

The Aim of Excise Taxes With External Costs

by Ronald C. Fisher



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In this installment of State Fiscal Affairs, Fisher explores various state excise taxes, which are used in part to address external and social costs. He then discusses the possibility of expanding the federal firearms and ammunition excise tax to pay for similar externalities related to gun violence.

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All levels of government in the United States apply a variety of excise taxes — taxes of an amount or percentage on sales of individual commodities — both to generate revenue and to change behavior. Some activities may generate costs for other consumers or firms that are not considered by the buyer — so-called external costs or externalities. One objective is to change consumer behavior, reducing consumption of goods that create consumption externalities or are otherwise determined to be socially undesirable. A second objective is generating revenue to address those and other costs.

Excise taxes intended to increase economic efficiency by offsetting negative externalities are sometimes called sumptuary taxes or sin taxes. Table 1 shows a rough, incomplete summary of state and federal excise taxes.

Table 1. General Summary of State and Federal Excise Taxes

Commodity	Range of State Tax Rates	Federal Tax Rates
Cigarettes (per pack)	\$0.17 (Mo.) - \$4.35 (Conn., N.Y.)	\$1
Beer (per gallon)	\$0.02 (Wyo.) - \$1.29 (Tenn.)	\$3.50 - \$16 per barrel
Wine (per gallon)	\$0.20 (Cal.) - \$2.25 (Fla.)	\$1.07 - \$3.40 (by type)
Spirits (per gallon)	\$1.50 (Md.) - \$14.27 (W.V.)	\$2.70 - \$13.34 (per proof gallon)
Cannabis	10% (several) - 37% (Wash.)	
State lottery	43.7% (on average)	
Sports gambling	9% (S.D.) - 50% (Del., N.H., R.I.)	0.25% of gross revenue
Gasoline (per gallon)	\$0.08 (Alaska) - \$0.576 (Penn.)	\$0.183
Firearms & ammunition	???	10% - 11%

All states collect excise taxes on sales of tobacco products.¹ For cigarettes, tax rates vary from \$0.17 per pack (Missouri) to a median of \$1.78 per pack to a high of \$4.35 per pack (Connecticut and New York).² In addition, the federal government collects an excise tax of \$1 per pack (increased from \$0.39 in 2009).³ Other tobacco products (cigars, snuff, chew)

¹The excise tax rates in this article come from the Federation of Tax Administrators.

²Cigarette prices in Connecticut and New York are near \$12 per pack. Combining the state and federal excise taxes, the effective tax rate is near 80 percent. Cigarette excise taxes at the median are equivalent to about 50 percent.

³Alcohol and Tobacco Tax and Trade Bureau, BEER — Reduced Tax Rates on Domestic Removals or Imports (2018 to Present).

are also taxed, with relatively high rates of 95 percent of the wholesale price in Minnesota and Washington. Substantial increases in cigarette taxes have been common in recent years partly to discourage cigarette use, particularly among young people. The median state tax rate of \$1.78 in 2021 is more than double what it was in 2005 (\$0.695). Evidence shows that these taxes have been effective in reducing teen cigarette use.

Similarly, all states levy taxes (effectively) on beer, wine, and spirits. Some levy the tax on private distributors, whereas states with state monopoly or stores do so indirectly through pricing. The highest direct excise tax on beer is \$1.29 per gallon in Tennessee. For wine it is \$2.25 per gallon in Florida, and for spirits \$14.27 per gallon in West Virginia. Substantial research shows that higher alcohol prices (through state monopoly action or taxes) affect consumption and reduce drinking and driving, accidents, domestic violence, and other crime, as well as improve health.⁴

Among the states that have legalized cannabis, a variety of excise taxes are applied to sales of marijuana for recreational use (as opposed to for medical purposes). Both tax types and rates vary. For example, Colorado levies both a 15 percent wholesale and 15 percent retail excise tax, whereas Washington levies a 37 percent tax on retail sales.⁵

State lotteries are operated as monopolies with the tax built into the monopoly price. In 2019 only \$0.70 of each sale dollar was used to operate the lottery and pay out prizes, but the ticket price was \$1, about 44 percent greater, which is the effective tax rate. Tax rates in states that have adopted legalized sports betting vary dramatically. Most of state taxes apply to net revenue with some rates that approach 50 percent.⁶ There is a federal tax (dating from 1951) at a rate of 0.25 percent on gross revenue.

