



**AN EMPIRICAL EVALUATION OF COUNTERTERRORISM
SPENDING AND ITS SUBSEQUENT EFFECT ON REDUCING
TERRORISM**

SAMUEL C. ILLIG

A Thesis

Submitted to the Faculty of Mercyhurst University

In Partial Fulfillment of the Requirements for

The Degree of

MASTER OF SCIENCE
IN
APPLIED INTELLIGENCE

RIDGE COLLEGE OF INTELLIGENCE STUDIES AND APPLIED SCIENCES
MERCYHURST UNIVERSITY
ERIE, PENNSYLVANIA
MAY 2016

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DEDICATION

This work is dedicated to my parents, Don and Christine Illig, for the hard work and sacrifice they put into helping me succeed in my education.

ACKNOWLEDGEMENTS

I would like to thank Dr. Orlandrew Danzell and Dr. Dawn Wozneak for acting as my primary and secondary readers for this thesis.

ABSTRACT OF THE THESIS

An Empirical Analysis of Counterterrorism Spending and its Subsequent Effect on Reducing

Terrorism

A Critical Examination

By

Samuel C. Illig

Master of Science in Applied Intelligence

Mercyhurst University, 2016

Professor Orlandrew Danzell, Chair

This research attempted to identify how efficiently counterterrorism resources were being used to combat terrorist attacks within seven different countries. The research used counterterrorism and public safety spending figures from the US, UK, Canada, Germany, Italy, Spain, and France, along with terrorism attack data from each country, to attempt to understand the effects that counterterrorism spending had on reducing terrorism attacks and terrorism attack lethality. Specifically, the study used both a Poisson regression model as well as an ordinary least squares regression model to evaluate the impact of counterterrorism spending on terrorist attacks and terrorist attack lethality. The study found that counterterrorism spending has an effect on decreasing domestic terrorism incidents within a country. The study also found that counterterrorism spending led to reductions in terrorist attack lethality. In both cases, however, the reductions in both terrorism incidents and

lethality were extremely small, suggesting that counterterrorism resources are being over-allocated in many cases.

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LIST OF ABBREVIATIONS

DHS	Department of Homeland Security
FinCEN	Financial Crime Enforcement Network
GTD	Global Terrorism Database
US	United States
UK	United Kingdom

INTRODUCTION

Introduction to the Problem

The events of September 11th 2001 marked a significant time period in the 21st century where the world has seen some of the deadliest terror attacks in modern history. Since the events of September 11th 2001, and the attacks that followed, the United States (US) and other countries throughout the world have taken an increased focus on combatting terrorism both domestically and internationally to protect their citizens. Primarily, in reaction to Al Qaeda's attacks on the US in 2001, the US enacted the US PATRIOT Act in October, 2001 (FinCEN, 2015). The act established a number of new capabilities to help the United States combat both domestic and international terrorism. More importantly, however, in response to the growing threat of terrorism, the US Congress also enacted the Homeland Security Act of 2002, which established the Department of Homeland Security (DHS) (Smith, 2003). The DHS was designed to serve as a broad government agency tasked to focus solely on combatting terrorism and terrorist threats as they relate to America (Thessin, 2003). Other countries, seeing the threat of terror that the US faced, sought to increase spending on public safety and counterterrorism in order to further prevent an attack similar to that of 9-11. For example, from 2001 to 2007 the United Kingdom's (UK) spending on public order and safety increased from approximately \$35 billion to over \$50 billion (Budget 2014, 2014).

Although research has been done on the effectiveness of counterterrorism spending as a whole, current studies lack in showing country specific effectiveness of counterterror and domestic security spending on reducing terrorist events within a country. This particular study will focus on the US, UK, Spain, France, Germany, Italy and Canadian

counterterrorism spending to assess the spending's relative effect on reducing terrorism. The purpose of this study is to fill a research gap to analyze the effectiveness of the aforementioned countries' homeland security spending on reducing terrorism in both the domestic and international arenas.

Understanding the effectiveness of homeland security spending on reducing terrorism is a key element into understanding how to combat terrorism. If the data displays that increases in homeland security spending is statistically shown to be a driving factor behind reduction in terrorist incidences, the study can provide insights into the overall effectiveness of resource allocation. Previous studies have evaluated counterterrorism spending on a broader base, focusing on over thirty countries at a time to see the collective effect of counterterrorism spending on overall domestic and international terrorist events (Danzell & Zidek, 2013). Other studies have evaluated the costs and benefits of counterterrorism spending by discerning what probability of terrorism attacks is needed for spending to be considered beneficial (Stewart and Mueller, 2012). This specific study adds to current body of research by presenting a centered focus on only seven countries' counterterrorism spending. These countries were chosen on the basis of having substantial similarities in terms of their socio-political heritage, as well as the fact that they are Western nations often targeted for terrorism (Atkinson and Leigh, 2010). It is important to note that Canada was additionally observed due to its proximity to the US. This study additionally adds to the current body of research because no extant literature is updated through the 2014 budget year. Specifically, this study aims to quantitatively analyze the impact of US, UK, France, Germany, Italy, Spain, and Canadian homeland security spending on reducing overall

domestic and international terrorist incidents and terrorist incident lethality within the respective countries.

Background of the Problem

In considering terrorism as a growing threat to the US, Europe, and Canada, it is important to recognize terrorism as it relates to the 21st century. While terrorism is not a new phenomenon, terrorist organizations in the late 20th and early 21st centuries have adapted their methods, weapons, and capabilities to become a greater direct international threat to western countries (Hoffman, 2013). For instance, in his book *Inside Terrorism*, Bruce Hoffman (2013) discusses how modern terrorist organizations have grown in capability through the acquisition of new weapons such as biological and chemical weapons, as well as through their ability to recruit and stay effective as linear, rather than purely hierarchical organizations. Moreover, terrorists in the 21st century have begun to utilize online media and video to reach a broader target base and to recruit members for their organization (Committee on Foreign Affairs House of Representatives, 2015). Terrorist groups such as the Islamic State and Al Qaeda are using new technologies, as well as the broad reach and large scope of the internet to further their agendas and target potential victims (Bay and Porche, 2015). As Gabrielle Weimann (2010) articulates in her report on modern terrorism and media, “there are many ways that contemporary terrorists use the internet ranging from psychological warfare and propaganda to highly instrumental uses including data mining and recruitment” (p. 1). What arises from these issues is an increased threat of terrorism to countries throughout the world (Jenkins, 2015).

Furthermore, as a result of modern terrorist organizations adapting their methods and capabilities, the 21st century has seen the effects of terrorist adaptations through some of the

deadliest terror attacks in modern history. Attacks such as the September 11th attacks on the US and the July 2005 London bus bombings in the UK show the capability and effectiveness of the continued adaptations made by extremist organizations (Oliver, 2015). Additional attacks like Al Shabaab's 2013 attack on a Kenyan Mall, and Boko Haram's 2014 kidnapping of over 200 school girls show the increased level of threat and violence that many parts of the world are experiencing, not just Western states. Furthermore, attacks such as the 2013 Boston Marathon bombings also bring to light the notion that terrorists are effectively recruiting individuals to act within the United States from abroad (O'Neill, 2015).

In addition to increased attacks, the growth in size and reach of terrorist organizations in the 21st century also proves to be an increased threat to many countries throughout the world; including many European countries, the US, and Canada. Groups such as Boko Haram, the Islamic State and Al Qaeda have not only grown in size, but have also grown in terms of their abilities to effectively attack outsiders (Gupta, 2008). In his book *Understanding Terrorism*, Dipak Gupta (2008) describes how terrorists are often successful by stating that successful organizations are able to garner a wide base of support across nations. This is evident through the Islamic State's recent support expansion across the world. For example, according to a June 2015 report, an estimated 3,400 Westerners have traveled to join ISIS in its mission to establish an Islamist state in Iraq and Syria. Further, according to counterterrorism officials, at least 200 Americans have gone or attempted to travel to Syria (Yan, 2015). Counterterrorism officials attribute the success of Islamic State's recruitment to their ability to use online media to reach out to potential recruits.

Due to the growth of terrorist organizations' capabilities, and the continued rising threat, the United States established the DHS in 2002 to help combat domestic and

international terrorism (Smith, 2003). According to Jonathon Thessin (2003), the DHS was created to prevent terror attacks within the US, reduce US vulnerability to terror, and also to limit damage caused by terror attacks. The United States' increased devotion to combatting the threat of terror is evident through the increased amount of budgetary spending allocated toward the DHS yearly. Since its establishment, the DHS budget has increased from \$42 billion in 2003 to just over \$64 billion for the 2016 year (DHS, 2015). The issue to recognize is that DHS spending has increased steadily since the inception of the organization. Budget evidence suggests that the US government has become increasingly focused on combatting terror throughout the 21st century.

Other countries, such as the UK and Canada, have also taken an increased focus in combatting terrorism throughout their own countries. For example, the UK played a major role in helping the US in its campaign to combat terrorism through the wars in Iraq and Afghanistan (Watt, 2014). Additionally, as stated previously, in the years immediately after September 11th, the UK ramped up their public order and safety spending in order to combat increased threats against the country. Additionally, in the Canadian government's most recent budget release they have devoted an entire chapter to describing new funds to be allocated toward defending their nation and people. For example, the budget states the Canadian government goals include "Strengthening the Canadian Armed Forces by providing \$11.8 billion over 10 years through an increase to the annual escalator for National Defense's budget to 3 per cent, starting in 2017–18 as well as providing up to \$360.3 million in 2015–16 for the Canadian Armed Forces to extend its mission to counter the Islamic State of Iraq and the Levant (ISIL)" (Government of Canada, pg. 1, 2014). The point to be made is that

European countries, the US, and Canada have all increased resource allocation to combatting terror threats against their own countries.

In addition to the UK and Canada, other countries in Europe have also increased their spending on public safety and security in a likely attempt to limit the increased terror threat of the 21st century (Europa, 2015). For example, from 2000 to 2013, France increased their public safety spending from \$21 billion to almost \$40 billion, according to European Union financial statistics (Europa, 2015). Spain also saw an increase in public safety spending from \$12 billion in 2000 to over \$22 billion in 2013 (Europa, 2013). This gives evidence to the fact that many countries in Europe, not just the UK, have focused an increased amount of monetary resources towards limiting terrorism in their regions.

