NIHCM FOUNDATION

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April 2010

ESSAYS ON TRENDS, INNOVATIVE IDEAS AND CUTTING-EDGE RESEARCH IN HEALTH CARE

Taxing Sin to Modify Behavior and Raise Revenue

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U.S. policymakers have long used taxes on tobacco products and alcoholic beverages – so called "sin taxes" – both to moderate consumption of these products and to generate revenue. There is a pronounced inverse correlation between cigarette tax rates and cigarette consumption (Figure 1), and numerous studies have credited tobacco taxes as being the single most effective strategy in achieving our country's dramatic reductions in smoking.[1]

More recently, similar taxes on products linked to obesity have been receiving increased attention, with the Institute of Medicine recommending this strategy as a weapon against childhood obesity,[2] several states and localities flirting with significant new taxes on sugary sodas, and an early proposal to use a soda tax as a financing source for national health reform. A just-released longitudinal study showing that a 10 percent rise in the price of sweetened soft drinks was associated with a 7 percent decline in daily caloric intake from sodas, lower overall calorie consumption, lower weight, and improved insulin resistance lends new support to a sin tax on sugary soda.[3] States now facing severe budget shortfalls may also find these taxes hard to resist. Estimates produced by the Yale University Rudd Center suggest, for example, that California could raise over $560 million in 2010 alone by taxing sugary beverages at a rate of 3 cents per 12 ounces.[4]

Despite this allure, the case for sin taxes is not clear cut. In this essay I review the arguments for and against sin taxes and describe how these considerations play out for cigarettes and alcoholic beverages. I then offer some thoughts on using sin taxes to combat rising obesity rates.

Arguments For and Against Sin Taxes

Two key arguments are typically offered as a rationale for sin taxes. The first relies on the concept of externalities: those who smoke, drink or overeat (until obese) impose costs on society that extend beyond the impact on the individual. Sin taxes are corrective taxes that both raise funds to compensate society for the externalities and reduce social costs by discouraging these activities. The second argument is one of internalities: when individuals harm themselves by making misguided decisions or failing to exercise self-control, society has a role in limiting their harmful behavior.

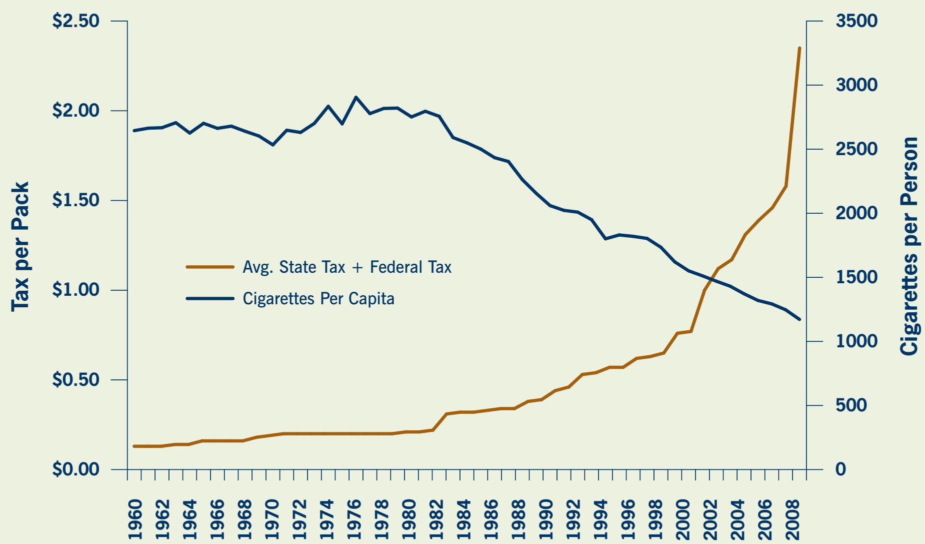
Opponents of sin taxes focus on their regressive nature since lower-income individuals spend a greater proportion of their income on the targeted products and could be disproportionately affected financially by a tax. Others decry the taxes as punitive and paternalistic. They also point out that the taxes may have unintended consequences, for example with cigarette taxes leading to use of higher tar products.

