Gun Control: Did the United States and the Commonwealth Nations Miss their Target?

By

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Chapter 1: Introduction

Concern with the potential linkage between private access to firearms and violent crime has driven the implementation of gun control as a political issue. Proponents for gun control legislation posit that firearms restrictions invariably result in fewer deaths, while advocates for gun rights insist that gun control does not affect determined criminals. Beginning in the late 1980s, reactions to tragic rampage shootings have resulted in numerous strict gun control measures being implemented in the major English speaking nations of the world. These measures were instituted under the logic that if personally owned firearms were more strictly controlled, homicide occurrences would decrease.

The United States of America posts one of the higher rates of homicide out of most all industrialized nations in the world (Corzine 2000, 153). It is widely held that the greater access to firearms in the United States, coupled with relatively relaxed ownership requirements contributes to this high rate of homicide (Dugan 2001, 1094). In 2002, 63.4% of homicides within the United States were committed by criminals armed with a firearm (Federal Bureau of Investigation Annual Report 2002, 23).

Further, the United States has a larger private civilian stock of firearms than most other industrialized nations, with calculations suggesting that there were 286 to 310 million privately owned firearms in the hands of citizens of the United States in 2009 (Krouse 2012, 8). These facts have led many to speculate that the access to firearms in the United States is at least partially responsible for the higher rates of homicide occurring annually (Killias 1993, 12; World Health Organization 2001, 17).

Since 2007, there has been an increased frequency of rampage shootings in the United States. These events have led some to compare the numbers of shooting homicides in Canada, the United Kingdom (England, Wales, Scotland and Northern Ireland), and Australia to those of the United States. Noting that these countries all have drastically lower rates of firearm homicide, and varying degrees of stronger gun control laws, many have maintained that limiting the access or preventing citizens from owning certain weapons altogether will substantially reduce the homicide rate (Clarke and Mayhew 1998, 106).

Photo source: www.nationalreview.com

News anchors and shocked citizens of the United States have claimed that the answer to gun violence has already been adopted by our Commonwealth neighbors, and demanded they be brought to our own shores. Each of the Commonwealth Countries has its own unique form of firearms legislation, and each is more restrictive than the legislation of the United States. Critics of the U.S. gun laws claim that the gun control measures adopted in each of these nations are

responsible for the lower rates of homicide, and that the United States would benefit from adopting similar sorts of laws. But while there is no speculation that these countries enjoy a lower homicide rate than the United States, just how the homicide rates fell in relation to the implementation of gun control laws is not entirely clear. A cross-national comparative analysis of all four nations has never been conducted.

Chapter Two: The Literature Review

The purpose of this literature review is three-fold. First, it explains what homicide is and how measurements are recorded, as well as clarifies the differences between gun deaths and homicide. Second, it discusses previous studies regarding homicide trends, and studies that examine sociological factors of homicide, including potential influences on their perpetrators. Lastly, it provides a history of atrocities that led to gun control legislation enacted in each country as a means to reduce homicide. The chapter concludes with the formal hypotheses relating gun control legislation to homicide rates.

What is Homicide? How is it Measured?

Homicide is perhaps the greatest tragedy that any society must face. In addition to the anguish that accompanies the loss of life, homicide imparts severe societal impacts; it directly affects property values and neighborhood reputations; it undermines police efficacy, and is a huge economic drain by way of prosecution, incarceration and health care costs (Shapiro and Hasset 2012, 18). Homicide is not a synonym for murder, however. The connotation of homicide is not based in any legal or moral means, and homicide simply refers to the act of killing another human. Societies generally recognize two forms of homicide, those being either:

- Criminal Homicide: These include (a) Murder and Non-negligent Manslaughter. These are willful acts of killing a person by another, and (b) Manslaughter by willful negligence. The latter is the resultant death of a person by the gross negligence of another, such as causing a fatal collision while driving under the influence of alcohol or drugs.

- Justifiable Homicide: This figure represents deaths that result in the killing of a felon by law enforcement in the line of duty; or the killing of a person engaged in the commission of a felony by a private citizen[1] (UCR handbook 2004, 15-18)

Homicide is often measured in government documents by aggregate counts and the rate of incidence.

Homicide Count: The homicide count refers to the actual number of homicides reported by police agencies of a host country. This number specifically refers to the count of criminal homicides and negligent manslaughter. It is occasionally referred to simply as "murders". Justifiable homicides are not counted in this figure, and are reported separately.

Homicide Rate: The homicide rate of each of the nations is measured by the homicide count mathematically manipulated to reflect a number-of-deaths per 100,000 persons. The rate is calculated by dividing the number of homicides by the total population of the nation; the result is then multiplied by 100,000. This yields the rate of homicide per one-hundred thousand persons.

The Wrong Question?

It is important to consider that the terms 'homicide count' and 'homicide rate' refer to acts of criminal homicide. In each nation, justifiable homicide counts are presented separately from criminal homicide counts (FBI UCR; Statistics Canada; The Home Office of the United Kingdom; Australian Institute of Criminology, 2014). While these justifiable homicides are not

1 Deaths of persons due to their own negligence, suicides, accidental deaths not resulting from gross negligence, and traffic fatalities are not included in this category.

used in the count to reflect the homicide rates of the representative nation, each nation does compile and report a total number of deaths that occurred by means of a firearm, or 'gun deaths', as well as 'firearm mortality rates' that does include them. See "Injury by Firearms" in Table 2.1, taken from the Centers for Disease Control report on number of deaths in the National Vital Statistics report for 2010. It lists 31,672 persons died by injury from firearms. While this figure is accurate, these are not all victims of criminal homicide. Further, the CDC National Vital Statistics report does independently list a figure for "Assault (homicide) by discharge of firearms", but this figure *also* includes justifiable homicides. (Vol. 61. No. 4 National Vital Statistics Reports 2013, 40)

Table 2.1: Number of deaths from 113 selected causes, Enterocolitis due to Clostridium difficile, drug-induced causes, alcohol-induced causes, and injury by firearms, by age: United States, 2010-Con.

[The asterisks (*) preceding the cause-of-death codes indicate that they are not part of the *International Classification of Diseases, Tenth Revision* (ICD–10), Second Edition; see Technical Notes]

Cause of death (based on ICD–10, 2004)	All ages	Age group (years)											
		Under 1 year	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over	Not stated
Assault (homicide) by other and unspecified means and their sequelae . . . . . (*U01.0–*U01.3,*U01.5–*U01.9,*U02, X85–X92,X96–Y09,Y87.1)	5,181	300	342	96	789	927	800	900	532	245	160	78	12
Legal intervention . . . . . (Y35,Y89.0)	412	–	1	1	74	102	108	70	46	9	1	–	–
Events of undetermined intent. . . . . (Y10–Y34,Y87.2,Y89.9)	4,908	108	82	67	456	806	932	1,295	726	195	136	102	3
Discharge of firearms, undetermined intent. . . . . (Y22–Y24)	252	–	3	14	53	54	26	44	33	10	10	5	–
Other and unspecified events of undetermined intent and their sequelae . . . . . (Y10–Y21,Y25–Y34,Y87.2,Y89.9)	4,656	108	79	53	403	752	906	1,251	693	185	126	97	3
Operations of war and their sequelae . . . . . (Y36,Y89.1)	9	–	–	–	–	2	–	–	4	–	–	3	–
Complications of medical and surgical care. . . . . (Y40–Y84,Y88)	2,490	22	19	22	40	61	122	242	418	499	629	416	–
Enterocolitis due to *Clostridium difficile* . . . . . (A04.7)[1]	7,298	2	–	4	6	6	27	149	426	1,063	2,462	3,153	–
Drug-induced deaths[2,3].	40,393	23	43	63	3,667	7,864	8,923	11,935	5,911	1,137	520	303	4
Alcohol-induced deaths[2,4]	25,692	1	–	–	152	899	3,076	8,612	7,986	3,420	1,250	291	5
Injury by firearms[2,5].	31,672	11	71	298	6,201	6,172	4,790	5,380	4,039	2,316	1,664	723	7

– Quantity zero.

. . . Category not applicable.

[1]Included in "Certain other intestinal infections (A04,A07–A09)" shown above. Beginning with data year 2006, Enterocolitis due to *Clostridium difficile* (A04.7) is shown separately at the bottom of tables showing 113 selected causes and is included in the list of rankable causes, see Technical Notes.

[2]Included in selected categories above.

[3]Includes ICD–10 codes D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.1–F11.5, F11.7–F11.9, F12.1–F12.5, F12.7–F12.9, F13.1–F13.5, F13.7–F13.9, F14.1–F14.5, F14.7–F14.9, F15.1–F15.5, F15.7–F15.9, F16.1–F16.5, F16.7–F16.9, F17.3–F17.5, F17.7–F17.9, F18.1–F18.5, F18.7–F18.9, F19.1–F19.5, F19.7–F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2–J70.4, K85.3, L10.5, L27.0–L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.1–R78.5, X40–X44, X60–X64, X85, and Y10–Y14. Trend data for Drug-induced deaths, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

[4]Includes ICD–10 codes E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, and Y15. Trend data for Alcohol-induced deaths, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

[5]Includes ICD–10 codes *U01.4, W32–W34, X72–X74, X93–X95, Y22–Y24, and Y35.0. Trend data for Injury by firearms, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

It is these figures - gun deaths and firearms mortality rates, that are mentioned in a 2001 World Health Organization report (WHO 2001, 17; FICAP 2011, 5). Reporting the total gun deaths without clarification is disingenuous, as it does not accurately reflect shootings that occur with malicious intent. 'Gun deaths' include cases of accidental discharge, justifiable shootings, and suicides committed with firearms. In fact, it is suicide that overwhelmingly composes the majority of gun deaths in the United States (FICAP 2011, 22). According to the CDC data for 2010, of the 31,672 gun deaths that occurred that year, 19,392 were suicides, with an extra 252 gun deaths of un-determinable intent and 606 accidental discharges (Murphy et al. 2013, 57). This demonstrates that 20,250 of the 31,672 – 64%, were not the result of criminal homicide, and therefore 'gun deaths' and 'firearm mortality rates' serve as a poor measurement to evaluate the effectiveness of gun control legislation in regards to a homicide rate.

The Profile of a Perpetrator:

The study of homicide rates and those who commit homicide has long fascinated researchers. Efforts to first develop international crime statistics took place in Belgium in 1853, and later in 1872 in London. Both attempts were never realized, as scholars were apprehensive that they could not achieve universal reporting standards at the time (LaFree 1999, 125). The matter has always intrigued researchers because homicide is considered to be one of the more reliable and valid forms of data available for international comparative study relative to other cross-national data sets, and even other crime statistics for that matter (LaFree 1999, 126). Non-homicidal violent crime rates, such as sexual assault, depend heavily on the victim reporting the crime to police (Shapiro & Hasset 2012, 4), while it is reasonable to assume homicide is much more likely to be reported to law enforcement. Police officials are more likely to record the

details of homicides, and the law enforcement establishments of nations allocate the most resources to solving homicides[2] (LaFree 1999, 126).

While interest on homicide rates has existed for quite some time, it was not until 1949 that the United Nations convened a group of scholars to lay the foundation of a plan for the collecting of international crime statistics. This group recommended that efforts should be focused to adopt a uniform classification of offenses, and those be limited to three major offenses: homicide, aggravated assault, and combinations of robberies and burglaries (LaFree 1999, 125).

By this time, observations on the types of people who were most commonly arrested for homicide had revealed that they all exhibited a similar set of characteristics. The overwhelming majority of those that commit homicide have been arrested for crimes before, suffer from psychological or psychotic disorders, or both (Kates and Mauser 2013, 666). Consequently, criminal homicide is most often committed by members of society who are deviant citizens, usually with histories of violent criminal acts or dangerous behaviors, substance abuse, and domestic abuse (Kates and Mauser 2013, 666).

In the United States, only 15% of Americans over the age of 15 have any sort of arrest record (Cooney 1997, 381), while almost 90% of adults arrested for criminal homicide have a history of prior criminal arrests, averaging a career of at least six years and including four felonious arrests (Kleck & Kates 2001, 20). Psychological studies conducted on juveniles who had committed acts of homicide revealed that 80% were diagnosed as psychotic or exhibited psychotic behaviors (Meyers and Scott 1998, 161-162). This suggests that these malcontent

2 Every country listed has a provision to include discovered homicides that occurred in years prior to the total number of homicides for the year that the death was discovered (Statistics Canada, 2014).

members of society, as the primary offenders of homicide, should not be permitted any access to any deadly instrument. It also leads one to suppose that it is unrealistic to expect any additional restrictions or laws on firearms to deter these criminals any more so than the existing laws they characteristically violate now (Kates and Mauser 2013, 669).

Previous Studies of Homicide Predictors:

Numerous researchers of sociology and criminology have studied the homicide rates of national and cross-national data sets extensively following World War II. Scholars have hoped to locate predictor variables with possible causal relationships in an effort to discern which factors contribute to societal homicide rates.

Gabrielle Salfati (1999) conducted a study to evaluate the hypothesis that consistencies can be found in the way homicidal perpetrators behave. She speculated that the samples of homicide could be differentiated as either expressive or instrumental, depending on the relation the victim had to the offender. Consistencies that could be made evident, specific to each homicide type, would also reveal interpersonal strategies that would coincide with an offender's past experiences and mentalities. These data could then be used to establish a scientific platform to link how an offender acted at a crime scene could be used to search for the type of person responsible.

Salfati analyzed a sample of 247 cases of homicide in the U.K. that occurred in a twenty-year period. This sample was scaled using a multidimensional Smallest-Space-Analysis. The SSA test measures relationships by recording the co-occurrences of variables within a hypothesis. The more often that variables co-occur during incidents of homicide, then the closer

will the points be that represent the variables. The results proved that homicides could be differentiated in types that were expressive or instrumental.

Expressive act homicides exhibited characteristics of premeditation, and suggests that the perpetrator likely had previous experience with violent encounters. The killing itself is the goal of the expressive murderer, and therefore the offender must know the victim to some extent (Salfati 1999, 100). Instrumental act homicides exhibit characteristics of surprise; that the murder itself is not necessarily the intended goal of the crime, but rather is a consequence of the crime being committed. Instrumental offenders are attempting to attain an ulterior goal such as money, and usually do not know their victims (Salfati 1999, 105).

This research is valuable in that Salfati noted the characteristics that co-occurred in each type of murderer. Characteristics found among expressive type homicides had perpetrators who had previously committed violent crimes, had committed homicide previously, and had established psychological and/or psychiatric problems (Salfati 1999, 105). Conversely, the characteristics that co-occurred in the instrumental type murderers were readily discernable from the expressive types. These variables were composed of previous convictions of robbery and theft, as well as a history of unemployment. Salfati goes so far to say "The fact that these predictors co-occurred across these cases of homicide is not surprising as most criminals are unemployed, and this unemployment may be associated with financial-gain crimes. Another co-occurring variable is the variable of previous imprisonment, which is concordant with seasoned criminals having several counts of offenses" (Salfati 1999, 106).

The extreme fluctuations in the homicide rate of the United States during the 1980s and 1990s aroused the curiosities of Alfred Blumstein and Richard Rosenfeld (1998). They assumed that a number of variables could potentially coincide with the unstable trend in homicide rates,

apropos to increase or decline. Their interest was determining whether societal factors occurring during this time period had a causal effect on homicidal rates.

Blumstein and Rosenfeld (1998) observed the pertinent data relevant to their hypothesized variable and traced the trajectory of these predictor's occurrence relative to the homicide rate for their projected time analysis. Their observations allowed them to speculate that each variable could potentially serve a causal effect for the period of increase or decrease that it was observed in. They noticed that the arrest rates for homicides committed by persons in the age group of 15-25 more than doubled in the time between 1985 and 1992, while the rates fell for persons 30 and older by about 25% (Blumstein & Rosenfeld 1998, 1180). There was also a correlative increase in handgun use among this age group while handgun homicides also increased (Blumstein & Rosenfeld 1998, 1192).

