TAXING GUNS

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ABSTRACT

Policymakers across the nation have recently adopted new taxes on guns. As expected, these policies are controversial. Supporters believe the taxes will increase the cost of weapons, decrease sales, and provide the revenue necessary to fund the costs of gun violence across America. Critics, by contrast, argue the taxes are nothing more than poll taxes and will drive the market for weapons underground.

Lost in the debate is the fact that gun taxes have been on the books for over a century. Congress adopted the first of such taxes during World War I to address the nation's extraordinary wartime revenue needs. Since then, policymakers at every level of government have added more taxes, creating a capacious system of modern gun taxation in the process.

Despite the significance of guns in America and the increasing role that taxes play, no study has systematically analyzed the underlying reasons for and against the laws or, more importantly, offered a detailed framework for recognizing the rights and *responsibilities of gun ownership. In this Article, we begin to fill this surprising gap in the extant literature. We review three theories of public finance and find that all provide useful ideas for improving our system of firearm taxation. We argue that one approach, however, provides the best framework for shaping gun tax policy in the future: the Pigouvian theory of taxation. We explain how and why legislators should pursue Pigouvian taxation, and we outline policies for improving the*

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nation's approach to taxing guns.

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INTRODUCTION

Depending on your perspective, the last several years have been very encouraging or seriously troubling as far as guns and taxes are concerned. During this period, legislators at every level of government have adopted or considered a wide range of new taxes on firearms, ammunition, and related devices.[1] To state the obvious: these laws are controversial.

1. For a summary of these initiatives, see Elizabeth Daigneau, *Gun Taxes and State Revenues*, GOVERNING (Feb. 13, 2013), https://www.governing.com/archive/col-guns-money-states-localities-taxes.html [https://perma.cc/3QHV-BGCR] (gun taxes unfolding across the country); Judy Keen, *States Look to Tax Guns, Ammo*, USA TODAY (Apr. 7, 2013, 5:28 PM), https://www.usatoday.com/story/news/nation/2013/04/07/gun-taxes-owners-second-amendment/2049363 [https://perma.cc/A8QS-Q65J] (same). Many of these initiatives were added to the rich collection of gun taxes already on the books. *See, e.g.*, ALA. CODE §§ 40-12-143, 40-12-158 (LexisNexis 2021) (license fee for firearm and ammunition dealers ranging from $3 to $150); COOK COUNTY, ILL., CODE OF ORDINANCES § 74-668(a) (2020) ($25 surtax on firearms); MD. CODE ANN., PUB. SAFETY § 5-117.1(g)(2) (West 2021) ($50 licensing fee); 18 PA. STAT. AND CONS. STAT. ANN. § 6111.2(a) (West 2021) ($3 surtax); SEATTLE, WASH., MUNICIPAL CODE § 5.50.030 (2015) ($25.00 surtax on firearms, $0.02 surtax on cartridges of 0.22 caliber or smaller, and $0.05 surtax for all other ammunition); *see also* H.B. 2331, 101st Gen. Assemb., Feb. Sess. (Ill. 2019) (proposed 3.75% surcharge on firearms and "components"); Assemb. B. 18, 2019–2020 Assemb., Reg. Sess. (Cal. 2019) (proposed surtax on firearms); Gun Violence Prevention and Safe Communities Act of 2018, H.R. 5103, 115th Cong. (2018) (proposed surtaxes).

Supporters argue the tax laws will increase the cost of weaponry, thereby decreasing gun sales and violence.[2] The revenue, they argue, will also offset the social and economic costs generated by America's strong gun culture.[3] Critics, by contrast, take the position that the laws impose unfair costs on law-abiding citizens and will have no effect on the underground market for guns and ammunition. The laws, it is argued, will neither deter crime nor raise much revenue.[4] Claiming the new taxes are nothing more than an assault on the Second Amendment, critics suggest the policies are "pretty much a poll tax," consigning gun owners to the same demeaned status that *Plessy v. Ferguson* imposed on Black Americans.[5]

The gun tax debates have heated up in recent years, but they are not

2. *See, e.g.*, *Gun Policy in America*, RAND CORP., https://www.rand.org/research/gun-policy.html [https://perma.cc/6RW5-9W7U] (local jurisdictions using tax laws to deter gun use and violence); Saul Cornell, *Don't Ban Assault Weapons—Tax Them*, ATLANTIC (Aug. 14, 2019), https://www.theatlantic.com/ideas/archive/2019/08/taxing-assault-weapons-old-solution-modern-problem/596047 [https://perma.cc/3S8P-VNJP] (supporting firearms taxation).

3. *See* Rachael Bade, *New Gun Control Strategy: Tax 'Em*, POLITICO (Apr. 9, 2013, 4:39 AM), https://www.politico.com/story/2013/04/guns-bullets-taxes-gun-control-tool-089782 [https://perma.cc/HV6J-46WB] (summarizing arguments for and against the new gun tax laws). For a discussion of strong and abiding gun culture in the United States, see generally David Yamane, *The Sociology of U.S. Gun Culture*, SOCIO. COMPASS, July 2017, at 1 (presenting a brief history from the founding era to the 1960s); PAMELA HAAG, THE GUNNING OF AMERICA: BUSINESS AND THE MAKING OF AMERICAN GUN CULTURE (2016) (arguing that the culture of guns was forged during the American Revolution); JOAN BURBICK, GUN SHOW NATION: GUN CULTURE AND AMERICAN DEMOCRACY (2006) (providing a history of gun culture through the lens of gun shows); CLAYTON E. CRAMER, ARMED AMERICA: THE REMARKABLE STORY OF HOW AND WHY GUNS BECAME AS AMERICAN AS APPLE PIE (2006) (discussing the history of guns from the colonial through Revolutionary War periods); Vivek Chaudhri & John Geanakoplos, *A Note on the Economic Rationalization of Gun Control*, 58 ECON. LETTERS 51 (1998) (commenting on gun policy and regulation).

4. *See, e.g.*, David Brunori, *Why Exactly Are We Taxing Guns?*, FORBES (Aug. 26, 2015, 12:00 PM), https://www.forbes.com/sites/taxanalysts/2015/08/26/why-exactly-are-we-taxing-guns/?sh=23cff26a5c2f [https:/perma.cc/U6HP-CHYH] (arguing that the new gun taxes will not deter violence or raise revenue); Joseph R. Buoscio Jr., *Violence Taxes: New Way to Recoup and Prevent the Costs of Gun Violence? Or New Method to Destroy Business and Competitiveness?*, 15 DEPAUL BUS. & COM. L.J. 81, 96 (2016) (arguing that new gun taxes will encourage gun owners to evade taxes and punish consumers for their hobbies); Daniel Beekman, *How Gun-Tax Legislation Would Affect Seattle Firearms Stores*, SEATTLE TIMES (July 29, 2015, 11:07 AM), https://www.seattletimes.com/seattle-news/politics/how-gun-tax-legislation-would-affect-seattle-firearms-stores [https://perma.cc/83KB-3FSD] (arguing that taxes will move gun demand to the illegal market); Daniel D. Polsby, *The False Promise of Gun Control*, ATLANTIC (Mar. 1994), https://www.theatlantic.com/magazine/archive/1994/03/the-false-promise-of-gun-control/306744 [https://perma.cc/4WH6-Y2SV] (arguing that gun taxes and other controls are futile and result in predictably perverse consequences).

5. Timothy Johnson, *Wash. Times' Miller Compares Proposal to Tax Firearms to Racially Discriminatory Poll Taxes*, MEDIA MATTERS FOR AM. (June 28, 2013, 3:37 PM), https://mediamatters.org/blog/2013/06/28/wash-times-miller-compares-proposal-to-tax-fire/194672 [https://perma.cc/R559-SYYM]; *see also* Plessy v. Ferguson, 163 U.S. 537 (1896); Whet Moser, *Today in Violence Prevention: The Chicago Violence Tax and Inner-City Farming*, CHI. MAG. (Oct. 9, 2012, 2:57 PM), https://www.chicagomag.com/city-life/october-2012/today-in-violence-prevention-the-chicago-violence-tax-and-inner-city-farming [https://perma.cc/W6RD-PD4G] (quoting an NRA lobbyist's statement that the tax laws are just "another way to enact a Jim Crow law and keep people from exercising their constitutional right").

new. Congress adopted the first tax on firearms in 1918,[6] and forty-five states, the District of Columbia, and many localities have taxed the sale and use of firearms for decades.[7]

So why are the new gun tax laws so divisive?

One possible explanation is the recent rhetoric around guns and taxes. Historically, legislators were silent on the social impact of guns, or they explicitly acknowledged owners' rights and responsibilities. Congress adopted the earliest gun taxes, for example, as part of a wartime revenue-raising measure that included a long list of newly taxed commodities, including candy, tobacco, and electricity.[8] A few decades later, policymakers chose to earmark gun tax revenue for wildlife preserves, hunter education programs, and other initiatives widely believed to benefit society.[9] By the 1960s, legislators emphasized the social costs of guns and adopted steep taxes intended to deter criminal activity but simultaneously supported gun ownership through special preferences for weaponry used in leisure, gaming, and other law-abiding activities.[10]

The tone of the gun tax debates has dramatically shifted. Commentators now choose sides and systematically highlight either the social costs or benefits of guns and gun ownership.[11] Passionate advocates exist on both sides for good reason—the stakes are high. After all, millions of Americans

6. For a brief history of the early gun taxes, see STEVEN A. BANK, KIRK J. STARK & JOSEPH J. THORNDIKE, WAR AND TAXES (2008) (discussing wartime revenue measures, including taxes on guns and ammunition); Carol Skalnik Leff & Mark H. Leff, *The Politics of Ineffectiveness: Federal Firearms Legislation, 1919–38*, 455 ANNALS AM. ACAD. POL. & SOC. SCI. 48 (1981); Robert J. Spitzer, *Gun Law History in the United States and Second Amendment Rights*, 80 LAW & CONTEMP. PROBS. 55 (2017) (examining how gun regulations, generally, have been around for centuries and span every conceivable category of regulations); Franklin E. Zimring, *Firearms and Federal Law: The Gun Control Act of 1968*, 4 J. LEGAL STUD. 133 (1975) (discussing gun taxes in the 1960s).

7. States and localities tax guns and related equipment through a combined system of sales and use taxes applied to commodities. For a list of the state sales and use tax rates, see JANELLE CAMMENGA, TAX FOUND., FISCAL FACT NO. 686: STATE AND LOCAL SALES TAX RATES, 2020, at 1 (2020), https://files.taxfoundation.org/20200115132659/State-and-Local-Sales-Tax-Rates-2020.pdf [https://perma.cc/FWW6-3KUP]. The remaining five states do not have state sales taxes, and a small number of states offer "Second Amendment Weekends." *See* Matthew Rocco, *Buy Guns Tax-Free in These States*, FOX BUS. (Aug. 25, 2016), https://www.foxbusiness.com/features/buy-guns-tax-free-in-these-states [https://perma.cc/L42M-CH99] (noting that Alaska, Delaware, Montana, New Hampshire, and Oregon do not have sales taxes and that Mississippi and Louisiana have offered special weekend exemptions of gun sales from state sales taxes).

8. *See infra* text accompanying notes 29–35 (providing a brief history of gun taxation in the United States).

9. *See infra* note 34 and accompanying text (discussing earmarked gun taxes).

10. *See infra* note 36 and accompanying text (noting that it is widely accepted that individuals use guns for leisure, self-defense, and noncriminal activities).

11. Spitzer, *supra* note 6, at 56 (noting that modern gun debates are "fierce, zero-sum" struggles); *see also* Leff & Leff, *supra* note 6, at 57 (noting that modern gun debates represent a "clash of world views"); B. Bruce-Briggs, *The Great American Gun War*, 45 PUB. INT. 37, 61 (1976) (noting that modern gun debates are akin to a "low-grade war").

venerate their guns, and the U.S. Supreme Court held that our Framers provided constitutional protection for guns in the hands of individuals.[12] At the same time, these weapons are undeniably linked to deaths, injuries, and heartbreak across our nation. In 2015, 36,252 people died of gun injuries: sixty-one percent were suicides, thirty-seven percent were homicides, and two percent were due to accidental firings and undetermined intent.[13]

Notwithstanding the significance of guns in American culture and the increasing role that taxes play, no study has systematically analyzed the underlying reasons for and against gun taxation or, more importantly, offered a detailed framework for a system of taxation that reflects the rights and responsibilities of gun ownership.[14] History, law, and data suggest both sides of the debate offer plausible claims, and we believe policymakers should account for these perspectives. With this Article, we begin to fill the surprising gap in the extant literature.

We begin our study with public finance theory, which offers a useful framework to determine the best way to tax guns in a manner that advances social welfare. We examine three widely discussed theories and find hints of each embedded in the current architecture of the law. The benefits theory aims to link taxes to the cost of government-provided goods and services, thereby ensuring constituents pay only for what they desire and use.[15] The optimal theory of commodity taxation prioritizes unfettered markets, arguing for tax rates linked to the elasticity of consumer demand in an effort to avoid

12. District of Columbia v. Heller, 554 U.S. 570, 635–36 (2008) (ruling, in a landmark decision, that the Second Amendment protects individuals' right to possess a handgun in the home for self-defense).

13. *Fatal Injury Reports, National and Regional, 1999-2015*, CTRS. FOR DISEASE CONTROL & PREVENTION: WEB-BASED INJ. STAT. QUERY & REPORTING SYS. (WISQARS), http://webappa.cdc.gov/sasweb/ncipc/mortrate10_us.html [https://perma.cc/N4G6-N2CL].

14. For a few recent contributions to the literature on guns and taxes, see Samuel D. Brunson, *Paying for Gun Violence*, 104 MINN. L. REV. 605, 606 (2019) (advocating Pigouvian taxation without delving into the wide-ranging categories and grades of guns and gun users); Victor Fleischer, *Curb Your Enthusiasm for Pigovian Taxes*, 68 VAND. L. REV. 1673, 1675–78 (2015) (critiquing Pigouvian taxation in the context of guns); Asha Rangappa, *The Cost of Freedom: Using the Tax Power to Limit Personal Arsenals*, YALE L. & POL'Y REV. INTER ALIA (Sept. 23, 2013, 2:15 PM), https://ylpr.yale.edu/inter_alia/cost-freedom-using-tax-power-limit-personal-arsenals [https://perma.cc/7RQU-8Y5E]. For a series of early but excellent contributions on taxing guns from an economic perspective, see Philip J. Cook & James A. Leitzel, *"Smart" Guns: A Technological Fix for Regulating the Secondary Market*, 20 CONTEMP. ECON. POL'Y 38, 43–44 (2002) [hereinafter Cook & Leitzel, *"Smart" Guns*] (arguing that taxation may promote safe gun use); Philip J. Cook & James A. Leitzel, *"Perversity, Futility, Jeopardy": An Economic Analysis of the Attack on Gun Control*, 59 LAW & CONTEMP. PROBS. 91, 95 (1996) [hereinafter Cook & Leitzel, *"Perversity, Futility, Jeopardy"*] (arguing that taxation may deter gun misuse).