Purpose of the Study

Even with such great resources devoted to combatting terrorism, it is not directly known to what extent counterterrorism spending helps to reduce both domestic and international terrorism. With countries devoting such an abundant amount of money to homeland security, it is important to understand how effectively and efficiently resources are being used. While some studies have identified links between increased homeland security spending and decreased terrorism, no study has specifically identified a focused link between US, UK, France, Germany, Italy, Spain, and Canadian counterterror spending, and its subsequent effect on reducing domestic and transnational terrorism. Further, no study has examined counterterrorism spending through the 2014 budgetary year. This research is especially important because of the financial situations that some countries find themselves within. For example, the U.S. is at a critical point in terms of budgetary spending. The United States' debt is at an all-time high of approximately \$19 trillion; therefore, it is vital to

understand the true impact of the money that the government is currently spending on counterterrorism efforts (Patton, 2015). By attempting to specifically understand if counterterrorism spending actually *does* reduce levels of terrorism (both internationally and domestic), this research can provide insight into spending efficiency.

The purpose of this study is to quantitatively analyze the impact that counterterrorism spending has on effectively reducing both domestic and international terrorist incidents. The study also serves to examine counterterrorism spending's effect on the lethality of terror events. In order to evaluate spending effectiveness among the three countries, yearly budget data must be correlated with terrorist incidents, both at home and abroad. As previously noted, this study will add to the current base of knowledge provided by previous studies that evaluate homeland security spending on a much broader scale by attempting to establish causality between spending specific to the aforementioned countries and terrorism incidents within these countries. Lastly, a quantitative study is necessary to evaluate the proposed research question because of the inherent numeric nature of the underlying data.

Research Questions

The first research question that guides this study asks the following: Does US, UK, France, Germany, Italy, Spain, and Canadian homeland security spending effectively reduce domestic terrorism? The second research question that guides the study asks: Does US, UK, France, Germany, Italy, Spain, and Canadian homeland security spending effectively reduce transnational terrorism. The third research question that guides this study asks: Does counterterrorism spending by the US, UK, France, Germany, Italy, Spain, and Canada reduce the lethality of terrorist events?

The above-stated research questions can be answered quantitatively using available data from yearly budget briefs and terrorism incident data from the Global Terrorism Database (Global Terrorism Database, 2015). Due to the availability of data on counterterrorism, public safety spending, and global terrorist incidents, the study is feasible to complete with accurate results.

Relevance and Significance of the Study

Primarily, the study addresses the overall growing security concerns being driven by terrorism. With terrorism posing an increasing threat to the US, Europe, and Canada, it is important to understand appropriate methods for combatting terror. In July 2015, the UK government met with the MI5, the lead domestic British intelligence agency, to discuss the possibility of raising the attack threat level to its highest level of 'critical' (Fielding, 2015). According to the UK government and the MI5, the UK consistently faces a heightened threat of terrorism, but the rise the Islamic State has heightened the threat further (Fielding, 2015). Canada has also seen the threat of terror affect them firsthand when in October of 2014 a Canadian soldier was gunned down by a terrorist on Canadian soil (Fantz, 2014). These events represent an increased and significant threat posed to the countries under study; therefore, this study sets a groundwork for identifying key parameters that are potentially helping drive a reduction in terrorism.

The study also aims to look at how efficiently countries are using their resources. Since 2001, the United States' overall debt has increased from 5.8 trillion to over \$19 trillion at the end of fiscal year 2015 (Treasury Direct, 2014). Moreover, the U.S. Congress has modified the debt limit 14 total times since 2001, enabling the government to raise the debt ceiling, furthering the increase in US debt (Austin, 2015). The point is that governments need

to understand the effectiveness of their monetary resources at a time when spending efficiency is important. This study aims to provide a clear, quantitative answer to evaluate the overall effectiveness of counterterrorism resources, which is beneficial to understanding how effectively countries are using their available monetary resources.

Definition of Terms

For the purposes of this research, the term *terrorism* was defined as violence, or equally the threat of violence, used or directed in pursuit of a political or ideological goal (Hoffman, 2013). Counterterrorism spending varied by country. For the US it is defined as the amount of U.S. dollars that are reported under the *Total Budget Authority* section in DHS's budget in brief for each fiscal year. For Europe and Canada, counterterrorism spending was classified as the amount of US dollars reported in the annual budget under their *public order and safety category*. Additionally, in terms of this research, the term *counterterrorism* is defined as operations that include the offensive measures taken to prevent, deter, preempt, and respond to terrorism (Source: Reinhart 2010).

Assumptions and Limitations

This study is built upon the assumption that terrorist organizations have had a growing interest in targeting the US, Europe, and Canada since September 11th. If terrorist organizations are not aiming to target the countries under examination, then domestic terrorism events could have easily decreased with minimal counterterror efforts by the countries themselves. This study is also based on the assumption that the countries under study are the driving force behind mitigating domestic terror threats in their own land.

A main limitation to this study is the fact that, due to the nature of the terrorism data, it is only feasible to track terrorist data as reported by the Global Terrorism Database (GTD).

If the GTD failed to record certain terror events, they are not factored into the study. Additionally, the study fails to factor in elements that may further play a role in preventing terror attacks within a country. Intelligence agency spending may also factor into the ability of a country to mitigate terror threats, however, due to data availability, it is difficult to factor these additional counterterrorism efforts.

Organization of the Study

This study is organized into five separate sections, the first of which was this introduction. The second section consists of a review of the current available literature on the topic of counterterrorism spending and its relation to terrorism. The third section of the study consists of a breakdown of the quantitative methodology used to answer both research questions that were previously addressed. The fourth section of this research describes the analytic results obtained from the empirical analysis. The final section of the study consists of concluding thoughts and implications. This section addresses both overall conclusions and implications, as well as thoughts on the potential for future research on counterterrorism spending efforts.

LITERATURE REVIEW

Introduction to the Literature Review

In considering a cost-benefit analysis of government counterterrorism spending, it is first important to gain an understanding of current research focused in the area of counterterrorism cost-benefit analysis. This chapter first presents a review of the main concepts that are important to this study, as well as an overview of 21st century terrorism and the subsequent counterterrorism efforts as a result. The chapter then will subsequently focus on a review of available literature on the topic of counterterrorism cost-benefit analysis. This will help to give a broad picture of current studies that have been undertaken to evaluate the benefits of counterterrorism efforts in the 21st century. Finally, the chapter will touch on an overview of quantitative research methods that are related to the specific study presented in this paper.

Defining Terrorism

In evaluating counterterrorism spending through a cost-benefit analysis, it is first important to provide a thorough understanding of terrorism as a concept. As Bruce Hoffman (1998) describes in his book *Inside Terrorism*, terrorism is often a difficult concept to define because the meaning of the term itself has changed frequently over the past two centuries. Nonetheless, in describing terrorism as it relates to counterterror spending, it is essential to define in order to distinguish terrorist events from other forms of crime within the countries under observation. As Eric Reitan (2010) states in his paper *Defining Terrorism for Public Policy Purposes*, “Any public policy response to terrorism achieves coherence only to the extent that there is a clear understanding of what is being targeted” (p. 1). Just as with public

policy, a cost-benefit analysis of a country's response to terrorism will only have coherence to the extent that there is a clear understanding of what the researcher defines as terrorism.

In its first popularization during the French Revolution, terrorism had somewhat of a positive connotation associated with establishing order in a recent revolutionary state (Hoffman, 2013). During the 1960s and 1970s, the idea of terrorism shifted in meaning to being associated with revolutionaries that included nationalists, separatists, and radical ideologically motivated groups (Hoffman, 2013). According to Hoffman, due to the dissolution of the Soviet Union and after the Cold War, terrorism came to be associated with 'threats to the stability of a nation by non-state actors'. It became associated with the idea of a power shift from legitimate governments to violent non-state actors in the region. In reference to late 20th century terrorism, Hoffman states, "Terrorism had shifted its meaning again from an individual phenomenon of subnational violence to one of several elements, or part of a wider pattern of non-state conflict" (p. 18). Into the 21st century, Hoffman describes how the September 11th terrorist attacks ushered in a new era of terrorism whereby the world saw an increased capability of violence, structure, and reach in terrorist organizations.

Within this idea of terrorism in the 21st century, it is important to identify details that distinguish terrorism from other types of crime commonly seen by countries. Due to its non-state nature, terrorism can often be confused with guerilla warfare. While there do exist similarities between the two groups' tactics, such as bombings, assassinations, hostage-taking, and kidnappings, the two groups are distinctly different (Hoffman, 2013). Often times, guerillas are a much larger, more organized force that aim to seize, hold, and exercise sovereignty over a territory. Guerillas also tend to operate as a military unit and attack military forces to achieve their goals. Terrorist groups, on the contrary often deliberately

avoid engaging enemy military forces, and *rarely* exercise sovereignty over a territory or population (although it has happened) (Hoffman, 2013).

Hoffman (2013) also discusses important differences between criminals' actions and terrorists' actions. The difference between these two groups comes down to their motivations and goals behind their acts. While criminal acts can be very similar to terrorist acts (e.g. kidnappings, murders, financial crimes, arson) the motivations for the two are most often different. Often times the criminal's act is driven by personal and selfish motivations. For example, a criminal theft is often for one's own personal gain, or a murder by a criminal is often motivated by personal anguish toward an individual (Hoffman, 2013). On the contrary, the goal of terrorist actions is to further a political or ideological goal through terrorizing a group or individual. A terrorist might still kill an individual, but it is often not because of personal hatred for that individual, rather it is to invoke fear amongst society to further a political or ideological goal (Hoffman, 2013).

Thus, according to Hoffman (2013), and for the purposes of the research, terrorism can be defined as having the following characteristics; being political in its motives and goals, being violent, or at least having the threat of violence, being designed to have psychological repercussions beyond the immediate victim, being conducted by an organization with a chain of command or a cell structure, and lastly that it is perpetrated by a subnational group or non-state entity.

History and Transition to Modern Terrorism

As previously alluded to, Bruce Hoffman (2013) suggests that the word "terrorism" was first popularized during the French Revolution in late 1700s. In this light, terrorism was used as a means by newly formed states, as a result of a revolution, to consolidate power, and

limit further revolutionaries that could counter the current state (Hoffman, 2013).

