

# Will an increase in tobacco excise duty bring health benefits in Poland?

Maciej Albinowski, Piotr Lewandowski

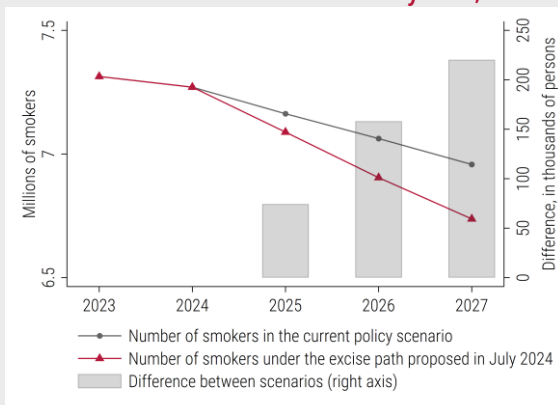
## Problem

Tobacco prices significantly influence consumption levels. Over the past decade in Poland, they have been falling in relation to incomes and the prices of other products. We show how a new proposal for an increase in excise duty will affect cigarette smoking and the health of the Polish population.

## Conclusions

The number of smokers and the level of cigarette consumption will decrease significantly compared to the status quo scenario. An increase in excise duty on e-cigarette liquids will reduce their popularity among young people. The tangible benefit of raising the excise duty will be a significantly lower number of premature deaths.

**Figure 1. Higher excise duties on cigarettes will reduce the number of smokers by 220,000 in 2027**



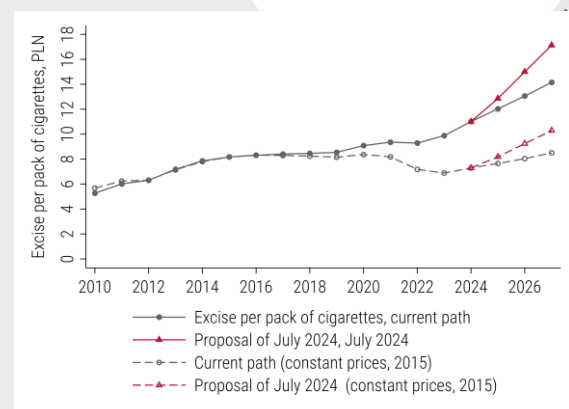
Note: Simulation based on elasticities of smoking relative to the affordability of cigarettes and trends in smoking prevalence, estimated for nine household groups (we distinguish three age groups and three education levels).

Source: own elaboration based on data from the Household Budget Survey and the European Health Interview Survey.

## Main results

- **9%** of Polish adults with tertiary education and **25%** of adults without tertiary education smoke cigarettes on a daily basis.
- Since 2014, there has been a **54%** increase in the number of cigarettes that can be bought with the average wage.
- A 10% increase in the price of cigarettes translates into a **1.7%** decrease in the number of smokers and a **4.0%** decrease in total cigarette consumption.
- The higher excise duty will reduce the number of smokers by **220,000** and the number of premature deaths by at least **66,000**.

**Figure 2. Planned excise duty increases**



Note: We assume that the non-tax components of the price of cigarettes will not change between 2024 and 2027.

Source: own elaboration based on data from the Ministry of Finance.

Tobacco excise duty is an important health and fiscal policy instrument. By reducing consumption of tobacco products, it reduces health risks among potential smokers and the costs of smoking for the rest of society. At the same time, excise tax revenue helps to finance state expenditures resulting from smoking. The Ministry of Finance of Poland has proposed an increase in tobacco excise duty: in 2027 excise duty on cigarettes would be 476.10 PLN/1000 sticks + 32.05% of the maximum retail price. The specific part of the excise duty is currently PLN 276.00/1000 sticks and, under the current law, was to reach PLN 367.36/1000 sticks in 2027. We estimate that acceleration of excise duty increases will reduce overall cigarette consumption by 6.8%, reduce the number of adult smokers by approximately 220,000 people, and consequently lower the number of premature deaths by at least 66,000.

