The Illinois Budget Policy
TOOLBOX

Tools to Address Revenue

Increasing the Cigarette Tax

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The significant fiscal crisis in Illinois suggests consideration of all options that could increase the state's revenue or decrease its expenditures. One revenue possibility is to increase the state's cigarette excise tax by $0.50 from $1.98 to $2.48 per pack, which would increase the average price of a pack of cigarettes by 7 percent.

This paper estimates the additional tax revenue that could be generated by this hypothetical tax increase, as well as the health care cost savings that would accompany the subsequent reduction in cigarette consumption. It also discusses the efficiency and distributional effects of such a tax.

Background

The average price of cigarettes in Illinois is $6.85 per pack (Tax Burden on Tobacco 2012). This price is above the national average but below that of many other states. For example, New York has the highest average price, $9.97 per pack. An increase of $0.50 in the price of cigarettes would move Illinois from the 12th most expensive state to the 10th most expensive state (see Table 1).[1]

As in the rest of the country, Illinois' per capita consumption of cigarettes has decreased over the past several decades due to the increased awareness of the dangers of smoking, higher cigarette prices, and the enactment of various anti-smoking laws. Figure 1 shows the historical decline in smoking rates in Illinois and across the nation. This trend will continue to erode the tax revenue from cigarettes, unless repeated increases in the rate of tax on cigarettes manage to offset the decline.

Revenue

The effect on state revenue of an additional $0.50 cigarette excise tax depends on the behavioral responses of smokers. Some are likely to quit smoking or reduce their consumption in response to a price increase, and these behaviors may be amplified if smokers influence each other's behaviors.[2] A large literature has examined the relationship between cigarette consumption and price. A comprehensive review of these studies by Chaloupka and Warner[3] suggests that each 1 percent increase in the price of cigarettes reduces consumption by approximately 0.4 percent, although a more recent analysis by Callison and Kaestner[4] argues that this effect is significantly smaller. In order to be conservative, I use Chaloupka and Warner's estimate in my analysis. Applying these results to Illinois implies that a $0.50 tax would reduce

[1]I assume throughout this paper that the cigarette tax burden is fully passed on to consumers through higher prices.

[2]Reif, Julian. (2013). Addiction and social interactions: Theory and evidence. Available at SSRN: http://ssrn.com/abstract=2331654.

[3]Chaloupka, Frank J. and Kenneth E. Warner. (2000). The economics of smoking. *Handbook of Health Economics*, 1539–1627.

[4]Callison, Kevin and Robert Kaestner. (2014). Do higher tobacco taxes reduce adult smoking? New evidence of the effect of recent cigarette tax increases on adult smoking. *Economic Inquiry*, 52(1), 155-172.

Table 1: Prices and state excise taxes per pack of cigarettes for the 15 most expensive states in 2012

State	Price	State excise tax
New York	$9.97	$4.35
Hawaii	$8.57	$3.20
Connecticut	$8.33	$3.40
Alaska	$8.30	$2.00
Rhode Island	$8.23	$3.50
Washington	$7.69	$3.03
Massachusetts	$7.51	$2.51
Vermont	$7.49	$2.62
District of Columbia	$7.37	$2.86
New Jersey	$7.32	$2.70
Wisconsin	$7.24	$2.52
Illinois	$6.85	$1.98
Arizona	$6.60	$2.00
Maine	$6.39	$2.00

Source: The Tax Burden on Tobacco (2012)

consumption by 2.9 percent.[5]

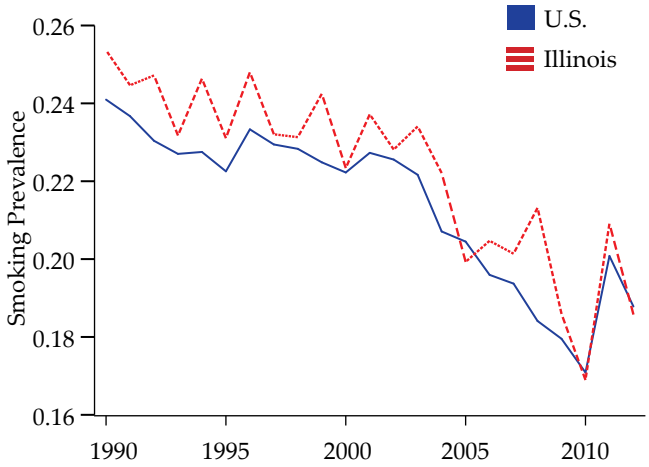
Employing the most recent data available on cigarette sales, I estimate that a $0.50 increase in the state excise tax on cigarettes would, after accounting for the behavioral responses of smokers, increase state revenue by approximately $175 million per year. This revenue is in addition to the existing tax revenue collected from cigarette sales, which totaled $810 million during the fiscal year ending June 30, 2013.[6]

The estimated revenue increase of $175 million assumes that the increase in the cigarette tax will not cause consumers to purchase cigarettes on the black market or in other jurisdictions not subject to the tax. While this is always a concern, it is less of a problem when the tax increase is statewide rather than city-wide because statewide taxes are more difficult to avoid. For example, residents of Cook County can

[5]Since $6.85 is the average price for a pack of cigarettes in Illinois, then (0.5/6.85)=0.073 is the proportional increase in price. Multiply by 0.4 to get .029 as the proportional decline in consumption.

