

University of Mary Washington Eagle Scholar

Student Research Submissions

4-29-2016

The Economic Determinants of Domestic Terrorism in the United States

Sarah Anne Van Giezen

Follow this and additional works at: https://scholar.umw.edu/student_research



Part of the [Economics Commons](#)

Recommended Citation

Van Giezen, Sarah Anne, "The Economic Determinants of Domestic Terrorism in the United States" (2016). *Student Research Submissions*. 45.

https://scholar.umw.edu/student_research/45

This Honors Project is brought to you for free and open access by Eagle Scholar. It has been accepted for inclusion in Student Research Submissions by an authorized administrator of Eagle Scholar. For more information, please contact archives@umw.edu.

THE ECONOMIC DETERMINANTS OF DOMESTIC TERRORISM IN THE UNITED STATES

An honors paper submitted to the Department of Economics
of the University of Mary Washington
in partial fulfillment of the requirements for Departmental Honors

Sarah Anne Van Giezen

April 2016

By signing your name below, you affirm that this work is the complete and final version of your paper submitted in partial fulfillment of a degree from the University of Mary Washington. You affirm the University of Mary Washington honor pledge: "I hereby declare upon my word of honor that I have neither given nor received unauthorized help on this work."

Sarah Anne Van Giezen
(digital signature)

05/03/16

SUBMITTED TO THE FACULTY
OF
THE DEPARTMENT OF ECONOMICS

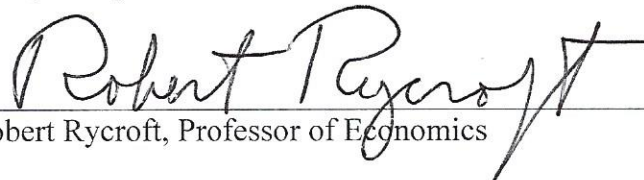
BY

Sarah Van Giezen


IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
HONORS IN ECONOMICS

April 29, 2016

Accepted by:



Robert Rycroft, Professor of Economics



Steven Greenlaw, Professor of Economics



Matthew Davis, Visiting Instructor of Economics

The Economic Determinants of Domestic Terrorism in the United States

Sarah Van Giezen

University of Mary Washington

April 29, 2016

This paper studies the economic determinants of domestic terrorism in the United States using a panel dataset of the fifty states and the District of Columbia from 1980 to 2005. The results suggest that individual economic wellbeing factors and predictive economic variables are significant economic determinants. However, economic variables are not major determinants of domestic terrorism.

I. Introduction

Terrorism has become an important issue and has been a persistent topic in the media and government policy due to highly visible terrorist attacks. Particularly, the terrorist attacks on September 11, 2001 made the “war on terrorism” a top priority of the United States government (Bolz, Dudonis, and Schulz, 2). Focusing on counterterrorism efforts, the Bush administration created the Department of Homeland Security, passed the USA Patriot Act, pursued wars in Afghanistan and Iraq, and led the largest reorganization of the U.S. government since World War II (LaFree, Dugan, and Miller, 1; Bolz, Dudonis, and Schulz, 2). However, domestic terrorism has been a constant and equally concerning trend in the United States. “More citizens are terrorized, wounded or killed, and more property destroyed per year within the U.S. by domestic terrorists than by all foreign-based terrorism directed against U.S. targets combined” (Mullins, 169). The Federal Bureau of Investigation defines domestic terrorism as “the unlawful use, or threatened use, of force or violence by a group or individual based and operating entirely within the United States or Puerto Rico without foreign direction committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.” (U.S. Federal Bureau of Investigation, v).

Because of the need to understand the determinants of terrorism and the lack of research in domestic terrorism, this paper aims to investigate the economic determinants of domestic terrorist incidents in the United States. No previous economic papers have studied this topic or the general determinants of domestic terrorism in the United States.

I use a cross-state panel data set of the fifty states and the District of Columbia from 1980 to 2005. The estimated results show that individual economic wellbeing factors such as GDP per

capita and the unemployment rate are significant, as well as predictive economic variables such as the Dow Jones Index.