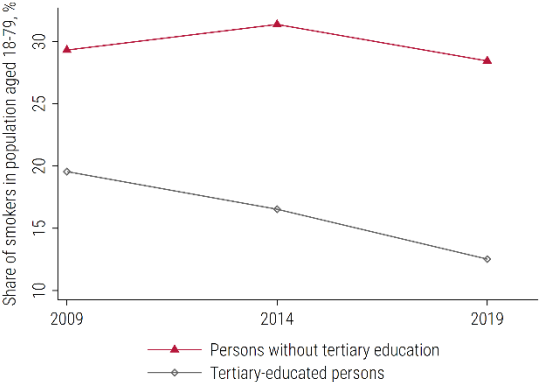
## The popularity of smoking remains high, and the affordability of cigarettes is increasing

In 2019, 24.3% of Poles were smokers, of which 20.9% smoked daily. The popularity of smoking is declining mainly among those with a university education (Figure 3). In 2009, 19.6% of people with tertiary education were smokers, of which 14.0% smoked daily. By 2019, the proportion of smokers in this group has fallen to 12.5%, including 9.0% who smoke daily. Among those without tertiary education, the percentage of smokers fell slightly, from 29.3% to 28.4%, and the percentage of daily smokers even increased from 24.5% to 25.1%. The differences in these trends can be attributed to different social norms and a growing health awareness among those with higher education.

The consumption of tobacco products other than cigarettes and cigars is increasing in both groups (Figure 4). In households of people with higher education, the proportion declaring to purchase such products increased from 2.0% in 2015 to 4.1% in 2022. Among other households, the popularity of these products is higher, and the proportion of people who declare they will purchase them has increased from 6.7% in 2015 to 7.5% in 2022.

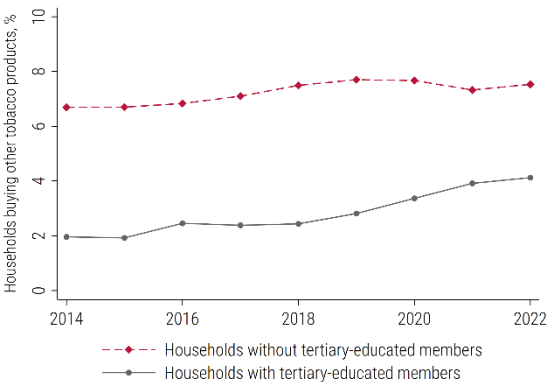
A major public health challenge is the increasing popularity of e-cigarettes among children and young people. We do not have data to determine the scale of this phenomenon in Poland. Research from the UK indicates that in 2023, 3.7% of children aged 11-17 used e-cigarettes more than once a week, a 3-fold increase from 2021.

**Figure 3: Smoking incidence decreases among tertiary-educated persons, but remains almost unchanged among the less educated**



Source: own elaboration based on European Health Interview Survey data (latest data 2019)

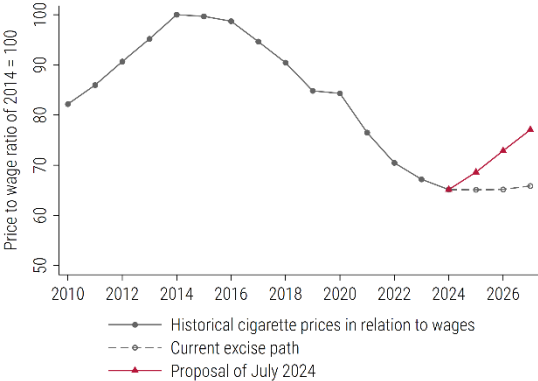
**Figure 4: Households without tertiary-educated members are also more likely to purchase alternative tobacco products**



Source: Own elaboration based on data from Household Budget Surveys

Since 2014, the affordability of cigarettes has increased (Figure 5). Between 2015 and 2019, excise duty parameters remained constant, although nominal wages increased by 29%. Despite a one-off excise duty increase in 2020, the affordability of cigarettes continued to increase due to rapid nominal wage growth, while the real value of excise duties fell due to inflation (Figure 2). Although the path of excise duty increases set by the law in 2022 stabilizes the price of cigarettes relative to average wages from 2024 onwards, the average wage in 2024 allows for the purchase of 54% more cigarettes compared to ten years earlier. Implementing the more ambitious excise duty increase path proposed by the MF in July 2024 will bring the affordability of cigarettes back to 2021 levels in 2027. However, it will still be 30% higher than in 2014.

