

This policy brief is based on a research study titled “Estimating Price Elasticity of Cigarette Demand in Bangladesh Using GATS Data” conducted by Advancement Through Research and Knowledge (ARK) Foundation, Bangladesh.

Price Elasticity of Cigarette Demand: Implications for Cigarette Taxation in Bangladesh

Background

Bangladesh has one of the largest populations of tobacco users in the world.^{1,2} According to the Global Adult Tobacco Survey (GATS) 2017, overall cigarette smoking prevalence is 14 percent among adults and 28.7 percent among men.

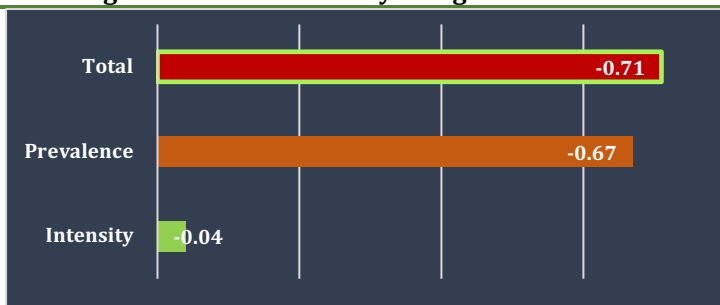
Higher cigarette taxes and prices decrease smoking prevalence by inducing current users to quit and discouraging smoking initiation, especially among youth.³ However, the effectiveness of a cigarette tax increase depends on how much it increases cigarette price, and, more importantly, how much the price increase reduces cigarette demand.

This study estimates the effect of a price change on cigarette demand using GATS 2009 and 2017 data from Bangladesh. It decomposes the total change in cigarette demand into changes in smoking prevalence and intensity. In addition, this study estimates the price sensitivity of cigarette demand by region and wealth groups.

Research Findings

An Increase in Cigarette Prices Discourages Non-Smokers from Smoking and Encourages Current Smokers to Smoke Less

Figure 1: Price Sensitivity of Cigarette Demand



Source: Authors' Estimation Using GATS 2009 & 2017 Data

Key Messages

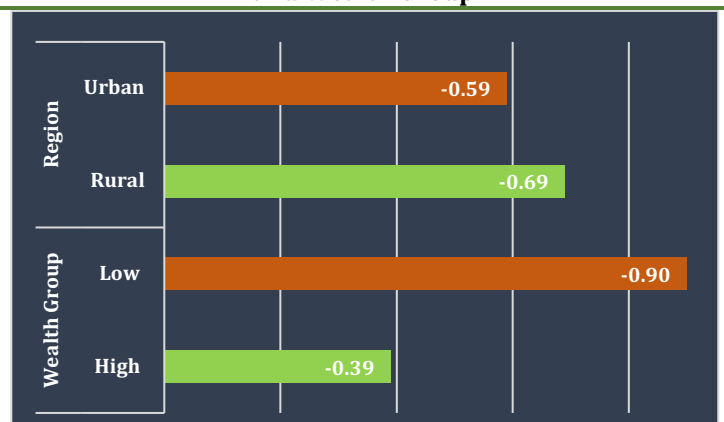
- Cigarette demand responds less than proportionately to changes in cigarette price.
- Increasing the price of cigarettes reduces smoking participation and encourages smokers to smoke less.
- Poorer people reduce cigarette demand more than the rich in response to a price change.
- The Government should increase cigarette taxes to increase the prices of cigarettes and reduce smoking prevalence in Bangladesh.
- The cigarette tax must be adjusted annually for inflation and income growth to reduce the affordability of cigarettes.

Cigarette price increases have a significant negative effect on their consumption. The total price elasticity of demand for cigarettes is estimated at -0.71. Hence, a ten-percent increase in the price of cigarettes would reduce smoking by 7.1 percent (Figure 1). This implies that demand for **cigarettes in Bangladesh is inelastic in that it decreases less than proportionately to a change in price.**

Cigarette smoking prevalence, as well as intensity of smoking, are inversely affected by cigarette price increases. The smoking prevalence and intensity elasticities are estimated as -0.67 and -0.04, respectively. This means that a ten-percent increase in price, would reduce smoking prevalence by 6.7 percent and intensity by 0.4 percent. **Thus, cigarette price increases reduce the uptake of smoking, encourage cessation, and induce smokers to smoke less.**

Poorer People Respond More to Price than Richer People, and there is Slight Difference in Responsiveness by Geographical Location

Figure 2: Price Sensitivity of Cigarette Demand by Region and Wealth Group



Source: Authors' Estimation Using GATS 2009 & 2017 Data

The effect of higher cigarette prices on its demand is much higher for poorer people. Figure 2 shows that individuals in the low wealth (bottom three quintiles) group are more than twice as responsive as their high wealth (top two quintiles) counterparts. If price increases by ten percent, cigarette demand among poorer people will decrease by nine percent compared to 3.9 percent among wealthier people. Thus, cigarette price increases are more effective in reducing cigarette demand among poorer people.

By geographical location the effect of cigarette price increases on demand does not differ considerably.

This research shows that the price elasticity of cigarette demand is only marginally higher (in absolute terms) in rural areas with a magnitude of -0.69, compared to -0.59 in urban areas (Figure 2). Thus, a ten-percent increase in the price of cigarettes would reduce cigarette consumption by 5.9 percent in urban areas and 6.9 percent in rural areas.

Conclusion and Policy Recommendations

Demand for cigarettes declines in response to price increases. Most importantly, poorer people are more sensitive to price increases and such increases discourage non-smokers from starting to smoke.

- The government should **impose a significant cigarette tax** increase to raise the price of cigarettes to encourage smokers to quit and prevent non-smokers from starting to smoke, especially youth and the poor.
- The tax must be **annually adjusted for inflation and income growth** to reduce the affordability of cigarettes.
- Poor people are more likely to smoke low-price cigarettes compared to rich people. **Implementing a uniform specific tax** will increase the price of low-price cigarettes relatively more. Since poor people are more responsive to price changes, **cigarette consumption of poor people decreased significantly.**

References

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3. Chaloupka, F. J., Kostova, D., & Shang, C. (2014). Cigarette excise tax structure and cigarette prices: Evidence from the Global Adult Tobacco Survey and the U.S. National Adult Tobacco Survey. *Nicotine & Tobacco Research*, 16 (Supplement 1): S3-S9.

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