They found that more homicides tend to occur in heavily populated urbanized locations rather than rural ones, with New York providing 9% of the total homicide rate for the United States in 1991. And that the cities of New York, Chicago, Los Angeles, Detroit, Philadelphia, Washington D.C., New Orleans, Baltimore, Houston and Dallas accounted for exactly a quarter of the homicides that occurred in the United States in 1996 (Blumstein and Rosenfeld 1998, 1202).

The pair provided hypothetical variables responsible for the decline of homicides during the observation period as well, with one being a demographics change, such as a young population that aged out of the high-crime risk age by the 1990s. (Blumstein and Rosenfeld 1998, 1188). Another variable was economic expansion, specifically a drop in unemployment. Their observations demonstrated that when economic gains were shared by racial minorities, teenagers, and high school dropouts; groups inexplicably at risk for criminal behavior, homicide

rates dropped. These periods of economic expansion coincided with periods that the homicide rates were in decline. (Blumstein & Rosenfeld 1998, 1198).

Most explanatory studies examining predictor correlations in the cross-national studies on homicide rates have taken place in the last 50 years (Nivette 2011, 1; Eisner 2012, 14). One of the most cited studies was written by Gary LaFree (1999), who published a narrative review of 34 international studies that had been published since 1965 to 1997. His intent was to review post World War II studies regarding homicide in the effort to locate trends in predictors that could have a positive association with homicide rate. The studies he reviewed collected data from the International Criminal Police Organization (Interpol), the World Health Organization (WHO), The United Nations, Human Relations Area Files (HRAF) and the Comparative Crime Data File (CCDF) (LaFree 1999, 125).

LaFree made six hypotheses from his review about which risk factors he believed predicted homicide rates. Out of the thirty-four studies he reviewed, he found that economic development and industrialization was one of the most common variables. He found these factors to have a negative relationship with homicide rate; that the economy of a country would improve, the homicide rate would correspondingly drop. The most consistent result he observed in the studies was relative income deprivation, or income inequality (LaFree 1999, 142). Measuring the Gini coefficient, LaFree found a strong positive relationship between higher levels of income inequality and higher homicide rates. He observed contradicting evidence concerning his hypotheses that population structure, urbanization and unemployment have a positive association with a nation's homicide rate (LaFree 1999, 141). LaFree does comment that, among other factors, several individual factors that made up his predictor population are associated with

higher homicide rates as well, such as linguistic heterogeneity, population growth in general, and the proportion of a population aged 15-24. (LaFree 1999, 142).

Amy Nivette (2011) observed that all cross-national studies on homicide had presently been narrative reviews. She expounded on LaFree's (1999) observation that, due to the limit of information available at the international level, predicting variables often had to be indicators for more than one theory of causation (Nivette 2011, 5). While the findings in these studies were important, there was no way to determine through narrative review how much of an impact such methodological biases have on the outcome variables, and could affect the predictor being tested (Nivette 2011, 5).

Nivette's (2011) research was the first that attempted to statistically analyze the content of cross-national empirical research, which is surprising considering the declared importance of comparative data by many nations. Her meta-analysis demonstrated that this kind of study is more efficient when research findings are organized to account for slight differences in collection techniques, data sources and definitions to provide solid information related involving the size and direction of common effects. Nivette's (2011) goals were to (a) assess the mean effect sizes for cross-national predictors of homicide, (b) determine the impact of methodological variations on study outcomes, and (c) evaluate the relative strength of sociocultural vs. structural predictors (Nivette 2011, 4).

Some of Nivette's (2011) findings were in accord with LaFree's previous observations. The meta-analysis confirmed that income inequality is in fact a strong predictor for elevated homicide rates, as well as countries that have higher degrees of economic development tend to have lower homicide rates. Predictors such as age structure 15-24, poverty, ethnic composition,

and divorce rate all emerged as strong, positive predictors that correlated with homicide rates (Nivette 2011, 17).

Numerous studies have assumed, assessed and explored the relationship between income inequality and homicide rates, though the findings have largely been inconsistent and had failed to reach a consensus concerning the association between the variables. Kovandzic, Vieratis and Yeisley (1998) observed that no study had analyzed data published after 1980 that regarded income inequality, poverty, and homicide (Kovandzic et al. 1998, 572). As there has been substantial changes in the economic and social conditions since 1980 when these studies concluded, it is theorized that reanalyzing these data could reveal a stronger relationship (Kovandzic et al. 1998, 569).

The decision of Kovandzic et al. to examine homicide rates with cities as the unit of measure lies in the argument that these cities are the most homogenous units, usually displaying a higher degree of variability in homicide rate, and that homicides primarily occur in large cities (Kovandzic et al. 1998, 570). Their theories were based in the conditions of absolute and relative deprivation. Evidence further suggests that under conditions of relative and absolute deprivation, social values that espouse violence can be conveyed to successive generations, either within families or multiple contacts within communities. They further claim that it is "heightened levels of angry aggression produced by the urban environment, poverty, discrimination and isolation experienced by the 'truly disadvantaged' that create such violent subcultures" (Kovandzic et al. 1998, 572).

In absolute deprivation, one perceives violence as one of the few options available to those who do not possess the economic resources necessary to cope with the stresses of daily life. Crime provides a means to gain money for members of society that are subject to long-term

unemployment or under-employment. Kovandzic et al. argues that absolute deprivation "may well have effects on the psychological well-being of 'truly disadvantaged'… that the totality of the experience of living in a violent and distressed community may generate additional anger, arousal and uncertainty, thus multiplying the types and frequency of situations that may lead to violence" (Kovandzic et al. 1998, 571).

Relative deprivation occurs when individuals aim to raise their socio-economic status relative to those around them in their communities and the population at large. When presented with the inequality of legitimate opportunities to elevate one's status, certain individuals resort to crimes to achieve their desired cultural status. "For example, rising inequality may motivate some individuals to take part in the illegal drug trade, which is associated with high rates of violent crime, particularly when high participation rates increase competition for territory" (Kovandzic et al. 1998, 583).

Kovandzic et al. perfomed multiple regression analysis for the total homicide rate on three measures of income inequality; poverty, income inequality, and a control variable of unemployment. They also included other population measures frequently used in other analyses, those being: population change, population density, and the percentage of population that is divorced. Also included was the percentage of a population that is African American, as well as a southern regional variable, as previous studies suggested a subculture of violence exist within these variables (Kovandzic et al. 1998, 583).

Inequality was measured by the Gini coefficient, but this coefficient was acknowledged to be unable to detect changes in the tail end of income distribution. To address this, Kovandzic, Vierait and Yeisley had to develop a new mechanism to measure inequality that (a) compared the ratio of the income of the lowest twenty percent of families to that of the highest twenty percent

and (b) the share of income received by the top twenty percent. These figures mirror the distribution of income in a population and equate developing the percentage of the area beneath the income distribution curve that falls within the high/low ranges.

Poverty is measured respective to the Social Security Administration's poverty line in order to preserve comparability with prior studies using the same measure. Their reasoning also supported the fact that the Social Security Administration accounts for family structures that make it more of an absolute measure (Kovandzic et al. 1998, 582). The results of the test are displayed in Table 2.2.

Table 2.2: Total Homicide Rates (1989-1991) Regressed Against Three Measures of Income Inequality

Variable	*b*	Beta	*t* Ratio	VIF	*b*	Beta	*t* Ratio	VIF	*b*	Beta	*t* Ratio	VIF
Gini Coefficient	3.66*	.188	3.25	2.49	—	—	—	—	—	—	—	—
Inequality Ratio	—	—	—	—	.033*	.142	2.18	3.06	—	—	—	—
Quintile 5	—	—	—	—	—	—	—	—	.033*	.143	2.65	2.14
Poverty	.021*	.147	2.13	3.55	.025*	.173	2.35	3.90	.027*	.187	2.83	3.21
Unemployment	.086*	.215	4.22	1.93	.081*	.204	3.95	1.92	.084*	.210	4.10	1.93
Percent Black	.023*	.425	8.12	2.04	.022*	.418	7.85	2.05	.024*	.444	8.34	2.07
South	.156	.077	1.73	1.47	.163	.080	1.76	1.50	.125	.062	1.31	1.61
Divorce Rate	.0005*	.096	2.29	1.31	.0005*	.107	2.53	1.30	.0005*	.098	2.31	1.31
Percent Young	.003	.013	.336	1.20	.003	.014	.335	1.22	.002	.007	.179	1.19
Inverse Population	−.900*	−.268	−6.29	1.35	−.916*	−.273	−6.24	1.38	−.889*	−.265	−6.06	1.40
Log Density	−.030	−.023	−.445	1.91	−.021	−.016	−.310	1.91	−.029	−.022	−.427	1.91
Pop. Change 80–92	.001	.037	.778	1.66	.0009	.025	.522	1.65	.001	.032	.668	1.66
City Share SMSA	−.338	−.085	−1.81	1.65	−.309	−.078	−1.60	1.69	−.339	−.085	−1.80	1.65
Constant	−.052				.950				−.128			
Adj. R^2	.767				.744				.747			

* Significant at $p < .05$.

Source: The Structural Covariates of Urban Homicide: Reassuring the Impact of Income Inequality and Poverty in the Post-Reagan Era. Tomislav Kovandzic, Lynne Vieraitis, Mark Yeisley, 1998.

The data revealed that there existed a significant, positive effect of income inequality and poverty on homicide rate. While previous studies resulted in varying findings for these two variables, the interpretation of Kovandzic et al. is that inequality and poverty have independently

significant, positive effects on homicide rates in all three measures of inequality. Likewise, the unemployment variable also shows a significant, positive effect on homicide rates. Unemployment rate has generally been associated to not have a significant positive effect on homicide rates in previous studies.

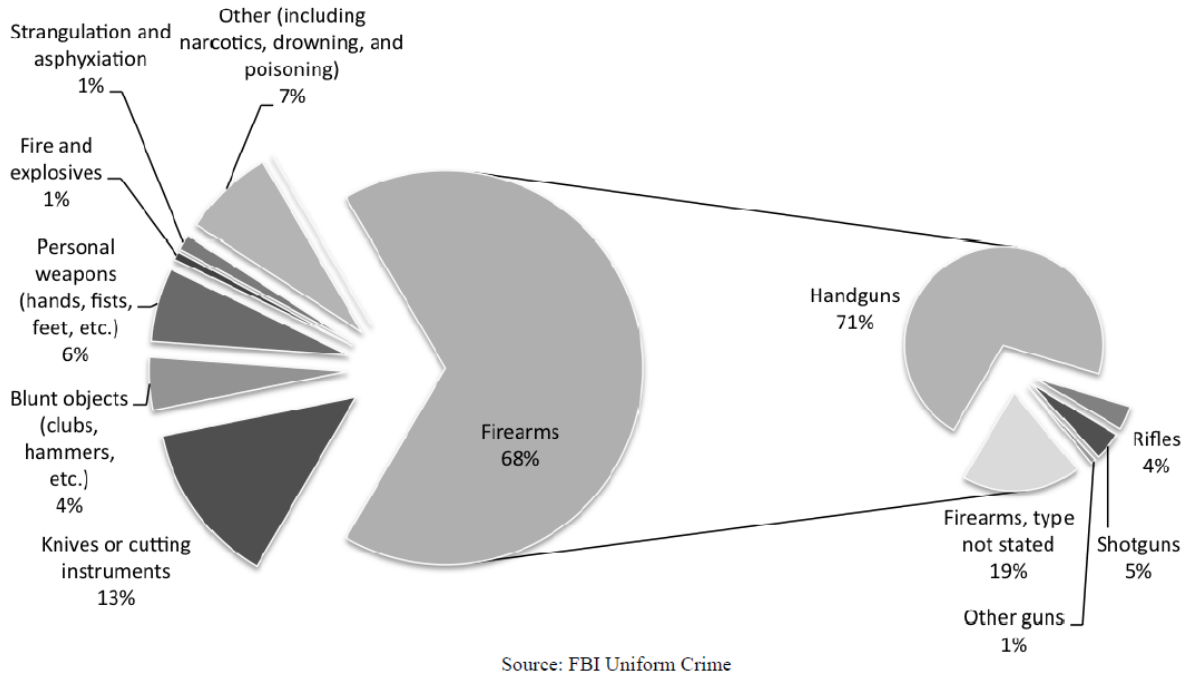
The percentage of divorced population also proved significant. The finding is consistent with previous studies. The percentage 'young persons' was not found to be a significant predictor in this study, which is not consistent with previous findings. The strongest predictor of homicide rate in this study is actually 'percentage black', consistently across every measure. Kovandzic et al. claims that this could be indicative of the "subculture of violence" interpretation, or could simply reflect the effects of economic deprivation typical of truly disadvantaged neighborhoods that African Americans tend to live in (Kovandzic et al. 1998, 586).

Methods Addressing Firearm Homicide and Why They Were Adopted:

The fact that there is a relationship between the availability of weapons and their use in homicidal acts is well established. Sixty-three percent of homicides in the United States in 2002 were carried out with criminals using firearms (Kovandzic et al. 2005, 1). Firearms were used in the commission of 68% of homicides in 2008, with handguns alone making up 71% of firearms homicides. See figure 2.1, below.

Figure 2.1: Homicide Weapons by Type – U.S., 2008

In 2008, firearms were used in 68% of all homicides. Handguns accounted for approximately 48% of the total homicides and approximately 71% of all firearm homicides. By comparison, shotguns were used in 5% of firearm homicides and rifles were used in 4% of firearm homicides.



Source: FBI Uniform Crime (UCR)

Figures such as these, in addition to incidents of rampage shootings, has led to the politicization of gun control measures in response to the logical conclusion that access to firearms has a causal relationship with rates of homicide in a nation (Hemenway & Miller 2000, 998). Any exact causal relationship between firearms ownership and homicide rates has never been identified, however (Kates & Mauser 2013, 693; Kovandzic et al. 2005, 39).

Nevertheless, gun control measures have been enacted in every nation mentioned in this literature review, with proponents claiming that even a small but discernible effect on homicide rates justifies the restriction or prohibition of firearms in a society (Cook & Ludwig 2003, 24). While restrictions on firearms already were in existence in the United States, Canada, the U.K.

and Australia, it was the increased levels of violence in the 1980s and 1990s, along with the shock of rampage shooters during these periods that resulted in sweeping increases in firearms controls.

On August 19, 1987, twenty-seven year old Michael Ryan shot and killed sixteen people, including his mother, and wounded fifteen others in Hungerford, England, before committing suicide. Ryan was an unemployed laborer who lived with his mother. Armed with two semi-automatic rifles and a handgun, Ryan fired his first rounds in Savernake Forest outside Hungerford, killing Susan Godfrey, before he calmly wandered into the town. Indiscriminately selecting his victims before committing suicide, Ryan terrorized Hungerford for six hours before barricading himself in a classroom. Little documentation exists about Ryan beyond what was reported in British news, and no known motive exists for Ryan's actions. Dr. John Hamilton, medical director for the Berkshire Prison for the Criminally Insane, and James Higgins, consultant forensic psychiatrist for Mersey Regional Health Authority have speculated that Ryan most likely suffered from acute schizophrenia, and may have had delusional thoughts about his mother oppressing him, resulting in her matricide (Blanco, 2012).

The Parliament of the United Kingdom enacted the Firearms (Amendment) Act of 1988 in response to Ryan's killings, which is still in effect today. The act amended the existing Firearms Act of 1968, which tightened British licensure and registration requirements for purchasing weapons and ammunition, banned the ownership of semi-automatic center fire rifles, and heavily restricted the use and possession of shotgun with a capacity of more than three total rounds (The National Archives (U.K.), 1988).