II. Literature Review

“The United States and a number of allies [since 2001 have begun] implementing policies that would take the war to the terrorists on multiple fronts and in multiple ways” (Bolz, Dudonis, and Schulz, 2). Researchers and policy makers have worked to study the determinants and consequences of terrorism. Gassebner and Luechinger (2011) did a comprehensive study analyzing 65 variables which they proposed were correlated with the location of the incidents, the victims, and the perpetrators. They found that population size, physical integrity rights, religious tension, economic freedom, and infant mortality rate were significantly correlated with these aspects. Krieger and Meierrieks (2011) reviewed previous literature of transnational terrorism and found that nondemocratic and unstable countries with higher populations tend to experience more transnational terrorism. Piazza (2013) studied 150 countries from 1970 to 2010 and found that consumer price volatility is a significant predictor of terrorism.

However, few studies include a focus on domestic terrorism. When they do, they tend to focus on domestic terrorism throughout the world or Western Europe. Boehmer and Daube (2013) use 144 countries from 1970 to 2000 to study the nonlinear relationship between economic development and domestic terrorism. They find that there is a curvilinear relationship between the two variables where countries with an intermediate level of development have a higher frequency of incidents compared to other countries. Choi (2015) uses a panel dataset containing 127 countries from 1970 to 2007 to measure the relationship between economic growth, which is divided into agricultural and industrial sectors, and terrorism, which is divided

into domestic, international, and suicide types. His results show that countries with more industrial growth experience less domestic terrorism. Gries, Krieger, and Meierrieks (2011) use the Hsiao-Granger method and a panel dataset of seven Western European countries from about 1951 to 2004 to study the causal relationship between economic growth and domestic terrorism. They find that there is a strong positive causal relationship between the two variables in bivariate systems.

III. Terrorism in the United States

While the United States has a long history of terrorism, the history covered in this section will focus on terrorism patterns and organizations from the 1960s to the early 2000s.

III.i. Recent History of Terrorism in the United States

The 1960s and 1970s were some of the most violent terrorist decades in United States history (Mullins, 73). The civil rights movement and the Vietnam War led to violent tensions and hostility towards the government (Mullins, 74). Left-wing groups, such as the Black Panther Party, the Students for Democratic Society, and the Weather Underground, were prevalent. Internationally, the United States also dealt with multiple incidents. The Vietnam War was riddled with terrorist incidents committed by both sides (Mullins, 76). However, the most notable international incident was on November 4, 1979 when the American embassy in Tehran, Iran and sixty-three U.S. citizens were taken hostage (Mullins, 77). The 1960s also saw the beginning of the trend of the airplane being used as a tool for terrorism (Mullins, 84). The airplane became used for hostage taking and skyjacking (Mullins, 84-85).

