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# Effect of Gun Culture and Firearm Laws on Gun Violence and Mass Shootings in the United States: A Multi-Level Quantitative Analysis

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## Abstract

*This paper examines the merit of two propositions at the center of the debate on gun control in the aftermath of mass shootings in the United States: (1) gun violence and mass shootings are a cultural artifact (gun enthusiast perspective); (2) gun violence and mass shootings are more prevalent due to lax regulations (pro-gun control perspective). To evaluate the value of each proposition, the study provides three levels of cross-sectional analysis that test the relation between gun culture and gun laws on deaths by guns and mass shootings (international and national incidents). The quantitative analyses points out that both cultural and legislative proposition have significant impacts on deaths by guns. While the cultural explanation seems to be related to an increase in deaths by gun, the legislative perspective is associated with a decrease in deaths by gun and mass shootings. The conclusion provides implications for future policy on gun control.*

Keywords: Mass Shooting, Gun Violence, Gun Control, Gun Culture.

## Introduction

Government officials and public opinion have been seriously challenged over the past decades regarding the occurrence and frequency of public mass shootings in the United States. A report published by the Congressional Research Service (Bjelopera et al., 2013) estimates that at least 78 public mass shootings transpired between 1983 and 2012. Together, these violent incidents have resulted in more than 540 casualties and injured approximately 480 persons. However, these mass shootings are not equally distributed over time and there is indication that in fact, the frequency of this type of incident has accelerated in the past five years and broadly shows a sharp positive trend per decade since the early 20<sup>th</sup> century. Despite the gruesome and overwhelming consequences, mass shootings are now becoming the subject of a major debate on a new national law to address the problem.

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Federal agencies, local law enforcement, police officer associations, public safety groups, medical associations, disaster response and public health preparedness groups, as well as academics are invested in looking at public mass shootings to better understand how to effectively prevent these violent tragedies. In December 2012, after the mass shooting at Sandy Hook Elementary School in Newtown, Connecticut, the debate on gun control reached a peak with the creation of a presidential task force charged with recommending solutions to the problem of public mass shootings and, more broadly, to gun violence. During these discussions, two main positions were opposing each other. First, the *status quo* is argued for the protection of the Second Amendment and the assertion that gun violence in America is mainly a problem of violent culture with calling for more situational solutions (e.g., armed guards in public places, school, etc.). The other side of debate calls for more enforcement and greater restriction for gun accessibility (background checks) and the restriction of certain types of military style weapons and large ammunition capacity (Faria, 2013).

These two opposing positions on gun control certainly have theoretical foundations, and the purpose of this paper is to scrutinize each side's merits through a multi-level approach. In the next sections, the nature of mass shootings will be addressed along with the literature related to gun control, gun violence, and gun culture. The methodology section explains how information related to this research was collected, structured, and analyzed. The analysis section examines the relationship between gun control laws, gun culture, and gun violence in general as well as with mass shooting in particular. This analytical design is based on a multi-level, cross-sectional analysis, which includes the macro level (cross-national comparison), the meso level (cross-state comparison), and the micro level (case comparison). The paper also discusses the implications for future policies.

## Review of Literature

### *Understanding Public Mass Shootings*

First, it is crucial to identify and define mass shootings and mass shooters. According to the Department of Homeland Security (DHS), an active shooter is defined as “an individual actively engaged in killing or attempting to kill people in a confined and populated area.” In its definition, DHS notes that “in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims.”<sup>24</sup> The Federal Bureau of Investigation (FBI) provides a more operational categorization where public mass shootings happen when four or more people are killed by one or more murderer(s) in a particular location with no *cooling-off period* between the murders. The FBI distinguishes *public mass killing* from *spree killing* in which one murderer (or more) kills several persons in different geographical areas with no *cooling-off period*. The spree killing and mass shootings differ from the serial murder because of a lack of cooling-off period and because of the fact that serial killers rarely kill more than one person at a time. Other than providing a classification related to the application of the law, these definitions are not specific enough to conceptualize mass shooting incidents.

According to Bjelopera et al., (2013), the selection of mass shooting targets can be random, loosely related to the shooter, and/or can involve the killing of a relative (spouse and/or family members). Despite the increasing number and intensity of these crimes over

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<sup>24</sup>Active Shooter - How to Respond.” Department of Homeland Security. October 2008. [http://www.dhs.gov/xlibrary/assets/active\\_shooter\\_booklet.pdf](http://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf)

the past decades, mass shootings remain too sporadic and hard to detect or predict (no hotspot concentration) since most mass shootings are perpetrated by one offender who is often socially isolated. Moreover, the violence cannot be considered as a means-to-an-end type of killing as with organized crime violence (for profit) or political violence (for ideology). In fact, many active shooters seem to act on personal motives associated with revenge or with serious psychological delusions. On that latter point, a recent survey conducted by a gun control advocacy group shows that “there was no evidence that any of the shooters were prohibited from possessing guns under Federal law due to having been adjudicated as mentally ill or involuntarily committed for treatment” (Mayors against Illegal Guns, 2013). However, several cases of mass shootings have shown evidence that shooters had existing records of mental illness and were known to utilize psychiatric services. This observation raises the debate in gun control legislation about who should be granted access to firearms.

### ***Gun Control Regulations and their Impact on Gun Violence***

At the heart of the gun control debate, in the aftermath of the tragedy of Sandy Hook Elementary School, is the potential impact of regulations to curb gun violence and to ultimately prevent public mass shootings. Regulating guns in the United States is a very contentious topic mainly due to the issues of historical and political contexts. The United States is one of only two countries in the world - with Mexico - to guarantee the “right to bear arms” in its constitution. Other countries granting that right in the past have amended their constitutions to make gun ownership a privilege (not a right), which requires permission from a licensing authority (the State), as with a driver’s license, for the sake of better public safety and security (Elkins, 2012).

On the political side, the United States lawmakers have always approached gun control cautiously due to the profound difference of opinion among the voters on this topic. Moreover, politicians are facing a strong firearms lobby through gun enthusiast associations that fund and endorse political candidates. For example, the *National Rifle Association* (NRA), which boasts millions of members, uses a scorecard system to rate politicians’ positions on gun control. To illustrate the power of this system, in 1996, the members of congress who opposed gun control sponsored a bill that succeeded in limiting federal government research on the health implications of firearms by restricting the funding for National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC) (Kellermann & Rivara, 2013). More precisely, the appropriation bill dictates that “none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention may be used to advocate or promote gun control.”<sup>3</sup> However, in 1994, despite this strong opposition for gun control regulations from the arms industry and related advocacy groups, the U.S. Congress was able to pass a bill that restricted public access to hundreds of military-type weapons and that limited the ammunition capacity of gun magazines. But this bill, the *Federal Assault Weapons Ban*, expired in 2004.

In contrast, a 2011 Canadian study on the impact of gun control laws on homicides shows that the enactment of gun regulations was followed by a significant drop in the number of homicides committed with a firearm, a decrease of 5% to 10%, depending on

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<sup>3</sup>Omnibus Consolidated Appropriations Bill. HR 3610, Pub L No. 104-208. <http://www.gpo.gov/fdsys/pkg/PLAW-104publ208/pdf/PLAW-104publ208.pdf>. September 1996. Accessed December 19, 2012.

the province. This reduction was most noticeable in the case of homicides committed with a shotgun or a hunting rifle. These results suggest that the law's effectiveness is more due to the reduced access and availability of firearms rather than the deterrence measures through severity of criminal sentences that were also included in the legislation (Blais, Gagne & Linteau, 2011).