Specifically, the term became popularized because the lead party during the French Revolution would use mass killings and beheadings to intimidate citizens and to retain power, often referring to themselves as terrorists in doing so (Hoffman, 2013).

Into the 19th century, David Rappaport's wave theory of modern international terrorism suggests that *modern* terrorism began in the late 1800s with a first wave of terrorism marked by anarchists attempting to assassinate prominent state officials in an effort to further their agenda (Rappaport, 2002). According to Rappaport (2002), the anarchist wave of terrorism originated in Russia in the 1880s and then subsequently spread to Europe, the Americas, and Asia. This marked a specific era of modern terrorism due to the advancement of technology and communication during this same time. Rappaport discusses that three waves followed the 'anarchist wave' of terrorism with those being an 'anticolonial wave', a 'new left wave', and a 'religious wave'. The anticolonial wave of terrorism largely emerged after the First World War as the world an emergence of new states as colonial empires were defeated by dissenters (Rappaport, 2002).

The 'new left wave' that Rappaport (2002) describes corresponds to Barry Cooper's (2004) description of terrorism in the late 20th century; essentially, an era marked by radical left-wing groups attempting to reach political goals through violence. This new left wave of terrorism is also described as the rise of social-revolutionary terrorism where radical-left wing groups used means of terrorism in an attempt to create social change (Post, McGinnis, and Moody, 2014). Among these radical left-wing groups included many that were attracted to Marxist-Leninist revolutionary theory, such as the Red Army Faction (RAF) in West

Germany, the Red Brigades in Italy, the Revolutionary Armed Forces of Colombia (FARC), and the Weather Underground in the US (Post, McGinnis, and Moody, 2014).

By the end of the 1970s, while radical political terrorists still existed, the world saw another shift to where state-sponsored terrorism became of prominence (Post, McGinnis, and Moody, 2014). In 1979, an Iranian Islamic cleric, the Ayatollah Ruholla Khomeini, had his militant Islamic followers invade the US embassy in Tehran and kidnap 52 US diplomats, holding them hostage for 444 days. After this event, according to Tesselano Devezas (2014) the radical Islamic world “began a determined and concerted campaign of fund raising, recruitment, training, armament and mobilization that resulting in the formation of an alliance of Anti-Western Islamic nations which included Saudi Arabia, Pakistan, Iran, Egypt, Syria, Libya, Yemen, Sudan, and Afghanistan” (p. 246).

Evidence for this state sponsored activity includes Iran’s late 20th century funding of the Taliban with weapons and money as well as the fact that Iran consistently funds Hamas with a significant amount of money and training annually (Stancati, 2015). Further evidence for this is the known support that the Taliban offered al-Qaeda before and after September 11th (Byman and Kreps, 2010). A driving factor behind the rise in state sponsored terrorism is the fact that it provided Middle Eastern states a relatively inexpensive and convenient way to further state interests with non-state actors (Hoffman, 2013). Additionally, through using terrorist organizations to act against western states, Middle Eastern countries remained anonymous while also avoiding the threat of a direct retaliation by western states (Hoffman, 2013). It is important to note that state-sponsored terrorism is still a prominent factor of terrorism, even into the 21st century, however its founding was rooted in the late 1970s. As

Walter Laqueur states, “It is almost certain that state-sponsored terrorism will continue into the foreseeable future” (Laqueur, p. 243, 2011).

A 21st Century Terrorism Shift

Having established a historical framework for terrorism, one must also understand the fundamental shift in terrorism into the modern 21st century. Over the course of the 20th century, the greatest period of terrorist group formation existed largely in the 1970s and 1980s during the aforementioned new-left wave of terrorism (Cooper, 2005). This age, as described earlier was primarily driven by socio-political terrorist groups with goals that were primarily political in nature. Cooper (2005) suggests that motivations of terrorists have shifted into the 21st century from previous motivations of the social-revolutionary terrorists in the 1960s and 1970s to motivations that are driven by religious factors more so than political. He states, “Moreover, the causes espoused by terrorists have changed. The social revolutionaries, secular nationalists and radical right of an earlier day have been largely replaced by terrorists promoting ‘religiously inspired agendas’ (Cooper, 2005, pg. 1). Other than a shift toward. Cooper also explains that one of the most shocking characteristics of the September 11th attacks on America was the fact that the attacks were ‘meant to please a deity’.

David Rappaport’s theory of terrorism also supports the aforementioned idea that terrorism has shifted in focus and group orientation into the 21st century. Rappaport (2012) argues that currently, terrorism is in an era of the religious wave; a wave marked by terror that is driven and motivated by religious elements. Rappaport further makes an argument that the Islamic faith lies at the heart of the religious wave of terrorism.

Interestingly, Rappaport (2002) discusses the idea that modern religious terrorism is marked by a lesser number of overall terror organizations, however describes the organizations that do exist as being larger and more durable than terror groups prior to the religious wave. A good representation that supports Rappaport's claim of current terror groups being larger and more durable is the 21st century rise of groups like Al Qaeda, the Islamic State, and Boko Haram. As Rappaport states, "Islamic groups are more durable than their third wave predecessors. These groups are larger organizations and Bin Laden's Al Qaeda was perhaps the largest with 5,000 members and cells operating in seventy-two countries" (p. 19). Michael Jenkins (2001) also supports the idea that terror groups are more durable and harder to pinpoint. Jenkins alleges that 21st century terrorist organizations have become much more amorphous than previously seen. He states, "In the 1970s and 1980s, we could identify specific terrorist organizations; we knew their leadership, their capabilities their modus operandi. Today we must think in terms of universes of like-minded fanatics in which there are galaxies and networks, even individual operators" (p. 324). In having these complex and somewhat fluid structures, 21st century terrorist organizations make it difficult for tracking and intelligence collection by law enforcement and government agencies (Jenkins, 2001).

In considering Rappaport's approach to describing the increased durability, size, and religious focus of terrorist organizations in the 21st century, one must also consider the change in dynamic of the threat that modern terrorism poses to states. In John Gearson's 2002 work titled *The Nature of Modern Terrorism*, the author argues that the end of the 20th century ushered in a new era of terrorism known as 'super terrorism'. In line with Rappaport, Gearson poses that, historically, terrorism is has been a difficult concept to define due to its

different uses in different time periods. Terrorism has been used historically as a tool for nationalists and revolutionaries to further their goals, but has also been used in a similar capacity by state governments to allow maintenance of power (Gearson, 2002).

Although difficult to define, Gearson (2002) makes a clear distinction that, upon the ending of the Cold War, and into the 21st century, a new age of terrorism emerged. This new stage of terrorism, according to Gearson, was marked by a nuanced religiously motivated emphasis where organizations focused greater attention on increased deaths through attacks greater than they did in previous terror campaigns. The shift in terrorism into the late 20th and early 21st century did not necessarily shift the overall goals of terrorists, but rather shifted the way in which terrorist attempted to achieve their goals. Examples of the increased terror focus on killing into the 21st century include the 1993 World Trade Center bombings, the series of 13 simultaneous car bombings in Bombay, the attack on U.S. military facilities in Saudi Arabia at Khobar, the bombing of two American embassies in East Africa 1998, and the USS Cole bombing in 2000 (Gearson, 2002). Of course, the attacks on September 11th also marked a significant turning point in how the U.S. and other countries viewed terrorism going into the 21st century. After September 11th, the bus suicide attacks on July 7th, 2005 in London provided further evidence that the focus of terrorism was shifting toward increasing violence in terms of their attacks (London Bombings, 2016). These attacks killed 52 civilians and the attackers were inspired by Al-Qaeda, one more showing the growing trend of religiously motivated terrorism in the 21st century (London Bombings, 2016).

Gearson (2002) also describes how the organizational structure of terrorist groups have changed into the 21st century. As Gearson states, in reference to modern terrorism, “the traditional structures of the groups concerned also evolved. Flatter, less hierarchical

organizations began to emerge that were find ultimate expression in the description of Al-Qaeda as a loose network” (p. 17). The author further describes modern organizations as more adaptable and responsive because of their adapted structures.

An additional consideration in the shift of terrorism is the concept of state sponsors. Gearson (2002) describes that the late 20th and early 21st century saw an increasing awareness of possibilities that state actors were beginning to support non-state extremist groups. State sponsors of terrorism particularly took off during the 1960s when state governments began to support terrorists through providing funds, weapons, and training to terrorist organizations (Byman, 2005). States are often motivated to do this because terrorist activity against a particular Western state could potentially help a state actor achieve their own goals (Byman, 2005).

Along with terrorism shifting toward increased deadly attacks, state sponsored terrorism, and toward an increased emphasis on religion, another major concern that has come about in the 21st century the concept of the possibility of terrorists obtaining a weapon of mass destruction (Gearson, 2002). After the attacks on September 11th, Al-Qaeda frequently and publicly threatened the United States and the Western world with larger, more deadly terrorist attacks (Intriligator and Toukan, 2006). With this threat, came also the threat of terrorist obtaining and using a weapon of mass destruction (WMD) against any number of countries, specifically those aligning with western ideals. Many scholars further support this idea in claiming that due to the motivations and capabilities of 21st century terrorists, many of the previous constrictions that inhibited terrorists from using WMDs are fading away (Hoffman, 2013). Further, scholars agree that WMDs are a perfectly tailored solution for a

group of individuals whose maximal object is to humiliate, annihilate, and strike fear within their enemies (Kurtulis, 2011).

Counterterrorism Efforts

With the increased threat of modern 21st century terrorism described above, many countries, especially western countries, have made adaptations to their security policies in order to combat these threats. In order to effectively analyze the costs and benefits of counterterrorism spending, it is important that the research addresses the different adaptations made by the seven countries under study.

Perhaps no country has made more adjustments to combatting terrorism than the US. This is understandably so, as the US was hit with the largest domestic terror attack in the 21st century on September 11th 2001. Conceivably one of the most comprehensive responses to modern terrorism came when then US President signed the US Patriot Act into law within almost a month of the September 11th attacks (Doyle, 2002). The stated purpose of the Patriot Act is to track down the terrorist members that were responsible for the September 11th attacks as well as prevent against a similar attack against the US in the future (Doyle, 2002). The Patriot Act mainly gave increased powers to law enforcement and intelligence officials to trace terrorists' communications and also added new financial regulations to trace possible terror financing (Doyle, 2002).

