

# Tobacco Taxation: Policy Impact, Tax Design and Lessons from WPRO

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**Part II. How Tobacco Tax Works**

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# Part I. Why Tobacco Tax Matters

**Tobacco Tax is both health policy and fiscal policy**

**Tobacco excise tax serves two objectives**

## **Health objective**

- Reduce consumption
- Prevent initiation
- Promote cessation
- Reduce premature mortality

## **Fiscal objective**

- Generate government revenue
- Create fiscal space
- Support sustainable public finance

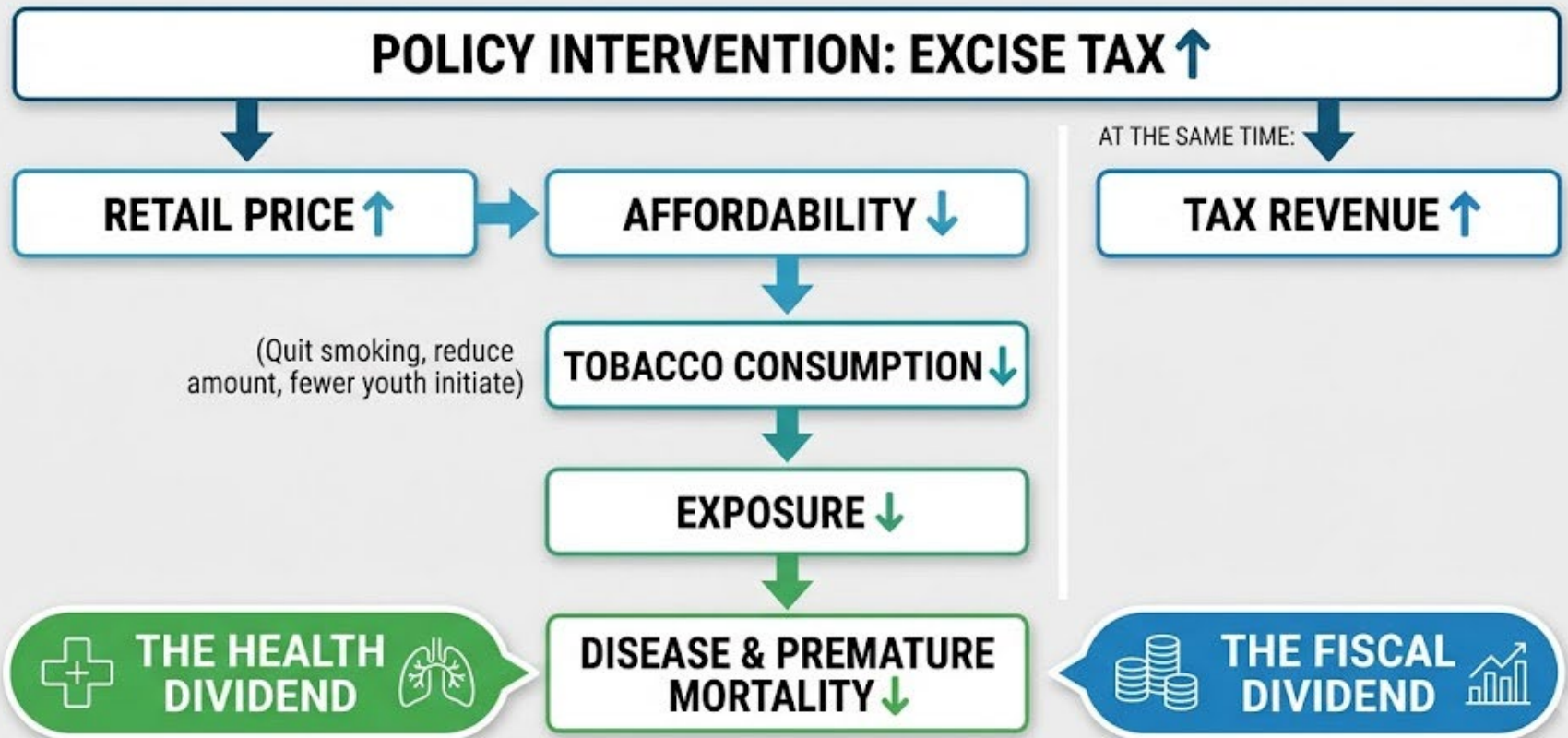
# Why Tobacco Tax Remains Relevant in WPRO

- **A major global tobacco production & consumption hub**  
China: the world's largest tobacco producer and consumer
- **Highly diverse tobacco-tax systems**
- **Uneven tobacco-control progress**
- **Persistent affordability of tobacco products**
- **Emerging nicotine products**
- **Fiscal pressures across countries**
- **Significant illicit trade & cross-border markets**
- **Different political and institutional contexts**

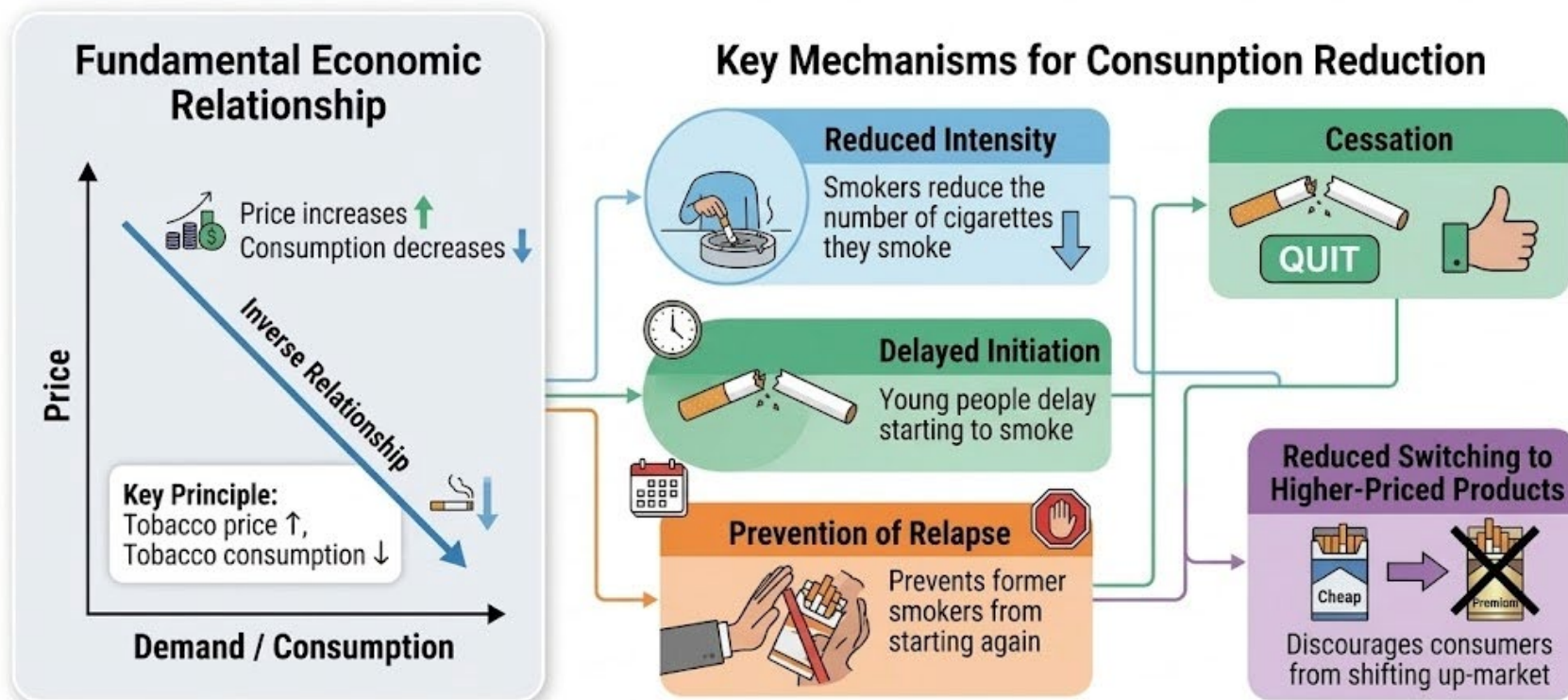
**The WPRO tobacco-tax challenge is not simply “raising the tax” ; it is designing an effective tax system for very different tobacco markets, fiscal systems and institutional contexts.**

## Part II. How Tobacco Tax Works

### Tobacco Tax-to-Health Pathway



# Price Is the Main Mechanism



Tax effectiveness hinges on retail price increase, which has a limited health impact if it is not meaningful.

# Price Elasticity: A Key Parameter for Tax Simulation

## Understanding Price Elasticity of Tobacco Demand

### Price elasticity of tobacco demand:

Formula:

$$\text{Estimated Elasticity} \approx \frac{\% \text{ Change in consumption}}{\% \text{ Change in price}}$$

Why Is It Critical?

### China Evidence

**10%**  
Price Increase → **~7.2%**  
Reduction in Consumption

Estimated  
Price Elasticity  
**≈ -0.72**

**Key Message:** Price elasticity is a key parameter determining the estimated health and fiscal impacts of an excise-tax increase.

EXCISE TAX INCREASE

RETAIL PRICE INCREASE

PRICE ELASTICITY

CHANGE IN TOBACCO  
CONSUMPTION

HEALTH & REVENUE IMPACTS

Health Dividend    Fiscal Dividends

**HEALTH DIVIDEND    FISCAL DIVIDEND**

# Income Elasticity and Tobacco Affordability

## Formula & Definition

$$\text{Income elasticity of tobacco demand} = \frac{\% \text{ change in tobacco consumption}}{\% \text{ change in income}}$$

For tobacco products, income elasticity is generally **positive**. As income increases (↑), tobacco consumption tends to increase (↑), other things equal.