Twenty-five year old Marc Lepine, armed with a semi-automatic Ruger Mini-14, entered the l'Ecole Polytechnique engineering school on December 6, 1989 in Montreal, Canada. It was

the last day classes were to meet before the Christmas break. He entered a classroom engaged in a presentation approximately at 5 p.m., and ordered the male students to one side of the room, and the female students to the other. He then instructed the males to leave, and commenced firing, killing six and wounding three female students. In total, Lepine killed fourteen young women and injured fourteen other male and female students before committing suicide. Survivors reported that Lepine told them he was there to "fight feminism," and accused the female engineering students of being feminists, and that he "hated feminists" (McNeil 2008, 378).

Lepine himself had applied to l'Ecole Polytechnique's engineering program, a position he believed should be held by men, yet was not admitted. He had no prior criminal convictions, though he left a rambling suicide note behind that suggested he was psychotically unstable. In it, he expounded on his contempt for feminism and named 19 perceived feminists that he desired to kill (McNeill 2008, 378).

Canada had in place a set of laws that restricted and prohibited some firearms since 1969. In 1977, Bill C-51 required gun owners to obtain a Firearms Acquisition Card (FAC) to purchase any firearm and ammunition, as well as pass a basic background check. After the Montreal massacre, Bill C-17 was introduced in 1991. It required FAC holders to provide a photograph of themselves with two references, instituted a 28 day waiting period for all new FAC applications, mandated firearms safety training and expanded the background check criteria. C-17 also further restricted or prohibited some weapons considered to be para-military in nature and ruled that semi-automatic magazines be limited to five rounds for rifles, and ten rounds for handguns (Royal Mounted Police 2012).

Furthermore, in 1995 and 1996, Bill C-68 replaced some provisions of C-17, those being: a new licensing system that replaced the FAC. Licensure is now required to own a firearm, purchase a firearm or ammunition. C-68 mandated minimum sentences for firearms crimes and made registration of all firearms in Canada mandatory. Most of these provisions are still in effect, although in 2012 Canada abolished the registration requirement for long guns, but it remains in effect for handguns (Royal Canadian Mounted Police 2012). For the purpose of this study, even though Bill C-68 succeeded C-17, Canada's gun control program will be referred to as C-17, as it has the initial starting date.

On January 17, 1989, twenty six year old Patrick Purdy fired 104 rounds from a Chinese manufactured semi-automatic variation of the Soviet AK 47 rifle, killing five children and wounding twenty-nine more and their teacher before committing suicide at the Cleveland Elementary School in Stockton, California (Fackler et al. 1991, 1). Purdy, an unemployed drifter who had a long criminal history (Phillips 2009, 1) had a racial aversion to Asian Americans, which is speculated to be the motivational factor in why he chose to attack the Cleveland Elementary School.

Following Stockton, President George H. W. Bush signed an executive order banning the importation of semi-automatic military style weapons in the U.S. in 1989. The United States Congress passed the Gun-Free School Zone Act in 1990, making possession of any firearm on school property in the United States illegal (18 U.S.C. § 922 (q)). Deliberations continued for four years, until the Crime Control Act was passed on September 13. Subtitle A (The Federal Assault Weapons Ban) of this act banned the importation, manufacture, transfer (sale) or

possession of semi-automatic weapons designated as assault weapons[3], as well as ammunition magazines capable of feeding more than ten rounds at a time (Roth & Koper 1999, 1).

The characteristics that defined "assault weapons" that were to be banned were detailed in the act, though existing weapons and feeding devices that were currently in circulation that met these characteristics were exempted from the law (Roth & Koper 1999, 1). Millions of these existing weapons were "grandfathered" and were still permitted to be owned and transferred among individuals. The assault weapons ban also contained an expiry date, known as a sunset provision that would take effect on September 13, 2004 unless Congress voted to renew the ban for a further ten years. It was permitted to expire, and has never been reinstated in the United States. The U.S. does not maintain a federal registry of firearms, though it does require that all persons purchasing a weapon through firearms dealers be a resident of the state he or she is attempting the purchase, and be subject to a background check (ATF Form 4473).

On March 13, 1996, Thomas Hamilton, a forty-three year old man in Scotland, killed sixteen children and their teacher and injured seventeen others in the Dunblane Primary School before committing suicide with one of the four pistols he armed with (Collier 1997, 178).Though an exact motive for Hamilton's actions was never known, he was suspected by the British Government to have had psychotic impairments. He was recalled by former schoolmates who remembered him to frequently speak with a 'ghost' that only he could see (Macritchie 1997, 6). Hamilton had a police complaint registered against him for pointing one of his pistols, then unloaded, at an acquaintance and squeezing the trigger. He had also been reprimanded due to

3 The term "Assault Weapon" was entirely based upon a weapon having 3 or more aesthetic features in addition to being able to accept a detachable magazine; telescoping or collapsible butt-stocks, presence of a bayonet lug, threaded barrel muzzles for attaching flash suppressors, and in the presence of a pistol grip. Manufacturers simply omitted these features or incorporated them in such a way that did not meet the definition. Mechanically and operationally, weapons identical to their pre-ban variant were sold during the ban.

complaints being registered against him for frenzied activity at a local gun range (Macritchie 1997, 7-8).

The Cullen Inquiry following the Dunblane massacre made recommendations for further restrictions on handgun ownership in the U.K., and encouraged changes in police departmental sharing of information, which would have revealed the 'unsavory' nature of Hamilton and resulted in the forfeiture of his weapons (Cullen 1997, 64). Prime Minister Tony Blair introduced the Firearms (Amendment) (2) Act of 1997, which essentially banned all handguns and their ownership except for muzzle-loading single shot weapons and weapons of historical importance. The provisions remain in effect today. The United Kingdom requires registration of weapons and possession of a firearms certificate, issued by police for each firearm and ammunition. The U.K. requires a licensure of all firearms owners who may possess "satisfactory reason for ownership". It also requires a background check, references, approval of a family doctor for the applicant, and inspection of the premises where any firearms will be stored (Firearms (Amendment)(No.2) Act 1997, Chapter 64). For the purpose of this study, the gun control program of the United Kingdom will be referred to as the Firearms Amendment Act.

Only weeks following the Dunblane massacre, twenty-eight year old Martin Bryant, armed with two semi-automatic rifles, killed 35 people and wounded 23 more on April 28, 1996 in Tasmania, Australia. Over a period of 26 hours, Martin killed two victims in Forcett Village before proceeding to Port Arthur, a popular tourist location, where he carried out 32 more killings and taking a man hostage. The hostage, Glenn Pears, was found dead at the home in Forcett Village where Bryant was apprehended by police.

Bryant pled guilty to the Port Arthur Massacre, though details involving his motive are protected under Australia's attorney privacy privileges. Paul Mullen, the chief defense

psychiatrist who was assigned to the case has revealed that a copycat factor was involved with the attack, citing that Bryant had been inspired by the Dunblane shooting (Wainwright 2006). "He followed Dunblane. His planning started with Dunblane. Before this, he was thinking about suicide. But after Dunblane and the early portrayal of the killer, Thomas Hamilton, changed everything" (Wainwright 2006).[4]

Prime Minister John Howard took advantage of gun control proposals that were assembled nearly a decade before in the 1988 National Committee on Violence, and introduced legislation that forced Australian states and territories to adopt them (Laming 2007, 50). Australia had firearms licensure laws in place since 1991, though Bryant had purchased his weapons from a registered firearms dealer without possessing the necessary license. Handguns were already heavily restricted in Australia in 1996. The legislation proposed by John Howard – the National Firearms Agreement, enacted a universal gun registry in Australia, a total ban and buyback of all automatic weapons, semi-automatic weapons, semi-automatic shotguns and pump action shotguns, and instituted a strictly restrictive system of licensing and ownership requirements. These measures are still in effect today (AIC 2012).

Every one of these rampage shootings, with the exception of Dunblane, were committed with semi-automatic rifles, and the ensuing legislation included provisions to either restrict or ban these types of weapons. However, as Figure 2.1 illustrates, rifles only account for 4% of firearm homicides in the United States, and semi-automatic sporting rifles are a smaller subset of the rifle classification. This implies that these types of weapons are used even more infrequently

4 Quoting Paul Mullen – Chief of Forensic Psychiatry, Monash University, Melbourne Australia

than blunt objects, which also account for 4% of homicide weapons. Homicides are overwhelmingly committed with handguns. Even in the U.K., where most modern handguns are entirely banned, they are the primary means of firearm homicide to this day. "The point is exemplified by the premier study of English gun control. Done by a senior English police official as his thesis at the Cambridge University Institute of Criminology and later published as a book, it found, 'Half a century of strict controls…has ended, perversely, with a far greater use of [handguns] in crime than ever before'" (Kates & Mauser 2013, 665)[5]

Observing Blumstein's time series analysis of 1975 to 1995, we can discern that handgun homicide by youths aged 18-24 increased 100% from 1985 to 1994, and for juveniles under 18, it increased 300%. See Figures 2.2 and 2.3, below. However, Blumstein and Rosenfeld mention that there has been no appreciable increase in the use of long guns for the time period examined (Blumstein & Rosenfeld 1998, 1196).

The suggested implication, if one were to be found necessary, is that if handguns could be prevented from being used in crimes, the homicide rate in the United States would decrease by more than half. The legal age to be able to purchase a handgun in the United States is 21, though the graphs illustrate that somehow they are the weapon of choice for perpetrators under 21. Since licensed retailers are able to sell handguns to persons under 21, one must speculate that they are being acquired by private parties. It is estimated that forty percent of U.S. firearms sales are carried about by private parties (FICAP 2011, 36).

5 Quoting Colin Greenwood, Firearms Control: A Study of Armed Crime and Firearms Control in England and Wales 1972, 243

Figure 2.2: Homicide Weapons by Youth (18-24)

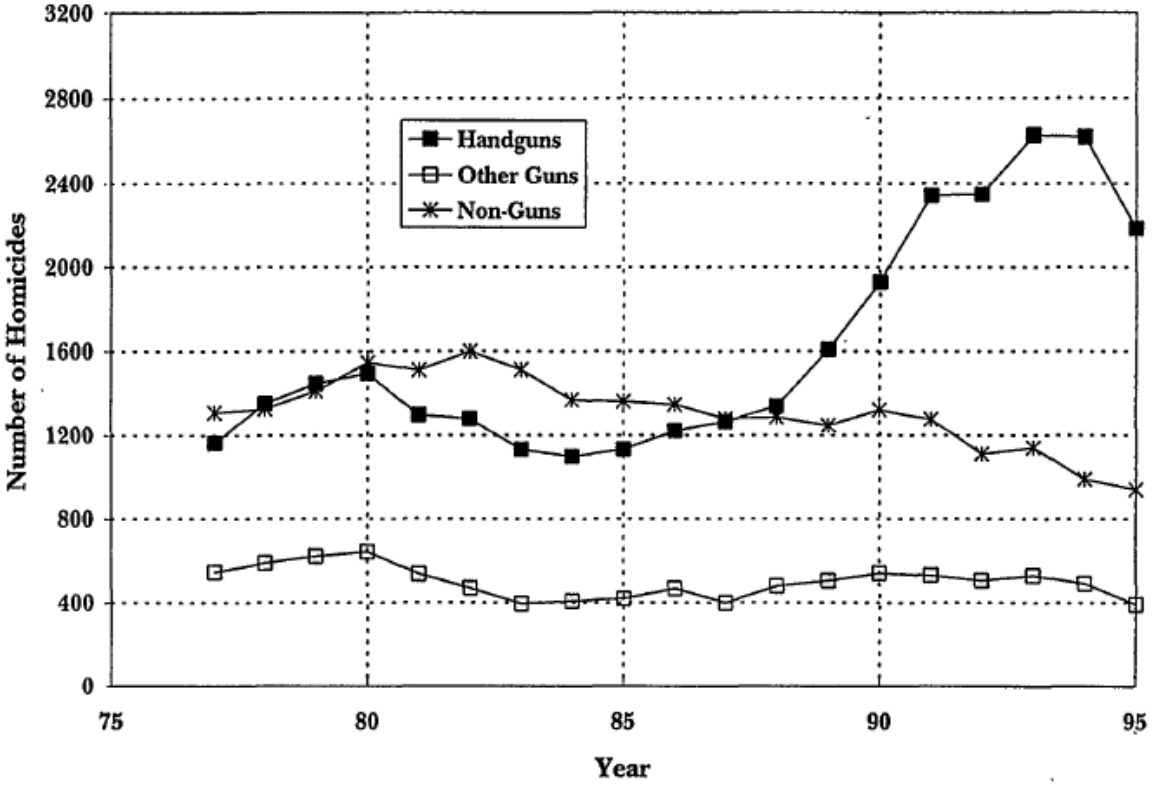
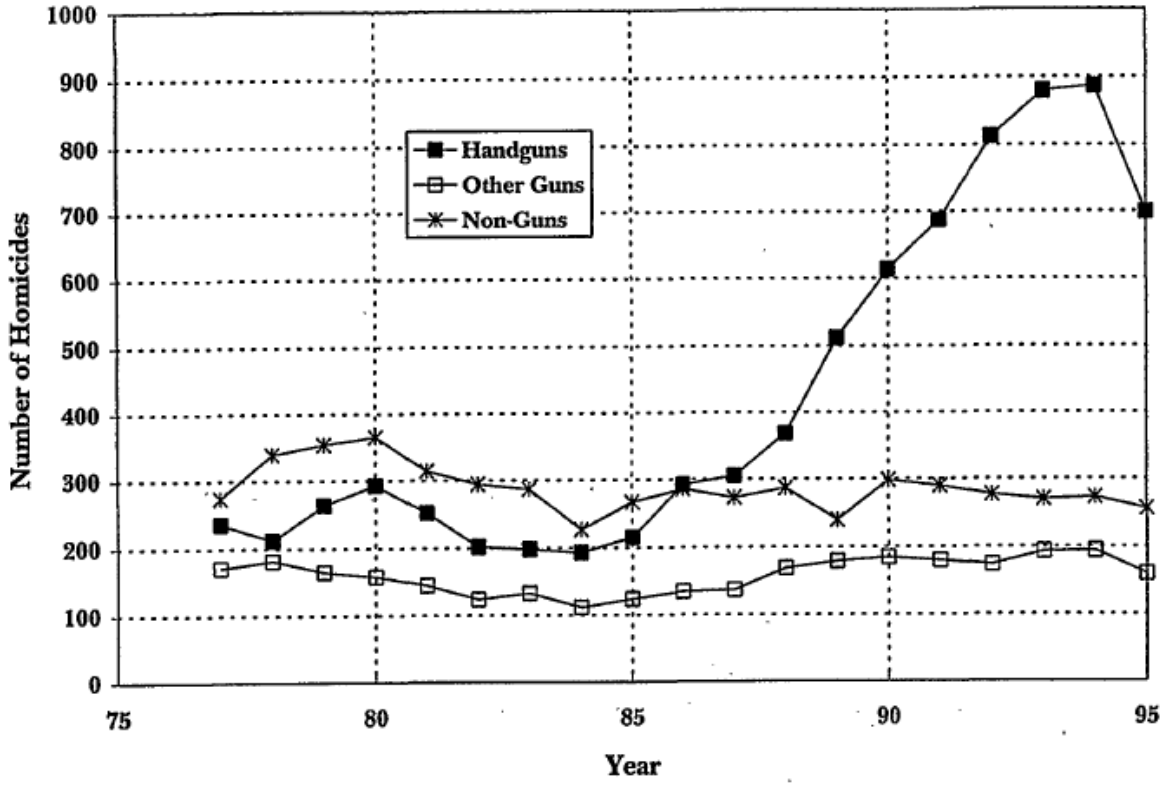


Figure 2.3: Homicide Weapons by Kids (<18)



The Conceptual Framework

The purpose of this chapter is to provide a link from sources found in the literature and the hypotheses examined within this study. The purpose of explanatory research is an investigation into a problem where only a small amount of information exists, in an attempt to find an explanation for why certain events occur.

