

The US Should Ban or Heavily Tax Weapons Designed for Mass Shootings

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Abstract

This paper presents four arguments for why the US should ban or at least heavily tax the sale or transfer to civilians of weapons designed for mass shootings (WDMS), which would include most semi-automatic guns and weapons with large capacity magazines.

1. The Supreme Court has repeatedly validated that second amendment protections of the right to bear arms do not apply to particularly dangerous weapons where protection of public safety overrides constitutional protections; this exclusion should apply to WDMS just as it does to machine guns and short-barreled shotguns.
2. To make gun owners pay for the annual cost of deaths in the US due to guns, we should be taxing each gun owned at \$1000 per year, or tax all gun sales (new or used) at \$15,000 per gun sold. Given their higher killing power we should tax WDMS at \$60,000 per gun sold. Or just ban them.
3. In the last 36 months, there have been 5,399 people in the US killed or injured at mass shootings (where four or more people are shot, although not necessarily killed). Unless action is taken, the most recent trends suggest that there will be twice as many mass shootings in the US in five years.
4. Current federal law for duck hunting bans the use of shotguns that hold more than three shells. If we care enough to ban four-bullet capacity guns to preserve ducks, then we should be willing to ban even higher capacity guns designed to kill people.

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Mass shootings have reached epidemic proportions, and American citizens and voters should expect their leaders to do something about it. There is abundant precedent and authority for federal legislation on this issue. All it takes is leadership and action by our congress and our president. This paper develops four reasons to for doing this immediately. The first argument is that the US Supreme Court has repeatedly decided that curtailing second amendment rights is justified for highly dangerous weapons that impose serious threats to society. Second, to reflect the cost of guns to society we should be charging at least \$1,000 per gun owned, or \$15,000 per new gun sold. Similar calculations suggest a tax of \$60,000 per weapon designed for mass shooting. Third, if we do nothing, the trends of the last three years suggest there will be a doubling of mass shooting deaths and injuries in the next five years. Finally, federal laws already restrict duck hunters from using shotguns holding more than three shells, so why can't we ban even higher capacity guns designed to kill people?

1. The Supreme Court has repeatedly validated that second amendment protections of the right to bear arms do not apply to particularly dangerous weapons where protection of public safety overrides constitutional protections; this exclusion should apply to WDMS just as it does to machine guns and short-barreled shotguns.

For years I have believed that since we already tightly regulate the private ownership of many explosives, artillery, hand grenades, and machine guns, why can't we also ban or tightly regulate private transfers of other extremely dangerous weapons such as large capacity magazine guns and semi-automatic guns with features whose primary value is in rapidly killing many people? It turns out we can, as long as we can show that they pose a significant risk to larger society. Recent experience summarized here, demonstrates this to be true.

The courts have repeatedly found that constitutional rights are not unlimited. The US Supreme Court has consistently ruled that a person falsely yelling "fire" in a crowded room is not protected by the first amendment because this act causes endangerment of the public.¹ By similar logic, the Supreme Court has ruled that the possession or sale of extremely dangerous weapons is not protected by the second amendment.² Examples of extremely dangerous weapons that the US Congress has seen fit to prohibit or tightly regulate include the private ownership of machine guns and short-barreled shotguns in 1934³, explosive devices (mines, hand grenades, large rockets, artillery) in 1970⁴, armor piercing ammunition in 1986⁵, and weapons that cannot be detected by metal detectors or x-ray machines in 1988⁶. For the

¹ Schenck v. United States, 249 U.S. 47 (1919) <https://supreme.justia.com/cases/federal/us/249/47/>

² United States v. Miller, 307 U.S. 174 (1939). This Supreme Court case involved a Second Amendment challenge to the National Firearms Act of 1934 (NFA). The key sentence in the case is "In the absence of any evidence tending to show that possession or use of a "shotgun having a barrel of less than eighteen inches in length" at this time has some reasonable relationship to the preservation or efficiency of a well regulated militia, we cannot say that the Second Amendment guarantees the right to keep and bear such an instrument. Certainly it is not within judicial notice that this weapon is any part of the ordinary military equipment, or that its use could contribute to the common defense."

³ Machine guns and certain short-barreled shotguns are Title II weapons regulated by the National Firearms Act of 1934 and Firearm Owners Protection Act of 1986.

⁴ The Organized Crime Control Act of 1970, containing the Explosives Control Act, 18 U.S.C.A. Chapter 40 provides for close regulation of the explosives industry.

⁵ <https://www.law.cornell.edu/uscode/text/18/922> U.S. Code › Title 18 › Part I › Chapter 44 › § 922 section b(4) "(b) It shall be unlawful for any licensed importer, licensed manufacturer, licensed dealer, or licensed collector to sell or deliver—... (4) to any person any destructive device, machinegun (as defined in section 5845 of the Internal

same reasons, Congress should also ban the sale of dangerous semi-automatic and large capacity magazine weapons. Recent mass shootings, as well as common sense, show that these weapons are extremely dangerous. It is time to add weapons designed for mass shootings (WDMs) to the list of weapons that are already banned by the National Firearms Act (NFA) of 1934, the Explosives Control Act of 1970, the Firearm Owners Protection Act of 1986, and the Undetectable Firearms Act of 1988.

Since the NFA of 1934 set the precedent for allowing future weapon restrictions, it is worthwhile reviewing its history briefly. The NFA of 1934 (passed the year *after* prohibition ended) imposed restrictions and taxes on the private new sales or transfer of machine guns, and short-barreled shotguns. Regulations from the NFA, which did not ban these weapons, did required registration are still in place today.⁷ The excise tax in 1934 was \$200 per gun transferred, which in today's dollars would be **\$3,585.61 per gun**⁸. This tax, ruled constitutional by the US Supreme Court in 1939⁹ is the same \$200 per gun in 2016¹⁰, although other firearms and ammunition are now taxed via an excise tax that is ten percent on pistols and revolvers, and 11 percent on other firearms as well as shells and cartridges.¹¹

Restricting ownership and taxing machine guns and short-barreled shotguns was controversial when implemented in the 1930s. Although not particularly common, machine guns and short-barrel shotguns were in use at that time (recall the Al Capone movies) when their ownership and use were restricted. In addition to constitutional arguments, there were also arguments that these weapons are used by some for hunting, or for their own entertainment while practice shooting, or for self-defense. These weapons are banned or tightly regulated in some states but still allowed in many states.

The American Bar Association, in "Special Committee on Gun Violence: Second Amendment Issues" (October 19, 2006, <http://www.abanet.org/gunviol/secondamendmentissues/home.shtml>), takes the

Revenue Code of 1986), short-barreled shotgun, or short-barreled rifle, except as specifically authorized by the Attorney General consistent with public safety and necessity; "

⁶ Undetectable Firearms Act of 1988 ([18 U.S.C. § 922\(p\)](#))

⁷ <http://legal-dictionary.thefreedictionary.com/National+Firearms+Act+of+1934>

⁸ <http://www.usinflationcalculator.com/>

⁹ From <http://legal-dictionary.thefreedictionary.com/National+Firearms+Act+of+1934>:

"In *Miller v. United States*, 307 U.S. 174, 59 S.Ct. 816, 83 L.Ed. 1206 (U.S.Ark. 1939), two men were charged with transferring a double barrel 12-gauge shotgun in violation of the NFA. A federal district court quashed the indictment, ruling that the NFA did indeed violate the Second Amendment. But the Supreme Court, in a unanimous decision, disagreed.

Writing for the court, Justice James McReynolds famously dismissed the defendants case with this statement: "the absence of any evidence tending to show that possession or use of a 'shotgun having a barrel of less than eighteen inches in length' at this time has some reasonable relationship to the preservation or efficiency of a well-regulated militia, we cannot say that the Second Amendment guarantees the right to keep and bear such an instrument." McReynolds added that "certainly it is not within Judicial Notice that this weapon is any part of the ordinary military equipment or that its use could contribute to the common defense." He also noted that many states had adopted gun-control laws over the years."