## China Evidence (Illustrative Example)

[Estimated income elasticity ≈ +0.23]

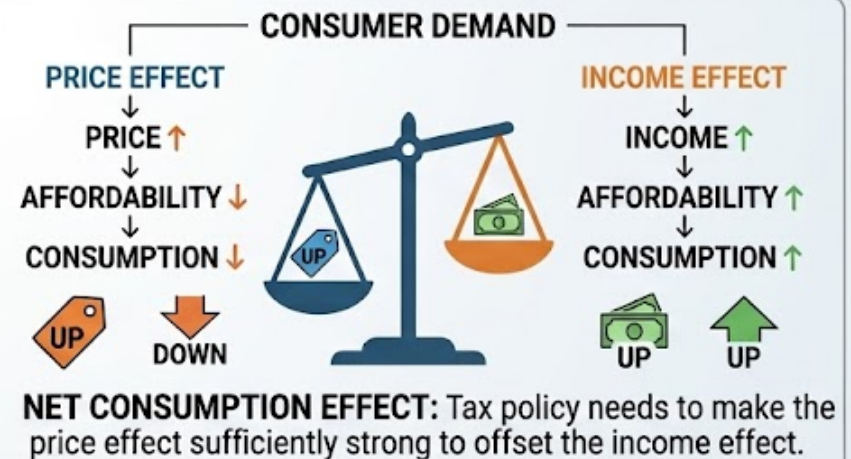
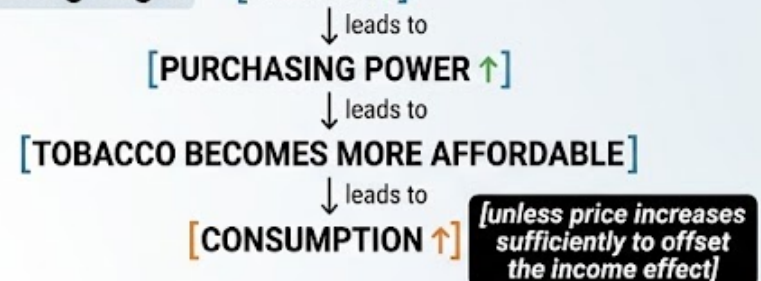
An illustrative example:

[10% INCREASE IN INCOME] → results in → [~2.3% INCREASE IN CONSUMPTION]

*\*Holding tobacco prices and other factors constant.*

**KEY MESSAGE:** Income elasticity is the second key behavioral parameter—alongside price elasticity—in assessing tobacco-tax impacts and changes in affordability.

## Modelling Logic – [INCOME ↑]

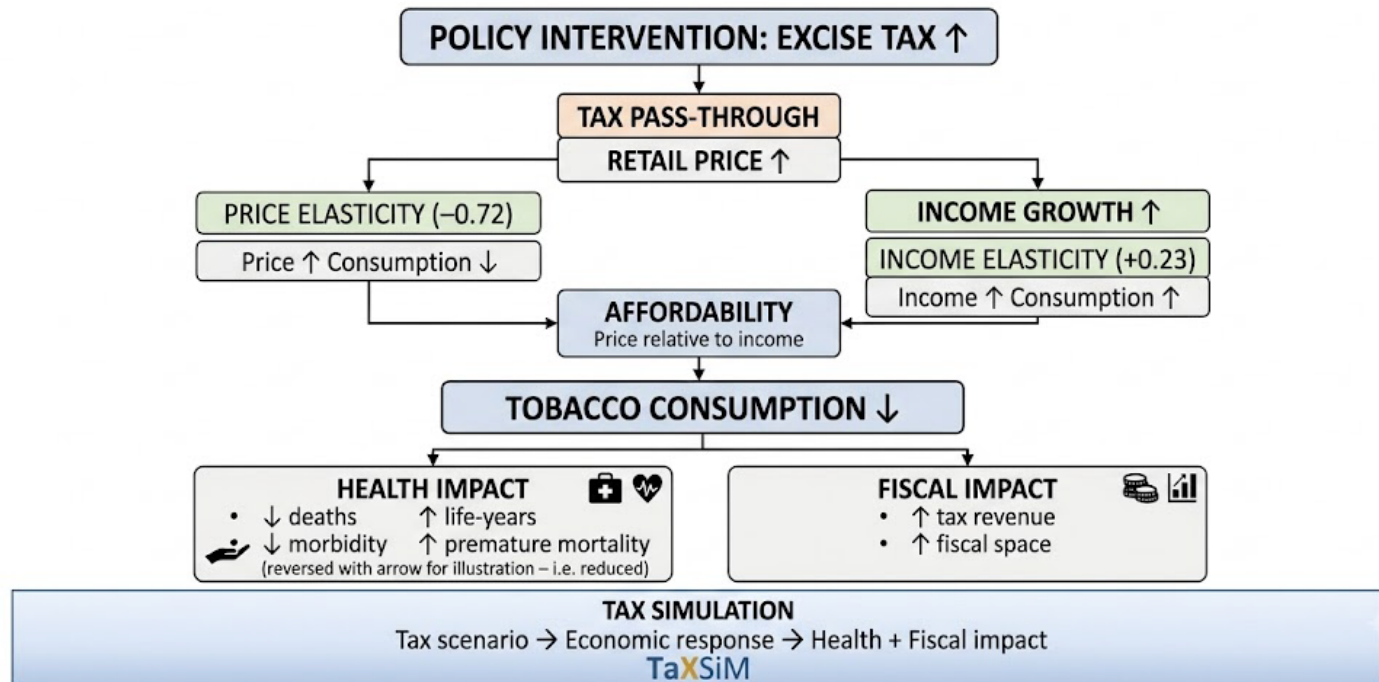


# From Tax Policy to Health and Fiscal Impact: The Complete Economic Chain

Price elasticity and income elasticity determine the strength of the response

## FROM TAX POLICY TO HEALTH AND FISCAL IMPACT: THE COMPLETE ECONOMIC CHAIN

Tax pass-through + price elasticity + income elasticity → affordability → consumption → health and revenue



The impact of a tobacco-tax increase depends not only on the tax rate, but on how the tax changes prices and affordability—and how consumers respond.

# Part III. Designing an Effective Tobacco Tax

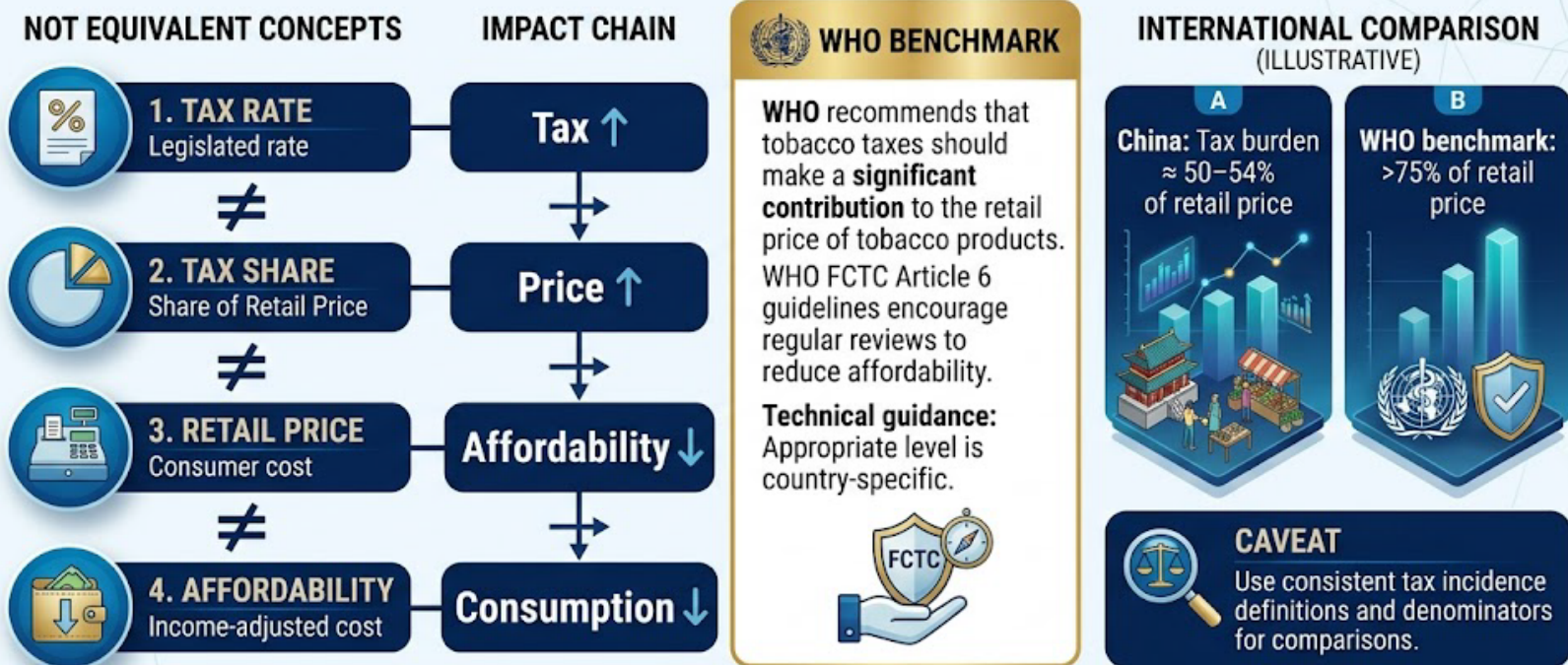
## Effective Tobacco Taxation Requires More Than a High Tax Rate



**Tax level + tax structure + tax adjustment + administration = policy effectiveness**

# How High Should Tobacco Tax Be?

## The Tax Level Matters: From Tax Rate to Price Impact



Tax level + tax structure + tax adjustment + administration = policy effectiveness

