FOREIGN AID AND TERRORISM:

When is Aid Effective in Reducing Terror?

By

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Submitted to the graduate degree program in Political Science and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Date approved: August 26, 2015

Abstract

This research examines the effectiveness of foreign aid in reducing terrorism. To uncover the circumstances in which aid is more likely to decrease terrorism, I examine total and sector-specific aid along with twenty-seven indicators of socio-economic and political grievances that aid seeks to redress. The overall expectation is that sectoral aid targeted at addressing relevant needs in aid-recipient countries is more likely to impact terrorism negatively. To test this expectation, I conduct a cross-national, longitudinal analysis of 190 countries and territories over a twenty-year period, from 1990 to 2010. The results, reported in eleven negative binomial, dynamic regression models, largely confirm that certain types of sectoral aid become statistically significant negative predictors of terrorism when addressed at specific socio-economic or political grievances. Examples of sectoral aid exercising a negative impact on terrorism include education aid spent on tertiary school enrollment and on public spending on education, social services aid assisting with research and development expenditures, governance aid geared toward strengthening state control of corruption as well as twelve additional instances when sectoral aid targeted at specific needs is found to correlate negatively with terrorism in a statistically significant way. Theoretically and empirically, this dissertation bridges the current divide between studies examining the effects of aggregate, total aid on poverty and conflict and research focusing on disaggregated, sectoral aid and its impact on terrorist incidents. In addition to integrating and testing both types of aid within the same theoretical framework, this study adds a new parameter to the current scholarship on aid and terrorism by including a wide variety of societal and governmental level grievances and testing their influence on the impact that aid exercises on terrorism.

Acknowledgements

I would like to begin by thanking my advisor, Dr. Mariya Omelicheva, for all the support and advice that she has provided during my PhD studies as well as with the dissertation research and writing. Without Dr. Omelicheva, I am not sure that this dissertation would have been completed. Despite being so busy herself, Dr. Omelicheva was always available to advise and provide feedback on my work from the very beginning of formulating the research proposal through the daunting process of data collection and the revision of many drafts. Also, Dr. Omelicheva taught me how to be a better teacher. Her encouragement, kindness, patience, and understanding are qualities that I seek to emulate when teaching my own students.

I am also extremely grateful to my committee members, Dr. Don Haider-Markel, Dr. Mark Joslyn, and Dr. Gary Reich for agreeing to serve on the dissertation committee. Thank you for your patience with this project. In addition, I would like to thank Dr. Marie Brown from the Department of History for taking the time out to serve on the committee and for providing a different perspective on my work.

I would like to thank Dr. Haider-Markel, especially, for meeting with me on several occasions to clarify quantitative analyses hurdles and for recommending articles linked with the literature review. Despite your busy schedule, thank you for answering your emails so promptly and for being always willing to help.

As a graduate student, I took classes with three of my committee members: Dr. Haider-Markel, Dr. Joslyn, and Dr. Reich. I thank you for the knowledge and the critical thinking skills that you taught me. While being amazing scholars, I also appreciate your easy-going, nonchalant attitude that makes you easy to approach and engage.

Another person without whom this dissertation may have never happened is my husband, Itzik Ben-Itzhak. His intellectual, emotional, and physical support has been beyond words. In particular, Itzik helped me save time by writing a code that converted my raw data into a format that I could use in my statistical analyses. Being a physicist, Itzik taught me logic, simplicity, and perseverance: qualities that I seek to apply beyond this dissertation.

Also, I would like to thank the Magliozzi brothers and their humorous Car Talk NPR radio program for making me laugh and keeping me sane during endless days of data collection. I believe that I listened (at least once) to all their shows that had been recorded over a span of 20+ years. Thank you, Click and Clack, the Tappet Brothers!

Finally, I would like to thank my wonderful family: my mother, father, sisters, their husbands and children, for always being there for me, for their encouragement, and their kind, generous hearts.

Dedication

During the course of my PhD studies, I gave birth to two wonderful children, worked full-time as a university instructor (teaching languages and political science) at Kansas State University, and went through some challenging times that included sicknesses, surgeries, and the loss of dear family members and friends. Although those years were difficult in some aspects, they were also years of learning, growth, and appreciation. My daughter, Shai (6) and my son, Joshua (4) epitomize the joy and love of life and I would like to dedicate this work to them for they remind me daily of all the beauty in life and why all this is worth it.

To Shai and Joshie

The more that you read,
the more things you will know.
The more that you learn,
the more places you'll go.
- *Dr. Seuss*

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List of Abbreviations

DAC – Development Assistance Committee

DFID – Department for International Development

DVAR – Dependent Variable

FGLS – Feasible Generalized Least Squares

GDP – Gross Domestic Product

GTD – Global Terrorism Database

HDI – Human Development Index

ID – Identification

IRR – Incidence-Rate Ratios

IVAR – Independent Variable

NY – New York (Times)

ODA – Official Development Assistance

OECD – Organization for Economic Co-operation and Development

OLS – Ordinary Least Squares

PPP – Purchasing Power Parity

START – Study of Terrorism and Responses to Terrorism

USAID – United States Agency for International Development

US – United States (of America)

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INTRODUCTION

Foreign aid has often been used to achieve strategic goals and secure national interests.[1] In the aftermath of the September 11, 2001 attacks, aid was promoted as a key instrument in the "war on terror." In his 2002 State of the Union Address, George W. Bush argued that "[w]e have a great opportunity during the time of war to lead the world toward the values that will bring lasting peace" and that "America will … advocate these values around the world" seeking "a just and peaceful world beyond the war on terror".[2] The Bush administration's 2002 budget reflected this belief by featuring an almost $750 million increase in foreign aid spending.[3] Later that same year, in a much cited speech in Monterrey on March 22, 2002, Bush further detailed on the role of foreign aid in the war on terrorism by tying both to poverty: "We fight against poverty because hope is an answer to terror".[4] As a result, development aid was set to increase by 50 percent over the next three years culminating in a $5-billion annual increase over previous aid levels. These new funds served to establish a new Millennium Challenge Account, which was officially inaugurated by Congress in 2004, devoted to channel aid to poor and developing countries with the aim to "bring hope and opportunity to the world's poorest people" and fight terror.[5]

Implicit to Bush's statement was the belief that poor economic conditions breed terrorism, and that giving aid with the aim of reducing poverty and terror is an effective foreign policy strategy. Such sentiments have been echoed in leading media outlets as well as by world

[1] Moss, Roodman, and Standley 2005, Tarnoff and Lawson 2012.

[2] Text of this address can be found online at https://web.archive.org/web/20090502151928/http://georgewbush-whitehouse.archives.gov/news/releases/2002/01/20020129-11.html (last accessed July 29, 2015).

[3] Critics argued that this was not enough (Epstein 2002 in Young and Findley 2011, Keefer and Loayza 2008).

[4] Text of this speech can be found online at http://www.un.org/ffd/statements/usaE.htm (last accessed July 29, 2015). Also cited in Krueger and Maleckova 2003:119 and Azam and Thelen 2008:376.

[5] George W. Bush speech at the International Conference on Financing for Development, Monterrey, Mexico, 2002, available at http://www.un.org/ffd/statements/usaE.htm. Those sentiments were expressed on multiple occasions by members of Bush's cabinet including former U.S. Secretary of State General Colin Powell (2002) who stated, "We can't just stop with a single terrorist or a single terrorist organization; we have to go and root out the whole system. We have to go after poverty" (CNN Money 2002. "Powell: Poverty Aids Terrorism").

leaders and members of the international development community.[6] News reports often advance this poverty-breeds-terrorism narrative that is clearly expressed in an editorial written by a leading NY Times columnist Nicholas Kristof in which he writes: "as we fought together in that war (i.e. *the 'war on terror')*, I came face to face with an unnecessary evil that takes more lives each day than are lost in Fallujah, Gaza, Kandahar, Mogadishu, and Jaffna combined, an evil that is directly connected to the proliferation of the terrorism and insurgency that we were fighting: the evil of extreme poverty."[7] In 2003, the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) – a body representing some 34 countries, officially endorsed a policy stating that "development cooperation… has an important role to play in helping to deprive terrorists of popular support and addressing the conditions that terrorists leaders feed on and exploit" (OECD, DAC, 2003:6). These conditions were said to include poverty seen as one of the main enabling forces of terrorism. As a result, a number of governments adopted new aid agendas that conflated the combating of terrorism and combating of poverty, as if they were the same phenomenon.[8]

However, the idea that poverty breeds terrorism (and its subsequent implications for aid policy) has many critics. For instance, studies employing survey data show that terrorists engaged in different movements are recruited predominantly from relatively wealthy and educated families (Kruger and Maleckova, 2003, Krueger and Laitin 2003, Krueger 2003). In

[6] Including former World Bank President James Wolfensohn and Nobel Peace Prize Laureate South African Archbishop Desmond Tutu. For instance, in 2003, Wolfensohn warned the US Council on Foreign Relations that "knocking off heads of fundamentalist organizations is no doubt meritorious, but it will not deal with the question of fundamental stability" (DevNews 2003a). In the war against terrorism, Wolfensohn argued in 2003, "the most important thing is to give people possibilities and hope by solving the problem of poverty. And I don't think that problem can be solved with security and military power. Of course that is necessary, but in order to make long-term strategy, it needs to encompass poverty alleviation" (Dev News 2003b in Owusu 2007:9). Similarly, Archbishop Desmond Tutu (2007) said, "You can never win a war against terror as long as there are conditions in the world that make people desperate — poverty, disease, ignorance." (CNN World, 2007).

[7] Kristof, Nicholas. March 13, 2012. "Linking Extreme Poverty and Global Terrorism" *The New York Times,* available online: http://kristof.blogs.nytimes.com/2012/03/13/linking-extreme-poverty-and-global-terrorism/. Last accessed July 24, 2012. Italics in parentheses added.

[8] For instance, Australia has been criticized for conflating development and counterterrorist aid funds when establishing bilateral counter-terrorism programs with Indonesia and the Philippines as well as contributing to regional economic and security initiatives ("The Reality of Aid", 2004 available at http://www.realityofaid.org/wp-content/uploads/2013/02/RR04_full.pdf). Similarly, UK's Deputy Prime Minister Nick Glegg reiterated at a United Nations summit in New York that the UK is dedicated at maintaining and even increasing the amount of aid given to poor countries in the fight against terrorism ("Aid Increase will Help Fight Terrorism, says Nick Clegg," *The Telegraph.* Sep 22. 2010. online: http://www.telegraph.co.uk/news/uknews/8019035/Aid-increase-will-help-fight-against-terrorism-says-sNick-Clegg.html . Last accessed July 26, 2012).

those studies, microeconomic evidence suggests that wealth and education may, in fact, impact positively the decision to engage in terrorism. As a result, some argue that aid should be cut because it may increase "the probability of terrorist attacks by increasing the supply of better off and educated people" (Azam and Delacroix 2006:330) or that it is used by the recipient country's government to fuel local violence and harbor/reward terrorist actions (Stotsky 2008).

In addition to poverty, aid scholars and practitioners further singled out other factors said to fuel terrorism (OECD, DAC 2003, Young and Findley 2011, Varner 2010). Among those are the marginalization and disaffection of people whose "frustrations and educated energy can make them useful foot soldiers and supporters for terrorism" and states with "weak, ineffectual or non-existent governance systems" that are "more likely to provide the environment in which terrorists are recruited and supported" (OECD, DAC 2003:5, 11).[9] As a result, aid donors attempted to identify targeted aid programs with the objective to alter or prevent environments enabling terrorism. While poverty reduction remained the main focus (OECD, DAC 2003, Bloomberg et al. 2004, Li 2005), additional arguments called for aid to be channeled toward alleviating grievances born out of income inequality, exclusion, injustice, and ignorance as well as providing assistance to aid-recipient governments in improving political governance, the rule of law, and counterterrorist measures (OECD, DAC 2003, Azam and Delacroix 2006, Azam and Thelen 2008, Frey 2004, Cassidy 2010).

In this context, several disagreements exist (discussed further in Chapter One). First, the argument that poverty is positively associated with terrorism has been disputed by several studies suggesting that the linkage between economic development and terrorism is not as causal and one-directional as intuitively presumed (Krueger and Maleckova 2003, Krueger and Latin 2003, 2008, Azam and Delcaroix 2006). Thus, using aid to combat terrorism by alleviating poverty is of questionable effectiveness. Second, with regard to aid and terrorism, several studies have shown that when aid is targeted at specific sectors (also termed 'sectoral' aid), it effectively reduces terrorism. This is the case, for instance, when foreign aid assistance is used

[9] Several months following his Monterrey speech, Bush mentioned other factors, in addition to poverty, that may feed into terrorism. In a *New York Times* op-ed published in September 2002, Bush wrote: "Poverty does not transform poor people into terrorists and murderers. Yet, poverty, corruption and repression are a toxic combination in many societies, leading to weak governments that are unable to enforce order or patrol their borders and are vulnerable to terrorists networks and drug cartels" (cited in Krueger and Maleckova, 2003:140).

to support education in aid-recipient countries or as an incentive for the recipient governments to adopt counterterrorist measures (Azam and Thelen 2008, 2010, Young and Findley 2011). Despite these findings, the actual link between aid and reduced terrorism is still undetermined, particularly when aid is targeted at addressing specific grievances. In addition to their scholarly merit, empirical examinations of the relationship between foreign aid and terrorism are also important for their practical application "so that policymakers will know if and how to use foreign aid to fight terrorism" (Young and Findley 2011:378).

Thus, the aim of this research is to identify the conditions in which aid becomes an effective counterterrorist tool. In particular, this study tests different types of foreign aid and specific grievances that aid is set to address in order to test both the independent and the conditional effect of aid on terrorism. Is aid more effective when given as a fungible assistance to be used at the discretion of the aid-recipient government or when targeted at specific sectors? If, so, which ones?

In exploring these questions, I conduct a longitudinal, cross-national quantitative study of 190 countries and territories over a twenty-year period: from 1990 until 2010. I include measures of both total, aggregate aid as well as of seven categories of sector-specific (also termed 'sectoral') aid. Those sectoral aid categories include education, health, social services, economic growth, peace and security, governance, and unallocated aid. In addition, the economic growth sectoral aid is further disaggregated into four subcategories, namely microeconomic growth, economic opportunity, production sectors, and development aid. Finally, I include 27 variables as proxies of socio-economic, political, and security grievances presumed to precipitate or precondition terrorism with the objective to determine their role in aid's impact on terrorism.

This research contributes to the study of aid and terrorism in four main ways. First, it bridges the divide between studies focusing on total, aggregate aid and studies examining exclusively different types of sectoral aid and their independent impact on terrorism by integrating and testing both types of aid within the same theoretical framework. Second, in addition to the standard measures of poverty (i.e. GDP per capita and Human Development Index) to assess the latter's linkage to terrorism, this study examines additional, more nuanced

measures of socio-economic needs based on income inequality, access to education, sanitation faculties, improved water sources, sector employment, savings, and household consumption expenditures. Third, it expands on existing sectoral aid research by matching different types of sectoral aid to corresponding grievances and tests their interactive effects on terrorism. The objective is to examine whether sectoral aid conditional on the grievance that it seeks to address becomes a negative predictor of terrorism. So far, to my knowledge, such endeavor has not been attempted in the field of sectoral aid and terrorism and this is an unexplored territory. Finally, in terms of actual foreign policy options, this research also discusses the magnitude of any reported aid effects and how sustainable those are in the long run.

This dissertation is organized as follows. Chapter one presents an overview of the state of the scholarship in terms of theoretical disagreements on aid effectiveness specifically vis-à-vis terrorism and the presumed role of poverty in breeding terrorism. Chapter two introduces the theoretical framework of this study and its three expectations. Chapter three explains the research design of the study. Chapters four, five, and six report the empirical results of the tests of the three expectations. Chapter seven discusses reported findings and examines the magnitude of any statistically significant results. Finally, the conclusion summarizes the main findings, outlines the main contributions of this study, and pinpoints questions that this study has uncovered that could be explored in future research.

CHAPTER ONE: STATE OF THE SCHOLARSHIP

The poor have enough burdens without being considered likely terrorists simply because they are poor.
Kofi Annan, Council on Foreign Relations, 2002.

1.1. AID AND TERRORISM
With a special focus on Poverty

The rationale behind using aid to combat terrorism

Foreign aid is often viewed as the tool *par excellence* in preventing organized political violence. Premised on the argument that basic services (infrastructure, economy) and human capital (health and education) must be in place for peace, prosperity, and stability to follow, aid is seen as an early, nonmilitary instrument to help optimize such preconditions. It is said to do so by creating, for instance, positive economic conditions, such as stabilizing the economy, securing minimum standards of living, restoring key infrastructures, developing institutions, enhancing the quality of governance, and supporting civil society and democracy (Hamburg 2001, Sachs 2005). As such, leading economists have called for successful market economies to help bring out these preconditions in economically disadvantaged countries through increased foreign aid, not only for the benefit of the aid-recipient states but also for the benefit of the global economy and security (Sachs 2005).

