

## BACKGROUND

Cigarette affordability is a key driver of smoking behavior in Bosnia and Herzegovina (BiH), where economic growth has outpaced tobacco tax increases. Despite earlier progress, cigarette prices remain low compared to the European Union (EU), sustaining high smoking rates, which stood at 41 percent in 2019<sup>1</sup>. For comparison, the weighted average retail sales price was 4.89 EUR in the EU<sup>2</sup> and only 2.48 EUR in BiH.

Post-2020, economic recovery and rising incomes further increased cigarette affordability as price growth lagged behind GDP and inflation. In the 2020–2023 period, cigarette prices rose by 12 percent cumulatively<sup>3</sup>, while real GDP grew by 10.5 percent and total prices by 22<sup>4</sup>. This trend has reversed earlier reductions in consumption, highlighting the need for stronger tobacco control policies centered on taxation.

## DATA AND METHODOLOGY

The study analyzes quarterly macroeconomic data from 2010 to 2023, focusing on cigarette consumption and affordability. Affordability is assessed using indicators such as relative income price (RIP), tobacco affordability index (TAI), minutes of labor (MoL), and income purchasing capacity (IPC). Three income groups—low, middle, and high—are defined based on average wages.

Two regression models estimate cigarette demand elasticities: (1) price and income elasticities and (2) affordability elasticity. The study also simulates the tax increases required to reduce cigarette consumption.

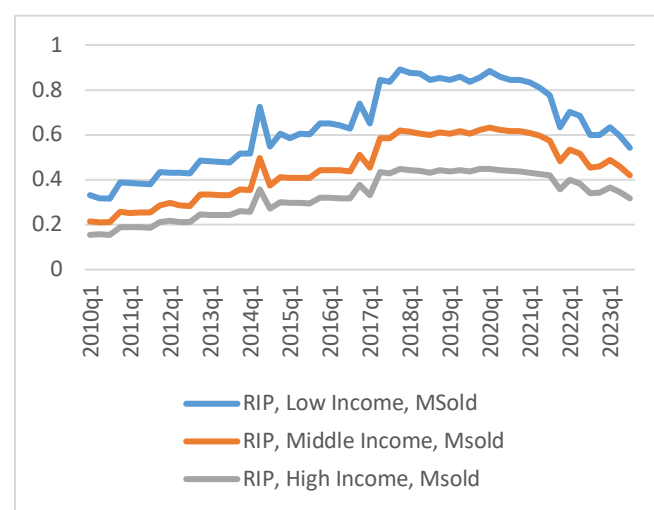
## RESULTS

The results show a decline in affordability until 2020, followed by a sharp increase, particularly for higher-income groups. Cigarettes remain most affordable for high-income earners and least affordable for low-income earners.

The analysis reveals a **long-run price elasticity** of -0.885, meaning a 10-percent increase in cigarette prices would reduce consumption by approximately 8.85 percent. This highlights that cigarette demand in BiH is responsive to price changes, making price-based interventions an effective tool for reducing smoking prevalence. In the short run, the price elasticity is smaller, reflecting the addictive nature of tobacco and the lag in consumer response to price changes.

**Income elasticity** is estimated at 0.587 in the long run, indicating that cigarettes are a normal good in BiH. A 10-percent increase in disposable income leads to a 5.87-percent increase in cigarette consumption. This underscores the role of rising incomes in increasing cigarette affordability and consumption, particularly in

Figure 1. RIP based on ANW, by income groups



a country where economic growth has often outpaced tobacco price increases.

**Affordability**, measured using RIP, has a long-run elasticity of -0.967. This means a 10-percent decrease in affordability (for example, due to higher prices or slower income growth) leads to a 9.67-percent reduction in cigarette consumption. Therefore, affordability is a stronger determinant of smoking behavior than price alone, given its dual dependency on both income and price trends.

The introduction of the **Law on Tobacco** in 2010 significantly reduced cigarette consumption in the long term. The impact is reflected in a statistically significant elasticity coefficient of -0.248 in the price-income model and -0.271 in the affordability model. However, the advertising ban, introduced by the **Code on Commercial Communications** in 2016, showed a limited and inconsistent effect in reducing consumption, particularly in the short run.

**Policy simulations** indicate that to achieve a 10-percent reduction in cigarette consumption, the specific excise tax must increase by 37–44 percent, depending on the elasticity model used. This tax hike would raise government revenue from excise taxes by 27–34 percent, demonstrating the dual benefits of taxation for public health and fiscal stability.

## POLICY RECOMMENDATIONS

To address rising cigarette affordability and reverse the increasing smoking prevalence in BiH, the following policy recommendations are proposed:

- The government should implement **substantial and sustained increases in specific cigarette excise taxes**. Given the observed price and affordability elasticities, as well as the absence of tax increases since 2019, policy makers should aim to substantially increase the specific

excise by 50 percent. This increase would achieve meaningful reductions in cigarette consumption while significantly boosting government revenue.

Also, it is necessary to introduce a regular annual increase in the specific excise tax of at least 15 percent in the coming years, which would be further adjusted for inflation and GDP growth, to ensure that cigarettes become progressively less affordable over time.

- **Non-price tobacco control measures** must complement tax policies. Stricter enforcement of existing laws, such as the Law on Tobacco (2010) and the Code on Commercial Communications (2016), and the introduction of stricter smoking ban laws across the entire territory of Bosnia and Herzegovina is crucial to sustaining the reduction in consumption. Additionally, targeted public health campaigns and smoking cessation programs should be expanded, particularly for vulnerable low-income and youth populations.
- Policy makers should consider **strengthening monitoring and data collection systems to track smoking behavior** and affordability trends more effectively. Robust data will enable timely policy adjustments and improve the evaluation of tobacco control efforts.
- Finally, **regional collaboration with other Western Balkan countries** should be pursued to align taxation and pricing policies. Coordinated action can reduce cross-border price differentials, minimizing opportunities and incentives for tobacco smuggling, a common challenge in the region.

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