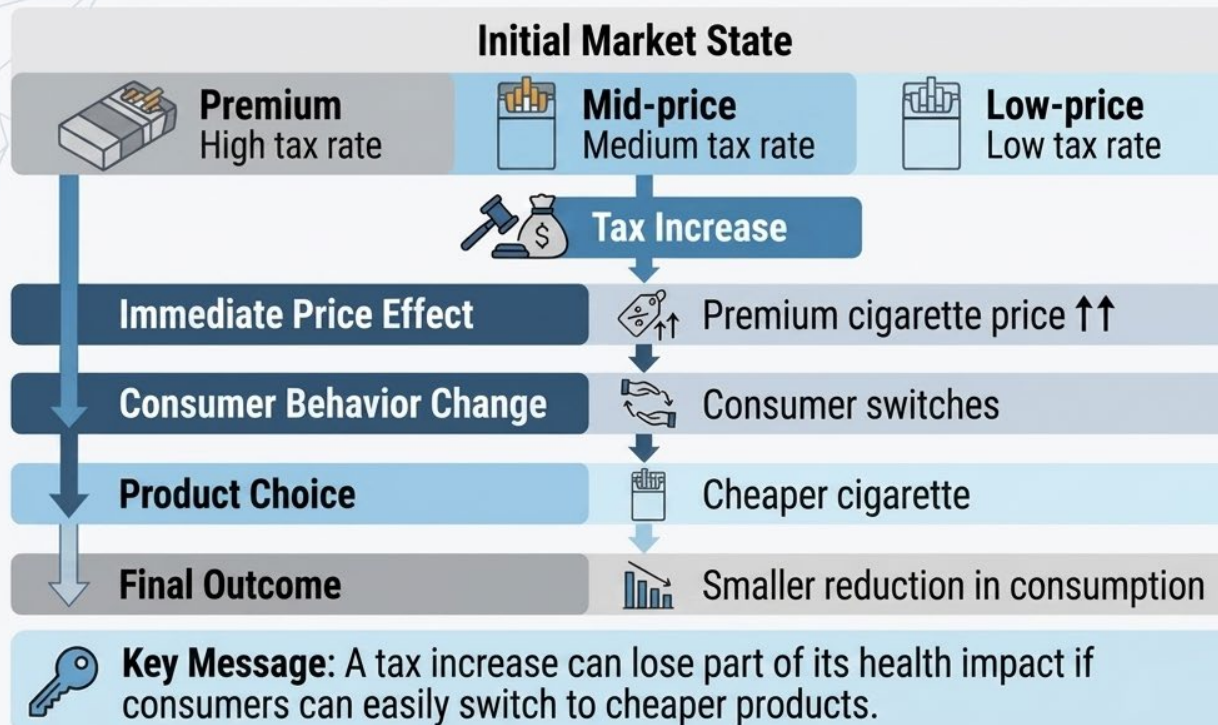
# Specific vs. Ad Valorem: Two Fundamental Tax Designs

## Specific vs. Ad Valorem: What Does the Tax Incentivize?

|  <b>SPECIFIC EXCISE</b>                                                                                                      |  <b>AD VALOREM EXCISE</b>                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>1. FIXED AMOUNT</b><br>A set tax per pack or individual unit.                                                            |  <b>PERCENTAGE OF PRICE</b><br>Taxed as a percentage of the retail or wholesale.                                                   |
|  <b>2. RAISES PRICE FLOOR</b><br>Increases the minimum price, raising the cost of cheaper products.                          |  <b>MOVES WITH PRODUCT PRICE</b><br>Tax amount automatically adjusts as the product price changes.                                 |
|  <b>3. PROTECTS AGAINST DOWN-TRADING</b><br>Makes lower-priced options relatively less attractive, reducing down-trading.    |  <b>MAINTAINS PRICE DIFFERENTIALS</b><br>Keeps the price differences between product tiers, encouraging product variety.           |
|  <b>4. MORE PREDICTABLE REVENUE</b><br>Creates a consistent revenue source per unit sold, regardless of price fluctuations. |  <b>REVENUE RISES WITH PRICE</b><br>Tax revenue increases significantly as premium products gain market share or prices increase. |
|  <b>5. NEEDS INFLATION ADJUSTMENT</b><br>The tax amount must be regularly updated to account for inflation.                |  <b>REINFORCES PREMIUM TAXATION</b><br>Ensures premium and luxury goods contribute disproportionately more in taxes.             |

# Tax Tiers and Down-Trading

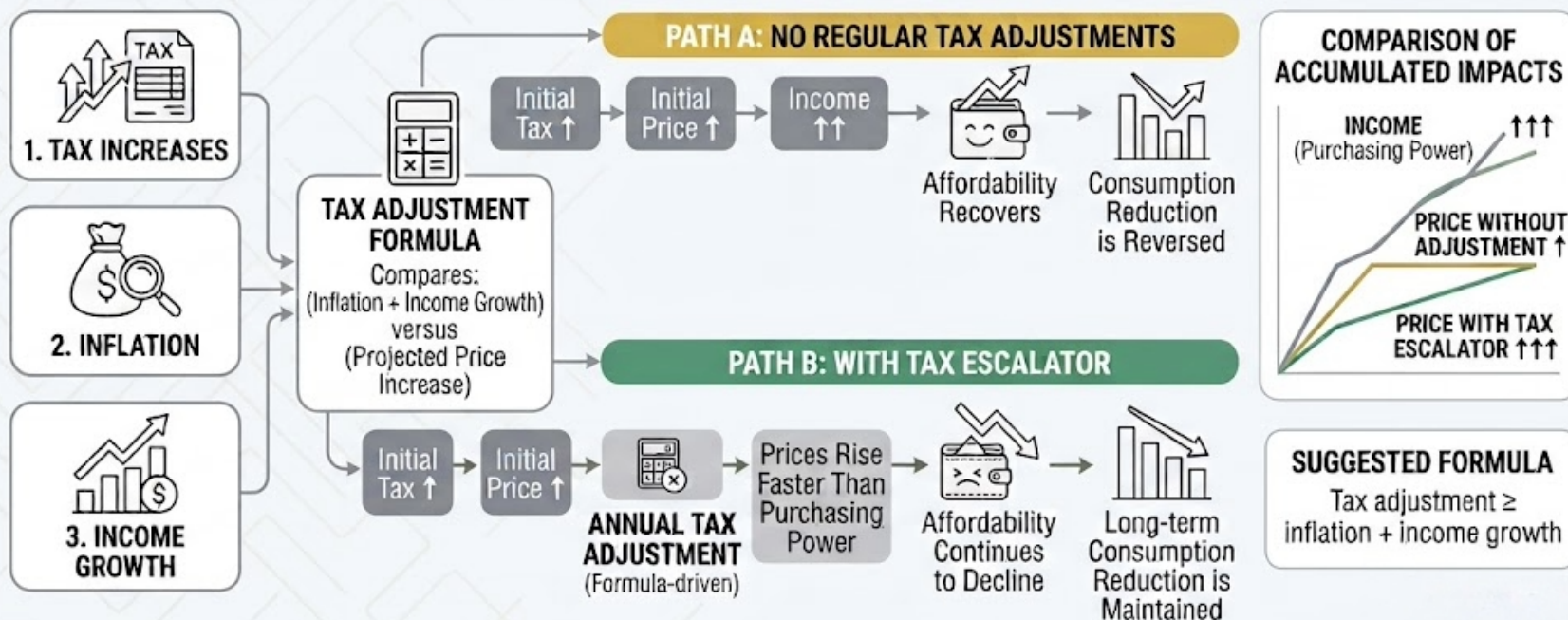
## Tax Tiers Matter: Avoiding the Down-Trading Trap



Tax differential → Price differential → Product switching

# Tax Escalator: Keeping Tobacco Unaffordable

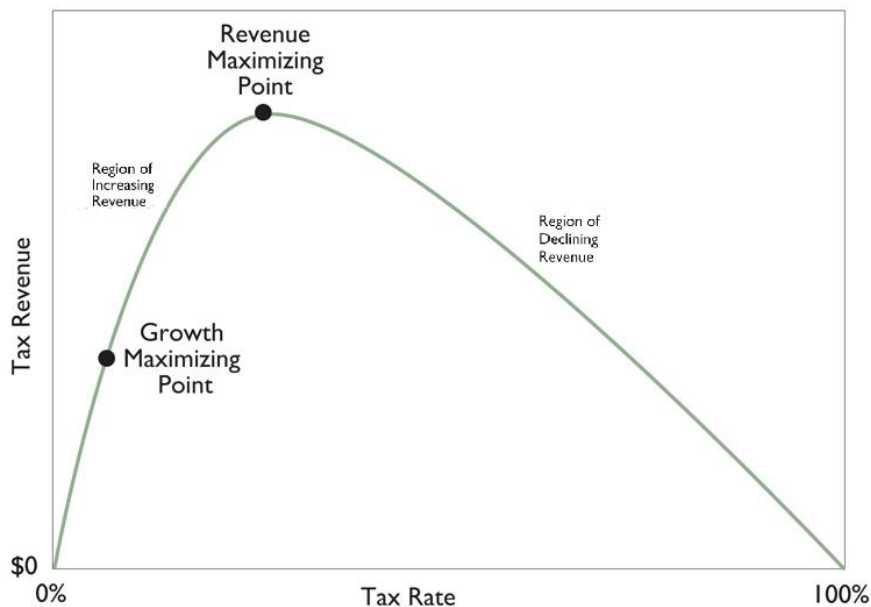
THE **OBJECTIVE** IS NOT MERELY TO INCREASE TAX—IT IS TO **INCREASE TOBACCO PRICES FASTER THAN PURCHASING POWER.**



