The Macroeconomic Effects of Terrorism

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Terrorism has existed in various forms for much of modern civilization. Records from as far back as 66 A.D. indicate terrorism by religious zealots in Palestine (Enders & Sandler, 2006). Despite this long existence, terrorism has become a more highly visible phenomenon recently, especially in the aftermath of such large, catastrophic events as the attacks of September 11, 2001 in the United States, or the March 11, 2004 train bombings in Madrid, Spain. These events drastically shook the prevailing political environment, with the September 11, 2001 attacks leading to a U.S.-led war with Afghanistan and vast political and economic effects reaching across the globe.

Terrorism can have large direct and indirect effects on a nation's economy. For example, in 2000, off the coast of Yemen, the USS Cole was rammed with a boat laden with explosives. In October of 2002, terrorists struck a French oil tanker off the coast of Yemen. Despite an ideal location bordering the Arabian and Red Seas, Yemen's shipping industry has been hurt. The U.S. State department indicates that a 300 percent rise in insurance premiums has caused ships to avoid Yemeni ports, costing Yemen up to $3.8 million per month in foregone economic activity (Enders & Sandler, 2006).

The Yemeni example illustrates how terrorism can have sweeping effects on a country's economy, even from a small number of attacks not directly aimed at that nation's assets. There are a wide number of channels through which terrorism affects the economy of a state: from influencing investment decisions to discouraging the open movement of productive labor across borders. When crafting an economy-wide model of the effects of terrorism on the economy, it is necessary to consider all of these channels in

order to gain the fullest possible understanding. One effective starting point in crafting such a model is the basic GDP equation, which states that GDP is the sum of consumption, investment, government spending, and net exports.

The effects of terrorism on consumption can be understood by examining the relationship between terrorism, wealth, and consumption. According to economic theory, consumption depends on a measure of a consumer's income. If incomes fall, consumers will adjust their spending downwards in response to this decrease. Terrorism is expected to cause incomes to fall, for a variety of reasons. Since terrorism often destroys capital assets, a terrorist attack can have large ramifications for business. For example, after the September 11 attacks, thirty percent of the office space in Manhattan was lost, along with dozens of businesses (OECD, 2002). Consumers who see their sources of income severely damaged or eliminated will consume less. Consumers may also reduce spending on durable goods such as houses or cars if they believe their future incomes will fall due to increased risk of either property destruction or death.

In contrast to consumption, government spending is expected to rise as a result of terrorism. Governments will place an increased focus on protecting the country from terrorism, resulting in increased defense spending as well as an increase in all types of security spending, from defending ports and borders to enhancing law enforcement (Koh, 2007). This increase in government spending has wide-reaching implications for the macro-economy. For one, government sponsorship of projects may draw productive labor and capital away from more economically productive projects in order to complete more security-based ones (Koh, 2007). While military-sponsored projects have produced numerous innovations with broad public uses, such as the internet or GPS, this is not

always the case. Military projects are not geared towards obtaining the highest rate of economic return, but focus instead on increased security, while commercial projects center on optimizing economic returns (Koh, 2007). This fact means that if government spending pulls productive assets out of commercial projects and into military projects, the focus of the economy as a whole will shift away from economic growth and towards security.

Government spending could also lead to a crowding out effect, assuming full employment, which would stifle investment; moreover, there are many other ways terrorism may affect investment. Potential investors will avoid projects in a country plagued with terrorism. One reason is that terrorism may destroy infrastructure, resulting in either the loss of productive capital of a business or the slowdown in transporting goods and services if the attack damages transportation or communication networks (Enders, Sachisda, and Sandler, 2006). However, even if the firm is not directly harmed by terrorist attacks, protecting labor and capital creates higher costs, translating into decreased profitability of the venture. Investors should also consider how the labor pool of a country is affected as a result of terrorism. If potential workers fear for their safety, they may either flee the area of investment, or not immigrate into a terrorized region (Enders, Sachisda, and Sandler, 2006). These effects all work to drive investment away from regions or countries at risk of terrorism.

