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Revenue and Public Health Impacts of a Cigarette Tax Increase in Indiana

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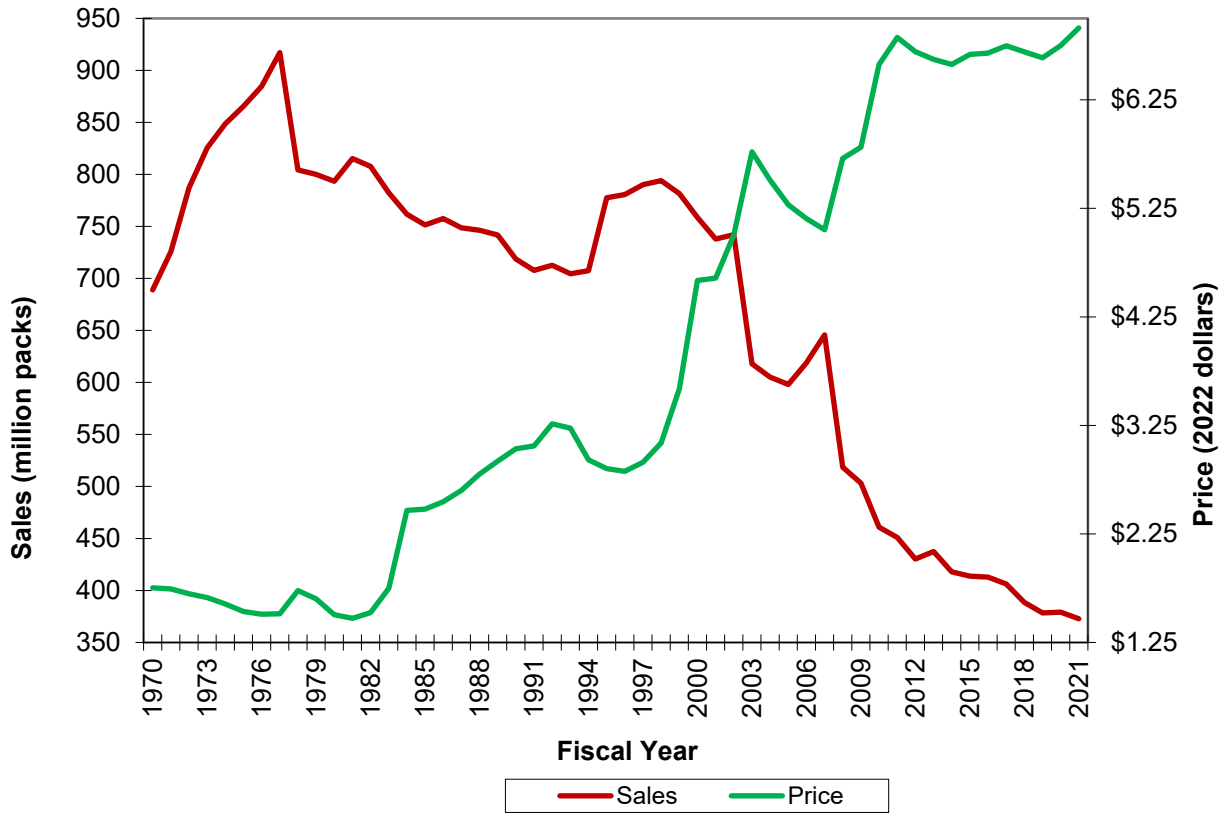
Introduction

Extensive national and international evidence shows that cigarette and other tobacco product tax increases that lead to significant increases in prices are the single most effective policy for reducing tobacco use (National Cancer Institute (NCI) and World Health Organization (WHO), 2016). At the same time, tobacco tax increases also generate significant new tax revenues, despite reductions in tobacco use. In addition, the improvements in health that follow the reductions in tobacco use result in less spending on health care to treat the consequences of tobacco use, as well as increased productivity.

Price Increases and Tobacco Use

Numerous economic studies clearly show that the demand for tobacco products follows the most fundamental law of economics – that of the downward sloping demand curve. That is, as prices go up, the quantity consumed goes down, and vice-versa. Estimates indicate that a ten percent increase in cigarette prices reduces overall cigarette consumption by about four percent. As illustrated in Figure One, Indiana is no exception, with cigarette sales generally falling as cigarette prices increase and cigarette sales rising when cigarette prices are falling.