# Tax Structure and Revenue: The Laffer Curve

## Revenue-maximizing tax $\neq$ health-optimal tax

The Laffer Curve

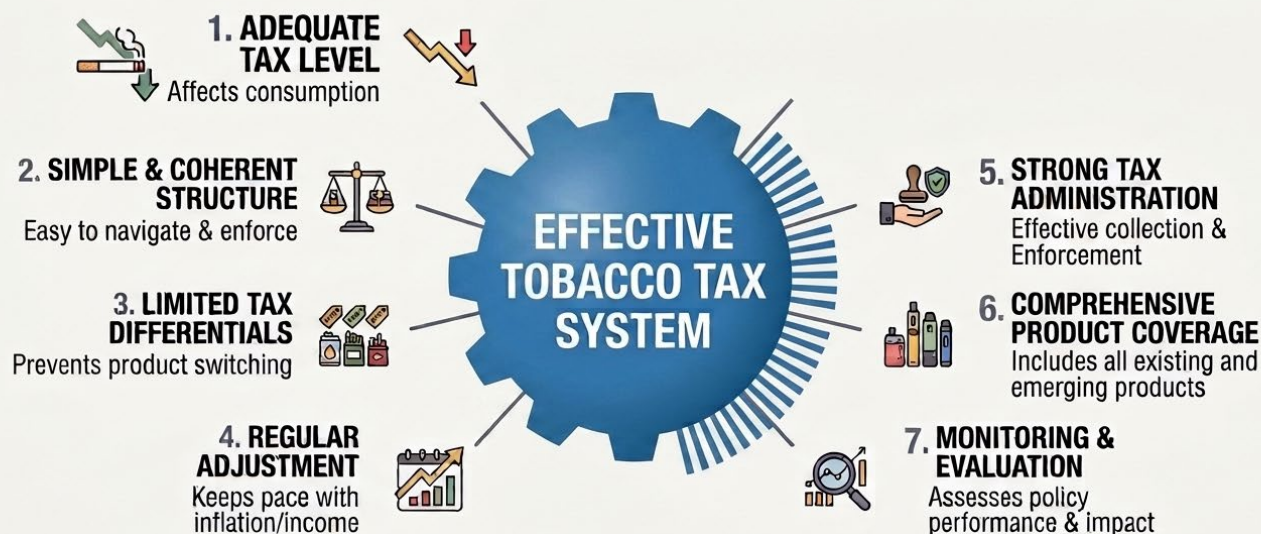


The health objective may justify taxation **beyond the revenue-maximizing point**, provided the tax remains administratively feasible and other policy considerations are addressed.

Higher Tax Does Not Mean Unlimited Revenue

# Designing the Tax System as a Package

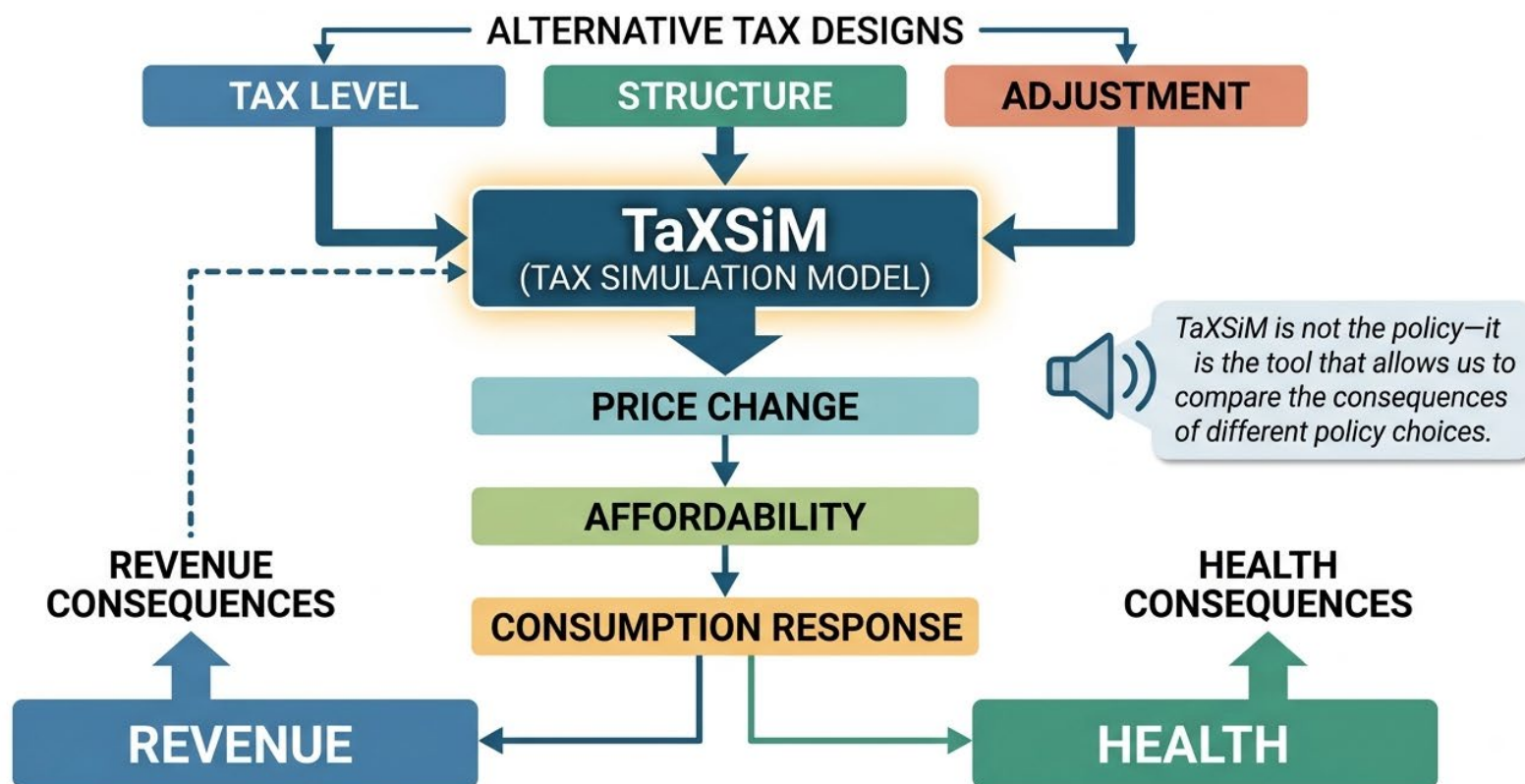
## The Most Effective Approach: A Comprehensive Tax Package



**Tax policy should be designed as a system—not as a single rate.**

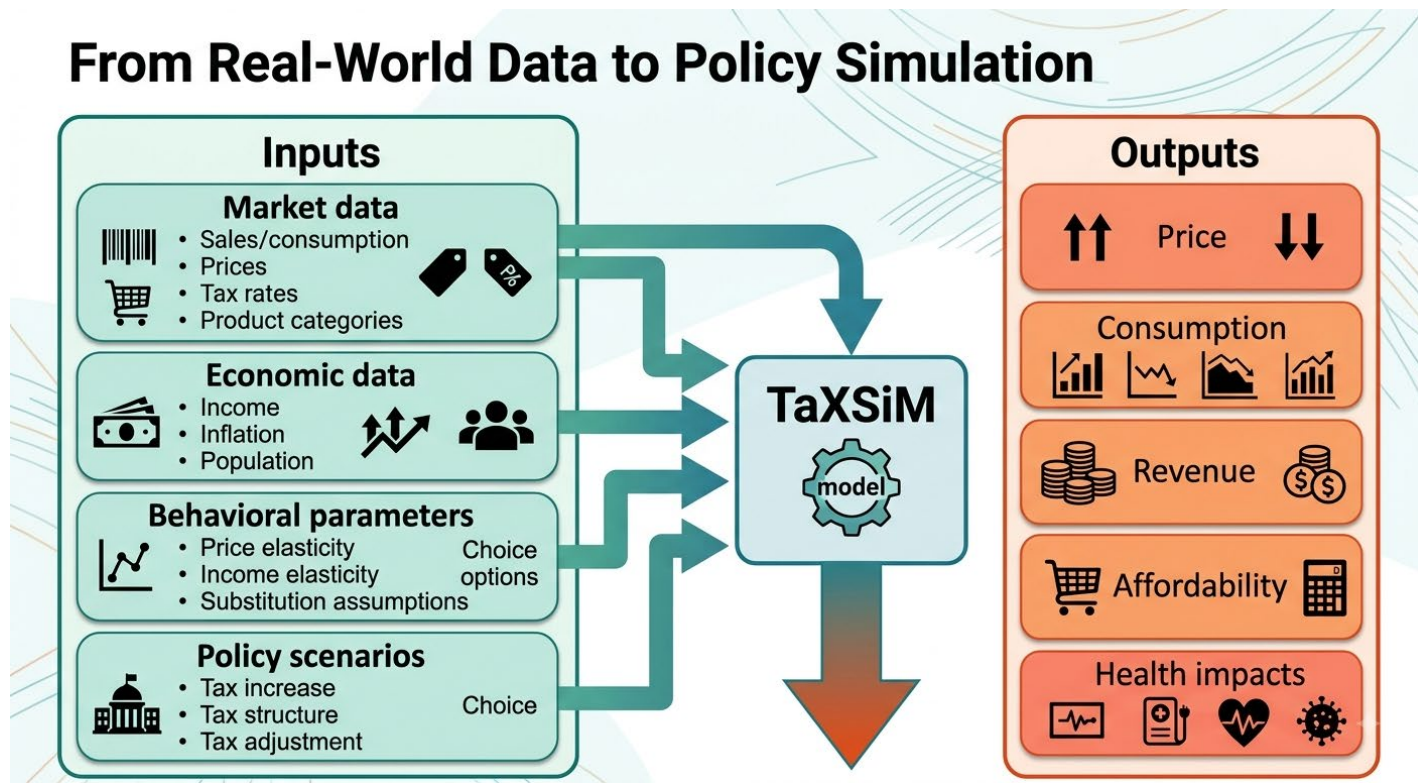
# From Tax Policy to Outcomes: TaXSiM

## TaXSiM: Quantifying the Consequences of Alternative Tax Designs



# What Goes Into the Model?

## From Real-World Data to Policy Simulation



# Part IV. What Can We Learn from the Western Pacific Region?

## The Western Pacific: Different Countries, Common Policy Lessons

| Case                          | Policy question                      | Main lesson                                                                              |
|-------------------------------|--------------------------------------|------------------------------------------------------------------------------------------|
| <b>Thailand</b>               | How should tax tiers be designed?    | Reduce structural incentives for down-trading                                            |
| <b>Philippines</b>            | Can taxes deliver a double dividend? | Health gains + revenue mobilization                                                      |
| <b>Australia /New Zealand</b> | How can impact be sustained?         | Regular increases and affordability management                                           |
| <b>Pacific Islands/Tonga</b>  | How should small markets respond?    | Context-specific design and administration, tax coverage on all tobacco products matters |
| <b>China</b>                  | What is the potential at scale?      | Large health gains remain possible from stronger taxation                                |

# Thailand: Tax Structure Matters

## Background

- Thailand has one of the **highest tobacco tax incidences in the Asia-Pacific region**, reflecting strong government commitment to tobacco control.
- In 2017, Thailand introduced a **two-tier cigarette excise tax system**:
  - **25% ad valorem tax** for cigarettes priced  $\leq 72$  baht/pack;
  - **42% ad valorem tax** for cigarettes priced  $> 72$  baht/pack;
  - Plus a **specific tax of 1.25 baht per cigarette**.