"Explanatory research and the formal hypothesis are the mainstay of social and policy science" (Shields 1998, 217; Shields and Tajalli 2005, 33). This section defines the conceptual framework of the homicide rate evaluation study. Explanatory research gauges expectations and uses formal hypotheses as a conceptual framework. The hypotheses post an 'if-then' relationship (Shields and Tajalli 2005, 33).

Gun control legislation restricts or prohibits private citizens' access to firearms. It is thought that the readily available access to these weapons is associated with increased homicide rates, then it is hypothesized that gun control measures will significantly reduce homicide rates in each nation since their implementation. Since the United States of America has the largest stock of privately owned firearms, it is also hypothesized that the commonwealth countries will have significantly lower rates than the United States. Table 2.3 illustrates the hypotheses of this study and relevant literature.

Table 2.3: Conceptual Framework Table

Formal Hypothesis	Supporting Sources:
H1: Canada's gun control legislation has significantly reduced the firearms homicide rate in Canada.	Blumstein & Rosenfeld, 1998; Cook & Ludwig, 2003; Duggan, 2001; Kovandzic et al., 1998; LaFree, 1999; Langman, 2012; Nivette, 2011; Statistics Canada, 2014.
H2: The United Kingdom's gun control legislation has significantly reduced the firearms homicide rate in the U.K.	Blumstein & Rosenfeld; Cook and Ludwig, 2003; Duggan, 2001; Justice Analytical Services, 2014; Kovandzic et al., 1998; LaFree, 1999; Langan & Farrington, 1998; Nivette, 2011; Public Service of Northern Ireland, 2014; The Home Office of England and Wales, 2014; The Home Office of Scotland, 2014; 1998.
H3: Australia's gun control legislation has significantly reduced the firearms homicide rate in Australia.	Australian Institute of Criminology, 2014; Baker and McPedran, 2006; Blumstein & Rosenfeld, 1998; Cook and Ludwig, 2003; Duggan, 2001; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011.
H4: The United States' gun control legislation has significantly reduced the firearms homicide rate in the U.S.	Blumstein & Rosenfeld, 1998; Cook and Ludwig, 2003; Duggan, 2001; Federal Bureau of Investigation Crime Statistics & Uniform Crime Report, 2014; Firearms & Injury Center at Penn, 2011; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;Roth & Koper, 1999.
H5: The United Kingdom's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Langan & Farrington, 1998; Public Service of Northern Ireland, 2014; The Home Office 2014; Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;
H6: Canada's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011; Statistics Canada, 2014;
H7: Australia's Canada's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Australian Institute of Criminology, 2014; Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;

Although gun control measures have been implemented in every nation mentioned in this literature review, a causal relationship has not been established between the homicide rates and the gun control legislation. The correlation between firearms and homicide rate is well documented, and it is reasonable to assume that one would affect the other. In every nation, there is a time sequence almost twenty years of observation. However, if an alternative explanation that occurs simultaneously within the gun control time sequence cannot be eliminated, then the gun control legislation cannot establish a causal relationship. Moreover, the United States permitted its import restrictions and assault weapons ban to expire after ten years. If the homicide rates do not spike after this expiration, then an alternative explanation is implied.

The literature mentions numerous intervening variables that can also affect homicide rates in a nation. Of these, income inequality and unemployment rates are two predictors that are most accurately able to be plotted among the time sequence and experimental nations. Unemployment rates are published by each nation in a manner not dissimilar from their crime reports, and income inequality can be measured using the Gini coefficient or Kovandzic's income inequality mechanism. In this study, we will use both unemployment rate and Gini index (as a measure of income inequality) as our covariates.

In conclusion, a description of homicides was established, a review of the studies that examine homicide were discussed, and events that led to gun control movements and what they consisted of were discussed in this chapter. Homicide is the most heinous of crimes known to man, and Americans live in a nation with one of the higher homicide rates in the industrial nations. The United States is often encouraged to adopt more restrictive gun control measures, but impacts of these measures on homicide rates is not precisely known. Comparison of the

Commonwealth Countries with that of the U.S. offer an opportunity to evaluate the impact of gun control on homicide rates.

Chapter 3. Methodology

Purpose:

The purpose of this chapter is to describe the methods used to test the validity of the hypotheses of this study. This chapter will explain the operationalization of the variables, the methods used for data collection, the chosen sample, as well as the statistical procedures that will be utilized.

The purpose of this research is to determine whether gun control legislation passed in Australia, the Canada, and the United Kingdom have been more effective in reducing firearms related homicide than gun control legislation in the U.S. We are also interested to find out whether the gun control legislation in the U.S. has led to a lower rate of firearms related homicide.

Operationalization:

This study uses data found in official government reports from the U.S, Canada, the United Kingdom & Australia. The information in these reports are compiled by national law-enforcement agencies, ministries of health and census bureaus. Only deaths that are resultant of criminal homicide with a firearm were examined in this study.

The dependent variable of this study is the homicidal firearms mortality rate, referred to as Firearms Homicide Rate for the purpose of this study. The independent variables of this study consist of seven manually created variables and two covariates (unemployment and Gini Index). These independent variables and their method of measurement are presented in Table 3.1.

Hypotheses:

H_1: Canada's gun control legislation has significantly reduced the firearms homicide rate in Canada.

H_2: The United Kingdom's gun control legislation has significantly reduced the firearms homicide rate in U.K.

H_3: Australia's gun control legislation has significantly reduced the firearms homicide rate in Australia.

H_4: The United States' gun control legislation has significantly reduced the firearms homicide rate in U.S.

H_5: The United Kingdom's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.

H_6: Canada's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.

H_7: Australia's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.

Table 3.1: Operationalization Table

Dependent Variable	**Measurement**
Firearm Homicide Rate	Rate of occurrences per 100,000 people. Computed by dividing the number of homicides per year with population for the same year and multiplying by 100,000.
Independent Variable	**Measurement**
A. Year	A counter starting from 1980 to 2012
B. Change of Level	0 = Before program in effect 1 = After program in effect
C. Change of Trends	0 = All periods before program initiated 1, 2, 3, etc. = Serial counter for each year program is in effect.
D. Countries	0 = United States 1 = Comparison Country
E. Difference in Trends before Program	D * A
F. Diff. in Short Term Impact	D * B
G. Diff. in Program Impact	D * C
H. Income Inequality	Gini Index of Income Inequality. Ratio scale, with 0.00 being absolute equality and 1.00 being absolute inequality.
Unemployment	Unemployment Rate per 100,000 persons.

Operationalization of the Dependent Variable

Table 3.1 operationalizes the dependent and independent variables as they relate to the hypotheses previously listed in Table 2.3. The Dependent variable, Homicide by Firearm Rate, is measured as a ratio scale and indicates the number of deaths per 100,000 people for each nation for each year of the study

Operationalization of the Independent Variables

The first independent variable is a Year variable (A). Year is a serial counter coded 1 for first year observed (1980), 2 for second year, 3 for third year, etc. until last year in the series is observed (2012). Regression coefficients for this variable will reveal if any trend in the firearm homicide rate was already occurring before the gun control legislation was introduced.

The second independent variable (B) is a dummy variable indicating the change of level for the homicide rate from before to after the implementation of the gun control variable in the United States. This variable represents time before the gun control program goes into effect (Coded 0) and the immediate change after the program goes into effect (Coded 1). The regression coefficient of this variable will show the immediate difference occurring to a firearm homicide rate just after the implementation of gun control legislation.

The third independent variable (C) is the Gun Control Program. This variable represents the years before the program was initiated (Coded 0), and a serial counter (1, 2, 3, 4, etc.) for each subsequent year that the program is in effect. Regression coefficient of this variable will show the differences in trend of the homicide rate before and after the U.S. gun control went into effect.

The fourth independent variable (D) distinguishes the two comparison countries. For the comparison hypotheses (H_5-H_7), this variable establishes two groups for comparison. The United States is coded 0 while each comparison country is coded 1. The regression coefficient for this variable does not reflect a measure that we are concerned with for this study, and therefore it is omitted.

The fifth, sixth and seventh independent variables are used to compare the selected Commonwealth nation (comparison groups) to the United States (observation group) for the comparison hypotheses (H_5-H_7). The regression coefficients for these variables reflect the amount of change each comparison country has in comparison to the United States.

The eighth independent variable is the income inequality rate, which is measured by the Gini Index for each nation and year and is applied per 100,000 persons in a country. The ninth independent variable is the Unemployment Rate, which is measured by the reported rate of unemployed people in a nation, measured annually per 100,000 people. These last two variables are to be used as control variables in this study.

Data Collection:

This study analyzed existing data published by government agencies of Australia, Canada, The United Kingdom and the United States. The data reflect each nation from 1980 to 2012. This time series was selected for several reasons. First, such a broad time frame would allow for an appropriately sized sample. Second, it includes time prior to each nation's adoption of gun control policies in order to examine any potential trends that may have already existed. Finally, each nation adopted their latest gun control law at a separate time in this series; and the time frame provides ample observation of each nation after the law was implemented.

Existing official data are precious to researchers because they are verifiable and are highly reliable. The data for this research were obtained for each of the countries by their reporting agencies, and the following tables itemize where each type of data were found.

The U.K. presented several problems in securing firearms homicide totals. The first is the fact that there are multiple homicide counts that would need to be combined. This was made problematic in that Scotland utilizes a different method to record homicides, unlike the rest of the United Kingdom (Richards 1999, 8). In England and Wales, a single offense is recorded for each victim of homicide, whereas in Scotland a single offense is recorded for each *incident* of homicide, irrespective to the number of victims. This would mean that the Dunblane Massacre, which resulted in 17 dead, would be counted as one act of homicide. As a result, the official numbers reported for Firearm Homicides in Scotland may not accurately represent the number of people killed. As a result, for this research, the figures for 1987 have been adjusted to include the Dunblane victims. The second issue is that Northern Ireland does not define which homicides were resultant from use of firearms until 1995 (PSNI 2014). While Northern Ireland does maintain records from 1968 regarding "Firearms Offences Endangering Life", it does not explicitly distinguish if they resulted in injury or homicide. Therefore, for the purpose of this research, it was considered disingenuous to include these figures, and Northern Ireland is omitted from this study entirely. The last problem presented by the United Kingdom is that it stopped reporting crime figures as annual totals in 1998, and instead began presenting them in fiscal year totals. For the purpose of this research, it became necessary to re-sort the number of homicides back into their calendar year totals.

These issues present a weakness in the data representing the U.K., in that the homicide by firearm rates represented in this study do not account for Northern Ireland, and potentially do not

reflect all of Scotland's. While the hypotheses regarding testing of the legislation are still valid and able to be measured accurately, the rates presented in this study are, to an unknown extent, lower than the actual total homicide by firearm rate in the United Kingdom. Due to the methods of historically counting crimes in the U.K. before 1995, it may not be able to ever fully collect the total number of homicides by firearm for this time series in the entirety of the United Kingdom.

Firearm Homicides

The total number of homicides committed with a firearm were collected for each country for every year of the time series distribution. This number is then divided by each country's population for the same year, and multiplied by 100,000. The result is the homicide by firearms rate per one-hundred thousand people for that year.

The means used to obtain the number of homicides committed by firearm for each nation is listed below in Table 3.2.

Table 3.2: Source of Firearm Homicide Data

Country:	**Sources of Data:**
The United States	1980-2012: Federal Bureau of Investigation, Uniform Crime Reports for the United States, in series (2013).
Canada	1980-1995: Statistics Canada, JURISTAT (1996); 1996-2005: Statistics Canada, JURISTAT (2006); 2006-2012: Statistics Canada, JURISTAT (2013).
The United Kingdom	1980-1997: House of Commons Library RP 99/56 (Richards); 1998-2011: House of Commons Library SN/SG/1940 (Berman); 2012: Office of National Statistics (2013); 1980-1987: Cullen Inquiry*; 1988-1997: Scottish Office, Homicide Report (1998)*; 1998-2012: Scottish Office, Homicide Report, in series (2013)*.
Australia	1980-1995: Australian Bureau of Statistics, Australian Institute of Criminology (1997); 1996-2001: United Nations Office on Drugs and Crime, Global Study on Homicide (2011); 2002-2010: Australian Bureau of Statistics (2010); 2011-2012: United Nations Office on Drugs and Crime, Global Study on Homicide (2014).

*Denotes Scotland

Population Data:

The population data used to calculate the homicide rates for the study sample were obtained from each nation's official census agencies. This number was needed to calculate the firearm by homicide rate per 100,000 persons. The source information is presented in Table 3.3.

Table 3.3: Sources for Population Data.

Country:	**Sources of Data:**
The United States	1980-1989: U.S. Census Bureau, Historical National Population Estimates, 1900 to 1989; 1990-1999: U.S. Census Bureau, Intercensal Estimates of the United States Population by Age and Sex, 1990-2000: All Months; 2000-2009: Monthly Intercensal Estimates of the United States: April 1, 2000 to July 1, 2010; 2010-2012: Monthly Intercensal Estimates of the United States: April 1, 2010 to November 1, 2013.
Canada	1980-2012: Statistics Canada, CANSIM, table 051-0001 (Pearsons).
The United Kingdom	1980-2012: Office of National Statistics, Population Estimates for UK, England and Wales, Scotland and Northern Ireland, in series (2014).
Australia	1980-2012: Australian Bureau of Statistics, Australian Historical Population Statistics, Catalogue number 3105.0.65.001 (2014).

Data for Income Inequality:

The figure used to represent income inequality is the GINI ratio, which measures 0.00 as total equality among all persons, and 1.00 as total inequality (1 person possessing all of the wealth). The source information is presented in Table 3.4.

Table 3.4: Sources of Income Inequality Data (Gini).

Country:	**Sources of Data:**
The United States	1980-2012: U.S. Census Bureau, Historical Income Tables: Income Inequality: Table H-4, Gini Indexes for Households, by Race and Hispanic Origin of Householder: 1967 to 2013 (2013).
Canada	1980-2012: Statistics Canada, Income Statistics Division, Table 202-0605, Gini Coefficients of Market, Total and After-Tax Income, by Economic Family Type, annual (2014).
The United Kingdom	1980-2011: U.K. Data Service Archive, Office of National Statistics Food Expenditure Survey, series 1971 to 2011 (2012); 2012: Office of National Statistics, Food Expenditure Survey (2013).
Australia	1980-1998: Jonson and Wilkins (2006); 2007-2010: Whiteford (2013); 2011-2012: Australian Bureau of Statistics, Catalogue Number 6523.0, Household Income and Income Distribution, Australia (2011-2012).

Unemployment Data:

The unemployment per 100,000 rate was gathered for each of the study nations. The definition of an unemployed person for this research includes those who are aged 16 years and older, currently not working but are willing and able to work, currently available to work, and have actively searched for employment, as defined by the International Monetary fund. Source information for unemployment data is presented in Table 3.5.

Table 3.5: Source of Unemployment Data.

Country:	**Sources of Data:**
The United States	1980-2012: U.S. Bureau of Labor Statistics, Labor Force Statistics for the Current Population Survey, 1980 to 2012 (2013).
Canada	1980-2012: Statistics Canada, Economics and Statistics Branch: Labor Force Survey, Annual Average Unemployment Rate, Canada and Provinces 1976-2013 (2014).
The United Kingdom	1980-2010: International Monetary Fund; 2011-2012: Office of National Statistics, Labor Market Statistics, December 2012, Table 9(1). (2012).
Australia	1980-2010: International Monetary Fund; 2011-2012: Australian Bureau of Statistics, Catalogue number 6105.0 – Australian Labor Market Statistics, Table 1 (2014).