Figure One
Cigarette Prices and Tax-Paid Cigarette Sales
Inflation Adjusted, Indiana, 1970-2021

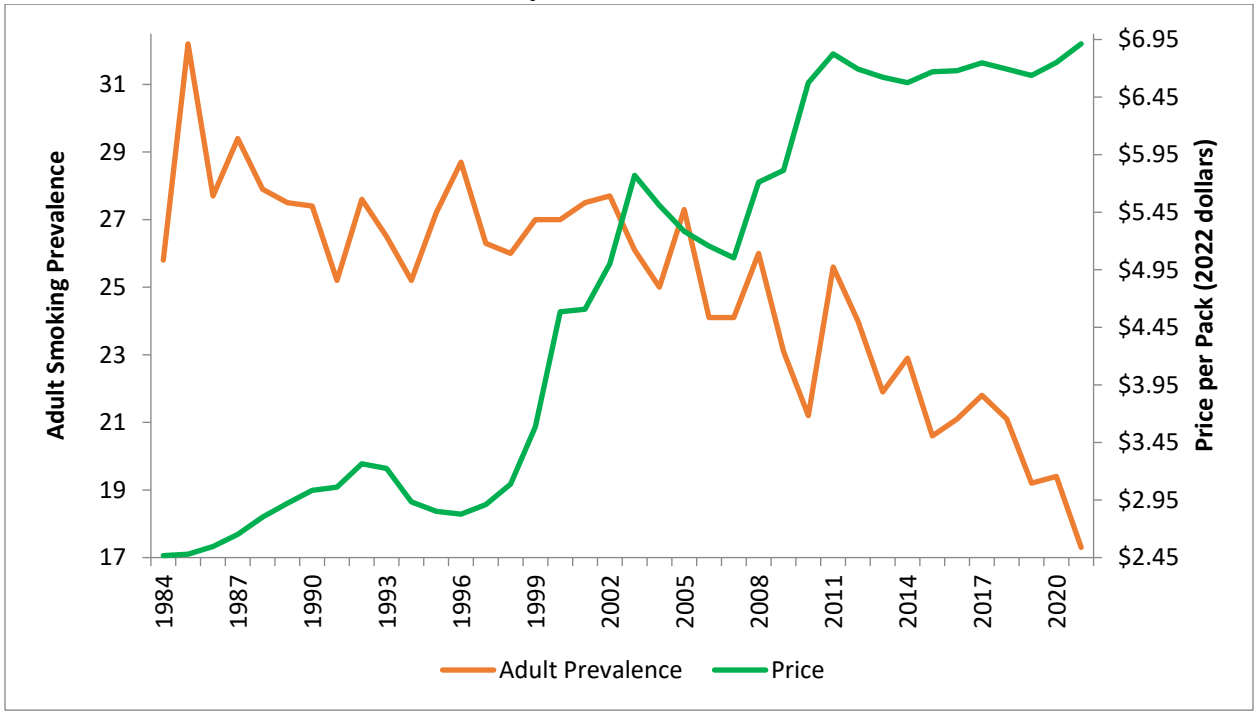


Source: Orzechowski and Walker, 2022, Bureau of Labor Statistics, and authors' calculations.

The declines in cigarette smoking result from reductions in the number of people who smoke, due to increases in smoking cessation among current smokers, prevention of relapse among former smokers, deterred initiation among young people, and reductions in cigarette consumption among continuing smokers (NCI & WHO, 2016). Estimates indicate that about half of the impact of price increases on smoking is from reductions in the number of people who smoke, with a ten percent price increase reducing smoking prevalence by about two percent. The inverse relationship between cigarette prices and smoking prevalence is

illustrated in Figure Two, for Indiana. As with cigarette sales, when inflation adjusted cigarette prices are rising, smoking prevalence is falling, and vice-versa. Most of the reduction in prevalence results from current smokers trying to quit smoking. It is estimated that about ten percent of smokers will try to quit smoking in response to a ten percent price increase, with about one in five who try to quit succeeding (NCI & WHO, 2016).