## Policy Challenge

The tiered system aimed to protect low-income consumers but resulted in unintended consequences:

- Limited reduction in smoking prevalence;
- Did not effectively eliminate illicit cigarette markets;
- Reduced expected government revenue performance;
- Encouraged consumers to shift toward cheaper cigarette products.

## Evidence

Under the previous simpler tax structure (before 2017):

- Tobacco tax revenue increased from **13.6 billion baht (1990)** to **68.6 billion baht (2017)**;
- Smoking prevalence declined by approximately **12%**.

# Thailand

## Key Lessons

- Tax incidence matters, but tax architecture matters too. A high overall tax burden is not sufficient if the structure creates large price gaps between products.
- Simple and more uniform excise systems can reduce down-trading and tax-induced product switching.
- Illicit trade should be addressed through effective enforcement and market control, rather than through lower or differentiated tax rates.
- The health impact of a tax increase depends on the price response across the entire cigarette market, not simply on the statutory tax rate.

## Take-home message:

- Thailand shows why tobacco-tax policy should be assessed not only by “how much” tax is imposed, but also by “how” the tax is structured.

# Philippines: Tobacco Tax as Both Health and Fiscal Policy

## Key Takeaway

**A well-designed tobacco tax can simultaneously achieve public health gains and strengthen government fiscal capacity.**

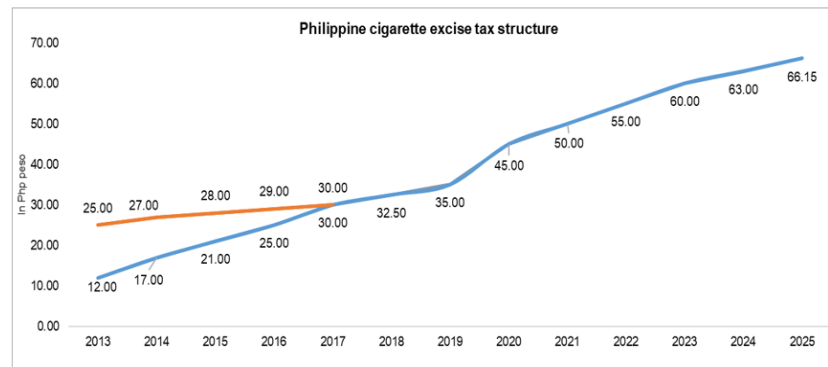
## Sin Tax Reform Act (2012)

- Simplified the excise tax structure;
- Increased tobacco excise rates substantially;
- Adopted a clearer health-oriented tax framework;
- Dedicated part of the revenue to health financing

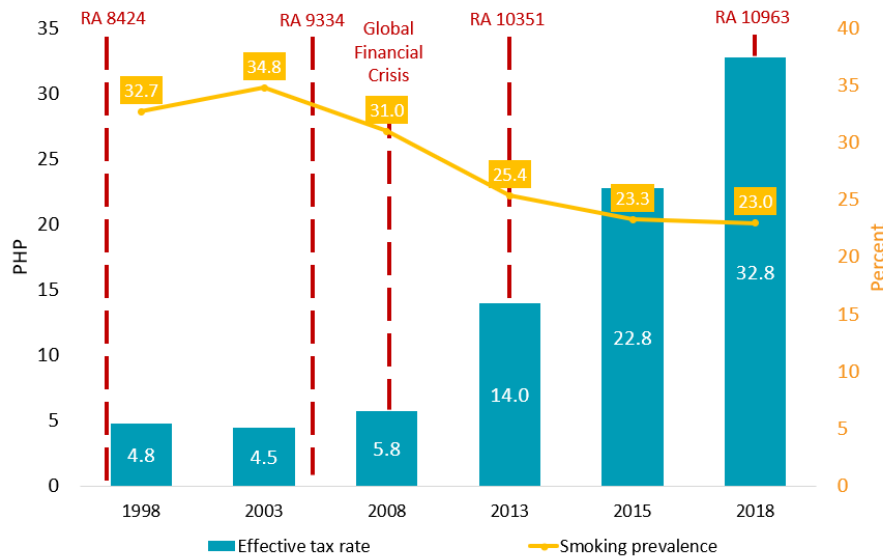
## Excise tax rates of cigarettes



1. Removal of price classification freeze and tax advantages of legacy brands.
2. Unitary tax structure and tax rates indexed to inflation by 2017.



## Smoking prevalence declined

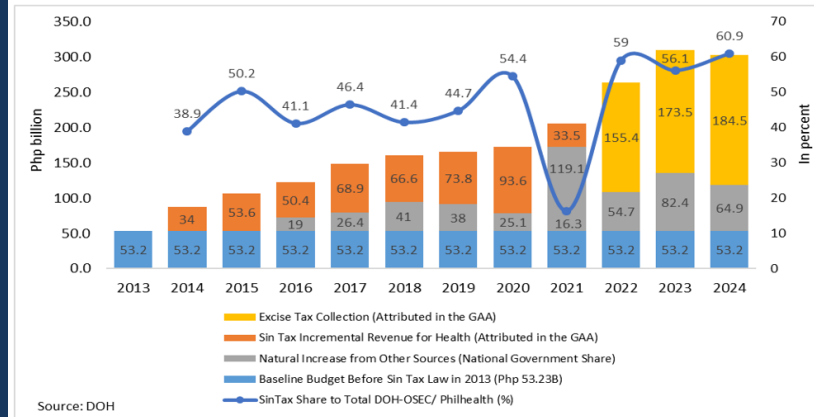


Sources: Effective tax rate data from the Department of Finance;  
Smoking prevalence data from National Nutrition Survey and Pulse Asia (2018)

## Impact

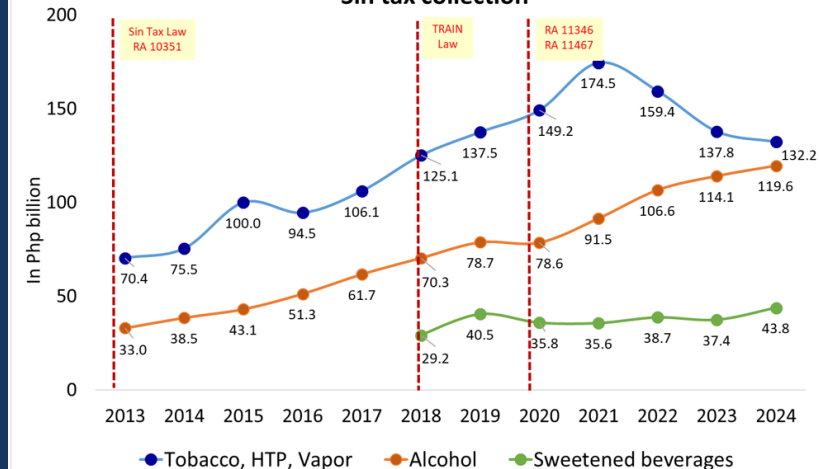
- Significant increase in tobacco excise revenue;
- Expanded health insurance coverage through earmarked revenue;
- Decline in cigarette affordability;
- Reduction in smoking prevalence.

## Excise taxes have helped increase the budget for DOH and PhilHealth



Source: DOH

## Sin tax collection



Source: BIR and BOC Sin Tax Certification.