Within this school of thought, using aid as a foreign policy tool to combat terrorism is often premised on the 'economics of terrorism' narrative, or the conventional assumption that terrorism is born out of poverty, unemployment, and the lack of economic opportunities. Such rationale is clearly seen in official statements affirming that "…underlying conditions such as poverty, corruption, religious conflict and ethnic strife create opportunities for terrorists to exploit…Terrorists use these conditions to justify their actions and expand their support" (US State Department 2003).[10] Further, once fallen in the 'poverty trap', poor nations are stuck in

[10] As discussed, similar arguments are made by other policy makers and donors. For instance, the UK Department for International Development (DFID) states in "Fighting Poverty to Build a Safer World" that "poverty and lack of access to basic services contribute to perceptions of injustice that can motivate people to violence" (DFID 2005).

cycles of poverty and violence, and only outside help, namely aid, can help them to extricate themselves from the vicious circle of poverty and violence (Sachs 2005, Collier et al. 2003).

However, for aid to work via poverty alleviation, one must assume that poverty and terrorism are linked in a causal, or, at least, in a meaningful enough way so that any decrease in the former, achieved through external aid, will translate into a decline of the latter. Often such linkage is intuitively presumed, particularly in policy making and media circles. For instance, it is easy to detect it in official speeches including President's Obama when he affirmed: "Extremely poor societies […] provide optimal breeding grounds for disease, terrorism and conflict" (cited in *The Economist* 2010). This rhetoric has resulted in actual policies. For instance, the Enhanced Partnership with Pakistan Act of 2009 linked economic aid to Pakistan with efforts to combat terrorism; a view that was clearly expressed by then US Special Envoy Richard Holbrooke who, in a testimony on a bill before the US House, stated that the US should "target the economic and social roots of extremism in western Pakistan with more economic aid" (House 2009, Senate 2009, Holbrooke 2009, Blair et al. 2013). The international community has echoed similar sentiments. At a 2009 donors' conference in Tokyo, for example, some 30 countries and organizations pledged $5 BLN in economic development aid to "enable Pakistan to fight off Islamic extremism" (BBC 2009; Wood 2009). Also, in Russia, following the suicide attack at Moscow Domodedovo International Airport on January 24, 2011, President Medvedev (2011) affirmed that: "We must do everything possible to influence […] the socioeconomic roots of terrorism: poverty, unemployment, illiteracy, and orphanhood, and to ensure that global development becomes stable, secure and fair." Such policies generally reflect a belief that "poverty is a root cause of support for militant groups, or at least that poorer and less-educated individuals are more prone to the appeals of militants" (Blair et al. 2013:31)[11].

Yet, despite having gained international acceptance, particularly among political practitioners, and being often used to justify aid, the poverty-causes-terrorism narrative is far

[11] The 9/11 National Commission 2004 Report gives Pakistan as an example to demonstrate that its "endemic poverty, widespread corruption, and often ineffective government create opportunities for Islamist recruitments" (National Commission on Terrorist Attacks upon the United States 2004: 367). USAID (2009) further discusses the rationale behind such arguments. One explanation is that poor families are compelled to send their children to the only option available: madrassah, or religious schools, that often serve as a recruiting ground for extremist militants. An alternative view is proved by Fair, Ramsay, and Kull (2008).

from being ascertained in academic research. The next part discusses the linkage between poverty and terrorism as examined in academic studies.

Poverty and Terrorism

The very diverse and growing scholarship on terrorism has identified a myriad of causes for the terrorist phenomena.[12] The empirical studies have, so far, failed to reach a consensus on common root causes of terrorism. However, as mentioned above, one dominant presumption shared by academicians, politicians, and journalists alike is that terrorism is rooted in economic grievances, more widely known as poverty (references well summarized in Krueger and Maleckova 2003).

Theoretically, the argument that poverty leads to belligerent behavior can be traced back to the *resource scarcity* thesis (Gatlung, 1982, Gleditsch 2001, Homer-Dixon 1998, Jackson 2002, Humphreys and Varshney 2004, Critchley and Terriff 1993) and the *greed/grievances* view (Collier and Hoeffler 2002, 2004).[13] The *resource scarcity* thesis affirms that "wars are often fought over resources"; thus, scarcity-induced poverty generates conflictual behavior (Galtung, 1982:99, Homer-Dixon, 1998, Jackson 2002, Glditsch 2001, Critchley and Terriff 1993, Nel and Richarts 2008).[14] The *greed versus grievance* theory, on the other hand, argues that

[12] Perhaps due to the lack of data and theoretical constructs, early studies approached terrorism from a historical perspective and centered on single cases, rejecting overall the establishment of general assumptions as "exceedingly vague or altogether wrong" (Laqueur 1977a:12, 1977b) and focusing instead on society-specific social factors as originators of terrorism behavior. Thus, some viewed terrorists as rational actors whose behavior is defined by expectations of certain outcomes, and could, therefore, be both predictable and alterable (Landes 1978), while others questioned terrorists' rationality as their behavior persists even when proven unsuccessful (Creshaw 1981, Abrahms 2008). As the collection of quantitative terror event data expanded considerably over the last two decades, the study of terrorism moved from earlier small-n qualitative case studies into the realm of large-n quantitative research. While aware of theoretical debates raging over small-n vs. large-n studies pointing each method's potential advantages and deficiencies, it is safe to affirm that large-n quantitative studies allowed for larger generalizations sweeping across countries and years (many references exist in that regard including Sandler 2013, Gassebner and Luechniger 2011, Young and Dugan 2011, Chenoweth 2010, Savun and Philips 2009, Li 2005).

[13] Some prominent studies in this field include Elbadawi (1992) *Civil Wars and Poverty;* Keen (1998) *The Economic Functions of Violence in Civil Wars*; Easterly and Gatti (2000) *What Causes Political Violence*; Berdal and Malone (2001) *Economic Agendas in Civil Wars*; Fearon and Laitin (2003) "Ethnicity, Insurgency, and Civil War"; Collier and Hoeffler (2004) *Greed and Grievance in Civil War;* and Fishman and Miguel (2008) *Do Conflicts Cause Poverty, or Vice-Versa?* and *Economic Gangsters: Corruption, Violence, and the Poverty of Nations.*

[14] For instance, Jackson (2002:48) reports that the most serious problem for Africa's weak states is underdevelopment and ongoing economic crisis that has led directly to political instability or created, at the very least, "the conditions whereby politics is transformed into a vicious competition for scarce resources" in which elite corruption, nepotism, rent-seeking, and coups have become the norm. Similarly, Gleditsch (2001:253) finds

conflict may be driven by a desire for self-enrichment (greed) or over unresolved issues (grievances). The *greed*-motivated explanation of conflict (spun by the influential work of Paul Collier (Collier and Hoeffler 2002b, 2004) focuses on the elites' competition over desirable objectives (i.e. ownership of natural resources) and emphasizes the economic side of the decision to engage in violence. In this paradigm, Collier and his associates (2003) emphasize the *poverty trap*: poverty makes 'soldiering' more attractive because it lowers the opportunity cost of engaging in violence. This, in turn, begets more poverty: a vicious circle that is difficult to escape. Collier's views have proven very influential in donor policy circles and have often received media publicity as his work has a simple, somewhat intuitive appeal: conflict is more likely to take place in poverty-stricken states ruled by venal, corrupt, and self-interested elites. In contrast, the *grievance*-based explanation of conflict focuses on issues of identity and injustice. A long standing tradition in political science argues that relative deprivation produces grievances that may fuel violence (Gurr 1970). The grievance thesis is also tied to the collective action problem, as discussed by Olson (1965) explaining that it is difficult to mobilize large groups to undertake collective actions because of mutual mistrust, monitoring difficulties, and the free-rider problem. However, the presence of grievances, or as some have called them "palpably perceived group differences," can serve as an effective amalgam to form enduring group identities that are central to mobilizing groups, including groups that perpetrate violent, terrorist acts (Murshed and Tadjoeddin 2007:4, Tilly 1978, Gurr 2000).[15] Overall, poverty features prominently as an explanatory factor of conflictual behavior in both the resource scarcity and the greed/grievance theses.

A number of studies claim, in fact, to have established a strong link between poverty and conflict.[16] In those studies, poverty, measured as below a certain threshold income per

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that population growth and high resource consumption per capita (demand-induced scarcity) have led to deteriorated environmental conditions (supply-induced scarcity) which, in turn, have further increased resource scarcity creating, thereby, harsher resource competition and increasing the chances for violence. Finally, Critchley and Terriff (1993:332) report that scarce resources directly result in conflict when they are essential for human survival and can be physically seized or controlled. The overall idea that resource scarcity (caused, for instance, by natural disasters, Nel and Righarts 2008) increases the risk of violent conflict.

[15] Some have termed the greed: booty-seeking, and the grievance: justice-seeking, explanations for conflict behavior (Murshed and Tadjoeddin 2007).

[16] Humphreys and Varshney (2004:9) argue that the linkage between poverty and conflict is "probably the most robust relationship found in recent econometric work on conflict". Based on data from the World Bank,

capita (Elbdawi and Sambanis 2002, Fearon and Laitin 2003, Collier and Hoeffler 2004, Draman 2003, Fisman and Miguel 2008), inequality and scarcity of resources (Gatlung 1982, Homer-Dixon 1998, Ross 2006, Jackson 2002), or income drop (due to external economic shocks, recessions, or natural disasters: Fishman and Miguel 2008, Bloomberg and Hess 2002, Brucknr and Ciccone 2007) is shown to correlate positively with higher instances of conflictual behavior[17] at variant degrees of correlation. As such, poverty has been found to be linearly associated with higher instance of conflict (Gatlung 1982, Homer-Dixon 1982, Gleditsch 2001); to result directly in conflict (Critchley and Terriff 1993); to be positively and robustly linked to conflict (Humphreys and Varshney 2004) with high levels of poverty corresponding to high risk of civil war (Elbadawi and Sambanis 2002, Blomberg and Hess 2002, Collier and Hoeffler 2002, 2004,Fearon and Laitin 2003, Nafziger and Auvinen 2000). Overall, the punch line of previous research has been that poverty is positively associated with the onset of conflict (Fishman and Miguel 2008).

While such findings examine poverty within the larger context of conflict, one may extend this to include terrorism as well. In fact, several studies claim to have found that economic hardships correlate positively with terrorism (Blomberg, Hess, and Weerapana, 2004, Drakos and Gofas 2004). As a result, the widespread assumption in some policy, media, and academia circles has been that poorer people are more likely to be recruited by terrorist organizations and are more likely to engage in terrorism (Aziz 2009, DFID 2005). As discussed

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Humphreys and Varshney (2004) show a strong link between the wealth of a nation and its chance of having a civil war. As such, a country with a GDP per person of just $250 has a predicted probability of war onset of 15% and this probability is reduced by half if the GDP increases to $600 per person. In contrast, Humphreys & Varshney argue, countries with per capita income of over $5,000 have a less than 1% chance of experiencing civil conflicts. Along these lines, Elbadawi and Sambanis (2002) - researchers at the World Bank and Yale University find that areas with extreme levels of poverty are at high risk of civil war. They argue that when economic income increases, the risk of war decreases irrespectively of the levels of ethnic diversity or other factors. Similarly, using a panel of 152 countries and covering the years from 1950 to 1992, Blomberg and Hess (2002) find that the economy, internal conflict, and external conflict are not independent, but interdependent. Specifically in Africa, the authors assert, economic recessions play an important role in triggering internal conflicts: the occurrence of an economic recession almost doubles the probability of internal conflict. Additional research on Somalia and other African nations also points to the fact that causes for civil war may lie in low per capita incomes and lack of economic growth (Collier and Hoeffler, 2002b, Fearon and Laitin, 2003, Nafziger and Auvinen, 2000). In addition, some have examined short term economic effects/income shock (i.e. drought in Africa, sudden export commodity price drop) and have found that, in Africa, an income drop of 5 % increases the risk of civil conflict in the following year by 30% (Fishman and Miguel 2008, Bruckner and Ciccone 2007).

[17] In addition, poverty is also found to act in tandem with other factors (political, demographic, or environmental in nature) the combined effect of which is shown to trigger civil wars (Bruckner and Ciccone 2007, Gleditsch 2001).

above, this 'economics of terrorism' narrative, affirming that terrorism thrives in poverty-stricken environments, seems to have become the conventional wisdom. The ensuing expectation is that those who are likely to engage in terrorist activities are poor, uneducated individuals with a pessimistic outlook on life. Economic theory on individual rationality seems to support such expectations, asserting that an individual is more likely to "engage in risky terrorist activity if, by doing so, bears a lower opportunity cost," or what one can gain is greater than what one stands to lose (Cassidy 2010:70).

However, while a positive relationship between poverty and terrorism is often presented as a matter of fact, particularly in media and policy outlets, extant empirical scholarship questions this assumption (Blattman and Miguel 2010, Gassebner and Luechniger 2011) or offers little support to the poverty-terrorism linkage (Fair and Shepherd 2006, Jo 2011, Shapiro and Fair 2010, Von Hippel 2008). In fact, several studies have shown that there is no direct connection between socioeconomic status and terrorism (Atran 2003, Hudson 1999, Krueger and Maleckova 2003, Russell and Miller 1983, Taylor 1988, Bueno de Mesquita 2005, Azam and Thelen 2010a). More recent evidence based on various measures of poverty/economic development - including GDP and GDP per capita (Abadie 2006, Berman and Laitin 2008, Blomberg and Hess 2008, Blomberg and Rosendorff 2009, Tavares 2004), the UN Human Development Index (Bravo and Dias 2006, Piazza 2006), poverty indices (Kurrild-Klitgaard et al. 2006), literacy and school enrollment rates (Blomberg and Hess 2008, Krueger and Malecova 2003, Kurrild-Klitgaard et al. 2006), calorie intake and telephone mainlines (Lai 2007, Piazza 2006), and infant mortality rates and life expectancy (Drakos and Gofas 2006, Kurrild-Klitgaard et al. 2006) - offers weak support for the hypothesis that terrorism is rooted in poverty/economic factors. Further, when accounting for the location of terrorist attacks, studies generally find (with a few exceptions) either no association or a positive association between economic development and terrorism. On the other hand, when focusing on terrorists (perpetrators), the linkage becomes murkier: some report negative relationship between a country's economic development and terror attacks perpetrated by its citizens, whereas others observe the opposite or inconclusive evidence either way (summarized in detail in Gassebner and Luechniger 2011).

Several studies clearly reject the poverty-causes-terrorism nexus by demonstrating that terrorists are neither poor nor uneducated. In particular, the seminal research of Kruger and Maleckova (2003) and Sageman (2004) as well as the theoretical analysis conducted by Bueno de Mesquita (2005) show that terrorists belonging to different terrorist organizations (i.e. Al-Qaeda, Hezbollah) have generally a high level of education and come predominantly from relatively wealthy families. In the late 1990s and 2000, for example, when terrorist attacks were at the highest against Israel citizens, "the typical Palestinian was reporting a rosier economic forecast and unemployment was declining" (Krueger and Laitin 2008:148, Berrebi 2003). Similarly, using public opinion polls conducted in the West Bank and Gaza, Kruger and Maleckova (2003) find that support for violent attacks against Israeli civilians did not decrease among Palestinians having higher education and higher living standards. Having a higher living standard (above the poverty line) or a higher education level (secondary school and above) correlated positively with support for Hezbollah (the study also shows that a majority of Israeli Jewish settlers who attacked Palestinians in the 1980s also came from well-remunerated occupations). Similarly, after analyzing data on 315 suicide terrorism campaigns (from 1980s through 2003) as well as 462 individual suicide terrorists, Pape (2005) concludes that the "economic explanation" for terrorism is weak. Overall, such studies demonstrate that the occurrence of terrorist violence is largely independent of economic conditions.

Thus, direct positive linkage between poverty and the individual decision to engage in terrorism has not found clear support in empirical studies (Russell and Miller 1983, Taylor 1988, Hudson 1999, Krueger and Maleckova 2003, Berrebi 2003, Atran 2003, Azam and Delacroix 2006, Krueger and Laitin 2008). If anything, the relationship between income and terrorism is purported to be nonlinear with the middle income class being more prone to support or engage in terrorism (Enders and Hoover 2012, Calle and Sanches-Cuenca 2012). The suggested rationale is that the poor are more focused on survival and the richer have fewer grievances (Blair et al. 2012, Sandler 2013) leaving the middle as a fertile ground for grievances and opportunities to fuel terrorist activities. To that effect, a recent study reports that support for terrorist organizations has been shown to be higher among middle-class citizens and lower with a decrease in income (Blair et al. 2013). Based on a 6,000-person survey of Pakistanis measuring

local sentiments toward four local terrorist groups, Blair et al. (2013) found that poor Pakistanis dislike extremist organizations even more than middle-class citizens. This dislike appeared strongest among the urban poor and those living in particularly violent areas suggesting that long-standing arguments linking support for terrorism to income may need to be revisited (Blair et al. 2013).

Aid and the Poverty-Terrorism Connection

The argument that poverty is positively associated with terrorism has been disputed by microeconomic evidence which suggests that (moderate) wealth and education may, in fact, exert a positive influence on individual decisions to engage in terrorist attacks (Krueger and Maleckova 2003, Kruger and Laitin 2003, Krueger 2003). This presented a challenge for rational choice theorists who were confronted by the evidence that while wealth and education may increase the opportunity cost in carrying out a terrorist attack, wealth and education do not seem to deter those who chose to act (Azam and Delacroix 2006).