15. *See* Ira K Lindsay, *Benefits Theories of Tax Fairness*, *in* 9 STUDIES IN THE HISTORY OF TAX LAW 93 (Peter Harris & Dominic de Cogan eds., 2019) (inquiring historically into the benefits theory of taxation); *see also infra* text accompanying notes 43–53 (applying the benefits theory to the gun context).

tax-generated market distortions.[16] Finally, the Pigouvian theory of taxation seeks to cure market inefficiencies with a system of surtaxes and subsidies that ensure individuals internalize the social costs and benefits of their behavior.[17]

All three theories offer useful insights, but we argue the best framework for advancing a rational system of gun taxation is the Pigouvian theory. First, it enables legislators to adopt laws that reflect one of our key underlying points: gun owners have rights *and* responsibilities.[18] By capturing both the social costs and benefits of guns, policymakers can accommodate these twin goals and avoid unnecessarily "choosing sides" in the heated controversy. Second, by increasing the rate of taxation on guns and gun owners with increasing probabilities of danger, the nation's gun taxes already implicitly reflect Pigouvian taxation through the recognition.[19] We argue that explicit reliance on the underlying motivation for adopting the laws would improve transparency and advance policymakers' aims and goals.[20] Finally,

16. *See* Joseph E. Stiglitz, *In Praise of Frank Ramsey's Contribution to the Theory of Taxation*, 125 ECON. J. 235 (2015) (outlining an intellectual history of optimal tax theory); *see also infra* text accompanying notes 57–68 (applying the optimal tax theory to the gun context).

17. *See* Jonathan S. Masur & Eric A. Posner, *Toward a Pigouvian State*, 164 U. PA. L. REV. 93, 100 (2015) (explaining the theory of Pigouvian taxes); *see also infra* text accompanying notes 72–95 (applying Pigouvian taxation to the gun context). *See generally* A.C. PIGOU, THE ECONOMICS OF WELFARE 172, 192–93 (4th ed. 1932).

18. The idea that gun owners have rights *and* responsibilities is often ignored, but it is not new. *See* Mark Rosenberg, *Considerations for Developing an Agenda for Gun Violence Prevention Research*, 42 ANN. REV. PUB. HEALTH 23 (2021) (arguing that policymakers must reduce gun violence while protecting the rights of law-abiding owners); Spitzer, *supra* note 6, at 56 ("[F]or the first 300 years of America's existence, gun laws and gun rights went hand-in-hand."); RAND CORP., THE SCIENCE OF GUN POLICY, at v (2018) (ebook) (arguing that policymakers must balance the constitutional right to bear arms with concerns about public safety); David Hemenway, *The Public Health Approach to Motor Vehicles, Tobacco, and Alcohol, with Applications to Firearms Policy*, 22 J. PUB. HEALTH POL'Y 381, 395–96 (2001) (arguing that policies recognizing rights and responsibilities are the "public health approach" given reliance on data, science, and populations); David B. Kopel & Christopher C. Little, *Communitarians, Neorepublicans, and Guns: Assessing the Case for Firearms Prohibition*, 56 MD. L. REV. 438, 442 (1997) (arguing that the best gun policy recognizes rights and responsibilities).

19. Pigouvian taxation internalizes negative and positive externalities. *See infra* text accompanying notes 72–95. While not explicitly noting the Pigouvian nature of gun taxes, commentators frequently note that gun taxes and subsidies are linked to social dangers and benefits of ownership. *See, e.g.*, Cook & Leitzel, *"Perversity, Futility, Jeopardy," supra* note 14, at 92–93 (recognizing implicitly that gun taxes and penalties are Pigouvian given the structure of increasing and decreasing taxes based on dangers associated with weapons and users); Note, *Restrictions on the Right to Bear Arms: State and Federal Firearms Legislation*, 98 U. PA. L. REV. 905, 906 (1950) ("It has been the general rule in legislation to allow the larger weapons, rifles and shotguns, a very high degree of freedom of use and transfer; easily concealed weapons such as pistols, on the other hand, are often regulated very restrictively.").

20. A large literature stresses the importance of transparency for good governance. *See, e.g.*, Alícia Adserà, Carles Boix & Mark Payne, *Are You Being Served? Political Accountability and Quality of Government*, 19 J.L. ECON. & ORG. 445, 478–79 (2003) (finding that transparency is crucial for government accountability); James R. Hollyer, B. Peter Rosendorff & James Raymond Vreeland,

Pigouvian taxation accounts for the wide-ranging social and policy issues associated with guns, from gaming and leisure to crime, mass shootings, and suicides.[21] Each context raises unique issues, which our proposed system can address in a coherent and useful fashion.

Our Article unfolds as follows. Part I provides a brief overview of the history of American gun taxes. Part II investigates three theories of public finance: the benefits theory, the optimal commodity theory of taxation, and the Pigouvian theory of taxation. After exploring the advantages and drawbacks of each approach, we argue policymakers should more aggressively and systematically rely on the Pigouvian framework to achieve their policy goals. Pigouvian taxation has recently gained traction in the literature; indeed, some scholars advocate Arthur Pigou's theory should motivate *all* legislative and regulatory decision-making.[22] We support this argument in the context of guns.

Part III looks to the extant empirical literature on guns to propose a system of Pigouvian taxes and subsidies. We argue legislators can and should revise and reform the laws to increase and decrease tax rates, thereby accounting for the complex landscape of risky and prudent gun use in our society. Specifically, we examine various types of guns, ammunition, devices, individual owners, intended uses, and geographic locations to demonstrate how legislators can frame a system of Pigouvian taxation. We argue policymakers should impose surtaxes on firearms and gun owners posing the greatest risk to society, such as assault weapons, high-caliber bullets, individuals under twenty-five, and those who struggle with mental health challenges. Simultaneously, policymakers should subsidize safety-related equipment and practices, such as smart guns and education programs.[23]

In Part IV, we address the hurdles to success, specifically the twin challenges of tax evasion and underground markets.[24] Although these

Measuring Transparency, 22 POL. ANALYSIS 413, 413–14 (2014) (offering a measure of transparency); Note, *supra* 19, at 909 (arguing that uniformity and predictability of laws in the gun context would eliminate confusion and inconvenience).

21. *See infra* text accompanying notes 72–95.

22. *See* Masur & Posner, *supra* note 17, at 100 (exploring Pigouvian taxation and issuing "a call to Pigouvian arms"); N. Gregory Mankiw, *Smart Taxes: An Open Invitation to Join the Pigou Club*, 35 E. ECON. J. 14, 16 (2009) (noting that Pigouvian taxes are popular among economists because they are "the least invasive way to remedy a market failure" and because they raise revenue). *But see* Fleischer, *supra* note 14, at 1679–80 (arguing that Pigouvian taxation sounds good but is difficult or impossible to implement in practice).

23. *See infra* text accompanying notes 114–28.

24. See Joel Slemrod, *Optimal Taxation and Optimal Tax Systems*, 4 J. ECON. PERSPS. 157, 157 (1990), for an argument that theories should account for the fact that individuals have tended to resist taxation.

problems exist in all tax regimes, policymakers have a unique policy option to improve the implementation of a rational system of taxation in the gun context. Thriving underground markets exist for firearms and related equipment, providing opportunities for gun users to avoid licensed dealers and taxation. In one context, however, underground markets have not developed: ammunition. Because ammunition cannot be reused, is expensive, and is difficult to hoard, nearly all transactions take place with licensed dealers. Accordingly, policymakers should consider extraordinary surtaxes on certain calibers of ammunition, such as the ammunition used with unusually dangerous weapons. To address the potential problem of high-risk individuals relying on third parties to purchase their firearms and equipment to avoid high taxes, we argue for increased tax avoidance penalties—a proven strategy in many contexts.

Before we begin, we emphasize that our goal in this Article is to fill a gap in the gun tax literature and offer a balanced view of gun taxation. With our framework, legislators can avoid their current ad hoc approach to taxation and systematically build a rational system of tax laws. We do not delve into the interesting and important constitutional questions that gun regulation inevitably raises. The 2008 Supreme Court case, *District of Columbia v. Heller*, held that the Second Amendment protects an individual's right to have a handgun in the home,[25] and the Court applied this holding to states and cities in the 2010 *McDonald v. City of Chicago* case.[26] Legal scholars are divided on whether these cases bar federal, state, and local governments from regulating and taxing guns, and hundreds of controversies are winding their way through the courts now.[27] For our purposes, we assume, along with respected legal experts, that the Second Amendment does not guarantee individuals' unfettered access to firearms and related

25. District of Columbia v. Heller, 554 U.S. 570, 635 (2008).

26. McDonald v. City of Chicago, 561 U.S. 742, 791 (2010).

27. For a sampling of views, see Michael C. Dorf, *The Constitutional Politics* Heller *Launched*, 68 DUKE L.J. 8, 12 (2018) (arguing that no one can predict with confidence how the Second Amendment issues will be decided after *Heller*); Stephen Kiehl, *In Search of a Standard: Gun Regulations After* Heller *and* McDonald, 70 MD. L. REV. 1131, 1170 (2011) (arguing that laws that do not ban guns and are related to public safety will likely be deemed constitutional); Philip J. Cook, Jens Ludwig & Adam M. Samaha, *Gun Control After* Heller*: Threats and Sideshows from a Social Welfare Perspective*, 56 UCLA L. REV. 1041, 1084–86 (2009) (arguing that there is an increased threat of Second Amendment claims against gun taxes); *see also* John Paul Stevens, Opinion, *John Paul Stevens: Repeal the Second Amendment*, N.Y. TIMES (Mar. 27, 2018), https://www.nytimes.com/2018/03/27/opinion/john-paul-stevens-repeal-second-amendment.html [https://perma.cc/4P7U-3UT9] (advocating repeal of the Second Amendment to foreclose the immense power awarded to the NRA by the *Heller* opinion); Eric Ruben & Joseph Blocher, *From Theory to Doctrine: An Empirical Analysis of the Right to Keep and Bear Arms After* Heller, 67 DUKE L.J. 1433, 1472 (2018) (noting that Second Amendment claims have an overall success rate of just nine percent post-*Heller*); A.B.A. STANDING COMM. ON GUN VIOLENCE, GUN VIOLENCE LAWS AND THE SECOND AMENDMENT: A REPORT OF THE AMERICAN BAR ASSOCIATION 3–5 (2015) (summarizing post-*Heller* litigation).

items, and thus taxation is appropriate and permitted when sufficient policy rationales exist.[28]

I. A BRIEF HISTORY OF GUN TAXATION

Congress adopted the first gun tax in 1918 as part of a massive revenue-raising effort to pay the costs of World War I.[29] Neither the legislative history nor subsequent commentary suggests legislators intended to send a political message to gun owners through this new tax, let alone a negative one. Rather, guns, like many other commodities, were prevalent and believed to be a useful source of revenue during a period of dire fiscal need.[30]

As tax historians widely note, once taxes are on the books, they rarely disappear and more often expand through incremental legal reform.[31] This is certainly true for our nation's system of gun taxes. Legislators at both the federal and state levels have added a wide range of new taxes on guns and ammunition over the last century.[32] By the 1930s, Congress and the State of Tennessee had adopted additional gun taxes[33] and earmarked the revenue for wildlife preserves, hunting activities, and gun education programs.[34] In the

28. The *Heller* case itself supports this view. The Justices highlighted the possible limitations on gun ownership with the following language: "[W]e do not read the Second Amendment to protect the right of citizens to carry arms for *any sort* of confrontation . . . ." *Heller*, 554 U.S. at 595; *see also* Ruben & Blocher, *supra* note 27, at 1473 (summarizing the majority of court opinions upholding gun regulations after *Heller*).

29. Revenue Act of 1918, Pub. L. No. 65-254, 40 Stat. 1057. Now codified as amended in the Internal Revenue Code, the law grades weapons according to danger and imposes differential taxes: a ten percent tax is imposed on pistols and revolvers, an eleven percent tax on other types of firearms, and a zero percent tax on antique firearms. I.R.C. §§ 4181, 5845(a); *see also infra* text accompanying notes 99–60 (discussing in detail dangers associated with weapons and users).

30. *See* BANK, STARK & THORNDIKE, *supra* note 6, at 49–60 (discussing details of wartime taxes on items such as cameras, candy, matches, soft drinks, electricity, and so forth).

31. *See, e.g.*, James M. Larson, *Government Gone Wild: The Real Reason for the 2nd Amendment*, 4 PHX. L. REV. 911, 913–22 (2011) (noting that policymakers launched an incremental approach to regulating guns through a system of taxation); Zimring, *supra* note 6, at 135 ("Like most emergency tax measures, the [early wartime] tax handily survived its emergency and is still, in amended form, a part of federal firearms policy." (alteration in original)).

32. *See* Rosanna Smart, *Firearm and Ammunition Taxes*, RAND CORP.: GUN POL'Y AM. (Apr. 15, 2021), https://www.rand.org/research/gun-policy/analysis/essays/firearm-and-ammunition-taxes.html [https://perma.cc/5GLY-QEDC] (discussing federal, state, and local taxes on guns and related equipment); *see also supra* note 1 and accompanying text (listing state gun tax laws).

33. National Firearms Act, Pub. L. No. 73-474, 48 Stat. 1236 (1934) (imposing taxes on highly dangerous weapons); *see also* Karen A. Michalson, *Is 18 U.S.C. § 922(o)(1) Constitutional? Mere Possession of Self-Created Objects and the Reach of the Commerce Clause*, 28 W. NEW ENG. L. REV. 133, 135–50 (2005) (discussing federal regulation of guns).

34. Pittman-Robertson Wildlife Restoration Act, 16 U.S.C. §§ 669–669i. For a useful background on the wildlife restoration fund and the revenue allocation formula, see M. LYNNE CORN & JANE G. GRAVELLE, CONG. RSCH. SERV., R42992, GUNS, EXCISE TAXES, AND WILDLIFE RESTORATION 1–6 (2013). For a discussion on earmarking generally, see Susannah Camic Tahk, *Public Choice Theory and Earmarked Taxes*, 68 TAX L. REV. 755, 766–68 (2015) (noting that many states across the country earmark taxes).