¹⁰ [http://www.ecfr.gov/cgi-bin/text-](http://www.ecfr.gov/cgi-bin/text-idx?SID=68b7cc27bd3a5a4af796d2a03e93425f&mc=true&node=se27.3.479_161&rgn=div8)

[idx?SID=68b7cc27bd3a5a4af796d2a03e93425f&mc=true&node=se27.3.479_161&rgn=div8](http://www.ecfr.gov/cgi-bin/text-idx?SID=68b7cc27bd3a5a4af796d2a03e93425f&mc=true&node=se27.3.479_161&rgn=div8)

¹¹ <https://www.law.cornell.edu/cfr/text/27/53.61>

position that when the Supreme Court and other federal courts have addressed the Second Amendment, they:

“Have consistently interpreted this Amendment only as a prohibition against Federal interference with State militia and not as a guarantee of an individual’s right to keep or carry firearms. The argument that the Second Amendment prohibits all State or Federal regulation of citizen’s ownership of firearms has no validity whatsoever.

The controversy over the meaning of the Second Amendment exists only in the public debate over gun control. Few issues have been more distorted and cluttered by misinformation than this one. There is no confusion in the law itself. The strictest gun control laws in the nation have been upheld against Second Amendment challenge, including local bans on handguns.”

Supreme court rulings and the interpretation of the gun control and the Second Amendment were transformed by the June 26, 2008 landmark decision in *District of Columbia v. Heller* 554 U.S. 570 (2008). This was the first ruling by the Supreme Court to uphold a citizen’s individual right to keep and bear arms, including for self-defense in the home. While the decision ruled that the nearly complete ban of all handguns in Washington, D.C. is unconstitutional, it stressed that certain regulations were legitimate.¹² In addition to allowing limitations on the type of firearms that can be owned, the decision also upheld prohibitions on the possession of firearms by felons and laws imposing conditions on the commercial sale of firearms. DC has subsequently passed new legislation restricting open and concealed possession of certain weapons, but the Supreme Court has not yet ruled on this law. Of central importance to the arguments here, the DC law ruled on bans of the ownership of all handguns, not on ownership of WDMS, which are the focus of this paper.¹³

The Supreme Court interpretation of the Second Amendment was made decidedly more confusing with the *DC v. Heller* decision in 2008. However since that ruling the rights of states to restrict who can own concealed weapons, or to ban certain assault weapons has been upheld as valid in carefully-designed state legislation in New York, Massachusetts and California. On June 20, 2016 the US Supreme Court effectively gave permission for states to restrict ownership of WDMS weapons, when it allowed restrictions on the sale and ownership of certain firearms in New York and Connecticut.¹⁴ Federal legislation could achieve the same purpose on a national level.

¹² The District of Columbia 2013 law was more restrictive than other state laws. In banned handgun possession by making it a crime to carry an unregistered firearm; prohibited the registration of handguns; provided separately that no person may carry an unlicensed handgun; authorized the police chief to issue 1-year licenses; and required residents to keep lawfully owned firearms (other than handguns) unloaded and disassembled or bound by a trigger lock or similar device.

¹³ The *Heller* decision contains the statement “nothing in our opinion should be taken to cast doubt on longstanding prohibitions on the possession of firearms by felons and the mentally ill, or laws forbidding the carrying of firearms in sensitive places such as schools and government buildings, or laws imposing conditions and qualifications on the commercial sale of arms.” These are also restrictions on the individual’s rights to own and bear arms, and would seem to permit taxes and regulations on WDMS such as are advocated here.

¹⁴ https://www.washingtonpost.com/politics/courts_law/supreme-court-again-refuses-to-consider-weapons-bans/2016/06/20/d108abf6-34b7-11e6-8758-d58e76e11b12_story.html.

http://blog.californiarighttocarry.org/wp-content/uploads/2016/04/Shew-v-Malloy_Opinion-in-NYSRPA-v-Cuomo1.pdf

Anytime someone proposes to restrict the possession of any gun, the argument is always made that they are needed for self-defense. What about the self-defense argument for WDMS? The empirical evidence is that possessing firearms in the home makes a person less, not more safe. According to The Law Center to Prevent Gun Violence “Guns kept in the home are more likely to be involved in a fatal or nonfatal unintentional shooting, criminal assault, or suicide attempt than to be used to injure or kill in self defense.”¹⁵ Citing a *New England Journal of Medicine* (NEJM) article, the same source states “Though guns may be successfully used in self-defense even when they are not fired, the evidence shows that their presence in the home makes a person more vulnerable, not less. Instead of keeping owners safer from harm, objective studies confirm that firearms in the home place owners and their families at greater risk.”¹⁶ The NEJM study finds that possessing a gun in the home increases an individual’s risk of death by homicide by 40 to 170%. Another study in the *American Journal of Epidemiology* found “presence of guns in the home increased an individual’s risk of death by homicide by 90%.”¹⁷ A 2013 Violence Policy Center found that for every one justifiable homicide in the US involving a gun, there were 44 criminal gun-using homicides, and this ratio ignores suicides and accidental shootings, which together are even more common than criminal homicides.¹⁸ All of the statistics just cited for self-defense include all kinds of guns, not WDMS. Even if there is a valid case to be made for allowing some guns to be permitted for self-defense, certainly the argument will be weaker for WDMS being used for defense.

A serious book “More Guns, Less Crime” and its related body of literature by researcher John Lott Jr. has argued that crime goes down when states pass “shall issue” concealed carry laws.¹⁹ It would take this article far afield to discuss this literature in detail. For careful opposing views, see the extensive work of John Donohue III with various colleagues.²⁰ More convincing to me, an academic economist, is the work of economist Mark Duggan published in the *Journal of Political Economy*, 2001, entitled “More Guns, More Crime”.²¹ Duggan uses nearly 20 years of sales data of *Guns and Ammo* (G&A) magazine as a proxy

¹⁵ Law Center to Prevent Gun Violence, “Statistics on the Dangers of Gun Use for Self-Defense” citing Arthur L. Kellerman et al., *Injuries and Deaths Due to Firearms in the Home*, 45 *J. Trauma* 263, 263, 266 (1998). smartgunlaws.org/dangers-of-gun-use-for-self-defense-statistics/ This Law Center source also has useful rebuttals of the discredited gun lobby statistics that overstate the frequency with which guns are legally used for defense, citing one study that shows that the defensive use of guns is 98.5% lower than the gun lobby has claimed.

¹⁶ Garen J. Wintemute, *Guns, Fear, the Constitution, and the Public’s Health*, 358 *New England J. Med.* 1421-1424 (Apr. 2008).

¹⁷ Linda L. Dahlberg et al., *Guns in the Home and Risk of a Violent Death in the Home: Findings from a National Study*, 160 *Am. J. Epidemiology* 929, 935 (2004).

¹⁸ Marty Langley & Josh Sugarmann, *Firearm Justifiable Homicides and Non-Fatal Self-Defense Gun Use: An Analysis of Federal Bureau of Investigation and National Crime Victimization Survey Data*, Violence Policy Center 1, 2 (Apr. 2013), at <http://www.vpc.org/studies/justifiable.pdf>. See also, Federal Bureau of Investigation, U.S. Dept. of Justice, *Crime in the United States, 2009, Expanded Homicide Data Table 15*, at http://www2.fbi.gov/ucr/cius2009/offenses/expanded_information/data/shrtable_15.html (last visited Oct. 10, 2010)(reporting that of the 13,636 Americans who were murdered in 2009, only 215 involved justifiable homicide by firearms and only 165 involved justifiable homicide by handguns).

¹⁹ Lott, John R. *More guns, less crime: Understanding crime and gun control laws*. University of Chicago Press, 2013.