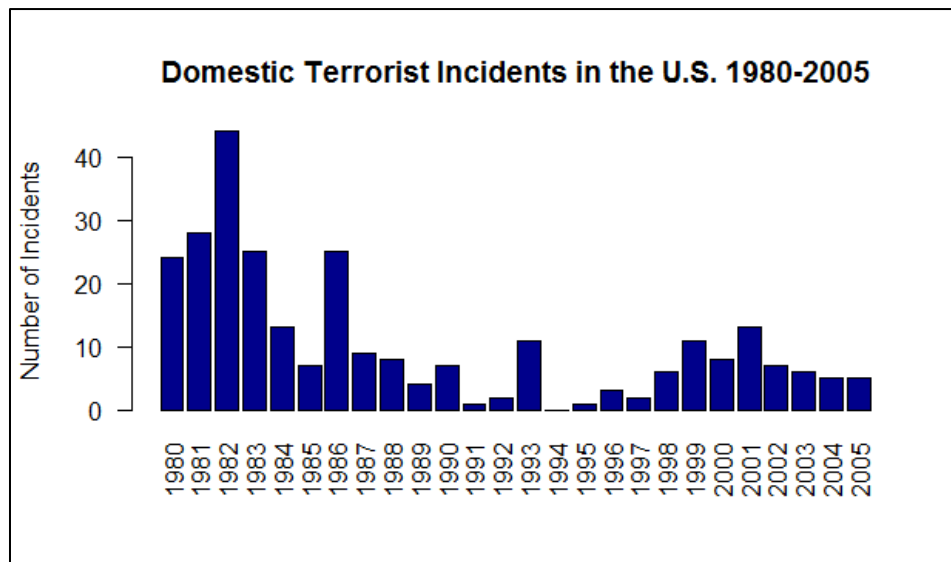


Figure 1: Number of Domestic Terrorist Incidents in the United States, 1980-2005

In the 1980s, left-wing terrorism decreased in the United States with “most left-wing organizations [being] disbanded and their members arrested” (Mullins, 80). However, a large portion of the terrorist incidents were perpetrated by Puerto Rican nationalist groups (Mullins, 183). Right-wing terrorism increased significantly, using “isolated attacks on minorities to concerted attacks designed to overthrow the government of the United States” (Mullins, 80-81). Special interest terrorist groups, specifically those focused on environmental rights, also became more prevalent in the 1980s (Mullins, 81). While not covered in this study, there has been an increase in foreign-based terrorist organizations perpetrating attacks against the United States, in both number and magnitude since the 1980s (Mullins, 169). Notable of international terrorist incidents was the bombing of Pan Am flight 103 over Lockerbie, Scotland on December 21, 1988 (Mullins, 86).

The 1990s saw a decrease in terrorist incidents, as shown in Figure 1. However, “although the far right declined in size [compared to the 1980s], their activities increased in scope” (Mullins, 82). Special interest groups continued to grow with a marked increase in anti-

abortion and animal rights incidents (Mullins, 82). Two notably devastating incidents occurred in the 1990s. On February 26, 1993, the World Trade Center in New York City was bombed by the foreign terrorist group Liberation Army Fifth Battalion as part of a Jihad against the United States (Mullins, 82-83). On April 19, 1995, the Alfred P. Murrah Federal Building in Oklahoma City was bombed by right-wing terrorist Timothy McVeigh (Mullins, 83).

The early 2000s saw a decrease in right-wing terrorism in the United States. However, environmental and animal special interest groups increased their terrorist activities. Foreign-based terrorist groups also increased their number of incidents in the United States. The most notable and devastating incident came at the hands of the foreign group Al-Qaeda on September 11, 2001. Hijackers crashed four commercial airliners into the U.S. Pentagon in Washington D.C. the World Trade Center in New York City, and a field in Pennsylvania, forced down by passengers before the terrorists aboard could use the plane to destroy a landmark (“FAQ about 9/11”).

III.ii. Terrorist Movements and Organizations

Left wing terrorist organizations vary in their motivations and aims. These groups are defined as “[seeking] to rebel against or radically change the political system through the use of terrorist tactics” (Combs, 177). The socialist groups include the Socialist Worker’s Party, Communist Workers Party, and New Afrikan Freedom Fighters (Mullins, 175-177). These socialist groups “believe violent revolution is required to bring about world socialism” (Mullins, 172). However, the previously mentioned groups were largely inactive past the 1970s. Domestic left wing terrorist groups who pursue foreign policy changes include Omega 7, an organization of exile Cubans whose goal is to remove Castro from power (Mullins, 178-179). Another major

branch of left wing domestic groups are Puerto Rican nationalist groups (Mullins, 183). These groups desire a change of the status of Puerto Rico, whether to statehood or independence (Combs, 179).

Right wing terrorist organizations are driven “to retain or to reestablish an earlier status quo by use of terrorist acts” (Combs, 177). Most are white supremacist and advocate for violence against Jews and other minorities (Mullins, 186-187). They also hold anti-government sentiments because they believe that Jews control the government and they must overthrow this government so that the nation may accept the Bible as its sole source of law and order and Jesus may return to Earth (Mullins, 187-189). The most notable violent right wing organizations are the Ku Klux Klan, Aryan Nations, The Order, and the Skinhead movement (Mullins, 200-219). The Jewish Defense League is also considered a right wing terrorist organization, though it commits terrorist acts to defend Jewish people and interests (Mullins, 189).