1960s, legislators turned to the tax laws in an effort to curtail, if not completely interdict, the use of machine guns, sawed-off shotguns, silencers, and other similar weapons believed to be the cause of urban crime waves.[35] Although reliance on the tax laws to deter crime has increased over time, legislators have long recognized that guns are also deployed for legitimate purposes. Indeed, in the past, legislators frequently expressed the twin goals of halting violence while sanctioning gun use for hunting, target shooting, personal protection, and other noncriminal activities.[36]

The notion that guns have multiple uses—hunting, target shooting, self-protection, *and* crime—is broadly accepted and reflected throughout the laws. High taxes exist but so, too, special preferences for items, individuals, and organizations perceived to advance social welfare. Policymakers have awarded tax exemptions, for example, to antique guns, retired law enforcement officers, nonprofit organizations, gun clubs providing safe gun-use classes, and so forth.[37] Additionally, devices such as trigger locks and gun safes are often exempt from taxation.[38] Recognizing geography can also be correlated with gun violence, such as lower gun crime and accident rates in rural areas compared to urban areas, some states tax rural gun users at lower rates.[39] In short, policymakers have long recognized that firearms and users exist along a continuum from safe and responsible to dangerous and violent. Later we rely on this continuum to advocate for a more rational framework for gun taxation, but for now, we simply note that policymakers have adopted a patchwork of taxes and special exemptions in federal, state, and local laws over the course of the last century.

35. Gun Control Act of 1968, Pub. L. No. 90-618, 82 Stat. 1213. For a terrific summary of the law, its implementation, and its potential impact on crime rates, see Zimring, *supra* note 6. *See also* Leila Nadya Sadat & Madaline M. George, *Gun Violence and Human Rights*, 60 WASH. U. J.L. & POL'Y 1, 17–25 (2019) (providing a brief history of American gun laws in the context of human rights analysis).

36. *See* Gun Control Act § 101, 82 Stat. at 1213–14 (highlighting guns can be used for gaming, self-protection, and noncriminal purposes); WIS. STAT. ANN. § 77.52 (West 2021) (exempting gun clubs that provide safety classes from gun taxes); *see also* Kopel & Little, *supra* note 18, at 441 (noting that anti- and pro-gun lobbies agree guns exist along a continuum from safe to dangerous and that gun owners can use guns for both legal and illegal activities).

37. *See supra* notes 29 and 36 and accompanying text.

38. *See, e.g.*, CONN. GEN. STAT. ANN. § 12-412(101) (West 2021) (exempting firearm safety devices, including safes, lock boxes, and trigger and barrel locks, from taxation in Connecticut); MASS. ANN. LAWS ch. 64H, § 6(rr) (LexisNexis 2021) (exempting "[s]ales of commercial gun safes and trigger lock devices" from taxation in Massachusetts); N.J. STAT. ANN. § 54:32B-8.50(b) (West 2021) (exempting "[r]eceipts from sales of firearm trigger locks and other devices that enable the firearm to be made inoperable by anyone other than an authorized person" from taxation in New Jersey); N.J. STAT. ANN. § 54:32B-8.51(b) (West 2021) (exempting "[r]eceipts from sales of firearm vaults providing secure storage for firearms" from taxation in New Jersey); WASH. REV. CODE § 82.08.832(1) (2021) (exempting "sales of gun safes" from taxation in Washington).

39. *See, e.g.*, ALA. CODE § 40-12-143 (LexisNexis 2021) (imposing a higher tax on guns purchased in urban areas).

Acknowledgment and appreciation of the wide-ranging uses of guns, both licit and illicit, are distinctly lacking in current debates. Contemporary legislators and commentators emphasize the costs or the benefits of guns and gun ownership, but they routinely ignore the reality that both might exist in our complex environment. Pro-gun advocates argue legislators must repeal gun taxes and have convinced a small handful of states to implement "Second Amendment tax holidays."[40] On the other side, anti-gun advocates characterize guns as the cause of an epidemic of violence and tragedy across the nation. They argue for high taxes and increased regulation, believing the social costs of guns and gun ownership far outweigh any benefits.[41]

In summary, the federal government, forty-five states, the District of Columbia, and many localities tax firearms and related equipment.[42] Policymakers at all levels have also added surtaxes to firearms perceived to be uniquely dangerous and, simultaneously, awarded special preferences to safety-related equipment and to owners deemed to be responsible gun users, such as retired police officers. This piecemeal approach to gun taxes incorporates many rational policies, but policymakers could more readily realize their aims and goals with a transparent and predictable framework of taxation. The public finance literature, to which we now turn, provides an avenue for achieving a more balanced and systematic approach to guns and taxes.

II. TAXING GUNS: THREE THEORETICAL PERSPECTIVES

Public finance theorists have much to say about commodity taxation, including gun taxes, but have never reached consensus on the best approach to taxation. In this Part, we explore three popular theories and investigate their potential for devising a rational system of gun taxation. Although each theory has merit under some circumstances, and hints of each can be found in the current approach, our analysis finds one framework is particularly well suited for the context of guns.

40. *See 2017 Louisiana Second Amendment Weekend Sales Tax Holiday: September 1-3*, LA. DEP'T OF REVENUE, https://www.revenue.louisiana.gov/NewsAndPublications/secondamendmentsales taxholiday [https://perma.cc/RA32-F5J5]; Mark Robyn, *West Virginia Governor Vetoes Gun Sales Tax Holiday*, TAX FOUND. (Apr. 6, 2010), https://taxfoundation.org/west-virginia-governor-vetoes-gun-sales-tax-holiday [https://perma.cc/UJ37-DRAX]; S.C. Rev. Rul. 08-13 (2008) (providing guidance for South Carolina's sales tax holiday); *see also* Hunter Stuart, *Texas Bill Would Establish Tax Holiday for Guns and Ammunition*, HUFFINGTON POST (Feb. 28, 2013), https://www.huffpost.com/entry/texas-tax-holiday-guns-ammo-leach-plano_n_2774078 [https://perma.cc/F2EF-DJ2U] (reporting that Texas legislators were considering a sales tax holiday); *Lawmaker Pushing for Sales Tax Holiday for Guns and Ammo*, KFOR (Jan. 22, 2013, 10:08 AM), https://kfor.com/news/lawmaker-pushing-for-sales-tax-holiday-for-guns-and-ammo [https://perma.cc/8ABD-VRUU] (reporting that an Oklahoma legislator had proposed a sales tax holiday).

41. *See, e.g.*, Stevens, *supra* note 27 (arguing for a repeal of the Second Amendment).

42. *See supra* note 7 and accompanying text (summarizing state laws).

A. BENEFITS TAXATION AND EARMARKING

The benefits theory of taxation is a centuries-old theory grounded in the idea that individuals should pay for the government-supplied goods and services they enjoy.[43] With this quid pro quo relationship as a driving force, the benefits theory requires legislators to assess the benefits associated with government goods and services and impose taxes accordingly.[44] The extant literature is filled with arguments for and against this approach.[45] On the positive side, benefits taxation arguably solves two of the most vexing problems in public finance: how much of a public good to supply and who should pay its cost.[46] On the negative side, government managers must calculate the benefits taxpayers receive from government activity, which is difficult given the need for prediction, often in the context of shifting public preferences over time.[47] Theorists also critique the model for its lock-in effect, undermining policymakers' ability to respond to unexpected crises or changing fiscal priorities.[48]

43. *See* Sijbren Cnossen, *The Economics of Excise Taxation*, *in* THE ELGAR GUIDE TO TAX SYSTEMS 278 (Emilio Albi & Jorge Martinez-Vazquez eds., 2011) (explaining the "benefit-charging" potential of commodity taxes); *see also* Nancy C. Staudt, *The Hidden Costs of the Progressivity Debate*, 50 VAND. L. REV. 919, 936–39 (1997) (explaining the benefits theory as part of early social contract theory); Nancy C. Staudt, *Taxation Without Representation*, 55 TAX L. REV. 555, 556 (2002) (exploring hidden benefits tied to taxpayer status); Nancy C. Staudt, *Taxing Housework*, 84 GEO. L.J. 1571, 1618 (1996) (noting that taxpayers earn retirement benefits).

44. *See* D. ANDREW AUSTIN, CONG. RSCH. SERV., R45463, ECONOMICS OF FEDERAL USER FEES 4 (2019) (arguing that tying taxes to those who enjoy the benefits of government expense promotes fairness and efficiency); TREASURY BD. OF CAN. SECRETARIAT, GOV'T OF CAN., USER CHARGING IN THE FEDERAL GOVERNMENT—A BACKGROUND DOCUMENT 8 (1997) (same); Cnossen, *supra* note 43, at 278 (same). In practice, however, the actual linkage between the tax and precise government benefits can be loose or almost nonexistent. *See* Tahk, *supra* note 34, at 766–68 (noting that various earmarking approaches exist in practice); Cnossen, *supra* note 43, at 278 (discussing earmarking issues associated with commodity taxes); Richard M. Bird & Joosung Jun, *Earmarking in Theory and Korean Practice*, *in* EXCISE TAXATION IN ASIA 49 (Stephen L.H. Phua ed., 2007) (creating a typology of earmarking practices based on their nature and actual linkage between tax and expenditure).

45. *See, e.g.*, AUSTIN, *supra* note 44, at 4–8 (discussing advantages and disadvantages of benefits taxation); JOEL MICHAEL, MINN. HOUSE OF REPRESENTATIVES RSCH. DEP'T, EARMARKING STATE TAX REVENUES (2015) (same); Ranjit S. Teja, *The Case for Earmarked Taxes*, 35 INT'L MONETARY FUND STAFF PAPERS 523 (1988) (same).

46. The benefits tax is appealing to economists because it mirrors the private market approach to pricing and also limits the political process. *See* Teja, *supra* note 45, at 527 (noting that the benefits tax parallels the market approach to private goods); Randall G. Holcombe, *Tax Policy from a Public Choice Perspective*, 51 NAT'L TAX J. 359, 361 (1998) (discussing the history of benefits theory from efficiency and public choice perspectives).

47. *See, e.g.*, Tahk, *supra* note 34, at 771–73 (listing critiques of the earmarking approach); AUSTIN, *supra* note 44, at 4–8 (discussing disadvantages of benefits taxation); MICHAEL, *supra* note 45, at 2–9 (same); Teja, *supra* note 45, at 527–31 (same).

48. *See, e.g.*, *supra* note 47 and accompanying text; *see also* James D. Savage, *The Administrative Costs of Congressional Earmarking: The Case of the Office of Naval Research*, 69 PUB. ADMIN. REV. 448, 448–49 (2009) ("Every president since Ronald Reagan has denounced earmarking because of its cost and because the practice undermines the ability of executive agencies to plan, coordinate, and execute their missions.").

In our context, the question is whether it is possible to link taxes imposed on guns to a particular public good, thereby justifying the tax under the benefits theory. Guns, ammunition, and related equipment are manufactured and sold by private entities. This means that individuals paying the gun taxes do not directly pay the cost for a government-provided good in the same way that, say, a bridge toll directly charges the user of a bridge.[49] Indirectly, it could be argued that our systems of national defense and local law enforcement are made possible by weapons manufacturers and suppliers, and all individuals benefit from the provision of these goods and services.[50] The problem with this analysis is that only gun users pay the gun taxes, and the amount of revenue raised is miniscule compared to the amount spent on national defense.

In one context, however, the benefits theory may offer a useful framework for gun taxes. The federal government and many states earmark a portion of their gun tax revenue for habitat restoration, hunter education, wildlife management, wildlife research, and shooting ranges.[51] Policymakers and gun owners tend to view these spending programs as support for gun-related activities and, simultaneously, the gun taxes as a means by which beneficiaries pay their costs. Moreover, agency directors routinely note that they cannot "overemphasize how important the [tax] program is to [funding] wildlife" projects and programs.[52]

This background suggests the benefits theory may have some purchase for framing the gun tax laws, but there are also serious drawbacks related to over- and underinclusivity. Policymakers impose taxes on many firearms

49. For an interesting discussion of the deployment of toll taxes in the United States and their policy uses beyond paying the cost of roads, see Ira Hirschman, Claire McKnight, John Pucher, Robert E. Paaswell & Joseph Berechman, *Bridge and Tunnel Toll Elasticities in New York: Some Recent Evidence*, 22 TRANSP. 97, 97 (1995) (noting that bridge and tunnel tolls are used primarily in the Northeast and have the potential to impact travel patterns).

50. *See* DONALD F. KETTL, SHARING POWER: PUBLIC GOVERNANCE AND PRIVATE MARKETS 6 (1994) ("As long as there have been governments, there have been armies; as long as there have been armies, governments have purchased weapons and supplies from private vendors."); *see also* Frank R. Lichtenberg, *How Elastic Is the Government's Demand for Weapons?*, 40 J. PUB. ECON. 57 (1989) (exploring government demand for various weapon systems and the structure of negotiations with private contractors).

51. Pittman-Robertson Wildlife Restoration Act, 16 U.S.C. §§ 669–669i. For a useful background on the wildlife restoration fund and the revenue allocation formula, see CORN & GRAVELLE, *supra* note 34, at 1–6.

52. Shannon Tompkins, *Run on Guns, Ammo Adds Millions to Parks Revenue*, HOUS. CHRON. (May 4, 2013, 10:35 PM), https://www.houstonchronicle.com/news/houston-texas/houston/article/Run-on-guns-ammo-adds-millions-to-parks-revenue-4489164.php [https://perma.cc/33YD-K59S] (alteration in original) (quoting an agency director); *see also* Claudia Dias Soares, *Earmarking Revenues from Environmentally Related Taxes*, *in* HANDBOOK OF RESEARCH ON ENVIRONMENTAL TAXATION 102, 106–17 (Janet E. Milne & Mikael Skou Andersen eds., 2012) (noting that earmarked funds increase demand for guns which, in turn, increases the size of the fund).

that are unsuitable for wildlife hunting, such as handguns, pistols, and machine guns. Moreover, many non-gun owners take advantage of public parks and wildlife areas and do not pay gun taxes because they do not own guns. In short, unlike user fees and bridge tolls, which ensure a tight relationship between taxes and benefits, the same cannot be said about the gun taxes.[53]

While there are many more drawbacks, our system of gun taxation highlights why the benefits theory, once highly regarded, has lost favor and applies to very few real-world situations today.[54] Indeed, policymakers have begun to adopt what appears to be the polar opposite of a benefits theory of taxation. Rather than asking individuals to pay for the benefit they take from society, many policymakers now argue that taxpayers should pay for the *costs* they *impose* on society.[55] This approach to taxation fits perfectly within the Pigouvian theory, to which we turn momentarily.[56] First, though, we explore an alternative theory that has received much attention in the public finance literature.