# Philippines

# Australia & New Zealand: The Importance of Sustained Tax Increases

## The policy problem

One-off tax increase



Initial price increase



Affordability gradually  
recovers

## The solution

Regular tax increases

Inflation adjustment

Affordability monitoring

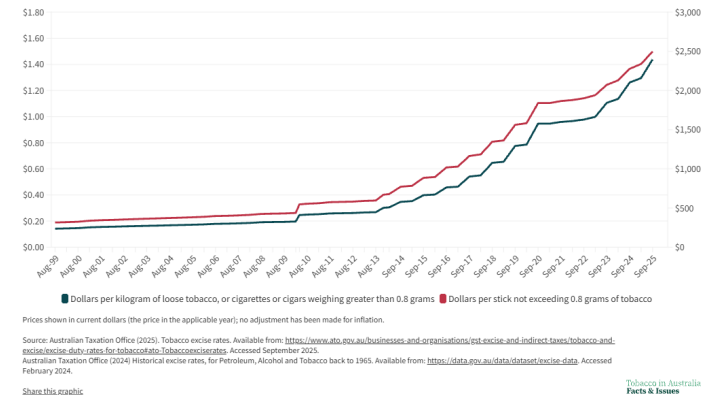


Sustained reduction in  
affordability

## Key message

**Tobacco-tax policy should be  
a process, not a one-off  
event.**

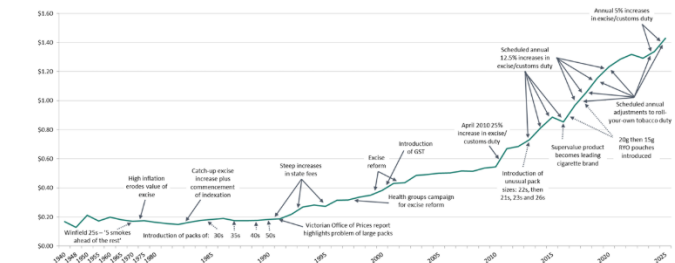
**Figure 13.6.1 Tobacco excise rates, Australia, November 1999 to September 2025 (\$)**  
Rates in current dollars for cigarette sticks and per kilogram of loose tobacco



Tobacco in Australia  
Facts & Issues

**Figure 13.6.4 Cigarette prices annotated with major policies and events impacting tobacco prices, \$2012, Australia, 1940 to 2025**

Recommended retail price per stick from the leading cigarette brand in each year



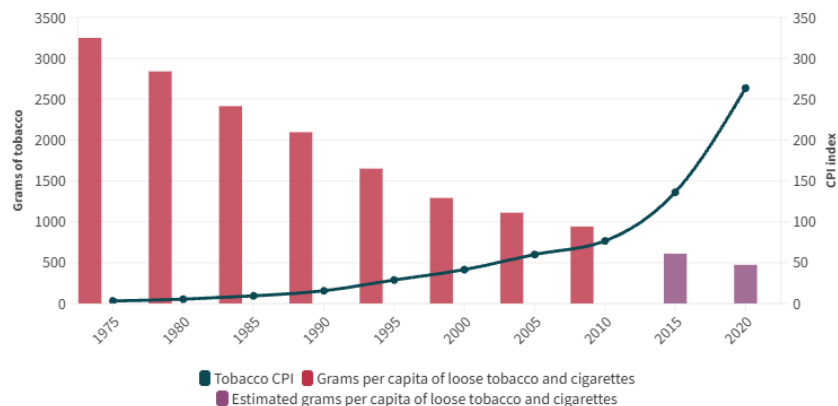
To adjust for inflation over time, prices are expressed in 2012 dollars. Dashed arrows: major industry innovations that impacted prices. Prices are for February of each year to 2013, then March of each year (or closest month available) from 2014 onwards. Sources: NSW Retail Traders' Association. Price lists—Cigarettes. The Retail Tobacconist of NSW, 1940–2013: 9 to 87 (February editions); 2014–2015: 90 to 93 (March editions); 2019: 108 (Dec 2018 edition). 2021 118 Apr-Jun edition. CTC Eastern. National Price Lists, March 2020, 2023 to 2025). CTC Eastern. Available from: [http://www.ctceastern.com/home/home\\_index.html](http://www.ctceastern.com/home/home_index.html). Accessed: 01/09/2025.

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Tobacco in Australia  
Facts & Issues

**Figure 13.8.1 Grams per capita of tobacco products dutied and the Tobacco Consumer Price Index, Australian, 1975 to 2020**

Estimated number of grams of tobacco per person aged 15 years and older on which duty was paid



Cigarettes and Tobacco Sub-group of the CPI is averaged for all quarters in each financial year.

Source: Total per capita weight of tobacco products on which duty was levied (excise and customs combined) per person 15 years and over, Australia, based on actual weights (grams) dutied until 1995 and estimated weights from 2000. Produced using data in historical publications published by the Commonwealth Bureau of Census and Statistics, publications produced by the Australian Bureau of Statistics and data provided by the ABS. See Section 2.2.

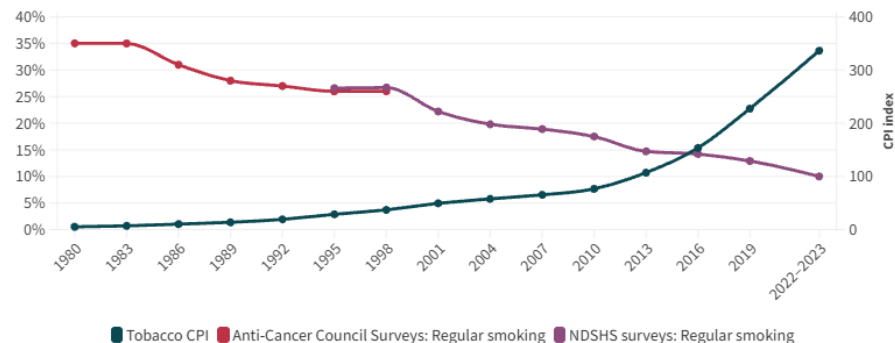
Australian Bureau of Statistics (Dec-quarter-2024), [Consumer Price Index](#), Australia, ABS Website, accessed 14 April 2025.

Tobacco in Australia  
Facts & Issues

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**Figure 13.8.2 Prevalence of regular smoking versus the Tobacco Consumer Price Sub-Index, Australia, 1980 to 2022-2023**

Prevalence of daily and weekly smoking among Australians aged 18+ years



Anti-Cancer Council data includes those describing themselves as smoking any combination of cigarettes, pipes or cigars with no frequency specified; NDSHS data includes those reporting that they smoke any combination of cigarettes, pipes or cigars 'daily' or 'weekly'.

Cigarettes and Tobacco Sub-group of the CPI is averaged for all quarters in each financial year.

Sources: Centre for Behavioural Research in Cancer, analysis of data from surveys conducted by the Anti-Cancer Council of Victoria from 1980-1998, and Tobacco in Australia: Facts & issues analysis of AIHW National Drug Strategy Household Surveys 1995 to 2022-2023. ADA Dataverse, 2024.

Australian Bureau of Statistics (Dec-quarter-2024), [Consumer Price Index](#), Australia, ABS Website, accessed 14 April 2025.

Tobacco in Australia  
Facts & Issues

Share this graphic

# Australia & New Zealand

## Tobacco Excise Indexation — Maintaining Tobacco Unaffordability

- Key message: Index tobacco taxes to income growth, not only inflation, to prevent tobacco from becoming more affordable over time

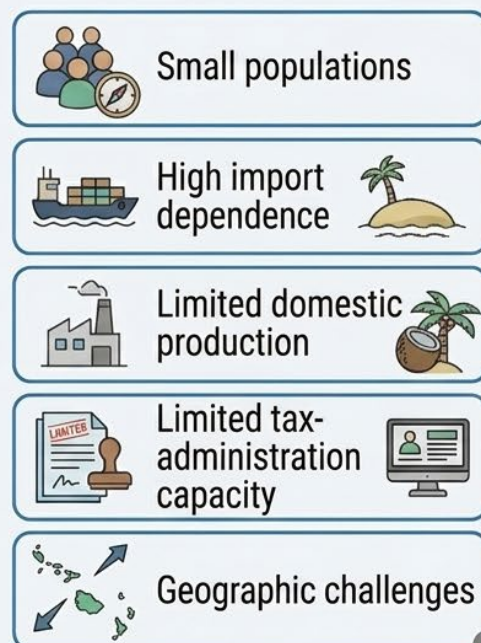
## Policy lesson:

- The effectiveness of tobacco taxation depends not only on raising tax rates, but also on maintaining long-term reductions in tobacco affordability. Indexing taxes to income growth is an effective strategy to sustain health impacts over time.

# Pacific Island Countries: Designing Tax Policy for Small Markets

## Pacific Island Countries: Designing Tax Policy for Small Markets

### STRUCTURAL CHARACTERISTICS



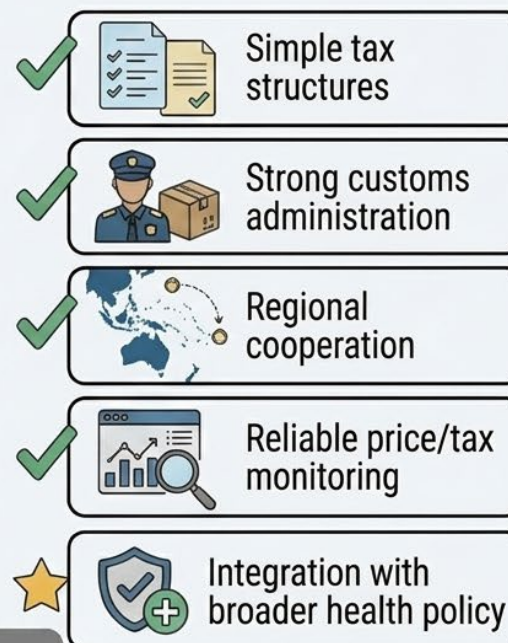
### SMALL MARKET PRINCIPLES

#### SIMPLE TAX SYSTEM

Customs + Enforcement +  
Monitoring + Regional  
cooperation



### POLICY IMPLICATIONS



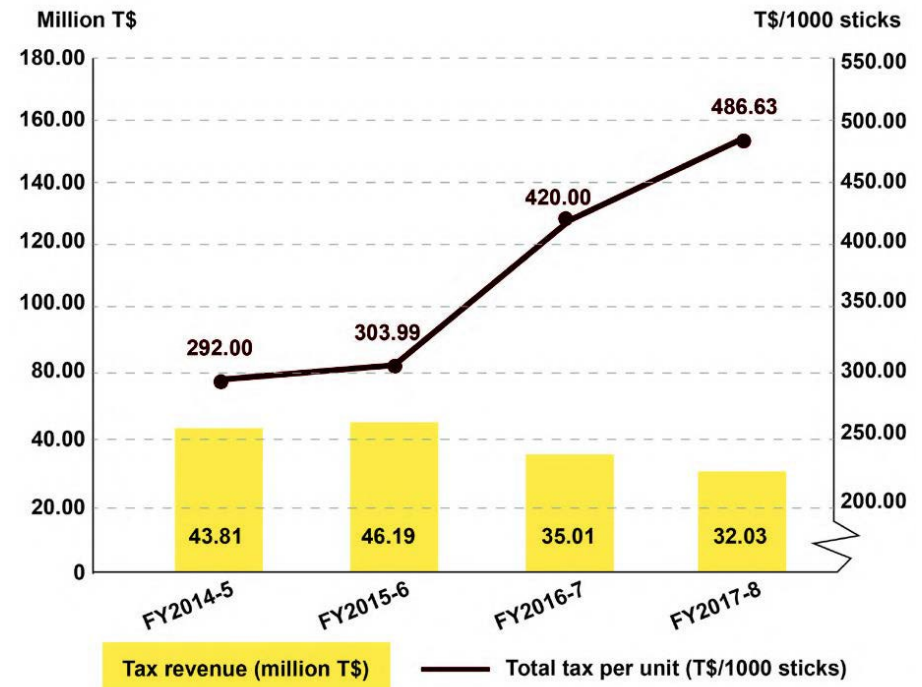
**KEY MESSAGE:** The optimal tobacco-tax system depends on market structure and administrative capacity.

