

Cigarette Tax and Price:

Affordability and Impacts on Consumption and Revenue

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This policy paper is based on the research paper “Cigarette Affordability and Impact of Tobacco Taxes in Indonesia” by Ms. Titissari Rumbogo and Mr. Abdillah Ahsan of the Demographic Institute under the University of Indonesia Faculty of Economics.

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INDONESIA

FACT SHEET

Growing smoking prevalence and tobacco-related mortality:

In 2004, Indonesia had 57 million smokers. There is a high and steadily increasing trend of cigarette consumption among both men and women in Indonesia. In 2010, Indonesian adult smoking prevalence was estimated at 34% (65.9% among men and 4.2% among women), a significant increase from 27% in 1995. At least 200,000 Indonesians die annually from smoking-related illnesses.

Large net economic losses from tobacco use

The total consumption cost of tobacco in 2001, including health care costs and losses from premature deaths, amounted to Rp. 127.4 trillion (USD 13.9 billion). This cost is 7.7 times the tax revenue generated from tobacco in the same year, which was only Rp. 16.5 trillion (USD 1.8 billion).

Much room to raise taxes

The Excise Law No.39/2007 allows for a maximum excise rate of 57%. The current average excise tax rate on tobacco is 46%, while the total tobacco tax is 54.4% (VAT is 8.4%) (far below the recommended level of 67-80%) of the retail price.

Increasing affordability of cigarettes

The average nominal price of a pack of cigarettes is only about Rp 6,000. Already cheap, cigarettes have become increasingly more affordable over the past several years due to a generally stable nominal price of cigarettes vis-à-vis Indonesia's rapid economic growth and consumers' increased purchasing power. This has resulted in increased tobacco consumption and its related diseases, disabilities, and premature deaths.

Positive fiscal and health impacts of increasing taxes

Significant increases (20 to 34%) in government excise revenue are expected from gradual tax increases up to the maximum level (57%) allowed by the current Excise Law.

Each tax increase has the potential to save 210,000 to 500,000 Indonesian lives. By applying the 57% excise tax rate, smoking prevalence could be reduced from 34% to 31.5%.

In spite of the reduced smoking prevalence and cigarette consumption, none of the simulated tax increases had any significant negative impact on industry revenue; even when industry revenue was negative, the percentage change was only -1.8%.

Policy recommendations

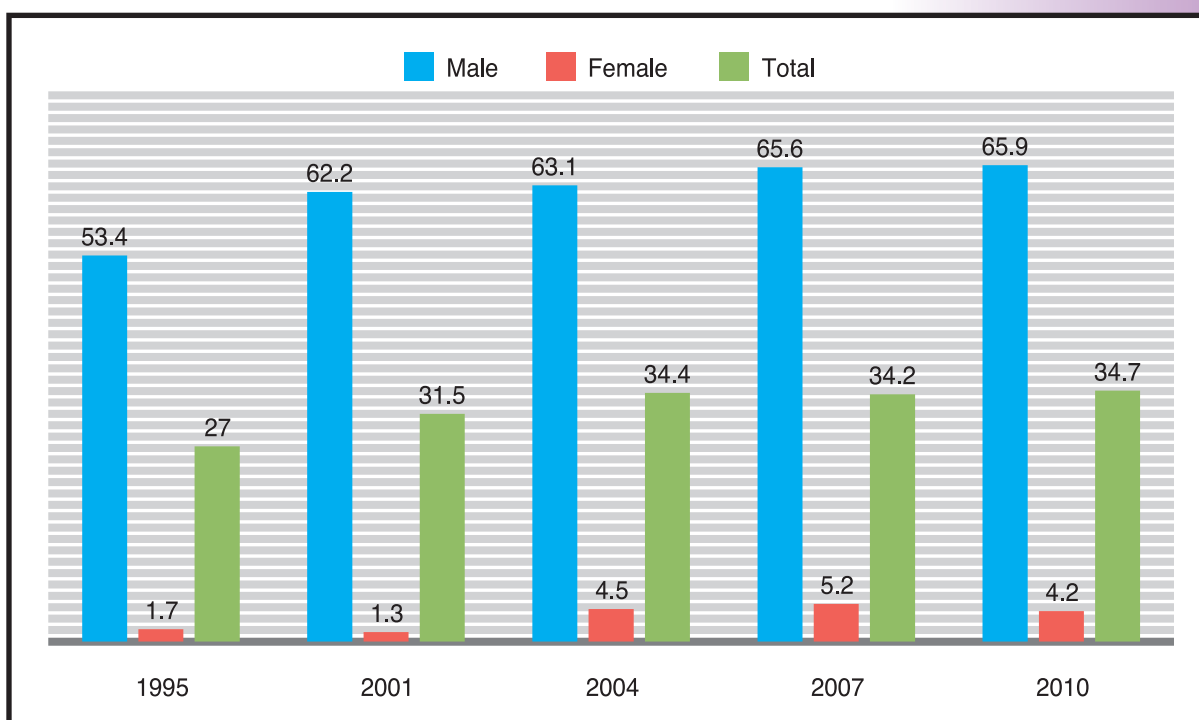
To maximize fiscal and health gains, the maximum excise rate (57%) allowed by law should be implemented as soon as possible.