On this issue of gun accessibility, a study conducted in the United States examined the impact of firearm regulations on male suicide rates and showed that (a) gun control laws which aim at reducing overall gun availability have a significant deterrent effect on male suicide and that (b) laws that seek to prohibit high risk individuals from owning firearms have a lesser deterrent effect (Rodríguez-Andrés & Hempstead, 2011). Moreover, Kleck (2009) suggests that specific gun control laws emerging in the wake of high profile media events may lack the expected impact and can also defeat the purpose of existing ordinary laws that address gun violence in general.

Also, two US studies show that the legal purchase of handguns increases the risk of violent deaths. More precisely for both suicides and homicides, the elevated relative risks persisted for more than 5 years after the purchase (Cummings and al. 1997). The second study shows that individuals in possession of a gun were 4.46 ( $p < 0.05$ ) times more likely to be shot in an assault than those not in possession of a gun. On average, guns did not protect those who possessed them from being shot in an assault (Branas et al., 2009). Finally, a study on homicide and geographical access to gun dealers in the United States shows that the prevalence of federal firearms licensee stores is strongly correlated with homicide rates in major cities but not so much at the county or town levels (Wiebe et al., 2009).

In Port Arthur, Australia, a mass shooting that killed 35 persons and injured 37 in 1996 led to the adoption of major gun control laws. A series of studies were conducted after the enactment of the new laws where statistics on homicides and suicides show that the rate of firearm homicides decreased by 7.5%. Also, firearm-related suicides of Australian men declined 59% between 1997 and 2005, while the rate of all other suicides declined by 24.5%, suggesting no substitution effect (Chapman et al., 2006; Chapman & Hayen, 2008). Further, some of the more practical gun buybacks shows a positive impact on gun violence. For example the study conducted by Leigh and Neill (2010) found that the buybacks contributed to a decline in the firearm suicide rates by almost 80% with no significant effect on non-firearm death rates. The effect on firearm homicides followed a similar correlation. Also, Chapman et al. (2006) pointed out 18 years before the gun law reforms that there were 13 mass shootings but that none occurred in the next 10.5 years following the enactment of the 1996 gun control law.

However, this last result is challenged by McPhedran and Baker (2011), who argues that factors other than the gun control laws must be taken into account to explain a drop in mass shooting since there was also a drop that occurred during the same period in New Zealand where no drastic gun control law was enacted. For example, several authors suggested that the occurrence of violent incidents involving the use of firearms could also be influenced by economic cycles and employment levels that may have contributed to variations in levels of violent crime, including mass shootings (Bellair & Roscigno, 2000; Krivo & Peterson, 2004; Lee & Slack, 2008; Narayan & Smyth, 2004). Also, differences in gun violence rates between countries and/or regions can be explained by cultural characteristics.

### **Cultural Characteristics and Gun Violence**

In the wake of the recent public mass shootings, the following questions have been raised: Is there an American “gun culture?” Is there a relationship between gun culture and gun violence? Pro-gun groups have argued that mass shootings are due to a violent culture but not due to the ownership of firearms; these groups have advocated for armed guards in public spaces, armed teachers in schools, and an armed general population to deter or to prevent shooting rampages in public places. This critical argument in the gun control debate takes root in the historical and cultural relationship between the American people and firearms. This common explanation for gun violence in United States refers to the violent history of the country, including defining violent periods such as the American Revolution, the Civil War, and the “Wild West” when most of the domestic conflict was resolved through the use of weapons. The guaranteed right to bear arms and to be armed for self-defense as a legal justification to use lethal power, authorizes an individual to kill a person if a perceived unlawful life threatening attack is imminent. Most recently, “stand-your-ground” laws expanded the scope of this self-defense concept to include perceived threatening situations occurring in public places rather than limiting these situations to defense of home or personal property only (Castle doctrine).

This expansion of the *Castle Doctrine* into public spaces (*Stand-your-Ground*) abrogates another legal common law principle known as “*duty to retreat*,” which aims at preventing the escalation of violence (Catalfamo, 2006; Weaver, 2008). Currently, about 26 states have adopted *Stand your Ground* Laws with the vast majority of these states situated in the Southern and Midwest sub regions of United States.<sup>4</sup> These states are also known for their permissive laws on firearms licensing and purchasing (LACV2012). Thus it is deeply rooted in American culture to have easy access to firearms, permissive regulations regarding the carrying of concealed weapons, and the enactment of laws that authorize citizens to use a gun in public spaces to defend themselves against an imminent deadly threat.

In a study conducted by Altheimer and Boswell (2012), the authors wanted to examine the merits of two research questions: (a) is there an association between gun availability, gun homicide, and homicide at a cross-national level? And (b) is the relation between gun availability and violence shaped by socio-historical and cultural context? According to the authors’ results, there is no indication that gun availability operates uniformly or proportionately across nations to influence levels of violence. However, the main finding indicates that, across nations, the association between gun violence and gun availability can be explained by historical and cultural processes.

Another cross-national study conducted by Kopel et al. (2008) scrutinized the relationship between “gun density” and several measures of freedom and prosperity by using data from the Freedom House ratings of political rights and civil liberties, the Transparency International Perceived Corruption Index, the World Bank Purchasing Power Parity ratings, and the Heritage Foundation Index of Economic Freedom. The results suggest that nations with the highest levels of gun ownership tend to have higher political and civil freedom, greater economic mobility and prosperity, and much less corruption than other nations. This relationship only exists for high gun ownership countries.

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<sup>4</sup>Alabama, Alaska, Arizona, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Michigan Mississippi, Missouri, Montana, Nevada, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah, West Virginia, Wisconsin.

Another study comparing perceptions of handguns by young adults living in the United States and the United Kingdom (Puddifoot & Cooke, 2002) was based on the theoretical assertion made by Cohen and Nisbett (1994) stating that violent and gun-related behaviors can be related to broad cultural norms, such as “U.S. southern sub-culture of violence.” The fundamental premise suggests that there are distinct historical and cultural conditions occurring in the Southern states of the U.S. that lead to an ideology authorizing violent behaviors, specifically for self-protection. Results show that gender plays a critical role in handgun perception since females tend to associate this type of firearm as a fearful cause of crime while males view handguns as a source of power. Another difference is associated with the variances in the political ideologies of the two countries; the reputation of handguns to young adults in the U.S. is much more anchored in a belief system related to liberty and independence and reinforced by the “right to bear arms” protected by the Second Amendment. However, the research did not address possible regional differences within the national sample; for example, between young adults from the Southern U.S. and young adults from the Northern U.S.

Finally, research conducted by Felson and Pare (2010) examined the effects of region and race on the tendency to carry weapons for protection. The research also tests theories on gun cultures as well as honor cultures. The findings show that Southern Caucasians tend to carry weapons more often for protection than northern Caucasians (especially true for women). This result tends to confirm the existence of a gun culture difference between Southern and Northern United States. However, analysis also shows that there is no regional difference amongst African Americans.