53. At the state level, earmarking gun taxes goes beyond wildlife funds. Several states earmark gun tax revenue for background checks, licensing, and permitting. *See supra* note 1 and accompanying text. Surveys indicate the vast majority of gun owners support these types of earmarks as a means to deter gun violence. *See* Press Release, Ctr. for Am. Progress, Gun Owners Overwhelmingly Support Background Checks, See NRA as Out of Touch, New Poll Finds (Nov. 17, 2015), https://www.americanprogress.org/press/release/2015/11/17/125618/release-gun-owners-overwhelmingly-support-background-checks-see-nra-as-out-of-touch-new-poll-finds [https://perma.cc/2F49-RHFN].

54. *See* Richard M. Bird, *Foreign Advice and Tax Policy in Developing Countries*, *in* TAXATION AND DEVELOPMENT: THE WEAKEST LINK? 103, 119–21 (Richard M. Bird & Jorge Martinez-Vazquez eds., 2014) (noting that budget experts almost unanimously condemn a system of benefits taxation and earmarking due to the cost of controlling separate funds, the inability to link taxes and specific benefits, and taxpayers' resistance to paying for what they don't want); *see also* RICHARD J. JOSEPH, THE ORIGINS OF THE AMERICAN INCOME TAX: THE REVENUE ACT OF 1894 AND ITS AFTERMATH (2004) (explaining the shift away from benefits taxation in theory and practice); Ajay K. Mehrotra, *Fiscal Forearms: Taxation as the Lifeblood of the Modern Liberal State*, *in* THE MANY HANDS OF THE STATE: THEORIZING POLITICAL AUTHORITY AND SOCIAL CONTROL 284, 293 (Kimberly J. Morgan & Ann Shola Orloff eds., 2017) (discussing the demise of benefits theory); Dennis J. Ventry Jr., *Equity Versus Efficiency and the U.S. Tax System in Historical Perspective*, *in* TAX JUSTICE: THE ONGOING DEBATE 25 (Joseph J. Thorndike & Dennis J. Ventry Jr. eds., 2002) (same).

55. A widely debated example of taxing gun owners for the social costs they impose on society emerged in Cook County, Illinois. Cook County justified a new twenty-five dollar gun tax on the grounds that the revenue would subsidize local hospitals, thereby offsetting the health costs associated with gun violence. *See* Daigneau, *supra* note 1 (discussing Cook County gun taxes as a levy tied to the social cost of gun use and summarizing similar proposed legislation in California, New Jersey, and Florida); *see also* Keen, *supra* note 1 (summarizing recent initiatives).

56. *See infra* text accompanying notes 72–96 (discussing the Pigouvian theory's internalization of negative externalities with the help of taxes).

B. OPTIMAL COMMODITY TAXATION AND THE INVERSE ELASTICITY RULE

The second theory of taxation revolves around the idea that taxes are necessary but also impose market distortions associated with tax-generated price increases.[57] We typically expect price increases to cause a decrease in consumer demand, but the impact depends on individual preferences.[58] Some goods are so highly desired and so lacking in substitutes that demand is largely impervious to price changes; these goods, often tied to addiction or life-saving treatments, are price inelastic, and consumers purchase them even when faced with dramatic price hikes.[59] Items with no close substitutes, such as table salt and toilet paper, also have inelastic demand. To minimize tax-induced price and behavioral changes, the optimal theory of commodity taxation holds that legislators should set tax rates in such a way that they impose similar effects on demand across all commodities in the market. Put differently, tax rates should vary depending on the relative elasticity of demand. The intuition behind the rule is straightforward: "Efficient taxes distort decisions as little as possible. The potential for distortion is greater the more elastic the demand for a commodity. Therefore, efficient taxation requires the relatively high rates of taxation be levied on relatively inelastic goods."[60]

Applying the optimal theory of commodity taxation to guns requires an understanding of demand elasticity for guns and weaponry. Consumer demand is more inelastic when (1) viable substitutes do not exist, and (2) individuals perceive the commodity as necessary (not discretionary) to their lifestyle.[61] With regard to the first factor, consider the old adage: never

57. Frank Ramsey pioneered the work in optimal tax theory. *See* F.P. Ramsey, *A Contribution to the Theory of Taxation*, 37 ECON. J. 47 (1927). Since Ramsey's early contribution, many scholars have elaborated on and advanced Ramsey's concepts. *See, e.g.*, Edward J. McCaffery, *Slouching Towards Equality: Gender Discrimination, Market Efficiency, and Social Change*, 103 YALE L.J. 595, 657–64 (1993) (applying optimal taxation to the family context); Cnossen, *supra* note 43, at 158–61 (discussing optimal taxation generally as having "revenue-raising efficiency aspects"); Slemrod, *supra* note 24, at 157–68 (noting that optimal tax theory has greatly impacted taxation in theory and practice); David F. Bradford & Harvey S. Rosen, *The Optimal Taxation of Commodities and Income*, 66 AM. ECON. REV. 94 (1976) (discussing the importance of optimal taxation in theory and practice); J.A. Mirrlees, *An Exploration in the Theory of Optimum Income Taxation*, 38 REV. ECON. STUD. 175 (1971) (advancing the Ramsey theory and ultimately winning a Nobel Prize).

58. *See* HARVEY S. ROSEN & TED GAYER, PUBLIC FINANCE 353–57 (9th ed. 2009).

59. *See id. But see* Frank J. Chaloupka, *How Effective Are Taxes in Reducing Tobacco Consumption?*, *in* VALUING THE COST OF SMOKING: ASSESSMENT METHODS, RISK PERCEPTION AND POLICY OPTIONS 205 (Claude Jeanrenaud & Nils Soguel eds., 1999) (noting that commentators routinely assume inelastic demand for addictive products, such as tobacco, but inelasticity may be context specific).

60. ROSEN & GAYER, *supra* note 58, at 356.

61. *Id.* at 353–57. Many scholars have noted, however, that the inverse elasticity rule ignores the political process and rent-seeking activities, which, when considered, suggest all goods be taxed at the same rate. *See, e.g.*, Randall G. Holcombe, *The Ramsey Rule Reconsidered*, 30 PUB. FIN. REV. 562, 562 (2002); James M. Buchanan, *Public Finance and Public Choice*, 28 NAT'L TAX J. 383, 385 (1975).

bring a knife to a gun fight. This maxim highlights the widespread view of most gun owners: few—and perhaps no—substitutes for guns exist.[62] Regarding the second factor associated with inelastic demand, the question of whether consumers view guns as essential to their lifestyle or not depends on the circumstances. Guns used for leisure activities, such as hunting and target shooting, may be viewed as discretionary, but guns deployed for safety and security are more likely to be viewed as a necessity.[63] In short, we expect businesses and homeowners who buy guns for protective purposes to be likely to have more inelastic demand for firearms and ammunition than hunters, collectors, and target shooters.[64]

No definitive study exists on the elasticity of consumer demand for guns,[65] but optimal commodity tax theory countenances the very highest taxes on weaponry with the lowest elasticity of demand.[66] Because gun advocates suggest that handguns, like life-saving drugs, are a necessity for survival, they should be taxed at the very highest rates.[67] If the demand for handguns is truly inelastic, then placing the highest tax on such guns would be efficient.[68]

Our brief analysis explains why the optimal commodity theory of taxation has never gained much traction in the real world.[69] The theory of

62. The Internet is filled with ideas for individuals seeking gun substitutes, including dogs, mace, pepper spray, and so forth. The academic literature, however, suggests there are no good substitutes for guns. *See, e.g.*, Buoscio, *supra* note 4, at 96 (noting that, given the lack of substitutes, gun demand is inelastic); Gary Kleck & David J. Bordua, *The Factual Foundation for Certain Key Assumptions of Gun Control*, 5 LAW & POL'Y Q. 271, 280 (1983) (arguing that demand for guns used for security and defense is price inelastic). *But see* Chaudhri & Geanakoplos, *supra* note 3, at 52 (suggesting gun demand is relatively elastic); Douglas C. Bice & David D. Hemley, *The Market for New Handguns: An Empirical Investigation*, 45 J.L. & ECON. 251, 263–64 (2002) (investigating demand for one category of guns—new handguns—and finding elasticity).

63. Gun demand elasticity, however, may also be related to geographic location of the gun user. *See, e.g.*, Neelam Poudyal, Seong Hoon Cho & J.M. Bowker, *Demand for Resident Hunting in the Southeastern United States*, 13 HUM. DIMENSIONS WILDLIFE 158, 163–65 (2008) (finding inelastic demand for hunting in ten southeastern states); Lili Sun, G. Cornelis van Kooten & Graham M. Voss, *Demand for Wildlife Hunting in British Columbia*, 53 CAN. J. AGRIC. ECON. 25, 25 (2005) (noting that, unlike Canadian hunters, U.S. hunters have inelastic demand for hunting).

64. *See* Kleck & Bordua, *supra* note 62, at 280 (arguing that demand for guns used for self-protection is price inelastic).

65. For a wide-ranging discussion, see *supra* note 14 and accompanying text.

66. *See supra* text accompanying notes 57–62.

67. *See infra* note 82 and accompanying text (noting the views of some commentators that guns are necessary for self-protection and deter gun-wielding criminals).

68. Because handguns are small and easy to use and conceal, they are often the weapon of choice for individuals seeking self-protection and thus should be subject to a surtax. *See* Bice & Hemley, *supra* note 62, at 264 (determining via an empirical study that individuals purchase handguns for self-defense); *see also infra* text accompanying notes 102–20 (discussing handgun use and misuse).

69. *See, e.g.*, James Alm, *What Is an "Optimal" Tax System?*, 49 NAT'L TAX J. 117, 118 (1996) (arguing that optimal tax theory is "largely irrelevant to practical tax design" because the theory ignores a range of issues associated with fiscal and social institutions).

taxation prioritizes efficiency above all else; the stated goal is to have a system that neither incentivizes nor deters behavior but leaves the market free of tax-related distortions. Fairness concerns are irrelevant for tax policymakers under this framework.[70]

In sum, we believe the optimal theory of taxation is creative—one of its architects won a Nobel Prize in Economics[71]—but the drawbacks outnumber the advantages in the highly contested area of gun policy, which we believe must account for social and fairness considerations. We now turn to the Pigouvian theory of taxation, the most promising framework of the three approaches.

C. PIGOUVIAN TAXATION AND THE PROBLEM OF EXTERNALITIES

Devised by the English economist Arthur Pigou, the Pigouvian theory instructs legislators to use tax policy to correct market failures caused by externalities.[72] Externalities are costs or benefits imposed by individuals on unrelated third parties.[73] The quintessential examples of a negative externality are secondhand smoke in bars and restaurants or pollution generated by a factory. By taxing the individuals or entities responsible for these externalities, legislators internalize social costs, thereby improving overall welfare.[74] Pigouvian taxation does not believe government-induced

70. *Id.* at 119 (noting that optimal taxation prioritizes efficiency, while fairness requires consideration of differential income levels and social vulnerability).

71. James Mirrlees expanded on Frank Ramsey's important contributions on commodity taxation. Mirrlees then won the 1996 Nobel Prize in Economics. *See* Press Release, Royal Swedish Acad. of Scis., The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1996 (Oct. 8, 1996), https://www.nobelprize.org/prizes/economic-sciences/1996/summary [https://perma.cc/2ZMV-95B5] (noting Mirrlees's contributions to the economic theory of incentives).

72. PIGOU, s*upra* note 17, at 192–93; *see also* Cnossen, *supra* note 43, at 158–61 (explaining the "externality-correcting" potential of commodity taxes). Many scholars note that policymakers can apply optimal and Pigouvian taxes sequentially so that the least distortionary tax is levied on goods according to the Ramsey rule, followed by Pigouvian taxes to address externalities. *See* Bas Jacobs, *From Optimal Tax Theory to Applied Tax Policy*, 69 FINANZARCHIV: PUB. FIN. ANALYSIS 338 (2013) (arguing that Ramsey and Pigouvian taxes applied to alcohol and tobacco are efficient and social welfare enhancing); Cnossen, *supra* note 43, at 158–61.

73. In other words, an externality is a cost or benefit that occurs when one person's or entity's activity "affects the welfare of another in a way that is outside the market mechanism." ROSEN & GAYER, *supra* note 58, at 73.

74. *See* Gary M. Lucas, Jr., *Voter Psychology and the Carbon Tax*, 90 TEMP. L. REV. 1, 6 (2017) (noting that a textbook example of a Pigouvian tax is the carbon tax); Bruce G. Carruthers, *The Semantics of Sin Tax: Politics, Morality, and Fiscal Imposition*, 84 FORDHAM L. REV. 2565, 2567–68 (2016) (noting that a tax on smokers addresses the secondhand smoke problem); R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1–2 (1960) (noting that smoke from a factory is a negative externality); PIGOU, *supra* note 17, at 185–86 (noting that new factory construction spoils a neighborhood). Policymakers and scholars often justify the so-called sin taxes in Pigouvian terms. *See* RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS (Penguin Books 2009) (2008) (discussing how taxes and regulations can nudge healthy behavior); Hunt Allcott, Benjamin

price increases are always problematic but rather welcomes them as a means to cure market distortions.

The goal of the Pigouvian tax regime is not to eliminate activities generating negative externalities but to ensure individuals pay for the harm they cause.[75] Moreover, the Pigouvian framework is not only applicable to situations involving negative externalities; policymakers can also use the framework to promote positive externalities through subsidies or special tax preferences.[76] For example, legislators may subsidize electric cars or solar panels to promote pollution-reducing technology and the attendant public benefits. Pigouvian taxation, therefore, promotes social welfare with a system of taxation that takes account of individuals' impact on society, both positive and negative.[77]

Scholars have explored the usefulness of Pigouvian taxation in a wide range of areas, such as pollution and smoking, but few have applied the framework to guns and gun owners, and none have done so in a systematic fashion.[78] Some scholars argue Pigouvian taxes are well suited for the gun context,[79] while others argue they are uniquely unsuited for guns given the empirical impossibility of assessing the costs and benefits of gun use.[80] Unlike the effects of pollution and secondhand smoke, commentators are divided on the issue of whether guns impose social costs and should be taxed, or generate social benefits and should be subsidized.[81]

B. Lockwood & Dmitry Taubinsky, *Regressive Sin Taxes, with an Application to the Optimal Soda Tax*, 134 Q.J. ECON. 1557, 1557–58 (2019) (noting that sin taxes on cigarettes, alcohol, and unhealthy foods increase social welfare by reducing healthcare costs or pollution); Fred Kuchler, Abebayehu Tegene & J. Michael Harris, *Taxing Snack Foods: Manipulating Diet Quality or Financing Information Programs?*, 27 REV. AGRIC. ECON. 4, 5–6 (2005) (examining taxes on salty snacks through a Pigouvian lens).