If further gains are to be expected, the ceiling on excise taxes should be removed to allow for even higher excise rates to be imposed.

I. Introduction and background

According to the Indonesian Ministry of Health, there were **about 57 million Indonesians smoking in 2004, and at least 200,000 Indonesians die annually from smoking-related illnesses.**¹ These worrisome statistics are even more troubling given the high and steadily increasing trend of cigarette consumption among both men and women in Indonesia. In 2010, Indonesian smoking prevalence was estimated at 34.7%. While smoking among adult males has been steadily increasing (65.9% in 2010), consumption among women has risen significantly in recent years, with almost a 300% increase from 1.3% in 2001 to 5.2% in 2007.²

Figure 1. Prevalence of tobacco consumption in Indonesia from 1995 – 2010



Source: National Socio Economic Survey 1995, 2001 and 2004; and Basic Health Survey 2007 and 2010

Such high rates of smoking can simultaneously and significantly contribute to premature deaths of smokers, increasing health costs, and decreased work productivity. An economic analysis of tobacco use in Indonesia³ points out that in 2001 Indonesia saw a total consumption cost of tobacco amounting to Rp. 127.4 trillion (USD 13.9 billion). This figure includes the use of tobacco products, medical bills for sicknesses, disabilities, and early deaths caused by tobacco use. Notably, this cost is 7.7 times the tax revenue generated from tobacco in the same year, which was only Rp. 16.5 trillion (USD 1.8 billion).⁴ It is therefore imperative that this worsening consumption trend and its related high socio-economic costs be adequately addressed in both the short and long term.

International experts, as well as Parties to the WHO Framework Convention on Tobacco Control (FCTC), recognize that price and tax measures are an effective and important means of reducing tobacco consumption among various segments of the population,⁵ in particular young persons and the poor, who are the most sensitive to price changes. Because tax increases also have a clear fiscal benefit of generating much needed government revenues from direct tax collection and from health and environmental cost savings, economists, other experts, and the public sector also support them. In addition, dedicated tobacco taxes have a significant potential to provide sustainable funding for health promotion and other social development programs.⁶ Many countries, however, especially developing ones, have not yet harnessed this potential, their tobacco taxes being generally low in absolute and relative terms.

¹ Kosen S. 'The health burden of tobacco use' in *The Tobacco Sourcebook*, Ministry of Health, Republic of Indonesia, 2004.

² National Socio Economic Survey 1995, 2001 and 2004; and Basic Health Survey 2007 and 2010

³ Kosen S. 'The health burden of tobacco use' in *The Tobacco Sourcebook*, Ministry of Health, Republic of Indonesia, 2004.

