E-cigarette taxation: Lessons from “sin taxes”  
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The Economist takes on “sin taxes” in a recent article, “Sin’ taxes—eg, on tobacco—are less efficient than they look.” The article has several lessons for policy makers eyeing taxes on e-cigarettes and other vapor products.

Historically, taxes had the key purpose of raising revenues. The “best” taxes would be on goods with few substitutes (i.e., inelastic demand) and on goods deemed to be luxuries. In Wealth of Nations Adam Smith notes:

Sugar, rum, and tobacco are commodities which are nowhere necessaries of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation.

The Economist notes in 1764, a fiscal crisis driven by wars in North America led Britain’s parliament began enforcing tariffs on sugar and molasses imported from outside the empire. In the U.S., from 1868 until 1913, 90 percent of all federal revenue came from taxes on liquor, beer, wine and tobacco.

Over time, the rationale for these taxes has shifted toward “sin taxes” designed to nudge consumers away from harmful or distasteful consumption. The Temperance movement in the U.S. argued for higher taxes to discourage alcohol consumption. Since the Surgeon General’s warning on the dangers of smoking, tobacco tax increases have been justified as a way to get smokers to quit. More recently, a perceived obesity epidemic has led several American cities as well as Thailand, Britain, Ireland, South Africa to impose taxes on sugar-sweetened beverages to reduce sugar consumption.

Because demand curves slope down, “sin taxes” do change behavior by reducing the quantity demanded. However, for many products subject to such taxes, demand is not especially responsive. For example, as shown in the figure below, a one percent increase in the price of tobacco is associated with a one-half of one percent decrease in sales.
Substitutability is another consideration for tax policy. An increase in the tax on spirits will result in an increase in beer and wine purchases. A high toll on a road will divert traffic to untolled streets that may not be designed for increased traffic volumes. A spike in tobacco taxes in one state will result in a spike in sales in bordering states as well as increase illegal interstate sales or smuggling. The Economist reports:

After Berkeley introduced its tax, sales of sugary drinks rose by 6.9% in neighbouring cities. Denmark, which instituted a tax on fat-laden foods in 2011, ran into similar problems. The government got rid of the tax a year later when it discovered that many shoppers were buying butter in neighbouring Germany and Sweden.

Advocates of “sin” taxes on tobacco, alcohol, and sugar argue their use impose negative externalities on the public, since governments have to spend more to take care of sick people. With approximately one-third of the U.S. population covered by some form of government funded health insurance, such as Medicare or Medicaid, what were once private costs of healthcare have been transformed into a public cost.

According to Centers for Disease Control and Prevention in U.S., smoking-related illness in the U.S. costs more than $300 billion each year, including; (1) nearly $170 billion for direct medical care for adults and (2) more than $156 billion in lost productivity, including $5.6 billion in lost productivity due to secondhand smoke exposure.

On the other hand, The Economist points out:

Smoking, in contrast, probably saves taxpayers money. Lifelong smoking will
bring forward a person’s death by about ten years, which means that smokers tend to die just as they would start drawing from state pensions. In a study published in 2002 Kip Viscusi, an economist at Vanderbilt University who has served as an expert witness on behalf of tobacco companies, estimated that even if tobacco were untaxed, Americans could still expect to save the government an average of 32 cents for every pack of cigarettes they smoke.

The CDC’s cost estimates raise important questions regarding who bears the burden of smoking related illness. For example, much of the direct cost is borne by private insurance, which charge steeper premiums for customers who smoke. In addition, the CDC estimates reflect costs imposed by people who have smoked for decades—many of whom have now quit. A proper accounting of the costs vis-à-vis tax policy should evaluate the discounted costs imposed by today’s smokers.

State and local governments in the U.S. collect more than $18 billion a year in tobacco taxes. While some jurisdictions earmark a portion of tobacco taxes for prevention and cessation efforts, in practice most tobacco taxes are treated by policymakers as general revenues to be spent in whatever way the legislative body determines. Thus, in practice, there is no clear nexus between taxes levied on tobacco and government’s use of the tax revenues on smoking related costs.

Most of the harm from smoking is caused by the inhalation of toxicants released through the combustion of tobacco. Public Health England and the American Cancer Society have concluded non-combustible tobacco products, such as e-cigarettes, “heat-not-burn” products, smokeless tobacco, are considerably less harmful than combustible products.

Many experts believe that the best option for smokers who are unable or unwilling to quit smoking is to switch to a less harmful alternative activity that has similar attributes, such as using non-combustible nicotine delivery products. Policies that encourage smokers to switch from more harmful combustible tobacco products to less harmful non-combustible products would be considered a form of “harm reduction.”

Nine U.S. states now have taxes on vapor products. In addition, several local jurisdictions have enacted taxes. Their methods and levels of taxation vary widely. Policy makers considering a tax on vapor products should account for the following factors.

- The current market for e-cigarettes as well as heat-not-burn products in the range of 0-10 percent of the cigarette market. Given the relatively small size of the e-cigarette and heated tobacco product market, it is unlikely any level of taxation of e-cigarettes and heated tobacco products would generate significant tax revenues to the taxing jurisdiction. Moreover much of the current research likely represents early adopters and higher income consumer groups. As such, the current empirical data based on total market size and price/tax levels are likely to be far from indicative of the “actual” market for these products.
The demand for e-cigarettes is much more responsive to a change in price than the demand for combustible cigarettes. My review of the published research to date finds the median estimated own-price elasticity is -1.096, meaning something close to a 1-to-1 relationship: a tax resulting in a one percent increase in e-cigarette prices would be associated with one percent decline in e-cigarette sales. Many of those lost sales would be shifted to purchases of combustible cigarettes.

Research on the price responsiveness of vapor products is relatively new and sparse. There are fewer than a dozen published articles, and the first article was published in 2014. As a result, the literature reports a wide range of estimated elasticities that calls into question the reliability of published estimates, as shown in the figure below. As a relatively unformed area of research, the policy debate would benefit from additional research that involves larger samples with better statistical power, reflects the dynamic nature of this new product category, and accounts for the wide variety of vapor products.

With respect to taxation and pricing, policymakers would benefit from reliable information regarding the size of the vapor product market and the degree to which vapor products are substitutes for combustible tobacco products. It may turn out that a tax on vapor products may be, as The Economist notes, less efficient than they look.

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