State gasoline excise taxes vary from \$0.08 per gallon (Alaska) to a median of \$0.25 per gallon to a high of \$0.576 per gallon (Pennsylvania). Local government gasoline taxes are also applied in a few

states. The federal excise tax on gasoline purchases is \$0.183 per gallon.⁷ Excise taxes on diesel fuel generally parallel those on gasoline. Motor fuel excise taxes have been used primarily to fund construction and maintenance of transportation facilities. Research suggests that if this tax were to correct for other external costs (pollution, congestion, accidents) tax rates would have to be three times greater than exist.⁸

Excise taxes to affect external costs often are referred to as Pigouvian taxes, because A.C. Pigou is thought to have initially described this role in his book *The Economics of Welfare*.⁹ Pigou identified what he called divergences between marginal social and private product and particularly cases for which “owing to the technical difficulty of enforcing compensation for incidental disservices, marginal private net product is greater than marginal social net product.” He noted: “It is, however, possible for the State . . . to remove the divergence in any field by ‘extraordinary encouragements’ or ‘extraordinary restraints’ upon investments in that field. The most obvious forms which these encouragements and restraints may assume are, of course, those of bounties and taxes.”

Pigou offered several examples consistent with his location and time, including:

resources devoted to the prevention of smoke from factory chimneys . . . the game-preserving activities of one occupier involve the overrunning of a neighbouring occupier’s land by rabbits . . . when the owner of a site in a residential quarter of a city builds a factory there and so destroys a great part of the amenities of the neighbouring sites . . . erecting buildings in a crowded centre, which, by contracting the air space and the playing-room of the neighbourhood . . . the running of motor cars that wear out the surface of the roads . . . and resources devoted to the production and sale of intoxicants.

⁴Recently a few local governments have levied taxes on soft drinks based on sugar content, ostensibly for health reasons. See Urban Institute, State and Local Backgrounders, Soda Taxes.

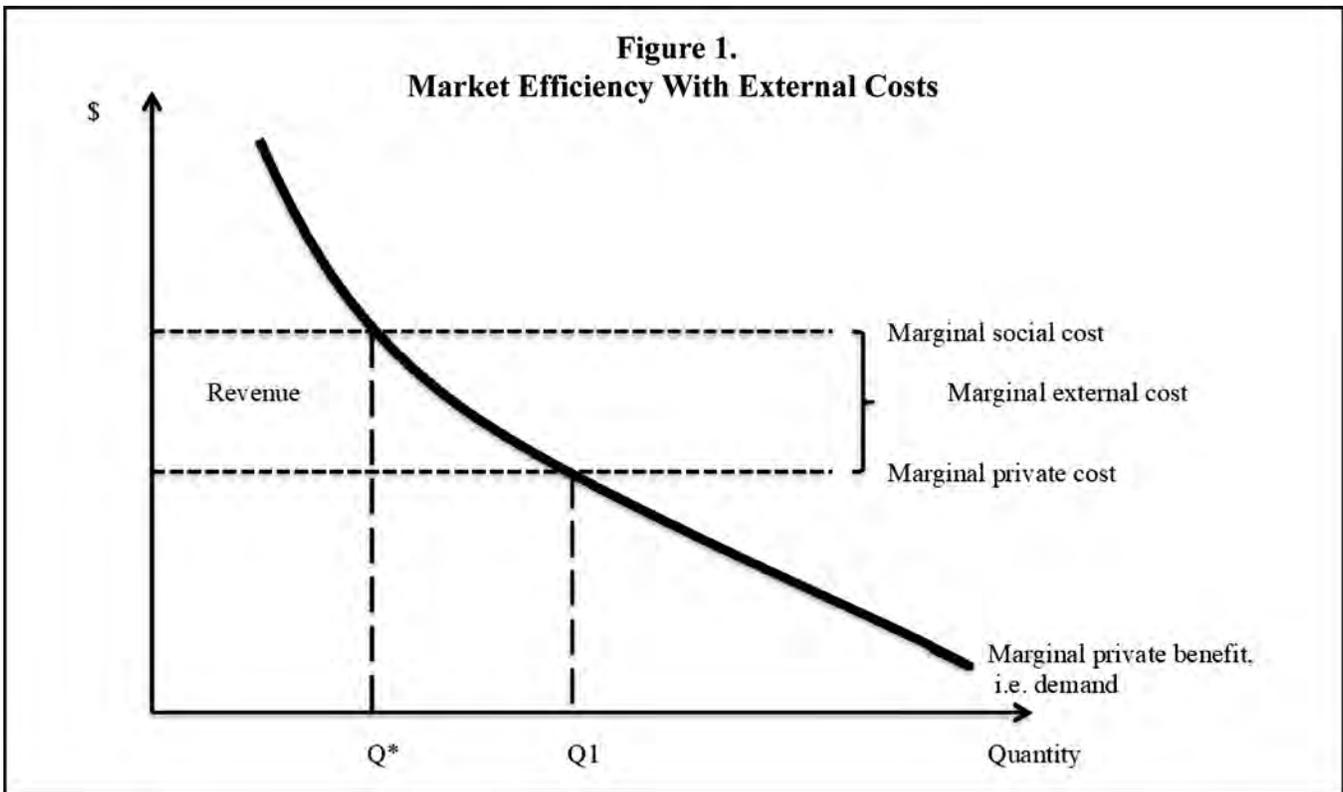
⁵FTA, Status of State Taxation/Sales of Marijuana.