[6] That cigarette tax revenue implies sales of 409 million cigarette packs (IL Department of Revenue Report: Fiscal Year 2013, p. 6). At the new proposed rate of $2.48/pack and new quantity of 409×(1-0.029) million packs, the new revenue would be $985 million (an increase of $175 million). This revenue will fall over time if cigarette consumption continues to decline for other reasons. Illinois Department of Revenue Monthly Revenue Report, June 2013. Available at http://tax.illinois.gov/aboutidor/taxresearch/junefy2013revenuereport.pdf

Figure 1: Cigarette smoking prevalence in the U.S. and Illinois, 1990-2012



Source: Behavioral Risk Factor Surveillance System

escape their county's tax, but not the Illinois state tax, by purchasing cigarettes in DuPage County. This is not a large impediment, however, for those residing near the state border, and evidence suggests that some smokers do engage in cross-border shopping.[7] If an increased tax rate were to increase tax avoidance dramatically in large border cities like Chicago, then this will reduce my $175 million estimate.

Medicaid cost savings

Medicaid amounts to almost one quarter of total state expenditures. A decrease in cigarette smoking rates among Medicaid-eligible individuals as a result of a tax increase will affect the state budget because smoking significantly affects the health and health care costs of individuals.

A decrease in cigarette consumption affects health care costs in two offsetting ways. First, it is likely to reduce health care costs per capita because the health care costs of smokers are higher than non-smokers at all ages. Second, the decrease in smoking consumption is likely to increase the average life expectancy of the population, which eventually will increase total expenditures on health care. For example, a reduction in smoking rates may reduce the prevalence of lung cancer and its associated health care costs but increase the total number of people residing in nursing homes.[8]

The Congressional Budget Office recently conducted

[7]Merriman, David. (2010). The micro-geography of tax avoidance: Evidence from littered cigarette packs in chicago. *American Economic Journal: Economic Policy*, 2(2), 61-84.

[8]Medicaid accounts for 35 percent of all spending on long-term care for the elderly, see http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/54xx/doc5400/04-26-longtermcare.pdf.

an empirical analysis that estimates the net effect on Medicaid costs of an increase in the cigarette tax. Using their results, I estimate that a $0.50 increase in the state excise tax on cigarettes would reduce Illinois' Medicaid expenditures by $9 million over the next 10 years.[9] In other words, the savings generated would total just under $1 million per year. This estimate accounts for savings due to lower annual health care costs as well as additional expenses due to an increase in life expectancy.

Efficiency and distributional considerations

If consumers are perfectly rational and well informed about the dangers of smoking, and the benefits to them of smoking outweigh the costs, then standard economic theory predicts that an additional tax would not make them happier. However, some researchers argue that many consumers do not properly account for the long-term consequences of their decisions. This is particularly relevant to cigarette smoking, because the benefits from smoking are immediate while the negative health consequences come later. If this latter argument is correct, then a cigarette tax can benefit consumers by discouraging them from engaging in harmful behavior. One well-known study estimates that the optimal tax for cigarettes is in the range of $5 to $10 per pack.[10] If we account for city, county, and federal cigarette taxes, then increasing the Illinois state tax by $0.50 would cause the total tax in Chicago, the most expensive place to purchase cigarettes in Illinois, to lie in the middle of that optimal tax range.

Another concern is that a cigarette tax increase may be highly regressive. Smoking in the United States is concentrated among low-income and less-educated individuals. Their expenditures on cigarettes as a fraction of their income are significantly higher than the expenditures of high-income individuals. All else equal, the additional tax burden will be a higher fraction of income for low-income people (the definition of "regressive" burdens). However, research shows that low-income individuals are more sensitive to price changes in cigarettes than high-income individuals.[11] The upper range of these estimates suggests that the decline in smoking consumption would offset the increase in price, so that total expenditures by low-income individuals would remain unchanged.

Summary

I estimate that a $0.50 increase in the state's cigarette excise tax would raise revenue by up to $175 million per year and reduce Medicaid expenditures by almost $1 million per year. Although cigarettes are predominantly consumed by the poor, many would significantly decrease their consumption in response to the tax, thereby mitigating some of their tax burden. Moreover, if smokers are not making rational, well-informed decisions, then economic theory predicts that a cigarette tax may benefit them by encouraging healthier behavior. •

Further Reading

Chaloupka, Frank J. and Kenneth E. Warner. (2000). *The economics of smoking. Handbook of Health Economics,* 1539–1627.

Merriman, David. (2010). The micro-geography of tax avoidance: Evidence from littered cigarette packs in chicago. *American Economic Journal: Economic Policy*, *2*(2), 61-84.

The Congressional Budget Office. (2012). Raising the tax on cigarettes: Effects on health and federal budget. Available at: http://cbo.gov/publication/43319.

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[9]The CBO estimates that a 3 percent decrease in the number of smokers would reduce Medicaid expenses by $563 million over 10 years nationwide. I multiply their estimate by 0.032 (Illinois' share of national Medicaid spending) and then multiply again by 0.5 (the federal government's share of Illinois' Medicaid expenses), see http://kff.org/medicaid/state-indicator/total-medicaid-spending/. My estimate assumes that the Illinois $0.50 tax increase would, as in the CBO's analysis, result in a 3 percent decrease in the number of smokers.

[10]Gruber, Jonathan and Köszegi, Botond. (2001). Is addiction 'rational'? Theory and evidence. *Quarterly Journal of Economics, 116*(4), 1261-1303.

[11]That is, low-income buyers have a price elasticity greater than the 0.4 average elasticity cited above, while high-income buyers are less elastic than that average.