The Case of Cigarettes

The most studied sin tax is that on cigarettes. The average state tax is now $1.34 per pack, and the federal tax is just over a dollar.[5] Most studies conclude that the social costs of smoking are relatively small and likely less than existing taxes on cigarettes, although controversy remains over the social costs of second-hand smoke. The relatively low social costs can be attributed to the "death benefit": smokers live long enough to contribute to Social Security and Medicare but not long enough to collect benefits. The externality argument would suggest that additional taxes on cigarettes are not warranted unless the costs of second-hand smoke are at the higher end of existing estimates.[6]

On the other hand, there is enormous evidence that smoking is not a decision made according to the standard model of rational and informed choice. More than 75 percent of all

Figure 1. Trends in Cigarette Taxes and Cigarette Consumption



Source: Orzechowski and Walker. "The Tax Burden on Tobacco: Historical Compilation." Volume 43, 2008.

adult smokers began smoking in their teens, and teens appear to massively understate the risk of addiction.[6] Furthermore, while eight in ten smokers want to quit the habit, more than half of all serious quit attempts fail within one week.

The fact that individuals are making bad choices or having self-control problems means that policymakers should consider the internalities of tobacco use – the serious damage that smokers inflict upon themselves through worsened health and shorter lives. Work I have completed with my colleague Botond Koszegi suggests that a tax of $5 to $10 per pack is needed to force smokers to control their self-damaging behavior.[7,8] This amount is well above tax levels today.

A large body of evidence shows that smokers are fairly sensitive to the price of cigarettes. Young smokers and those with lower incomes are most sensitive to price; among low-income smokers, for example, each 10 percent rise in cigarette prices leads to 10 percent less smoking. The magnitude of this behavioral response means that, on net, higher taxes do not increase the amount low-income groups spend on smoking but do improve their health through reduced smoking. When these factors are considered, cigarette taxes are more progressive than commonly perceived.

The Case of Alcohol

While cigarette taxes are levied primarily to correct internalities, alcohol taxes are motivated largely by the externalities that alcohol consumption imposes on society. The major externality is the harm due to drunk driving, which now kills some 12,000 people annually.[9] Alcohol consumption imposes additional externalities through drinkers' increased tendency to engage in violence, crime and other risky behavior. In contrast, internalities due to drinking are likely small. Drinking in moderate quantities may actually be good for long-run health, and only a small share of drinkers damage their health and otherwise harm themselves by drinking excessively.

Existing taxes on alcohol are much lower than the external cost that drinking imposes on society. The best estimates of the tax needed to account for the externalities of excess alcohol consumption imply a tax of 80¢ per ounce of pure alcohol. This rate is much higher than current taxes of only an average of 18¢ per ounce.[10] Furthermore, this externality cost estimate does not include the costs of increased violence related to alcohol consumption. Alcohol taxes clearly should be raised if the goal is to account for the high externalities.

Determining the appropriate role for government in regulating drinking is challenging, however, because the externalities arise from the small share of drinking that ends in drunk driving and violence. While the optimal policy would target drunk driving and violence with steeper fines and penalties, realistically it is impossible to raise the cost of these behaviors enough to account fully for the externalities they impose. Attempting to account for the externalities by raising taxes on all alcohol consumption is a very blunt instrument that will lower drinking too much among those who are not going to cause harm and not enough among those who are at risk for harmful behavior. Still, the enormous damage done by drinking suggests that higher alcohol taxes would raise social welfare overall.

Sin Taxes Targeting Obesity

Another potential area for sin taxation is goods that cause obesity, a condition now affecting fully one-third of the U.S. adult population. Unlike the two prior examples, obesity has both staggering externalities and internalities. Estimates suggest that our obesity-related medical costs were $147 billion in 2008; these costs are borne by taxpayers for publicly-insured patients and reflected in higher premiums for private health insurance.[11] Within 50 years, obesity is expected to shorten the average life span by at least two to five years.[12] Thus, a large government role in addressing obesity could be justified on the grounds of reducing societal costs and mitigating self harm.