## Methodology

The analytical design of this research is based on a three-level, cross-sectional approach; the macro level focuses on an international comparison between 25 developed countries,<sup>5</sup> the meso level implements a national comparison between 50 states, and the micro offers a case-study comparison between 73 public mass shootings. The macro level analysis uses the rate of death by guns and the rate of gun ownership in each country as inter-dependent variables. Data for both variables are provided by the United Nations. Also, the meso analyses uses data sets composed of several control variables per country related to socio-economic and demographic characteristics, including the following criteria: the percent of gross domestic product (GDP) dedicated to education, social security budgets, and healthcare expenditures; the percent of population aged between 15-24 years old; the net migration rate; the percent of population living in urbanized areas; and, the levels of education of the overall population. This set of variables will serve as control variables to better explain gun deaths in a cross-national comparative analysis. Most of this data comes from the *Organization for Economic Cooperation and Development* (OECD) reports for 2012 and 2013.<sup>6</sup>

These gun control law variables identify countries having restrictive or permissive laws related to firearms ownership (sales, storage and handling). This dichotomous variable is

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<sup>5</sup>The countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Holland, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States.

<sup>6</sup>Statistics provided by OECD can be found at [http://www.oecd-ilibrary.org/economics/oecd-factbook\\_18147364](http://www.oecd-ilibrary.org/economics/oecd-factbook_18147364)

based on the definition proposed by Newton and Zimring (1969). Restrictive gun licensing laws refers to a system in which individuals who want to purchase firearms must demonstrate to a licensing authority that they have valid reasons to get a gun (shooting range, hunting, etc.) and that they demonstrate “good character”. Usually under such a system, citizens are required to train for gun handling, obtain a license for hunting, and/or provide proof of membership to a shooting range. Also, individuals must prove that they are not part of prohibited groups, such as the mentally ill, criminals, children, or those at high risk to commit violent crime (such as those with a police record of threatening the life of another). In contrast, permissive gun licensing laws refer to a system in which all but specially prohibited groups of persons can purchase a firearm. In such a system an individual does not have to justify purchasing a weapon; rather, the licensing authority has the burden of proof to deny gun acquisition.

Finally, the macro level analysis will use two proxy variables of “gun culture.” The first one is the percent of a country’s GDP that is dedicated to military expenditures. The rationale behind the use of this variable is built on the numerous studies linking the predominance of war culture and the militarization of several sectors of the society that valorize the use of military tools and tactics to resolve social problems, which thus creates a trickling down effect (Haggerty & Ericson, 2001; Kraska, 2002; Lemieux & Dupont, 2005). Also, the military expenditures indicate how much the vitality of a country’s economy relies on the military-industrial complex. Finally, the level of military expenditures can provide an indirect measure of military-grade weapons available within the country throughout its armed force members (active duty, reserve soldiers, honorably discharged and retired).

The second proxy variable measuring the concept of “gun culture” has been developed by identifying movies that in some way glorified the use of guns. More precisely, included in the calculations are the revenues of all movies portraying the use of guns as a violent justification (protection, revenge, vigilantism, etc.) and/or gun movies that were just based on a blood-and-gore scenario. The same calculation was made for each of the 25 countries in the study, and the revenues were provided by national box office information for the year 2012.<sup>7</sup> These movie revenues served to create two variables. The first variable aggregates the total spending on movies that glorify gun use in each country. The second one is based on the ratio between the dollars spent on gun movies versus the total dollars spent for all movies in each country for the year of 2012. The reason why two variables are created is that one measures spending for gun movies directly based on absolute values of spending while the other variable offers a relative measure based on a ratio. It is important to note that the assumption is not to imply that watching gun movies will predict gun violence in a given country but to see if the fascination for guns in entertainment activities is related to the rate of gun ownership in the country.

The meso level analyzes three different dependent variables in the 50 states of the US: death by gun rates, gun ownership rates, and homicide rates. The data is made available by the Unified Crime Report and the U.S. Department of Justice. As control variables, the analyses use age structure of the population (percent of 15–24 year olds), unemployment rate, net immigration rate, percent of people living in urban areas, and percent of spending for mental health per state. Another variable, the number of concealed weapons permits, has been used to measure the propensity of each state’s commitment to self-protection by

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<sup>7</sup> Statistics about international box office revenues can be found at <http://boxofficemojo.com/yearly/>



firearms. In order to measure the impact of firearm control laws on gun violence, the data from Legal Community Against Violence (LCAV) report was integrated to the analysis.<sup>8</sup> The LCAV provides a ranking of U.S. states based on 25 policy approaches related to firearm regulations. States gain or lose points based on the level of restrictiveness or permissiveness of their gun regulation laws. Finally, in order to test the gun culture hypothesis, the states have been regrouped in four sub-regions: Midwest, Northeastern, Southern, and Western. As the studies by Cohen and Nisbett (1994), Felson and Pare (2010), as well as Puddifoot and Cooke (2002) pointed out, there is a plausible connection between guns and geography due to historical and cultural characteristics deeply ingrained in U.S. sub-regions.

Finally, the micro level analysis is composed of 73 mass shooting cases that occurred in the United States between 1983 and 2013. This data set is composed of several variables concerning the shooter's personal characteristics, such as age, race, sex, and mental health. The database is also composed of information related to the properties of the shooting event such as the site (school, work place, etc.), location (city/state), number of deaths and injuries, type of weapons, number of weapons, use of explosives, number of shooters, and perpetrator outcome (suicide, arrested, killed by police, killed by citizen). The information about all the cases has been found in local and national electronic newspapers and police reports.

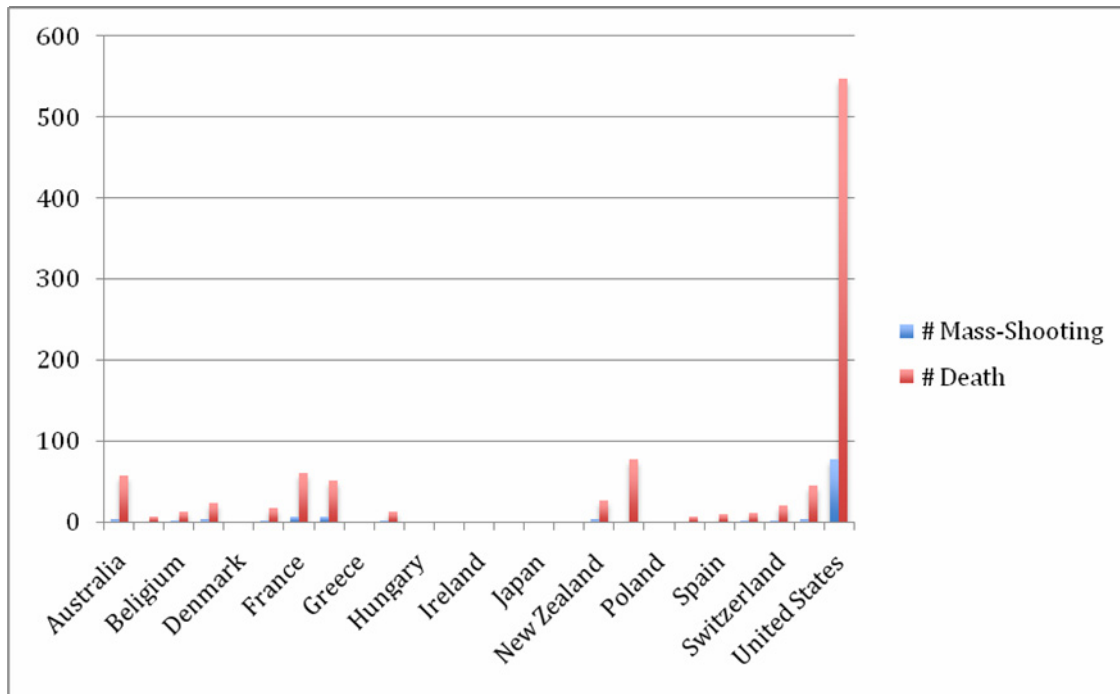
### **Macro Level: Cross-National Analysis**