Figure Two
Cigarette Prices and Adult Smoking Prevalence
Inflation Adjusted, Indiana, 1984-2021

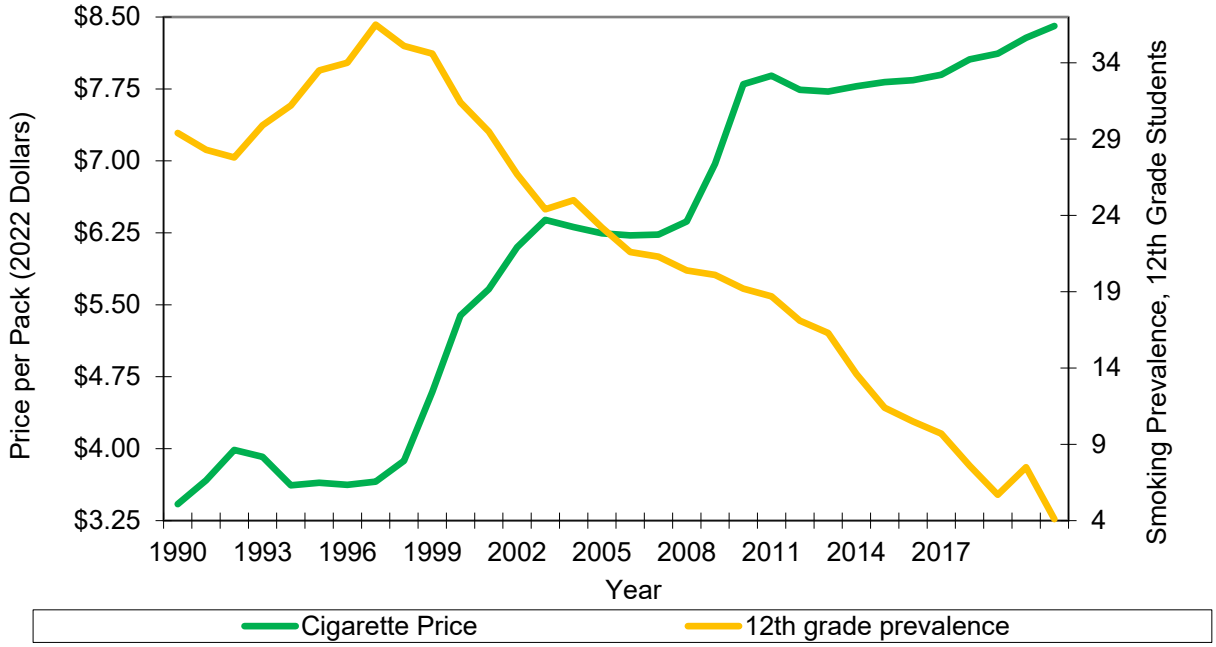


Source: Behavioral Risk Factor Surveillance System (BRFSS), Orzechowski and Walker (2022), Bureau of Labor Statistics, and authors' calculations.
Note: BRFSS sampling methodology changed in 2011, so prevalence estimates beginning in 2011 are not directly comparable to prevalence estimates before 2011.

Moreover, price increases have their greatest impact on high-risk populations, including young people, pregnant women, and those with low incomes (NCI & WHO, 2016). Estimates indicate that smoking among young people is two to three times more sensitive to price

increases than is smoking among older populations. Price increases are highly effective in deterring young people from smoking, particularly in preventing the transition from experimentation with cigarettes into more regular smoking. Figure Three illustrates the impact of prices on youth smoking prevalence among U.S. high school seniors since 1990; again, as cigarette prices rise, youth smoking prevalence declines. Similarly, estimates indicate that a ten percent price increase will reduce smoking prevalence among pregnant women by as much as seven percent, leading to improved birth outcomes such as reductions in low birthweight births. Finally, price increases can help reduce socioeconomic disparities in the health consequences of smoking, given that low-income smokers will respond more to price increases than will their higher income counterparts.

Figure Three
Cigarette Prices and Youth Smoking Prevalence
High School Seniors, Inflation Adjusted, United States, 1990-2021



Sources: Monitoring the Future, Orzechowski and Walker (2022), Bureau of Labor Statistics, and authors' calculations.