Three arguments have been put forward to reconcile rational choice assertions of terrorism with empirical findings. First, the supply and demand explanation resting on the premise that while the actual terrorists may not be poor, the countries from within which they originate may be. When there is an excess supply of volunteers for terrorist missions, terrorist organizations may afford to apply a 'screening test' for prospective recruits the result of which is that wealthier, more educated individuals are chosen for they are deemed to be more efficient and qualified than the rest. Thus, while economic considerations may still influence the decision to join a terrorist group, ultimately an internal screening process singles out wealthier, more educated recruits (Bueno de Mesquita 2005). In this model, policies, including foreign aid, aimed at improving the economic conditions may still play a positive role in reducing terrorists' mobilization (Bueno de Mesquita 2005).

Second, terrorists' rationale is said to lay in altruistic motivations toward the next generation (Azam 2005). People who invest in education may also be more willing to sacrifice their life for the sake of the future generation for they have a better understanding of what their sacrifice entails. This model asserts that some types of aid policies may be effective

against terrorism, but their effect will be conditional on trade-offs facing potential terrorists and their intended beneficiaries.

Finally, societal pressures and the provision of selective benefits, to use Olson's (1965) terminology, are said to explain why 'clubs' of certain type (mostly of religious nature) are able to organize high-stakes suicide terrorist attacks despite strong incentives for the recruits to defect (Berman and Laitin 2005:5, Berman and Laitin 2003, Wintrobe 2002, 2006, Ferrero 2006). In this context, aid may be used to counterbalance such selective benefits and offer better alternatives. For instance, foreign aid used to provide or enhance social safety nets and redistribute policies at the national level in aid-recipient countries may alleviate grievances and, thus, reduce terrorism (Gassebner and Luechinger 2011:238, Azam and Delacroix 2006, Azam and Thelen 2008, Bugoon 2006, Crenshaw et al. 2007, Neumayer and Plümper 2009, Robinson et al. 2006).

Overall, despite academic evidence that poverty and terrorism are not one-directionally, causally linked as intuitively presumed, many have rallied behind the idea of using foreign aid as a way to combat terrorism by combating poverty. In a sense, based on the last paragraph's summary of rational choice explanations of terrorist behavior, using aid to combat terrorism via addressing poverty-related maladies or other socio-political grievances may be effective. However, how effective is it? Further, whether or not explicitly targeted at poverty alleviation, how effective has foreign aid been vis-à-vis terrorism? The next part examines this question by reviewing research findings on the effectiveness of aid in reducing terrorism.

1.2. AID EFFECTIVENESS

Aid Effective in Reducing Terrorism

Viewed through the prism of grievances, aid is said to effectively address and/or reduce bottled-up societal discontent that may, otherwise, surface through violent means (Collier and Hoeffler 2002, 2004b, Fearon and Laitin 2003, Hamburg 2001, MercyCorps 2015). In particular, while not targeting poverty directly, specific aid components have been found to be an

effective counter-terrorist tool, and, arguably, proven even more effective than military intervention (Young and Findley 2011, Bandyopadhyay et al. 2011a, Azam and Thelen 2008, Azam and Delacroix 2006, Azam and Thelen 2010a, b). In particular, aid channeled toward specific sectors – otherwise termed as sectoral aid, such as education, conflict prevention/resolution (aid directly tied to counterterrorism), health, governance (democracy aid), and civil society (providing social services) were found to be effective in fighting terrorism (Young and Findley 2011, Azam and Thelen 2008, Bandyopadhyay et al. 2011a). Young and Findley (2011), for example, find a statistically significant positive relationship between governance aid (defined as aid aimed at improving "the capacity of government institutions that carry out tasks related to basic administration and public sector reform") and a decrease in terrorist activities. Substantively, "a one standard deviation increase in governance aid" was found to "decrease terrorism by over 65%" (Young and Findley 2011:376). Similar results have been reported when aid is targeted at education and conflict prevention/resolution sectors resulting in negative and statistically significant effects on terrorism. In general, reported results have been said to be robust; however, when running different models, some sectoral aid indicators become insignificant (Young and Findley 2011).

Within sectoral aid research, aid has been also found effective when provided to recipient governments as a carrot-stick tool used to elicit counterterrorist actions from aid recipient governments (Azam and Delacroix 2006, Azam and Thelen 2008, Frey 2004). The expectation is that increased foreign aid will reduce the local supply of terrorist attacks as it would create incentives for the aid-recipient governments to fight terrorism domestically (Azam and Delacroix 2006). In particular, aid-recipient governments are encouraged to adopt several strategies upon receiving aid, including increasing social spending (Frey 2004, Azam and Thelen 2008, Cassidy 2010); ensuring that the local media does not give too much attention to terrorist attacks (Sageman 2008), decentralizing economic, political, and social centers of decision-making (improve political participation) reducing, thereby, the incentives to engage in terrorism (Frey 2004), and lower the terrorists' probability of success by increasing security and military measures (Enders and Sandler 2008). Even though repressive and coercive domestic strategies

have also been considered, those have proven largely ineffective, and, in some instances, have lead to increased incentives for terrorists to (re)act (Bueno deMesquita 2005, Frey 2004).

Aid Not Effective in Reducing Terrorism

In contrast to Sachs' (2005) supporters pushing for using aid as a tool to combat terrorism via abating economic or noneconomic grievances or strengthening statecraft, the opposing side endorses Easterly's (2006) claim that aid has done 'so much ill and so little good'. Even studies reporting that sector-specific foreign aid has produced some reduction in terrorism (discussed above) concur that the aid effectiveness literature is ambiguous as to whether aid, overall, has produced the desired outcomes (Young and Findley 2011). Studies negating any foreign aid's impact on reducing conflict/terrorism can be grouped under two main arguments.

First, aid effectiveness, in general, is questionable (Easterly 2003 a, b, 2006, Easterly et al. 2004, Cohen and Easterly 2009).[18] The debate has generally focused on whether aid increases economic growth (Burnside and Dollar 2000) or whether aid fosters democratic institutions (Djankov et al. 2008b, Roodman 2007a, Rajan and Subramanian 2007, Knack 2004). In terms of economic growth, aid has been found to produce only limited outcomes with diminishing returns that are time and region specific (Burnside and Dollar 2000, Guillaumont and Chauvet 2001, Collier and Dehn 2001, Dalgaard, Hansen, and Tarp 2004). As to fostering democratic institutions, aid has been found to have a rather detrimental effect. Dependence on foreign aid has been shown to correlate positively with the establishment of corrupt, weak, rentier states that subsist on foreign aid rather than on local taxes and resources (Djankov et al. 2008b, Svennson 1998, Alesina and Weder 2002) and that are also more susceptible to terrorist incidents (O'Neal 2013:220, Brown 2001, Jackson 2001). Even though aid has been demonstrated to be most effective in good policy environments (Dollar and Levin 2004, Owusu 2007), aid has not been proven effective in building them; quite the opposite: it may lead to institutional demise if states become "aid-overdosed" (Djankov et al. 2008b). In that sense, aid

[18] In terms of aid and development, William Easterly has been one of the major critics of aid effectiveness rebutting Burnside and Dollar's claim (2000, 2004) that aid can impact growth positively in good policy environment (i.e. with proper fiscal, monetary, and trade policies).

has been called a 'curse' worse than oil for illiberal, transitional regimes with weak state capacity are more likely to generate both opportunities and motivations for terrorists (O'Neal 2013:220, Djankov et al. 2008b).

Second, in terms of aid and conflict, aid has been found to work with diminishing returns and only in good policy environment, a few years after civil conflict (Collier and Dollar 2002). Yet, more recent studies negate even such assertions and present findings that do not support that foreign aid, either its amount or its timing, is related to the emergence of political stability in post conflict societies (Breuning and Ishiyama 2007). In fact, a review of the recent aid-conflict literature suggests that foreign aid may be linked to the onset and dynamics of conflict by (1) increasing the prize associated with capturing the state and, if/when captured, by (2) financing rebellious, extremist factions (Strandow and Tanner 2011). More specifically, fungible aid, or aid that can potentially be diverted to purposes other than those intended by its donor, has been found to correlate positively with an increase of conflict (Strandow and Tanner 2011).

Thus, aid, and, in particular development aid, has been shown to exacerbate conflict, instability (particularly in ethnically divided societies) (Esman and Herring 2003, Humphreys and Varshney 2004), and, by extension, terrorism, by weakening state capacity and democratic institutions (O'Neal 2013) as well as by promoting 'wasteful public corruption' and impacting negatively economic growth and domestic political institutions (Breuning and Ishiyama 2007:83, Alesina and Weder 2002, Djankov et al. 2008b, Svensson 1998). In addition, some have argued that aid has not only encouraged the supply of terrorists, but it has also been used to reward the families of suicide bombers (Stotsky 2008).

Summary of Aid Effectiveness

Despite the plethora of studies affirming aid's overall ineffectiveness, a recent survey of 105 papers on aid and growth found that about 30% of newer studies report that aid is effective[19] (Doucouliagos and Paldam 2011): a claim supported by others (Arndt et al. 2009,

[19] The survey covered a total of 38 new studies (published between 2005 and 2008 with some 676 new estimates of aid effectiveness) added to previously reviewed 68 "older" (pre-2005) papers (covering 541 estimates) for a total study of 105 papers on aid (with 1217 estimates of aid effectiveness) (Doucouliagos and Paldam 2011).

Feeny and McGillivray 2010, Doucouliagos and Paldam 2008). The survey notes that most of the newer papers were authored by newcomers to the field (50 out of 65 authors) for whom aid effectiveness remains an open question. The intensity of the research in this field for that period (2005-2008) seems to be matched only by the growth of aid itself (swelling from $80 billion US in 2004 to $120 billion US in 2009). On the other hand, one may see the glass half empty noting that *only* 30% of the most recent research reports any aid effectiveness; most, in fact, demonstrate that "the aid ineffectiveness is even stronger after recent years of intense scrutiny" (Doucouliagos and Paldam 2011:40). In addition, in terms of causality, the new literature has made an effort to adjust the aid-growth linkage for simultaneity bias (confirming the old assumption that aid precedes growth) and, as a result, has produced promising and positive aid effectiveness results. However, to date, very little independent replication has taken place that would allow a firmer conclusion one way or another.

Overall, two main points can be made in regard to aid effectiveness. First, some types of aid have been found to work better than others. For instance, total, aggregate aid is reportedly ineffective in generating growth, and newly updated results show that scores on total aid's ineffectiveness are even more robust than previously reported (Doucouliagos and Paldam 2011). However, expanded and updated assessments on aid's ineffectiveness do not appear to be problematic as no donor has stated that aid is now less effective than in the past. Second, when disaggregated, some aid components are found to be effective. Specifically, short-term aid, project aid, and grants showed positive relationship with growth whereas program aid and technical assistance seemed to be detrimental to growth (Doucouliagos and Paldam 2008). Similarly, food aid given for emergency relief and aid given to reduce debt has been shown to reach intended objectives (Bjerg et al. 2011), and, most recently, a *Science* article reported that the right type of aid does work to alleviate poverty amongst the very poor as observed from several pilot projects in Ethiopia, Ghana, Honduras, India, Pakistan, and Peru (Banergee et al. 2015).

In general, reports of aid ineffectiveness do not affirm that aid is never effective. Rather, they suggest that we should focus our attention on examining, through replication or

originality, which aid components may be more likely to achieve desired goals, particularly as those pertain to abating terrorism (Bjerg et al. 2011; Doucouliagos and Paldam 2011).

1.3. CONCLUSION: AID, POVERTY, AND TERRORISM

The literature on the aid-terrorism relationship, on one hand, and aid effectiveness, on the other, leads to several key observations and puzzles. First, although often assumed, the causal linkage between poverty and terrorism is still being debated which puts into question how effective aid as a counterterrorist tool is when targeted at poverty alleviation. As some have pointed out, while some terrorists may not be poor, the societies in which they live may be (Ehrlich and Liu 2002, Homer-Dixon 2001, Owusu 2007:8). This individual vs. national poverty differentiation has transpired arguments about the indirect, rather than direct effects of aid on terrorism (Young and Findley 2011, Bueno de Mesquita 2005, Hassan 2001). Thus, instead of dismissing poverty off-hand as an irrelevant variable, a study needs to unpack the concept of poverty to include not only the standard GDP per capita measure, but also additional variables accounting a variety of economic ills plaguing societies including quality of life, unemployment, inflation, and income inequality that tap into the individual and national levels of wellbeing.

Second, while the effectiveness of total, aggregated aid has been found questionable, sectoral aid - or aid targeted at specific sectors within aid-recipient countries (education, health, civil society, and conflict prevention aid, for instance, in Young and Fidley 2011), has been generally affirmed to be more effective in decreasing terrorism. However, at times, such sectoral aid has also been shown to exacerbate terrorist incidents (i.e. counterterrorist aid) if the aid is perceived to be a foreign intervention or a threat to local interests (Bueno de Mesquita 2005, Stosksy 2008). For instance, as aid to the Palestinian government increased in the last decade, terrorism-related deaths among Israelis and Palestinians increased which some scholars interpreted as a reaction against Western support (Stotsky 2008). In addition, if the collateral damage is high or if social services are not provided, government counterterrorism

efforts may invite further support for terrorist groups (Findley and Young 2007, Siqueira and Sandler 2006). Thus, aid directed at supporting local government's counterterrorist efforts could produce opposite results: sometimes reducing terrorism, and, at other times, increasing it by encouraging more support for terrorist groups (Findley and Young 2007, Siquiera and Sandler 2006, Young and Findley 2011, Bueno de Mesquita 2005). The question that still remains is: when is the former more likely to happen than the latter? To answer this question, research needs to focus on understanding which type of sectoral aid is more likely to be effective and under what conditions.

Overall, studies examining the effects of foreign aid on terrorism disagree on three contentious points: (1) the nature of the relationship between aid and terrorism (direct vs. indirect); (2) the nature of foreign aid (measured as an total, aggregated, general aid vs. disaggregated, sector-specific foreign assistance); and (3) the nature of the dependent variable (terrorism vs. conflict in general) (Table I). This research focuses on the impact of aid on terrorism and seeks to address this divide by integrating aggregate, total and disaggregated, sectoral aid in the analysis of the impact of different types of aid on the scores of terrorist incidents.

Table I. Main Disagreements on the Linkage between Aid and Terrorism

	AID EFFECTIVE	**AID NOT EFFECTIVE**
Conceptualization of Aid	Disaggregated, sectoral aid	Aggregate, total aid
Type of relationship with DVAR	Indirect effects	Direct effects
DVAR	Terrorism	Conflict Economic growth Political institutions Terrorism not specifically considered

Note: For the purpose of this paper, "aggregate, general, total aid" is referred to only as "total," and "disaggregated, sectoral aid" as "sectoral".

As such, the main question that this research probes: "when is aid most effective in reducing terrorism?" is examined in bridging the divide between total vs. sectoral aid and

direct, independent vs. indirect, conditional effects of aid on terrorism. In particular, this study aims to fill the above gaps by (1) connecting aggregate, total aid to terrorism; (2) unpacking the concept of poverty to include, in addition to GDP per capita, also a quality of life measure (Human Development Index) as well as a spectrum of additional economic dimensions such as unemployment, inflation, and income inequality; (3) examining direct, independent as well as indirect, conditional effects (via poverty alleviation) of total aid on terrorism; and (4) probing specific sectoral aid categories and the conditions under which they may impact negatively terrorism. In terms of sectoral aid, this study tests both the direct and indirect effects of the latter thanks to the inclusion of grievances variables to determine whether, by addressing specific needs, the effectiveness of aid increases. Finally, I also report on the magnitude of any statistically significant, negative effects.

The next chapter discusses the theoretical framework of this study.

CHAPTER TWO: THEORETICAL FRAMEWORK

As a means to gain theoretical traction on the question of aid's impact on terrorism, I turn to general explanations of politically motivated violence, nested within the scarcity and greed versus grievance frameworks. Within this literature, three developments are important: the issue of individual participation, the strategy of the terrorist organization, and the effects of the setting/environment (Crenshaw 1981). In the recent literature on contentious politics, these developments have been also described in the concepts of motives, incentives, and opportunities (Nel and Righarts 2008).

Motives refer to the conditions surrounding the decision of an actor to undertake drastic actions in order to alter the status quo. For instance, economic frustrations, said to be caused by relative deprivation – or the gap between individual expectations and actual outcomes, could induce individuals to engage in terrorist activities (based on Gurr 1970, Eckstein 1980, Thorbecke and Charumilind 2002, Nel and Righarts 2008) as explored earlier in chapter one discussing the poverty-terrorism nexus.

Incentives are presented from the other side of the table and are introduced by terrorist organizations with the aim to recruit, mobilize, and motivate potential terrorists for violence by exploiting prevalent socio-economic grievances. In a way, incentives represent the lure of the gains to be had when/if engaging in terrorism. This concept bridges the greed-grievance divide for while it exploits grievances (in an effort to recruit), it satisfies the greed (of the elites).