²⁰ Aneja, A.; Donohue, J. J.; Zhang, A. (29 October 2011). "The Impact of Right-to-Carry Laws and the NRC Report: Lessons for the Empirical Evaluation of Law and Policy" (PDF). *American Law and Economics Review*. 13 (2): 565–631. doi:10.1093/aler/ahr009.

²¹Mark Duggan, “More Guns, More Crime” *Journal of Political Economy*. 2001. 109(5) 1086-1114.

for gun ownership at the state and county levels. This measure is shown to have a strong positive correlation with survey measures of gun ownership, gun shows, and NRA membership. Duggan's two main findings is that a ten percent increase in the number G&A magazine sales is associated with a ten percent increase in the number of guns owned, and it is also associated with a two percent increase in the number of homicides the following year. He finds no evidence that an increase in the numbers of homicides is associated with an increase in G&A magazine sales the following year, suggesting that reverse causality is not significant. The associations of G&A magazine sales with suicides and non-gun homicides are insignificant. In summary, Duggan is the most convincing study showing a causal effect that increasing the numbers of guns increases homicides, although his work does not address specifically whether changes in WDMS are associated with more mass shootings.

So there is Supreme Court precedent that restrictions on the ownership of extremely dangerous weapons are constitutional, even under the second amendment.²² But this does not tell us where to draw the boundary line defining dangerous weapons. Since this paper has nothing to contribute to the debate of exactly which weapons should and should not be permitted, I choose definitions that reflect available data for calculating the costs imposed by classes of such weapons, and call them Weapons Designed for Mass Shootings (WDMS). As feasible, I allow WDMS to mean variously "all semiautomatic weapons," or semiautomatic weapons and large capacity magazines as defined by Diane Feinstein's Assault Weapons ban of 2013, or H.R.4269, the proposed Assault Weapons Ban of 2015, which is currently before the US Congress.²³

2. To make gun owners pay for the annual cost of deaths in the US due to guns, we should be taxing each gun owned at \$1000 per year, or tax all gun sales (new or used) at \$15,000 per gun sold. Given their higher killing power we should tax WDMS at \$60,000 per gun sold. Or just ban them.

These are strong and no doubt controversial statements. Let me document first why I propose this, and then how I came up with these numbers.

If a person uses a good and it causes damage to others, then a well-established principle of torts argues that the damaged party should be compensated for that damage²⁴. At present, people can sue for

²² Other Bill of Rights protections that come into play with gun control are fourth amendment protections against illegal and unreasonable searches and seizure; fifth amendment protections against uncompensated taking of property, double jeopardy, and assurances of due process of law; and ninth and tenth amendment protections against unconstitutional exercise of authority by the federal government. Control of dangerous weapons has been deemed not to violate these rights as well. These issues are discussed extensively in the State appeals court rulings *Shew v. Malloy* and *Kampfer v. Cuomo* that the US Supreme Court declined to review on June 21, 2016.

²³ The proposed Assault Weapons Ban of 2015, HR 4269, was introduced December 15, 2015 by Rep. David Cicilline with 149 cosponsors. This bill, in addition to banning the sale of 150 specific firearm models, also bans classes of weapons including many semiautomatic firearms (whether rifles, pistols or shotguns) with combinations of specified features that make them attractive for killing multiple people. These features include large capacity detachable magazines; pistol grip and forward grip rifles; folding, telescoping, or detachable stocks; grenade or rocket launchers; barrel shrouds; or a threaded barrel (enabling the use of a silencer).
<https://www.congress.gov/bill/114th-congress/house-bill/4269/>

²⁴ Legal Information Institute. Tort. <https://www.law.cornell.edu/wex/tort>. Generally, intentional torts are uninsurable as a matter of public policy, meaning that people guilty of such torts must pay damages out of their own pocket (if they have any money worth going after). Otherwise, professional criminals could obtain liability

damages from gun injuries or death, but many feel that the deterrent effect of this is totally inadequate.²⁵ For one thing, Federal legislation passed in 2005 granted immunity to firearms or ammunition manufacturers and sellers from liability (“charging legal responsibility”) for unlawful uses of their products.²⁶ Since manufacturers and sellers are immune, another proposal is that owners of guns should be held liable or required to take out mandatory liability insurance policies that would compensate victims for the damage caused by the guns they own.²⁷ There are problems with this approach, however. In a significant proportion of gun homicides and injuries, even for mass shootings, the shooter is never identified. Data from Mass Shooting Tracker show that in 2015 the shooter was unknown in 78 percent (289 out of 371) of the mass shootings, where mass shootings are defined as any incident with four or more people injured or killed by firearms.²⁸ Finally, even if a person is found guilty of injury, they will often not have sufficient assets to fully compensate the victim(s): many shooters have very limited resources. Unless society is willing to severely punish people for not having adequate insurance, mandatory insurance is unlikely to work.

In such settings where neither mandatory insurance nor reliance on the tort system work well, other approaches are desirable. When the transaction cost of collecting compensation is high, economists often recommend imposing a tax on the good causing damage, something called “a negative externality.” Taxes on cigarettes and alcohol, as well as fines for air and water pollution are examples.²⁹ Both for fairness and in order to create correct incentives about the cost of different activities, a very old concept is for a “Pigovian tax,” which is a tax on a good or activity that is designed to reflect the burden of the externality.³⁰ In short, the owners of guns should have to bear some or all of the cost they impose on others.

To give a lower bound on the cost imposed by guns, this paper focuses on cost of deaths data from the Centers for Disease Control and Prevention (CDC), which show that guns killed 33,599 lives in 2014 (counting both suicides and homicides, whether intentional or not)³¹. Even subtracting the 464 cases of legal (police and military) intervention, this leaves over 33,000 deaths from guns in the most recent year available. The US Department of Transportation used the value of life of \$9.4 million per life in 2015 for assessing the value of construction projects³², (the EPA justified \$9.1 million per person in 2011, leading to much the same estimate). Using either of these estimates results in an estimate of the annual value of lives lost through deaths from guns being valued at over \$300 billion per year. This estimate is line with other estimates of the annual cost of guns: Follman et al, 2015 come up with an estimate of \$229

insurance to insure against the risk of being caught and prosecuted by the state, or sued in civil actions by their victims.

²⁵ Ian Simpson. “Gun Liability Insurance Could Be Mandatory For Firearms Owners Under New State Proposals” Huffington Post 02/06/2013 03:14 pm ET | Updated Apr 08, 2013

http://www.huffingtonpost.com/2013/02/06/gun-liability-insurance_n_2632321.html

²⁶ The Protection of Lawful Commerce in Arms Act at 15 U.S.C. §§ 7901-7903

²⁷ Ian Simpson, *op cit*.

²⁸ Mass shooting Tracker. <https://www.massshootingtracker.org/data/2015>.

²⁹ Requiring motorcyclists to wear helmets is a related example: the high costs of treating motorcycle accident victims for head injuries is not born just by the victim, but also by society through their medical insurance premiums. Here a ban, instead of a tax is used, in some states.

³⁰ Pigou, Arthur C. (1920). *The Economics of Welfare*. London: Macmillan.

³¹ <https://everytownresearch.org/gun-violence-by-the-numbers/>

³² https://www.transportation.gov/sites/dot.gov/files/docs/VSL2015_0.pdf

billion in 2012, an estimate that is lower primarily because it uses a lower value of life at 6.2 million per life.³³

It is difficult to estimate the number of guns owned in the US, since Congress has passed legislation to ensure that no ownership records are maintained.³⁴ As previously discussed, some of the most impressive calculations of the impact of gun ownership is found in Duggan (2001), who used sales of “Guns and Ammo” magazines as a powerful proxy for gun ownership, but that study does not provide an actual count of the number of guns owned. A 2012 Congressional Research Service paper estimated that there were 310 million guns in 2009.³⁵ While popular media such as the Washington Post estimate the number may have been 357 million guns in 2013, a more academic study by Philip Cook of Duke University, which took into account guns that are destroyed, lost or broken each year, estimated them at 245 million in 2011. For simplicity, I assume there are 300 million guns privately owned in the US currently.