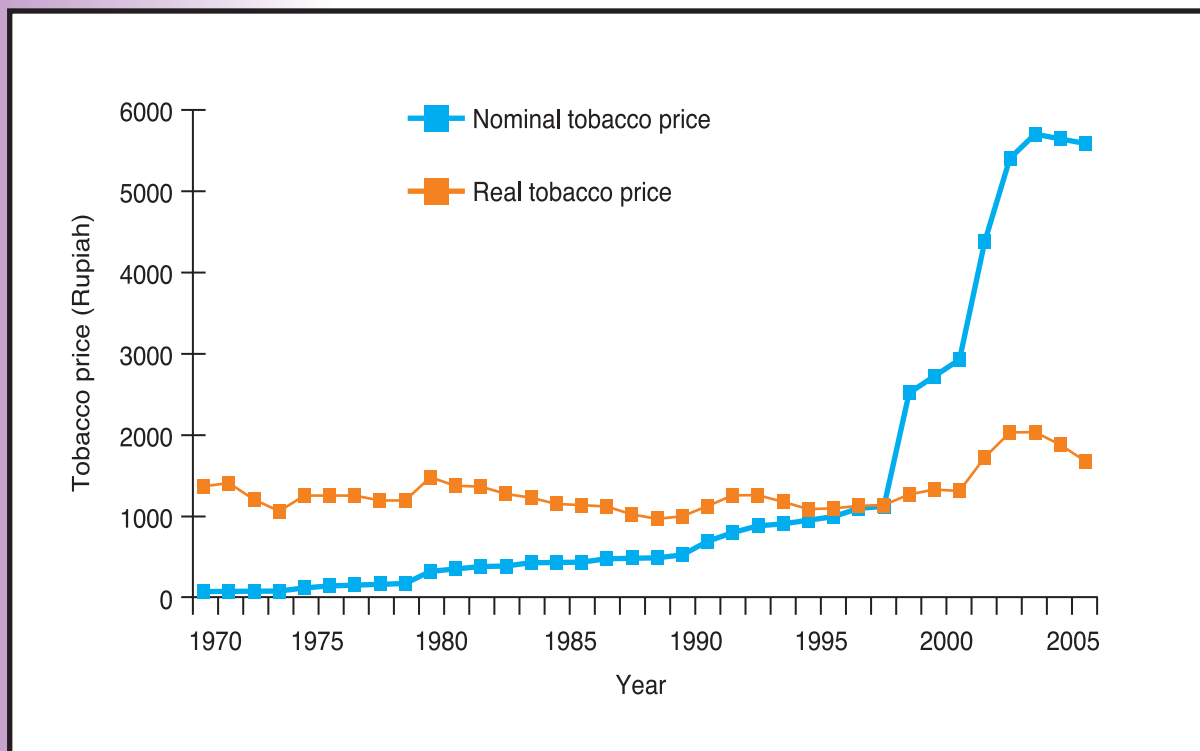
⁴ National Socio Economic Survey 1995, 2001, and 2004; and Basic Health Survey 2007

⁵ Article 6 of the WHO Framework Convention on Tobacco Control

⁶ Carroll A. *The Establishment and Use of Dedicated Taxes for Health*. World Health Organization, 2004.

Economic and social conditions differ though in every country. During recent decades, many developing countries experienced high economic growth and/or high inflation; however, the general increase in consumer prices has not been reflected in the price of tobacco products, making them more affordable to the general public.⁷ A comparison of nominal and real cigarette prices in Indonesia from 1970-2005⁸ showed that while nominal cigarette prices have increased, their real prices have remained relatively unchanged.

Figure 2. Comparison of nominal and real tobacco prices, 1970-2005



Source: Barber S, Adioetomo SM, Ahsan A, Setyonaluri D. Tobacco Economics in Indonesia, 2008.