Opportunities reflect the conditions in which discontent can be organized, expressed, and solved or in which violence is an attractive and available outlet for grievances (Gamson 1975, Oberschall 1973, Tilly 1978, Nel and Righarts 2008). In other words, grieved citizens may resort to terrorist violence if (1) other political avenues of making their voices heard are systematically blocked (i.e. regime type that does not allow dissenting opinions) or, (2) they can (i.e. the government is too weak to prevent extremist manifestations).

In combination, these three concepts form a basis for a plausible framework explaining how aid may impact terrorism as all three refer to strategic evaluations and considerations of

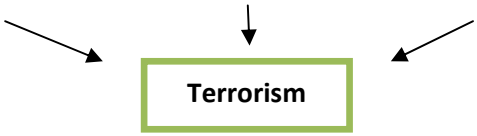
actors who entertain the possibility of engaging in violence. Overall, motives reflect rationales behind personal or group decisions to engage in terrorism (primarily rooted in perceived injustices in terms of income inequality and quality of life), incentives represent socio-economic grievances exploited by terrorist organizations to recruit would-be terrorists, and opportunities embody fallacies in states' political and military apparatus that allow terrorists to carry out attacks (such as weak governments or lack of opportunity to engage in the political process). As information about the personal, psychological environment within which actors respond is not readily available (such as the exact nature of their motivations, thoughts, and personal choices they face in terms of incentives and opportunities), I focus on more quantifiable societal and political indicators of potential grievances that may give rise to terrorist incidents.

The three concepts and how they relate to terrorism are summarized in Table II. They transition from the micro: individual/group level dynamics of organized rationale to the macro: state setting theorized to fuel terrorism.[20] In addition, they can be also seen as *precipitants* or immediate, short-term factors that precede immediately the occurrence of terrorism, and *preconditions* or longer running factors that set the stage for terrorism (terms pioneered by Crenshaw 1981, Nel and Righarts 2008). Note that the delineation between immediate precipitants and longer-term preconditions is not a clear-cut, definitive one. For instance, a precipitant at the Micro Level I, such as low or no income, can translate to an overall, longer-term decline in wellbeing which may serve as a trigger for violence. Thus, although precipitants (immediate-impact factors) and preconditions (longer-term considerations) may overlap or evolve from each other, the demarcation between the two is still kept to indicate the presence of both short and long term determinants of terrorism.

[20] Please, note that state sponsored terrorism is not part of this discussion. Rather, it is state political and military features (inclusive political participation, counterterrorist policies, rule of law) that either prevent or permit terrorist events. This is discussed more in the Research Design part, chapter three.

Table II. Summary of Causes of Terrorism

	Micro Level I (Individual/Group Level) **Motives**	**Micro Level II** (Group/Societal Level) **Incentives**	**Macro Level** (Setting/State) **Opportunities**
Precipitants ***(specific events that*** *immediately precede* ***the occurrence of terrorism)***	**Relative Deprivation** (Poverty) **Quality of Life** (health, knowledge, standard of living)	Short-Term **Education Grievances** **Health Grievances** **Social Grievances** **Micro-Economic Grievances**	**Peace and Security Concerns** (rule of law)
Preconditions ***(factors that set the stage over the*** *long run****)***	**Persistent Poverty** **Deteriorating Quality of Life**	Long-Term **Widespread Socio-Economic grievances** **Development Grievances**	**Governance Concerns** (weak state, lack of opportunity for political participation, dissatisfied elites)
	Poverty-Related Grievances/Scarcity	**Exploiting Economic-Societal Grievances**	**Permissive Context/ Political Grievances**



Within this framework delineating factors that may fuel terrorism on both micro and macro levels, I propose three expectations to test the impact of aid on terrorism.

Micro Level I: Poverty-Related Motives

The first type of causes explores the motives behind individual decisions to engage in violent actions. It is difficult to single out one factor that underlies human behavior as the relationship between personality/group dynamics and politics is notoriously complex and imperfectly understood (Crenshaw 1981, Greenstein 1969). However, as previously discussed, economic grievances, rooted in poverty, perceived injustice in income distribution or in general well-being (relative depravation), have been seen by many as a starting point in the decision to engage in terrorism. The general reasoning is that, by virtue of being more desperate, poor people have less to lose (lowered opportunity cost) and more to gain in engaging. The

sentiment, rooted in the economics of terrorism narrative (discussed in chapter one), is summarized well by Klaus Topfer, Executive Director of the United Nations Environment Program, who argues that poverty can "fan the flames of hate and ignite a belief that terrorism is the only solution to a community's or nation's ills…desperate people can resort to desperate solutions" (quoted in Newman 2006:752 and Mousseau 2011:49). Whether the poverty-terrorism linkage is direct or indirect has been a matter of debate, as previously noted. Arguably, poverty, directly, or expressed via other factors (such quality of life or income inequality), may impact one's decision to engage in terrorism (Crenshaw 1990, Burgoon 2006). However, extant research offers little support for the causal linkage between poverty and the personal decision to perpetrate terrorist activities (Fair and Shepherd 2006, Jo 2011, Shapiro and Fair 2010, Von Hippel 2008, Blair et al. 2013); poverty does not appear to correlate positively with the number of terrorist incidents (Piazza 2006), nor with the decision to become a terrorist (Krueger and Maleckova 2002) or to support terrorist organizations (Blair et al. 2013). This coupled with studies reporting the overall ineffectiveness of total aid in fostering economic development, leads to my first expectation that total aid aimed at poverty alleviation would not affect terrorism.

Expectation I:

The effect of total aid on terrorism is insignificant and it is not conditional upon the level of poverty.

Micro Level II: Incentives Used by Terrorist Groups

A second cause of terrorism is found in the strategies employed by terrorist organizations to recruit followers and carry out terror attacks. I perceive a terrorist organization largely as a rational actor for it possesses "internally consistent sets of values, beliefs, and images of the environment and collectively sees terrorism as a logical means to advance desired ends" (Crenshaw 1981:385). As previously noted, the formation of shared identity is central to mobilizing groups and individuals (Tilly 1978, Gurr 2000) and shared grievances is an affirmed way to build shared identity. To that end, terrorist organizations may and do exploit

extant socio-economic grievances to recruit followers. Such grievances may be based on dashed economic expectations (Gurr 1970, Abadie 2006, Esposity and Voll 1996, Piazza 2007, Tessler and Robins 2007, Mousseau 2011, Piazza 2011) as well as on educational, health, or social services related frustrations.

In this aspect, as suggested by rational choice theorists (discussed in chapter one, p. 13-14) aid may help decrease the likelihood of terrorism at the incentives level. In other words, it may be used to decrease the appeal of terrorist organizations by addressing particular socio-economic grievances that may provide incentives and basis for terrorist recruitment and mobilization. Thus, aid directed at sectors that may give rise to societal grievances (i.e. education aid given in response to higher school enrollment and increased educational needs in the aid-recipient country) may be more effective in decreasing local incentives to engage in terrorism. On the other hand, aid that targets sectors that are not sources of societal discontent is expected to have minimal to no effects on terror events. For instance, if a country is experiencing rampant unemployment and aid is channeled toward military expenditures instead, aid's effect in reducing grievances, and, by extension, in decreasing the incentives used by terrorist organizations to recruit and motivate terrorists, is expected to be minimal. Thus, I expect that

Expectation II:

Sector-specific aid will be negatively related to the magnitude of terrorism conditional upon aid's ability to address relevant socio-economic grievances.

Macro Level: State Failures as Opportunities for Terror

Finally, the general setting in which terrorism takes place is also important. Although aggrieved citizens may be found in any society, political violence occurs only in some societies. This observation gave rise to the concept of "opportunity" referring to propitious conditions in which discontent can be organized and in which violence is seen as an acceptable expression of grievances (Nel and Righarts 2008, Gamson 1975, Oberschall 1973, Tilly 1978). Some of those opportunities reflect political grievances formed in response to decreased or curbed

opportunities for political participation and dissatisfied elites (that may incite violence to either suppress or promote their interests) (Gurr 1979, Crenshaw 1981, Nel and Righarts 2008). The observation that "terrorism is a weapon of the weak" seems apt as rebels and other political opponents may resort to violent means if other avenues of having a say in the governing of a country are systematically blocked (through electoral mechanisms or the nature of the political regime, for instance).

Within these background conditions, two are said to be particularly salient, namely (1) peace and security concerns or the government's inability or unwillingness to prevent terrorism (such as lack of adequate police, military, and/or intelligence services), and (2) governance grievances related to the lack of opportunity for political participation. As political institutions either constraint or encourage, formal institutional features, including the level of democracy, the inclusiveness of the system, and the characteristics of regimes have been shown to impact the likelihood of terrorism (Crenshaw 1981, Brown 2001, Jackson 2001, Nel and Righarts 2008). In fact, illiberal, transitional regimes with weak state capacity are said to generate both opportunities and motivations for terrorism (O'Neal 2013:220, Brown 2001, Jackson 2001, Nel and Righarts 2008). Addressing country-specific political grievances, sectoral aid geared toward improving recipient country's counter-terrorist efforts and institutional quality is expected to impact negatively terrorism.

Expectation III:

Aid geared toward improving government counterterrorist capacities or institutional quality is expected to decrease the level of terrorism conditional upon it addressing existing military or political concerns.

The next chapter outlines the research design used to test this study's expectations.

CHAPTER THREE: RESEARCH DESIGN

This study employs longitudinal, panel data to test the effect of aid on terrorism. The unit of analysis is the country-year. The analysis covers 20 years: from 1990 until 2010, and includes 190 countries and territories.[21] For a list of aid recipient countries and territories, please refer to Appendix 1.[22] The dependent variable - terrorism, is regressed on 45 independent variables (not counting the interactive variables) in 11 different models. To account for time-delayed effects, all models are dynamic with all independent and control variables lagged by one period/year.[23] To improve the accuracy of the analysis, intermittently missing data values have been linearly interpolated, as per standard practice for slowly varying data. I applied linear interpolation to all independent and control variables except for general aid, sectoral aid (all categories), and ethnic fractionalization for which values were available. Descriptive statistics of all variables (with and without linearly interpolated values) are presented in Appendix 2. Detailed explanations of all variables are included in Appendix 3. Finally, while lagging variables helps to remedy for reported autocorrelation – common to longitudinal, panel data, all models are equipped with an additional parameter to correct for heteroskedasiticy bias; thus, the produced standard errors are robust to intra-group correlation and heteroskedasticity while still remaining with dynamic, lagged models within the negative binomial family. As robustness checks, I include both nonlagged, negative binomial regressions (equipped with panel-corrected standard error parameters to remedy for autocorrelation and heteroskedasticity bias) and zero-inflated negative binomial regressions. All regressions are run in Stata13.

The next part presents the study's variables and methodology.

[21] Originally, there were 214 countries and territories. However, 24 of those were omitted due to lack of data in key variables, leaving a total of 190 used in this study.

[22] The study time period for some countries begins with their, de facto, independence which, at times, begins post 1990 (i.e. former-Communist bloc countries). Data was originally collected from 1970 through 2010. However, as data in key variables were lacking mostly prior to 1990, the analysis was collapsed to 2990-2010 in order to improve the analytical accuracy.

[23] Arguably, time lagging is controversial as a variable's effects may be immediate or delayed. Further, if those effects are delayed, it is debatable how long they should be lagged (Li 2005, Micholus et al. 2008, Young and Findley 2011). Thus, in addition to the main results, I include the same analysis with non-lagged independent variables in the corresponding appendixes.

3.1. DEPENDENT VARIABLE: TERRORISM

The dependent variable of this study is terrorism. It is measured as the total, yearly count of terrorist attacks registered in the country of analysis during the year (Young and Findley 2011, LaFree and Dugan 2006). Data on the dependent variable come from the Global Terrorism Database (GTD), a publicly available, open source event-count database of terrorist attacks from 1970 through 2013, built and managed by the National Consortium for the Study of Terrorism and Responses to Terrorism (START), housed at the University of Maryland.[24]

Terrorism is defined as "the threatened or actual use of illegal force and violence by a non state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" (START-GTD Codebook 2013:7).[25] This definition is also consistent with others in the literature that view terrorism as premeditated, intentional acts of violence used by "individuals or subnational groups to obtain political or social objective through the intimidation of a large audience beyond that of the immediate victims" (Sandler 2013:1, Enders and Sandler, 2012, RAND 2012, Hoffman 2006, US Department of State 2001, Atran 2003, Kruger and Maleckova 2002).

The key ingredients in the above definition include non-state actors, intentionality, the attainment of political or social objectives, and the need to involve larger audiences (extending beyond the immediate victims). First, the perpetrators of terror incidents must be non-state actors. The focus on non-state actors is important for, if the perpetrator is the state, then the focus shifts to state terrorism which, while an important subject, is not the inquiry of the present research. Second, the incident must be intentional indicating prior, conscious calculation on the part of the perpetrators. Third, while the incident must entail some level of violence (or threat of violence), the solo use of violence is not considered terrorism, but simply an objectionable and criminal behavior. Thus, the use of violence must be perpetrated in the name of grander social or political goals that transcend one-time criminal offenses. Finally, engaging larger audiences is a way to pressure governments into doing terrorists' bidding by

[24] Access to the raw GTD database, descriptions of count methods, and operationalization of terrorism, is available online at http://www.start.umd.edu/gtd/.

[25] START, or the National Consortium for the Study of Terrorism and Responses to Terrorism, maintains the Global Terrorism Database (GTD) whose data on terror events are used in the quantitative analysis of this dissertation. This definition is found in GTD Codebook (2013:7).

triggering mass societal discontent (Sandler 2011, 2013). Overall, terrorism is viewed as a rational behavior: one that is political motivated, based on deliberate choices of non-state actors (i.e. individuals or/and terrorist organizations) in the pursuit of clearly defined interests (Crenshaw 1981).

GTD allows users to stipulate operational definition criteria to trim the data as per individual needs. In order to meet the above defined parameters of terrorism in terms of being an intentional act of violence (or threat of violence) by non-state actors and exclude random acts of violence, I adhered to the following three criteria (as outlined in START-GTD Codebook 2013:8): (1) it must be aimed at "attaining a political, economic, religious, or social goal" [Criterion I]; (2) it must intend to "coerce, intimidate, or convey some other message to a larger audience" [Criterion II]; (3) it must fall "outside the context of legitimate warfare activities" deliberately targeting civilians and not military targets [Criterion III].

For an act to be counted as a terrorist event, it had to meet at least two of the above three criteria. In addition, in order to filter out random acts of violence, I excluded any events that were coded as doubtful,[26] or, in other words, were not clear-cut, categorical cases of terrorism *(See Text Box 1 for examples)*. Thus, I counted only events that were coded as definite

Text Box 1: Examples of Doubtful and Clear Cases of Terrorism

For example (1) on Aug 2, 1998, a stolen pickup truck carrying a homemade bomb crashed through the doors of the county courthouse in Lafayette, Indiana, U.S.A., ignited, and caused a fire that heavily damaged the building. However, the bomb did not explode and no one was injured. Even though a government building was targeted and there were financial losses, this incident was coded Criterion I: (0), Criterion II: (1), Criterion III (1), DoubtTerrorism (1), thus, classified under "Other Crimes". This was **not** an act of terrorism (event ID: 19980802000).

On the other hand, (2) a little more than one month later, on Sept 8, 1998, in a series of related attacks, unknown perpetrators ignited a fire at the Carolina Women's Clinic in Fayetteville, North Carolina, U.S.A. There were no casualties, but abortion clinic sustained $17,000 in damages. The premeditated motive was to express protest against anti-abortion activities and the perpetrators used violent means (arson) to that effect. The incident was coded Criterion I: (1), Criterion II: (1), Criterion III (1), DoubtTerrorism (0); thus, this **was** counted as act of terrorism (event ID: 199809080004.)

Source: GTD

[26] A special categorical variable responding to the question "Doubt Terrorism Proper?" records reservations, in the eyes of GTD analysts, that the incident in question is exclusively terrorism. For instance, any uncertainty that disqualifies an incident as terrorism (but that is not sufficient enough to entirely exclude the said incident from the dataset) resulted in coding the event as doubtful or 1 (and inversely, coded as 0 if there was no doubt as to the terrorist nature of an incident). In addition, an additional variable further specifies whether the said incident falls into any of the following five categories: (1) Insurgency/Guerilla Action; (2) Other Crime Type; (3) Intra/Inter-group conflict; (4) Lack of Intentionality; or (5) State Terrorism. This "Doubt Terrorism Proper" variable was routinely made for incidents that took place after 1997. Prior to that year, terror events were marked only along the above discussed three criteria.

incidents of terrorism[27] and excluded, thereby, the following: insurgency or guerilla actions, inter/intra group conflicts, state terrorism, crimes categorized as "other" as well as any violent acts that lack intentionality.