75. Tax rules (or subsidies) are not the only way to address externalities; a series of private responses associated with bargaining and social conventions can also be used. *See* ROSEN & GAYER, *supra* note 58, at 81–84; Agnar Sandmo, *Optimal Taxation in the Presence of Externalities*, 77 SWED. J. ECON. 86, 86 (1975) (noting that taxation is particularly important when the externality in question is of the public good variety so that negotiations between the parties are impossible).

76. *See* ROSEN & GAYER, *supra* note 58, at 73.

77. *See id.*

78. *See supra* note 14 and accompanying text (citing articles that have explored gun taxation).

79. *See, e.g.*, Rangappa, *supra* note 14 (advocating Pigouvian taxes on gun arsenals); Brunson, *supra* note 14, at 606–07 (advocating for Pigouvian taxation of guns and gun users); Cook & Leitzel, *"Smart" Guns*, *supra* note 14, at 43–44 (arguing that Pigouvian taxation may promote safe gun use); Cook & Leitzel, *"Perversity, Futility, Jeopardy*,*" supra* note 14, at 118 (arguing that Pigouvian taxation may deter gun misuse).

80. *See, e.g.*, Fleischer, *supra* note 14, at 1675–78 (critiquing Pigouvian taxation in the context of guns).

81. *See* Rosenberg, *supra* note 18, at 29–35 (setting out a gun policy research agenda and arguing that policymakers need clarity on the benefits and costs of gun ownership); Philip J. Cook & Jens Ludwig, *The Social Costs of Gun Ownership*, 90 J. PUB. ECON. 379, 379–80 (2006) (noting that research produces conflicting views on the social costs and benefits of gun use). *Compare* Carlisle E. Moody & Thomas B.

The debates regarding the social value of firearms tend to circle around the issue of whether more guns lead to more or less crime.[82] The literature is vast and ferociously divided.[83] For several reasons, we believe that useful advice can be given on the appropriate taxation of firearms without deciding this question. First, the available data render it virtually impossible to reach confident conclusions on the question of whether guns lead to more or less crime in the aggregate.[84] Second, and more importantly, sixty-three percent of gun-related deaths occur *outside* the context of crime; most gun deaths and injuries are the result of suicides and accidents.[85] Finally, the guns-and-crime debate fails to account for the substantial data associated with age, background, use, and region—all correlates of gun violence.[86] While we believe some weapons and activities are so beset with risk and danger that they should be deterred with high taxes if not barred altogether,[87] we also

Marvell, *Guns and Crime*, 71 S. ECON. J. 720, 735 (2005) (determining that guns have no significant effect on crime rates), *and* JOHN R. LOTT, JR., MORE GUNS, LESS CRIME: UNDERSTANDING CRIME AND GUN CONTROL LAWS (3d ed. 2010) (arguing that guns produce social benefits), *with* Mark Duggan, *More Guns, More Crime*, 109 J. POL. ECON. 1086, 1112 (2001) (arguing that guns produce social costs). Although we were unable to find estimates of the social value of guns, scholars have long sought to estimate the social cost of guns. *See, e.g.*, Marika Cabral, Bokyung Kim, Maya Rossin-Slater, Molly Schnell & Hannes Schwandt, *Trauma at School: The Impacts of Shootings on Students' Human Capital and Economic Outcomes* 25 (Nat'l Bureau of Econ. Rsch., Working Paper No. 28311, 2020), https://www.nber.org/papers/w28311 [https://perma.cc/426T-S4H8] (finding that school shootings increase absenteeism and grade repetition); Cook & Ludwig, *supra* note 81, at 379 (estimating the average annual marginal social cost of household gun ownership as ranging from $100 to $1,800).

82. *Compare* LOTT, JR., *supra* note 81 (more guns, less crime), *and* John R. Lott, Jr. & David B. Mustard, *Crime, Deterrence, and Right-to-Carry Concealed Handguns*, 26 J. LEGAL STUD. 1, 64–65 (1997) (same), *with* Abhay Aneja, John J. Donohue III & Alexandria Zhang, *The Impact of Right-to-Carry Laws and the NRC Report: Lessons for the Empirical Evaluation of Law and Policy*, 13 AM. L. & ECON. REV. 565 (2011) (more guns, more crime), *and* John J. Donohue, *The Impact of Concealed-Carry Laws*, *in* EVALUATING GUN POLICY: EFFECTS ON CRIME AND VIOLENCE 287, 289–90 (Jens Ludwig & Philip J. Cook eds., 2003) (same), *and* Ian Ayres & John J. Donohue III, *Shooting Down the "More Guns, Less Crime" Hypothesis*, 55 STAN. L. REV. 1193, 1201–02 (2003) (same), *and* Charles C. Branas, Therese S. Richmond, Dennis P. Culhane, Thomas R. Ten Have & Douglas J. Wiebe, *Investigating the Link Between Gun Possession and Gun Assault*, 99 AM. J. PUB. HEALTH 2034, 2037–38 (2009) (determining that individuals with a gun are substantially more likely to be shot in an assault than those without), *and* Moody & Marvell, *supra* note 81, at 735 (determining that guns have no significant effect on crime rates).

83. Gun debates are often framed as "wars" and protests as "God's work." *See, e.g.*, Nelson Lund, *The Second Amendment and the War on Guns*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES 107, 120 (Marie Crandall, Stephanie Bonne, Jennifer Bronson & Woodie Kessel eds., 2021) ("The war on guns is ultimately rooted in a war on republican virtue."); Linda Noonan, *Praying with Our Feet: Interfaith Rituals of Disruption and Sanctification in the Public Square*, *in* THE ROUTLEDGE HANDBOOK OF RELIGION AND CITIES 287, 292–94 (Katie Day & Elise M. Edwards eds., 2021) (discussing Philadelphia's Heeding God's Call to End Gun Violence organization).

84. *See supra* text accompanying notes 2–5 (noting the wide-ranging views on the social costs and benefits of guns); *see also infra* text accompanying notes 97–107 (noting the difficulty of data collection in the gun context).

85. *See supra* text accompanying note 13 (noting that the highest percentage of firearm-related deaths are suicides).

86. *See infra* text accompanying notes 125–60 (outlining correlates of gun violence).

87. We put weapons of mass death and destruction into the category. For a discussion of these weapons, see *infra* text accompanying notes 110–25.

believe that legislators are well positioned to account for a wide range of additional factors to promote responsible gun use without taking a position on whether guns increase or decrease crime in America.[88]

Many of the current federal and state laws already place firearms, ammunition, purchasers, and users along a continuum of risk and impose concomitant increasing or decreasing taxes.[89] Federal law, for example, imposes a baseline tax on all guns, imposes a surtax on extremely dangerous weapons, and exempts certain firearms deemed to be safe, such as antique guns.[90] Forty-five states and many localities have enacted sales and use taxes that subject all commodities, including firearms and ammunition, to taxation.[91] Many states, however, also award special exemptions and subsidies for items that promote safe gun use, such as trigger locks, firearm vaults, and other safety-related devices recognized as generating positive externalities.[92] In short, the federal and state governments have (perhaps somewhat unintentionally) adopted a tax strategy that already reflects the underlying logic of Pigouvian taxation.

At the same time, we believe legislators have an array of missed opportunities and hard-to-justify provisions on the books. Some states, for example, provide exemptions for guns kept in the home or purchased for "private use," but data indicate that guns in the home are substantially more likely to be misused or misfired than guns used in other contexts.[93] Moreover, the "Second Amendment tax holidays" may show support for guns and gun owners, but the "holidays" also allow dangerous weapons to go tax-free and are inconsistent under the Pigouvian framework, which takes a more nuanced approach to guns and gun users.[94] At the same time, extraordinary surtaxes on all categories of guns fail to recognize the gradations of danger present; there is no dispute, for example, that shotguns pose significantly fewer injuries and deaths than do handguns. To advance the aims and goals of the theory, the special exemptions and carve-outs

88. *See* ROSEN & GAYER, *supra* note 58, at 85; Cnossen, *supra* note 43, at 2–3 (arguing that, because marginal costs and benefits are difficult to identify and measure, policymakers can adopt a pooling approach for charging taxes and awarding benefits).

89. *See* Zimring, *supra* note 6, at 165 (exploring the grading system for guns, known as the "Factoring Criteria for Weapons," based on the level of associated danger); *see also supra* text accompanying notes 36–42.

90. *See supra* text accompanying notes 37–39.

91. *See supra* note 7 and accompanying text.

92. *See supra* note 38 and accompanying text.

93. *See* Arthur L. Kellermann, Frederick P. Rivara, Norman B. Rushforth, Joyce G. Banton, Donald T. Reay, Jerry T. Francisco, Ana B. Locci, Janice Prodzinski, Bela B. Hackman & Grant Somes, *Gun Ownership as a Risk Factor for Homicide in the Home*, 329 NEW ENG. J. MED. 1084, 1087 (1993) (finding high correlation between guns in the home and homicides).

94. *See infra* text accompanying notes 99–29.

should more closely be tailored to the factors associated with social cost and benefits.

Finally, while we have not identified any study that successfully solves the puzzle of whether guns cause more or less crime, many students have estimated the physical, emotional, and economic costs of gun use to society. Experts estimate that taxpayers incur more than $2.3 billion annually due to gun violence. If we include all the indirect and direct costs, experts estimate that the total medical, legal, and social costs associated with gun violence in the United States exceed $100 billion.[95]

In summary, while all three theories of public finance have advantages and drawbacks, we believe the Pigouvian framework is best suited for gun taxation.[96] In the next Part, we explore various contexts in which policymakers can apply Pigouvian taxation to firearms and related equipment.

III. PIGOUVIAN GUN TAXATION IN PRACTICE

In this Part, we offer a systematic analysis of the factors associated with risk and safety in the gun context and link these data to the Pigouvian theory of taxation. Our goal is to advance and deepen legislators' commitment to rational tax policymaking and, simultaneously, advance a legal framework that recognizes gun owners' rights and responsibilities. Recall that the federal government and forty-five states, the District of Columbia, and many localities impose sales and use taxes on many, if not most, commodities. Under our framework, we argue legislators should adopt a layer of special taxes and subsidies in recognition of the differential dangers categories of weapons and individuals impose on society, as well as the safety protocols they implement to keep households and communities free of gun mishaps and violence.

Before we begin our analysis, this is probably a good time to note that

95. A.B.A. STANDING COMM. ON GUN VIOLENCE, *supra* note 27, at 1–2; PHILIP J. COOK & JENS LUDWIG, GUN VIOLENCE: THE REAL COSTS 10–11 (2000); Philip J. Cook, Bruce A. Lawrence, Jens Ludwig & Ted R. Miller, *The Medical Costs of Gunshot Injuries in the United States*, 281 JAMA 447, 454 (1999) (estimating the annual medical costs from firearm-related deaths and injuries at $2.3 billion, much of which is borne by U.S. taxpayers); Astrid Botty van den Bruele & Marie Crandall, *Scope of Firearm Injuries in the United States*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES, *supra* note 83, at 3, 7–8 (discussing the cost of firearm injuries).

96. Many commentators also critique the Pigouvian theory for imposing the greatest taxes on low-income and vulnerable groups. *See, e.g.*, Adam J. Hoffer, William F. Shughart II & Michael D. Thomas, *Sin Taxes and Sindustry: Revenue, Paternalism, and Political Interest*, 19 INDEP. REV. 47 (2014) (arguing that Pigouvian sin taxes are political, paternalistic, and regressive); James R. Hines Jr., *Taxing Consumption and Other Sins*, 21 J. ECON. PERSPS. 49, 66 (2007) (arguing that U.S. policymakers are unwilling "to intrude on individuals' lives by imposing 'sin' taxes" due to their many drawbacks); *see also* Chaloupka, *supra* note 59, at 205 (discussing the regressivity of tobacco taxes).

data regarding firearms, their owners, and their uses are available but also very limited. The federal government and many states are reluctant to support—and in some circumstances even to permit—the collection of gun-related data.[97] We believe that data would foster the twin policy goals of safeguarding individual rights and responsibilities, and while this view is gaining traction, it has not yet won the day.[98] We readily acknowledge that, as data become more widely available, we may want to update the analysis below.

A. WEAPONS AND DEVICES

While the number and types of available firearms and related items on the market are staggering, it is possible to create a general classification system that places guns on a continuum from the least to the most dangerous.[99] These data facilitate a Pigouvian system of taxation that seeks to internalize the social costs of guns and gun-related items.[100] We begin our analysis with an examination of the dangers associated with four categories of weapons: (1) long guns, (2) handguns, (3) weapons of mass death and destruction, and (4) safety- and lethality-enhancing devices.

Our first category, long guns, including shotguns and rifles, are widely viewed as much less dangerous than handguns. They are designed to be held with two hands and braced against the shoulder; they are difficult to carry and poorly concealable. For these reasons, owners primarily use them for hunting and target shooting.[101] Data indicate that shotguns and rifles are

97. *See* Edward J. Sondik, *Data on Gun Violence: What Do We Know and How Do We Know It?*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES, *supra* note 83, at 15 (outlining data availability challenges and summarizing gun data resources); MARK GIUS, GUNS AND CRIME: THE DATA DON'T LIE 96–97 (2017) (noting that gun data are difficult to obtain because they are neither collected, reported, nor publicly available).

98. *See* Rosenberg, *supra* note 18, at 37 (noting legislation supporting gun research in 2019 and proposing a research agenda for scholars). *See generally* Rita Rubin, *Tale of 2 Agencies: CDC Avoids Gun Violence Research but NIH Funds It*, 315 JAMA 1689 (2016) (summarizing the controversy around gun data collection and research).