In addition to the Patriot Act, the US also created the DHS in 2002 to act as the agency in charge of protecting Americans against domestic terrorist attacks (DHS About, 2016). The passage of the Homeland Security Act of 2002, which created the DHS, led to a current organization of over 240,000 employees that serve in jobs that range from border security to criminal investigations. Mainly, the DHS houses the following agencies: US

Secret Service, the Transportation and Security Administration, the US Coast Guard, the Federal Emergency Management Agency, US Immigration and Customs Enforcement, US Customs and Border Protection, and the US Citizenship and Immigration Services (DHS About, 2016).

Moreover, the United States also reacted to the threat of modern terror by declaring global war on terror and entering into two wars, Operation Enduring Freedom in 2001 and Operation Iraqi Freedom in 2003 (Council on Foreign Relations, 2014). According to the Congressional Research Service, these two wars combined cost the US a total of \$1.6 trillion (Belasco, 2014). Thus, in reaction to September 11th and the new threat of modern terrorism, the US vastly increased both their domestic counterterrorism efforts, but also their cross-border terrorism resources.

Richard Jackson (2011) supports these claims in his work on evaluating US counterterrorism policy during both the Bush and Obama administrations. For instance, Jackson (2011) states, “The central elements of the war on terror were embedded in the institutions and practices of American government and security in the years following 9/11” (Jackson, 2011, p. 394). Jackson further assesses that, “The Bush administration and its top officials worked to institutionalize the war on terror approach to counterterrorism at all levels of national and local government” (Jackson, 2011, p. 394). Thus, after September 11th, the US government saw a massive change of focus in favor of counterterrorism operations in a host of local, state, and federal agencies.

A few examples of the aforementioned change of focus toward counterterrorism include the establishment of the Federal Bureau of Investigation’s (FBI) Joint Terrorism Task Force, the changes brought on by the US Patriot Act, and also the establishment of the DHS.

Additionally, a main focus of the US Secret Service has shifted toward countering terror financing within the US and across the world. With the passage of the Homeland Security Act of 2002, the US also established a number of law enforcement fusion centers (DHS, 2008). According to the DHS, these centers are designed to serve as primary focal points within the state and local environment for the receipt, analysis, gathering, and sharing of threat-related information among federal, state, local, tribal, and territorial (SLTT) partners (DHS, 2008).

In all, the US government has adapted strongly to the nuanced threat of terrorism in the 21st century. Through creation of new agencies, foreign contingency operations, and new legislation that enhances the ability of US law enforcement to target and track terrorists, the US has been a lead in counterterrorism efforts throughout the world.

The UK correspondingly has made various adaptations to increase counterterrorism efforts in a determination to protect its citizens from what they perceive as a heightened threat (Blake et al., 2012). In response, public display of violence and global reach that the 9-11 terrorist attacks provided, the UK government began to pass an increasing amount of anti-terrorism legislation to prevent against such attacks on their own soil (Blake et al., 2012). For instance, in November, the UK government passed the Anti-Terrorism, Crime and Security Act 2001, which essentially imposed gave increased power to law enforcement to hold suspected terrorists as well as allowed bank accounts and assets of suspected terrorists to be frozen (Anti-terror Laws, 2015). Another feature of this act was to allow bank accounts and assets of suspected terrorists to be frozen. In 2005, the UK passed the Prevention of Terrorism Act which also gave further powers to that enabled to government to restrict the actions of suspected terrorists, even if there was lack of evidence (Anti-terror Laws, 2015). In

response to London being hit with three suicide bombings in 2005, the UK passed the Terrorism Act of 2006. This allowed the government to detain suspected terrorists for 28 days prior to them being charged, while also prohibiting the glorification of terrorism (Anti-terror Laws, 2015).

Similar to the US, in response to the London terrorist attacks in 2005, the UK government also underwent a slight restructuring to better combat terrorism (Blake et al., 2012). Prior to changes, the UK's Home Office solely directed and supported the country's counterterrorism strategy. In 2007, the UK split the duties of the Home Office by creating the Ministry of Justice, which would handle the former prison, probation, and court duties of the Home Office (Blake et al., 2012). As a result, the Home Office became solely responsible for security, immigration, policing, and counterterrorism.

In addition to legislation, the UK also responded to the modern terror threat with force, as well as increased security spending. Primarily, the UK came to America's aid in both Iraq and Afghanistan to support the US mission in defeated global terrorist organizations as well as the regimes that supported them (Cost of Wars, 2010). During their main support time, Britain spent at least £9.24bn in Iraq and £11.1bn in Afghanistan between April, 2001 and March, 2010 (Cost of Wars, 2010). In addition to their support abroad, the UK also increased spending on public safety and security. According to data taken from the UK annual government budget, from 2001 to 2009, public safety and security spending increased from \$35 billion to over \$53 billion (Budget, 2014).

Changes and adaptations toward counterterrorism policy were also seen throughout Europe. For example, in the UK, they adapted their overall counterterrorism policy as a result of the September 11th attacks and the London bus bombings in 2005 (Coaffee, 2010). As

John Coaffee (2010) states, “The events of September 11 2001 in New York and Washington, and of July 7 2005 in London, have ushered in a new era in protective counterterrorist planning within UK urban areas” (p. 1). Specifically, the UK’s adapted counterterrorism policy as a reaction to the increased violence in 21st century attacks was called CONTEST (Coaffee, 2010). Coaffee also states that “Traditional emergency planning and counterterrorist strategies in the UK were rethought in the light of an increased appreciation of the multiple and fluid threats posed by international terrorism” (Coaffee, 2010, p. 943). Developed in 2010, the UK CONTEST counterterrorism strategy was organized around four key objectives with those being pursuit to stop terror attacks, prevention of people becoming terrorists, protection to strengthen UK protection against an attack, and preparedness to mitigate the impact of a potential attack (UK Countering Terrorism, 2011). As their CONTEST policy states, “We recognise that the overall terrorist threat we face continues to be significant. The agencies and the police continue to disrupt terrorist-related activity here. The numbers of people arrested and then convicted for terrorist offences remains high” (UK Countering Terrorism, 2011, p. 15). Thus, the UK has overhauled their counterterrorism strategy in many ways, ranging from their policy and legislation changes, to increased spending on defense and protection.

Canada also made adjustments to their counterterrorism strategy in response to the happenings on September 11th and the subsequent threats that followed (Canada’s CT Strategy, 2015). Langlois and Brodeur allege that when Paul Martin succeeded Jean Chrétien as Canada’s new Prime Minister in December 2003, one of his most noticeable moves was to appoint a Cabinet that included a new Ministry of Public Safety and Emergency Preparedness (MPSEP), which was speculated to be patterned on the US Department of

Homeland Security (Langlois and Brodeur, 2005). While not in direct response to a terrorist attack on their own soil, Canada made these changes in response to the perceived increased terror threat brought on by September 11th (Langlois and Brodeur, 2005).

Much like the US and Europe, the Canadian government also responded to September 11th with new legislation that would further their ability to combat terrorism within their own country. In December 2001, Canada passed the Canadian Anti-Terrorism Act which, much like the US Patriot Act, extended the Canadian government's powers to investigate and mitigate terrorism (Roach, 2012). The Canadian Anti-Terrorism Act specifically increased anti-terrorism financing laws, broadened the array of different terrorist offenses, and also provided the government with the ability to remove terrorism speech from the internet (Roach, 2012). In 2015, the Canadian government also passed an updated version of the anti-terrorism act largely aimed at preventing recruitment and homegrown terrorism within the country (Canada.gov, 2015).

In seeing the vast changes that the US, Europe, and Canada have implemented to mitigate terrorism events effectively within their respective countries, it is important to understand how effective the different countries' changes in counterterrorism are at reducing levels of terrorism. The underlying data suggests that with each of the aforementioned countries increasing their counterterror capabilities, it led to increased levels of spending. For example, the creation of the DHS by the US government alone cost the US over \$50 billion within its first two years of funding (DHS, 2014). The UK also increased their public safety spending by almost \$20 billion over the course of eight years after the attacks on September 11th (Budget 2014, 2014). This on top of the Global War on Terror spending provides evidence that the reaction to counterterrorism by all three countries not only was large in

nature, but also represented heightened escalation in spending. One potential way to evaluate spending effectiveness, and thus, the intent of this research, is to evaluate spending increases and their relative impact on reduction of terrorism events. In order to do this, it is central to give an appropriate understanding of the efforts that each country has taken to adjust their counterterrorism strategies.

Established Counterterrorism Research

Much research has been written since September 11th 2001 on the topic of counterterrorism strategies and their overall impact on reduction of terrorist events. Studies range from statistical cost-benefit analyses to evaluate the cost of preventing one terror attack to other studies that evaluate more specific counterterror efforts such as airport security measures. The goal of this research is to fill a gap to specifically focus on if counterterrorism spending shows a statistically significant reduction in actual terror events within three specific countries.

On a broader scale, a 2008 study by Konstantinos Drakos and Nicholas Giannakopoulos evaluated the authorities' relative counterterrorism effectiveness focusing on its behavior over time, its impact on casualties and property losses (Drakos and Giannakopoulos, 2008). Specifically, the authors' use transnational terrorism data and discrete statistical choice models to evaluate counterterrorism effectiveness (Drakos and Giannakopoulos, 2008). As one might expect, the authors found that as the probability of a terrorist incident being stopped by authorities increased, the probability of casualties and damages from terror attacks decreased (Drakos and Giannakopoulos, 2008). Further, the authors concluded that the overall probability of terrorist incidents had decreased for their observed time period of the study. This represents a case where research was done solely on

transnational terror events, but nonetheless a statistical correlation was established between counterterrorism efforts and a reduction in transnational terror events (Drakos and Giannakopoulos, 2008).