Sample:

The firearm homicide rate of the three Commonwealth Nations of Australia, Canada and the United Kingdom are selected to be compared to that of the United States of America. This sample was selected for their convenient cultural and historical significance to one another. All of the sampled nations are descended from the British Crown, and as a result, English is the primary language for each of them. Culturally homogenous, they share similarly diverse ethnical demographics, nearly identical forms of government, and comparable economies. At the beginning of the time series used in this study, each study nation fundamentally permitted its citizens to own the same sorts of firearms, serving as a baseline. The study nations have similar stratification in socio-economic patterns. The primary difference found within the study sample is that the population of the United States is drastically larger than any of the other nations in the study sample. For this reason, the dependent variable uses the homicide by firearms rate per 100,000 persons. The same rate is applied for unemployment.

Design:

This research uses interrupted time-series design to compare the firearm homicide rate of the United States with the Commonwealth Nations. The results of this study are dependent upon two methods of time series statistical analysis, both of which rely on multiple regression.

Two sets of analysis are used in this study. The first set of analysis is the use of interrupted time series analysis to evaluate possible impact of gun control legislation for each study nation individually. Interrupted time-series analysis compares trends in the homicide by firearm rate before and after the legislation was implemented. Should a significant difference be found in the trends after the program was instituted, one is able to confidently say that the

program had an effect upon the homicide rate. The control variables of Income Inequality (Gini index) and Unemployment are introduced into the regressions for the purpose of removing their impact from the dependent variable.

The second set of statistical analysis uses interrupted time-series with comparison. This will compare the United States firearm homicide rate to that of the three other nations in the study, respectively. Each of the Commonwealth countries will serve as a comparison group to the United States.

Chapter Summary:

This chapter presented the hypotheses provided in the previous chapter and defined how they are operationalized. The methods of data collection are presented along with the potential research design to be utilized. The planned statistical analyses were listed to provide any potential researcher the pertinent information to perform the tests should they desire to.

Chapter 4: Results

Purpose:

The purpose of this chapter is to evaluate the impact that gun control measures enacted in the 1980s and 1990s had on firearm homicide rates in Australia, Canada, the United Kingdom and the United States of America. The research performed for this study uses simple interrupted time-series and interrupted time-series with comparison design. Both of these time-series analyses are multiple regression tests that isolate the impact of gun control programs on firearm homicide rates. The results will demonstrate whether the rates rose, fell, or remained the same with each nation's citizen's access to firearms, while controlling for income inequality and unemployment rate which may influence homicide rates.

Statistical Results for Individual Nations:

The following tests present the findings for the evaluation of each nation's gun control legislation independently. The intent is to determine whether each nation's program affected their firearm homicide rate. Table 4.1 presents the results of Simple Time-Series analysis for Canada, the United Kingdom and Australia. Results for the United States can be discerned from the second set of regression that compare the U.S. with other countries. Coefficient 'Year' in Table 4.1 represents the rate of firearm of homicide before the gun control legislation went into effect. Coefficient for the variable 'Level Change' represents the possible change in the levels of the trend before and after the implementation of the legislation. The effect of a program can be discerned from the coefficient 'Trend Change'. A significant coefficient for this variable shows the difference between the trend of homicide rate before the gun control legislation and the trend after. If the gun control legislation in any of the countries has had a significant impact in

reducing the homicide rate, we should expect to see a significant negative value for this coefficient.

Table 4.1: Simple Interrupted Time Series Coefficients
For Individual Commonwealth Countries

	Canada	U.K.	Australia
Year	-.015	.009	-.024*
Level Change	.028	-.029	.024
Trend Change	.010	-.010	.010
Gini Index	-2.169	.217	-.448
Unemployment	.022	-.002	.022
Constant	1.454	-.003	.720
R^2	.710	.270	.876
F	13.194**	1.993	38.091**

** Significant at p < .05*
*** Significant at p < .01*

Canada

Table 4.1 reports the regression coefficients comparing the slopes of the firearm homicide rate in Canada before Bill C-17 was initiated in 1991, and after. The first coefficient, (B= -015) represents the trend that existed in the firearm homicide rate before the gun control program was implemented. As the coefficient is not statistically significant, it suggests that there was no significant trend in the homicide rate prior to the implementation of C-17. Nor was there an immediate shift of trends in the firearm homicide rate after implementation of C-17, as the second coefficient (B=0.28) is also insignificant. The third coefficient (B=.010) represents the change in slope for the firearm homicide rate as a result of adopting the gun control program C-17. Since this figure is not statistically significant it concludes that, in Canada, the firearm homicide rate did not change as a result of Bill C-17/C-68. The outcome of this analysis does not support Hypothesis 1.

The United Kingdom

The U.K. has both the longest running gun control program and the most restrictive, with the Firearms (Amendment) Act implemented in1988. Regression testing for the U.K. revealed that no independent variables for the U.K. predict the dependent variable. None of the independent variables have any statistical effect on the firearm homicide rate in the United Kingdom. The outcome of this analysis does not support Hypothesis 2.

Australia

The regression results for Australia are displayed in the far-right column of Table 4.1. The first coefficient (B=-.024, $p<.05$) represents that a negative trend in the firearm homicide rate was already in place before the National Firearms Agreement was implemented in 1996. As it is significant, we are able to conclude that the firearm homicide rate was already decreasing .024% per year. There is no significant change of level immediately after the implementation of the Agreement, as the second coefficient reveals at (B=.024). The last coefficient (B= .010) reflects Australia's Change of Level in the firearm homicide rate as a result of the Agreement. Since it is statistically insignificant, we can conclude that the firearm homicide rate was not affected as a result of the National Firearms Agreement. The outcome of this analysis does not support Hypothesis 3.

Statistical Results for Comparison with the United States

The United States

Table 4.2 compiles the regression coefficients comparing the firearm homicide rate of the United States with that of the three Commonwealth Nations. The first three coefficients (A, B, C) listed in Table 4.2 are representative of the effect of the gun control legislation passed in the United

States in 1994. The latter three (E, F, G) represent the comparison group test between each Commonwealth Country and the United States. The first coefficient, Year, reveals that a very statistically significant negative trend in the firearm homicide rate of the United States was already occurring before the Assault Weapons Ban was implemented in 1994. The next two coefficients, Change of Level and Change of Trends are insignificant, however. This allows us to conclude that there was no immediate change of level in the firearm homicide rate as a result of the Assault Weapons Ban, and that the gun control program had no significant effect on the firearm homicide rate in the United States. The outcome of this analysis, therefore, does not support Hypothesis 1.

Table 4.2: Comparison Outputs

		H5: U.S. v. U.K.	H6: U.S. v. Canada	H7: U.S. v. Australia
A.	Year	-.080**	-.133**	-.116**
B.	Change of Level	.079	-.128	-.073
C.	Change of Trends	-.099	-.086	-.090
D.	Countries	-5.601**	-3.462**	-2.568
E.	Diff. in Trends Before Program	.101	.110*	.050
F.	Diff. in Short Term Impact	-.173	-.013	.286
G.	Diff. in Program Impact	.075	.054	.104
H.	Income inequality	-.011	.048*	16.726
I.	Unemployment	-.022	.012	-.004
	Constant	5.825**	-4.437	-1.114
	R^2	.955	.945	.951
	F	132.703**	106.915**	120.779**

** Significant at p < .05*
*** Significant at p < .01*

U.S. and Canada

The analysis then compares the Canadian firearm homicide rates to the American firearm homicide rates before and after each nation implemented gun control programs. The fifth coefficient, (B= .110, $p<.05$) represents the difference in trends in the firearm homicide rate for both countries prior to their gun control programs. The coefficient is statistically significant; therefore we conclude that there was a difference between the two slopes before gun control programs were adopted. In other words, Canada's firearm homicide rate was increasing at a higher rate than the rate of the United States. The sixth coefficient (B=.-013) compares the instant difference in levels between the firearm homicide rates of the two nations after implementing gun control, though since it is insignificant we conclude that there was no immediate change. The seventh coefficient (B=.054) represents the difference of the differences between the firearm homicide rate trends for the two countries. The fact that this figure is not statistically significant implies that gun control programs were not responsible for any differences in the firearm homicide rates for either the U.S. or Canada. Therefore, Hypothesis 6 is not supported.

U.S. and the United Kingdom

The analysis then compares the U.K.'s firearm homicide rates to the American firearm homicide rates before and after each nation implemented gun control programs. The fifth coefficient (B=.101) represents the difference in trends in the firearm homicide rate in the U.K. and the United States prior to their gun control programs. The coefficient is statistically insignificant, therefore we conclude that there was no difference between the two slopes before gun control programs went into effect. The sixth coefficient (B=.-173) compares the difference in

immediate change in the firearm homicide rate between the U.K. and the United States just after each implemented a gun control program. Being not statistically significant, there is no immediate change in the firearm homicide rates among these two nations resulting from their gun control programs. The seventh coefficient (B=.075) represents the difference of differences between the firearm homicide rate trends for the two countries. The figure is not statistically significant, therefore implying that gun control programs were not responsible for any difference in the firearm homicide rates for either the United States or the United Kingdom for the period observed (1980-2012). This outcome fails to support Hypothesis 5.

U.S. and Australia

The analysis finally compares the Australian firearm homicide rates to the American firearm homicide rates before and after both nations implemented gun control programs. The fifth coefficient (B=.050) represents the difference in trends of Australia and the United states prior to their gun control programs. The coefficient is statistically insignificant, therefore indicating no trends in in the firearm homicide rate between the U.S. and Australia. The sixth coefficient (B=.286) compares the difference in immediate change of levels in the firearm homicide rate between Australia and the United States just after each implemented a gun control program. Being insignificant, we conclude there was no immediate change of levels for either nation. The seventh coefficient (B=.104) is the difference of differences between the firearm homicide rate trends for the two countries. The impact of the gun control legislation in the U.S. is not any different from the impact of the Australian legislation. The outcome of this analysis does not support Hypothesis 7.

Chapter Summary

This chapter provides the output data for the regression testing performed for this study, and the subsequent interpretations of those data. The primary intent of the testing was to determine if any nation's gun control program has had a negative effect on the firearm homicide rate of that nation. The Commonwealth Nations of Canada, the United Kingdom and Australia were tested individually with simple interrupted time-series, then analyzed again along with the United States in interrupted time-series with comparison testing. The individual results of the United States' Assault Weapons Ban are discerned from the second regression test.

When comparing the nations, the regressions show that the greatest trend in declining homicide rates prior to gun control laws is attributed to the United States. Regardless of comparison nation, there was no significant impact from gun control programs between countries and their firearm homicide rate.

Chapter Five: Conclusion

This research was born out of renewed interest in gun control proposals in the United States following the recent rampage shootings of Aurora, Colorado, the Newtown School in Connecticut, and the Fort Hood attacks. Critics of firearms ownership in the United States and abroad voiced their desire for stricter regulations concerning firearms ownership, or outright forfeiture for citizens to own weaponry.

The United States has the highest rate of civilian owned weapons in the world, with the 2009 count placing the number at 310 million privately owned firearms in American homes (Krouse 2012, 8). Since the United States also has one of the highest firearm homicide rates in the world, many speculate that the abundance of weapons has led to the abundance of firearm homicides. Though the causative link between numbers of firearms and numbers of homicides committed with them has never been established, there remains a demand to remove, limit, or regulate more heavily the stock that is on the market today.

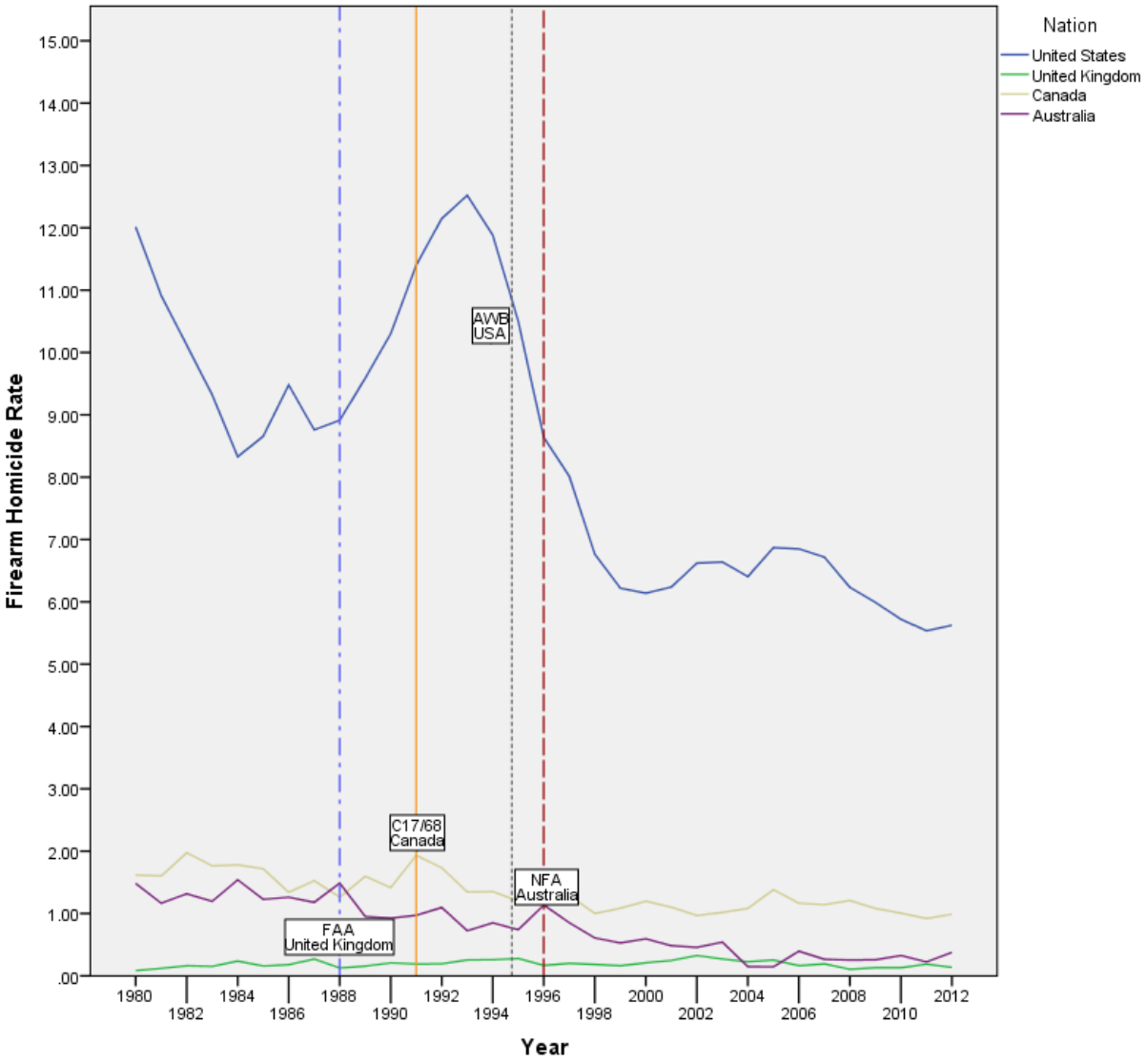
The Commonwealth Nations all have more restrictive forms of gun control than does the United States; from Canada prohibiting handguns and limiting magazine capacity in rifles; to Australia prohibiting handguns, limiting rounds in bolt action weapons, and no semi-automatic rifles of any sort; to the United Kingdom essentially confiscating all privately owned firearms. Each of these nations introduced their most severe gun control programs following a rampage shooting, and gun control proponents have all questioned why the U.S. hasn't followed suit.