Surprisingly, it is also hard to calculate how many guns are sold each year. Imports, exports and new gun manufactured are measured, but not private sales or transfers. Statistics from the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)³⁶ show that in 2013 there were 10.8 million guns manufactured in the US, and that fewer than 400,000 of these were exported.³⁷ The US also imported 5.5 million guns that same year. Both of these numbers were up considerably over previous years. In 2015 there were 23.1 million gun licensing checks by the FBI suggesting a similar number of gun purchases (both new and used).³⁸ For simplicity, I assume that there are 20 million gun purchases per year currently, half of them new. (Using a lower estimate comes up with an even higher tax per gun.)

³³ Mark Follman, Julia Lurie, Jaeah Lee & James West, (*The True Cost of Gun Violence in America* (2015), available at <http://www.motherjones.com/politics/2015/04/true-cost-of-gun-violence-in-america>

³⁴ The Gun Control Act of 1968 forbids the U.S. Government agency from keeping a registry directly linking non-National Firearms Act firearms to their owners, the specific language of this law (Federal Law 18 U.S.C. 926 (<http://www.law.cornell.edu/uscode/text/18/926>) being:

No such rule or regulation prescribed [by the Attorney General] after the date of the enactment of the Firearms Owners Protection Act may require that records required to be maintained under this chapter or any portion of the contents of such records, be recorded at or transferred to a facility owned, managed, or controlled by the United States or any State or any political subdivision thereof, nor that any system of registration of firearms, firearms owners, or firearms transactions or disposition be established. Nothing in this section expands or restricts the Secretary's authority to inquire into the disposition of any firearm in the course of a criminal investigation.

³⁵ <https://fas.org/sgp/crs/misc/RL32842.pdf>

³⁶ It is interesting that the name of the ATF was changed by adding the word “explosives” in 2002 with wide bipartisan support after the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon. We need the same congressional resolve with respect to specified semiautomatic and large capacity magazine guns. The Bureau kept the acronym ATF even though responsibility for alcohol and tobacco tax collection and the regulation of alcohol production was transferred to the Alcohol and Tobacco Tax and Trade Bureau (TTB) in 2003.

³⁷ Bureau of Alcohol, Tobacco, Firearms and Explosives, Firearms Commerce in the United States, Annual Statistical Update 2015, <https://www.atf.gov/about/docs/report/2015-report-firearms-commerce-us/download>

³⁸ <http://www.governing.com/gov-data/gun-background-checks-by-state-nics-chart.html>.

“Numbers of firearm background checks do not represent numbers of firearms sold. Federal background checks are not required, for example, in private transactions, and multiple firearms may be purchased after a single background check.”

If we were to impose a tax on the ownership of all 300 million guns owned in the US equal to the value of the deaths caused each year, then we should tax all guns owned at \$1000 (\$300 billion over 300 million guns) each year. Since taxing existing owners would be very difficult, if not infeasible, to do, another approach would be to tax only gun sales and transfers each year. Based on recent gun license checks, this tax would apply to 20 million gun sales (new and used) in 2014. In order to cover the social costs of gun deaths in that year, the gun sale tax should be over \$15,000 per gun sold (\$300 billion in losses from death over 20 million gun sales). If we wanted to tax only the sale of new guns sold, the tax would have to be \$30,000 per new gun sold to cover the cost of deaths from guns.

According to government statistics, actual federal tax revenue from manufacturers and licensed sellers of firearms (from the NFA of 1934) was \$23 million in 2014³⁹, while excise taxes on sale of firearms and ammunition totaled \$636 million in FY 2015⁴⁰. The sum of these two divided by the number of gun sales puts tax revenue per gun at only about \$33 per gun sold. Clearly, today's federal taxes on guns are extremely low relative to the amounts calculated here.

Once we accept the objective of limiting access to WDMS, the economist's natural question is how high should the tax on them be? Clearly, it has to be higher than the \$1,000 per year or \$15,000 per gun sale or \$30,000 per new gun sale, since their damage and risk is much greater than the average risk. But how much higher?

I could find no credible estimates of how many semi-automatic weapons or assault are sold or owned in the US. The most serious estimate I could find was by Justin Peters, in 2012, and was based on sales by a few manufacturers of semiautomatic weapons. He put the number of AR-15-style semiautomatic weapons at around 3.75 million, or about one percent of the total US gun market.⁴¹ Scary, but a useful estimate.

How many mass shootings are caused by semi-automatic and high capacity guns such as the ones used in Orlando and San Bernardino? Although one might think that FBI crime statistics could be used for this purpose, studies (Maltz, 1999; Duggan, 2001) have found that FBI data, compiled from Uniform Crime Reports, greatly undercount gun crimes.⁴² One useful summary posted online, is by Mother Jones in their records from 1982 to 2012, recently updated to June 2016, spanning a 34-year period. In their 2012 analysis they note that "more than half" of the 62 mass killings studied were committed by weapons that would be banned by Diane Feinstein's proposed 2013 Assault Weapons Ban legislation,

³⁹ <https://www.atf.gov/file/89561/download>

⁴⁰ Alcohol and Tobacco Tax and Trade Bureau (TTB) Annual Report, 2015 <https://www.ttb.gov/foia/ttbar2015.pdf>.

⁴¹ http://www.slate.com/blogs/crime/2012/12/20/assault_rifle_stats_how_many_assault_rifles_are_there_in_america.html

⁴² Maltz, Michael D. "Bridging Gaps in Police Crime Data." Report NCJ-1176365. Washington: Dept. Justice, Off. Justice Programs, Bur. Justice Statist., 1999. Duggan (2001, footnote 12) summarizes "The states that are especially bad at reporting at the county level are Vermont, Illinois, Montana, and Mississippi. Many other states, including Florida, Georgia, Iowa, and Kentucky, fail to report any crime data for one or more years. A comparison of the summary statistics at the state and county levels reveals that county-level data are substantially noisier, with standard deviations that are typically two to three times as large as the corresponding ones from state-level data (tables 7 and 9). In approximately one out of five cases, the sum of county crimes within a state deviates by more than 20 percent from the statewide total reported by the FBI."

banning 150 specific firearms that included various semi-automatic rifles, guns with military features, and handguns using magazines holding more than 10 rounds. If assault weapons are only 1% of all guns owned, but account for “more than half” of all mass shootings (rather than 1%), then surely they should have a much higher tax.

Mother Jones’ updated data now includes mass killings up to June 2016. Of the 81 total mass shootings they tally since 1982, their data shows that 58 used either semiautomatic weapons or assault weapons. This comes to 71 percent of all mass killing incidents.⁴³ If events are weighted by the number of people killed, or the number of people killed or injured, the percentage increases to 80 percent of the people injured or killed. For calculations, it seems plausible to assume that 80 percent of mass killings are the result of semiautomatic and high capacity magazine guns.

How many people are killed or injured by semiautomatic weapons and high capacity magazines? The Mother Jones’ data from 1982 to 2012 relies on the FBI criterion of at least 4 people killed by gunshot injuries. After these criteria were criticized as being overly restrictive, since 2013 the FBI (and Mother Jones) have been using a revised standard of 3 or more people killed to classify a mass killing. Even this is misleading, since mass shootings are much more common than mass killings. And their threat to society can be nearly as great.⁴⁴

This brings us to a different source of information: <http://massshootingtracker.org/> a crowd-based data site, which tracks not just mass killings, but mass shootings, where a mass shooting is defined as a violent event where three or more people are injured or killed by guns. To be consistent with measures created using the older FBI standard of four or more people killed or injured, I focus here on this tighter standard. Over the three-year period, from June 20, 2013 to June 19, 2016, Massshootingtracker.com documented 1,085 mass shootings. During the same period, 1,399 people were killed and 4,000 people injured for a total of 5,399 killed or injured people. Unfortunately, Massshootingtracker.org does not attempt to document the weapons used, partly because for a majority of the shootings, the shooter and weapon used are not known. It does, however provide media links for each shooting. I assume that 80 percent were caused by semi-automatic or assault weapons. (While plausibly high, some of the deaths by non-mass shootings were no doubt also done with semiautomatic weapons as well, dampening the overestimate.)