While the Indonesian government has only minimally increased excise taxes on cigarettes in recent years from 38% to 44%, and then from 44% to 46%, the excise rate is still below the maximum (57%) allowed by the country's Excise Law No.39/2007 and averages to only 52.4% of retail price, far below the recommended tobacco tax level of 67%-80% of the retail price per cigarette pack.⁹

II. About this research

Because economic growth coupled with low cigarette prices contribute directly to rising cigarette consumption, there is a need to examine the level of cigarette affordability in terms of percentage of income used to purchase a pack of cigarettes, the trend of affordability over time, and the fiscal and public health impacts of tax increases.

This research therefore answers two important questions:

1. How affordable are cigarettes in Indonesia, and what is the affordability trend over time, using the measure of Relative Income Price?
2. How would cigarette tax and price increases affect affordability, government tax revenue, industry revenue, cigarette consumption, and smoking prevalence?

⁷ Blecher EH. Targeting the affordability of Cigarettes: A New Benchmark for Taxation Policy in Low-Income and Middle-Income Countries. *Tob Control* 2010; 19: 325-330.

⁸ Barber S, Adioetomo SM, Ahsan A, Setyonaluri D. Tobacco Economics in Indonesia. Paris: International Union Against Tuberculosis and Lung Disease; 2008.

⁹ World Bank, *Curbing the Epidemic: Governments and the Economics of Tobacco Control*, 1999.

Such findings would indicate an appropriate level of cigarette excise burden to make cigarettes less affordable particularly among the low- and middle-income groups.

In particular, this research uses measures such as Relative Income Price (RIP)¹⁰ developed by Blecher and van Walbeek in their cigarette affordability model¹¹ and the “percentage of daily wage” measure for analysis based on secondary data sources on cigarette price and income in the past 10 years. Six income measures were used in calculating affordability: per capita gross domestic product (GDP), per capita national income at current price as a measure of income, and, based on the different costs of living in each, the nominal wage of labor for four regions in Indonesia (Jakarta as capital of Indonesia & West Java, Central Java & Yogyakarta, East Java & Bali, and outside of Java & Bali).

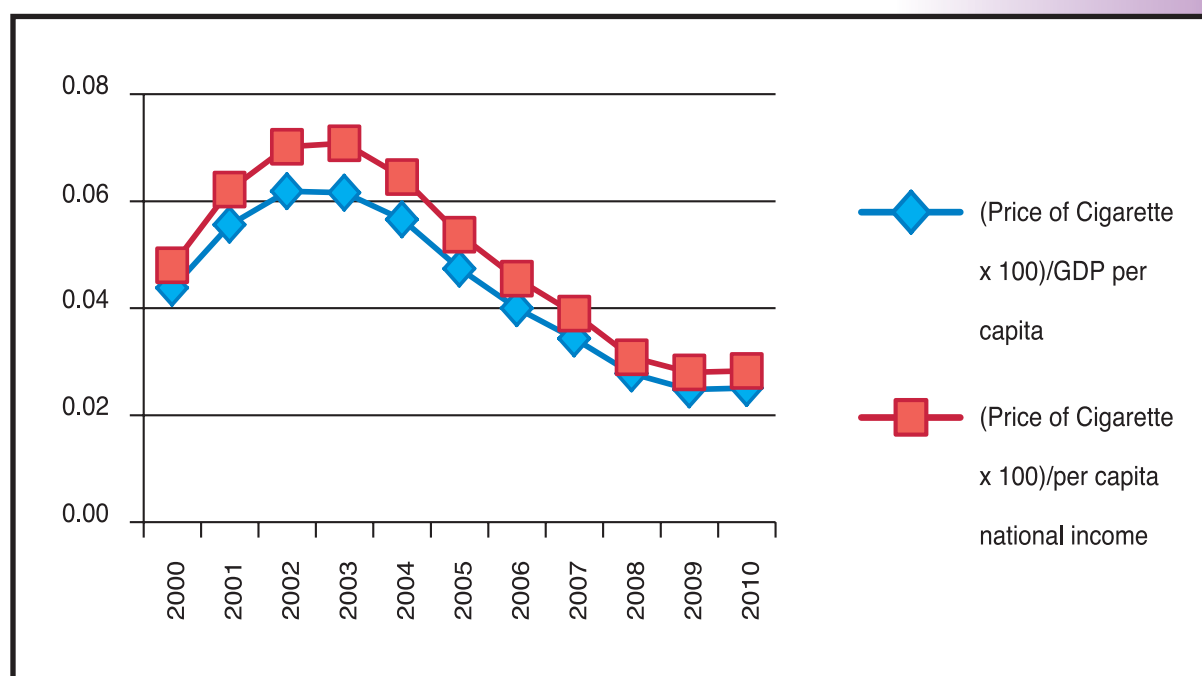
The simulation model introduced by van Walbeek¹² was used to study the fiscal and public health impact of tobacco taxes.