The theoretical effect of terrorism on net exports is a bit more ambiguous. An attack may cause countries to import or export more or less than before the attack. For example, a terrorist attack may damage domestic production facilities, forcing imports to rise, lessening net exports. However, consumers may leave the country in order to live in

a safer environment, taking their purchasing power with them. When this is coupled with the adverse effect terrorism has on wealth, and, by extension, on spending, a situation arises where imports potentially drop, thus increasing net exports (Mirza and Verdier, 2008). This positive effect may be compounded by an increase in shipping costs resulting from heightened security after terrorist attacks. If governments secure borders and points of entry for international trade, it most often translates into longer time spent by businesses trying to enter a country, which effectively raises the costs of transport. In so doing, it may cause imports to decline, as domestic producers become more competitive since they lack this effective tax on imports.

Slowdowns in trade and tightening of borders can have numerous adverse effects reaching beyond imports and exports. Innovation is one of the largest contributors to economic growth in advanced, industrialized nations (Koh, 2007). Countries not as technologically advanced gain access to these new technologies and creations through trade or as a result of foreign direct investment (Koh, 2007). As the costs of trade rise as countries attempt to offer increased security to their citizens, the costs of bringing new technology into developing countries will rise, thus limiting the amount of new technology brought into a country, ceteris paribus. Since investment should also fall as a result of terrorism, nations not on the technological frontier will lack a crucial component of GDP growth. Similarly, the export of these innovations, as well as their use in foreign direct investment, is a source of wealth for advanced countries. When trade in new innovations slows down, these countries will lose a key channel for generating wealth, thus lessening the GDP of each.

Slowdowns along borders also translate into increased inefficiency in domestic businesses, particularly as a result of slowdowns in supply chains. More and more companies are switching to a "just in time" inventory system, where goods are delivered to a store just before estimated purchase by a consumer (Koh, 2007). Just in time inventory systems reduce inefficiencies by lowering the amount of inventory any given business has on hand, allowing businesses to better customize their stock of goods to the demands of consumers, as well as reducing the amount of money tied up in inventory. This can translate into either a broader selection of goods offered to customers, or a smaller floor-plan, reducing costs (ASA, 2009). One of the best examples of a successful just in time supply chain is Wal-Mart (ASA, 2009). Wal-Mart's supply chain begins at the cash register. As soon as an item is purchased, the cash register sends a signal to a central warehouse that the store needs a replacement of that good. The manufacturers are then notified that the central warehouse needs a new item, and this message is also relayed to the suppliers of raw goods (ASA, 2009). In a matter of minutes, Wal-Mart has set about replacing the item on its shelves, and often does so in two days (ASA, 2009). The efficiencies of this system fall apart when confronted with delays in products entering the country. If delays are appreciable, it may lead to an abandonment of the more efficient just in time system, causing inefficiencies, and thus decreases in business profitability and in GDP.

However, restrictions on borders do not merely affect the transport of goods, but also of individuals. An emphasis on safety may lead governments to restrict entry of potential terrorists into the country (Koh, 2007). Logically, restricting entry of risky groups lessens the chances of allowing a terrorist into a country, but this increased

security comes at a price. A country restricting access might deter foreign students who would study science and technology in the country, thus limiting the amount of potential employees in fields associated with innovation. With fewer qualified workers in innovation-based jobs, the rate of innovation, and by extension the growth rate of GDP, falls.

Although theoretical discussions can help policymakers and interested parties understand the channels through which terrorism impacts the economy, it is necessary to empirically examine case studies of terrorism as well as cross-sectional and time series data in order to ascertain quantifiable effects of terrorism on a given economy. Doing so will allow policymakers to more effectively determine the benefits or costs of counter-terror strategies, as well as to understand which sectors of the economy are affected the most as a result of terror. Better information may eventually lead to a curtailing of this economically damaging event.

In order to properly study the effects of terrorism, an operational definition is first necessary. Walter Enders and Todd Sandler define terrorism as "the premeditated use or threat to use violence by individuals or subnational groups in order to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims" (2006, page 3). Beyond this simple operational definition, numerous studies define terrorism as inherently transnational, meaning that the events of September 11, 2001 were terrorist attacks since they were carried out by foreign agents, while the Oklahoma City bombing does not count as terrorism since it was purely domestic (Blomberg, Hess, and Orphanides, 2004). Studies often deal with transnational terrorism, since the differences between domestic conflict and domestic terrorism are often difficult

to unravel, especially given that numerous domestic conflicts use domestic terrorism as a tool (Campos and Gassebner, 2009). However, examinations of domestic terrorism do exist and are readily useful when determining the effects of terrorism on GDP.