Over the last 36 months, the Mother Jones criteria (which models after the FBI criteria for mass killings) captures only 141 deaths, while Massshootingtracker documents 1,399 deaths from mass shootings. James Allan Fox (2016) as presented in Time magazine (June 27, 2016) estimates an intermediate number at 499 deaths during the calendar years 2014-2016. Hence the FBI definition used for mass shootings underestimates both the number of mass shootings and the resulting deaths. In the case of deaths at mass shootings, the FBI criterion only captures $141/1399 = 10$ percent of the deaths. Since

⁴³ Mother Jones does not specify enough features of every semiautomatic weapon in their data to determine which weapons are high-capacity, or have the additional features that would make them considered assault weapons as banned in 1994. So this calculation just counts the number of semi-automatic or assault weapons used.

⁴⁴ In November 23, 2015, seventeen people in New Orleans were injured in a gun battle using high capacity magazine weapons although no-one was killed. One victim was hit five times. Mass shootings such as this are not recorded in the FBI or other tabulations which only include mass gun killings.
<http://www.wwltv.com/news/crime/17-now-confirmed-injured-in-bunny-friend-shooting-/47965219>

conceptually I find deaths at all mass shootings a more reliable indicator than deaths at mass killings, I use the mass shootings estimate of deaths below.

A reasonable, fact-based estimate of the number of deaths due to mass shootings in the US in the last three years is 1,399, which for the past twelve months (June 18 2015-June 19 2016) has been 555 deaths, higher than the three-year average of 466 deaths per year. One quick observation is that based on this measure, mass shooting deaths have grown by 32 percent from 2013-14 to 2015-16. So if this two-year rate of increase continues, mass shootings will double in just over five years, which is discussed further as point three below.

Of the estimated 555 deaths from mass shootings in the last 12 months, the logic proposed above would assign 80% of these deaths to semiautomatic weapons, which is 444 deaths. This is 444 homicides out of the 11,409 firearm homicides recorded by the CDC in 2014. This is in fact 4% of all homicides. This means that the particularly dangerous WDMS that are the focus here, which represent only 1 percent of all firearms owned, are causing 4 percent of the firearm homicides. This suggests that they are four times as dangerous. Even without taking into account that mass killings have a much greater social cost than solitary killings, largely because of their randomness and the media attention they get, this higher death rate would justify a tax on WDMS that is four times the rate of the average gun sale. So instead of \$15,000 per average gun sale, it should be \$60,000 per WDMS gun sold (or \$120,000 per new WDMS gun sold).

My estimates of the cost of WDMS guns are clearly underestimates, since many other costs of these guns are not included. For instance guns are also used in nonlethal crimes, estimated at 326,000 in 2009 by the US Department of Justice.⁴⁵ Duke researcher Philip Cook (2016) reports an estimate of violent crimes committed with guns each year estimated at \$500,000.⁴⁶ A Follman et al. (2015) study estimates of the medical costs of treating gun injury (and dying) victims to be \$8.6 million per year.⁴⁷ Another consideration is the value of lost work productivity and quality of life for gunshot survivors. Ted Miller and colleagues, of the Pacific Institute for Economic Research and Evaluation are cited as estimating the value of the lost quality of life at \$169 billion and lost wages at \$49 billion annually, as reported in Mother Jones.⁴⁸ Adding the medical costs, and lost quality of life would roughly double the implied tax that should be charged on WDMS.

In addition to the costs imposed by gun deaths and injuries, there are also huge costs of avoidance and protection related to guns. Enormous police effort and self-protection go into the pursuit, arrest, and conviction of individuals who own or use firearms for illegal purposes, and this effort is particularly worsened by the need to prepare for defending against assault weapons. Estimating the incremental costs of this is daunting, and I do not try. Individuals also invest considerable in private protection efforts and suffer mental anguish not only at learning of mass shootings, but also in contemplating the risks in their everyday lives.

⁴⁵ U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey, *Criminal Victimization, 2009*, by Jennifer L. Truman and Michael R. Rand, p. 8.

⁴⁶ <http://www.newsweek.com/gun-control-where-criminals-get-weapons-412850>

⁴⁷ Mark Follman, Julia Lurie, Jaeah Lee & James West, *The True Cost of Gun Violence in America* (2015), available at <http://www.motherjones.com/politics/2015/04/true-cost-of-gun-violence-in-america>

⁴⁸ <http://www.motherjones.com/politics/2015/04/true-cost-of-gun-violence-in-america>

The analysis so far suggests that there are very high costs to society of allowing widespread gun ownership, and particularly the WDMS, which in particular include military-style semi-automatic and large capacity magazine weapons. As far as the estimates go, appropriate taxes on these guns should be at least \$60,000 per WDMS gun. Since such high taxes will be very unpopular and seem prohibitive, a much simpler alternative is to simply ban them, while raising the tax on other guns. Low taxes could be charged on the sale of simple hunting rifles, while handguns should be taxed substantially more than the current average of less than \$50, since they are the most common type of gun used for illegal purposes. If people want to own a handgun for legal purposes, or for a profession (such as a bodyguard), then they should be willing to shell out \$15,000 for one (only an extra \$1,000 per year with a six percent loan!). Private use of such guns should reflect the costs imposed on society of such guns.

Yes, of course I know that people will point out that there are already millions of guns out there, and for a tighter gun control policy to have an impact, it will have to be in place nationally and for many years. But we did ban assault weapons federally in 1994⁴⁹, and many states ban them now. My previous analysis of national trends shows that the assault weapons ban of 1994 saved lives, perhaps 6,000 of them per year⁵⁰. The analysis below estimates large savings of life from mass shootings following a ban. State laws regulating gun ownership have also saved many lives.⁵¹ In 1996 Australia successfully banned assault weapons and bought back many guns, with a dramatic decrease in mass shootings.⁵² Australia has now had twenty years with only three mass shootings in which four or more people died. Even firearm and non-firearm suicides showed evidence of a decline after the Australian gun ban.⁵³ From these examples, we can see that it is possible to act and implement change.

The US Bureau of Justice statistics document that 70 to 80% of homicides and 90% of non-fatal firearm victimizations were committed with a handgun.⁵⁴ A different article could focus on the riskiness of different types of handguns. Once the WDMS guns emphasized here are banned or heavily taxed, then simple hunting rifles should (eventually) kill very few people, as they do in Australia and Canada, where dangerous weapon ownership is sharply curtailed.

Some will argue that banning or restricting access to certain guns is ineffective, since so many of them are already in possession. But research by Fleegler et al, 2013⁵⁵, supports the view that states with tighter gun control laws also experience fewer guns owned, and fewer gun fatalities. Both homicides

⁴⁹ The Federal Assault Weapons Ban (AWB) — officially, the Public Safety and Recreational Firearms Use Protection Act — was a subsection of the Violent Crime Control and Law Enforcement Act of 1994, a United States federal law that included a prohibition on the manufacture for civilian use of certain semi-automatic firearms it defined as assault weapons, as well as certain ammunition magazines it defined as "large capacity." The ten year ban expired in 2004. While repeatedly challenged, it was never rejected by the reviewing courts.

⁵⁰ <http://blogs.bu.edu/ellisrp/2012/12/1994-assault-weapons-ban-may-have-saved-6000-lives-per-year/>

⁵¹ Fleegler EW, Lee LK, Monuteaux MC, Hemenway D, Mannix R. Firearm Legislation and Firearm-Related Fatalities in the United States. *JAMA Intern Med.* 2013;173(9):732-740. doi:10.1001/jamainternmed.2013.1286
JAMA Intern Med. 2013;():1-9. doi:10.1001/jamainternmed.2013.1286.