By scholarly account, most terrorism is domestic; however, transnational or international terrorism has purportedly higher profile and greater economic consequences (Gaibulloev and Sandler 2008). Arguably, distinguishing between domestic and international terrorism is important when deciding on the topic to study (Sandler 2013). Particularly, in studies examining economic growth and foreign direct investments, scholars make the case that one type of terrorism may have more of an impact than the other one (Sandler and Enders 2008). However, in the aid-terrorism literature, a strict delineation between domestic and transnational terrorism is not always made (Azam and Thelen 2010a, b, Campos and Gassebner 2009, Azam and Thelen 2008, Bueno de Mesquita 2005, Bandyopadhyay et al. 2011, Adelman 2007, Krueger 2008), although some studies focus exclusively on transnational terrorist acts (Young and Findley 2011, Azam and Delacroix 2006, Burgoon 2006). Within the context of this study, no distinction will be made between the two types of terrorism as the main focus will be the explicit count of terrorist events per aid recipient country.[28]

3.2. INDEPENDENT VARIABLES

The main independent variables of the study include total aid, poverty (2 measures), and sectoral aid (10 measures). In addition, grievances-related variables used to construct interactive variables to test the second and the third propositions include 27 measures. Finally,

[27] Coded 0 or "No": There is essential no doubt as to whether the incident is an act of terrorism in "Doubt Terrorism Proper" variable. As this variable was more routinely used only after 1997, for incidents dating from 1990 until 1997, I included all events coded as 0 and as -9 (indicating that they were not revisited and recoded according to doubt (1) or no doubt (0) categorical variable "Doubt Terrorism Proper").

[28] Articles affirming to have found an empirically significant and possibly causational link between sector-specific aid and a decrease in terrorism tend to focus predominantly on transnational terrorism (i.e. defined as terrorist activities "involving citizens or the territory of more than one country," US Department of State, 2001, *Patterns of Global Terrorism* in Atran 2003:1534). Such a one-sided line of enquiry needs, first, to expand its analysis and include domestic terrorism, and, second, to explain better its dependent variable measured as "the number of transnational attacks in an aid-recipient, country-year" (Young and Findley 2011:373), for it is unclear how sectoral aid directed to and received by country A may affect terrorism originated from or conducted by country B (following the definition of transnational terrorism). One way to circumvent this would be to count only the country of origin of a potential terrorist as well as aid received by that country. However, this is beyond the scope of this study.

based on earlier research, the following control variables are included: population density, political competition, corruption control, and ethnic fractionalization. These controls are the same in every model for consistency and comparison (except for the last model in Expectation III).

A. TOTAL AID

Total Aid is measured in actual disbursements of financial assistance and is defined as "those flows to developing countries and multilateral institutions provided by official agencies, including state and local governments, or by their executive agencies, each transaction of which meets the following tests: i) it is administered with the promotion of the economic development and welfare of developing countries as its main objective; and ii) it is concessional in character and conveys a grant element of at least 25 percent" (OECD 2015[29] also used by Thérien 2002:450, Browne 1990, Burnell 1997, Lancaster 2000).[30] Total Aid is measured in millions USD (current prices) per year per recipient country. In summing total aid, I included aid given by DAC countries, non-DAC countries, as well as multilateral agencies.[31] The data for total aid come from the Organization for Economic Co-operation and Development (OECD) and is freely available online.[32] In addition, I double-checked OECD's data against the one provided by the World Bank[33]; with minor discrepancies, both databases report similar amounts of foreign aid disbursements.

[29] OECD Foreign Aid/ODA codebook, available online at http://www.oecd.org/dac/stats/34086975.pdf (last accessed April 13, 2015)

[30] While foreign aid/ODA definition is generally not contested, scholars differ on how they measure aid. Thus, aid has been measured as *an averaged ODA per capita* (Azam and Thelen 2008, Humphreys and Varshney 2004, Breuning and Ishiyama 2007, Young and Findley 2011); *ODA as a percentage of GDP* (Azam and Thelen 2008, Humphreys and Varshney 2004, Breuning and Ishiyama 2007, Young and Findley 2011); *ODA as a percentage of the GNP* (Knack 2004, Brautigam and Knack 2004); an aggregate of the *actual disbursements* of loans and grants by official agencies (Azam and Thelen 2010a, Djankov et al. 2008b), and, even the opposite*: ODA commitments* rather than ODA disbursements (Young and Findley 2011). Some robustness checks also include the level *of ODA as ratio to the GNI* (Azam and Thelen 2010a). This dissertation considers the actual total disbursements of foreign aid.

[31] For a list of donors, please, refer to Appendix 4.

[32] Website: http://stats.oecd.org/qwids/.

[33] Website: http://ddp-ext.worldbank.org/ext/DDPQQ/report.do?method=showReport

B. SECTORAL AID

Sectoral Aid refers to foreign aid that has been assigned a specific purpose. This study includes the following general categories of sectoral aid*: Investing in People Aid* (includes Education, Health, and Social Services Aid), *Promoting Economic Growth Aid* (includes Microeconomic Growth, Economic Opportunity, Production Sectors, and Development Aid), *Peace and Security Aid* (includes Peace and Security/Military Aid), and *Governing Justly and Democratically Aid* (includes Governance Aid). For a further break-down by categories and what those include, refer to Table III. (For specific codes and categories included in each type of sectoral aid, refer to Appendix 4.)

All sectoral data come from AidData: an online, free, and accessible to the wide public source.[34] The reported amount is the total amount per sectoral aid category (that includes all aid commitments[35] by DAC/non-DAC countries and multilateral agencies) per year per aid-recipient country in constant USD values.

[34] Database available at www.aiddata.org.

[35] AidData reports primarily foreign aid commitments. When using commitments, the question of whether the committed aid actually arrives in a country is always open for a discussion. Unfortunately, few options exist to remedy this concern (Tierney et al. 2011). As of now, we can work with what is available. In this case, for sectoral aid, mostly commitment aid is available. It is acknowledged that both commitment and disbursement data have their problematic; however, this has not been a deterrent for including either measure in the aid literature (Findley, Powell, Strandow, and Tanner 2011, Tierney et al. 2011).

Table III. Sectoral Aid by Category.

General Category	*Targeted Sectors*	*Goals of Sectoral Aid*
Investing in People Aid	EDUCATION	Basic, secondary, post-secondary education, system-wide education improvements, education training, and scientific institutions.
	HEALTH	Basic and specialized medical services, basic health and nutrition, infectious disease control, reproductive healthcare, family planning, control of sexually transmitted disease, health-specific policy development, education, training, and research.
	SOCIAL SERVICES	Water supply and sanitation, social infrastructure, welfare services and housing, general social aid, culture and recreation, social services.
Promoting Economic Growth Aid	MICROECONOMIC GROWTH	Economic infrastructure and services, business and private enterprises, urban and rural development, non-agricultural alternative development
	ECONOMIC OPPORTUNITY	Employment, employment policy and services, women
	PRODUCTION SECTORS	Agriculture, forestry, fishing, Industry, mining, construction Trade policy and regulation, tourism
	DEVELOPMENT AID	General, food support, import and commodity assistance, debt assistance
Peace and Security Aid	PEACE AND SECURITY	Counter-Terrorism/Military, conflict prevention, arms control, security system management, land mine clearance, reintegration of former soldiers
Governing Justly and Democratically Aid	GOVERNANCE	Rule of law, good governance, strengthening civil society (free and fair elections, free flow of information, support nongovernmental organizations).

Source: AidData. Values reported as a total amount per year. For included aid codes, please refer to Appendix 5.

C. POVERTY

To measure poverty, I use two variables: the traditional measure of GDP per capita and the more nuanced Human Development Index (HDI).

GDP per capita is a country's gross domestic product divided by its midyear population. It is the most commonly used measure assessing level of economic development (or poverty).[36] It is measured in current US dollars. The data come from the World Bank.[37]

The second measure of poverty: the Human Development Index (HDI) steps beyond the monetary representation of poverty. It is a composite index that measures human well-being along three basic dimensions: quality of life, access to knowledge, and a decent standard of living.[38] The scores for the three HDI dimension indices are aggregated into a composite index using geometric mean. The reported, composite HDI's values range from 0 (low) to 1 (high) human development. Data on HDI are collected by the United Nations Development Program.[39] While values before 2005 are scarcer (namely, values are reported for 1980, 1985, 1990, 2000), post 2005, the UNDP reports HDI indices yearly.

D. INTERACTIVE VARIABLES: GRIEVANCES

A key component of this study is the expectation that sectoral aid must respond to specific grievances that are experienced by the people of the country receiving aid in order for

[36] Listing relevant references would be too long to include as virtually every study includes GDP per capita as a measure of poverty or of economic development.

[37] Data available on www.worldbank.org.

[38] Notes adapted from the UNDP methodology on HDI: The ***health dimension*** is assessed by life expectancy at birth using a minimum value of 20 years and maximum value of 85 years. The ***education component*** of the HDI is measured by mean of years of schooling for adults aged 25 years and expected years of schooling for children of school entering age. Mean years of schooling is estimated by UNESCO Institute for Statistics based on educational attainment data from censuses and surveys available in its database. Expected years of schooling estimates are based on enrolment by age at all levels of education. This indicator is produced by UNESCO Institute for Statistics. Expected years of schooling are capped at 18 years. The indicators are normalized using a minimum value of zero and maximum aspirational values of 15 and 18 years respectively. The two indices are combined into an education index using arithmetic mean. The ***standard of living*** dimension is measured by gross national income (GNP) per capita. The goalpost for minimum income is $100 (PPP) and the maximum is $75,000 (PPP). The minimum value for GNI per capita, set at $100, is justified by the considerable amount of unmeasured subsistence and nonmarket production in economies close to the minimum that is not captured in the official data. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean. For more details, refer to technical notes available on http://hdr.undp.org/en/content/human-development-index-hdi.

[39] Data available on http://hdr.undp.org/en/content/human-development-index-hdi.

this aid to decrease terrorist incidents in this country. In other words, if aid is given ad hoc or does not respond to existing needs, it may have no impact, at best, or exacerbate instances of terrorism, at worst. This has partial support in the literature (discussed in chapter one, p. 16-17); however, it has not been tested empirically.

Table IV lists all variables reflecting corresponding societal needs in aid-recipient countries. I identified the nature of societal needs from the intended purpose(s) of sectoral aid. For example, one of the goals of education aid is to improve basic, secondary, and post-secondary education (Table III). A corresponding societal need that I examine is the level of primary, secondary, and tertiary enrollment. Similar logic was used in the selection of the other 'grievances' variables. For detailed explanation of all grievance-related variables, please see Appendix 3.

Table IV. Sectoral Aid Categories and Corresponding Grievances

Sectoral Aid	Corresponding Grievances/Societal state
Education Aid	**Primary School Enrollment** (% gross) (GEduc4) **Secondary School Enrollment** (% gross) (GEduc2) **Tertiary School Enrollment** (% gross) (GEduc3) Repeaters, Secondary, total (% of total enrollment) (GEduc5) – *only in Appendix* **Public Spending on Education** (% GDP) (GEduc9)
Health Aid	**Health Expenditure per Capita** (current US$) (GHealth1) **Life Expectancy at Birth** (years) (GHealth3) **Prevalence of Undernourishment** (% population) (GHealth4)
Social Services Aid	**Improved Sanitation Facilities** (% of population with access) (GSocial2) **Improved Water Source** (% of population with access) (GSocial3) **Science and Technology: Scientific and Technical Journal Articles** (number) (GSocial6) Research and Development Expenditure (% of GDP) (GSocial7) - *only in Appendix*
Microeconomic Development Aid (ECONOMIC1)	**Income Share Held by Lowest 20%** (GMicroG5) **Household Final Consumption Expenditure** (current US$) (GMicroG7) **Inflation, consumer prices** (annual % change) (GMicroG9)
Economic Opportunity Aid (ECONOMIC2)	**Total Unemployment** (% of total labor force) (GUnempl1) **Youth Total Unemployment** (%total labor force **ages 15-24**) (GUnempl3) Long-Term Unemployment (% of male unemployment) (GUnempl5) – only in Appendix.
Production Sectors Aid (ECONOMIC3)	**Employment in Agriculture** (% of total employment) (GAgricltr) **Employment in Industry** (% of total employment) (GIndustry) **Employment in Services** (% of total employment) (GSErvices)
Development Aid (ECONOMIC4)	**Food Imports** (% of merchandise imports) (GFoodImp) **Gross Domestic Savings** (current US$) (GDomSav)
Peace and Security Aid	**Military Budget** (% GDP) (MilBud) **Political Stability** (Index -2.5 (weak) to +2.5 (strong))
Governance Aid	**Corruption Control** (Index -2.5 weak to +2.5 strong governance performance) (CorrupControl) **Political Competition** (Index 0 highly regulated/least to 10 – competitive/most) (PolCompt) – *Source:* Polity IV

Aid Source: AidData. Values reported as a total amount per year. For included aid codes, please refer to Appendix 5.
Grievances Data Source: the World Bank unless otherwise noted. The codes in parentheses are the codes given to the respective variables when collecting the data.

3.3. CONTROL VARIABLES

Based on previous studies on terrorism, the following control variables are included: population density, political competition, control of corruption, and ethnic fractionalization.

A. POPULATION DENSITY

The positive association between population size and terrorism has been documented in several studies.[40] The main explanation has been that larger populations provide a larger pool of both potential victims and perpetrators.[41]

In this study, I use population density as a proxy for population. Population density is measured in people per squared kilometer of land area. The population counted includes the de facto definition of population, or all residents regardless of legal status or citizenship--except for refugees[42] not permanently settled in the country of asylum. Land area is a country's total area, excluding area under inland water bodies (i.e. rivers and lakes). Data on population density come from the World Bank.

B. POLITICAL COMPETITION

Political competition reflects the ability of actors outside of the ruling regime to participate in the political process giving them, thereby, the opportunity to express grievances and political aspirations. The overall rationale is that the existence of official channels through which to express discontent would lessen the likelihood of conflict. Thus, while, intuitively, democratically organized countries are seen as less prone to terror violence by providing official channels for the expression of grievances (Kurrild-Klitgaard et al. 2006, Baten and Mumme 2013, Skaperdas 2008, Reynal-Querol 2005), practically, repressive regimes may fare better in impeding terrorism through repression (Daxecker and Hess 2012, Hegre et al. 2001, Li 2005,

[40] Gassebner and Luechinger 2011, Azam and Delacroiz 2006, Azam and Thelen 2008, Braithwaite and Li 2007, Burgoon 2006, Campos and Gassebner 2009, Crenshaw et al. 2007, Dreher and Fischer 2010, 2011, Dreher and Gassebner 2008, Eyerman 1998, Koch and Granmer 2007, Krueger and Laitin 2008, Krueger and Maleckova 2003, Lai 2007, Li and Schaub 2004, Li 2005, Neunmayer and Plümper 2009, Piazza 2006, 2007, 2008a, 2008b, Robison et al 2006, Sambanis 2008, Urdal 2006, Walsh and Piazza 2010.

[41] Late studies report that countries with growing/aging population seem to experience less terrorism (Dreher and Fischer 2010), while countries with youth-bulging or younger populations are associated with more terrorism (Tavares 2004, Urdal 2006, MerciCorps 2015).

[42] Refugees are generally counted in the population count of their country of origin.

Azam 2012, Krieger and Meierrieks 2011, Caruso and Schneider 2011, Freytag et al 2011). In direct refutation of the logic of previous scholarship asserting that democratic states seeking to increase minority representation in government are less likely to experience terrorism (Huber and Powell 1994, Reynal-Querol 2002, Li 2005, Aksoy and Carter 2012), recent findings suggest that domestic terrorism increases as political representation (i.e. the number of small parties represented in the legislature) increases (Foster, Braighwaite, and Sobek 2012, Kis-Katos, Liebert, and Schulze 2011).

In addition, as data on terrorism (i.e. GTD data) is collected primarily from media sources, reporting may be biased considering that democracies are less likely to impose restrictions on the coverage of terrorist activities. Such potential reporting bias (as discussed in Li 3005 and Drakos and Gofas 2006) in addition to the ambivalent relationship between a political system's openness and terrorism makes it necessary to control for a country's political system in terms of its regulation and competitiveness of political participation. I termed this composite control variable: political competition.

To measure political competition, I used the Political Competition index, as compiled by the Polity IV project (under POLCOMP). The index ranges from 0 (highly regulated/least competitive political systems) to 10 (highly/most competitive political systems). It is comprised of two component variables: Regulation of Participation *(rules of how/when)* and Competitiveness of Participation *(rules of who/how many)*. The regulation of participation refers to the extent of existing biding rules on "when, whether, and how political preferences are expressed" (Polity IV manual, p. 24) and is coded along a five-category scale that includes unregulated (fluid), multiple identity, sectarian, restricted, and regulated (stable and enduring political groups) participation. The competitiveness of participation (PARCOMP) refers to "the extent to which alternative preferences for policy and leadership can be pursued in the political arena" (Polity IV manual, p. 25) and is coded on a five-category scale indicating the level of civil interactions between polities including repressed (no opposition allowed), suppressed, factional, transitional, and competitive (stable, enduring, and regular political opposition groups exist) systems.[43]

[43] Detailed methodology is available online in the Polity IV Dataset manual (p. 26-29).