Proponents for strong gun control posit that these countries all enjoy a significantly smaller firearm homicide rate than the United States does, and that their gun control programs must play a pivotal role in securing these lower firearm homicide rates. Gun control advocates

also often refer to the U.S. Assault Weapons Ban of 1994 as a measure of a successful means to bring down the firearm homicide rate. The data remain inconclusive, however.

The statistical analysis performed in this study consistently failed to establish a connection between gun control programs and the firearm homicide rates of any nation in this research. Firearm homicide rates were already starting to plummet in the United States and Australia when the incidents that sparked their gun control programs took place. It is entirely possible that these programs received credit for events that were already occurring. Canada also was experiencing a decline in firearms homicides, if not a statistically significant one. If one refers to Figure 5.1, below, they can conclude that had there not been a spike of firearm homicides in 1991, Canada would have registered a significantly decreasing trend of firearm homicides in the early 1990s.

Figure 5.1: Trends of Firearm Homicide Rates Among Study Nations



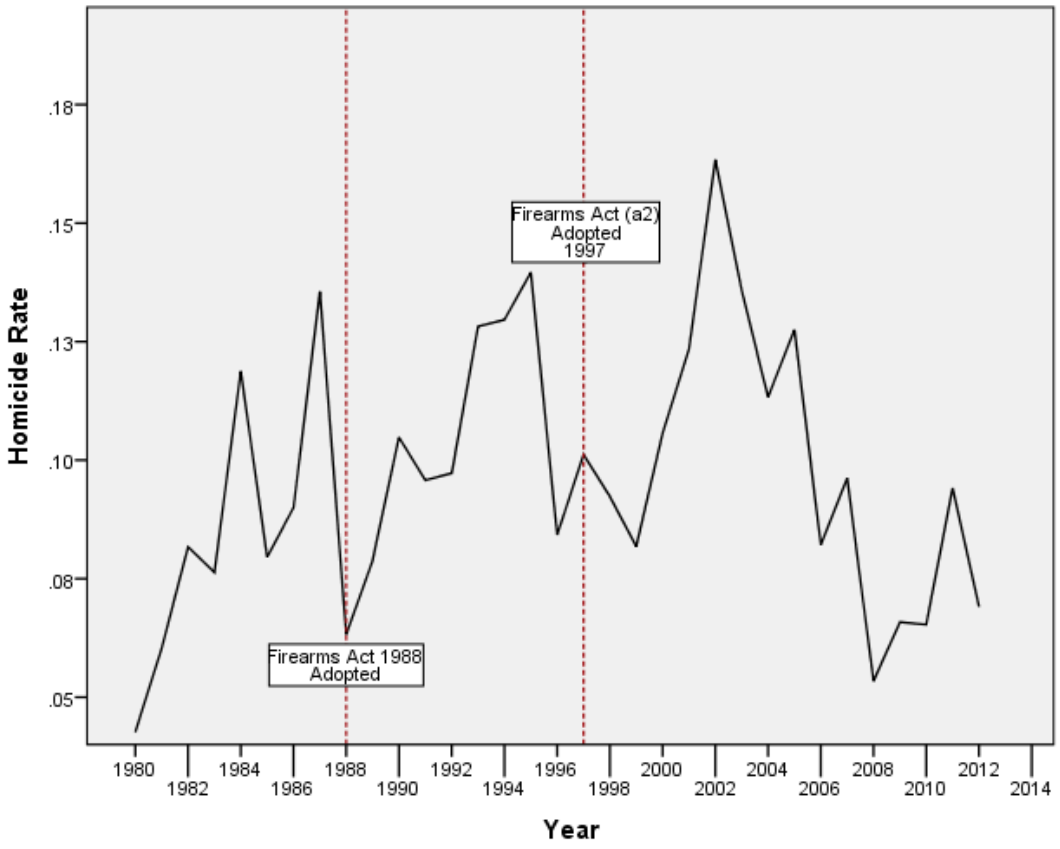
Canada still limits feeding magazines to five rounds for semi-automatic rifles, and ten rounds for handguns, but it has done away with its federal firearms registration requirement for rifles and shotguns, claiming the program was incredibly expensive and ineffective. Ontario Provincial Police Commissioner Julian Fantino said the following in an interview in 2003: "We have an ongoing gun crisis including firearms-related homicides lately in Toronto, and a law registering firearms has neither deterred these crimes nor helped us solve any of them…The

firearms registry is long on philosophy and short on practical results,"[6] (Monroe and Miner 2006, 221) The recent attack on the Parliament building in Ottawa during October of 2014 was perpetrated by a man with an illegally acquired weapon, as the Royal Canadian Mounted Police claim that Michael Zehaf-Bibeau's previous criminal and mental history would never have allowed him to purchase one through legal means. Canada still maintains a registry for handguns, which this study has mentioned are the primary weapon of choice for firearms homicide.

Further, one needs to consider that the United Kingdom, the one nation where gun control laws mandated that all private arms be surrendered and destroyed, is the only one in this study that did not witness a steady decline in firearms homicides. Figure 5.2 illustrates that in the time period observed, the United Kingdom experienced its highest level of firearm homicides *after* private weapons were seized and destroyed. The U.K. is the only nation that completely banned firearms, and it is also the only one that does not show a steady decline in firearms homicide rates.

[6] Quoting Julian Fantino – Ontario Provincial Police Comissioner, Toronto, Canada.

Figure 5.2: Firearm Homicide Rate Trends in the United Kingdom



The erratic spikes and valleys in the United Kingdom's firearm homicide rate in figure 5.2 illustrates how there are periods of few incidents that then experience large increases every 6-8 years. Of course, almost every single firearm that is used in a homicide in the United Kingdom is an illegal weapon; either smuggled in or had by some other means. As firearms are essentially not permitted in the U.K., live ammunition is also not readily available, which together suggests that the United Kingdom's gun control laws have only disarmed law abiding gun owners. Criminals have still somehow been able to get their weapons.

It is also interesting to observe Australia's steady drop of firearm homicides through the nineties, and that had the Port Arthur Massacre not occurred in 1996, one may speculate that

Australia would have achieved similar firearm homicide to those that occurred after the Firearms Agreement was adopted, regardless. It is impossible to say. Conversely, though gun homicides have gone into decline, mass shootings have not been prevented; lone gunmen committed mass murder at Monash University in 2002, and an entire town was terrorized in what became known as the 2011 Hectorville Siege that took place in the Adelaide suburb of Campbelltown.

When one observes the staggering decline in firearms homicide in the United States in Figure 5.1, it is difficult to understand how studies can find no relationship between the decline in the firearm homicide rate and the Assault Weapons Ban. It is important to consider that the AWB was very different from any of the other programs mentioned in this study. Canada required licensure and registration of weapons, and limited magazines. Australia and Great Britain both seized and destroyed existing weapons deemed too dangerous for individuals to own. The United States permitted the millions of weapons[7] that were already in circulation to remain, and with them all magazines that were also in circulation. The Assault Weapons ban only applied to weapons that were manufactured or imported during the 10 years between 1994 and 2004. And since the criteria that established an "assault weapon" were purely cosmetic, firearms manufactures found way to sell the exact same weapon (functionally) as they were before the ban. Refer to Figure 5.2, below.

Figure 5.2: Comparison of a pre-ban weapon and a ban-era weapon.

[7] The number of grandfathered AR15's made just by Colt's Firearm Division that were in circulation in 1994 totaled 577,585. This is just one type of weapon specifically targeted by the AWB, of which variants were produced by seven different companies by 1994. There were a total of 19 specifically named firearms targeted by the AWB, and their clones, made by numerous manufacturers (Sweeney 2007, 3).

A “pre-ban” AR15 Rifle manufactured in 1988

Above: A ban-era Ar15 Rifle.

The difference between the pre-ban and ban-era rifles.

Source: Google Images

The firearm at the top of the image represents the type of AR-15 semi-automatic rifle that was legal for sale in the United States before September 13, 1994 and again in September 13, 2004. The firearm on the bottom of the image represents the type of AR-15 semi-automatic rifle

that was legal for sale *during* the Assault Weapons Ban. The only difference is a few minor cosmetic features, in this case the barrel has no muzzle device or bayonet lug, and the collapsible stock is replaced with a fixed stock.

Consequently, firearm manufacturers just deleted these cosmetic features from their designs and continued production of these weapons. Bushmaster Firearms, for example, only manufactures AR15 style semiautomatic weapons. In 1998, with the Assault Weapons Ban in effect, Bushmaster produced 25,610 brand new rifles to be sold to the public. (ATF 2008, 10) When one is aware of the shortcomings of the Assault Weapons Ban, it becomes much more apparent that the legislation would have had little effect on the firearm homicide rate in the United States.

Ironically, the literature and Figure 2.1 illustrate that handguns have always been the primary weapon used in homicides, while the legislation in the United States was primarily aimed at long guns that account for less than 4% of homicides. Perhaps the lower homicide rates in the Commonwealth Countries is due in part to their restriction and licensing of handguns, though this question was not addressed in this study.

Regardless, the regression tests in this study failed to support any of the hypotheses presented in the Conceptual Framework (Table 2.3). The gun control legislation passed in the United States in 1994 has been ineffective, in that the AWB itself could not be proven to have a negative effect on the firearm homicide rate in the United States, suggesting some other reason being responsible for the decline.

Further, not one of the of the gun control measures implemented by Canada, the United Kingdom or Australia has had better results than that of the United States. Long lauded as the

'solution' to America's firearm homicides, none of the gun control measures revealed a statistically significant negative effect on firearm homicide rates. The only nation that entirely disarmed its citizens, the U.K., is effectively seeing no change in firearm homicide rates even after twenty-four years of observed gun control laws.

It would appear that the narrative that "more guns means more crime" is simply unfounded. The United States could claim 242 million privately owned firearms in 1996, and a firearm homicide rate of 4.32 per 100,000 people. Sixteen years later, with more than 68 million more firearms, and the rate has fallen to 2.81 per 100,000 people. It is also important to realize that though the U.S. has the highest rate of these studied nations, the total number of people who were victims of firearm homicide account for only .002 of the overall population. The suggestion that half the population is at risk of being killed by a firearm is simply unfounded.

While there is no question that the United States experiences more firearm homicides than the other countries mentioned in this study, the causal reasons for these murders, and why they are decreasing, remains elusive.

Recommendations for Future Researchers

There are several areas in which this study can be further examined to possibly yield more accurate descriptives of what affects changes in the firearms homicide rate. The United States exhibits many times the firearm homicide rate of the Commonwealth Nations, but it also has many times the population of these countries. The United States has a disproportionately larger amount of population dense cities than the other nations, and it would be worthwhile to examine if the majority of the U.S. firearm homicides are confined primarily to large cities, and if so, which ones.

Blumstein and Rosenfeld mentioned that ethnicities can play a role in crime. If it were possible to gather the ethnic data for perpetrators of firearm homicide, this could serve as an entirely new independent variable for the existing framework presented in this study.

Crimes could be influenced or deterred by social service structures within a nation. While Russia has very strict gun control, the firearm homicide rate for Russia is around 15 per 100,000 persons, more than six times the rate of the United States. Nations could be examined for the sorts of social services they provide and the rate of firearms homicide that occur.

An interesting study could be conducted to focus solely on the use of handguns, and restrictions based solely upon them. As they are the primary weapon used in firearm homicide, there could be more concrete evidence when controlling for all other types of firearms but handguns.

And if verifiably accurate figures could be located for the time of the study (1980-2012) for Northern Ireland and Scotland, there exists a possibility that the figures for the U.K. could reveal relationships that are currently unable to be found.

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Raw Data Used in this Study

United States

Nation	Year	Firearm Homicide #	Population	Firearm Homicide Rate	Unemployment	GINI
USA	1980	13650	227224681	6.01	7.1	0.403
USA	1981	12523	229465714	5.46	7.6	0.406
USA	1982	11721	231664458	5.06	9.7	0.412
USA	1983	10895	233791994	4.66	9.6	0.414
USA	1984	9819	235824902	4.16	7.5	0.415
USA	1985	10296	237923795	4.33	7.2	0.419
USA	1986	11381	240132887	4.74	7	0.425
USA	1987	10612	242288918	4.38	6.2	0.426
USA	1988	10895	244498982	4.46	5.5	0.426
USA	1989	11832	246819230	4.79	5.3	0.431
USA	1990	12847	249438712	5.15	5.6	0.428
USA	1991	14373	252127402	5.70	6.8	0.428
USA	1992	15489	254994517	6.07	7.5	0.433
USA	1993	16136	257746103	6.26	6.9	0.454
USA	1994	15463	260289237	5.94	6.1	0.456
USA	1995	13790	262764948	5.25	5.6	0.45
USA	1996	11453	265189794	4.32	5.4	0.455
USA	1997	10729	267743595	4.01	4.9	0.459
USA	1998	9143	270298524	3.38	4.5	0.456
USA	1999	8480	272690813	3.11	4.2	0.458
USA	2000	8661	282171957	3.07	4	0.462
USA	2001	8890	285081556	3.12	4.7	0.466
USA	2002	9528	287803914	3.31	5.8	0.462
USA	2003	9638	290326418	3.32	5.8	0.464
USA	2004	9385	293045739	3.20	6	0.466
USA	2005	10158	295753151	3.43	5.5	0.469
USA	2006	10225	298593212	3.42	5.1	0.47
USA	2007	10129	301579895	3.36	4.6	0.463
USA	2008	9484	304374846	3.12	5.8	0.466
USA	2009	9199	307006550	3.00	9.3	0.468
USA	2010	8874	310232863	2.86	9.6	0.47
USA	2011	8653	312646912	2.77	8.9	0.477
USA	2012	8855	314908469	2.81	8.1	0.477

Canada

Nation	Year	Firearm Homicide #	Population	Firearm Homicide Rate	Unemployment	GINI
Canada	1980	195	24143192	0.81	7.5	0.353
Canada	1981	199	24820393	0.80	7.6	0.348
Canada	1982	248	25116942	0.99	11	0.351
Canada	1983	224	25366451	0.88	12	0.361
Canada	1984	228	25607053	0.89	11.3	0.357
Canada	1985	222	25842116	0.86	10.7	0.357
Canada	1986	175	26100278	0.67	9.7	0.358
Canada	1987	202	26446601	0.76	8.9	0.355
Canada	1988	169	26791747	0.63	7.8	0.354
Canada	1989	218	27276781	0.80	7.5	0.351
Canada	1990	196	27691138	0.71	8.2	0.357
Canada	1991	271	28037420	0.97	10.3	0.364
Canada	1992	246	28371264	0.87	11.2	0.364
Canada	1993	193	28684754	0.67	11.3	0.361
Canada	1994	196	29000663	0.68	10.3	0.362
Canada	1995	176	29302311	0.60	9.5	0.363
Canada	1996	212	29610218	0.72	9.6	0.372
Canada	1997	193	29905948	0.65	9.1	0.377
Canada	1998	151	30155173	0.50	8.3	0.386
Canada	1999	165	30401286	0.54	7.6	0.386
Canada	2000	184	30685730	0.60	6.8	0.392
Canada	2001	171	31020596	0.55	7.2	0.392
Canada	2002	152	31358418	0.48	7.7	0.391
Canada	2003	161	31641630	0.51	7.6	0.389
Canada	2004	173	31938004	0.54	7.2	0.394
Canada	2005	223	32242364	0.69	6.8	0.393
Canada	2006	190	32570505	0.58	6.3	0.392
Canada	2007	188	32887928	0.57	6	0.393
Canada	2008	201	33245773	0.60	6.1	0.394
Canada	2009	182	33628571	0.54	8.2	0.394
Canada	2010	171	34005274	0.50	8	0.395
Canada	2011	158	34342780	0.46	7.4	0.395
Canada	2012	172	34754312	0.49	7.2	0.397