**Figure 5. Since 2014, wages have risen faster than excise duty - affordability of cigarettes has increased**



Source: Own elaboration based on data from Statistics Poland and the Ministry of Finance

### Excise duty increases will have major health-promoting effects

Changes in the price of cigarettes relative to income significantly affect cigarette smoking. We estimate that a 10% increase in relative cigarette prices reduces the probability of a household purchasing cigarettes by 0.45 percentage points (pp).<sup>1</sup> The smoking decisions of the less educated are more sensitive to changes in cigarette prices: the effect is stronger among households with primary or lower secondary education (-0.57 pp) than among those with tertiary education (-0.35 pp) or secondary education (-0.46 pp).

As a result, higher excise duty rates will reduce the number of adult smokers in 2027 by 220,000 compared to the status quo, of which 42,000 are tertiary educated and 178,000 are at most secondary educated (Figure 1).<sup>2</sup> The literature assumes that every 100 people who abstain from smoking translates into 30-50 fewer premature deaths. The proposed excise tax increases will therefore reduce premature deaths by at least 66,000.

Due to a lack of data, our calculations do not include children and adolescents. Stokłosa et al. (2022) showed, however, that a 10% increase in the price of cigarettes reduces the risk of smoking initiation among Polish youth by 10-15%, which is a strong effect. The MF proposal of July 2024 also increases excise duty on e-cigarette

<sup>1</sup> Based on data from the Household Budget Survey 2010-2022. We use information on 157,000 households that participated in the survey in two consecutive years. Based on the average share of households purchasing cigarettes, we estimate the elasticity of the number of smokers with respect to affordability to be -0.17. In other words, a 1% increase in price relative to income results in a 0.17% decrease in the number of households purchasing cigarettes.

<sup>2</sup> Simulations based on econometric models of the elasticity of demand for cigarettes estimated for nine socio-demographic groups distinguished by age and education level, Household Budget Survey data.

liquid: from 0.55 PLN/ml in 2024 to 1.8 PLN/ml in 2027. Such a change implies a 55% increase in the price of these liquids. We expect that this intervention will significantly reduce e-cigarette consumption among children and adolescents. Among adults, on the other hand, assuming elasticities analogous to those for traditional cigarettes, the number of e-cigarette users would decrease by 9%.

The price of cigarettes also affects the number of cigarettes purchased by those who continue to smoke. We estimate that a 1% increase in the price of cigarettes (relative to income) reduces the number of cigarettes smoked by 0.27%. This effect is also stronger for households with primary or lower secondary education (-0.32%) than those with tertiary education (-0.23%). We estimate that total cigarette consumption decreases by 0.4% with a price increase of 1%. On this basis, we expect the amendment to the excise law to reduce cigarette consumption by 6.8% in 2027.

## Risks associated with excise duty increases are low

A potential increase in illicit sales is a risk associated with with excise duty hikes. However, a KPMG (2023) study shows that in 2022, cigarettes without domestic excise duty accounted for only 5.2 per cent of total consumption, well below historical values reaching over 10 per cent between 2011 and 2018. This can be partly attributed to better market surveillance (including *Track & Trace* system), reduced traffic at the borders with Belarus and Ukraine, and the lower popularity of street and bazaar trade. Inactive channels of illegal trade reduce the risk of increased activity following excise duty increases.

The second risk is a potential reduction in living standards among low-income smokers who are unable to quit. The answer may be to reduce consumption. To ensure that excise duty increases do not hurt the household budget, a person smoking 14 cigarettes a day in 2024 should reduce their consumption to no more than 10 cigarettes in 2027.

**Bibliography:** <https://ibs.org.pl/en/publications/will-an-increase-in-tobacco-excise-duty-bring-health-benefits/>

---

### IBS Policy Paper Series

The IBS Policy Paper series presents the results of economic research in an accessible format to enhance the quality of public debate.

Series editor - Jan Rutkowski

### IBS Policy Paper 2/2024

ISSN: 2451-4365

### Additional information

The authors are grateful to Hana Ross and Jan Rutkowski for their valuable comments.

This research was funded by The Vienna Institute for International Economic Studies (wiiw). wiiw is a partner of the Bloomberg Philanthropies' Initiative to Reduce Tobacco Use..

The contents of this publication express the views of the Authors and do not necessarily represent the position of the Institute of Structural Research. The usual disclaimers apply.