A 2014 study by John Mueller and Mark Stewart also takes a unique approach to evaluate counterterrorism spending through a cost-benefit lens. Mueller and Stewart attempt to evaluate the ‘appropriate level’ of counterterrorism and also statistically analyze the amount of potential terror attacks that it would take to justify counterterrorism spending (Mueller and Stewart, 2014). Using estimates of costs for past terrorist attacks, such as the London bombings and September 11th, the authors calculate the number of terrorist attacks that would need to occur in order for the counterterrorism spending increases by the US to be justified (Mueller and Stewart, 2014). The authors find that counterterrorism spending increases would need to avert an implausibly high number of terror attacks within the country for the post September 11th spending increases to be justified (Mueller and Stewart, 2014). This study provides a counterterrorism cost benefit analysis from the perspective of attempting to justify spending through evaluating what would need to occur in order for spending to be “worth it” (Mueller and Stewart, 2014). Alternatively, the proposed research attempts to conduct a cost-benefit analysis from the perspective of evaluating spending’s actual effect on reduction of terror events.

Other studies, such as Sandler, Arce, and Enders’ 2011 study on counterterrorism linkages focus on actual tangible costs to evaluate the effectiveness of counterterrorism spending. In their study, the authors evaluate the payback from Interpol’s efforts to coordinate proactive counterterrorism efforts throughout their member countries. The study computes counterfactual benefit measurements using Interpol spending and arrest data to

come up with a cost-benefit ratio of spending to saving on mitigating terrorism. The authors' findings include that for every dollar spent by Interpol on counterterrorism, it returns 200 dollars in savings from terror attacks (Sandler, Arce, and Enders, 2011). This study, in a much more literal sense, represents a true cost-benefit analysis on counterterrorism spending.

Counterterrorism has also been evaluated on a more specific level by Mueller and Stewart (2012) through their cost-benefit analysis of aviation security. In their 2012 study, the authors assess the risk reduction, losses, and security costs of aviation security measures with how well they actually inhibit aviation threats (Mueller and Stewart, 2012). The authors specifically evaluated installed barriers on cockpit doors, the Federal Air Marshal Service, and the Federal Flight Deck Officer Program. According to the authors, "We find that the installed barriers are cost effective if the annual attack probability of an otherwise successful attack exceeds 0.5% or one attack every 200 years. The FFDO program is cost-effective if the annual attack probability exceeds 2%. On the other hand, more than two otherwise successful attacks per year are required for FAMS to be cost effective" (Mueller and Stewart, 2012, p. 1). This study represents a more focused analysis on specific policies, whereas the proposed research aims to simply evaluate counterterrorism spending on a broader country scale.

Orlandrew Danzell and Steve Zidek's 2013 study on the reduction of the incidence and lethality of terrorist events through counterterrorism spending perhaps most closely represents the methodology and approach of the proposed research. In their study, titled *Does counterterrorism spending reduce the incidence and lethality of terrorism? A quantitative analysis of 34 countries*, the authors evaluate security spending as an independent variable to see its subsequent effect on actual terrorist event occurrence. Using cross sectional time

series data of terror events and spending for 34 countries, the authors used a Poisson regression model to identify the effects of the independent variable (counterterrorism spending) on the dependent variable (terrorism). The authors also use a number of control variables such as the country size and the urban population in order to control for outside factors. The authors' overall conclusion was that increased terrorism spending actually does have a net effect on the reduction of terrorist incidents, both transnational and national. Further, the authors concluded that

Hypothesis

The former study represents a framework for the proposed research to evaluate US, European, and Canadian counterterrorism spending and its overall reduction of terrorist event within the respective countries. A commonality of the different studies described above is that they all represent research that attempt to evaluate if certain counterterrorism strategies are actually worth the effort. Further, the majority of the former studies also use quantitative methods to analyze their hypotheses.

While the proposed research aims to use quantitative methodologies to evaluate counterterrorism spending's subsequent effect on domestic and transnational terrorism, it also plans to take a more central focus on seven individual countries (US, UK, France, Germany, Italy, Spain and Canada), rather than evaluating a larger number, such as the 34 in Danzell and Zidek's 2013 study. The proposed research aims to extend terrorism event data and spending data beyond year 2009. This specifically is important as terrorist groups have continued to expand their global reach, strength, and capabilities (Hoffman, 2011). While some of the former studies also looked at specific measures of counterterrorism, such as the

Federal Air Marshal Service, the proposed research will only use counterterrorism spending data, as opposed to focusing on specific counterterrorism programs.

- H1: *counterterrorism spending likely leads to the reduction of domestic terrorism events.*
- H2: *counterterrorism spending likely leads to the reduction of transnational terrorist events.*
- H3: *counterterrorism spending leads to a reduction of terror attack related fatalities.*
- H4: *counterterrorism spending leads to a reduction in terror attack related fatalities.*

Through the research, it is believed that a better understanding of counterterrorism spending efficiency and effectiveness will be understood. Additionally, the research will likely provide avenues of approach for further study in the area of counterterrorism cost-benefit analysis.

METHODOLOGY

To empirically evaluate the nexus between terrorist attacks and the effects that counterterrorism spending has on reducing overall domestic and transnational terrorist incidents within specific countries, this paper uses a cross-sectional times series statistical approach. The time series evaluated was the time period from year 2000 to year 2014. The dependent and independent variables was mainly collected from the Global Terrorism Database, the European Union (EU) spending database and published government budgets for the different countries (Eurostat, 2016)ⁱ. In addition to evaluation of overall terrorist events, the study examined the effects of counterterrorism spending on the lethality of those terror events. The dataset builds on Danzell and Zidek's (2013) empirical analysis of counterterrorism spending. The following subsections will specifically highlight the methodologies used to perform the research.

Variables and Operationalization

In order to evaluate the effect of counterterrorism spending on the reduction of overall terrorist events, it was necessary to incorporate and operationalize a number of variables. Primarily, the independent variable in this research was counterterrorism spending.

Independent Variable

The independent variable *counterterrorism spending* specifically detailed the total spending amount in the areas of public safety spending that is directed at counterterrorism (for each country). While the categories of spending data differed slightly by country, government budget data on security spending for the US, Canada, and the UK gave explicit dollar amounts allocated for public safety and counterterrorism. These spending figures were

consistent with the criteria used to select them for use as data in the study (See *Data Collection*).

Dependent Variable

The dependent variables in this research is a yearly count of the number of *domestic* and *transnational terror* attacks committed by individuals and terrorist organization. As a way to determine the severity of terrorist attacks, casualties and terrorism fatalities were also included (Danzell and Zidek 2013; Frey et al. 2007). Terrorist incidents were divided into the subcategories of domestic and transnational terrorism. For the purposes of this research, domestic terrorism was defined as any act of terrorism carried out within a country that does not transcend across international borders (Enders and Sandler 2008; Hoffman 2013). Thus, transnational terrorism, for the purposes of the research, was defined as a terrorist event that involves cross border movement to the country under attack (Hoffman, 2013). As noted before, the Global Terrorism Database that was used to obtain terrorism attack data gave in depth descriptions of the terror events, which allowed for accurate interpretation of whether or not an attack was classified as domestic or transnational (Global Terrorism Database, 2015).

Control Variables

Given that extant literature suggests multiple factors condition the likelihood of terrorist incidences, this thesis incorporates several variables to control for aspects of a state that are considered to be more conducive to terrorist events. In total, nine control variables were used.

The first control variable used was *urban population* percentage. This variable was obtained from the World Bank and acted as a measure of the percent population per country

was classified as living in urban areas. This variable was incorporated into the study because urban populated areas are often seen as more conducive to terrorist attacks (Piegorisch, Cutter, and Hardisty, 2007). Thus, the variable was used in an effort to control for countries that may have a higher urban population, and consequently, a greater vulnerability to terrorism attacks.

The second control variable used was the *size of the country*. The size of the country was calculated through using World Bank data on total population per country, and was subsequently logged to control for skewness. Research suggests that increased populations and heterogeneous cultures are more susceptible to terrorist attacks (Engene, 2004).

In addition, the research incorporated *Muslim population* as a control. This was also done in an effort to control for heterogeneity of different cultures within a country (Engene, 2004). This control variable was obtained as a percentage of the total population within each country under study from a 2011 Pew Research census (Muslim Population, 2011).ⁱⁱ

Literature also suggests that the economic conditions in a country, particularly economic downturns, can be positively correlated with a greater incidence of terror events (Blomberg, Hess, and Weerapanac, 2004). To control for this, the research incorporated *gross domestic product (GDP) growth*, a World Bank indicator, as a variable. This growth was incorporated as an annual percentage per year to control for economic fluctuations experienced by the countries under evaluation. The research also incorporated the *GDP per capita* for each country under study.

Scholars have also pointed to political repression levels as a determinant for terrorism (Danzell 2011; Danzell and Zidek 2013; Krueger and Laitin 2003). As Abdelaziz Testas (2010) states in his research on terrorism determinants, “low and high repression are a

positive determinant for terrorism in sample countries” (p. 23). Thus, the research incorporated three control variables to account for these factors. The three control variables used to account for political repression were *political rights*, *repression* scores, and *civil liberties* scores. To control for repression, polity 2 scores were coded as a replica variable that scores 1 for values between -10 and 3 and then 0 for values between 4 and 10 (Danzell and Zidek, 2013). This variable was then coded as repression. Political rights and civil liberties scores were obtained from *Freedom House*, which ranks countries on values from 1 to 7, with a value of 1 being most free and a value of 7 being least free. These values were coded based on their assigned score in the *Freedom House Index* (Freedom in the World, 2015).

The final control used in the study was *relative political capacity*. This variable attempted to incorporate a country’s ability to extract resources toward domestic security. To do this, the notion of relative political capacity (rpc4) from Arbetman-Rabinowitz and Johnson was used. According to Arbetman-Rabinowitz and Johnson, *Relative political capacity* can “measure the ability of a government to extract resources from a population given their level of economic development”. (Arbetman-Rabinowitz and Johnson, 2007). Essentially, this variable attempts to control for the ability of government to access resources to enable it to enact varying types of policies. In the context of this particular study, relative political capacity is used because it can capture the ability of the seven countries under study to access fiscal resources to utilize in counterterrorism efforts.