Published online March 6, 2013 [Free online](#)

⁵² Chapman, S, Alpers, P, Agho, K, Jones, M. "Australia's 1996 gun law reforms: faster falls in firearm deaths, firearm suicides, and a decade without mass shootings." *Injury Prevention* 2006; 12:365–372.

⁵³ Ibid.

⁵⁴ <http://www.bjs.gov/content/pub/pdf/fv9311.pdf>

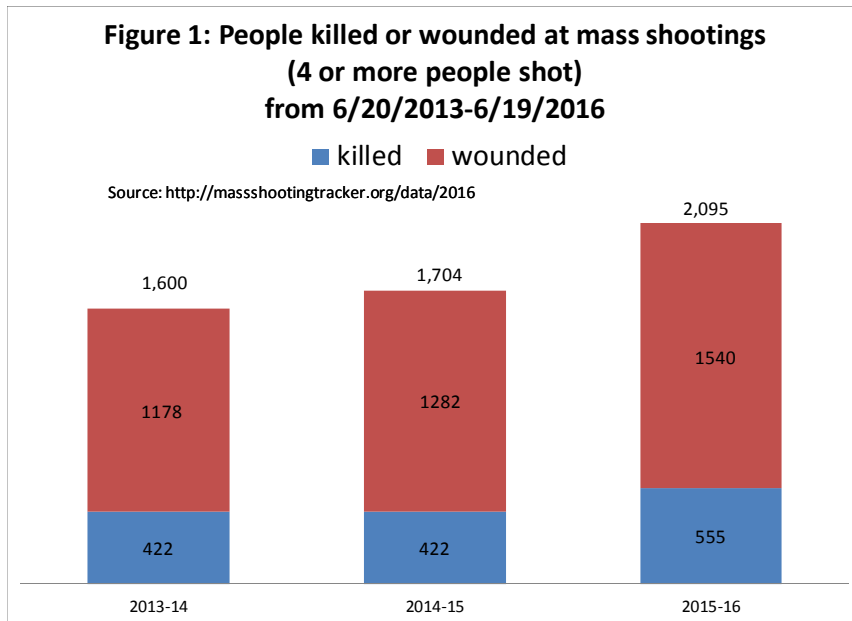
⁵⁵ Fleegler EW, et al.,2013, op cit.

and suicides are affected by these laws. More recent work by Kalesan et al (2016) looks more closely at which state laws have the greatest effect, and finds that predicted firearm mortality risk would be reduced the most with laws for firearm identification (by 84%), universal background checks (by 61%), and ammunition background checks (by 82%).⁵⁶ It is plausible that their results would be even stronger with federal rather than state laws. State bans on assault weapons, as well as tighter regulations on gun shows and many other regulations s are not found to have an impact in the Kalesan et al study, but this may be because consumers can travel to a different state for gun purchases. Restrictions on WDMS will be more effective at the federal, not state level.

Almost every economist would agree that taxes are usually undesirable in that they distort prices and hence create market inefficiencies. But this proposed tax on WDMS will improve social welfare, (since it will reduce the number of people killed), and on the whole, is welfare improving. As discussed in the opening section of the text, taxing guns to make gun owners pay for the cost of damage imposed can be justified as a Pigovian tax.⁵⁷ Taxing negative externalities is generally welfare improving, even if some will protest or be worse off.

3. In the last 36 months, there have been 5,399 people in the US killed or injured at mass shootings (where four or more people are shot, although not necessarily killed). Unless action is taken, the most recent trends suggest that there will be twice as many mass shootings in the US in five years.

This is a prediction and a call to do something soon. The statement is based on the analysis of the useful data presented at <http://massshootingtracker.org/data/2016>. Figure 1 was generated using this data, which unfortunately does not go back before January 2013, but upward trends in the last three years are large and very discouraging: deaths and injuries from mass shootings are becoming more common.



⁵⁶ Kalesan, B., Mobily, M. E., Keiser, O., Fagan, J. A., & Galea, S. (2016). Firearm legislation and firearm mortality in the USA: a cross-sectional, state-level study. *The Lancet*, 387(10030), 1847-1855.

⁵⁷ Baumol, W. J. (1972), "On Taxation and the Control of Externalities", *American Economic Review*, 62 (3): 307–322.

Current public discourse on gun control has often focused on two themes: Blaming ethnic terrorists, and blaming people with mental illness. With regard to ethnic terrorism, the current fervor is towards Muslim terrorists, and the solution proposed is to limit only their access to guns, not everyone else's access. The MassShootingTracker.com data, which is downloadable in excel, lists each shooter's full name when known.⁵⁸ Among the 1,085 mass shootings, there are 334 mass shootings in the last three years in which one or more names are given. I am not an expert on the origins of last names, but I do have a fair amount experience given the diverse student body at Boston University. I could detect only four names among those 334 mass shootings in the three years which appear to be traditional Muslim names – about one percent of all identified mass shooters. Mass shootings are a widespread American problem, not one solved by blaming ethnic or foreign terrorists.

With regard to blaming people with mental illness, it is almost a tautology that anyone committing a mass gun killing must have some form of mental illness. How could a person with a healthy mind want to shoot multiple people? But this misses the point that most of those committing mass gun shootings do not have a clinically-based diagnosis of mental illness that could be relied upon as a justification for preventing them from purchasing a gun.⁵⁹ Not only is this information generally confidential to the patient's mental health provider, but it is likely not specific enough to determine someone as unfit for owning a gun: many people can be depressed, anxious, paranoid or drug abusing without becoming homicidal or suicidal.

Although disputed by some, data on gun killings suggest that the previous assault weapons ban in effect from 1994 to 2004 did save lives, particularly on reducing mass gun killing. Consider Figure 2 which tracks mass killing events, deaths and injuries using data from Mother Jones from 1982 to June 2016. Since there is considerable year to year variation in the number of deaths, the figure plots five year moving averages.

Four patterns are apparent in the mass killings. First, the number of mass killings (defined here to be four or more people killed by firearms) was growing before the ban, remained largely constant during the ban, and resumed a sharper upward trend after the ban. A similar pattern is shown for the numbers of mass shooting deaths and injuries, rising until the passage of the assault weapons ban, then declining, and then rising more sharply since 2004. A third pattern is that while injuries were more common than deaths before 2004, deaths now regularly exceed injuries, reflecting the greater killing ability of today's WDMS once the ban was cancelled. Finally, we can see that the five year moving averages of both deaths and injuries per year have increased about eightfold in the 12 years since assault weapons ban expired in 2004. These trends, on a much smaller sample of mass killings (four or more deaths at one incident) than the studies of mass shootings, imply a 19 percent growth rate per year. Such high rates imply a doubling in the number of deaths and injuries in only four years. These figures support the belief

⁵⁸ <http://www.massshootingtracker.org/data>

⁵⁹ MA Swanson JW, McGinty EE, Fazel S, Mays VM. Mental illness and reduction of gun violence and suicide: bringing epidemiologic research to policy. *Annals of Epidemiology*. 2015;25(5):366-376.