Results indicate that the mass-shooting phenomenon is not limited to the United States but has also happened in several other industrialized countries. Figure 1 in the appendix provides an overview of the mass shootings that have occurred between 1983 and 2013 in 25 advanced nations comparable to the United States. These shootings varied from 4 to 77 deaths. The first striking observation emerging from Figure 1 is that the number of mass shootings and related casualties in the United States far surpasses any of the other individual countries included in this study during that same period of time. Amongst the sample, the highest number of mass shootings experienced by another country other than the United States is 7 over a period of 30 years. A total of 41 mass shootings have been identified in all other 24 industrialized countries total with 78 mass shootings for the United States. The U.S. has more than the double of mass shootings than all other 24 countries combined in the same 30-year period. On average, there are 7.01 persons killed in a United States based mass shooting in contrast to 10.6 casualties per incident in mass shootings based in the other 24 other countries (cumulative average) studied. The countries that have the highest death rate per single mass shooting are in this order: Norway (77 in one incident), United Kingdom (15), Australia (14.25), France (10), and Switzerland (10).

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<sup>8</sup> The report can be found at [http://smartgunlaws.org/wp-content/uploads/2010/07/Gun\\_Laws\\_Matter\\_Brochure.pdf](http://smartgunlaws.org/wp-content/uploads/2010/07/Gun_Laws_Matter_Brochure.pdf)

**Figure 1. Distribution of mass shooting and related casualties in 25 countries between 1983 and 2013**



A significant finding is that mass shootings and gun ownership rates are highly correlated ( $r=0.75$ ;  $p<0.01$ ) and that this association remains high even when the number of incidents from the United States is withdrawn from the analysis ( $r=0.39$ ;  $p<0.05$ ). In other words, the higher the gun ownership rate, the more a given country is susceptible to experience mass shooting incidents; further, this relation is not impacted by an outlier effect induced by a large number of incidents in the United States. There is also a strong correlation between mass shooting casualties and death by firearms rates ( $r=0.86$ ;  $p<0.01$ ). However, in this particular analysis, the relation seems to be mainly driven by the very high number of deaths in the United States. The relation disappears when the United States is withdrawn from the sample ( $r=0.16$ ;  $p=0.43$ ).

However, the difference in the number of occurrences of mass shootings in the United States compared to each country included in the study presents some limitations. The low number of occurrences of mass shootings in countries other than the U.S. makes sophisticated quantitative analysis irrelevant because there is not enough data per country to analyze. In fact, the volatility of these events challenges the requirements of a sound multivariate analysis. Despite this limitation, the strong positive correlation between the number of mass shootings per country and the firearms ownership rate suggests that accessibility to guns is a critical component of mass shootings. Furthermore, in 71% of the incidents, the weapons used in mass shootings were legally and directly accessible to the killers. Since mass shootings are a result of gun accessibility and since gun accessibility contributes to the high rate of death by gun, the rest of this section will focus on testing the gun culture and gun control hypotheses on the gun availability and death rate variables.

The two main arguments made by gun enthusiasts (the culture-based argument) and gun control advocates (the access-based argument) can be tested at the international level between 25 industrialized countries who are members of the *Organization for Economic Development and Co-Operation* (OECD). In order to verify the validity of both assertions, a first series of correlation analyses were conducted on both gun ownership rates and on the rates of death by guns. The results show a statistically significant correlation ( $p < 0.05$ ) between the firearm ownership rate and the following: the Gini Index ( $r = -0.47$ ), the percentage of GDP devoted to military expenditures ( $r = 0.47$ ), the total money spent on gun movies ( $r = 0.74$ ), and the rate of money spent on gun movies ( $r = 0.57$ ). Also, the type of regulation regarding gun access (permissive or restrictive) is negatively correlated with gun ownership rates ( $r = -0.46$ ,  $p < 0.05$ ). In other words, the more restrictive the gun regulations are the lower the gun ownership rate. It appears that in these preliminary analyses both the gun enthusiasts and the gun control advocates' assertions are valid based on the results related to gun movies and gun access regulations.

But in order to differentiate between the effects of the cultural versus the accessibility hypotheses, a multiple regression analysis has been conducted that includes only the variables correlating with gun ownership rates. The results displayed in Table 1 reveal that the cultural assertion does better in predicting gun ownership than does the gun regulation hypothesis. More precisely, the better predictor of firearms ownership is the fascination for firearms (measured in absolute dollars spent on movies that value gun violence). Also, the percentage of GDP devoted to the military expenditures variable is statistically significant, which contributes to an understanding of the variation of gun ownership rates between countries. Despite the fact that the variables related to gun control laws are not statistically significant ( $p = 0.08$ ), the model informs us that a country that has more restrictive regulations experiences lower firearm ownership rates ( $B = -16.75$  firearms per 100 inhabitants). This model is statistically significant and possesses a strong regression coefficient (R square) that explains 62% of the variance of gun ownership between countries.

**Table 1. Summary of Multiple Regression Analysis for Variables Predicting Gun Ownership Rates in 25 Industrialized Countries\***

<i>Variables</i>	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t-test</i>	<i>Sig.</i>
(Constant)	41.97	23.16	--	1.81	0.09
<b>Rate spending on gun movies (USD)</b>	<b>0.02</b>	<b>0.01</b>	<b>0.40</b>	<b>2.47</b>	<b>0.02</b>
<b>GDP Military Exp.</b>	<b>11.43</b>	<b>4.37</b>	<b>0.52</b>	<b>2.61</b>	<b>0.01</b>
Gun Control law	-16.75	8.96	-0.30	1.86	0.08
Gini Index	-1.13	0.72	-0.30	-1.56	0.13

\*Model Summary: R Square 0.62 ( $p < 0.01$ )

A second series of analysis examines the relation between gun culture, gun control legislation, and death by firearm rates (per 1000 inhabitants). A first set of results shows that the gun control regulations ( $r = -0.61$ ), the percentage of GDP devoted to military expenditures ( $r = 0.60$ ), and the rate of money devoted to gun movies ( $r = 0.47$ ) are all

strongly correlated with death by the firearms rates. Again, a multiple regression has been conducted in order to differentiate the effect of the arguments from both gun enthusiasts groups and gun control advocacy groups.