III. Research results and analysis

A. Cigarettes are becoming more affordable

Despite the fact that nominal cigarette prices have gone up in the last decade from Rp. 2,995 in 2000 to Rp. 6,023 by 2010, Indonesia still has among the world’s cheapest and most affordable cigarettes. Cigarette affordability is determined by the interaction of consumers’ income levels, which have been growing steadily from year to year, and cigarette nominal prices, which have remained relatively stable since 2003. As a result, cigarettes have become more affordable over the past several years, as illustrated in Figures 3 and 4.

Figure 3. Relative Income Price (RIP), 2000-2010

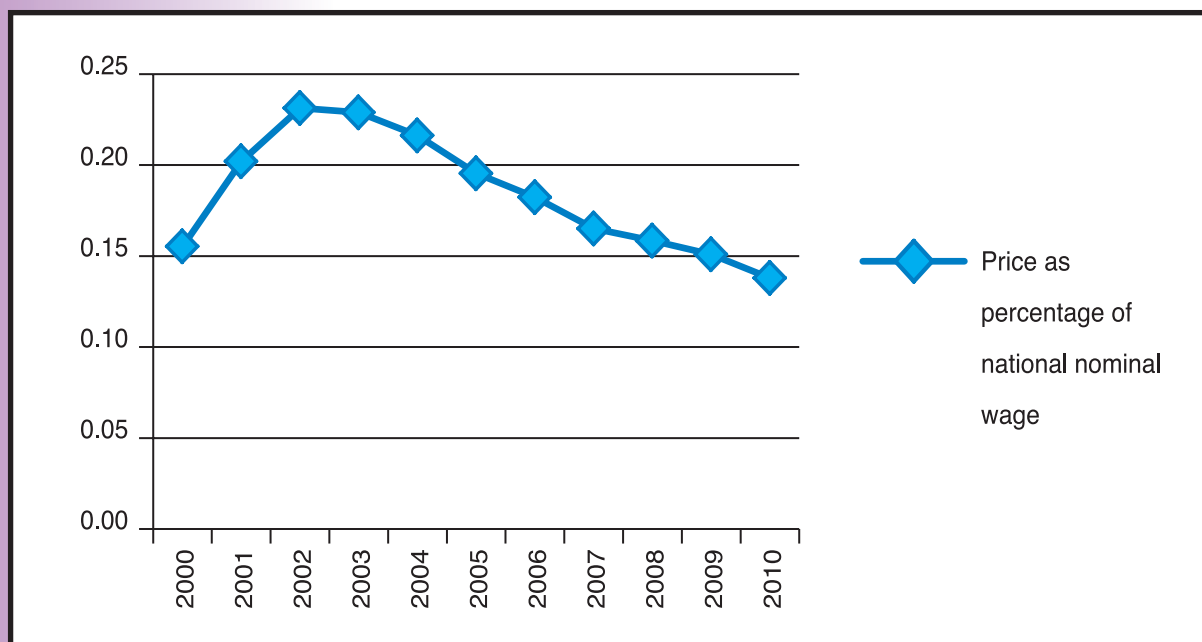


¹⁰ The Relative Income Price (RIP) is a broad measure of affordability that calculates the percentage of per capita GDP required to purchase 100 packs of cigarettes.