Unlike previously mentioned groups, special interest terrorist organizations commit terrorist acts to change a specific set of laws rather than the entire government (Mullins, 229). Special interest groups are generally divided into three categories: environmental, animal rights, and anti-abortion. Environmental terrorists aim to save the environment from human exploitation and destruction (Mullins, 230). The main environmental terrorist organization in the United States is Earth Liberation Front (Combs, 180). Similar to environment terrorism, animal rights terrorist groups aim to protect animals from abuse (Mullins, 233). The main animal rights terrorist organization is the Animal Liberation Front (Combs, 181). Both environmental and animal rights groups tend to strike in remote areas and have diverse targets (Bolz, 176). Anti-abortion terrorist groups target abortion clinics to prevent and dissuade women from seeking abortions (Mullins, 233).

IV. Data Section

The theory behind terrorism is similar to other crimes. Both assume that a person's likelihood of committing a criminal act is dependent on its perceived costs and benefits. If a rational person perceives the costs of committing a terrorist incident as greater than the benefits, they will choose to not commit said incident. I expect that when an economy is weak, the opportunity cost of engaging in terrorism decreases which leads to an increase in the number of terrorist incidents. Thus, the variables included in the model aim to measure the overall health of the economy and the opportunity cost associated with committing a terrorist act. I include population, GDP per capita, the unemployment rate, the inflation rate, and the Dow Jones Industrial Average index. All of the data used is annual and by state when applicable.

The Federal Bureau of Investigation provides the dependent variable, the number of terrorist incidents committed in the United States by domestic terrorist organizations, in the 2002 to 2005 edition of the published report series *Terrorism*, which was previously known as *Terrorism in the United States*. The report includes information on each successfully completed domestic terrorist incident, including the location of the attack and the perpetrating individual or group. However, the report groups all incidents committed in the United States together, whether by a domestic group or by a foreign group. As a result, the classification of an incident as a domestic or foreign is determined using available editions of *Terrorism in the United States*. For years in which editions are not available, I researched and determined the perpetrating organization's status and classified the resulting incident as such. However, the dependent variable may not be an accurate representation of the number of domestic terrorist incidents in the United States. Also, the United States lacks a "common definition and methodology" with "very few incidents [lending] themselves to everyone calling the incident terrorism" and

agencies defining terrorism differently (Mullins, 170). Some victims of terrorism also do not report incidents because do not want publicity (Bolz, Dudonis, and Schulz, 161). In addition, some incidents, such as vandalism, may not be considered important by law enforcement (Bolz, Dudonis, and Schulz, 161).

Population estimates are provided by the U.S. Census Bureau annually from 1980 to present. They are included in the model because domestic terrorists are more likely to attack areas local to them. As a result, areas with higher populations have more people to commit domestic terrorism.

I include GDP per capita and unemployment rates to measure a person's opportunity cost associated with committing a terrorist act. If a person is arrested, they forfeit their income. As a result, a person with a higher income, measured with GDP per capita, has more to lose should they be arrested. On the other end of the spectrum, someone unemployed or with a lower income has less to lose and more time to devote to terrorist activities. I calculated the states' GDP per capita using GDP data from the U.S. Bureau of Economic Analysis and the previous mentioned population estimates from the U.S. Census Bureau. The Bureau of Economic Analysis provides the states' nominal GDP in millions of 2016 dollars annually from 1963 to present. I calculated the real GDP using the Bureau of Labor Statistics' CPI Inflation Calculator, then calculated each state's real GDP per capita from their real GDP and population estimates. However, the GDP data is inconsistent over the reviewed period of time because the Bureau of Economic Analysis changed their collection and classification of economic data in 1997 by shifting from SIC to NAICS. The SIC definition is consistent with gross domestic income (GDI) while the NAICS definition is consistent with gross domestic product (GDP). The unemployment rates are seasonally adjusted and based on the civilian non-institutional population by state. The data are

supplied monthly by the U.S. Bureau of Labor Statistics from 1976 to present. As a result, I calculated each state's annual averages.

The inflation rates measure the purchasing power of the U.S. dollar and act as another measure of the health of the economy. The included inflation rates are based on the consumer price index of all urban consumers. They are available annually from 1914 to 2014 from the U.S. Bureau of Labor Statistics. I include the Dow Jones Industrial Average index, or the Dow Jones index, as an indicator of expected future economic conditions. I expect that terrorists are influenced by perceived future economic conditions, especially negative economic growth. With expected negative growth, terrorists may become more desperate. However, I chose to include the Dow Jones index instead of economic growth because it indicates expectations at the time of the event rather than eventual changes in the economy. The data are provided by Quandl.com annually from 1900 to present.