Additional information about the Data Collection and specification Process

The entirety of the data used in the study was retrieved from secondary sources and then subsequently organized in a Microsoft Excel data table for analysis. The database

provided Microsoft Excel tables available for download which organized terrorism events by year and by country. The GTD also gave in-depth descriptions of each terrorist attack, which provided information as to whether or not the attack was to be classified as transnational terror or domestic terror. Thus, the data was collected and then categorized in a table providing a total count (for each country) of terrorist attacks per year; and also a total count of both domestic and transnational terror attacks per year.

Terrorism attack data was collected for the United States, the UK, France, Germany, Italy, Spain, and Canada for years 2000-2014. Years 2000-2014 were used because counterterrorism literature suggests that countries began to increase their focus on counterterrorism at the turn of the 20th century (Emerson, 2014).

Counterterrorism spending data was collected for each country studied, however, the data was obtained from different sources in order to find data for all countries. The criteria used to select this data was largely based on Drakos and Konstantinou's (2004) approach to evaluate increases in spending related to counterterrorism. Prior research suggests that counterterrorism spending is often either embedded within other spending categories or is classified and not available to the public (Drakos and Konstantinou, 2004). In order to combat this issue, terrorism is considered as criminal activity and therefore counterterrorism spending can be observed under the budget categories of public safety spending.

Explicit counterterrorism spending dollar amounts were obtained for the United States using government budget reports that highlighted spending categories. The US Department of Homeland security spending amounts were used as a measure for counterterrorism spending for the US. The DHS spending category was consistent with the aforementioned criteria, but also can be considered more specific than simply just 'public

safety spending'. This is due to the fact that the DHS' stated mission is to 'ensure a homeland that is safe, secure, and resilient against terrorism and other hazards' (Our Mission, 2015). Since the DHS organization is the largest US agency that is directly focused on counterterrorism, its budget was used as the measure of counterterrorism spending in the US (Our Mission, 2015). The DHS spending data was obtained from the organization's annual budget report.

The UK counterterrorism spending amounts were obtained from the UK Government's annual budget report. The UK Government's annual budget had specific spending amounts categorized as 'public order and safety', which were ultimately the dollar amounts used for UK counterterrorism spending data in the study. These dollar amounts were used based on the selection criteria guided by prior research (Drakos and Konstantinou, 2004; Danzell and Zidek 2013).

The data for the Canadian government spending was obtained from the Canadian Department of Finance website using archived financial reports. The archived financial reports detailed different spending amounts per year by category. The category used for the data was 'public safety spending'. The criteria used to select this category was also based on prior research that states, due to the secret nature of counterterrorism spending data, public order and safety data is the best estimate of counterterrorism spending when not explicitly stated (Drakos and Konstantinou, 2004).

The data for the remaining European countries (France, Germany, Italy, and Spain) was obtained from the European Union (EU) spending database (Eurostat, 2015). The EU spending database provided government spending amounts by category for each EU member

country. The category of public order and safety in the database was used to select spending amounts for the research.

Empirical Approach

Once collected, the data was organized into a Microsoft Excel data table. The table categorized spending amounts and terrorist attack incident data by country. Thus, this gave an organized table that displayed total terrorist attacks per year for each country. This table also showed the amount of money each country allocated to counterterrorism per year. The control variables were also added to the same table showing economic growth, urban population, repression and total population for each country per year.

STATA 14 software was then used to import the Excel data table and run the subsequent statistical analysis. First, the data was assessed as a whole using the summary statistics function in STATA. This provided a summary of the variables used. Subsequently, the data was assessed for multicollinearity through estimating the variance inflation factor of the variables used in the study. This step was completed to ensure no two variables were having a compounding effect on the dependent variable under study.

The data was then statistically analyzed using a total of two different statistical models. Because the hypotheses relate to the number of terrorist incidences, fatalities and casualties, simple Ordinary Least Squares (OLS) was found to not be suitable. For the terrorist incident data, this analysis employed a count model. Poisson models have been shown to be more appropriate in this case, as they have been shown to be more efficient than regular OLS when counts are highly dispersed (Long 1997; Cameron and Trivedi 1998). Further, this specific model was used because Poisson regression models tend to work efficiently when the dependent variable is a count of some event; in this case, terrorism

events (Introduction to SAS, 2007). Therefore, Poisson regression model was used to assess the effects of counterterrorism spending on domestic terrorism

For the fatalities and casualties count, an OLS model with panel corrected standard errors was used because it was found to be more efficient based on test of fit. This model was selected because extant literature suggests that the model is efficiently used when analyzing repeated observations of the same cross sections (Linear Panel Model Basics, 2012). In this case, the repeated observations were terrorism events across the years 2000-2014. The linear regression model with panel-corrected standard errors was also used because previous models that use a generalized least squares approach often show extreme overconfidence in results (Beck and Katz, 1995). This overconfidence can underestimate variability by up to 50 percent, according to researchers (Beck and Katz, 1995). Thus, a model that incorporates panel-corrected standard errors was used in an attempt to produce more accurate results.

To address possible endogeneity, the independent variables were lagged (Gujarati 2002). To determine if multicollinearity is affecting the models, the models were assessed with Variance Inflation Factor (VIF) tests. Individual variable VIF scores do not approach 5 and the mean VIF for each model never exceeds 4.0, which indicates that multicollinearity does not have a negative effect on the estimates (Table 2).

Limitations of the Research Design

The main limitation to the research design is the fact that counterterrorism spending data categories are inherently difficult to pinpoint (Drakos and Konstantinou, 2004). While strict criteria were used to select the spending data, it is important to recognize that other factors can be attributed to combatting terrorism within a country. For example, intelligence agencies put a great deal of resources to limiting terrorist attacks within a country. It was not

feasible to include these figures into the study, and thus, the study may not include all aspects of spending that may help a country combat terrorism within its borders.

Additionally, due to the clandestine nature of counterterrorism budget data, a specific country's budget allocation to counterterrorism could potentially include, within it, money that is also used for law enforcement or intelligence. Simply put, the counterterrorism spending data figures may not be exclusive to money spent on counterterrorism, however, as stated previously, the spending figures used provided the best estimate of counterterrorism spending per country.

The other limitation is that this study has no way of factoring in the increased and advancing efforts of terrorist organizations toward recruitment and attack planning. There are likely other factors at play, in terms of how well a terrorist organization operates, besides the amount of money being spent by other countries to combat their organization. For example, in 2015, there was a substantial rise in the Islamic State's ability to recruit and train new members. This cannot be accounted for within the study, but is a key aspect to understanding what factors can limit terrorism attacks within a country.

RESULTS

The following section provides an analysis of the results from the four models used to analyze counterterrorism spending data and terrorism events. Two of the four models proved to be statistically significant when evaluating counterterrorism spending. This led to the researcher rejecting the null hypothesis for both hypothesis H1 and hypothesis H3. The overall results were relatively consistent with extant literature, showing that counterterrorism spending increases led to a reduction in terror attacks and terror attack lethality, albeit a very small reduction.

Summary Statistics

Tables 1 and 2 provide initial statistical tests that were run on the variables prior to running the analysis. Table 1 provides basic summary statistics that give an overview of the means, standard deviation, minimum value, and maximum value for the variables that were examined. The mean domestic terror attack count was 15.97 attacks, whereas the average transnational terror attack count was much lower at .76 attacks. This initially showed that the dataset obtained from the GTD consisted of much more domestic terror incidents than transnational terror incidents.

The mean values for terror attack related fatalities and terror attack related casualties were very similar with the mean fatality count at 32.07 and the mean casualty count at 38.38. The mean value of money spent on counterterrorism was 5.00e9, however, the standard deviation of 1.49e10 for counterterrorism showed that there was a high degree of variation in amounts spent by countries on counterterrorism.

Table 2 shows the variance inflation factor (VIF) test that was run in STATA 14. The VIF values were all between 1 and 3, which meant that there was a low degree of

multicollinearity amongst the variables. A VIF below 10 is considered sufficient for a statistical variable, proving that the controls used in the study were satisfactory for analysis.

Table 1. Summary Statistics

Variable	Observed Values	Mean	Standard Deviation	Min	Max
Year	105	2007	4.341216	2000	2014
Country	105	4	2.009592	1	7
Terrorism Events per Country	105	16.73333	23.58384	0	137
Domestic Count of Terror Events	105	15.97143	23.51614	0	136
Transnational Count of Terror Events	105	.7619048	1.376477	0	8
Terror Fatalities	105	32.06667	293.1861	0	3001
Terror Casualties	105	38.38095	193.6618	0	1835
Counterterrorism Spending	105	3.24e10	1.49e10	5.00e9	6.00e10
Population	105	9.2e07	8.7e7	3.08e7	3.19e8
Urban Population	105	76.91143	4.43763	67.2	82
Civil Liberties	105	1.161905	.3701302	1	2
Political Rights	105	1	0	1	1
Repression	105	0	0	0	0
Rpc4	105	1.017382	.3299858	.66436	1.754947
GDP per capita	105	36578.05	9409.507	14787.2	54629
Economic Growth	105	1.444762	2.097754	-5.6	5.2

Table 2. Variance Inflation Measure for Ten Control Variables

Variable	VIF	1/VIF
Population	2.92	.343
Counterterrorism Spending	2.77	.361
GDP Per Capita	2.08	.480
Rpc4	1.95	.513
Urban Population	1.88	.533
Civil Liberties	1.58	.632
Percent Muslim	1.51	.660
Economic Growth	1.15	.869
Polity2	1.10	.910
MEAN VIF	1.88	N/A

Table 3. Poisson Regression Model 1, Domestic Terror Events as Response Variable

Domestic Terrorism Events (Dependent Variable)	Coef.	Std. Err.	Z	p> [z]	95% Conf. Interval
Counterterrorism Spending	-2.38e-11**	4.97e-12	-4.78	0	-3.35e-11 - -1.40e-11
Polity2	-.3195802	.8970162	-.36	.722	-2.0777 - 1.438539
Economic Growth	.0382572*	.0179272	2.13	.033	.0031206 - .0733938
Urban Population	.463558	.0666288	.70	.487	-.0842342 - .1769459
Percent Muslim Population	.1331424**	.0211427	6.30	0	.0917035 - .1745812
Civil Liberties	.6911574**	.1012302	6.83	0	.4927499 - .889565
Rpc4	3.192224**	.5332738	2.147026	0	2.147026 - 4.237421
Log Population	.7360317*	.4300155	-1.067832	.087	-1.067832 - 1.578847
Log GDP per capita	-.7417538***	.2230879	-1.178998	.001	-1.178998 - -.3045096
Alpha	.6688173	.3821156	-	-	.2183054 - 2.049371

Poisson Regression Models

Tables 3 and 4 present the findings for Poisson models 1 and 2. The first model (Table 3) presents the results from the test of the first hypothesis which examines the impact of counterterrorism spending on domestic terrorism. This hypothesis states that counterterrorism spending will decrease domestic terror events within a country. The coefficient for model 1 was significant at level $p < .05$. The coefficient for counterterrorism spending was $-2.38e-11$, with the variable also having a p-value of .00. This suggests that for a unit of change in the counterterrorism spending variable, the response variable (domestic terror events) would change in a negative direction at the rate of $-2.38e-11$ instances. This is consistent with the first hypothesis as it shows that as counterterrorism spending changes, domestic terror events trend in the decreasing direction.