Addressing obesity through tax policy is tricky, however. For example, while every cigarette is bad for you, clearly some food consumption is good for you! A simple tax on calories could do more harm than good by deterring low-income people from getting enough nutrition. Likewise, the very complicated relationship between different types of food consumption and health poses significant challenges.

One obvious place to start in using tax policy to address obesity is taxation of sugary drinks. Evidence is mounting that non-diet sodas, fruit juices, sports drinks, and other sugary beverages are contributing to rising rates of obesity in the U.S.[13,14] and new research now shows significant reductions in caloric intake and weight as soda prices rise.[3] While a number of states and localities have attempted to impose new excise taxes on sugary beverages in recent years, these efforts have so far met with considerable resistance from industry interests and garnered only mixed public support. It is unclear when or whether the growing evidence will turn the tide on this issue.

Ultimately, what may be needed to address the obesity problem are direct taxes on body weight. While it is hard to conceive of this approach being a common public policy tool in the near term, such taxation may be happening indirectly through health insurance surcharges. Currently, employers may charge up to 20 percent higher health insurance premiums for employees who fail to meet certain health-related standards, such as attaining a healthy BMI. The new health reform legislation increases this differential to 30 percent, with the possibility of rising to 50 percent. Results of programs that use differential premiums to impose direct financial penalties for obesity will bear watching in the future.

1 Engelhard CL, Garson A, Dorn S. *Reducing Obesity: Policy Strategies from the Tobacco Wars*. July 2009.

2 Institute of Medicine and National Research Council. *Local Government Actions to Prevent Childhood Obesity*. Washington DC: The National Academies Press. September 2009.

3 Duffy KJ, Gordon-Larson P, Shikany JM, Guilkey D, Jacobs DR, and Popkin BM. "Food Price and Diet and Health Outcomes." *Archives of Internal Medicine*, 170(5):420-6. 2010.

4 http://www.yaleruddcenter.org/sodatax.aspx. Accessed December 15, 2009.

5 "State Cigarette Excise Tax Rates and Rankings" and "New Federal Tobacco Product Tax Rates" available at http://www.tobaccofreekids.org/research/factsheets/. Accessed February 19, 2010.

6 Gruber J. "Tobacco at the Crossroads: The Past and Future of Smoking Regulation in the U.S.," *Journal of Economic Perspectives*, 15:193-212, 2001.

7 Gruber J and Koszegi B. "Is Addiction 'Rational'? Theory and Evidence," *Quarterly Journal of Economics*, 116:1261-1303, 2001.

8 Gruber J, Koszegi B. "Tax Incidence When Individuals are Time Inconsistent: The Case of Cigarette Excise Taxes," *Journal of Public Economics*, 88:1959-88, 2004.

9 National Highway Traffic Safety Administration. "Fatalities and Fatality Rates in Alcohol-Impaired-Driving Crashes by State, 2007-2008." DOT-HS-811-250. December 2009.

10 Manning WG, Keeler EB, Newhouse JP, Sloss EM, Wasserman J. "The Taxes of Sin: Do Smokers and Drinkers Pay Their Way?" *Journal of the American Medical Association*, 261:1604–9, 1989. Estimated external cost of alcohol use updated to current dollars by author. Data on current alcohol tax rates based on author's calculations.

11 Finkelstein EA, Trogdon JG, Cohen JW, Dietz W. "Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates." *Health Affairs*, 28(5):w822-31, July 27, 2009.

12 Olshansky SJ. "A Potential Decline in Life Expectancy in the United States," *New England Journal of Medicine*, 362:1138-45, 2005.

13 Vartanian LR, Schwartz MB, Brownell KD. "Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis." *American Journal of Public Health*, 97(4):667-75. April 2007.

14 Gortmaker S, Long M, Wang YC. "The Negative Impact of Sugar-Sweetened Beverages on Children's Health." Robert Wood Johnson Foundation Research Synthesis. November 2009.