One of the most prominent terrorist attacks in recent history was the attack of September 11, 2001. The immediate effects of the disaster were large, with losses of physical assets estimated at over $16 billion, and rescue, cleanup, and other related costs at over $11 billion (OECD, 2002). Although the United States took numerous actions in order to stave off a decrease in economic performance, including injecting liquidity into the financial market, numerous short-term economic effects occurred, such as a sharp dip in equity prices (OECD, 2002). Macroeconomic theory dictates that a drop in the price of equities leads to a drop in GDP. One method is by decreasing Tobin's Q, a process which leads to decreased investment, and thus a fall in GDP. Although equity prices did rebound, other effects of the attack have not been so short-lived. After 9/11, insurance losses were at an all time high, estimated between $30 and $58 billion, a sum dwarfing the largest previous losses of $21 billion resulting from Hurricane Andrew in 1992 (OECD, 2002). The magnitude of the event caused insurance companies to raise their rates, especially for at-risk sectors such as aviation, transportation, construction, tourism, and electricity generation (Koh, 2007). Overall, estimates of the increased premiums indicate a 30 percent hike (OECD, 2002). Decreased coverage makes businesses less likely to engage in risky investment, lessening GDP in targeted countries.

The events of September 11 also had adverse effects on transportation costs and business transactions. As a result of the tightening of the US-Canada border, several factories shut down temporarily, a result of their reliance on the "just in time" inventory

management system (OECD, 2002). The increases in security at the border have also had the effect of raising the costs of transporting goods by sea or air. For instance, airfreight rates rose by ten percent by the end of 2001, while underlying transportation costs across all sectors are estimated to have also risen, despite underlying decreases in fuel costs, as well as under-utilized shipping capacity (OECD, 2002). The effect on total transportation costs is difficult to estimate from the data since despite decreasing trends in input factors, like fuel costs, freight costs have remained fairly resilient. However, even small increases in costs may have a large economy-wide effect, with elasticity of trade flows estimated between -2 and -3, meaning a one percent rise in international trading costs, ceteris paribus, yields a 2 to 3 percent drop in international trade.

Despite the political and worldwide significance of the attacks on September 11, numerous other countries have been faced with terrorist attacks, in some cases even pervasive and constant struggles against extremism. One of the many regions of the globe to experience prolonged terrorism has been the Basque region of northern Spain. Before the start of terrorist activity in the 1970s, the Basque region was one of the richest areas in Spain, with the third highest per capita GDP of all 17 regions (Abadie and Gardeazabal, 2003). However, after nearly 30 years of terrorist attacks, the region fell to sixth in terms of per capita GDP. It should not be assumed that this drop in relative wealth is a direct result of terrorism, despite theoretical expectations, since there may have been underlying factors in the economy which caused per capita GDP to trend downwards. In line with this, Alberto Abadie and Javier Gardeazabal studied the effects of terrorism in the region by creating a "synthetic" control region with similar economic characteristics to the Basque region before terrorism, and compared the economic

standing of the control region to the actual Basque region after terrorism (2003). Abadie and Gardeazabal constructed this control region by combining the other regions in Spain and weighting them in order to obtain a nearly identical economic region, yet one devoid of terrorism, since the terrorism in Spain only occurred in the Basque region. The region the two created mirrored the actual Basque region exceptionally well. For instance, per capita GDP in the Basque region in terms of US dollars was $5,285.46, while in the control region it was $5,270.80. The share of the economy involved in agriculture in the Basque region was 6.84, while in the control region it was 6.18 (Abadie and Gardeazabal, 2003). They then compared how the two regions fared during the 30 year period of terrorism, and found that the control region outperformed the Basque region by an average of ten percent, a number which changed according to the intensity of terror attacks in the Basque region (Abadie and Gardeazabal, 2003).

In order to examine the effects of terrorism on the economy of the Basque region more fully, Abadie and Gardeazabal also examined how stock prices for various Spanish companies varied during the truce negotiations between the Spanish government and ETA, the terrorist group responsible for the attacks. The two theorized that if investors thought peace had a credible chance at success, they would expect businesses to perform better without constant loss of labor or physical capital, and thus stock prices for Basque-centered businesses would rise (Abadie and Gardeazabal, 2003). Abadie and Gardeazabal examined stock prices from September 16, 1998, when a truce was announced, until November 28, 1999, when ETA announced the end of the truce. They found that Basque businesses outperformed non-Basque businesses for most of the time period, except at the beginning of the period, when investors were still leery of the truce's

permanence, and at the end of the period, when the cease-fire had lost credibility (Abadie and Gardeazabal, 2003). Thus, Abadie and Gardeazabal theorized that terrorism has an adverse effect on stock prices in terrorized economies, and that this is one of the ways in which terror attacks impact GDP. The two also noted how investment has shrunk in the Basque region, with domestic and foreign investors nervous about investing in the region as late as 2000.