**Table 2. Summary of Multiple Regression Analysis for Variables Predicting Death by Firearms Rates in 25 Industrialized Countries\***

<i>Variables</i>	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t-test</i>	<i>Sig.</i>
(Constant)	6.23	7.01	--	-0.89	0.39
<b>Gun laws</b>	<b>-2.98</b>	<b>1.00</b>	<b>-0.50</b>	<b>-2.96</b>	<b>0.01</b>
Rate spending on gun movies (USD)	0.00	0.00	0.14	0.56	0.58
GDP Military Exp.	0.96	0.54	0.40	1.78	0.10
Gini Index	0.05	0.09	0.13	0.59	0.57
Net Immigration	0.11	0.28	0.09	0.42	0.68
% Urbanization	-0.03	0.06	-0.14	-0.48	0.64
GDP Soc. Security	0.09	0.08	0.24	1.10	0.29
Level of Education	0.03	0.03	0.17	0.80	0.44
Age Structure(15/24)	0.30	0.38	0.21	0.80	0.44

\*Model Summary: R Square 0.77 ( $p < 0.05$ )

Table 2 shows that gun control legislation is the only and best predictor of the death by gun rates. The regression model was also enriched by several demographics and socioeconomic variables that are known in the existing literature to have an influence on death-by-firearms rates. The findings show that only the gun control laws variable proved to be a predictor of death by firearms. The model is statistically significant and possesses a strong regression coefficient (r square) that explains 77% of the variance of death by firearms between countries. The results imply that, all things equal, restrictive gun control regulation have a negative effect (reduction) on the rate of casualties due to firearms while the gun culture variable does not have any predictive value on the death by gun rates. However, the overall best predictor for death by firearms remains the gun ownership variable with an almost perfect positive correlation coefficient ( $r=0.90$ ). It has been decided to exclude that variable from the model due to the problem of multicollinearity with other variables included in the analysis.<sup>9</sup>

### **Meso Level: Cross-State Analysis**

The previous section clearly illustrated that among the 25 countries included in our study, the United States stands out on death by firearms, gun ownership rates, and the number of mass shootings. Therefore, this section is scrutinizing the validity of the hypotheses related to gun culture and gun control legislation among 50 states using similar measures (dependent variables). The analysis also includes the rate of murders committed with firearms, which was not reported by all countries in the previous section. The first series of analysis examines the presence of a regional gun culture. More precisely, the 50

<sup>9</sup>Multicollinearity is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated.

states have been regrouped according to the U.S. Census Bureau into four sub-regions (Southern, Western, Northeastern, Midwest), and correlation analyses have been performed against variables related to gun violence and gun access.

**Table 3. Measures of Association between U.S. Regions, Gun Violence, and Gun Access (N=50).**

Regions	murder/gun	All death/gun	% Gun owner	Concealed Gun
Southern	r=0.55**	r=0.41*	r=0.25	r=0.28*
Northeastern	r=-0.18	r=-0.52**	r=-0.46**	r=-0.3
Midwest	r=-0.11	r=-0.08	r=-0.22	r=-0.01
Western	r=-0.27*	r=0.23	r=0.10	r=-0.15

\*p<0.05    \*\*p<0.01

According to the results displayed in Table 3, a major finding emerges. The direction of the correlation coefficients is going in the opposite direction when comparing the Southern region with the three other regions - except for the Western region that displays a positive coefficient for all the death by guns and a positive coefficient by the percentage of gun ownership in the population. In other words, this means that the Southern region is associated with higher rates of murder by gun, higher rates of death by firearms, and higher numbers of concealed carry gun licenses delivered by the states (all statistically significant).<sup>10</sup> The only region associated with the percentage of gun ownership is northeastern, which indicates a negative correlation (less gun ownership). Since our analysis is including all states and is not a sample (total population), it can be concluded that the Southern region has an established rapport with firearms that is completely distinctive from the other regions. As noted before, these results are most likely a reflection of historical and cultural characteristics that pertain to the Southern region.

A second series of analysis scrutinizes the relation between restrictive and permissive firearm legislations, gun violence, and gun access in the 50 states. The measure related to the firearms legislation is based on the work performed by the Legal Community Against Violence Law Center (LCAV), which produced a ranking system of “25 policy approaches” that regulate firearms in each state. After a thorough review of the methodology used by the center, it has been concluded that the analysis and rankings made by the LCAV Center are consistent and robust.

However, in order to generate a dichotomous variable (0-1) that represents the most permissive and restrictive regulations, the ranking scale has been reconfigured to isolate the top restrictive states (those with the most restrictive regulations) and the top permissive states (those with the most permissive regulations). When tested against gun violence and gun access variables, the results show strong correlation coefficients. More precisely, states with more restrictive regulations on guns tend to have lower rates of death by guns (r=-0.60; p<0.01) as well as a lower percentage of gun ownership in the population (r=-0.66; p<0.01). The reverse is also true in that states having more permissive gun regulations

<sup>10</sup>Statistics related to concealed carry gun licenses are provided by the Government Accountability Office (<http://www.gao.gov/assets/600/592552.pdf>) and several State government agencies.

tend to show higher rates of deaths by gun ( $r=0.42$ ;  $p<0.01$ ) as well as higher percentages of gun ownership in the population ( $r=0.50$ ;  $p<0.01$ ). These results are consistent with the findings from the LCAV Law Center.

The next series of analyses aims to differentiate between the effects of gun culture and the effects of gun regulations on gun violence. The preferred analytical framework is based on two multivariate regression models, one using the percentage of deaths by gun in the population as a dependent variable and the other using the rate of murders committed by firearms as a dependent variable. In addition to the Southern region (gun culture) and the most restrictive states (gun regulation) variables, the models include several socio-demographic and socio-economic variables that can explain the two dependent variables – such as the percent of urbanization in each state, the age structure (15-24), the percent of immigration in each state, and the percentage of persons in poverty per state.

**Table 4. Model Summary for Variables Explaining Murder by Firearms and Death by Firearms Rates (n=50).**

<i>Variables</i>	<i>B</i>	<i>SE(B)</i>	<i>Beta</i>	<i>t-test</i>	<i>Sig.</i>
<b>Model 1*</b>					
(Constant)	-5.52	2.72	--	-2.02	0.05
<b>Gun Culture (south)</b>	<b>1.52</b>	<b>0.50</b>	<b>0.38</b>	<b>3.00</b>	<b>0.00</b>
Restrictive Laws	0.66	0.76	0.14	0.68	0.39
<b>% Urbanization</b>	<b>0.06</b>	<b>0.02</b>	<b>0.47</b>	<b>2.50</b>	<b>0.05</b>
Age Structure	0.01	0.13	0.01	0.10	0.92
% Immigrant	-0.10	0.07	-0.34	-1.55	0.12
<b>Poverty</b>	<b>0.31</b>	<b>0.08</b>	<b>0.49</b>	<b>3.36</b>	<b>0.00</b>
<b>Model 2**</b>					
(Constant)	4.27	5.42	--	0.78	0.43
Gun Culture (south)	1.76	1.01	0.22	1.74	0.08
<b>Restrictive Laws</b>	<b>-4.50</b>	<b>1.51</b>	<b>-0.47</b>	<b>2.96</b>	<b>0.00</b>
% Urbanization	0.04	0.04	0.16	0.89	0.37
Age Structure	-0.01	0.26	-0.01	-0.05	0.96
% Immigrant	-0.08	0.13	-0.13	-0.61	0.54
<b>Poverty</b>	<b>0.36</b>	<b>0.17</b>	<b>0.28</b>	<b>2.01</b>	<b>0.03</b>

\*Model 1: Murder committed by firearm, R Square=0.51( $p<0.01$ )

\*\*Model 2: Death by firearm, R Square=0.53 ( $p<0.01$ )

Model 1 illustrates the findings that the best predictors of murders committed by firearms are in the following order: firstly, the importance of gun culture (1.52); secondly, the percentage of population living in urban areas (0.06); and thirdly, the percentage of persons living in poverty (0.31). More importantly, all things equal, the murder-by-firearms rate in southern states is higher than in any other sub-region. This variable is the strongest predictor in Model 1. In the second model, the best predictor for the total death by firearms is the restrictive regulations on guns (-4.50) and the percentage of persons living in poverty (0.36). More precisely, all things equal, states having stricter gun laws

experience lower total deaths by guns than states having more permissive regulations. The variable measuring restrictive gun laws is the strongest predictor in this model. Why is there this difference between the two models? On the one hand, it seems that murders committed with guns can be an expected outcome of a gun culture that believes in using guns or deadly force for protection or for settling conflicts. On the other hand, it seems that gun control laws have a broader impact on deaths by reducing the likelihood of suicides and deadly accidents.