The United Kingdom

Nation	Year	Firearm Homicide #	Population	Firearm Homicide Rate	Unemployment	Gini
United Kingdom	1980	24	56314216	0.04	6.5	0.304
United Kingdom	1981	34	56333829	0.06	9.4	0.31
United Kingdom	1982	46	56313641	0.08	10.6	0.309
United Kingdom	1983	43	56332848	0.08	11.4	0.312
United Kingdom	1984	67	56422072	0.12	11.8	0.303
United Kingdom	1985	45	56550268	0.08	11.4	0.322
United Kingdom	1986	51	56681396	0.09	11.3	0.348
United Kingdom	1987	77	56802050	0.14	10.6	0.364
United Kingdom	1988	36	56928327	0.06	8.8	0.384
United Kingdom	1989	45	57076711	0.08	7.3	0.374
United Kingdom	1990	60	57247586	0.10	7	0.403
United Kingdom	1991	55	57424897	0.10	8.6	0.39
United Kingdom	1992	56	57580402	0.10	9.8	0.382
United Kingdom	1993	74	57716614	0.13	10.3	0.384
United Kingdom	1994	75	57865745	0.13	9.7	0.379
United Kingdom	1995	81	58019030	0.14	8.7	0.371
United Kingdom	1996	49	58166950	0.08	8.2	0.366
United Kingdom	1997	59	58316954	0.10	7.1	0.38
United Kingdom	1998	54	58487141	0.09	6.3	0.38
United Kingdom	1999	48	58682466	0.08	6	3.39
United Kingdom	2000	62	58682514	0.11	5.5	0.396
United Kingdom	2001	73	59119673	0.12	5.1	0.389
United Kingdom	2002	97	59370479	0.16	5.2	0.404
United Kingdom	2003	81	59647577	0.14	5	0.374
United Kingdom	2004	68	59987905	0.11	4.8	0.379
United Kingdom	2005	77	60401206	0.13	4.8	0.361
United Kingdom	2006	50	60846820	0.08	5.4	0.374
United Kingdom	2007	59	61322463	0.10	5.4	0.386
United Kingdom	2008	33	61806995	0.05	5.6	0.373
United Kingdom	2009	41	62276270	0.07	7.5	0.382
United Kingdom	2010	41	62766365	0.07	7.9	0.374
United Kingdom	2011	60	63766365	0.09	8.1	0.364
United Kingdom	2012	44	63695687	0.07	7.9	0.323

Australia

Nation	Year	Firearm Homicide #	Population	Firearm Homicide Rate	Unemployment	GINI
Australia	1980	109	14695356	0.74	6.1	0.263
Australia	1981	87	14923260	0.58	5.8	0.268
Australia	1982	100	15184247	0.66	7.1	0.276
Australia	1983	92	15393472	0.60	9.9	0.277
Australia	1984	120	15579391	0.77	8.9	0.278
Australia	1985	97	15788312	0.61	8.3	0.292
Australia	1986	101	16018350	0.63	8.1	0.295
Australia	1987	96	16263874	0.59	8.1	0.287
Australia	1988	123	16532164	0.74	7.2	0.295
Australia	1989	80	16814416	0.48	6.1	0.31
Australia	1990	79	17065128	0.46	6.9	0.281
Australia	1991	84	17284036	0.49	9.6	0.287
Australia	1992	96	17494664	0.55	10.8	0.29
Australia	1993	64	17667093	0.36	10.9	0.311
Australia	1994	76	17854738	0.43	9.7	0.317
Australia	1995	67	18071758	0.37	8.4	0.308
Australia	1996	104	18310714	0.57	8.5	0.296
Australia	1997	79	18517564	0.43	8.4	0.292
Australia	1998	57	18711271	0.30	7.7	0.303
Australia	1999	50	18925855	0.26	6.9	0.31
Australia	2000	57	19153380	0.30	6.2	0.311
Australia	2001	47	19413240	0.24	6.7	0.317
Australia	2002	45	19651438	0.23	6.3	0.309
Australia	2003	54	19895435	0.27	5.9	0.312
Australia	2004	15	20127363	0.07	5.3	0.306
Australia	2005	15	20394791	0.07	5	0.314
Australia	2006	41	20697880	0.20	4.7	0.315
Australia	2007	28	21015042	0.13	4.3	0.319
Australia	2008	27	21249200	0.13	4.2	0.319
Australia	2009	28	21691700	0.13	5.6	0.323
Australia	2010	36	22031800	0.16	5.2	0.336
Australia	2011	25	22340000	0.11	5.1	0.329
Australia	2012	43	22723900	0.19	5.2	0.32

Table 2.1: Number of deaths from 113 selected causes, Enterocolitis due to Clostridium difficile, drug-induced causes, alcohol-induced causes, and injury by firearms, by age: United States, 2010-Con.

[The asterisks (*) preceding the cause-of-death codes indicate that they are not part of the *International Classification of Diseases, Tenth Revision* (ICD–10), Second Edition; see Technical Notes]

Cause of death (based on ICD–10, 2004)	All ages	Age group (years)											
		Under 1 year	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over	Not stated
Assault (homicide) by other and unspecified means and their sequelae . . . . . (*U01.0–*U01.3,*U01.5–*U01.9,*U02, X85–X92,X96–Y09,Y87.1)	5,181	300	342	96	789	927	800	900	532	245	160	78	12
Legal intervention . . . . . (Y35,Y89.0)	412	–	1	1	74	102	108	70	46	9	1	–	–
Events of undetermined intent. . . . . (Y10–Y34,Y87.2,Y89.9)	4,908	108	82	67	456	806	932	1,295	726	195	136	102	3
Discharge of firearms, undetermined intent. . . . . (Y22–Y24)	252	–	3	14	53	54	26	44	33	10	10	5	–
Other and unspecified events of undetermined intent and their sequelae . . . . . .(Y10–Y21,Y25–Y34,Y87.2,Y89.9)	4,656	108	79	53	403	752	906	1,251	693	185	126	97	3
Operations of war and their sequelae . . . . . (Y36,Y89.1)	9	–	–	–	–	2	–	–	4	–	–	3	–
Complications of medical and surgical care. . . . . (Y40–Y84,Y88)	2,490	22	19	22	40	61	122	242	418	499	629	416	–
Enterocolitis due to *Clostridium difficile* . . . . . (A04.7)[1]	7,298	2	–	4	6	6	27	149	426	1,063	2,462	3,153	–
Drug-induced deaths[2,3].	40,393	23	43	63	3,667	7,864	8,923	11,935	5,911	1,137	520	303	4
Alcohol-induced deaths[2,4]	25,692	1	–	–	152	899	3,076	8,612	7,986	3,420	1,250	291	5
Injury by firearms[2,5].	31,672	11	71	298	6,201	6,172	4,790	5,380	4,039	2,316	1,664	723	7

– Quantity zero.

. . . Category not applicable.

[1]Included in "Certain other intestinal infections (A04,A07–A09)" shown above. Beginning with data year 2006, Enterocolitis due to *Clostridium difficile* (A04.7) is shown separately at the bottom of tables showing 113 selected causes and is included in the list of rankable causes, see Technical Notes.

[2]Included in selected categories above.

[3]Includes ICD–10 codes D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.1–F11.5, F11.7–F11.9, F12.1–F12.5, F12.7–F12.9, F13.1–F13.5, F13.7–F13.9, F14.1–F14.5, F14.7–F14.9, F15.1–F15.5, F15.7–F15.9, F16.1–F16.5, F16.7–F16.9, F17.3–F17.5, F17.7–F17.9, F18.1–F18.5, F18.7–F18.9, F19.1–F19.5, F19.7–F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2–J70.4, K85.3, L10.5, L27.0–L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.1–R78.5, X40–X44, X60–X64, X85, and Y10–Y14. Trend data for Drug-induced deaths, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

[4]Includes ICD–10 codes E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, and Y15. Trend data for Alcohol-induced deaths, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

[5]Includes ICD–10 codes *U01.4, W32–W34, X72–X74, X93–X95, Y22–Y24, and Y35.0. Trend data for Injury by firearms, previously shown in this report, can be found through a link from the online version of this report, available from http://www.cdc.gov/nchs/deaths.htm.

Table 2.2: Total Homicide Rates (1989-1991) Regressed Against Three Measures of Income Inequality

Variable	*b*	Beta	*t* Ratio	VIF	*b*	Beta	*t* Ratio	VIF	*b*	Beta	*t* Ratio	VIF
Gini Coefficient	3.66*	.188	3.25	2.49	—	—	—	—	—	—	—	—
Inequality Ratio	—	—	—	—	.033*	.142	2.18	3.06	—	—	—	—
Quintile 5	—	—	—	—	—	—	—	—	.033*	.143	2.65	2.14
Poverty	.021*	.147	2.13	3.55	.025*	.173	2.35	3.90	.027*	.187	2.83	3.21
Unemployment	.086*	.215	4.22	1.93	.081*	.204	3.95	1.92	.084*	.210	4.10	1.93
Percent Black	.023*	.425	8.12	2.04	.022*	.418	7.85	2.05	.024*	.444	8.34	2.07
South	.156	.077	1.73	1.47	.163	.080	1.76	1.50	.125	.062	1.31	1.61
Divorce Rate	.0005*	.096	2.29	1.31	.0005*	.107	2.53	1.30	.0005*	.098	2.31	1.31
Percent Young	.003	.013	.336	1.20	.003	.014	.335	1.22	.002	.007	.179	1.19
Inverse Population	−.900*	−.268	−6.29	1.35	−.916*	−.273	−6.24	1.38	−.889*	−.265	−6.06	1.40
Log Density	−.030	−.023	−.445	1.91	−.021	−.016	−.310	1.91	−.029	−.022	−.427	1.91
Pop. Change 80–92	.001	.037	.778	1.66	.0009	.025	.522	1.65	.001	.032	.668	1.66
City Share SMSA	−.338	−.085	−1.81	1.65	−.309	−.078	−1.60	1.69	−.339	−.085	−1.80	1.65
Constant	−.052				.950				−.128			
Adj. R^2	.767				.744				.747			

* Significant at $p < .05$.

Source: The Structural Covariates of Urban Homicide: Reassuring the Impact of Income Inequality and Poverty in the Post-Reagan Era. Tomislav Kovandzic, Lynne Vieraitis, Mark Yeisley, 1998.

Table 2.3: Conceptual Framework Table

Formal Hypothesis	Supporting Sources:
H1: Canada's gun control legislation has significantly reduced the firearms homicide rate in Canada.	Blumstein & Rosenfeld, 1998; Cook & Ludwig, 2003; Duggan, 2001; Kovandzic et al., 1998; LaFree, 1999; Langman, 2012; Nivette, 2011; Statistics Canada, 2014.
H2: The United Kingdom's gun control legislation has significantly reduced the firearms homicide rate in the U.K.	Blumstein & Rosenfeld; Cook and Ludwig, 2003; Duggan, 2001; Justice Analytical Services, 2014; Kovandzic et al., 1998; LaFree, 1999; Langan & Farrington, 1998; Nivette, 2011; Public Service of Northern Ireland, 2014; The Home Office of England and Wales, 2014; The Home Office of Scotland, 2014; 1998.
H3: Australia's gun control legislation has significantly reduced the firearms homicide rate in Australia.	Australian Institute of Criminology, 2014; Baker and McPedran, 2006; Blumstein & Rosenfeld, 1998; Cook and Ludwig, 2003; Duggan, 2001; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011.
H4: The United States' gun control legislation has significantly reduced the firearms homicide rate in the U.S.	Blumstein & Rosenfeld, 1998; Cook and Ludwig, 2003; Duggan, 2001; Federal Bureau of Investigation Crime Statistics & Uniform Crime Report, 2014; Firearms & Injury Center at Penn, 2011; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;Roth & Koper, 1999.
H5: The United Kingdom's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Langan & Farrington, 1998; Public Service of Northern Ireland, 2014; The Home Office 2014; Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;
H6: Canada's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011; Statistics Canada, 2014;
H7: Australia's Canada's gun control legislation has been more effective in reducing the firearms homicide rate than the U.S. gun control legislation has been.	Australian Institute of Criminology, 2014; Blumstein & Rosenfeld, 1998; Kovandzic et al., 1998; LaFree, 1999; Nivette, 2011;

Table 3.1: Operationalization Table

Dependent Variable	**Measurement**
Firearm Homicide Rate	Rate of occurrences per 100,000 people. Computed by dividing the number of homicides per year with population for the same year and multiplying by 100,000.
Independent Variable	**Measurement**
A. Year	A counter starting from 1980 to 2012
B. Change of Level	0 = Before program in effect 1 = After program in effect
C. Change of Trends	0 = All periods before program initiated 1, 2, 3, etc. = Serial counter for each year program is in effect.
D. Countries	0 = United States 1 = Comparison Country
E. Difference in Trends before Program	D * A
F. Diff. in Short Term Impact	D * B
G. Diff. in Program Impact	D * C
H. Income Inequality	Gini Index of Income Inequality. Ratio scale, with 0.00 being absolute equality and 1.00 being absolute inequality.
Unemployment	Unemployment Rate per 100,000 persons.

Table 3.2: Source of Firearm Homicide Data

Country:	**Sources of Data:**
The United States	1980-2012: Federal Bureau of Investigation, Uniform Crime Reports for the United States, in series (2013).
Canada	1980-1995: Statistics Canada, JURISTAT (1996); 1996-2005: Statistics Canada, JURISTAT (2006); 2006-2012: Statistics Canada, JURISTAT (2013).
The United Kingdom	1980-1997: House of Commons Library RP 99/56 (Richards); 1998-2011: House of Commons Library SN/SG/1940 (Berman); 2012: Office of National Statistics (2013); 1980-1987: Cullen Inquiry*; 1988-1997: Scottish Office, Homicide Report (1998)*; 1998-2012: Scottish Office, Homicide Report, in series (2013)*.
Australia	1980-1995: Australian Bureau of Statistics, Australian Institute of Criminology (1997); 1996-2001: United Nations Office on Drugs and Crime, Global Study on Homicide (2011); 2002-2010: Australian Bureau of Statistics (2010); 2011-2012: United Nations Office on Drugs and Crime, Global Study on Homicide (2014).

*Denotes Scotland

Table 3.3: Sources for Population Data.

Country:	**Sources of Data:**
The United States	1980-1989: U.S. Census Bureau, Historical National Population Estimates, 1900 to 1989; 1990-1999: U.S. Census Bureau, Intercensal Estimates of the United States Population by Age and Sex, 1990-2000: All Months; 2000-2009: Monthly Intercensal Estimates of the United States: April 1, 2000 to July 1, 2010; 2010-2012: Monthly Intercensal Estimates of the United States: April 1, 2010 to November 1, 2013.
Canada	1980-2012: Statistics Canada, CANSIM, table 051-0001 (Pearsons).
The United Kingdom	1980-2012: Office of National Statistics, Population Estimates for UK, England and Wales, Scotland and Northern Ireland, in series (2014).
Australia	1980-2012: Australian Bureau of Statistics, Australian Historical Population Statistics, Catalogue number 3105.0.65.001 (2014).

Table 3.4: Sources of Income Inequality Data (Gini).