The control variables in model 1 generally behave as predicted. The coefficient for the *Polity2* variable, which measured the effect of repression, was shown statistically

insignificant with a p-value of .722. For *economic growth* the coefficient measured at .038 and the variable showed statistical significance producing a p-value of .033. The coefficient for *economic growth* meant that countries with higher GDP would see terrorism events increase .038 more instances per unit of change in GDP. The *urban population* variable was shown statistically insignificant with a p-value of .487. The *percent muslim* variable had a coefficient .13 and was also statistically significant by its p-value of .00. The resultant coefficient for *Muslim population* mean that increases in Muslim population increased domestic terror events by .13 incidents. The *Civil liberties* variable also behaved as expected producing a statistically significant coefficient of .69, with a p-value of .00. This meant that freer countries experienced higher incidence of domestic terrorism. *Population* also had a statistically significant coefficient of .74, with a p-value of .087. This displayed that increases in population can positively correlate with increases in domestic terrorism. *GDP per capita* showed statistical significance with a p-value of .001. *GDP per capita* had a coefficient of -.741, which contrasted with the *economic growth* variable. Finally, the *rpc4* variable showed statistical significance with a p-value of .000 and also had a correlation of 3.19. This meant that countries who were able to efficiently extract resources saw domestic terror incidents increase 3.19 events on average.

Table 4. Poisson Regression Model 2, Transnational Terror Events as the Response Variable

Transnational Terrorism Events (Dependent Variable)	Coef.	Std. Err.	Z	p> [z]	95% Conf. Interval
Counterterrorism Spending	-5.75e-12**	4.97e-12	-4.78	0	-3.35e-11 - -1.40e-11
Polity2	.0076232	.8970162	-.36	.722	-2.0777 - 1.438539
Economic Growth	.2166859	.0179272	2.13	.033	.0031206 - .0733938
Urban Population	-.3323746	.0666288	.70	.487	-.0842342 - .1769459
Percent Muslim Population	-.0231383**	.0211427	6.30	0	.0917035 - .1745812
Civil Liberties	-.8369593**	.1012302	6.83	0	.4927499 - .889565
Rpc4	6.543849**	.5332738	2.147026	0	2.147026 - 4.237421
Log Population	.8496869	.4300155	-1.067832	.087	-1.067832 - 1.578847
Log GDP per capita	-.7686426***	.2230879	-1.178998	.001	-1.178998 - -.3045096
Alpha	1.782272	.3821156	-	-	.2183054 - 2.049371

The second Poisson model (Table 4) used transnational terrorism events as the response variable to see the effects of the counterterrorism spending on reducing transnational terrorism. The results of the second model were inconsistent with the hypothesis that increased counterterrorism spending would lead to a reduction in overall transnational terror events. For the *counterterrorism spending* variable, the resultant coefficient was $-5.75e-12$ with a p-value of .854. Since the p-value for *counterterrorism spending* variable was so high, these results were rendered statistically insignificant. This displayed that for every unit of change in *counterterrorism spending*, transnational terrorism events trended in the negative direction.

The control variables in model 2 varied in terms of their behavior as predicted. The coefficient for the *Polity2* variable, which measured the effect of repression, was .007 and had a p-value of .996. This rendered *Polity2* statistically insignificant. For *economic growth*

the coefficient was measured at .216 and the variable was statistically significant with a p-value of .015. This meant that countries with higher GDP would see increases of .216 terror incidents with increases in GDP. The *urban population* variable had a coefficient of -.332 and was statistically significant with a p-value of .090. This result displayed that transnational terror trends negatively as urban population increases. This result contrasted with the first model where higher urban populations were more likely to see increased domestic terror. The *percent muslim* variable had a coefficient -.023, but was statistically insignificant with a p-value measuring .775. The *civil liberties* variable also behaved contrary to the first model producing a coefficient of -.837. This variable was also statistically significant with a p-value of .051. This meant that freer countries experienced lower incidences of transnational terrorism, contrary to extant literature. When *GDP per capita* and *population* were logged, both showed statistical insignificance with p-values above .10. The *rpc4* variable was consistent with the results of model 1. *Rpc 4* showed statistical significance with a p-value of .006 and also had a resultant coefficient of 6.54. This meant that countries that are more efficient at extracting resources saw increases of transnational terror events by 6.54 instances on average.

Linear Regression Models

Tables 5 and 6 provide a summary of models 3 and 4 which examine terror casualties and terror fatalities using the Xtpsce estimator for models. For model 3, *terror fatalities* were shown to decrease slightly with a unit change in the *counterterrorism spending* variable. The coefficient for both model 3 and 4 was significant at the $p < .05$ level. For model 3, *counterterrorism spending* had a resultant coefficient of $-1.55e-08$ with a statistically significant p-value of .007. This meant that higher counterterrorism spending amounts led to a negative trend in terror fatalities, albeit a small trend of $-1.55e-08$ incidents.

Table 5. Linear Regression (Panel-Corrected Standard Errors), Terror Fatalities as the Response Variable

Terrorism Fatalities (Dependent Variable)	Coef.	Panel-Corrected Std. Err.	Z	p> [z]	95% Conf. Interval
Counterterrorism Spending	-1.55e-08**	5.8e-09	-2.67	.007	-2.69e-8 - -4.14e09
Polity2	34.27094	19.15064	1.79	.074	-3.26 - 71.81
Economic Growth	-19.82896	11.81942	-1.68	.093	-42.99 - 3.34
Urban Population	-7.652402	5.668044	-1.35	.177	-18.76 - 3.46
Percent Muslim Population	19.66768**	9.58646	2.05	.040	.879 - 38.46
Civil Liberties	-102.5196*	55.75793	-1.84	.066	-211.80 - 6.76
Political Rights	.000	-	-	-	-
Repression	.000	-	-	-	-
Rpc4	310.3273**	123.0265	2.52	.012	69.20 - 551.45
Log Population	365.2131**	143.1868	2.55	.011	84.57 - 645.85
Log GDP per capita	-38.52303	57.6854	-.67	.504	-151.58 - 74.54

The control variables in model 3 also varied according to their expected result. The *Polity2* variable had a resultant coefficient of 34.27 and was statistically significant with a p-value of .074. This showed that freer countries saw an increase in terror fatalities by 34.27 fatalities on average. For *economic growth* the resultant coefficient from the regression analysis was -19.82 with a statistically significant p-value of .093. This meant that increases in percent GDP would lead to a reduction in terror fatalities by almost 20 casualties on average. *Urban population* had a resultant coefficient -7.65 with a statistically significant p-value of .177. This is contrary to what the other models showed, but displayed that increases in urban population led to a decrease in terror fatalities. When measuring the *percent muslim* variable, the resultant coefficient was 19.68 with a p-value of .040, rendering it significant. These results showed that increases in Muslim populations showed to increase terror fatalities by 19.68 fatalities on average. *Civil liberties* showed a negative correlation coefficient at -102.5 and also showed statistical significance with a p-value of .066. The *log population* variable had a correlation coefficient of 365.21 with a .012 p-value. This showed that population increases correlated with increases in terror event fatalities by 365 fatalities on average. Similarly, the *Rpc4* variable also had a high coefficient of 310.33 and showed statistical significance with a p-value of .012. These results showed that as countries became more efficient at resource extraction, terror fatalities increased 310.33 fatalities on average. Finally, when *GDP per capita* was logged, the resultant p-value was .504, rendering the variable statistically insignificant.

Table 6. Linear Regression Panel-Corrected Standard Errors Model 4 (Terror Casualties as the Dependent Variable)

Terrorism Casualties (Dependent Variable)	Coef.	Panel-Corrected Std. Err.	Z	p> [z]	95% Conf. Interval
Counterterrorism Spending	1.40e-9	1.32e-9	1.07	.287	-1.18e-9 – 3.98e-9
Polity2	32.91696	30.04374	1.10	.273	-25.97 – 91.80
Economic Growth	8.972022	11.25679	.80	.425	-13.09 – 31.03
Urban Population	3.256579	4.498313	.72	.469	-5.56 – 12.07
Percent Muslim Population	-5.562508	7.302568	-.76	.446	-19.88 – 8.75
Civil Liberties	-32.96305	55.30801	-.60	.551	-141.36 – 75.44
Political Rights	.000	-	-	-	-
Repression	.000	-	-	-	-
Rpc4	4.670816	68.17889	.07	.945	-128.96 – 138.30
Log Population	-27.49681	33.4714	-.82	.411	-93.10 – 38.11
Log GDP per capita	-109.0849	123.1399	-.89	.376	-350.43 – 132.26

For the fourth model, *terror casualties* were actually shown to be statistically not significant when compared to counterterrorism spending (Table 6). The coefficient for model 4 was not significant. When the regression analysis was performed with *terror casualties* as the response variable, the resultant coefficient for *counterterrorism spending* was 1.40e-09, however, the p-value was .287. This meant that the *counterterrorism spending* variable was statistically not significant.

The control variables in model 4 also did not show any statistical significance, with the lowest p-value being .22 for all ten control variables. These results are shown in Table 6. Since all control variables were statistically significant, it meant that none of the controls had a significant impact on terror casualties in the countries evaluated.