99. For a lucid discussion of the types and dangers associated with different categories of guns and ammunition, see MARIANNE W. ZAWITZ, BUREAU OF JUST. STAT., GUNS USED IN CRIME (1995), https://www.bjs.gov/content/pub/pdf/GUIC.PDF [https://perma.cc/5CYZ-42m9] (providing a table of weapons and ammunition and discussing criminal activity associated with guns).

100. As discussed *supra*, the federal and state governments have implemented an ad hoc collection of laws that attempt to do just this. *See supra* text accompanying notes 31–42.

101. PHILIP J. COOK & KRISTIN A. GOSS, THE GUN DEBATE: WHAT EVERYONE NEEDS TO KNOW 10 (2014). *See generally* JOHN PETROLINO, DECODING FIREARMS: AN EASY TO READ GUIDE ON GENERAL GUN SAFETY & USE (2020) (providing a general description of firearm types and categories); STEVEN GREGERSEN, THE GUN GUIDE FOR PEOPLE WHO KNOW NOTHING ABOUT FIREARMS (2012) (same); DAVID STEIER, GUNS 101: A BEGINNER'S GUIDE TO BUYING AND OWNING FIREARMS (2011) (same).

rarely used for self-harm or in criminal activities.[102] Long guns, in short, are less likely to generate negative externalities than handguns. With this background, policymakers should tax long guns at a lower rate than handguns.

The second category, handguns, are small, relatively affordable, and easily concealable.[103] Handguns are the gun of choice for individuals seeking personal safety and security, but they are also routinely and easily stolen, concealed, misused, and mishandled.[104] In 2017, at least sixty-four percent of homicides by firearm were with a handgun,[105] and in 2018, seventy-five percent of suicides involved handguns.[106]

The vexing problem in the context of handguns is whether legislators can successfully protect an individual's right to own a handgun responsibly for self-defense,[107] while simultaneously deterring gun violence associated with suicides and crime. The answer revolves around safety and access prevention inside the home. Studies consistently find that guns that are difficult to fire due to pressure requirements, trigger locks, gun safety vaults, lockboxes, and other safety devices are correlated with fewer suicides, less theft, and fewer accidents. Originally adopted to protect children and young adults, the data indicate safe storage practices protect the entire household from death and unintentional injury and, at the same time, reduce theft.

This analysis counsels for legislators to impose a surtax on handguns,

102. *See* C. William Schwab, Therese Richmond & Maura Dunfey, *Firearm Injury in America*, LEONARD DAVIS INST. ECON. ISSUE BRIEF, Oct. 2002, at 1, 2.

103. COOK & GOSS, *supra* note 101, at 10; *see also* MAJOR JULIAN S. HATCHER, TEXTBOOK OF PISTOLS AND REVOLVERS: THEIR AMMUNITION, BALLISTICS AND USE (1935) (providing a textbook analysis of pistols and revolvers and their ammunition, uses, and history).

104. Handguns are more prevalent in cities than rural areas, are rarely used for hunting, and are viewed as the best weapons for self-defense. *See, e.g.*, Zimring, *supra* note 6, at 164 (noting that handguns typically do not have a sporting purpose and are typically used for self-defense in urban areas); COOK & GOSS, *supra* note 101, at 13; Audrey DiPoala, Janelle Duda & John Klofas, *An Exploration of Gun Violence and Prevention: Toward the Development of an Inclusive Database: Working Paper 1 of 3: Background on Gun Violence* 14 (Ctr. For Pub. Safety Initiatives, Working Paper No. 2012-08, 2012), https://www.rit.edu/liberalarts/sites/rit.edu.liberalarts/files/documents/our-work/2012-08.pdf [https://perma.cc/HT9F-58UY] (noting widespread uses of handguns in criminal activity).

105. *2017 Crime in the United States: Expanded Homicide Data Table 11*, FED. BUREAU OF INVESTIGATION: UNIFORM CRIME REPORTING PROGRAM, https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/tables/expanded-homicide-data-table-11.xls [https://perma.cc/YS2E-KBVS].

106. Beth Duff-Brown, *Handgun Ownership Associated with Much Higher Suicide Risk*, STAN. MED. (June 3, 2020), https://med.stanford.edu/news/all-news/2020/06/handgun-ownership-associated-with-much-higher-suicide-risk.html [https://perma.cc/B2AP-5TFQ]; *see also* GIUS, *supra* note 97, at 37 (noting that handguns are the predominant weapon used in mass shootings, being deployed in thirty-three percent of them); ZAWITZ, *supra* note 99, at 3 (citing the stolen gun files at the FBI's National Crime Information Center, which indicate that nearly sixty percent of all guns stolen are handguns).

107. *See* District of Columbia v. Heller, 554 U.S. 570, 635 (2008) ("[W]e hold that the District's ban on handgun possession in the home violates the Second Amendment, as does its prohibition against rendering any lawful firearm in the home operable for the purpose of immediate self-defense.").

in order to internalize the social costs of ownership.[108] As discussed below, there is a particular concern for individuals living in households with children, young adults, and others who increase the risk of handgun misuse, accidents, and death.[109] Pigouvian tax theory also suggests that taxes and subsidies should recognize both this danger and the positive externalities associated with gun locks, gun safes, and other devices. Policymakers might subsidize these devices in order to ensure all households with handguns have the best safety protocols in place.

Our third category of firearms includes weapons of mass death and destruction. This group includes all firearms (including long guns and handguns) that individuals can transform into rapid-fire and fully automatic weapons, increasing both the lethality and the likelihood of harm, damage, and death.[110] The escalation of danger and social harm is also present with grenade and rocket launcher attachments for military-grade rifles—weapons that, when used, make it difficult to contain harm to a single person. These types of assault weapons are used disproportionately in mass public shootings.[111]

Some states and localities prohibit the purchase and use of weapons of mass death and destruction, but markets continue to flourish.[112] We argue the potential negative externalities associated with the attachments and devices that transform a handgun or long gun into a weapon of mass death and destruction are so high that policymakers should impose extraordinary surtaxes on the purchases and owners, *if* current law does not already impose an outright ban.[113] High taxes and penalties on private users would

108. *See* Cook & Leitzel, *"Perversity, Futility, Jeopardy," supra* note 14, at 108–09 (reviewing the advantages and disadvantages of imposing a surtax on handguns).

109. *See infra* text accompanying notes 125–50.

110. *See* COOK & GOSS, *supra* note 101, at 13–14.

111. Although there is no formal definition of "mass shootings," some suggest the following attributes: (1) occurred in a relatively public place, (2) involved four or more deaths, (3) a random selection of victims, and (4) the shooting was not a means to a criminal end, such as robbery or terrorism. GIUS, *supra* note 97, at 37 (citing JEROME P. BJELOPERA, ERIN BAGALMAN, SARAH W. CADWELL, KRISTIN M. FINKLEA & GAIL MCCALLION, CONG. RSCH. SERV., R43005, PUBLIC MASS SHOOTINGS IN THE UNITED STATES: SELECTED IMPLICATIONS FOR FEDERAL PUBLIC HEALTH AND SAFETY POLICY 4–5 (2013)). Additionally, although mass shootings receive extraordinary coverage in the media, they are only a tiny portion of overall gun deaths. *Id. See generally* Jaclyn Schildkraut, *A Call to the Media to Change Reporting Practices for the Coverage of Mass Shootings*, 60 WASH. U. J.L. & POL'Y 273 (2019) (providing a general critique of media reporting of mass shootings).

112. Seven states ban assault weapons and two states regulate assault weapons, but most state laws do not address assault weapons. *Assault Weapons*, GIFFORDS L. CTR. TO PREVENT GUN VIOLENCE, https://giffords.org/lawcenter/gun-laws/policy-areas/hardware-ammunition/assault-weapons [https://perma.cc/SZy4-EDQH].

113. For a similar argument, see Randall P. Ellis, The U.S. Should Ban or Heavily Tax Weapons Designed for Mass Shootings (Aug. 22, 2016) (unpublished working paper), https://blogs.bu.edu/ellisrp/files/2016/08/Banning-or-heavily-taxing-WDMS-20160822.pdf [https://perma.cc/3LKJ-92HB] (exploring the social costs of weapons designed for mass shootings).

discourage private use but not access in government-controlled contexts. We discuss policy options for addressing the problem of the underground market in Part IV below.

The fourth and last category includes safety- and lethality-enhancing devices and private initiatives that promote safety. As noted above, devices and equipment that limit access and promote safe storage practices reduce self-inflicted fatal or nonfatal injuries, homicides, and accidents.[114] Additionally, educational campaigns fostering increased understanding of guns and gun safety are also linked to a reduction in gun violence, especially when the campaigns include free safety devices for the participants.[115] Pigouvian taxation calls for legislators to subsidize the purchase and distribution of these devices, as well as the educational programs.

At the same time, the market brims with special devices that increase the lethality of guns, many of which are also associated with criminal activity, injury, and death. Silencers, machine gun conversion devices, gun spears, bendable arms, and grenade and rocket-launch attachments are just a few examples.[116] Users may identify legal uses for these lethality-enhancing devices, but because they increase danger and harm, legislators should apply surtaxes to this category of equipment under the Pigouvian framework.

B. AMMUNITION

Like weapons, it is possible to place ammunition along a continuum of social costs and benefits. Not surprisingly, the least dangerous ammunition is associated with the least dangerous weapons, and thus the Pigouvian analysis above will also apply to gauges, caliber, and magazines. Later we explore the unique role that ammunition can play in our Pigouvian tax framework by addressing the twin problems of tax avoidance and underground markets. In this Section, we explore three categories of ammunition: (1) shotgun gauges, (2) bullet caliber, and (3) magazine size.

Shotguns, as noted above, fall into the general category of long guns, and are, by far, the least dangerous. Shotguns come in several different sizes called "gauges"—most typically twelve, sixteen, and twenty—and shotgun

114. *See* Sadat & George, *supra* note 35, at 23–24 (listing states with gun safety mandates and noting their value for reducing death and injury). *See generally* David C. Grossman, Beth A. Mueller, Christine Riedy, M. Denise Dowd, Andres Villaveces, Janice Prodzinski, Jon Nakagawara, John Howard, Norman Thiersch & Richard Harruff, *Gun Storage Practices and Risk of Youth Suicide and Unintentional Firearm Injuries*, 293 JAMA 707 (2005) (finding via empirical study that safe practices reduce gun-related deaths and injuries).

115. Marjorie S. Hardy, *Keeping Children Safe Around Guns: Pitfalls and Promises*, 11 AGGRESSION & VIOLENT BEHAV. 352, 355–62 (2006) (discussing gun education programs).

116. HATCHER, *supra* note 103, at 240–72 (discussing in detail weapons-related accessories and attachments).

shells fit the gauge of the gun.[117] Lower gauge indicates larger shells. The shells typically contain spherical pellets that spray out from the gun when fired. This spray of pellets increases the likelihood of hitting a target, and thus shotguns are often used for hunting birds and small game and for target shooting, regardless of gauge.[118] Shotguns are widely perceived to be the least dangerous weapon on the market, even when misused or misfired, because the pellets do not penetrate deeply enough to cause an incapacitating wound.[119] For this reason, policymakers should subject shotgun shells, like long guns, to the same level of taxation as other commodities on the market—neither surtaxes nor tax subsidies are applicable in this context.

Firearms other than shotguns use bullets identified in size by their caliber. The caliber of a bullet is the measurement of the diameter of the slug or projectile part of the bullet cartridge. Firearm caliber ranges roughly from 0.177 to 0.50.[120] Unlike shotgun shell size, increasing caliber size tends to be associated with increasing price and danger. The harm associated with misuse and misfiring is lowest with a 0.177 and highest with a 0.50-caliber firearm.[121] Although the number and types of bullets on the market are confounding, the broad generalizations associated with caliber and price suggest that the Pigouvian tax regime calls for higher caliber bullets to be taxed at increasingly higher rates, given the increasing dangers posed with their use and misuse.

Some firearms require the user to reload after firing a single shot, but semi-automatic and automatic weapons enable users to fire multiple shots without reloading. The potential number of shots can be expanded with the help of a detachable magazine. Magazines are detachable ammunition storage units that feed devices with bullets.[122] Magazine capacity varies, and

117. COOK & GOSS, *supra* note 101, at 10–12.

118. *Id.* at 12.

119. *See* Dana Bash, *Cheney Accidentally Shoots Fellow Hunter*, CNN (Feb. 13, 2006, 9:53 AM), https://www.cnn.com/2006/POLITICS/02/12/cheney [https://perma.cc/XDS3-F4SN]. *But see* Simon J. Bronner, *Ritual and Controversy at Deer Camp*, *in* 2 GUNS AND CONTEMPORARY SOCIETY: THE PAST, PRESENT, AND FUTURE OF FIREARMS AND FIREARM POLICY 185, 244–48 (Glenn H. Utter ed., 2016) (noting that every year a small number of deaths are reported during buck shooting season).

120. COOK & GOSS, *supra* note 101, at 10–12; *see also* HATCHER, *supra* note 103, at 275–400 (providing an excellent and detailed description of ammunition, interior ballistics, exterior ballistics, cartridges, and shock power).

121. *See* HATCHER, *supra* note 103, at 401–04 (comparing fatal damage from certain firearms). Velocity, however, also plays a role in the deadly nature of a weapon. For a discussion highlighting the reality of small but deadly bullets, see James Fallows, *Why the AR-15 Is So Lethal*, ATLANTIC (Nov. 7, 2017), https://www.theatlantic.com/politics/archive/2017/11/why-the-ar-15-is-so-lethal/545162 [https://perma.cc/7HBR-M4G4] (noting that bullets with greater velocity can impose vastly greater harm).

122. *See* Louis Klarevas, Andrew Conner & David Hemenway, *The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990–2017*, 109 AM. J. PUB. HEALTH 1754, 1754–55

the ability of the weapon to fire a large number of shots quickly increases with the size of the magazine. High-capacity magazines, often associated with assault weapons, can allow the shooter to fire up to one hundred rounds without pausing to reload.[123] High-capacity magazines are strongly associated with mass shootings and police officer deaths. Commentators also note, however, that they are used in marksmen and shooting competitions, as well as hunting activities and military training.[124] We argue that high-capacity magazines, like weapons of mass death and destruction, are so dangerous and apt to impose negative externalities, that they should be taxed at extraordinary rates under the Pigouvian framework.