C. CONTROL OF CORRUPION

Corruption is usually omitted in aid-terrorism studies. This is intriguing especially considering that official corruption has been shown to be one of the primary ways in which terrorist organizations sustain themselves and perpetuate violent behavior (Shelley 2014). Curbing corruption may curb terrorism by cutting the latter's monetary oxygen. I use data provided by the World Bank where official control of corruption is measured in term of perceptions of the extent to which public power is exercised for private gain as well as "capture" of the state by elites and private interests. Its index ranges from approximately -2.5: weak to 2.5: strong governance control of corruption.

D. ETHNIC FRACTIONALIZATION

Notorious cases of sectarian violence suggest that ethnically, linguistically, or religiously fragmented societies may serve as a fertile ground for terrorism. Studies point to a positive relationship between ethnic fractionalization/tensions and violence, in general, or terrorism, in particular.[44] Although linguistic[45] and religious fragmentation[46] have also been considered in previous studies, in this research I focus primarily on ethnic fractionalization as the latter's positive linkage to terrorism and violence has been arguably least disputed.

I use the ethnic fractionalization index to measure the degree of ethnic heterogeneity in a country. It ranges from 0 (low) to 1 (high) ethnic fractionalization. For instance, in 1995, Afghanistan consisted of the following ethnic groups: Pashtuns (30%), Tajiks (30%), Hazara (16%), Turkmens and Uzbeks (13%), Koochis (8.8%), Baluchis (1.6%), and Nuristanis (.4%) (*source:* the World Directory of Minorities). For that year, the ethnic fractionalization index of Afghanistan was 0.7693 indicating high ethnic fragmentation. Ethnic fractionalization indices are based on population data collected from several sources namely Encyclopaedia Briannica, CIA's World Factbook, Levinson's Ethnic Groups Worldwide, and Minority Rights Group

[44] Gassebner and Luechinger 2011, Abadie 2006, Basuchoudhary and Shughart 2010, Bravo and Dias 2006, Drakos and Gofas 2006a, Dreher and Fischer 2010, Goldstein 2005, Kurrild-Klitgaard et al. 2006, Lai 2007, Piazza 2006, Sambanis 2008, Tavares 2004.

[45] Linguistic Fractionalization: Abadie 2006, Bloomberg and Hess 2008a, Dreher and Fischer 2010, Goldstein 2005, Kurrild-Klitgaard et al. 2006, Piazza 2008a.

[46] Religious Fractionalization has, arguably, no linkage to terrorism: Abadie 2006, Bloomberg and Hess 2008a,b, Dreher and Fischer 2010, Goldstein 2005, Piazza 2006, 2008a, Tavares 2004.

International's World Directory of Minorities (and Mozaffar & Scarrit 1999 for selected African countries). In most cases the primary source is national censuses.[47] As the Ethnic Fractionalization Index is available only for certain years, I spread values given to specific countries across all examined years based on the argument that ethnic identities change slowly and such change would not be substantial within the twenty years span of this study (Alesina et al. 2003). Others have adopted similar approach (Quality of Government dataset 2015).

3.4. METHOD OF ANALYSIS

To test this study's expectations, I use negative binomial regression. The usage of negative binomial regression over any other method (i.e. ordinary least squares, Poisson,[48] or zero-inflated negative binomial) is due to several unique features of the dependent variable (terrorism). First, it is a count, interval measurement that does not take on negative values. Second, it is highly over-dispersed, unevenly distributed across cases and years: while some countries experience little terrorism or have few citizens who engage in terrorist activities, others are exposed to many terrorist events. Thus, the values of the dependent variable exhibit over-dispersion with variances larger than their means. Third, if the GTD dataset does not indicate any terror events for a specific country in a specific year, that country received a value of 0 for that particular year. As such, for the 1990-2010 period the dependent variable terrorism has a total of 3,895 values of which 2,131 are zeroes and 1,764 positive integers (or 45% non-zero events). However, as each model uses different variables, often the reported zeros account for between 45 to 55% the examined cases.[49] In addition, the reported zero values are not 'random' or 'excess' zeroes due to two different processes. If that were the case, a zero-inflated negative binomial regression would have been in order (Piazza 2011, Brant et al. 2000). Instead, all zero values are indicative of the lack of terror activities for specific countries in specific years. In other words, if no terror event has been noted in a particular year, that country received a total event count of 0. Therefore, the usage of the negative binomial

[47] For additional details, refer to Appendix 3.
[48] The negative binomial distribution is, in fact, an over-dispersed Poisson distribution.
[49] I also run a zero-inflated negative binomial analysis on each model that contains the precise number of reported zeros on the dependent variables. Those are included in the appendix part, under the corresponding model section.

regression is justified. I do, however, produce nonlagged as well as zero-inflated negative binomial tests[50] as robustness checks to the reported, negative binomial estimation and find them to, generally, mirror the core results.[51] I am therefore confident that the findings of the analyses are not dependent on my selection of the estimation technique. In fact, negative binomial regression models have become the preferred tool in empirical analyses of terrorism (Krieger and Meierrieks 2011, Azam and Thelen 2010, Caruso and Schneider 2011, Kis-Katos et al. 2011, Burgoon 2006, Gassebner and Luechinger 2011, Freytag et al. 2011, Piazza 2008a,b, Findley and Young 2011, Young and Findley 2008).

As previously mentioned, all independent variables have been lagged by one period/year to account for time-delayed effects. Lagging variables also helps to remedy the autocorrelation bias – common to longitudinal, panel data. In this study, the Wooldridge test[52] for autocorrelation in panel data shows that serial correlation is indeed present in all models when those are run as nonlagged, OLS regression models; in this case, the test reports significant F statistics indicating the presence of autocorrelation (or that the null hypothesis H_O= no first

[50] Zero-negative binomial regression is applied if there is a suspicion that excess zeros in the dependent variables are generated by a separate process from the count values. In other words, a zero-inflated model assumes that zero outcome is due to two different processes. In this case, zero outcome can be due to countries not being included in the original data reporting (on the GTD dataset). As GTD reports only terrorist attacks that took place, my assumption is that a no-reporting would indicate zero terrorist attacks. Thus, I recorded a zero for every year-country when no terrorist attacks were reported (by GTD). However, some countries are simply never reported on in the GTD database. To account that zero terrorist events in those countries may be due to other factors (i.e. countries not being accounted for in the database), I created a dummy variable with a value 1=countries reported in the GTD database (even if they had 1 terrorist incident over the studied period 1990-2010) and 0=countries never reported in the GTD database. The expected count, based on a combination of these two processes, can be expressed as follows: E(#terrorist events=k) = prob(countries not included in GTD database)*0 + prob(countries included)*E(y=k|countries included) (based on Stata examples of zero-inflated negative binomial). Within the scope of this study, the following countries and territories – that were never reported in the GTD database, were recorded as having had zero terrorist events: Cape Verde, Kiribati, Marshall Islands, Micronesia Oman, Palau, Samoa, Sao Tome and Principe, St Vincent and Grenadines, Tonga, and Tuvalu. Their effect is recorded and controlled for as a dummy variable when reporting zero-inflated negative binomial regression results (in the respective models' corresponding appendixes).

[51] Both nonlagged and zero-inflated negative binomial results are reported in the appendices of the respective expectations when discussing the main findings.

[52] As the traditional Durbin-Watson, Ljung-Box Q-Statistic, and Breusch-Godfrey Tests for serial autocorrelation do not apply to multiple panels data, I turn to the Wooldridge test to check for serial autocorrelation in longitudinal panel data. Wooldridge (2002:2823) derived a simple test for autocorrelation in panel-data models using pooled OLS residuals. Under the null hypothesis, the errors are serially uncorrelated. A statistically significant test values would lead to the rejection of the null hypothesis confirming serial correlation. Based on Wooldridge's work, Drukker (2003) created the xtserial command in STATA that runs a test for serial correlation according to the peculiarities existing in a linear panel-data. A significant test statistic would indicate the presence of serial correlation.

order autocorrelation cannot be rejected).[53] Lagging variables has been frequently used "to eliminate autocorrelation in the residuals and to model dynamic data generating processes" (Wilkins 2015:1, Caseli et al. 1996, Green et al. 1998, El-Din and Smith 2002, Montanari et al 2000, Singh et al. 2011, Ayyangar 2007). In addition, a standard Breusch-Pagan / Cook-Weisberg (BP) test returns statistically significant values of chi^2 indicating the presence of heteroscedasticity.[54] To address heteroskedasticity issues, I added an additional parameter to each code - *vce (robust)* in Stata13 (Hoechle 2007), which produces standard errors that are robust to heteroskedasticity bias while allowing to still remain within the negative binomial, longitudinal, panel, and dynamic (lagged) nature of the models. Finally, as robustness checks, I include both nonlagged, negative binomial regressions (equipped with panel-corrected standard error parameters or *vce (cluster id)* producing standard errors that are robust to intra-group correlation and heteroskedasticity) and zero-inflated negative binomial regressions (reported in the appendixes).

The results are presented next.

[53] Test results of the Wooldridge test for autocorrelation in panel data and the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity of ALL models are reported in Appendix 20. The two tests are run on regular OLS, nonlagged models.

[54] Also confirmed by FGLS (feasible generalized least squares) in first difference model accounting for hetereskedasiticy in cross-sectional time-series data (based on significant *p* values).

CHAPTER FOUR - RESULTS EXPECTATION I: TOTAL AID, POVERTY, AND TERRORISM

4.1. Model Specifications and Descriptive Statistics

The first expectation of the study is that total aid would have no impact on terrorism when conditional upon aid's ability to address poverty in aid-recipient countries. To test this expectation, I regressed the dependent variable - number of terrorist events per year per country - on total aid, two measures of poverty (GDP per capita and Human Development Index (HDI)), the interactive terms of total aid and the two measures of poverty, and the following control variables: population density, political competition, corruption control, and ethnic fractionalization.[55] The inclusion of interactive variables examines whether total foreign aid, conditional upon the level of poverty, impacts terrorism. All independent variables are lagged by one period (year) to account for time-delayed effects. The control variables are also lagged by one year. As outlined in the research design part, the model is adjusted to produce standard errors that are robust to intra-group correlation and heteroskedasticity bias[56]. STATA13 was used for running a negative binomial regression of the model.

The regression equation representing the examined variables is:

$$Y_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 * X_2 + \beta_5 X_1 * X_3 + \beta_{6-9} X_{6-9} + \varepsilon$$

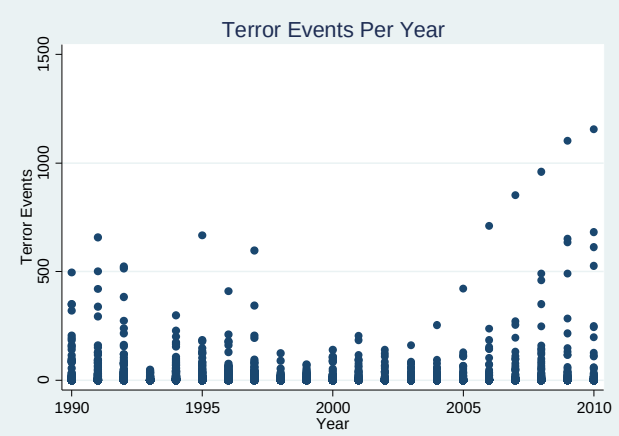
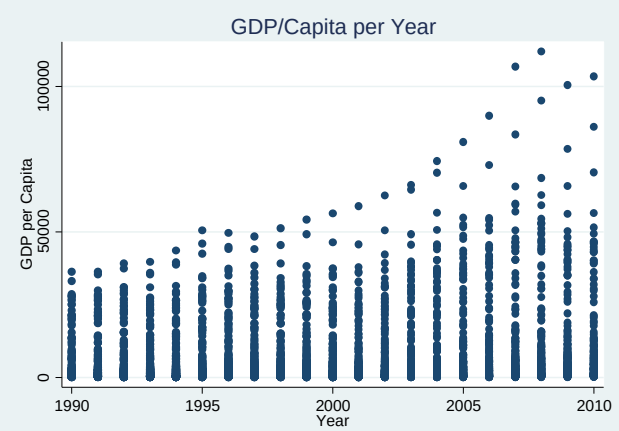
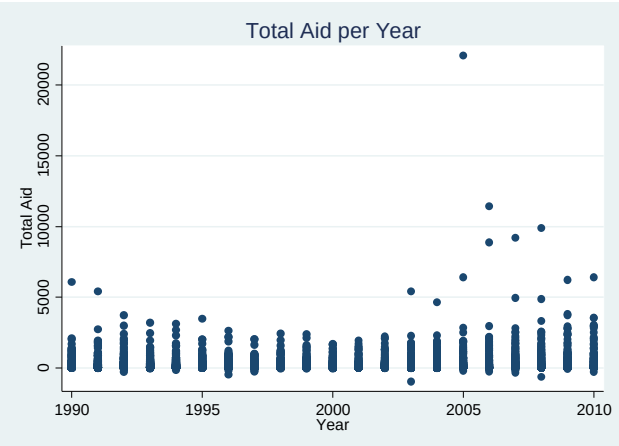
where Y_t = Terrorism, X_1 = Total Aid; X_2 = Poverty (GDP/cap); X_3 = Poverty (HDI); $X_1 * X_2$ = interaction between total aid and GDP/capita; $X_1 * X_3$ = interaction between total aid and HDI; and X_{6-9} = the four control variables respectively: population density, political competition, control of corruption, and ethnic fractionalization. The summary statistics of all variables are presented in Appendix 6.[57]

Overall, basic plots of the main variables: terrorist events (total number per year), poverty (as GDP per capita), and aggregate aid (in $ US millions) indicate that for the examined 1990-2010 period, the following general tendencies can be observed: terrorist events (Figure 1)

[55] The Research Design Part (p.38-41) discusses the rationale behind the inclusion of the said control variables.
[56] Test results of the Wooldridge test for autocorrelation in panel data and the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity of ALL models are reported in Appendix 20. The two tests are run on regular OLS, nonlagged models.
[57] Pearson's correlation coefficients and matrix graph available in Appendix 7.

and total aid (Figure 3) have both increased, while poverty (measured as GDP/capita) has decreased (Figure 2).

Table V. General Tendencies: Terrorism, Poverty, Total Aid (1990-2010)

Figure 1. Terrorism The number of terrorist events has either remained steady or increased (particularly after 2005). (For a more detailed representation of terrorist events with countries' names, see Appendix 8, Figure 8A.)	
Figure 2. Poverty Poverty has decreased during 1990-2010, as indicated by a steady increase of GDP per capita. (The same tendency is observed when poverty is measured in purchasing power parity (PPP) terms – see Appendix 8, Figure 8C.)	
Figure 3. Total Foreign Aid Overall, the amount of general aid has either remained steady or has increased with more pronounced peaks post 2005. (The main outliers in 2005, 2006, 2007, and 2008 are Iraq and Nigeria). (For a more detailed representation of total aid per year with countries' names, see Appendix 8, Figure 8B.)	

4.2. Regression Results

The results, reported in Table VI, show that total aid has a statistically significant and, contrary to expectations, positive impact on terrorism ($p < 0.001$, Model 1a) suggesting that larger volumes of general aid are associated with higher magnitudes of terrorism. However, substantively, the effect of total aid on terrorist incidents is trivial: every one million dollar increase in general aid is expected to lead to a 0.000849 increase in terror events, or, based on the incident-rate ratio (IRR) values: a million dollar increase in general aid would correspond to ~0.1% increase of terrorism if all other variables are held constant (see Appendix 9A and 9B for detailed results and incident-rate ratios values). Similarly, a one point increase in a country's Human Development Index would lead to a 5.548 point increase in terror events ($p < 0.001$, Model1a, Table VI), *ceteris paribus*. Poverty, measured as GDP per capita, appears to have no statistically significant linkage to terrorism.

Table VI. MODEL1: Terrorism regressed on Total General Aid and Poverty (negative binomial regression)

	Model 1a *No Interactives*		Model 1b *With Interactives*
Total Aid	0.000849*** (0.000156)	Total Aid	0.00101 (0.000772)
GDP/Capita	-0.0000161 (0.00000851)	GDP/Capita	-0.0000171 (0.00000917)
HDI	5.548*** (0.829)	HDI	5.718*** (1.000)
		xTotalAid*GDP/Capita	-5.74e-08 (3.34e-08)
		xTotalAid*HDI	-0.0000936 (0.00146)
Population Density	0.000711 (0.000891)	Population Density	0.000587 (0.000832)
Political Competition	0.131*** (0.0348)	Political Competition	0.128*** (0.0350)
Corruption Control	-1.036*** (0.122)	Corruption Control	-1.030*** (0.123)
Ethnic Fractionalization	0.667 (0.444)	Ethnic Fractionalization	0.590 (0.430)
Constant	-3.137*** (0.684)	Constant	-3.175*** (0.740)
lnalpha Constant	1.927*** (0.0432)	lnalpha Constant	1.924*** (0.0432)
Observations Adjusted R^2	1936	Observations Adjusted R^2	1936

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard robust errors in parentheses.

(1) Detailed results included in Appendix 9A.
(2) Negative binomial regression of non-lagged variables reports similar results (Appendix 9C).
(3) Zero-inflated negative binomial regression also confirms the above reported results (Appendix 9D).