Finally, a last series of analyses have been conducted to determine if there is a relation between gun culture, gun control regulation, and mass shootings. A first set of results shows that the number of mass shootings and the number of victims related to mass shootings are not associated with gun culture. However, correlation analysis shows that states having restrictive gun laws also experienced more mass shootings ( $r=0.45$ ;  $p<0.01$ ) and more victims of mass shootings ( $r=0.35$ ;  $p<0.01$ ). This counter-intuitive result can be explained by the nature of the data being used in this study and as a side effect of cross-state analysis. While the variable of mass shootings aggregates cases and victims over 30 years, the variable on gun control laws provides a current perspective (2010) on existing state legislation. One must keep in mind that laws are reactive in nature and that their enactment is rarely in sync with emerging societal problems.

In a cross-state approach, correlation analysis fails to capture the evolution of states laws over time and does not take into account what kind of gun control law was in effect at the time of a specific mass shooting. After the tragic incident at Sandy Hook Elementary School, the State of Connecticut as well as other legislatures in the country passed sweeping reforms on gun control laws that were not in effect before. It is most probable that the frequent occurrence of mass shooting in some states (over time) may have led to stricter gun control laws and not the other way around. Therefore, this interpretation makes the analysis on the relation between mass shooting and gun control laws a reversed association. In other words, the mass shootings are more likely to predict more restrictive gun control laws over the time than the laws are predictive of mass shootings.

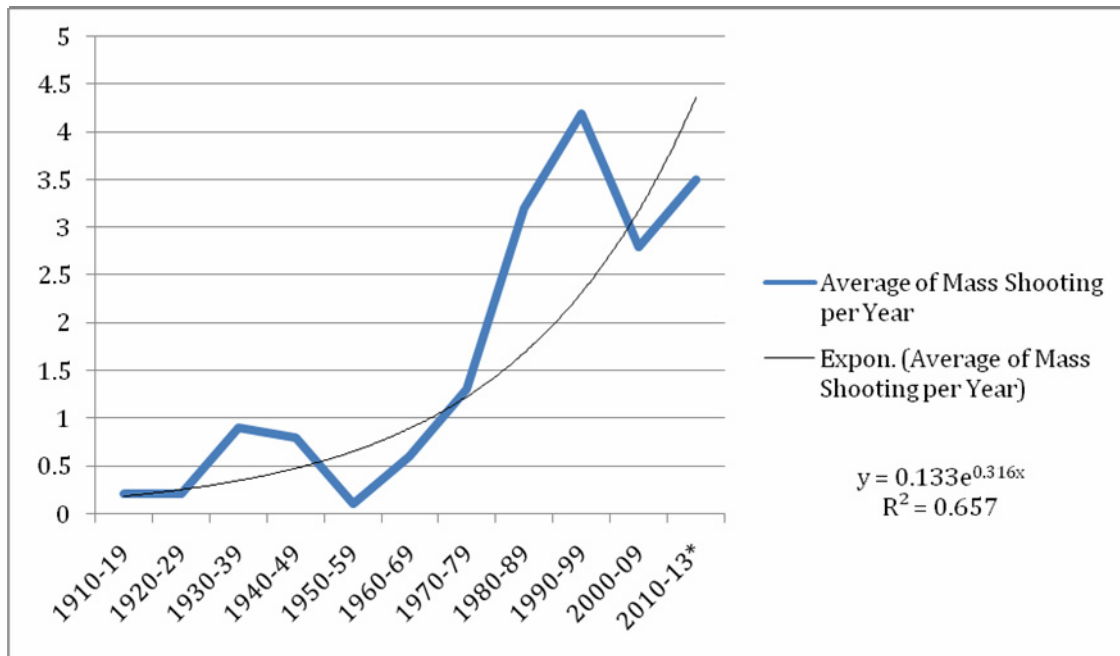
### **Micro Level: Case Comparison Analysis**

This section examines the mass shooting incidents that happened in the United States by comparing cases that have been identified in the media and in government reports. First, as it has been mentioned in the introduction, the frequency of public mass shootings has continually increased since 1910. Figure 2 shows that the increase follows a positive trend with an R-squared exponential curve fit of 0.66, representing an increase in the annual average mass shootings over the past ten and a half decades (2010- mid 2013). The data has been aggregated from the work of Duwe (2007) and Kessler (2013). The absolute number of incidents per decade was transformed into a per-year average to better represent the intensification of mass shootings in the last half of the decade of the graph (2010-2013).<sup>11</sup>

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<sup>11</sup>With 14 incidents over a period of four years, this absolute number was misleading compared to the number of mass shooting in the three past decades. The yearly adjustment better represents the trend of the mass shooting phenomenon, especially in accounting for the recent years.

**Figure 2: Annual Average of Mass Shooting Aggregated by Decade, 1910-2013**  
 (sources: Duwe 2007; Kessler 2013)



\*2010-13: Since the creation of this database in January 2013, 5 more incidents should have been added by the time this chapter was written.

An overview of the data provided by Duwe (207) and Kressler (2013) shows that ten years before the federal gun ban 19 mass shooting took place (1983 to 1994), that there were 16 incidents during the gun ban period (1995–2004), and that 27 mass shootings occurred after the ban expired (2005–2013). Despite the fact that these numbers are too small to conduct reliable statistical analysis, one can observe a steep difference between the gun ban period and the following period. Nevertheless, the real question is: do gun control laws reduce mass shootings? Focusing on the years between 1983 and 2013, a total of 78 cases have been identified, but five of them have been deleted due to inconsistencies and to the lack of information related to the various variables used in the analysis. In other words, analyses in this section will be based on a total of 73 cases. As mentioned in the methodology section, the cases that are used include incidents that resulted in least four casualties and that these were incidents where a firearm was the predominant tool in the murders. Also, a total of 13 incidents that can be described as *spree killing* have been included in the study because of the dynamics of the situations, which were closer to mass shootings.

A first set of descriptive analysis shows that mass shooting perpetrators were 35 years old on average and that their ages ranged from 13 to 66 years old. The vast majority of shooters are Caucasian and male (66% and 99% respectively). In 56% of the cases, signs of mental illness existed before the incidents occurred. It has been reported that 52% of the perpetrators committed suicide, that 17% were killed by police officers, that 30% were arrested, and that in only one case did a bystander stop the shooter by use of physical force (without a weapon). Regarding the weapons involved in these incidents, it has been established that in 59% of the cases, the perpetrators were carrying two or more firearms



and that assault rifles were used in 26% of the cases. In 76% of the cases, the firearms were acquired legally through stores or private sales. The vast majority of the mass shootings happened in a closed environment, such as schools (16%), workplaces (29%), and commercial buildings like restaurants, shopping malls, or shops (23%). Finally, the total number of victims is established at 1090. More precisely, these incidents have caused 576 fatalities and 514 injuries between 1983 and 2013.