C. INDIVIDUALS AND HOUSEHOLDS

We now turn from weapons and ammunition to individuals and households. Data indicate that safe and responsible gun use is associated with particular individuals, households, and backgrounds. Many federal and state policymakers already recognize the role that individual-level characteristics can play in the use and misuse of guns and enforce a system of background checks to address the issue.[125] Red flag laws, which facilitate the reporting and confiscations of guns from individuals deemed dangerous, are also a means by which policymakers recognize that background characteristics are related to gun violence and mishaps.[126] We argue Pigouvian tax policy can also play a role in promoting responsible gun use and advocate taxes be set along the continuum of individual risk-taking and prudence. In this Section, we consider the following categories: (1) age, (2) criminal background, and (3) health-related factors.

Age is one of the strongest correlates of gun violence and injury. The largest cohort of victims and perpetrators of gun-related harm, injury, and

(2019) (discussing magazines generally); *Large Capacity Magazines*, GIFFORDS L. CTR. TO PREVENT GUN VIOLENCE, https://giffords.org/lawcenter/gun-laws/policy-areas/hardware-ammunition/large-capacity-magazines [https://perma.cc/QAZ9-FH9A] (providing background on large-capacity magazines).

123. *Large Capacity Magazines*, *supra* note 122.

124. *See, e.g.*, John Nichols, *Hunting and High-Capacity Magazines*, MSNBC (July 24, 2012, 4:00 AM), https://www.msnbc.com/the-last-word/hunting-and-high-capacity-magazines-msna39773 [https://perma.cc/46ZG-6S5L] (noting a shift in hunters' preferred hunting weapons).

125. *See* Bisakha Sen & Anantachai Panjamapirom, *State Background Checks for Gun Purchase and Firearm Deaths: An Exploratory Study*, 55 PREVENTIVE MED. 346, 347 (2012) (noting that every state checks criminal history and that many states check information on mental illness and other variables).

126. Red flag laws allow law enforcement, family, or household members to file a petition for a court order to remove a person's access to guns. *See* Tara Sklar, *Elderly Gun Ownership and the Wave of State Red Flag Laws: An Unintended Consequence that Could Help Many*, 27 ELDER L.J. 35 (2019) (outlining red flag laws and their potential to limit violence and death); Timothy Zick, *The Constitutional Case for "Red Flag" Laws*, JURIST (Dec. 6, 2019, 3:39 PM), https://www.jurist.org/commentary/2019/12/timothy-zick-red-flag-laws [https://perma.cc/5E3X-JN5M] (arguing that red flag laws are constitutional).

death is children and young adults age twenty-five and below.[127] In 2019, 7,947 children between the ages of zero and twenty-four died in firearm-related injuries, accounting for twenty percent of all gun deaths in the United States.[128] Experts find that unsupervised gun use in households lacking safe gun storage and use protocols is the primary source of the problem.[129] Senior and retired individuals, by contrast, are correlated to the lowest levels of gun violence and misuse, given their tendency to purchase firearms for hunting, sporting, and responsible home use.[130]

With these data on social costs and benefits associated with age, the Pigouvian framework countenances the highest gun and ammunition taxes be imposed on households with members age twenty-five and younger and the lowest rates on households that include only members age sixty-two and older. Linking the presence of young individuals in the household to the highest tax would assure that individuals imposing the highest social costs on society will internalize these costs, while enabling safety-conscious gun users continued access to weapons.[131] Recall that legislators may also reward households investing in safe gun practices with special tax preferences, thereby decreasing the surtax on households with individuals under the age of twenty-five.

127. *See* Peter Bendix, *Unintentional Firearm Injuries in Children*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES, *supra* note 83, at 27 (discussing firearm injuries to children and possible interventions); *Fatal Injury Reports, National and Regional, 1999-2015*, *supra* note 13 (providing statistics on gun injuries and children); Lee T. Dresang, *Gun Deaths in Rural and Urban Settings: Recommendations for Prevention*, 14 J. AM. BD. FAM. MED. 107, 107 (2001) (noting that guns kill male teenagers more often than all natural causes combined); Karl P. Adler, Jeremiah A. Barondess, Jordan J. Cohen, Saul J. Farber, Spencer Foreman, Gary Gambuti, Margaret Hamburg, Nathan G. Kase, Jacqueline Messite, Robert Michels, Robert G. Newman, Herbert Pardes, Dominick P. Purpura, Allan Rosenfield, John W. Rowe, Richard H. Schwarz, David B. Skinner, William T. Speck & J. Rock Tonkel, *Firearm Violence and Public Health: Limiting the Availability of Guns*, 271 JAMA 1281, 1281 (1994) ("The burden of firearm violence is borne to a considerable degree by our country's most vulnerable population—its young people."); Lawrence Wallack, Liana Winett & Linda Nettekoven, *The Million Mom March: Engaging the Public on Gun Policy*, 24 J. PUB. HEALTH POL'Y 355, 367–69 (2003) (describing how several hundred thousand people marched to protest gun violence against children).

128. *Underlying Cause of Death, 1999-2019 Results*, CTRS. FOR DISEASE CONTROL & PREVENTION: WIDE-RANGING ONLINE DATA FOR EPIDEMIOLOGIC RSCH. (WONDER), https://wonder.cdc.gov/controller/saved/D76/D219F256 [https://perma.cc/FX3R-9XUV].

129. *See* Grossman et al., *supra* note 114, at 712.

130. Indeed, various states and counties around the nation offer special exemptions for retired law enforcement officers on the theory that gun use by these individuals is unlikely to generate social harm and may generate social benefits. *See* GIUS, *supra* note 97, at 66–68 (arguing that age controls reduce suicides and deaths and listing states with age laws); Gun Control Act of 1968, 18 U.S.C. § 922(b)(1) (imposing a higher minimum age for purchases of handguns than for long guns).

131. Age-based regulations pass constitutional muster if they are related to policy considerations. *See* Gregory v. Ashcroft, 501 U.S. 452, 473 (1991) (holding that age is not a suspect class); Mass. Bd. of Ret. v. Murgia, 427 U.S. 307, 314 (1976) (same). Some scholars, however, argue age-based classifications should not be tolerated. *See, e.g.*, Nina A. Kohn, *Rethinking the Constitutionality of Age Discrimination: A Challenge to a Decades-Old Consensus*, 44 U.C. DAVIS L. REV. 213, 231–55 (2010) (exploring constitutional arguments in favor of heightened scrutiny for age classifications).

A second strong correlate with gun violence and injury is criminal background. Policies making it difficult for individuals with criminal backgrounds to purchase and use guns will reduce the incidence of gun violence. Research suggests, for example, that laws targeting domestic violence offenders and individuals with a criminal background more generally are likely to reduce firearm violence and harm. Over seventy percent of battered women report their abusers have threatened them with a gun, and the majority of women killed in domestic violence situations die at the hands of an abuser with a gun.[132] These data suggest that legislators should use the Pigouvian framework to impose high taxes on individuals and households with criminal backgrounds.

Our third category includes individuals with health-related conditions. Some mental health challenges are highly correlated with increased violence and harm, both to individuals and to the general public.[133] Suicides, for example, account for sixty-one percent of all gun deaths.[134] Safety measures could provide greater security for individuals who suffer from mental illness but also for other members in the household. Additionally, individuals who suffer from alcohol and drug abuse challenges are substantially more likely to commit violent acts, and these acts often occur with firearms.[135] In short,

132. *See* Jennifer Bronson, *Intimate Partner Violence, Firearm Violence, and Human Rights in the United States*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES, *supra* note 83, at 49 (discussing injuries and deaths due to firearms in domestic violence contexts); Susan B. Sorenson, *Firearm Use in Intimate Partner Violence: A Brief Overview*, 30 EVALUATION REV. 229, 232–33 (2006) (same); *see also* Cassandra K. Crifasi, Elizabeth M. Stone, Emma E. McGinty & Colleen L. Barry, *Differences in Public Support for Gun Policies Between Women and Men*, 60 AM. J. PREVENTIVE MED. e9, e10 (2021) (finding that women support gun control policies at statistically significant greater levels than men). Readers might wonder if gender is an important correlate for increased gun violence; after all, the vast majority of gun owners are men, and thus they are the most likely to impose negative externalities on society. PHILIP J. COOK & JENS LUDWIG, GUNS IN AMERICA: RESULTS OF A COMPREHENSIVE NATIONAL SURVEY ON FIREARMS OWNERSHIP AND USE 31–43 (1996) (reporting that men own most guns and that most men have owned a gun at some point in their lives). Our proposed tax system addresses this gender-based concern (albeit indirectly) because it imposes taxes on individuals engaged in the riskiest gun-related activities. In short, if men buy and use guns more often than women, they will pay a larger percentage of the Pigouvian gun taxes. *Cf.* James I. Daley, Mandy A. Stahre, Frank J. Chaloupka & Timothy S. Naimi, *The Impact of a 25-Cent-Per-Drink Alcohol Tax Increase*, 42 AM. J. PREVENTIVE MED. 382, 384 (2012) (finding that white male drinkers between the ages of twenty-one and fifty pay the most in alcohol taxes).

133. *See* Ryan Chaloner Winton Hall & Susan Hatters Friedman, *Guns, Schools, and Mental Illness: Potential Concerns for Physicians and Mental Health Professionals*, 88 MAYO CLINIC PROC. 1272, 1272 (2013) (noting that anti- and pro-gun advocates are now focusing on mental illness and gun violence); Michael Jellinek, *Mental Illness and Gun Violence*, *in* WHY WE ARE LOSING THE WAR ON GUN VIOLENCE IN THE UNITED STATES, *supra* note 83, at 63 (noting a strong relationship between mental health challenges and firearm injuries and deaths).

134. *See supra* text accompanying note 13; *see also* Matthew Miller, Deborah Azrael & David Hemenway, *The Epidemiology of Case Fatality Rates for Suicide in the Northeast*, 43 ANNALS EMERGENCY MED. 723, 726 (2004) (reporting data on suicides in the Northeast).

135. *See, e.g.*, Atul Madan, Derrick J. Beech & Lewis Flint, *Drugs, Guns, and Kids: The Association*

health-related factors counsel policymakers to adopt a Pigouvian system with surtaxes on the guns and ammunition purchased by individuals or households managing mental illness and drug and alcohol abuse challenges.

D. INTENDED USE

The personal traits of individual buyers are relevant factors for Pigouvian taxation but so, too, are the intended uses of the weapon. Although it is impossible to know ex ante exactly how all guns will ultimately be used, some individuals and entities buy and use guns in a manner that makes misuse more or less predictable. Legislators and policy analysts have long noted that two categories of noncriminal gun use exist: (1) collecting, gaming, and educational, and (2) self-protection.

Individuals and entities often purchase and use weapons solely for collecting, gaming, and educational purposes.[136] Guns and ammunition purchased for antique collections or use in gun clubs, shooting ranges, and nonprofit organizations whose sole purpose is to promote gun education and safe use impose few negative externalities on society and thus should not be subject to high tax rates. Indeed, gun training may promote positive externalities, and thus legislators may award subsidies for such training.

The second category of gun use, self-protection, raises more difficult questions for the legislator seeking to advance a system of Pigouvian gun taxation. Many individuals buy guns to use in their home and in public for self-protection. The gun of choice for self-protection is a handgun due to its wide availability, low cost, and easy-to-conceal size.[137] The stated purpose is safety related, but handguns also tend to be misused more often than all other weapons. Data indicate, for example, that handguns purchased for use in the home are forty-three times more likely to kill a household member than an intruder.[138] These data suggest that, while home use is certainly acceptable—indeed, the Supreme Court deemed it a constitutional right—

Between Substance Use and Injury Caused by Interpersonal Violence, 36 J. PEDIATRIC SURGERY 440, 441–42 (2001) (finding that gunshot wounds are strongly associated with substance abuse).

136. *See generally* HATCHER, *supra* note 103, at 417–75 (discussing guns used for target shooting, hunting, and other gaming activities). For a discussion of Olympic shooting events, see Scott McDonald, *Your Comprehensive Guide to the 15 Olympic Shooting Events*, TEAM USA (Apr. 15, 2016, 3:09 PM), https://www.teamusa.org/News/2016/April/15/Your-Comprehensive-Guide-To-The-15-Olympic-Shooting-Events [https://perma.cc/TBT6-K6L4] (providing an overview of the rifle, pistol, and shotgun competitions).

137. *See* Bice & Hemley, *supra* note 62, at 261–62 (discovering via empirical study that individuals purchase handguns for self-defense).

138. *See* Douglas J. Wiebe, *Homicide and Suicide Risks Associated with Firearms in the Home: A National Case-Control Study*, 41 ANNALS EMERGENCY MED. 771, 771 (2003) (finding that having a gun in the home increases the risk of homicide and suicide); Kellermann et al., *supra* note 93, at 1087 (finding high correlation between guns in the home and homicides).

legislators should subject these purchases to a surtax under the Pigouvian framework. It is possible, of course, that some individuals will claim their guns are intended for collecting, gaming, or educational purposes in an effort to avoid the surtax on the gun. The issues of tax avoidance and fraud are discussed in more detail in Part IV below.

E. GEOGRAPHY

Firearm-related suicides, homicides, and injuries vary by population density and geography. Data indicate that low-density, rural regions across the country have the highest rates of firearm-related suicides and unintentional injuries. Densely populated urban areas, by contrast, suffer from the highest rates of gun-related homicides and crime-related gun injuries.[139] These differences counsel for a nuanced Pigouvian approach to taxation based on several factors, including geography.[140] As discussed above, legislators should subsidize safety protocols, devices, and educational programs and impose surtaxes on individuals struggling with mental health challenges and criminal backgrounds. At the same time, the prevalence of gun violence in highly populated regions argues for surtaxes on guns purchased and used in urban areas.[141] The relevance of geography has not gone unnoticed, and some policymakers have already deployed the Pigouvian framework to address negative externalities correlated with region. At least one state imposes higher fees on pistols, revolvers, and silencers sold in densely populated areas.[142]

Importantly, some commentators argue that, although guns sold and used in urban areas are more likely to be misused, individuals living and working in densely populated areas may also need extra protection to stay

139. *See* Dresang, *supra* note 127, at 108 (noting that handguns caused fifty-nine percent of urban deaths in Tennessee between 1978 and 1988); *see also* Ruth Igielnik, *Rural and Urban Gun Owners Have Different Experiences, Views on Gun Policy*, PEW RSCH. CTR. (July 10, 2017), https://www.pewresearch.org/fact-tank/2017/07/10/rural-and-urban-gun-owners-have-different-experiences-views-on-gun-policy [https://perma.cc/Q96P-969W] (finding that rural gun owners own more guns and become gun owners at a younger age).