In line with Abadie and Gardeazabal's study, Dotan Persitz applied the methodology used in studying the Basque region in order to examine the effects of terrorism on Israel's economy. Contrary to the study of the Basque region, Persitz assumed that Israel shared characteristics in common with other OECD countries, and compared macroeconomic data aggregates of OECD countries with Israel in order to determine how Palestinian terrorist attacks from 1980 to 2003 affected Israel's economy (Persitz, 2007). Although this method assumes that Israel's economy is nearly identical to the "average" OECD economy, and though there are similarities in per-capita GDP, population characteristics, and the structures of capital markets, there are differences in the shares of different sectors in the economy between Israel and the "average" OECD economy (Persitz, 2007). These differences make it harder to accept that any differences between Israel and the control are due solely to terrorism, though the findings of the study are in line with economic theory and the empirical results of Abadie and Gardeazabal.

Persitz estimated that had there been no terrorism in Israel since 1994, Israel's per capita GDP would have been 8.6 percent higher than it was (Persitz, 2007, page 17). The results also found that an average quarter of terrorism decreased per capita GDP by 1.4

percent (Persitz, 2007, page 19). The study also showed that consumption decreased, primarily due to a decrease in income of 12.2 percent (Persitz, 2007, page 17). Despite these fairly dire statistics, the study estimated that if terrorism ceased in 2003, Israel's economy would be able to regain approximately two-thirds of its losses within two years, as investment and consumption rise.

Although case studies can provide great insight into the effects of specific acts of terrorism, large panel studies can provide a way to examine the costs of terrorism in countries where data may not be as accessible, or where attacks are neither particularly large nor plentiful. Nicole Crain and W. Mark Crain performed a panel study of 147 countries between 1968 and 2002 in order to determine the effects terrorism has on countries of varying size or per capita GDP, and with varying rates of casualties (Crain & Crain, 2006). The two argued that the impact of terrorism is not linear, and that preventing one attack would have a larger effect in a nation with few terrorist attacks than in a country with numerous attacks. When examining the effects of a reduction of terrorism on GDP, they then did so for various levels of terrorism. The study was conducted using an econometric model that sought to explain per capita GDP as a measure of terrorist activity as well as other indicators such as education, communications infrastructure, and credit access. The study then used these estimates of terrorism's impact on GDP growth to determine panel-wide conclusions.

Nicole and W. Mark Crain first examined the impact of deterrence on countries with an estimated per capita GDP of $3,212 (the median per capita GDP of countries used in the panel data). For a country with a population of 250 million, a reduction from 3 incidents to 2 translates to an increase in GDP of $2.93 billion, while a reduction from

8 to 7 attacks yields only a $970 million increase (Crain & Crain, 2006, page 24). The non-linear aspect of terrorism is evident from these numbers. The study also shows that for countries with lower populations, the appreciable GDP gains are smaller. For instance, for a country with a per capita GDP of $3,212 and a population of only 25 million, a reduction of terrorism from 3 incidents to 2 yields an increase in GDP of only $290 million (Crain & Crain, 2006, page 24). Crain and Crain argue that this is because the percentage change in real GDP stays constant for each reduction in terrorism, but since per capita GDP is the same across all country sizes, total GDP is larger in more populous countries. Thus, percent changes in GDP will have a larger real value in countries with larger total GDPs.

The study also concluded that as a country's GDP per capita increases, so too will the gains from reducing terrorism. If a country is estimated to have a per capita GDP of $10, 144 and a population of 250 million, then a one incident reduction from 3 to 2 attacks results in an increase in GDP of $9.25 billion. Similarly, if a country has a population of 250 million and a per-capita GDP of $35,000 (roughly that of France or the United States), then a reduction from 3 to 2 attacks will generate an increase in GDP of $31.9 billion. Crain and Crain estimate that a reduction from three incidents to two in the United States would yield an increase in GDP of over $40 billion, while reducing the number of terrorist attacks in Colombia from 13 to 12 would yield an increase in GDP of $87 million (2006, pages 25-26).