⁶Ulrik Boesen, “States Continue to Bet on Sports,” Tax Foundation (June 17, 2021).

⁷The per-gallon taxes are equivalent to about a 20 percent ad valorem tax (\$0.44 per gallon at a retail price of \$3 or 0.44/2.56).

⁸Ian W.H. Parry, Margaret Walls, and Winston Harrington, “Automobile Externalities and Policies,” 45 *J. Econ. Literature* 2, at 373-399 (June 2007).

⁹A.C. Pigou, *The Economics of Welfare* (1920).



The modern economic analysis of Pigou's perception is straightforward. If an activity creates external costs, then the producer or consumer underestimates the social cost of the activity and chooses too much of that activity from society's viewpoint. If there are external costs, a tax equal to the marginal external cost will force the consumer or firm to include all costs in the economic decision, and thus the efficient quantity will be selected. This is the case depicted in Figure 1. The consumer chooses quantity Q_1 , where price meets demand, but the socially efficient quantity is Q^* when the external costs are considered. A tax equal to marginal external cost increases private cost to social cost, resulting in an efficient consumer choice. The revenue can be used to address the remaining social costs.

All of this then brings us to firearms and ammunition. The federal firearms and ammunition excise tax (FAET) began in 1919.¹⁰ The tax is collected from the manufacturer or importer at rates of 10 percent of the sales price for

pistols and revolvers and 11 percent for other firearms and shells and cartridges. A few state and local governments also levy excise taxes on sales of firearms or ammunition, although it seems this was much more common in the early 20th century.¹¹

Could (or should) states levy excise taxes on sales of firearms and ammunition as has been done with tobacco, alcoholic beverages, gambling, and motor fuels? The economic analysis is clear: If there are social costs from gun ownership that gun owners are not bearing, then a Pigouvian excise tax is appropriate both to generate revenue to cover social costs and to alter behavior. Of course, it may not be simple to estimate such social costs. Here, again, Pigou provides unexpected guidance by his interesting comment about "intoxicants." He wrote: "To enable the social net product to be inferred from the private net product of the marginal pound invested in this form of production, the investment should, as Mr. Bernard Shaw

¹⁰ Alcohol and Tobacco Tax and Trade Bureau, FAET Reference Guide.

¹¹ Rosanna Smart, "Firearm and Ammunition Taxes," RAND Corp. (Apr. 15, 2021).

observes, be debited with the extra costs in policemen and prisons which it indirectly makes necessary.”

Aha. Suppose public schools incur substantial additional expenses to increase security (new infrastructure, additional training, security personnel, and so on) as a result of past and potential future gun violence.¹² These expenditures would require additional tax revenue. It would seem appropriate that owners and sellers of firearms bear the cost of these related security expenditures — like Pigou’s comment regarding “the extra costs in policemen . . . which it indirectly makes necessary.” This would be equivalent to tobacco tax revenue being used for education about health effects and mitigation of health damages.