# Pacific Islands: Tonga Case Study

The World Bank's analysis of Tonga found that the major FY2016–17 increase in cigarette excise was followed by a substantial reduction in manufactured cigarette consumption and tobacco-tax revenue, with approximately one-fifth of smokers shifting toward Tapaka Tonga, a cheaper local tobacco product.

## Lessons takeaway:

Taxing cigarettes is not enough if smokers can switch to cheaper, untaxed tobacco products, both the fiscal and health impacts of taxation can be weakened.



# China: Tobacco Tax Works in The World's Largest Tobacco Market

## Early assessment of China's 2015 tobacco tax increase

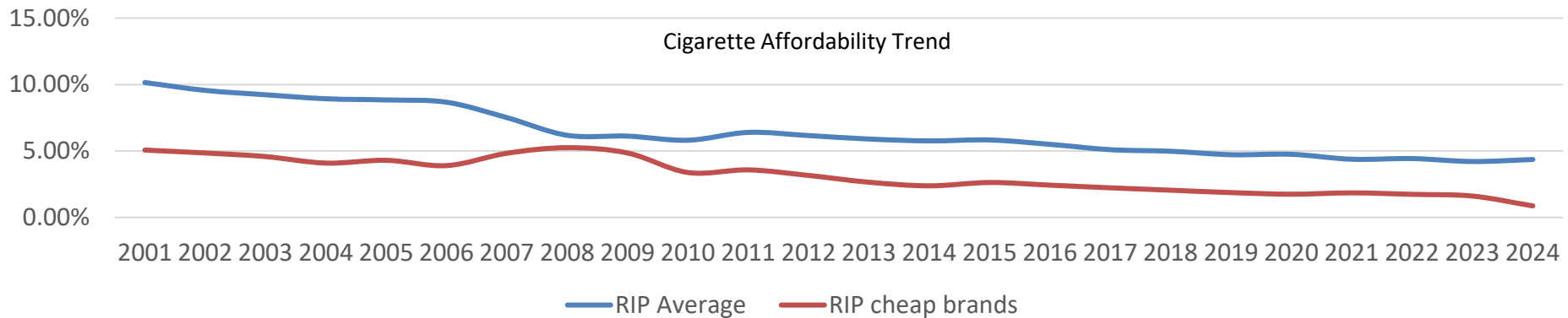
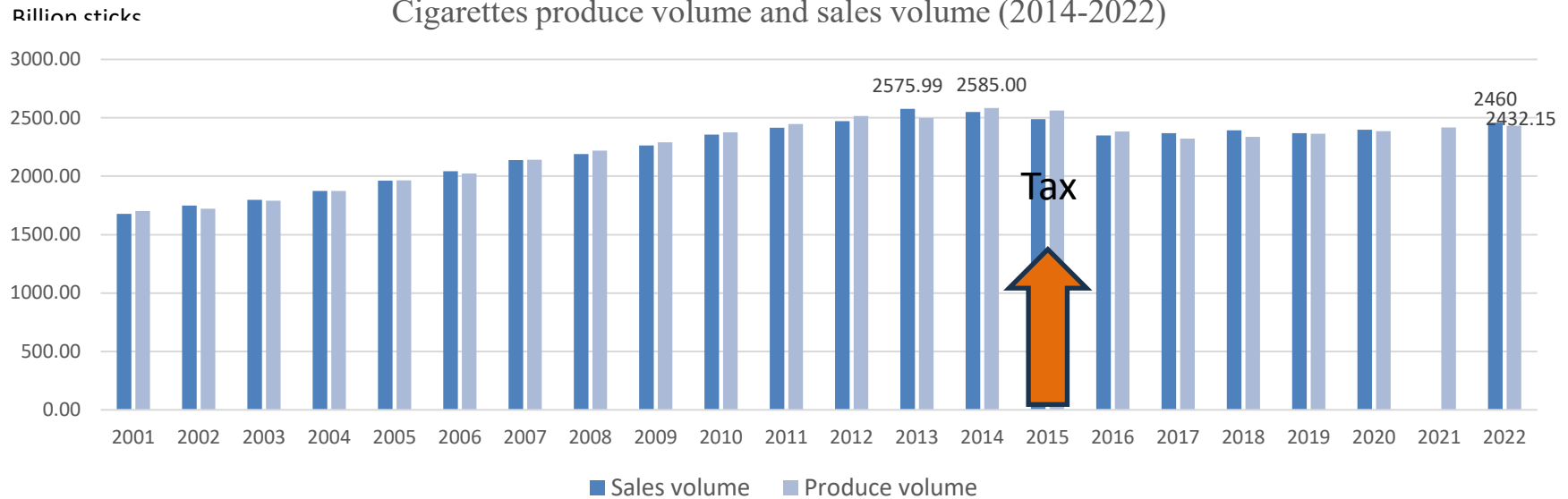
Mark Goodchild<sup>a</sup> & Rong Zheng<sup>b</sup>

**Abstract** In 2015, the Chinese government raised tobacco excise tax for the first time since 2009. Changing from previous practice, the State Tobacco Monopoly Administration raised its cigarette prices at the same time. We assessed the early impact of the 2015 tax increase on cigarette prices, sales volumes, tax revenue generation and the potential effect on prevalence of smoking in China. Between 2014 and 2016, the retail price of cigarettes increased on average by 11%, with the cheapest category of cigarette brands increasing by 20%. The average proportion of tax in the price of cigarettes rose from 51.7% to 55.7%. Annual cigarette sales decreased by 7.8%, from 127 to 117 billion packs. The increase in cigarette prices could be associated with a 0.2% to 0.6% decrease in the proportion of adults smoking, representing between 2.2 and 6.5 million fewer smokers. Tax revenues from cigarettes increased by 14%, from 740 to 842 billion Chinese yuan between 2014 and 2016, reflecting an extra 101 billion Chinese yuan in tax revenues for the government. The 2015 tax increase shows that tobacco taxation can provide measurable benefits to both public health and finance in China. The experience also highlights the potential for tobacco taxation to contribute to China's broader development targets, including the sustainable development goals and Healthy China 2030. Looking forward, this link to development can be facilitated through multisectoral research and dialogue to develop consistent cross-sectoral objectives for tobacco tax policy design and implementation.

Abstracts in العربية, 中文, Français, Русский and Español at the end of each article.

# China: One-Off Increases Are Not Enough

Cigarettes produce volume and sales volume (2014-2022)



# Part V. From Evidence to Policy Action



**Central:** Effective tobacco taxation is not a one-time tax increase. It is a continuous policy process.

# Step 1 — Know Your Tobacco Market

Before changing the tax,  
governments should know:

**Who consumes?**

→ Smoking prevalence

**What do they consume?**

→ Cigarettes / roll-your-own / heated tobacco / other products

**What do they pay?**

→ Retail prices

**What is taxed?**

→ Tax structure and tax burden

**What substitutes exist?**

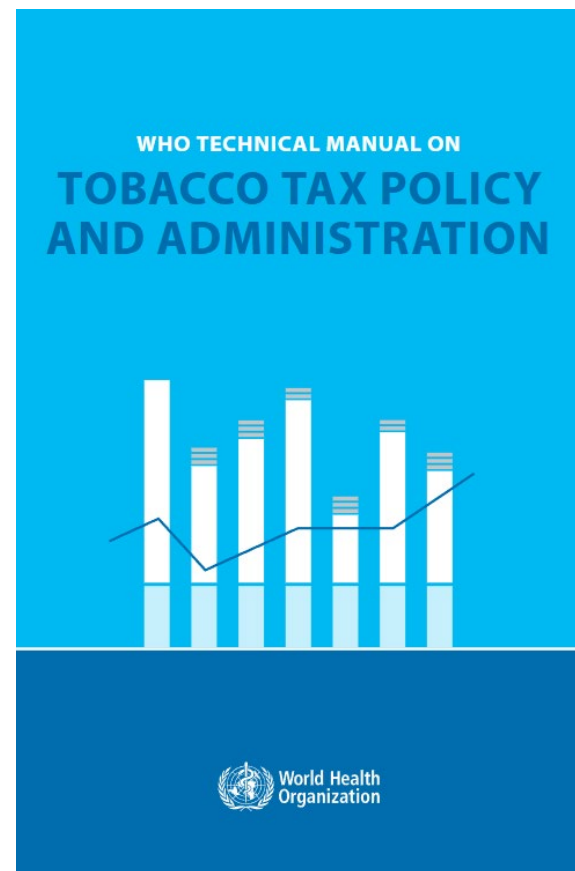
→ Cheaper brands / untaxed products / illicit products

**How affordable is tobacco?**

→ Price relative to income

**Key message:**

**A tax reform designed without a clear understanding of the market can produce unintended consequences.**



WHO's technical manual specifically identifies understanding the tobacco market as a fundamental step before deciding on the form of taxation.