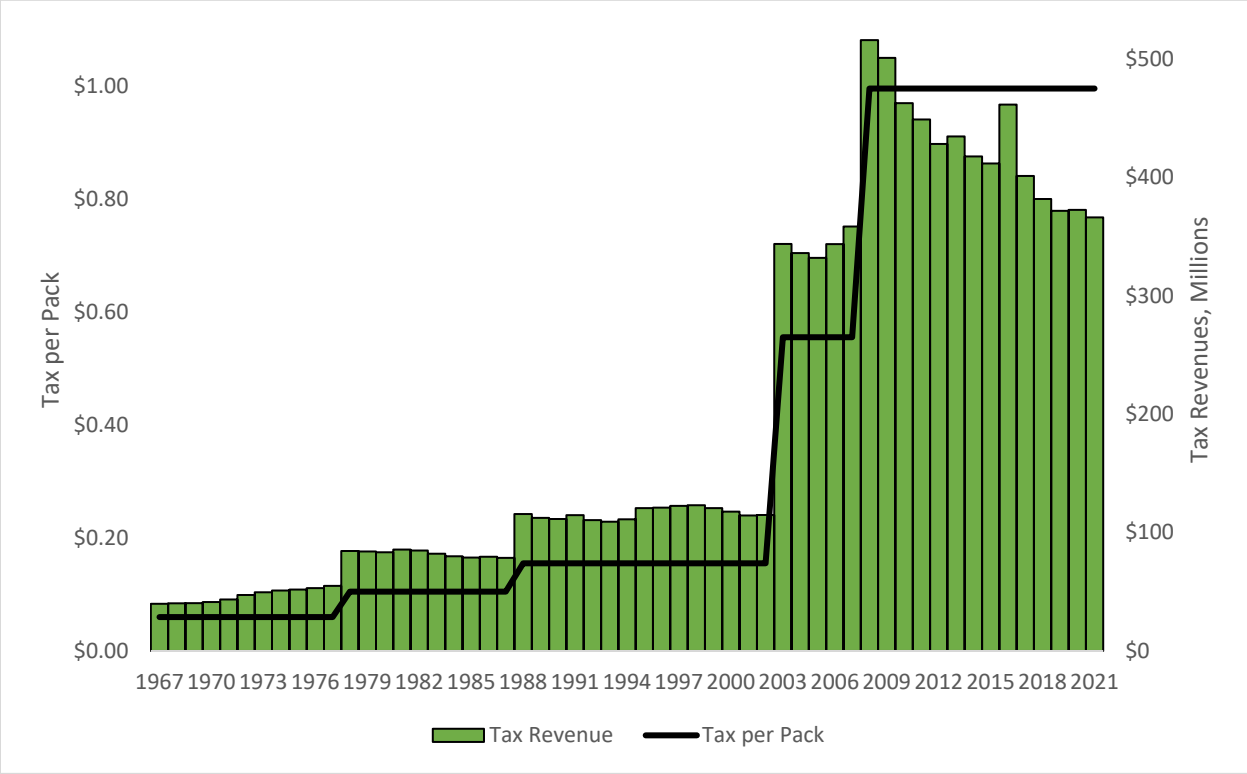
Tax Increases and Tax Revenues

Increasing excise tax rates on tobacco products is the most direct way to increase prices. Despite the reductions in tobacco use that result, tax increases that raise prices also generate considerable new tax revenues. Two factors explain this. First, excise taxes account for a relatively small share of tobacco product prices in most states. This implies that a large tax increase will result in a less than proportional rise in price. Second, the reduction in sales is less than proportionate to the increase in price. For example, if the cigarette tax accounts for 25 percent of average prices, a doubling of the tax – a 100 percent tax increase – will raise prices by 25 percent, if fully passed on to smokers. This 25 percent price increase reduces consumption by about ten percent, on average. The remaining 90 percent of the original consumption is now taxed at twice the original rate, resulting in an 80 percent rise in revenues. Even if there is some tax avoidance and evasion in response to the tax increase, revenues will still rise. Using the example above, if for every one-pack decline in actual cigarette consumption, there is another one-pack decline in sales due to smokers avoiding the tax (e.g., by buying cigarettes in a neighboring state where taxes are lower) or from purchases of cigarettes smuggled in from a lower tax state, the overall decline in sales would be about 20 percent. In this case, the remaining 80 percent of sales being taxed at double the rate would result in a 60 percent rise in revenues.

The positive impact of cigarette tax increases on cigarette tax revenues is true for Indiana, as illustrated in Figure Four showing the evolution of the cigarette excise tax rate and

cigarette tax revenues in the state over the last 50+ years. Every time Indiana raised its cigarette tax rate, cigarette tax revenues increased significantly. For example, when the tax was increased from 55.5 cents per pack to 99.5 cents per pack on July 1, 2007, gross state cigarette tax revenues rose from $358.4 million in fiscal year 2007 to $515.8 million in fiscal year 2008. Likewise, revenues rose from $114.8 million in fiscal year 2002 to $343.7 million in fiscal year 2003, when the tax was increase from 15.5 cents per pack to 55.5 cents per pack on July 1, 2002.