Clearly, I am not a lawyer, but the fact that the FAET has existed since 1919, along with some state excise taxes, suggests that excise taxes on sales of firearms and ammunition are not unconstitutional per se. The federal tax also has differential rates, which might have legal implications. However, high tax rates intended to restrict consumption might be considered a violation of a constitutional right. Thus, if states want to apply excise taxes to sales of firearms and ammunition, the tax rates likely should be justified through the revenue generated to offset external costs.

If an excise tax were to be adopted, ammunition might be the more appropriate subject than firearms, similarly to motor fuels.¹³ Both sales of vehicles and motor fuel are subject to a general sales tax (in most cases), but the additional excise tax is applied to motor fuel. It is the use of the vehicle (rather than possession) that creates infrastructure and pollution costs. Similarly with firearms, it is use of the weapon with ammunition that creates external costs. Ammunition sales in the United States in 2021 were about \$7 billion.¹⁴

¹² Natasha Singer, “Schools Are Spending Billions on High-Tech Defense for Mass Shootings,” *The New York Times*, June 26, 2022 (updated July 11, 2022).

¹³ Many firearms already are owned, so an excise tax would apply only to new purchases. But this would likely generate more revenue than an ammunition excise tax.

¹⁴ Grand View Research, “Ammunition Market Size, Share & Trends Report by Caliber.”

There are more than 50,000 public elementary schools in the United States. If each school employs one security officer, the cost would be more than \$2 billion annually. Adding infrastructure and training, the annual cost might approach \$3 billion. And that is just public elementary schools. There are another 16,000 middle schools and 24,000 high schools. So now that cost has doubled, at least. There are many other such examples of direct costs outside of education that could be funded with these taxes. Thus, a substantial excise tax on ammunition sales, perhaps even 100 percent, might be justified by such external costs.¹⁵

Some writers who have discussed this tax option dismiss it, arguing that these excise taxes would have little effect on purchases; in economics terminology, that demand is price-inelastic. The research is unclear, essentially because there is little data about this to estimate the response carefully. However, this may not matter. In the case of cigarettes, higher rates were intended to affect consumption by teens, who might be expected to be relatively more price-sensitive. The same might be true of demand for firearms and ammunition. The irony is that if the tax does not reduce consumption, it will generate more revenue to offset associated costs and effects.

What should states do? First, and most obviously, such excise taxes might be considered only if a state thinks that there is an issue with external costs associated with firearms. Second, a state that elects to levy an excise tax on ammunition (or firearms) sales must enforce and collect the tax. Interstate trafficking (cigarette smuggling) has been an issue with both tobacco and alcohol excise taxes; enforcement requires resources. This suggests that a federal tax with revenue dispersed to states might be preferable.¹⁶ Third, use of a firearms or ammunition excise tax does not preclude use of other methods to affect use. Even with excise taxes, states limit tobacco,

¹⁵ Obviously, I am considering only additional direct spending. The value of lives lost is the fundamental and larger cost from firearm violence.

¹⁶ Another avoidance option is making one’s own ammunition, which to me at least seems to be more likely among serious hunters than potential violent offenders. In any case, hunters use little ammunition in hunting, more for practice and aiming a scope.

alcohol, cannabis, and gambling purchases by age or other characteristics.

No one believes seriously that taxation is the primary solution to gun violence, but it might have a role to play — just as it does with other situations (cigarettes, alcohol, and so on). If ammunition is substantially more expensive and thus less available, some gun violence situations might be avoided or mitigated. Perhaps even more importantly, a tax would generate revenue to address new and continuing security concerns. If we have 50 percent or more excise taxes on cigarettes and gambling, 30 percent taxes on recreational marijuana, and even 20 percent on motor fuel, anything less for firearms and ammunition seems incongruous. And because the costs related to firearm violence are so large, both absolutely and comparatively, even greater tax rates may be justified.¹⁷ ■

¹⁷ Anticipating some criticisms, most folks betting on sports don't go bankrupt, not all cigarettes generate secondhand smoke, and most marijuana users don't cause auto accidents, but all pay the tax. Motor fuel seems more crucial to everyday life than firearms and ammunition and yet is taxed, although at too low of rates.

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