticity, suggesting a tendency toward inferior good behavior, with consumers shifting away from these products as purchasing power increases.

Market segment	Income elasticity
SPM 1	0,30
SPM 2	0,27
SKM 1	0,25
SKM 2	0,20
SKT/SPT 1A	0,15
SKT/SPT 1B	0,10
SKT/SPT 2	0,00
SKT/SPT 3	-0,20

3.2 Public health benefits

1. Population

Adult population data (aged 15+) for the period 2025–2027 were sourced from the Indonesian Population Projection 2020–2050 published by BPS.

2. Adult smoking prevalence

The adult smoking prevalence was calculated from the 2023 Indonesian Health Survey (*Survei Kesehatan Indonesia, SKI*).

3. Prevalence elasticity

The absence of individual-level data limits the ability to obtain a precise estimate of smoking prevalence elasticity in Indonesia. In the absence of such data, prevalence elasticity is commonly assumed to be half of the total demand elasticity — yielding an estimate of 0.38 ($\frac{1}{2} \times 0.77$, where 0.77 is the total demand elasticity estimated using household level data⁶) — following the approach suggested in the toolkit⁷. However, this estimate is likely to be an overestimation in the Indonesian context, given the relatively high affordability of cigarettes, particularly hand-rolled kretek, which dampens the responsiveness of smoking participation to price changes. Consequently, a prevalence elasticity in the range of 0.1 – 0.2 appears to be a more realistic assumption for Indonesia, with a central point estimate of 0.15 adopted in this simulation.

4. Assumptions on averted death and risk reduction from cessation

The assumed rates of averted deaths and risk reduction from smoking cessation are 40% and 70%, respectively, based on the toolkit, which draws on extensive literature reviews⁷.

⁵ Triasih Djutaharta et al., Aggregate Analysis of the Impact of Cigarette Tax Rate Increases on Tobacco Consumption and Government Revenue : The Case of Indonesia (World Bank, Washington, DC, 2005), <https://doi.org/10.1596/13758>; Arief Tirtana and I. Gede Agus Ariutama, "The Effect of Cigarette Prices and Income on Cigarettes Consumption and State Revenue: Case Study of 33 Provinces in Indonesia," *Jurnal Ekonomi Dan Bisnis* 25, no. 1 (2022): 137–52, <https://doi.org/10.24914/jeb.v25i1.4037>.

⁶ Center for Indonesia's Strategic Development Initiatives, *Cigarette Affordability in Indonesia: Recent Trends and Elasticity* (Jakarta: CISDI, 2026).

⁷ J. Tesche et al., Modeling the Impacts of Tobacco Taxes. A Tobaccconomics Toolkit (Tobaccconomics, Institute for Health Research and Policy, University of Illinois Chicago, n.d.), <https://www.economicsforhealth.org/>.