The study also examined the effects of casualties from terrorist attacks on GDP, yielding very similar results. Crain and Crain found that a reduction in the number of casualties yielded lower gains in GDP when total casualties were high as opposed to

when they were low. For instance, in a country with per capita GDP of $3,212 and a population of 250 million, a reduction in casualties from 15 to 5 increases GDP by $6.2 billion, while for the same country, a reduction in casualties from 85 to 75 will result in GDP gains of only $700 million. Crain and Crain also concluded that as GDP per capita rises, the net gains from reducing casualties from attacks will also rise. A country with a population of 250 million and a per capita GDP of $10,144 will increase GDP by $19.5 billion if casualties are reduced from 15 to 5 (Crain & Crain, 2006, page 28-30).

Another examination of panel data was conducted by Brock Blomberg, Gregory Hess, and Athanasios Orphanides, who examined 177 countries from 1968 through 2000 in order to examine the effects of terrorism and other types of conflict on growth. After using a cross-country regression model, Blomberg et al. determined that terrorism had a negative and statistically significant effect on per capita GDP growth (Blomberg, Hess, and Orphanides, 2004). For the thirty-three years studied, they determined that if a country experienced a terrorist attack in each year of the sample, per capita GDP growth would decrease by a total of 1.5 percent (Blomberg, Hess, and Orphanides, 2004). A single terrorist attack in one year decreases growth by 0.045 percent, a number found by dividing the total of 1.5 percent by the number of years in the study (Blomberg, Hess, and Orphanides, 2004). The study also determined that terrorism causes government spending to rise by approximately 0.4 percent, while investment fell by approximately 0.4 percent. The results of this study indicate that while overall economic growth falls as a result of terrorism, government spending is crowded in, while investment is crowded out (Blomberg, Hess, and Orphanides, 2004).

A similar study conducted by Brock Blomberg examined the relationship between political instability (including terrorism), growth, and defense spending (1996). Blomberg theorized that political instability should have a negative effect on growth, while the effect of defense spending on growth would be ambiguous, since defense spending crowds out investment, but at the same time educates and disciplines the labor force. Blomberg held that when defense spending is used to protect a country from attack, the economy suffers because it is not operating at a Pareto-optimal level, as focus shifts from economic performance to defense (Blomberg, 1996).

Blomberg's study used panel data from 70 countries from 1967 until 1982 in order to run an econometric model explaining growth rates. The study estimated a small negative relationship between political instability and growth which was statistically significant at the 0.01 percent level (Blomberg, 1996). The study did not find strong evidence that defense spending impacted growth, due in part to the varying levels of crowding out and labor training which occurred in various economies; however, the model Blomberg used did predict a negative relationship between growth rates and defense spending (Blomberg, 1996).

While the 1996 Blomberg study and the 2004 research by Blomberg, Hess, and Orphanides focused on economic growth rates, Walter Enders, Adolfo Sachsida, and Todd Sandler chose to focus their research on the effects of terrorism on foreign direct investment stemming from the United States. This increased focus allows policymakers to better grasp the effects of terrorism on specific sectors of the economy, as opposed to its macroeconomic effects. Enders et al. examined panel data from 69 countries, looking specifically at changes in U.S. foreign direct investment. The researchers estimated an

explanatory equation for stocks of U.S. foreign direct investment in a country, and then added in a measure of terrorist activity. The authors found that for each terrorist attack directed against U.S. targets, the stock of U.S. foreign direct investment in the country fell by approximately $1 million (Enders, Sachisda, and Sandler, 2006).

Although this number appears to be small, Enders et al. argue that diversified economies are insulated against terrorist attacks because investors will move from risky sectors of the economy to less risky ones (2006). They explain the discrepancy between the results of this study and the results of Abadie and Gardeazabal's examination of the Basque country by explaining that investors fled a risky region in favor of calmer parts of Spain (Enders, Sachisda, & Sandler, 2006). However, if investors were not affected by terrorism's geography as much as they were by sector risk, it would be expected that more investors would have stayed in the Basque region, but that investment would have shifted to less risky investment opportunities. While the discrepancy in arguments raises doubts about the validity of this 2006 study, others such as Blomberg et al. have estimated relatively small impacts of terrorism in relation to the case studies of the Basque region or Israel.