A second series of analysis examines how the characteristics of the incidents impact the number of victims. First of all, a correlation analysis shows that the number of weapons used by perpetrators is positively correlated with the total number of victims ( $r=0.23$ ;  $p<0.05$ ). More importantly, the possession of two or more weapons – instead of only one – seems to be the threshold that generates stronger correlations with the total number of victims ( $r=0.30$ ;  $p<0.01$ ), deaths ( $r=0.28$ ;  $p<0.05$ ), and injuries ( $r=0.23$ ;  $p<0.05$ ). However, the analysis found no significant relation between the use of assault weapons and the number of victims, deaths, or injuries. Moreover, the ANOVA Analysis confirms that having access to multiple weapons is the best predictor of all categories of victims (total deaths and injuries). This result is revealing in regards to the debate related to gun control. The key finding here points out the fact that the type of weapon used may not matter as much as the overall capacity of fire power without reloading. Many incidents involved at least two semi-automatic pistols (with magazine clips that can contain 10 to 30 rounds with enlarged capacity clip) as well as an alternative long weapon like shotguns (containing between 5-8 rounds). In that very realistic example, the firing capacity – without recharging – is between 25 to 68 rounds, which are equal or superior to the capacity of an assault rifle (AR-15, AK-47, etc.), which usually has a minimum of 20 to 30 rounds in its magazine clip.

Also, further analysis shows that the state of mind of the perpetrators (mental illness) is not associated with the number of victims, the numbers of weapons, or the perpetrator outcome of the incident. In other words, killers who had prior signs of mental illness are no more destructive than shooters with no such medical diagnosis. Finally, the type of venue – mainly shootings that take place inside of buildings such as schools, factories, office buildings, or shopping malls – show higher numbers of victims than in open spaces – such as killing rampages taking place on streets, parking lots, apartment compounds, etc. This last finding point out another important factor related to mass shootings: situational characteristics related to the incident, such as when the mass shooting is taking place, where it is happening, and how the rampage is executed (improvised or planned). These factors are as important as the type of weapons used by perpetrators because such factors may have a direct influence on the number of potential targets available to shooters.

**Table 5. Homogeneity of Variance between the Gun Ban Period and Control Periods for Mass Shooting Incidents and Number of Victims (n=30)**

	Experimental	Control	F-test	Sig.
Incidents	1.80	2.61	0.74	0.40
Total victims	23.50	43.42	0.58	0.45
Casualties	11.60	21.71	1.25	0.27
Injuries	11.90	18.71	0.19	0.66

Finally, the last series of analysis scrutinizes the impact of gun bans on the number of mass shootings and victims between 1994 and 2004. In order to measure the effect of the legislation, the analysis uses a model based on two control periods - 10 years of observation before a ban (1983-1993) and 10 years after a ban (2004-2013) - against one experimental period of 10 years during the ban (1994-2003). Table 5 shows that during the period of the gun ban between 1994 and 2004 (experimental), there is an indication of a systematically lower number of per-year incidents, injuries, and casualties with lower total victims compared to non-ban periods (control), although these differences are assumed to be not statistically significant by the test. However, since we are not working with a sample but with all mass shootings that happened during a specific period, the importance of the statistical significance can be marginalized.

### **Discussion and Conclusion**

This study proposed to examine the merits of two central claims in the debate over gun control legislation in relation to mass shootings in the United States. The first claim is that gun violence is the result of a cultural appetite encouraged and validated by popular entertainment such as violent movies. Under that particular claim, gun enthusiasts suggest that firearms are not the problem but that rather people are (“guns don’t kill, people do”). Associated with this reasoning comes a series of proposed solutions mainly anchored in the deterrence theory (harsher sentences for criminals) and a physical prevention paradigm (more armed guards or armed citizens in public places – “good guys with guns”). The second claim that has been scrutinized suggests that the availability of firearms has an impact on gun violence and mass shootings. This claim suggests that restrictive firearms regulation can save lives by imposing background checks, stricter condition for access to firearms (e.g. mental health, required training, etc.), and banning specific weapons and/or features (clip magazine capacity).

This research has demonstrated throughout a series of analyses at the international and national levels, which shows that the best predictor of death by firearms is the possession of guns (gun ownership). In other words, gun access predicts death by guns; further, this result is trans-culturally consistent, meaning that this finding is true amongst 25 advanced democracies and 50 states in the United States regardless of the cultural background. As to the culture of violence and death by guns relationship claim, this is mainly invalidated at the international level but partially validated in the Southern region of United States by the murders by firearms rates. Also there is no connection between gun culture – or the absence of thereof - and the occurrence of mass shooting.

However, in the United States, the gun culture prevailing in the Southern region of the United States is associated with and predicts the rate of murders by firearms. On the other hand, both international and national multivariate analyses show that gun control legislation reduces overall fatalities related to firearms. This correlation is true for Canada and Australia, which adopted and maintained stricter gun control laws. The same finding is also true for the United States as it relates more directly to mass shootings. During the 10-year-long ban on assault weapons and large capacity magazines, total mass shootings, total victims and total injuries and fatalities were substantially lower than during the 10-year periods that preceded and succeeded the gun ban.

Thus, in terms of the implications for gun policy and regulation, a certain number of considerations can be drawn from these results. First, there is absolutely no evidence that more armed guards or armed citizens reduced or stopped any of the 73 mass shooting

studied. Only one case involved an unarmed bystander who intervened and tackled a shooter while he was reloading his weapons. Therefore, the claim that a preventative heroic action can be taken by an armed guard or citizens is pure speculation and does not resist the test of fact. Only in 17% of the cases were the shooters killed by police officers that too only after several victims and casualties. Between the beginning and the end of a typical killing rampage, the only interruption that makes the shooter pause is the need to reload or to search for new targets. Also, there is no evidence that harsher punishments will effectively deter mass shooters from executing their killing rampage. It has been clearly demonstrated that a vast majority of the shooters committed suicide or got killed by police officers during a gunfight. Harsher punishments will be totally irrelevant in most of the cases involving a shooter who is ready to die – 17% of them fought police to the death and 52% committed suicide.

However, these results show that a reduced firepower capacity– fewer firearms and therefore a lesser capacity to fire – is clearly associated with fewer victims. This result is true no matter what type of weapon is used by the shooters. In other words, the limitation of ammunition capacity saves lives more than targeting specific models of weapons. In the case of the semi-automatic assault rifle, the limitation of ammunition defeats the purpose of these weapons as a direct consequence. Another finding shows that a majority of shooters (56%) clearly had known mental illness and at lower percentage had domestic violence history or were involved in an intense divorce/custody battle. This result points out critical elements of stability to be assessed during background check procedures. In addition to criminal records, relevant mental health information and known background information by law enforcement should be included into the verification process to limit the access of firearms to at risk individuals based on these cumulative factors. Nevertheless, legislators should keep in mind that these numbers prove that more restrictive gun regulations will save lives above and beyond the issue of spontaneous mass shootings and can counterbalance the deadly effects of a violent gun culture.