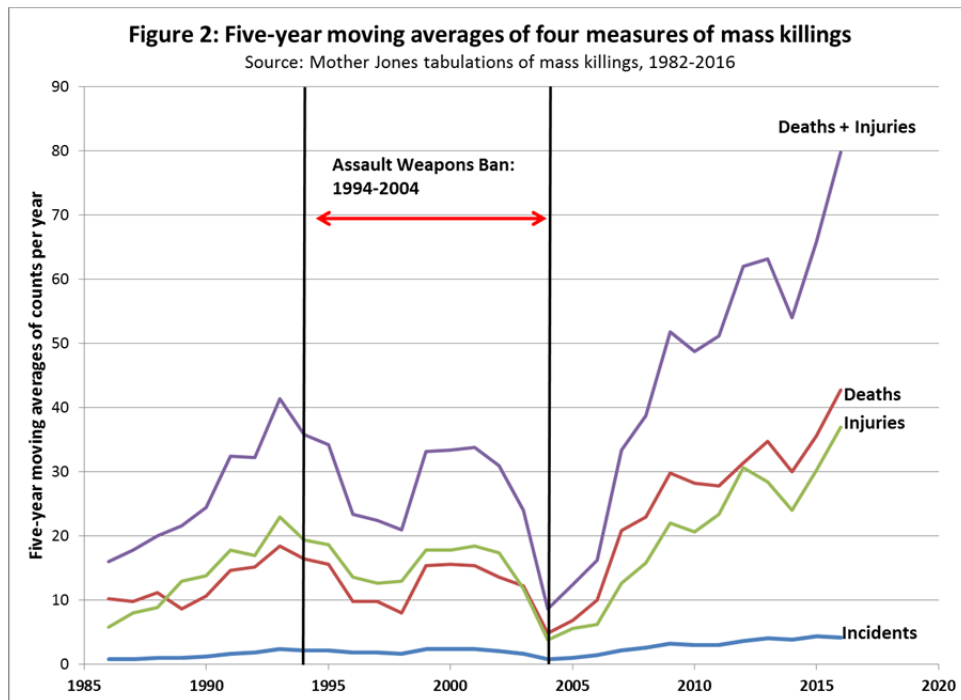
doi:10.1016/j.annepidem.2014.03.004. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4211925/>

New York Times Editorial Board. "Don't Blame Mental Illness for Gun Violence" Dec. 15, 2015.

http://www.nytimes.com/2015/12/16/opinion/dont-blame-mental-illness-for-gun-violence.html?_r=0

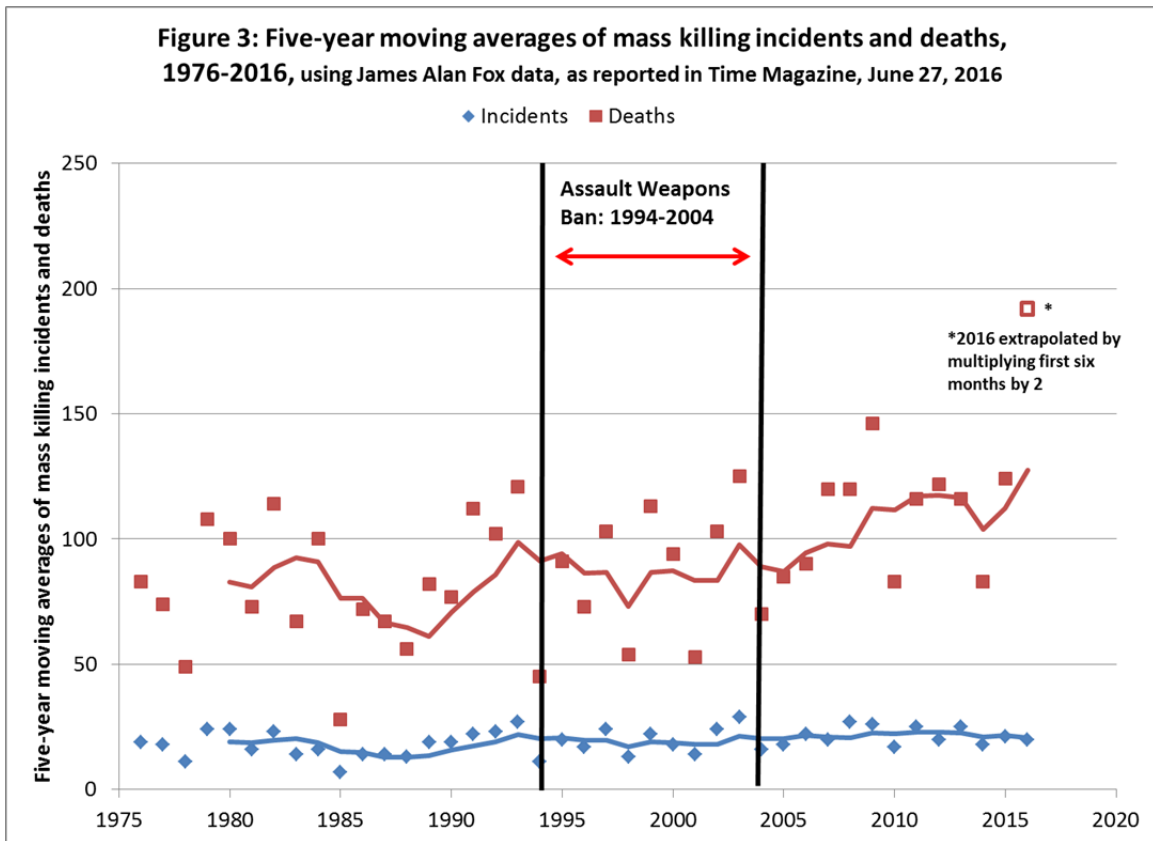
Stone MF. Mass murder, mental illness, and men. *Violence and Gender* 2015; 2: 51-86.

that banning certain specified semi-automatic weapons and large capacity magazines will substantially slow down rates of mass killings.



The data from Mother Jones focuses on mass killings, excluding 'familicides' and other mass shootings which others argue should be included in the calculations. A different tabulation has been done by James Alan Fox of Northeastern University and is tabulated in Figure 3. Here the slower growth during the assault weapons ban from 1994 to 2004 is less evident, although the higher rate of growth in recent years remains.⁶⁰

⁶⁰ The NRA Institute for Legislative Action provides an important explanation for why the Assault Weapons Ban of 1994 was relatively ineffective. They note that manufacturers were able to make simple changes to banned weapons, such as omitting the flash suppressors, to create nearly identical models that were not banned. News releases suggest that after the ban even more assault weapons were sold than before it. The Violence Policy Center in 2004 described the 1994 ban as a “fictional ban,” “a ban in name only . . . [and a] “charade.” The NRA is much more concerned about the Connecticut legislation and other proposals such as HR 4269 that ban features of weapons instead of specific models. <https://www.nra.org/articles/20151229/124-anti-gun-democrats-introduce-gun-and-magazine-ban-in-house-of-representatives>
<http://www.vpc.org/press/press-release-archive/senate-passed-assault-weapons-ban-will-do-little-to-keep-assault-weapons-off-our-streets-violence-policy-center-vpc-warns/>



4. Current federal law for duck hunting bans the use of shotguns that hold more than three shells. If we care enough to ban four-bullet capacity guns to preserve ducks, then we should be willing to ban even higher capacity guns designed to kill people.

This leads to a very simple question: Why should we protect ducks with intrusive hunting restrictions, but not people?

A similar argument can be made for other recent federal laws banning certain people from owning guns. These federal laws were approved with significant bipartisan support in congress, and have survived Supreme Court challenges despite their obvious effects on an individual's "right to bear arms". The Brady Handgun Violence Prevention Act of 1993 banned gun ownership or possession by any person who is: convicted of a felony, a fugitive from justice, an unlawful user or addict of any controlled substance, adjudicated as mental defective or committed to a mental institution, an alien illegally or unlawfully in the US, dishonorably discharged armed force veterans, stalkers and individuals convicted of a crime of domestic violence⁶¹. Since crimes of domestic violence are often only a misdemeanor rather than a felony, the legislation was further revised to ban gun ownership by individuals convicted of

⁶¹ [Pub.L. 103-259](#), commonly known as the Brady Handgun Violence Prevention Act of 1993, passed 238-187 in the house and by voice vote in the senate, and was largely upheld by the Supreme Court in *Printz v. United States*, 521 U.S. 898, 1997.

a even a misdemeanor crime of domestic violence in 1996.⁶² Once again, laws ruled constitutional even though they violate the interpretation by some of the Second Amendment.