Abadie and Gardeazabal attempted to resolve these discrepancies by examining the impact of openness on the stock of foreign investment in a country. The two argue that while terrorism may initially only damage a small amount of physical capital, it produces long term effects by raising the level of risk associated with a certain country (Abadie and Gardeazabal, 2007). Thus, they argue that capital will flow to areas where the threat from terrorism is either nonexistent or minimal. For instance, before the September 11 attacks in the United States, foreign direct investment represented 15.8

percent of capital formation in the United States (Abadie and Gardeazabal, 2007). However, in 2003, this figure had fallen to 1.5 percent.

Abadie and Gardeazabal created a model to explain how investment decisions are affected by incidences of terrorism. After examining 110 countries, they concluded that changes in terrorism account for two percent of all foreign direct investment decisions (Abadie and Gardeazabal, 2007). When estimating the effects of terrorism, they found that a one standard deviation increase in terrorist risk (measured from the Global Terrorism Index) corresponded to a $16 billion decrease in GDP for the average country (Abadie and Gardeazabal, 2007). These results illustrate that transnational investment is very elastic, and that increases in perceived risk may lead to large capital outflows from a country.

However, Abadie and Gardeazabal's exploration of elastic investment does not fully explain different measures of terrorism's impact. When comparing large panel studies, it is important to note that the years studied may be significantly different, as may the countries within the samples. Even within samples, the choices of countries may significantly affect the results. For example, Enders et al. note that one potential problem with their study stems from the heterogeneity of the countries studied (Enders, Sachisda, & Sandler, 2006). The researchers noted that some countries had experienced little terrorism, while other countries had experienced fairly widespread terrorism. This heterogeneity is also applicable to the makeup of the economies studied. Terrorism may affect some sectors more than others, and when these sectors contribute heavily to GDP it may heavily influence the results.

Tourism plays a large role in many countries' economies, constituting up to 10 percent of GDP in some Caribbean nations (Neumayer, 2004). Tourism also constitutes a large source of foreign direct investment, and as such, countries are keen to protect their tourism industries (Drakos & Kutan, 2003). Terrorism has a large impact on the tourism industry. Eric Neumayer estimated the effects of an increase in terrorism on tourism, and found significant results. Using the PANDA database for terrorist activities, he estimated that a one standard deviation increase in terrorist attacks would yield a decrease in long-term tourist arrivals by 14.8 percent (Neumayer, 2004). When considering contemporaneous tourist arrivals, this figure falls to 8.8 percent (Neumayer, 2004). Konstantinos Drakos' and Ali Kutan's examination of terrorism's effects on tourism in Mediterranean countries support these conclusions. Drakos and Kutan found that terrorism had negative effects on tourism in the country targeted by terrorism, but also that the effect had dramatic regional effects (Drakos and Kutan, 2003). The two estimated that out of the total tourism revenues lost by a country due to terrorism, only 11 percent of these revenues would stay within the region, while over 88 percent of revenues would shift to safer countries outside the region (Drakos and Kutan, 2003).

Thus, while countries need to be concerned with the effects of terrorism within their borders, the effects of terrorism are not localized, and thus the choices neighboring countries make can have a large impact on a nation's GDP. Because of this, countries are increasing cooperation in counterterrorism. Israel and Turkey have been undergoing joint training exercises, while the European Union has passed legislation creating better cross-border investigations and information sharing (Drakos and Kutan, 2003). Counterterrorism cooperation also helps eliminate negative externalities associated with

counter-terror expenditures in neighboring countries. For instance, if the United States dramatically boosts defense spending, terrorists may find that it is easier to attack U.S. interests abroad (Rosendorff and Sandler, 2005). Thus, defense spending in the United States may increase the amount of terrorism faced by countries in Europe or Asia. Cooperation between countries can help create an efficient level of counterterrorism, where countries use resources to prevent the greatest possible number of terrorist attacks, and provide the greatest benefit to assets at home and abroad (Rosendorff and Sandler, 2005).

The increasingly transnational nature of terrorism suggests that increased cooperation may be one of the strongest tools countries have in ensuring the safety and security of their citizens. Despite the high costs associated with preventing terrorist attacks, economic theory and empirical analysis argue that terrorism causes a decrease in GDP, providing an incentive for policymakers to pursue counterterrorism. Although the estimations of this decrease in GDP vary from study to study, they provide policymakers with a useful starting point when weighing the decision to increase defense spending. Only by fully weighing all of the benefits with the costs of a measure can governments ensure the wellbeing of their citizens. The analysis of terrorism, though relatively young, enables policymakers to do just that.

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