Country:	**Sources of Data:**
The United States	1980-2012: U.S. Census Bureau, Historical Income Tables: Income Inequality: Table H-4, Gini Indexes for Households, by Race and Hispanic Origin of Householder: 1967 to 2013 (2013).
Canada	1980-2012: Statistics Canada, Income Statistics Division, Table 202-0605, Gini Coefficients of Market, Total and After-Tax Income, by Economic Family Type, annual (2014).
The United Kingdom	1980-2011: U.K. Data Service Archive, Office of National Statistics Food Expenditure Survey, series 1971 to 2011 (2012); 2012: Office of National Statistics, Food Expenditure Survey (2013).
Australia	1980-1998: Jonson and Wilkins (2006); 2007-2010: Whiteford (2013); 2011-2012: Australian Bureau of Statistics, Catalogue Number 6523.0, Household Income and Income Distribution, Australia (2011-2012).

Table 3.5: Source of Unemployment Data.

Country:	**Sources of Data:**
The United States	1980-2012: U.S. Bureau of Labor Statistics, Labor Force Statistics for the Current Population Survey, 1980 to 2012 (2013).
Canada	1980-2012: Statistics Canada, Economics and Statistics Branch: Labor Force Survey, Annual Average Unemployment Rate, Canada and Provinces 1976-2013 (2014).
The United Kingdom	1980-2010: International Monetary Fund; 2011-2012: Office of National Statistics, Labor Market Statistics, December 2012, Table 9(1). (2012).
Australia	1980-2010: International Monetary Fund; 2011-2012: Australian Bureau of Statistics, Catalogue number 6105.0 – Australian Labor Market Statistics, Table 1 (2014).

Table 4.1: Simple Interrupted Time Series Coefficients
For Individual Commonwealth Countries

	Canada	U.K.	Australia
Year	-.015	.009	-.024*
Level Change	.028	-.029	.024
Trend Change	.010	-.010	.010
Gini Index	-2.169	.217	-.448
Unemployment	.022	-.002	.022
Constant	1.454	-.003	.720
R^2	.710	.270	.876
F	13.194**	1.993	38.091**

** Significant at p < .05*

*** Significant at p < .01*

Table 4.2: Comparison Outputs

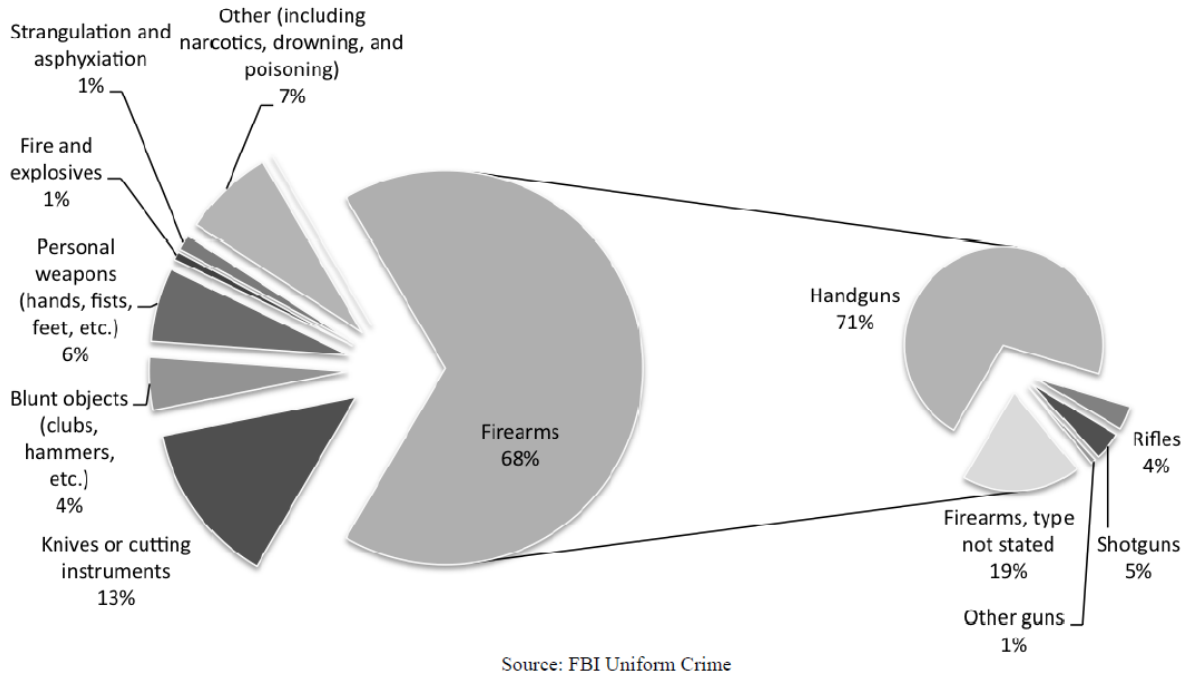
		H5: U.S. v. U.K.	H6: U.S. v. Canada	H7: U.S. v. Australia
A.	Year	-.080**	-.133**	-.116**
B.	Change of Level	.079	-.128	-.073
C.	Change of Trends	-.099	-.086	-.090
D.	Countries	-5.601**	-3.462**	-2.568
E.	Diff. in Trends Before Program	.101	.110*	.050
F.	Diff. in Short Term Impact	-.173	-.013	.286
G.	Diff. in Program Impact	.075	.054	.104
H.	Income inequality	-.011	.048*	16.726
I.	Unemployment	-.022	.012	-.004
	Constant	5.825**	-4.437	-1.114
	R^2	.955	.945	.951
	F	132.703**	106.915**	120.779**

** Significant at p < .05*
*** Significant at p < .01*

Reference Figures

Figure 2.1: Homicide Weapons by Type – U.S., 2008

In 2008, firearms were used in 68% of all homicides. Handguns accounted for approximately 48% of the total homicides and approximately 71% of all firearm homicides. By comparison, shotguns were used in 5% of firearm homicides and rifles were used in 4% of firearm homicides.



Source: FBI Uniform Crime (UCR)

Figure 2.2: Homicide Weapons by Youth (18-24)

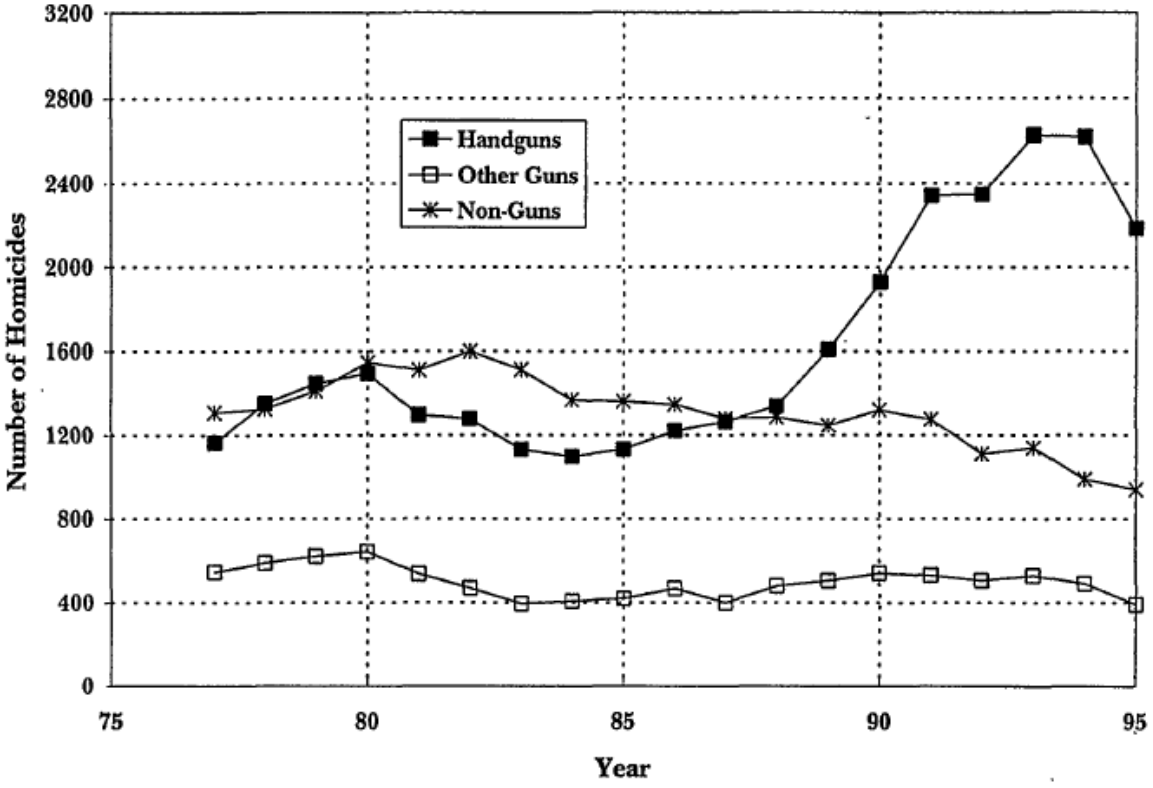


Figure 2.3: Homicide Weapons by Kids (<18)

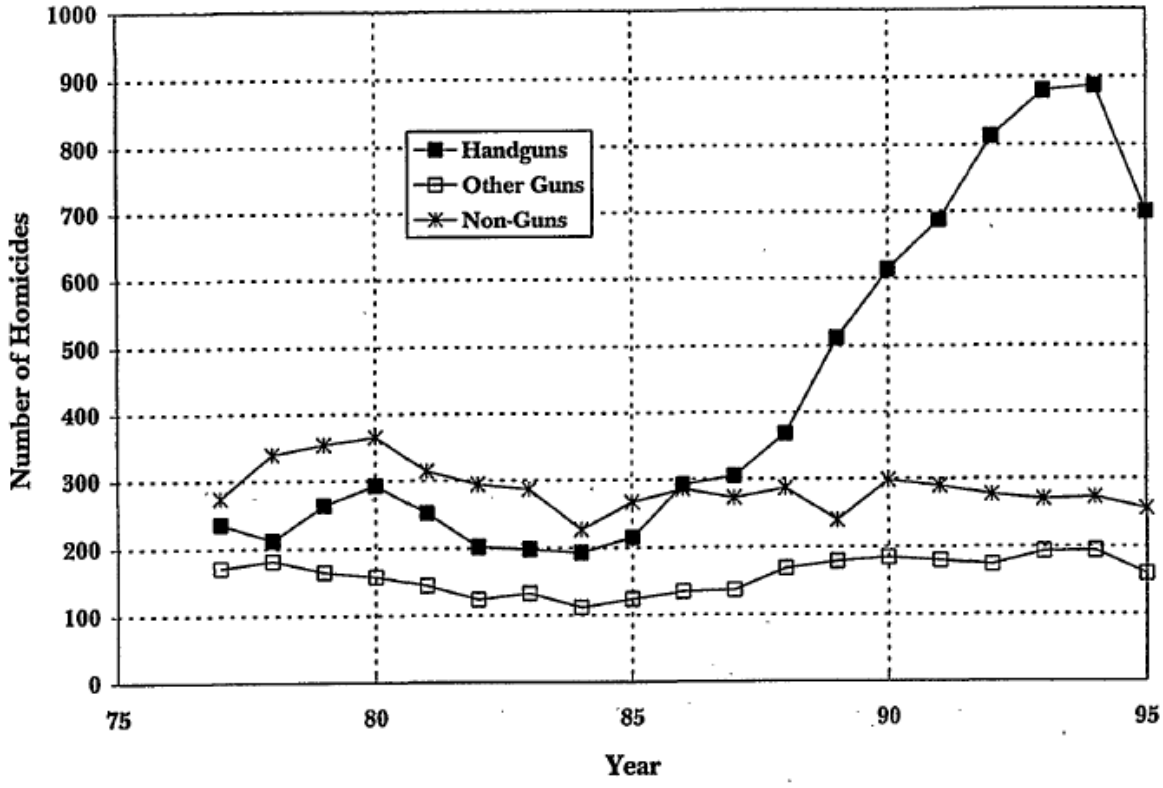


Figure 5.1: Trends of Firearm Homicide Rates Among Study Nations

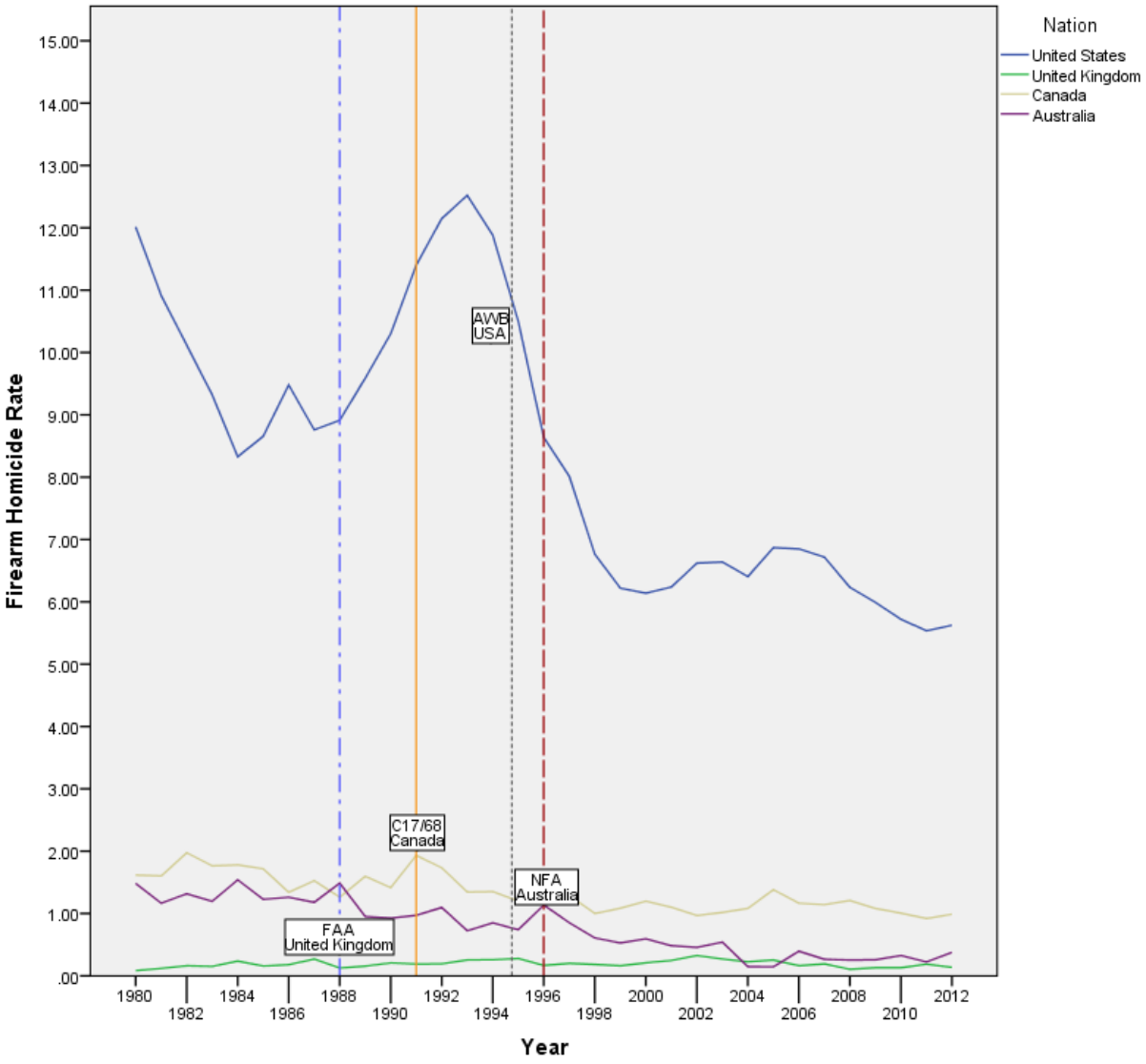


Figure 5.2: Firearm Homicide Rate Trends in the United Kingdom