## Step 2 — Set a Clear Tax Reform Objective

A government may have several objectives:

**Health:** Reduce tobacco consumption and smoking prevalence

**Revenue:** Mobilize sustainable domestic revenue

**Objectives should be explicit because different objectives may imply different policy choices.**





## Step 3 — Use Modelling Before Making the Decision

### **Policy scenarios**

#### **Scenario 1**

Current policy (Base year/BAU)

#### **Scenario 2**

#### **Scenario 3**

#### **Scenario 4**

#### **Scenario 5**

Comprehensive reform + regular adjustment



#### **TaXSiM**



#### **Compare:**

Price

Tax incidence

Affordability

Consumption

Revenue

Health impact (smoking rate)

Distributional effects

**Don't Debate Tax Rates  
Without Quantifying the  
Options**

#### **Key message**

**Modelling should inform the  
policy decision before the tax  
reform—not explain it  
afterwards.**

# Step 4 — Build the Tax Reform into a Sustainable System

## From One-Off Increases to Automatic Adjustment: Building a Sustainable Policy

### THE ONE-OFF APPROACH

(Ineffective)

ONE-TIME  
TAX INCREASE  
(Tax ↑)



PRICE  
INCREASE  
(Price ↑)



AFFORDABILITY  
DECREASES  
(Affordability ↓)



INCOME GROWTH  
& INFLATION



AFFORDABILITY  
RECOVERS



AFFORDABILITY  
RECOVERS



POLICY IMPACT ERODES

- Intermittent increases lead to temporary consumption reduction that vanishes as incomes and prices adjust

### THE SUSTAINABLE APPROACH

(Effective)

INITIAL TAX  
INCREASE  
(Tax ↑)



REGULAR, PERIODIC  
ADJUSTMENTS



AFFORDABILITY  
REMAINS LOWER



SUSTAINED  
CONSUMPTION  
REDUCTION



"WHO recommends that tobacco taxes be increased significantly and periodically, with tax rates and prices monitored relative to real income so that tobacco does not become more affordable over time."



**KEY MESSAGE:** A strong tobacco-tax policy should contain a mechanism for keeping tobacco unaffordable over time.

What Gets Measured  
Gets Managed

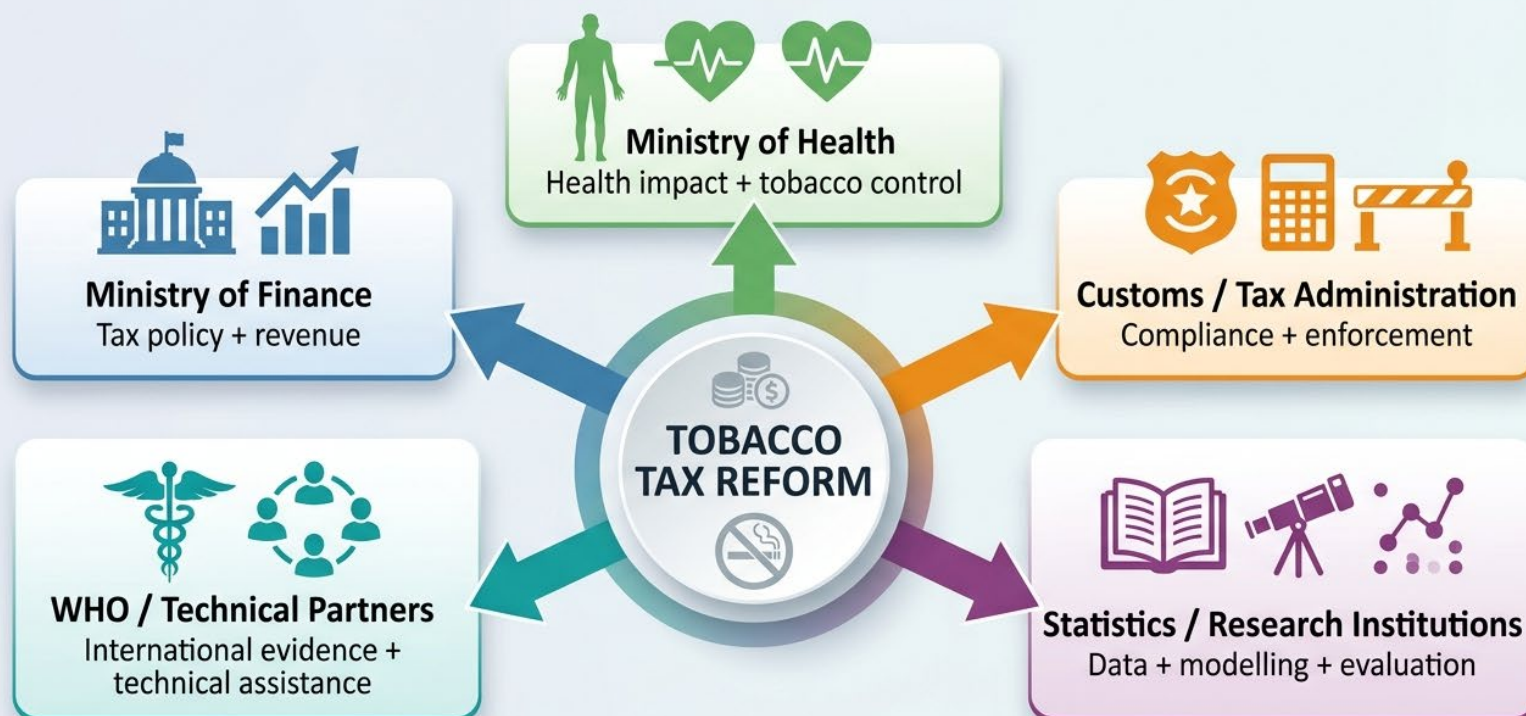
## Step 5 — Implement and Monitor

**Monitor outcomes—not just tax rates.**

| Indicator                        | What does it tell us?                          |
|----------------------------------|------------------------------------------------|
| <b>Excise tax rate</b>           | Is the statutory tax changing?                 |
| <b>Retail price</b>              | Is the tax being passed through?               |
| <b>Affordability</b>             | Is tobacco becoming less affordable?           |
| <b>Sales/consumption</b>         | Is behavior changing?                          |
| <b>Product switching</b>         | Are consumers moving to substitutes?           |
| <b>Tax revenue</b>               | What is happening to tax revenue?              |
| <b>Illicit market indicators</b> | Are there implementation/enforcement concerns? |

# Step 6 — Institutionalize a Cross-Ministry Process

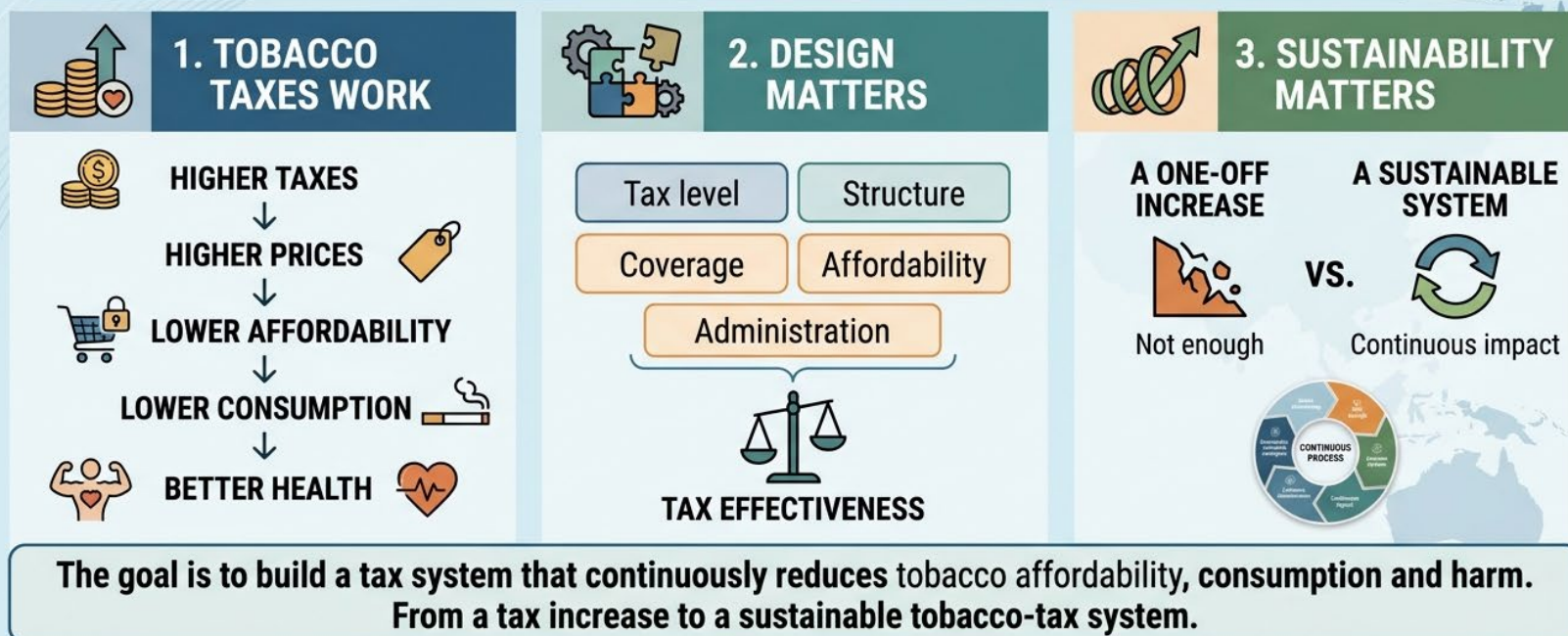
## Tobacco Tax Reform Is a Whole-of-Government Effort



*Collaboration is key to sustainable success*

# Concluding Comments

## Three Messages to Take Home



For countries in the Western Pacific, the real challenge is to design and improvement a tax system based on clear evidence.

**Policy Cycle:** Evidence → Design → Simulation → Implementation → Monitoring → Adjustment → Evidence. ♦

**Resulting in:** Tax → Price → Affordability → Consumption → Health + Revenue.

# **Thank You**

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