However, when controlled for poverty, aid's impact on terrorism disappears (Table VI, Model 1b). One possible explanation is that general aid does not efficiently address poverty in a way that would impact terrorism or that aid aimed at poverty alleviation is simply ineffective. This observation is valid for both measures of poverty: the crude GDP per capita as well as HDI. Thus, the findings reported in Table VI, Model 1b lend support to the first expectation of this study, namely that general aid has no impact on terrorism when targeted at poverty. Additional regression analysis with non-lagged variables (Appendix 9C) as well as a zero-inflated negative binomial regression (Appendix 9D) confirm the results reported in Table VI.

The reported results also lead to several additional observations. First, independently, GDP per capita does not seem to be a statistically significant predictor of terrorism (Table VI, Model 1a)[58] supporting previous studies' findings that poverty does not necessarily predicate terrorism. Second, independently, the HDI does correlate positively with terrorism. Systematically compiled by the United Nations Development Program since 1980, the HDI is a composite statistic of the quality and longevity of life, education, and standard of living, offering, thereby, a more nuanced understanding of poverty. The fact that the HDI correlates positively in a statistically significant ($p < 0.001$) way with terrorist events lends support to previous arguments that terrorists often come from generally well-to-do families (Kruger and Maleckova 2003, Krueger and Laitin 2008, Pape 2005).

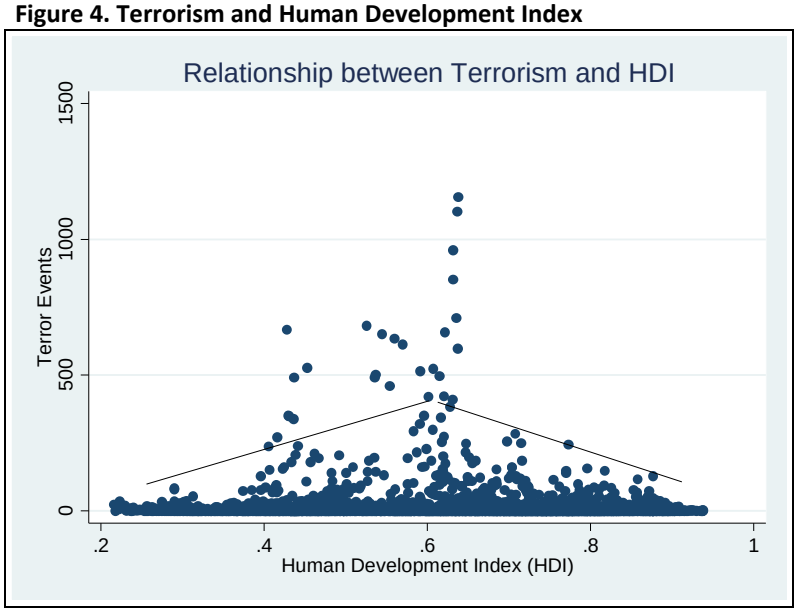
The substantive interpretation of the statistical results provides further insight into the nature of the relationship of poverty and terrorism. Based on the results reported in Table VI, Model 1a, one unit increase in HDI would lead to 5.548 point increase in terrorism ($p < 0.001$). A more practical explanation, based on the incident-rate ratio values of the HDI variable (reported in Appendix 9B), is that a 0.1 unit increase in a country's HDI score (measured on a scale of 0 to 1) would result in a 25,560% increase in terrorism![59] This high percentage change is problematic not only in terms of having an extreme value, but it also appears meaningless when we look at the non-linear plot distribution of the two variables - HDI and terrorism (Figure

[58] In the zero-inflated negative binomial regression model (Appendix 9D), GDP per capita appears to correlate negatively, in a statistically significant way, with terrorism indicating that an increase in income would lead to a decrease in terror events. However, in this model, the interactive term (xTotalAid*GDPCap) remains statistically insignificant indicating that foreign aid conditional upon increased income fails to impact terrorism.

[59] HDI's IRR value=256.6. As percentage, this would be (1-256.6)*100 = 25,560% (Appendix 1B-1).

4). While there is an increase in terrorist activities in states with higher HDI values, such increase is neither as dramatic nor as constant. In fact, terrorist events seem to peak when HDI values range between 0.4 to 0.65, but terrorism decreases in countries with higher human development indices. This may, in fact, indicate that countries ranked in the middle of the HDI scale (mainly 0.4-0.6) are more prone to experience increased terrorist incidents.

Figure 4. Terrorism and Human Development Index



On the other hand, as plotted, the relationship between HDI and terrorism may also indicate that outliers impact the data results and overemphasize the importance of HDI. However, even when controlling for outliers on the terrorism spectrum (e.g., Iraq, Pakistan, Peru, Colombia, India, Afghanistan, Turkey, and El Salvador in particular, Figure 5 and Figure 6), the reported results confirm that HDI has a statistically significant and positive linkage to terrorism (see Figure 6, Regression Results, p. 49). With or without outliers, the relationship between terrorism and HDI does not appear to be linear (Figure 5 and 6). Thus, regression results confirming a statistically significant positive impact of HDI on terrorism need to be examined within the context of specific countries. As reported, HDI's incident-rate ratio value is meaningless and does not fit the plotted relationship between the two variables. Instead, HDI's dramatic positive linkage with terrorist events seems to be valid only for countries falling within

specific human development dimensions; namely, terror events increase most dramatically in countries that are ranked between .4 and .65 (approximately) on the HDI scale.

Figure 5. Terrorism and HDI: all countries with names.

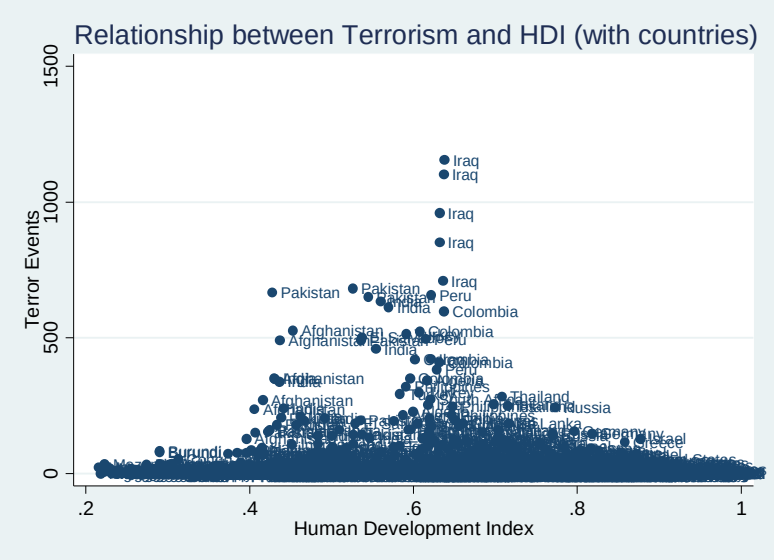
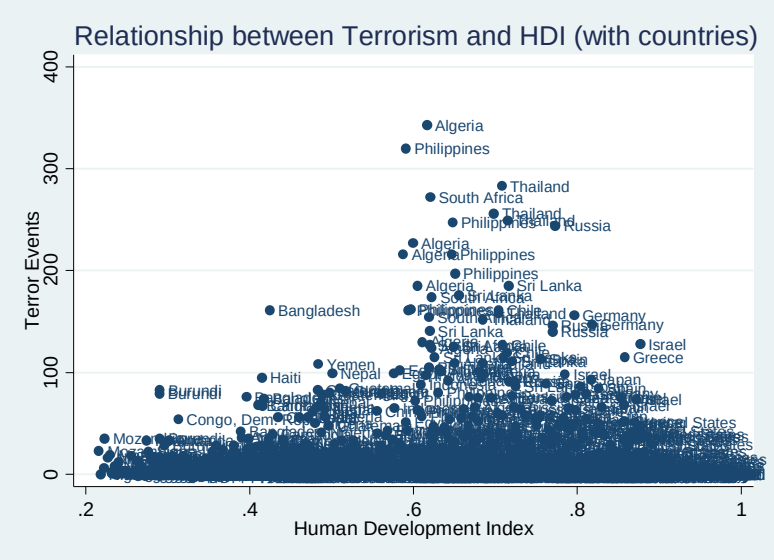


Figure5 – Original Regression Results

	Model 1a *No Interactives*
Terror Events	
Total Aid	**0.000849***
	(0.000156)
GDP/Capita	-0.0000161
	(0.00000851)
HDI	**5.548*****
	(0.829)
Population Density	0.000711
	(0.000891)
Political Competition	0.131***
	(0.0348)
Corruption Control	-1.036***
	(0.122)
Ethnic Fractionalization	0.667
	(0.444)
Constant	-3.137***
	(0.684)
lnalpha	
Constant	1.927*** (0.0432)
Observations	1936
Adjusted R^2	

Figure 6. Terrorism and HDI: Controlling for Outliers, with names.



*The following (terrorism) outliers were omitted to check for HDI overestimation: Afghanistan, Colombia, El Salvador, India, Iraq, Pakistan, Peru, and Turkey. Similar results are reported even when fewer number of outliers are omitted (for example only Iraq).

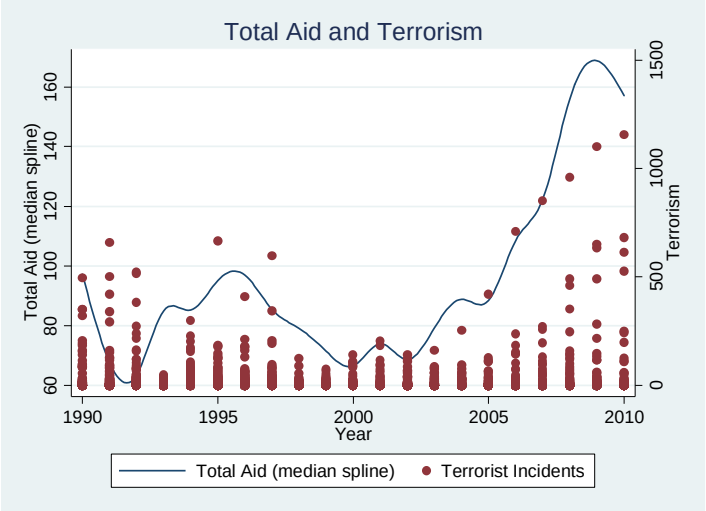
Figure 6– Regression Results: Controlling for Outliers

	No interactives
Terror1	
Total Aid	0.000263*
	(0.000129)
GDP/Capita	-0.0000110
	(0.0000885)
HDI	**4.808*****
	(0.794)
Pop Density	0.000391
	(0.000598)
Pol Competition	0.0971**
	(0.0358)
Corruption Control	-0.944***
	(0.118)
Ethnic Fractionalization	0.218
	(0.414)
Constant	-2.290***
	(0.622)
lnalpha	
Constant	1.921***
	(0.0461)
Observations	1833
Adjusted R^2	

Robust Standard Errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Overall, the main regression results (Table VI) support two main arguments: (1) poverty, measured as GDP per capita, does not have a statistically significant impact on terrorism, holding other factors constant; and (2) HDI, indicative of bettered life (in terms of longevity, health, education, standard of living), and total aid correlate positively, in a statistically significant way, with increased instances of terrorism. While the relationship between HDI and terrorism needs to be placed within the context of specific countries or be modeled as nonlinear, the linkage between total aid and terrorism follows a somewhat more linear pattern (Figure 7).[60] Thus, despite assertions to the contrary, an increase in general aid seems to exacerbate instances of terrorism. The statistically significant, positive correlation of total aid with terrorist events contradicts the premise of using total aid as a tool to combat terrorism.

Figure 7. Total Aid and Terrorism, 1990-2010



These results extend existing observations on the general ineffectiveness of aggregate aid in ameliorating poverty by placing this relationship within the context of terrorism. The main finding reported in this study, and particularly in this section, is that the interactive linkage between total aid and poverty alleviation appears to be statistically insignificant in decreasing terrorist incidents.

[60] Terrorism – Total Aid Pearson's correlation coefficient r=0.4 (Appendix 7).

CHAPTER FIVE – RESULTS: EXPECTATION II
SECTORAL AID AND TERRORISM: SOCIETAL LEVEL

The second expectation of this study is that aid channeled to specific purposes – also termed as sectoral aid – would be negatively related to the magnitude of terrorism conditional upon aid's ability to address relevant socio-economic grievances. To test this expectation, I evaluated several models probing the impact of different types of sectoral aid on terrorism.[61] The following sectoral aid categories were considered: education, health, social, economic, peace and security, and governance aid. In addition, when examining societal grievances, the economic aid was disaggregated further in four subtypes: microeconomic growth, economic opportunity, production sectors, and development aid. The different aid categories and their targeted goals are presented in Table III. Sectoral Aid by Categories (p.34).

As outlined in the research design section, all independent variables are lagged by one period (year) to account for time-delayed effects. The control variables are also lagged by one year. All models are adjusted to produce standard errors that are robust to intra-group correlation and heteroskedasticity bias.[62] The summary statistics of all independent variables used in the models are presented in Appendix 10.[63] STATA13 was used for running negative binomial regressions of all models.

Before assessing the conditional impact of sectoral aid, I performed tests of the independent effect of **all** sectoral aid categories on the number of terrorist incidents per state per year.[64] Analysis of sectoral aid's independent impact on terrorism is presented next.

[61] The following aid categories are included: education, health, social, economic, peace and security, and governance aid. In addition, when examining societal grievances, the economic aid is disaggregated further in four subtypes: microeconomic growth, economic opportunity, production sectors, and development aid. The different aid categories are discussed in Table VI. Sectoral Aid by Categories (p. 44).

[62] Test results of the Wooldridge test for autocorrelation in panel data and the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity of ALL models are reported in Appendix 20. The two tests are run on regular OLS, nonlagged models.

[63] The names in brackets are the ones given when collecting the data. For detailed explanations of all variables, see Appendix 3 (Codebook) and Appendix 5 (Sectoral Aid Categories and Included Aid Codes).

[64] Including peace/security aid and governance aid whose conditional effects are examined in Chapter Six.

5.1. ALL SECTORAL AID CATEGORIES AND TERRORISM

Independent Effect: Model Specifications and Descriptive Statistics

The independent effect of all sectoral aid categories is represented in the following equation:

$$Y_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_{8-11} X_{8-11} + \varepsilon$$

where Y_t=Terrorism, X_1=Education Aid; X_2=Health Aid; X_3= Social Services Aid; X_4= Economic Growth Aid; X_5= Peace and Security Aid; X_6= Governance Aid; X_7= Unallocated Aid; X_{8-11} = the four control variables respectively: population density, political competition, control of corruption, and ethnic fractionalization.

When examining the independent effect of sectoral aid, all seven types of sectoral aid are included, namely: education, health, social services, economic growth, peace and security, governance, and unallocated aid.[65] Those are summarized in Table III (p.34). An exception is the economic growth aid which, independently, is examined as a total number, but is further disaggregated in four subcategories (microeconomic, economic opportunity, production sectors, and development aid) when discussing its conditional effect on terrorism.

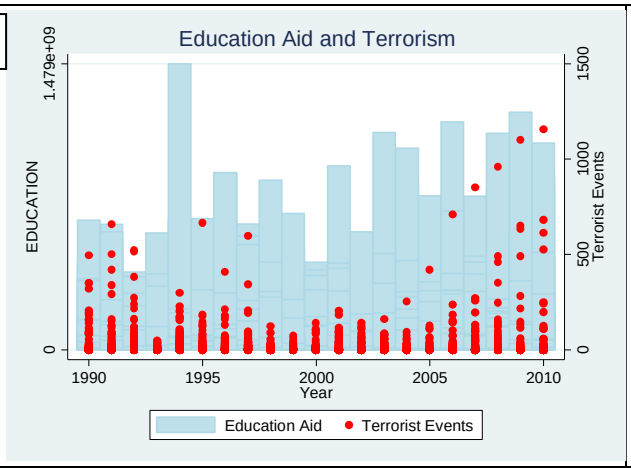
Plotting the different types of sectoral aid against terrorist incidents reveals that sectoral aid has generally increased with some categories of aid experiencing more dramatic boosts than others (Table VII). For example education aid (1), peace and security aid (5), and governance aid (6) have seen more pronounced and, often, substantial increases, particularly post-2000. Other sectoral aid categories have either remained steady or have experienced less dramatic increases. Health aid (2), for instance, has remained generally steady, with dramatic peaks in 2008 and 2009. Similarly, economic growth aid (4) and social services aid (2) have remained stable with more noticeable increases, respectively, in 2000 and 2004-2005. Overall, sectoral aid has either remained steady with punctuated increases (health, social services, economic growth aid), or has increased steadily (education aid) or dramatically (peace/security and governance aid), particularly post-2000.

[65] Pearson's correlation coefficients and matrix graph are available in Appendix 11. The results of the Wooldrige test for autocorrelation and the Breusch-Pagan/Cook-Wesiberg test for heteroskedasticity, both run on nonlagged, OLS models, are reported in Appendix 20.

Table VII presents trends of sectoral aid by category (education, health, social services, economic growth, peace and security, and governance aid) in light blue and incidents of terrorism (represented by red dots) for the same period.