140. The U.S. Supreme Court has also noted the importance of place-based restrictions in the gun context. District of Columbia v. Heller, 554 U.S. 570, 626–27 (2008) ("[N]othing in our opinion should be taken to cast doubt on longstanding . . . laws forbidding the carrying of firearms in sensitive places such as schools and government buildings . . . ."). Place-based policies and restrictions are common across many areas of the law. *See, e.g.*, David Neumark & Helen Simpson, *Place-Based Policies*, *in* HANDBOOK OF REGIONAL AND URBAN ECONOMICS 1197 (Gilles Duranton, J. Vernon Henderson & William C. Strange eds., 2015) (exploring enterprise zones); Ce Shang, *The Effect of Smoke-Free Air Law in Bars on Smoking Initiation and Relapse Among Teenagers and Young Adults*, 12 INT'L J. ENV'T RSCH. & PUB. HEALTH 504 (2015) (exploring smoke-free air laws in bars).

141. *See supra* note 139 and accompanying text.

142. *See* ALA. CODE § 40-12-143 (LexisNexis 2021) (imposing a higher tax on guns purchased in urban areas).

safe because of higher crime rates.[143] This insight returns us to the question of whether guns—in the aggregate—generate greater social costs or benefits. As noted above, we need not take a position on this important question to advise legislators on Pigouvian tax rates. Because guns purchased and used for self-protection, whether in urban or rural areas, are more often misused and misfired than any other type of gun,[144] legislators should impose a surtax to internalize the negative externalities.

F. SUMMARY

The Pigouvian theory of taxation provides a framework for improving our system of gun taxation, promoting transparency, and recognizing that gun owners have rights and responsibilities. As summarized in Table 1 below, policymakers are well positioned to deploy a contextualized approach to taxes and subsidies—one that accounts for both the negative and the positive of gun use and ownership.

TABLE 1. The Pigouvian Tax Policy Framework

Factor	*Negative Externalities and Surtaxes*	*Possible Positive Externalities and Sometimes Subsidies*
Weapon	Handguns, assault weapons	Smart guns
Ammunition	High-caliber bullets, high-capacity magazines	Shotgun shells
Related devices and activities	Silencers, rocket launchers	Trigger locks, gun vaults, safety devices, safety training
Individuals and households	Under twenty-five years, criminal history, mental health challenges	Seniors, retired individuals
Intended use	Home protection	Gun clubs, shooting ranges, hunting, clay targets
Geography	Urban	Rural

143. *See* COOK & GOSS, *supra* note 101, at 5 (noting that self-protection is a major reason for gun ownership). Plaintiffs challenging restrictive gun laws also highlight the importance of guns for self-protection. Otis McDonald, for example, was a seventy-six-year-old man who purchased a handgun for self-protection in his home because he feared robberies and break-ins. The Supreme Court supported his right to own a handgun in the home for self-protection. McDonald v. City of Chicago, 561 U.S. 742, 791 (2010).

144. *See supra* text accompanying notes 104–17 (noting that guns purchased for self-protection highly correlate with misuse, accidents, and death).

IV. THURDLES TO SUCCESS: TAX EVASION AND UNDERGROUND MARKETS

Although commentators and policymakers do not have a consensus view on the effects of taxes and underground markets, many strenuously argue taxes on firearms are bad policy and doomed to fail.[145] The tax laws, they posit, will do nothing more than foster the underground market and incentivize a system whereby only the law-abiding "good guys" pay taxes.[146] This critique is not new. Tax avoidance is an age-old problem and present in virtually every system of taxation, regardless of the underlying theory.[147] In every era, including the present, individuals and firms seek to avoid taxes, often with elaborate schemes and plans.[148] Our proposed system of Pigouvian taxation will be no exception, but we believe policymakers have unique strategies in the gun context that will help to curtail the avoidance problem. In this Part, we briefly explore these options.

With (or without) a system of taxation, it is widely recognized that a thriving underground market for guns and related equipment exists.[149] First, while no one knows the exact number of guns in existence, the sheer number of firearms available makes tracking sales and trades difficult, if not

145. *See supra* text accompanying notes 4–5.

146. *See supra* text accompanying notes 4–5; *see also* David Frum, *America's Gun Problem Is Not a Race Problem*, CNN (Jan. 16, 2013, 5:42 AM), https://www.cnn.com/2013/01/15/opinion/frum-guns-race [https://perma.cc/T2JC-KSMY] (citing a 2013 study in Baton Rouge) ("The gun laws intended to put guns into the hands of 'good guys' are the laws that also multiply guns in the hands of 'bad guys'—bad guys who might not have become such bad guys if the guns had not been available to their hands."). Commentators, however, do not have a consensus view on the impact of taxes on the underground market for guns. *See* Cook & Leitzel, *"Perversity, Futility, Jeopardy," supra* note 14, at 101–11 (arguing that the view that taxes will increase sales on the underground market is incorrect); *see also* John F. McDonald, *An Economic Analysis of Guns, Crime, and Gun Control*, 27 J. CRIM. JUST. 11, 18 (1999) (finding that gun demand in the criminal and law-abiding markets are inextricably linked).

147. *See* Slemrod, *supra* note 24, at 171–73 (arguing that optimal tax systems must address enforcement because all taxpayers have the incentive to misrepresent their activities to reduce their tax liability).

148. The literature on tax planning is vast and diverse. *See, e.g.*, Matti Ylönen & Matias Laine, *For Logistical Reasons Only? A Case Study of Tax Planning and Corporate Social Responsibility Reporting*, 33 CRITICAL PERSPS. ON ACCT. 5, 5–6 (2015) (arguing that tax planning should be viewed in the context of social responsibility). *See generally* Clemens Fuest, Christoph Spengel, Katharina Finke, Jost H. Heckemeyer & Hannah Nusser, *Profit Shifting and "Aggressive" Tax Planning by Multinational Firms: Issues and Options for Reform* (Ctr. for Eur. Econ. Rsch., Discussion Paper No. 13-078, 2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2343124 [https://perma.cc/KMW9-NDB4] (summarizing tax avoidance issues and proposals for reform); David M. Schizer, *Frictions as a Constraint on Tax Planning*, 101 COLUM. L. REV. 1312 (2001) (arguing that market frictions are often more effective at blocking tax planning than legal reform).

149. *See, e.g.*, Cassandra K. Crifasi, Shani A.L. Buggs, Marisa D. Booty, Daniel W. Webster & Susan G. Sherman, *Baltimore's Underground Gun Market: Availability of and Access to Guns*, 7 VIOLENCE & GENDER 78, 78 (2020) (noting that there are 265 million privately held firearms in the United States, many of which are transferred in the underground markets); Anthony A. Braga, Rod K. Brunson, Philip J. Cook, Brandon Turchan & Brian Wade, *Underground Gun Markets and the Flow of Illegal Guns into the Bronx and Brooklyn: A Mixed Methods Analysis*, 98 J. URB. HEALTH 596 (2021).

impossible.[150] Second, guns and most related equipment are durable. Owners can use and trade firearms over the course of decades, if not centuries.[151] There is, however, one exception to this durability phenomenon: ammunition. Ammunition is not reusable without extravagant measures associated with collecting used slugs, melting them down, and putting them back into a proper shape with new casing. Because ammunition is difficult to self-manufacture and tough to hoard, the secondary and underground markets for ammunition have never emerged.[152] In short, policymakers can tax the most dangerous weapons and devices by imposing the very highest surtaxes on the ammunition necessary to operate the equipment.[153] This "taxation-by-proxy" approach would help to close the tax loopholes that exist due to the presence of an underground market for guns and ensure policymakers successfully internalize the social costs of violent gun use to the correct individuals.[154]

The ammunition taxes are a creative way to tax the dangerous firearms and equipment that we discussed above,[155] but this proxy is less useful for the Pigouvian taxes we propose on certain individuals, including those under the age of twenty-five, with criminal backgrounds, living with mental health challenges, and living in urban areas.[156] Although the mandatory federal and state background checks will help to effectuate these taxes on specific individuals, the background checks are not a perfect solution. Background

150. *See* Edward W. Hill, How Many Guns Are in the United States: Americans Own Between 262 Million and 310 Million Firearms 4 (Apr. 1, 2013) (unpublished working paper), https://engaged scholarship.csuohio.edu/urban_facpub/676 [https://perma.cc/GV7B-5HK6] (noting that, whether measured at the individual or household level, Americans own a lot of guns).

151. Philip J. Cook, Susan T. Parker & Harold A. Pollack, *Sources of Guns to Dangerous People: What We Learn by Asking Them*, 79 PREVENTIVE MED. 28, 29 (2015) (noting that guns are durable and thus available for repeated trading).

152. *See* Philip J. Cook, Jens Ludwig, Sudhir Venkatesh & Anthony A. Braga, *Underground Gun Markets*, 117 ECON. J. F588, F597–98 (2007) (finding via empirical study that ammunition is difficult to purchase on the underground market).

153. We are not the first to argue for taxation of ammunition as a proxy for taxing guns. *See* Real Cost of Handgun Ammunition Act, S. 1616, 103d Cong., 139 CONG. REC. 27226 (1993) (proposing a 10,000% increase in the tax rate on certain forms of ammunition); Richard J. Gelles, *Why Not Tax Bullets?*, AM. INT. (Feb. 7, 2016), https://www.the-american-interest.com/2016/02/07/why-not-tax-bullets [https://perma.cc/8TGX-QWKC] (advocating a tax on bullets).

154. *See* George E. Tita, Anthony A. Braga, Greg Ridgeway & Glenn L. Pierce, *The Criminal Purchase of Firearm Ammunition*, 12 INJ. PREVENTION 308 (2006) (finding that regulating ammunition may reduce the supply of bullets to criminals, thereby decreasing gun assaults); MAITREESH GHATAK, GUN CONTROL AND THE SELF-DEFENSE ARGUMENT 24 (2001), https://econ.lse.ac.uk/staff/mghatak/gun.pdf [https://perma.cc/S5GH-LDPJ] (noting that a tax on gun purchases will apply only to the sale of new guns and not the existing stock of guns, which implies taxing ammunition might be a better option than taxing firearms); Brendan J. Healey, *Plugging the Bullet Holes in U.S. Gun Law: An Ammunition-Based Proposal for Tightening Gun Control*, 32 J. MARSHALL L. REV. 1, 1 (1998) ("Ammunition control is the next frontier in U.S. gun control policy.").

155. *See supra* text accompanying notes 99–29.

156. *See supra* text accompanying notes 125–60.

checks, for example, do not extend to family members.[157] Accordingly, it is simple to avoid a background check by asking a third party to purchase the gun, ammunition, or related equipment.[158]

The problem of corrupt dealers and straw purchasers has long existed, and policymakers have not identified a solution.[159] Many studies suggest, however, that weak tax evasion policies and the lack of enforcement are key determinants for smuggling and underground markets.[160] Even opponents of gun taxes and regulations support severe ex post penalties as a means to deter illegal gun use.[161] Accordingly, we propose that policymakers enhance the Pigouvian tax system outlined above with high and notable penalties and increased enforcement, especially in contexts that are likely to lead to gun-related harm, injury, and death.

CONCLUSION

Federal and state governments have long taxed guns and gun owners, and the number of laws is growing. Although gun taxes are subject to much debate and controversy, no scholar has offered a systematic study of how and why policymakers should tax guns. To fill this gap, we explored three theories of public finance: the benefits theory, the optimal theory of commodity taxation, and the Pigouvian theory of taxation. We argued the

157. *See, e.g.*, Jon S. Vernick, Ted Alcorn & Joshua Horwitz, *Background Checks for All Gun Buyers and Gun Violence Restraining Orders: State Efforts to Keep Guns from High-Risk Persons*, 45 J.L. MED. & ETHICS 98, 100 (2017) (noting that background checks in Colorado exclude transfers of guns to immediate family members).

158. For a discussion of "straw purchasers," see generally Philip J. Cook, Richard J. Harris, Jens Ludwig & Harold A. Pollack, *Some Sources of Crime Guns in Chicago: Dirty Dealers, Straw Purchasers, and Traffickers*, 104 J. CRIM. L. & CRIMINOLOGY 717 (2015) (collecting data on the problem of straw purchasers and proposing policy solutions); Anthony A. Braga & David M. Kennedy, *The Illicit Acquisition of Firearms by Youth and Juveniles*, 29 J. CRIM. JUST. 379, 384 (2001) (outlining the problem of corrupt licensed dealers and straw purchasers).

159. *See supra* note 158 and accompanying text.

160. *See, e.g.*, Luk Joossens & Martin Raw, *Cigarette Smuggling in Europe: Who Really Benefits?*, 7 TOBACCO CONTROL 66, 70–71 (1998) (advocating tighter enforcement and increased policy controls for smugglers); Luk Joossens & Martin Raw, *Smuggling and Cross Border Shopping of Tobacco in Europe*, 310 BRITISH MED. J. 1393, 1396 (1995) (advocating increased enforcement); Robert Kleine, *The Declining Role of Interstate Cigarette Smuggling in the United States*, 2 TOBACCO CONTROL 38, 38 (1993) (noting that increased enforcement and stronger policies lead to a decline in underground market activities); Chaloupka, *supra* note 59 (same).

161. *See, e.g.*, Alan B. Morrison, *Raise the Cost of Gun Violence*, NAT'L L.J. (Feb. 4, 2013, 12:00 AM), https://www.law.com/nationallawjournal/almID/1202586633190/raise-the-cost-of-gun-violence [https://perma.cc/FGD9-8QGU] (arguing that effective gun policy requires heightened taxes and penalties); Jeffrey A. Miron, *Violence, Guns, and Drugs: A Cross-Country Analysis*, 44 J.L. & ECON. 615, 631 (2001) (suggesting that the best way to regulate gun violence is to enforce the drug laws); WAYNE LAPIERRE, GUNS, CRIME, AND FREEDOM 111–28 (1994) (arguing that gun policymakers should focus on ex post penalties); *see also* Cook & Leitzel, *"Perversity, Futility, Jeopardy," supra* note 14, at 95–97 (arguing that effective policymakers should adopt ex ante and ex post penalties to deter gun misuse).

Pigouvian theory is the best framework for designing and implementing a rational system of gun tax policy. Pigouvian taxes help to internalize the social costs and benefits of guns. Moreover, the theory reflects the reality that gun owners have both rights and responsibilities; it best explains our current system of taxation; and it allows for sufficient revenue raising and earmarking, thereby enabling policymakers to advance the complex set of goals around guns and firearm-related activities.