¹¹ Blecher EH and van Walbeek CP. Cigarette affordability trends: an update and some methodological comments. *Tob Control* 2009; 18 (3), 167–175.

¹² Van Walbeek C. A simulation model to predict the fiscal and public health impact of a change in cigarette excise taxes. *Tob Control* 2010; 19 (1), 31–36.

Figure 4. Price as percentage of national average nominal daily wage of labor, 2000-2010



B. Impact of raising taxes

Due to the addictive nature of tobacco consumption and the inelasticity of demand for cigarettes, **increasing the excise tax has the potential to not only reduce consumption of a harmful product but also to generate additional revenues for the government.** While the Indonesian government has increased excise taxes on cigarettes from 38% to 44%, and then from 44% to 46%, this level is still below the maximum allowed by the country's national tax law. Four step-by-step excise tax increase scenarios, representing the actual and potential rates levied in Indonesia (38% to 44%, 44% to 46%, 46% to 50%, 50% to 57%) were run through van Walbeek's tax impact simulation model.

Table 1. Results of tax impact simulation model

	Before tax increase	Scenario 1: 38% to 44%	Scenario 2: 44% to 46%	Scenario 3: 46% to 50%	Scenario 4: 50% to 57%
Excise tax incidence as % of retail price	38	44.1	46.1	50	57
Retail price/pack (USD)	1.03	1.22	1.34	1.54	1.94
Industry price/pack (USD)	0.56	0.59	0.62	0.65	0.68
Adult smoking prevalence (%)	34	33.3	32.9	32.4	31.5
Lives saved		380,000	210,000	300,000	500,000
Cigarette consumption (billion packs/year)	12.817	12.212	11.886	11.416	10.675
% change in cigarette consumption		-4.7	-2.7	-4.0	-6.5
Excise tax revenue (USD billion)	5.016	6.548	6.555	8.795	11.836
% change in excise tax revenue		30.5	11.9	20.1	34.7
Industry revenue (USD billion)	7.161	7.165	7.346	7.428	7.293
% change in industry revenue		0.04	2.20	0.84	-1.81

Summarized in Table 1, the simulation model indicates that all of the scenarios result in significant increases (20 to 34%) in excise revenue for the government, except for Scenario 2, where the small 2% increase in excise tax resulted, as expected, in the smallest (11.9%) increase in tax revenues.

From a public health perspective, a few hundred thousand Indonesian lives were saved with each tax increase; although Scenario 2, having the smallest rate increase, also resulted in the fewest lives saved.

Additionally, **in spite of the reduced smoking prevalence and cigarette consumption, none of the simulated tax increases had any significant impact on industry revenue**; even when industry revenue was negative, the percentage change was only -1.8%, a negative cost that the industry might easily afford to absorb (industry still earns over USD 7.2 billion) or offset through even a small increase in retail prices.

IV. Policy recommendations

There are at least three purposes for imposing a tax on tobacco products: to raise revenue, correct negative externalities (e.g. health care costs), and discourage use of a harmful product (i.e. reduce consumption).

The research indicates that in order to achieve these objectives, **the maximum excise rate allowed by law (57%) should be implemented as soon as possible**, as this would not only generate additional revenue for the government but also control consumption and improve the public's health.

As cigarettes are becoming more affordable in Indonesia, **the government should ensure that excise taxes are indexed to inflation and significantly high enough (at least 67% of the retail price) to discourage initiation among youths and curb current smoking**. If maximal gains are to be expected, the ceiling on excise taxes should be removed so as to allow even higher excise rates to be imposed.

Finally, this study also touches on the complexity of the Indonesian tobacco taxation system and highlights the need to simplify this system as soon as possible so as to prevent the tobacco industry from manipulating the system to avoid paying taxes. **All tobacco products should also be taxed uniformly to discourage users from switching to lower priced brands, which would erode both the economic and public health benefits of any tax and price increase.**

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**Mission:
Working together
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