CONCLUSION

Overall, terrorism attacks remain one of the most significant threats against both the United States and their western allies in the 21st century (Hoffman, 2013). Given the rise in successful terrorist groups, effectively understanding how to limit terror attacks and fatalities is growing in importance for law enforcement agencies and government public safety sectors throughout many countries. With this, comes the importance of understanding where a country should allocate counterterrorism resources to ensure maximum spending efficiency. For this reason, this study examined counterterrorism and public safety spending in the US, UK, Canada, Italy, France, Germany, and Spain. As stated previously in this study, the four hypotheses that guided this research were: 1) Increased counterterrorism spending leads to a reduction in overall domestic terrorism events within a specific country, 2) Increased counterterrorism spending leads to a reduction of transnational terrorist events within a specific country, 3) Increased counterterrorism spending leads to a reduction in terror attack related fatalities, and 4) Increased counterterrorism spending leads to a reduction in terror attack related casualties. These hypotheses will be individually discussed within this section of the study.

The purpose of this study is to provide an empirical analysis of counterterrorism spending by seven different countries to evaluate the effects of counterterrorism spending on the reduction of both domestic and transnational terrorism events. Specifically, counterterrorism spending figures by the US, UK, Canada, Italy, France, Spain, and Germany were evaluated. The country specific spending figures were statistically compared to the number of terror attacks within the respective country to identify statistical relationships between counterterrorism spending and terror attack incidents.

The subsequent paragraphs in this section will provide conclusive thoughts on each hypothesis, as well as provide implications for the results of the study in terms of counterterrorism policy. Additionally, the section will provide areas for future research that were discovered during this particular study.

Summary of the Results

The first hypothesis, which stated that increased counterterrorism spending leads to a reduction in overall domestic terrorism events within a specific country, was shown to be correct. When the Poisson-regression model was used to evaluate counterterrorism spending's effect on domestic terror attacks, the coefficient was significant at level $p < .05$. The coefficient for counterterrorism spending was $-2.38e-11$, with the variable also having a p-value of .00. This suggests that for a unit of change in the counterterrorism spending variable, the response variable (domestic terror events) would change in a negative direction at the rate of $-2.38e-11$ instances. This proves statistically significant, and consistent, with the first hypothesis. It should be noted that since the coefficient for counterterrorism spending was so small ($-2.38e-11$) when comparing counterterrorism spending to domestic terror attacks; it means that, while increased counterterrorism spending does show to trend domestic terror attacks in the negative directions, the impact is extremely small.

In regards to the second hypothesis, which stated that increased counterterrorism spending leads to a reduction in overall transnational terrorism events within a specific country, the researcher failed to reject the null hypothesis. When the Poisson-regression analysis was used to compare counterterrorism spending to transnational terrorism incidents, the counterterrorism spending variable had a resultant coefficient of $-5.75e-12$ with a p-value of .854. Since the p-value for counterterrorism spending variable was so high, these results

were rendered statistically insignificant. This was most likely due to the fact that the GTD data used for the study showed a relatively low number of transnational terror incidents over the course of the time period evaluated. While the coefficient for the second hypotheses proved to be trending in the negative direction, since the p-value was so high, the researcher failed to reject the null hypothesis.

The third hypothesis, which stated that counterterrorism spending would lead to a reduction in overall terror attack related fatalities, proved to be correct. When evaluating counterterrorism spending and terror attack related fatalities, counterterrorism spending had a resultant coefficient of $-1.55e-08$ with a statistically significant p-value of .007. This meant that higher counterterrorism spending amounts led to a negative trend in terror fatalities, albeit a small trend of $-1.55e-08$ incidents. Much like the results seen in the first hypothesis, although counterterrorism spending increases statistically showed to reduce terror attack related fatalities, the impact of counterterrorism spending on terror attack fatalities was extremely small.

In regards to the fourth hypothesis, which stated that counterterrorism spending would lead to a reduction in overall terror attack related casualties, the researcher failed to reject the null hypothesis. The resultant coefficient for counterterrorism spending, when comparing the variable to terror attack related casualties through regression analysis, was $1.40e-09$, however, the p-value was .287. This meant that the counterterrorism spending variable was statistically insignificant.

Thus, in summary, the researcher was able to reject the null hypothesis for hypotheses 1 and 3. Further, the researcher was unable to reject the null hypothesis for hypotheses 2 and

4. The failure to reject the null hypothesis for hypotheses 3 and 4 stemmed from the fact that the p-value for both regressions proved statistically insignificant.

Discussion of the Findings

The results showed that increases in counterterrorism spending led to slight reductions in both domestic terror attacks and terror attack related fatalities. This led to the rejection of the null hypothesis for H1 and H3. Essentially, the models for H1 and H3 showed that, while counterterrorism spending does have an impact on reducing domestic terror attacks and the lethality of those attacks, the impact is very small. For every unit of change in counterterrorism spending, domestic attacks and terror attack fatalities only decreased a very small amount. This was, however, still consistent with H1 and H3.

Alternatively, due to the models for H2 and H4 showing no statistical significance, the null hypothesis could not be rejected for H2 and H4. This meant that, for the specific datasets in this research, counterterrorism spending did not impact transnational terror attacks or terror attack related casualties.

The results of this research were, for the majority, consistent with extant literature. In instances where counterterrorism spending showed to reduce terror attacks and the lethality of those attacks, the reduction was minimal. Studies such as Danzell and Zidek's (2013) '*Does counterterrorism spending reduce the incidence and lethality of terrorism?*' also arrived at a similar conclusion, citing that counterterrorism spending reduces both incident and lethality of terrorism, albeit in a small way. Studies such as Stewart and Mueller's (2012) '*Terrorism Risks and Cost-Benefit Analysis of Aviation Security*' also arrived at similar conclusions stating that the US spends almost 140 million dollars per life saved with aviation

security measures when the US goal is 10 million dollars per life saved. This again, highlights the fact that counterterrorism efforts are effective, however, are often not efficient.

Implications for Practice

Based on the overall research and findings for the study, counterterrorism spending did seem to have an impact on reducing domestic terror attacks and also at reducing overall terror related fatalities. It should be noted that, while counterterrorism spending showed to reduce domestic attacks and overall fatalities, the reduction rate was extremely small. This means that countries are likely over-spending on counterterrorism policies and should target their approach to counterterrorism more effectively. Further, the results of this study show that countries are likely not spending their money, or allocating their resources in the most efficient manner.

At the outset of the research, one of the main goals was to evaluate where counterterrorism resources should and should not be allocated. With terrorism threats on the rise, and the risk of large-scale attacks increasing, the research intended to evaluate how efficiently countries are using their resources. In considering the results of this research, countries are likely over-allocating resources toward domestic counterterrorism activities. The statistical correlation coefficients in the results of the study proved so small that, while counterterrorism spending did show to reduce domestic terror attacks and fatalities, the rate reduction was almost negligible.

Due to the results of the study and the fact that counterterrorism spending showed to have a rather small impact on reducing terrorism attacks and fatalities, counterterrorism policies should likely be re-evaluated at some level. This likely means that the US and other countries should target their approach to counterterrorism. There needs to be a concerted

effort to identify both high risk population groups and high risk regions for terrorism attacks. With this, comes the inherent difficult in creating policy prescriptions which target certain individuals or regions; therefore, it is expected that these policy prescriptions would take a considerable amount of debate and time.

Politicians, law enforcement professionals, and even analysts can all benefit from this research at some level. It displays that monetary increases toward counterterrorism alone will not likely fix the terrorism problem. The research also shows that there are likely a number of different factors at play when it comes to seeing reductions in terrorism events within a specific country. The following section will address some potential research areas that could bring to light additional factors that help reduce terrorism attacks and the severity of those attacks.

Areas for Future Research

The results of this particular study showed that, while counterterrorism spending does show to reduce domestic terrorism events and overall terror fatalities, the reduction is at an extremely small rate. Thus, this likely means that there are many other factors at play toward reducing terrorism. The likely most beneficial research to add on to this study would be research that targets spending on an even more specific level than simply counterterrorism and public safety spending. What the results of this study really show is that counterterrorism spending is not as efficient as it could potentially be. Thus, identifying areas of counterterrorism spending that are proven to work versus areas of waste would be particularly beneficial to policy makers. Counterterrorism agencies and operations involve a host of activities that range from intelligence gathering and analysis to investigations and

law-enforcement. It would be highly beneficial for future research to pinpoint efficient counterterrorism activities versus inefficient counterterrorism activities.

Since terrorist groups in the 21st century have been particularly localized to areas in the Middle East, it would also be beneficial to evaluate overseas operation's spending and its impact on the reduction of terrorist events and terrorist attack lethality. This similarly falls into the category of understanding where to allocate resources. It would be highly beneficial to statically analyze whether overseas counterterrorism operations help to reduce terror attacks more or less than domestic counterterrorism operations. Of course, the difficulty with both of the aforementioned research areas is data availability. As previously stated in this study, the clandestine nature of counterterrorism operations tends to make it difficult to find budget specifics on counterterrorism operations. It would likely be even harder to find budget specifics on spending *within* a particular counterterrorism organization. Nonetheless, if possible, both of these research areas would be extremely beneficial to both counterterrorism agencies themselves, but also policy makers within a particular country.

Moreover, when evaluating the results of this study, many of the control variables used in conjunction with the counterterrorism spending variable also proved statistically significant. For example, when evaluating terror attack fatalities, the *Muslim population* control variable showed to correlate with increased terror attack fatalities at a statistically significant level. Further, when evaluating transnational terror attacks, the *economic growth* control variable showed to correlate with increased transnational attacks at a statistically significant level. Thus, it would be beneficial for future research to statistically evaluate these control variables on a larger scale to determine their overall impact on terrorist events.

Finally, expanding and repeating this particular study would also be beneficial. This particular study was built on a previous 2009 statistical analysis of counterterrorism spending in 36 countries, and its subsequent effect on the reduction of terrorist incidents (Danzell and Zidek, 2013). Thus, future research that expanded to evaluate a greater number of countries would be beneficial. Moreover, as every year passes, terrorist incidents continue to occur and countries continue to allocate resources toward combatting terrorism. Therefore, future research that expanded the time period evaluated in this study would also be beneficial to discovering efficient ways to limit terrorism throughout the world.

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