Table 1 shows descriptive statistics of the dependent variables and explanatory variables. As the mean of the number of domestic incidents shows, most states do not experience domestic terrorism. Indeed, only twenty-nine of the fifty states, including Puerto Rico and the District of Columbia, experience terrorist incidents during the observed period of time, as shown in Figure 2. Three of the states, Puerto Rico, New York, and California, comprise about 60 percent of the total domestic terrorist incidents.

Despite its large number of domestic terrorist incidents, Puerto Rico is not included in this study due to the lack of economic data during the observed time period. Variables measuring the marginal benefit of committing a terrorist act are not included because the marginal benefit, assumed to be changes in policy or attitudes, are immeasurable. In addition, variables estimating prevention and countermeasures, such as police spending are not available for the desired time

period, time increments, and areas of this study. As a result, these measures are not included in this study. The terrorist incidents are also weighted equally regardless of the magnitude of the event.

Table 1: Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
Domestic Incidents	0.1553544	0.9603447	0	21
Population (millions of people)	5.063532	5.587203	0.401851	35.82794
GDP per capita (thousands of dollars)	20.23808	56.6205	1.020726	1368.682
Unemployment Rate	5.939605	2.050777	2.3	17.79167
Inflation Rate	3.915385	2.584159	1.6	13.5
Dow Jones	5138.757	3781.66	875	11497.12

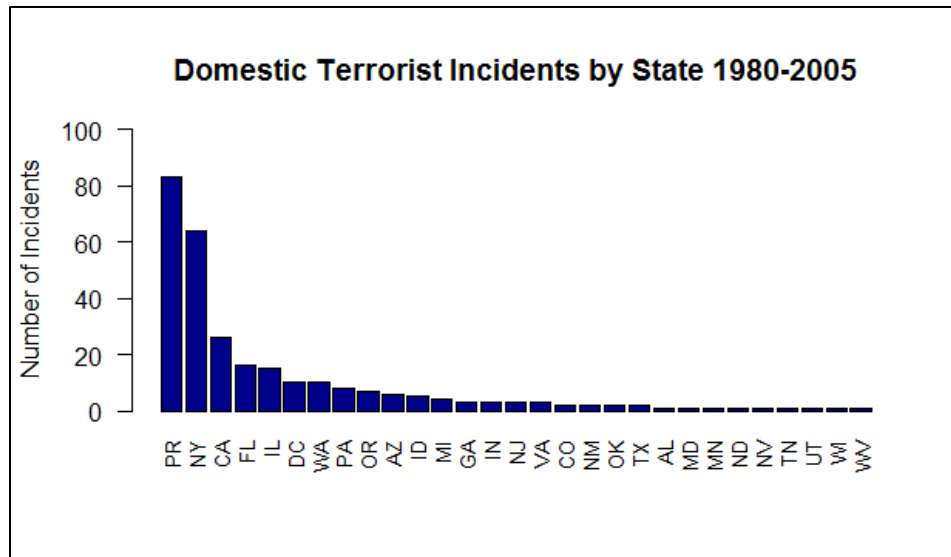


Figure 2: Number of Domestic Terrorist Incidents in the United States by State, 1980-2005

(This graph does not include states with zero terrorist incidents)

V. Results

I use a panel data set of the fifty states and the District of Columbia from 1980 to 2005. It includes the fifty states in the United States and the District of Columbia for a total of 1326 observations. A fixed effects estimator and robust standard errors are used.

Table 2: Fixed Effects Regression with Robust Standard Errors

Variable	Domestic Terrorist Incidents
Constant	0.0155855 (0.3800006)
Population (in millions of people)	-0.0506196 (0.0849712)
GDP per capita (in thousands of dollars)	-0.0003579*** (0.0001047)
Unemployment Rate (%)	0.0353321** (0.0172535)
Inflation Rate (%)	0.0282358 (0.0216221)
Dow Jones Index	0.0000161** (7.81E-06)
	R ² = 0.0432 N = 1326

Notes: Robust standard errors in parentheses.