## References

- Alzheimer, I., & Boswell, M. (2012). Reassessing the Association between Gun Availability and Homicide at the Cross-National Level. *American Journal of Criminal Justice*, 37(4), 682-704.
- Bellair, P. E., & Roscigno, V. J. (2000). Local Labor-Market Opportunity and Adolescent Delinquency. *Social Forces*, 78(4), 1509-1538.
- Bjelopera, J. P., Bagalman, E. S., Caldwell, W., Finklea, K. M., & McCallion, G. (2013). *Public Mass Shootings in the United States: Selected Implications for Federal Public Health and Safety Policy*. Washington DC: Congressional Research Service.
- Blais, E., Gagne, M.-P., & Linteau, I. (2011). L'effet des lois en matiere de controle des armes a feusur les homicides au Canada, 1974–2004. *Canadian Journal of Criminology and Criminal Justice*, 53(1), 27-61.
- Branas, C. C., Richmond, T. S., Culhane, D. P., Ten Have, T. R., & Wiebe, D. J. (2009). Investigating the Link Between Gun Possession and Gun Assault. *American Journal of Public Health*, 99(11), 2034-2040.
- Catalfamo, C. (2007) Stand your ground: Florida's castle doctrine for the twenty-first century. *Rutgers Journal of Law & Public Policy*, 4(3), 504-545.
- Chapman, S. & Hayen, A. (2008). Declines in Australian suicide: A reanalysis of Mcphedran and Baker. *Health Policy*, 88, 152-154.

- Chapman, S., Alpers, P., Agho, K., & Jones, M. (2006). Australia's 1996 Gun Law Reforms: Faster falls in firearm deaths, firearm suicides and a decade without mass shootings. *Injury Prevention*, 12, 365–72.
- Cohen, D. & Nisbett, R. E. (1994). Self-protection and the culture of honor: Explaining southern homicide. *Personality and Social Psychology Bulletin*, 20, 551–567.
- Cummings, P., Koepsell, T. D., Grossman, D. C., Savarino, J. & Thompson, R. S. (1997). The association between the purchase of a handgun and homicide or suicide. *American Journal of Public Health June 1997*, 87(6), 974–978.
- Duwe, G. (2007). *Mass Murder in the United States: A History*. Jefferson, North Carolina: McFarland.
- Elkins, Z. (2012). Rewrite the Second Amendment. The New York Times. Retrieved on 8<sup>th</sup> August 2013 from [http://www.nytimes.com/2013/04/05/opinion/rewrite-the-second-amendment.html?ref=opinion&\\_r=0](http://www.nytimes.com/2013/04/05/opinion/rewrite-the-second-amendment.html?ref=opinion&_r=0).
- Faria M. A. (2013). Shooting Rampages, Mental Health, and the Sensationalization of Violence. *Surgical Neurology International*, 4, 16.
- Felson, R., & Pare, P. P. (2010). Gun Cultures or Honor Cultures? Explaining Regional and Race Differences in Weapon Carrying. *Social Forces*, 88(3), 1357–1378
- Guns and Freedom? Comparative Results from 59 Nations. *Texas Review of Law and Politics*, 1. Retrieved on 8<sup>th</sup> August 2013 from SSRN: <http://ssrn.com/abstract=1090441> or <http://dx.doi.org/10.2139/ssrn.1090441>
- Haggerty, K. D., & Ericson, R. E. (2001). The Military Technostructures of Policing. In P. B. Kraska (ed.), *Militarizing the American Criminal Justice System*, (pp. 43–64). Boston: Northeastern University Press.
- Kellermann A. L., & Rivara, F. P. (2013). Silencing the Science on Gun Research. *Journal of the American Medical Association*, 309(6), 549–550.
- Kessler, G. (2013). Bill Clinton over-the-top “fact” on mass shooting. *The Washington Post*. Retrieved on 8<sup>th</sup> August 2013 from [http://www.washingtonpost.com/blogs/fact-checker/post/bill-clintons-over-the-top-fact-on-mass-shootings/2013/01/10/7040d61e-5b7a-11e2-9fa9-5fbdc9530eb9\\_blog.html](http://www.washingtonpost.com/blogs/fact-checker/post/bill-clintons-over-the-top-fact-on-mass-shootings/2013/01/10/7040d61e-5b7a-11e2-9fa9-5fbdc9530eb9_blog.html).
- Kleck, G. (2009). Mass Shootings in Schools. The Worst Possible Case for Gun Control. *American Behavioral Scientist*, 52(10), 1447–64.
- Kopel, D. B., Moody, C. E., & Nemerov, H. R. (2008). Is There a Relationship between Guns and Freedom? Comparative Results from 59 Nations (December 23, 2008). *Texas Review of Law and Politics*, 13. Retrieved on 8<sup>th</sup> August 2013 from SSRN: <http://ssrn.com/abstract=1090441>.
- Kraska, P. B. (2002). *Militarizing the American Criminal Justice System*. Boston, Northeastern University Press.
- Krivo, L. J., & Peterson, R. D. (2004). Labor Market Conditions and Violent Crime Among Youth and Adults. *Sociological Perspectives*, 47, 485–505.
- Lee, M. R., & Slack, T. T. (2008). Labor market conditions and violent crime across the metro-nonmetro divide. *Social Science Research*, 37(3), 753–768.
- Leigh, A., & Neill, C. (2010). Do Gun Buybacks Save Lives? Evidence from Panel Data. *American Law and Economics Review*, 12(2), 509–557.
- Lemieux, F., & Dupont B. (dir) (2005). *La militarisation des appareils policiers*. Québec: Presses de l'Université Laval.
- Mayors Against Illegal Guns (2013). Analysis of Recent Mass Shootings.

- McPhedran, S., & Baker, J. (2011). Mass shootings in Australia and New Zealand: A descriptive study of incidence. *Justice Policy Journal*, 8(1), 21.
- Narayan, P. K., & Smyth, R. (2004). Crime rates, male youth unemployment, and real income in Australia: Evidence from Granger causality tests. *Applied Economics*, 36, 2079–2095.
- Newton, G. D & Zimring, F. E. (1969). 'Firearm Licensing: Permissive v Restrictive.' *Firearms & Violence in American Life: A Staff Report submitted to the National Commission on the Causes and Prevention of Violence*. Washington, DC: US Government Printing Office.
- Puddifoot, J. E. & Cooke, C. A. (2002). Representations of Handguns by Young Adults in the US and UK. *Journal of Community & Applied Social Psychology*, 12, 256–270.
- Rodríguez, A. A., & Hempstead, K. (2011). Gun control and suicide: The impact of state firearm regulations in the United States, 1995–2004. *Health Policy*, 101, 95–103.
- U.S. Government Accountability Office (2012) Gun Control. States' Laws and Requirements for Concealed Carry Permits Vary across the Nation. Report GAO-12-717. Retrieved on 8<sup>th</sup> August 2013 from <http://www.gao.gov/assets/600/592552.pdf>.
- Weaver, Z. L. (2008). Florida's "Stand Your Ground" law: The actual effects and the need for clarification. *Miami Law Review*, 63(1), 395–430.
- Wiebe, D. J., Krafty, R. T., Koper, C. S., Nance, M. L., Elliott, M. R., & Branas, C. C. (2009). Homicide and geographic access to gun dealers in the United States. *BMC Public Health*, 9, 199.