Figure Four
Cigarette Tax per Pack and Cigarette Tax Revenues
Indiana, 1967-2021



Source: Orzechowski and Walker (2022) and authors' calculations.

Year to year, state cigarette and other tobacco tax revenues are more predictable and less volatile than most other state revenue sources, such as state personal income taxes or corporate income taxes, which can vary considerably from year to year because of nationwide or regional recessions or state economic slowdowns. In contrast, sharp drops in cigarette or other tobacco tax revenues from one year to the next are rare, given the addictive nature of cigarette smoking and other tobacco use. Long-term trends in tobacco use show modest declines from year to year, both nationally and at the state level. These declines can be accelerated by comprehensive tobacco prevention efforts, but will generally be no more than a few percentage points each year. The exception to this will be the large declines that result from significant increases in cigarette prices, such as the large cigarette company price increases prompted by the 1998 Master Settlement Agreement and the April 1, 2009 increase in federal excise taxes on cigarettes and other tobacco products. The only other large year-to-year changes to state cigarette tax revenues are the large revenue increases when a state significantly increases its own cigarette tax rates.

Potential Impact of Tax Increases in Indiana

Tobacco taxes in Indiana are low compared to taxes in other states. The state's 99.5 cent per pack cigarette tax is the 39th highest state tax (including DC) in the country and is just over 52 percent of the average state tax of $1.91 per pack. It is the lowest among its neighboring states of Illinois ($2.98), Kentucky ($1.10), Michigan ($2.00), and Ohio ($1.60), and far below the tax of $6.16 in Chicago, where city and county taxes add $4.18 to the state tax.

As Indiana's past experiences with tobacco tax increases, as well as experiences in other states, clearly demonstrate, increasing tobacco taxes in Indiana will raise revenue despite any increases in tax avoidance and tax evasion. Based on a model that accounts for the impact of higher taxes and prices on tax-paid sales, including changes in cross-border shopping, bootlegging, and other forms of tax avoidance and evasion, we estimate that a $2.00 per pack increase in the Indiana state cigarette excise tax will generate an increase of $356.2 million in the first year alone. Moreover, the increase in revenues would be sustained over time, with revenues declining slowly and predictably as tobacco use continues to fall in the state.

In addition to the revenue benefits, an increase in Indiana's tobacco tax rates would lead to significant improvements in public health. Every year, 11,000 Hoosiers die prematurely from smoking-attributable diseases. Based on a model that incorporates evidence on the impact of price increases on youth and adult smoking prevalence, as well as the impacts of smoking and smoking cessation on smoking-attributable mortality, we estimate that a $2.00 increase in the cigarette tax would reduce youth smoking prevalence by 16.6 percent and prevent 17,800 youth from becoming adult smokers. The tax increase would also reduce the number of young adult smokers by 3,700 and encourage 45,100 adults to quit smoking. As a result, the tax increase would prevent 16,400 future smoking-caused deaths in the current Indiana population. Increases in taxes on other tobacco products would add to the public health impact by reducing the use of these products and minimizing incentives for smokers to switch from cigarettes to other forms of tobacco.

The improvements in health following the tax-induced reductions in tobacco use would lower health care spending in the state. Currently, it is estimated that it costs $3.4 billion

annually to treat the diseases caused by smoking in Indiana. Based on a model using evidence on the impact of smoking on various health outcomes and their costs, we estimate that a $2.00 increase in the cigarette tax would generate over $30 million in health care cost savings in the first five years, due to fewer smoking-caused cases of lung cancer ($7.7 million), fewer heart attacks and strokes ($5.3 million), and 8,000 fewer pregnancy and birth complications ($17.7 million). The state Medicaid program would save more than $13.3 million in health care costs in the first five years. Given the long-term consequences of smoking, these benefits would grow over time, with an estimated long-term savings of $795 million in overall health care spending.

Conclusions

Significant increases in cigarette and other tobacco taxes are the single most effective policy for reducing tobacco use and its health and economic consequences. Experiences in Indiana, as well as numerous other states, nationally, and internationally clearly demonstrate that the higher prices resulting from tobacco tax increases promote cessation, prevent initiation, and reduce consumption among continuing tobacco users, while at the same time generating significant new tax revenues.

Literature Cited

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