This paper has focused on banning and taxing weapons designed for mass shootings without trying to precisely define the full set of such weapons. Trying to justify what weapons to tax or restrict would be a distraction from the main focus of this paper. Re-enacting the 1994 Federal Assault Weapons Ban, with an update on the guns disallowed, would be a simple start. Diane Feinstein's 2012 proposed assault weapon ban, which specified 150 banned guns is another possible approach, although as with the 1994 ban, any prescribed list will result in new weapons being created not on the list but with the same features.

A number of states have recently grappled with this and could be used by federal leaders to help design new federal laws. One careful, recent law is Connecticut's Public Act 13-220 of 2013. The US Supreme Court upheld this law on June 20, 2016 when it refused to reconsider a lower court's decision in support of the law. The 2013 Connecticut law augments an earlier law that banned certain sales of some semi-automatic and large capacity magazine guns but focuses on prohibiting generic gun features rather than banning specific brand names and models.⁶³ The law focuses especially on two dimensions:

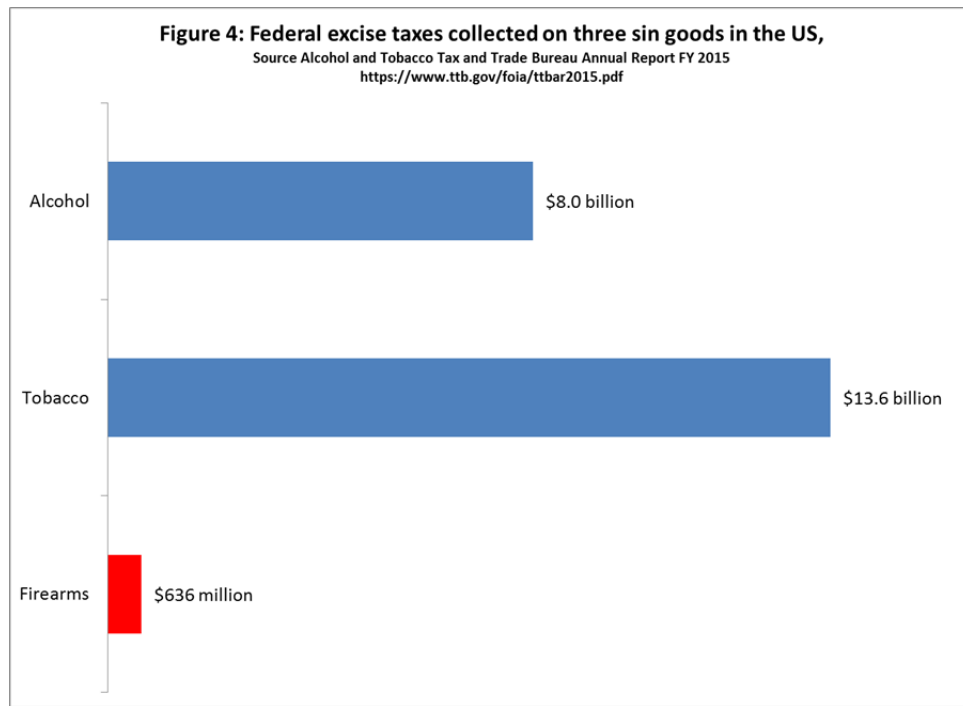
- Large capacity magazine weapons, where large is defined as more than 10 rounds. Large capacity magazines make it easier to shoot many people, particularly in a semiautomatic weapon. When they are detachable, this makes it even harder for victims to escape or attack the shooter when reloading. The recent Orlando shooter used ten magazines of 30 bullets each.
- The combination of semi-automatic weapons or shotguns with features that make them particularly dangerous for mass shootings, including
 - Easily detachable rather than fixed large capacity magazines (easier to reload quickly)
 - Folding or telescopic stock (easier to hide and transport)
 - Any grip below the gun action (easier to shoot with one hand)
 - A forward pistol grip (easier to aim, control, and shoot repeatedly)
 - A flash suppressor (harder to locate in the dark)
 - A grenade launcher or flare launcher (dangerous for obvious reasons)
 - Shrouds that surround the barrel (which permits a shooter to fire repeatedly without getting burned)
 - Rifles shorter than 30 inches (easier to hide and transport)
 - Shotguns with revolver chambers (faster to reload and shoot).

Without denying that some people may enjoy using guns with such features, I believe most people will find it difficult to justify permitting their use. There is no good hunting justification for any of these features in semiautomatic weapons. The argument that they are needed for self-defense is philosophical one of what measures one should be allowed to use for offense or defense. We don't currently allow individuals to use hand grenades, machine guns or short-barreled shot guns for defense. Why should we allow other WDMS? Protection of human lives, as is justified by other restrictions on rights, or regulation as is used to protect ducks, justifies tight regulation of such WDMS.

⁶² 18 U.S.C., Section 922(g)(9) passed in 1996 by nearly unanimous votes, validated by the Supreme Court cases *US v. Hayes* 2009, and *Voisine vs. US* 2016.

⁶³ <https://www.cga.ct.gov/2013/act/pa/2013PA-00220-R00SB-01094-PA.htm>

This paper has shown that the average cost of guns from deaths alone in the US is a lot larger than most people would have guessed. The number one complaint I have heard from people about imposing high taxes on guns (\$1000 per gun per year or \$15,000 per gun sold or transferred) is that some people will not be able to pay for them, and they use guns for normal hunting and self-defense purposes. I do not have the data to calculate more refined schedules of fees, such as differential low fees for simple hunting rifles, higher fees for handguns, and prohibitive fees or bans on WDMS. The fees calculated here of \$60,000 per new or used WDMS gun sold should eliminate all but a few willing buyers of these weapons, although if only the wealthy are to be allowed, then a ban seems much fairer and simpler. More refined calculations would be possible with better data. Clearly guns have been far too lightly taxed relative to their costs to society, and as seen in Figure 4, the tax revenues are tiny compared to the excise taxes on alcohol and tobacco, two other “sin goods” that deserve significant taxes.



I can already foresee the NRA preparing a blistering response to this paper charging that it is yet one more effort to take away everyone’s guns. Actually, I support allowing ownership of simple hunting rifles, or with safeguards even other simple handguns for hunting and self-defense, and I have used guns myself in recent years. But responsible gun owners can agree there is no justification for allowing large capacity magazine weapons, silencers, or semiautomatic guns with flash suppressors or other military features, or pistol-grip semiautomatics: they are dangerous, designed primarily for military, police or illegal activities, and are not appropriate for hunting or self-defense. It makes sense that we simply ban their sale and strictly regulate their transfer among private citizens. Pragmatic ownership and transfer laws will enable farmers to continue to use rifles for controlling vermin, and permit legitimate hunting and sports shooting. It would only prevent the easy ownership of WDMS guns, the focus of this paper.

Tightly regulating or heavily taxing WDMS would make the most sense if the federal laws were changed so as to ALSO require background checks, firearm recordkeeping, and firearm identification. Work by

Kalesan et al (2016) supports the view that firearm related-deaths are most affected by firearm identification, universal background checks, and ammunition background checks, with mandatory registration and recordkeeping also associated with a more modest but statistically significant one-third decline. Since much has been written about gun registration and background checks already, I leave it for future research to evaluate the role of combination policies.

Of course there will be transition difficulties. Previous gun bans (including that in Connecticut) grandfathered in permission to continue to hold and inherit a great many of the guns already owned. These laws have tried particularly to prevent the new acquisition of WDMS, which would also be a possible compromise with federal legislation. Bans or high taxes will create a black market in which existing guns are resold without registering, but this is already happening, and making WDMS more scarce will raise prices and make many less willing to purchase them because it will be illegal and carry penalties. High prices for new WDMS guns will also raise the prices of existing WDMS guns, which itself will deter some of the mass shooters from being able to purchase WDMS so easily. The benefits of taxing or regulating the ownership of these guns will appear gradually over time, but the 1994-2004 experience suggests that it did work (modestly) in the US, and it has worked spectacularly in Australia since 1996.