*** significant at the 99% level, ** significant at the 95% level

Table 2 shows the results of the regression analysis. These results are largely in line with the predictions from the model which hypothesized that variables that affect the opportunity cost of participating in terrorism will be significant. GDP per capita and unemployment rate have their expected signs and are statistically significant at the 99% significance level and the 95% level respectively. However, GDP per capita has low economic significance, requiring an increase of a thousand dollars of GDP per person for the number of terrorist incidents to decrease by -0.0003579.

The Dow Jones Index is also statistically significant at the 95% level. This may be due to the forecasting nature of the Dow Jones. Terrorism requires large amounts of time to plan, prepare, and execute their goals and thus requires people who are meticulous and forward-thinking. Therefore, it is reasonable to believe that variables such as the Dow Jones Index will play a role in their plans.

Table 2 has a low R-squared of 0.0432. This result indicates that economic determinants do not play a large role in domestic terrorism and reinforces the idea that domestic terrorists are driven by moral and ideological beliefs rather than economic determinants.

VI. Conclusion

This paper sought to find the economic determinants of domestic terrorism in the United States. By constructing a panel data set of the fifty states and the District of Columbia from 1980 to 2005, I find that individual economic wellbeing factors such as GDP per capita and the unemployment rate are significant when determining whether to commit a domestic terrorist act in the United States. In addition, predictive economic variables such as the Dow Jones Index are important factors in an individual's decision to participate in terrorism. In addition, my results show while economic determinants play an important role in domestic terrorism, they do not play a large role in domestic terrorism in the United States.

Further research may be done studying the economic determinants of terrorist incidents perpetrated by specific types of organizations. Another study may also research the economic determinants of violent vs. non-violent domestic terrorism. This research may also be continued with more future dates to study the ever-changing landscape of domestic terrorism.

References

- Boehmer, Charles, and Mark Daube. 2013. "The Curvilinear Effects of Economic Development on Domestic Terrorism." *Peace Economics, Peace Science And Public Policy* 19, no. 3: 359-368.
- Bolz, Frank, Jr., Kenneth J. Dudonis, and David P. Schulz. 2005. *The Counterterrorism Handbook: Tactics, Procedures, and Techniques*. 3rd ed. Boca Raton, FL: CRC Press.
- Choi, Seung-Whan. 2015. "Economic Growth and Terrorism: Domestic, International, and Suicide." *Oxford Economic Papers* 67, no. 1: 157-181.
- Combs, Cindy C. 2006. *Terrorism in the Twenty-First Century*. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall.
- "FAQ about 9/11." National September 11 Memorial & Museum. Accessed December 6, 2015. <http://www.911memorial.org/faq-about-911>.
- Gassebner, Martin, and Simon Luechinger. 2011. "Lock, Stock, and Barrel: A Comprehensive Assessment of the Determinants of Terror." *Public Choice* 149, no. 3-4: 235-261.
- Gries, Thomas, Tim Krieger, and Daniel Meierrieks. 2011. "Causal Linkages Between Domestic Terrorism and Economic Growth." *Defence & Peace Economics* 22, no. 5: 493-508.
- Krieger, Tim, and Daniel Meierrieks. 2011. "What Causes Terrorism?" *Public Choice* 147, no. 1-2: 3-27.
- LaFree, Gary, Laura Dugan, and Erin Miller. 2015. *Putting Terrorism in Context: Lessons from the Global Terrorism Database*. New York, NY: Routledge.

Mullins, Wayman C. 1997. *A Sourcebook on Domestic and International Terrorism: An Analysis of Issues, Organizations, Tactics and Responses*. 2nd ed. Springfield, IL: C.C. Thomas.

Piazza, James A. 2013. "The Cost of Living and Terror: Does Consumer Price Volatility Fuel Terrorism?" *Southern Economic Journal* 79, no. 4: 812-831.

U.S. Federal Bureau of Investigation. "Terrorism 2002-2005." Accessed April 18, 2016.

<https://www.fbi.gov/stats-services/publications/terrorism-2002-2005>.