Table VII. Sectoral Aid (by category) and Terror Events

1



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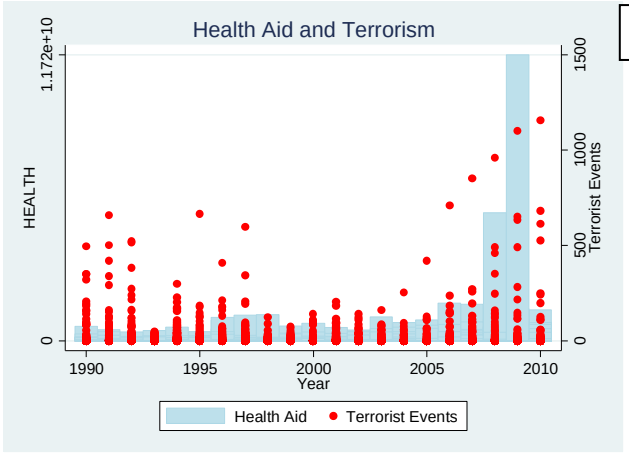

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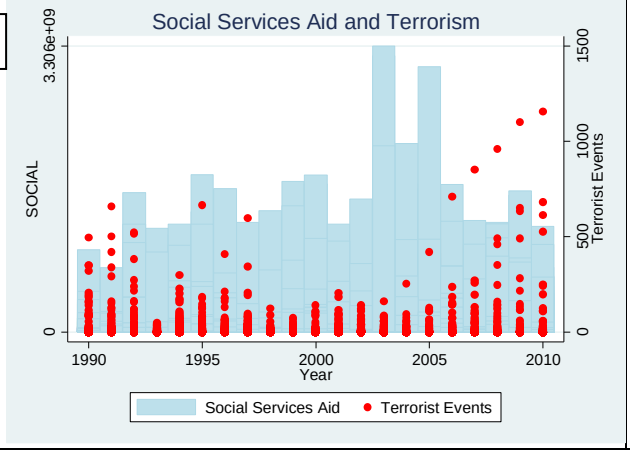

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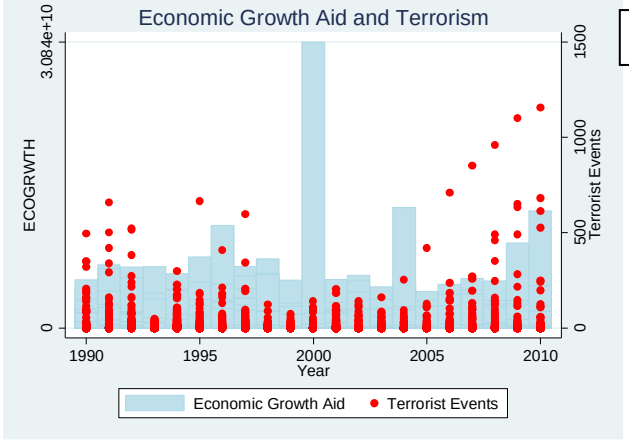

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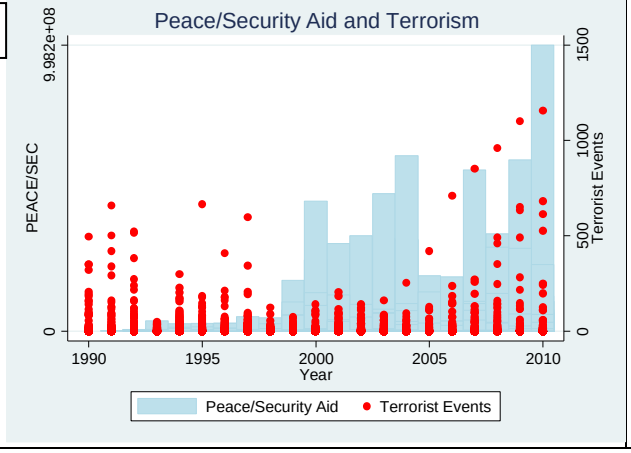

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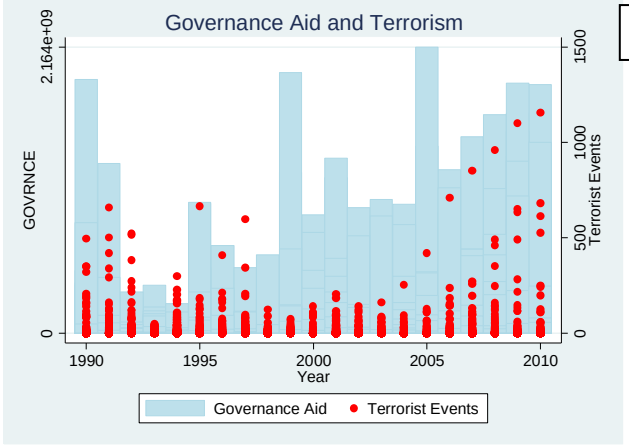

For the same period - 1990-2010 – incidents of terrorism have generally increased as well. A steady and more pronounced increase in terrorist attacks can be observed particularly post-2005 (most notably in Iraq, Pakistan, Afghanistan, and India – see Appendix 3A for plots with country names). Overall, with some exceptions, both terrorist events and sectoral aid have steadily increased.

Independent Effect: Regression Results

The results reported in Table VIII show that, overall, sectoral aid does not have the expected negative, statistically significant linkage to terrorism. In fact, all but one (health aid) sectoral aid categories appear to correlate positively with incidents of terrorism and four in a statistically significant way, namely education aid, economic aid, peace and security aid, and governance aid. However, how significant is their impact on terrorism? A further scrutiny reveals that, overall, it is less than one percent. For instance, one million dollars increase in economic aid would lead to a 0.000362 times increase in terrorism ($p < 0.01$), when all other variables are held constant. Or, based on the incidence-rate ratios (reported in Appendix 12B), each one million dollars increase in economic aid would result in less than 0.04% increase in terrorism, when all other variables are held constant. The effect of economic aid on terrorism, albeit statistically significant (and different from 0), is very close to 0 as confirmed by a quick calculation of its relative error. The latter is a significant 39% (the standard error/the coefficient) or $\frac{0.000140}{0.000362} = 0.39 * 100 = 39\%$ relative error. Such substantial relative error in the linkage economic_aid-terrorism explains the lower statistical significance of the correlation between education aid and terror events: while it is close to 0, it is still significant enough to report positive tendencies.

Among the other sectoral aid categories, peace and security aid appears to exercise the most statistically significant impact on terrorism ($p < 0.001$). Every one million dollar increase in peace and security aid would result in a 0.9% increase of terrorist attacks, *ceteris paribus* (with a smaller relative error of 26%).

Table VIII. MODEL 2: Terrorism regressed on Sectoral Aid (lagged), negative binomial regression

	Terrorism
EDUCATION AID	0.00167* (0.000711)
HEALTH AID	-0.000135 (0.000102)
SOCIAL AID	0.000559 (0.000319)
ECONOMIC GROWTH AID	0.000362** (0.000140)
PEACE AND SECURITY AID	0.00872*** (0.00223)
GOVERNANCE AID	0.000820* (0.000400)
UNALLOCATED AID	0.000269 (0.00177)
Population Density	0.0000277 (0.000337)
Political Competition	0.115** (0.0357)
Corruption Control	-0.464*** (0.103)
Ethnic Fractionalization	0.0661 (0.369)
Constant	0.627 (0.325)
lnalpha	
Constant	1.933*** (0.0447)
Observations	2171
Adjusted R^2	

*Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

(1) Detailed results included in Appendix 12A.
(2) All aid is analyzed using 1 Million-dollar as aid unit. The original aid input, while measured in millions, was reported in single dollars, was divided by 10^6 in order to convert it to one million-dollar aid unit to analyze aid on a meaningful scale (in millions instead of single dollars). Through previous analysis, I discovered that a meaningful interpretation would be in either millions or billions of aid dollars.
(4) When the independent variables are not lagged, the results remain generally similar in terms of general aid correlation although some aid categories' impact on terrorism chances in statistical significance (Appendix 12C).
(5) Zero-inflated negative binomial regression confirms the above reported results (Appendix 12C).

Finally, education aid and governance aid have similarly positive correlations with terrorism with, respectively, 43% and 49% relative errors,[66] which explains their statistical significance at the p<0.05 level. Practically, each million dollar increase in education aid would result in a 0.2% increase of terrorist attacks, and each million dollar increase in governance aid would lead to a 0.1% increase of terrorism (based on incidence-rate ratios reported in Appendix

[66] Calculated by dividing the standard error/the coefficient or for Education Aid: 0.000711/0.00167=0.5 (or 43%) and for Governance Aid: 0.000400/0.00872= 0.49 (or 49%). The regression is based on robust standard errors.

12B). Thus, while the relationships between education aid and terrorism as well as between governance aid and terrorism are reported as statistically significant, in practical terms, the value change is very low. Nevertheless, we can affirm positive tendencies at the $p<0.05$ level.

The remaining sectoral aid categories (health aid, social aid, and unallocated aid) do not seem to impact terrorism in any significant way (with relative errors often exceeding 50% indicating lack of statistically significant correlations). In contrast, two of the control variables – political competition and control of corruption, correlate in a statistical significant way with terrorism. However, while the former correlates positively with terrorist events: one unit increase in political competition leads to 0.115 times (or 12%) increase in terrorist events ($p < 0.01$), the latter – control of corruption, correlate with a decrease with the number of terrorist attacks as one unit increase in corruption control results in 0.464 times (or 37%) decline in terrorism, when all other variables are held constant ($p<0.001$).[67]

The reported statistically significant positive linkage between terrorism and four sectoral aid categories (i.e. education, economic, peace/security, and governance aid) may be perplexing. However, it does confirm previous arguments that some aid may exacerbate terrorist incidents if such aid is perceived to be a foreign intervention or a threat to local interests (Bueno de Mesquita 2005, Stosksy 2008). Within the context of this study, I also argue that aid may be more effective when targeted at extant socio-economic needs. However, if it does not address concerns that are of relevance to aid-recipient countries, aid may prove counterproductive. In other words, if one is hungry, but is given a coat instead when no such is needed, the gesture – while well-intended - may be indicative of ulterior motives and provoke a backlash.

Thus, aligning with previous arguments, the above results warrant further analyses to (a) examine instances when sectoral aid may correlate negatively with terrorism if addressed to satisfying specific needs, and (b) provide empirical support to previously untested affirmations that aid may exacerbate terrorism if it does not address existing needs. The results reported in Model 2, Table IX show that, overall, sectoral aid either has no impact on terrorism or correlates positively, in a statistically significant way, with it. Are there instances, then, when

[67] Based on IRR values reported in Appendix 12B.

we can expect not only a stronger linkage between sectoral aid and terrorism, but also a negative one? The next section examines this question placed within the context of societal grievances. Before proceeding to each type of sectoral aid, a brief overview of the conditional model's specifications is in order.

5.2. SECTORAL AID, SOCIETAL GRIEVANCES, AND TERRORISM

Conditional Effect: Model Specifications

To test the conditional effects of sectoral aid, I interacted the different types of sectoral aid with measures of societal needs or grievances that this aid was designed to redress. The conditional effect of sectoral aid is represented in the following equation:

$$Y_t = \beta_0 + \beta_1 X_1 + \beta_2 X_{G1} + \beta_3 X_{G2} + \beta_4 X_{G3} + \beta_5 X_1 * X_{G1} + \beta_6 X_1 * X_{G2} + \beta_7 X_1 * X_{G3} + \beta_{C1-4} X_{C1-4} + \varepsilon$$

where Y_t=Terrorism, X_1=Sectoral Aid Category; X_{G1}, X_{G2}, X_{G3}=Corresponding Societal Need/Grievance; $X_1 * X_{G1/G2/G3}$= interactive variables; X_{C1-4}= the four control variables respectively: population density, political competition, control of corruption, and ethnic fractionalization.

Table IV (p. 37) presented a summary of all sectoral aid categories and their corresponding societal grievances that are used in the models to assess aid's conditional effect on terrorism. The summary statistics of all variables used to test Expectation II are presented in Appendix 10.

A. Education Aid, Related Grievances, And Terrorism

The model examining the impact of education aid conditional on its ability to address educational needs in the aid-recipient countries includes the following measures related to education: primary school enrollment, secondary school enrollment, tertiary school enrollment, and public spending on education (in addition, Appendix 13E includes a measure of secondary school repeaters). The first three variables measure the total school enrollment in each educational tier. Higher enrollment percentages would be indicative of increased access to

education and increased needs for resources (physical facilities, materials, and personnel/teachers). The fourth variable: public spending on education - measures the local government's educational expenditures as a percentage of the country's GDP. The interactive effect of education aid and educational needs assesses whether aid has met existing educational demands reducing, thereby, potential incentives to engage in terrorist activities. Inversely, if education aid is insufficient or inappropriate in terms of educational concerns, I expect its effects on terrorism to be insignificant or counterproductive. The results of the negative binomial regressing terrorism on education aid and related needs are reported in Table IX, Model 3.

The main findings reported in Table IX indicate that, independently, both education aid and level of education (mainly secondary and tertiary school enrollment) correlate positively with terrorism in a statistically significant way (Model 3a, Table IX). On average, each million dollars of education aid corresponds to 0.4% increase in terrorism ($p < 0.001$); similarly, one percent increase in enrollment (either secondary or tertiary) results in 1.5% increase in terror attacks, holding all other covariates constant (based on incidence-rate ratios reported in Appendix 13B).

However, when conditioned upon educational needs – as defined by an increase in enrollment which may be indicative of increased access to education or increased need for physical resources and personnel – education aid's linkage to terrorism becomes, as predicted, negative and statistically significant (Model 3b, Table IX). In particular, education aid addressed at aiding primary and tertiary school enrollment has the most significant, negative impact on terrorism ($p < 0.05$ and $p < 0.001$, respectively). On average, one million dollars increase in education aid corresponding to one percent increase in tertiary school enrollment is expected to decrease the count of terrorist attacks by 0.03% ($p < 0.001$).[68] Focusing on tertiary school enrollment seems most effective as the independent effect of this variable correlates positively with terrorism in a significant way ($p < 0.05$, Model3a, Table IX); however, when interacted with education aid, its effect not only subsides, but is reversed becoming a statistically significant negative predictor of terrorism ($p < 0.001$, Model 3b, Table IX). Similarly, education aid appears

[68] Based on IRR reported in Appendix 13B. Subsequently, a more substantial increase of education aid: 1 BLN per percent increase in tertiary enrollment would result in 30% decrease of terrorism, ceteris paribus.

effective when targeted at primary school enrollment: each million spent per percent increase in enrollment would correspond to 0.01% decrease in terrorism ($p < 0.05$), when other variables are held constant.[69] On the other hand, education aid aimed at secondary school enrollment seems to only exacerbate the positive effect of the latter on terrorism which may indicate that education aid is either ill-matched or insufficient to meet actual secondary school level needs.

Table IX. MODEL3: Terrorism regressed on Education Aid and Related Grievances (negative binomial regression)

	Model 3a *No Interactives*		Model 3b *With Interactives*
Education Aid	0.00406*** (0.000861)	Education Aid	0.0140* (0.00582)
Primary School Enrollment	0.00707 (0.00590)	Primary School Enrollment	0.0146 (0.00751)
Secondary School Enrollment	0.0150*** (0.00440)	Secondary School Enrollment	0.00437 (0.00524)
Tertiary School Enrollment	0.0149* (0.00719)	Tertiary School Enrollment	0.0258*** (0.00777)
Public Spending on Education	-0.232*** (0.0581)	Public Spending on Education	-0.178** (0.0660)
		xEdAID*Primary	-0.000138* (0.0000578)
		xEdAID*Secondary	0.000268*** (0.0000549)
		xEdAID*Tertiary	-0.000316*** (0.0000697)
		xEdAID*Public Spending on Education	-0.00158** (0.000597)
Population Density	0.00327*** (0.000912)	Population Density	0.00314** (0.000961)
Political Competition	0.0517 (0.0350)	Political Competition	0.0446 (0.0350)
Corruption Control	-0.800*** (0.115)	Corruption Control	-0.802*** (0.123)
Ethnic Fractionalization	1.050* (0.497)	Ethnic Fractionalization	1.034* (0.515)
Constant	-0.715 (0.682)	Constant	-1.197 (0.773)
lnalpha Constant	1.832*** (0.0583)	lnalpha Constant	1.815*** (0.0595)
Observations Adjusted R^2	1619	Observations Adjusted R^2	1619

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results included in Appendix 13A.
(2) Negative binomial regression of non-lagged variables reports similar results (see appendix 13C).
(3) Zero-inflated negative binomial regression confirms the above reported results (Appendix 13D).

[69] Based on IRR reported in Appendix 13B.

In addition, educational aid assisting local government's public spending on education (as percent of GDP) also correlates negatively in a statistically significant way with terrorism (p < 0.01, Model 3b). In fact, independently, public spending on education appears to be a negative predictor of terrorism (p < 0.001, Model 3a); more specifically, one percent increase in local educational budget (as percent of state GDP) would lead to some 20% decrease of terrorism, if all other variables are held constant. Educational aid directed at enhancing local government's educational budget seems to support this effect as confirmed in the interactive term (p < 0.01, Model 3b, Table IX): one million dollars increase for each percent increase in educational state budget would correspond to 0.2% decrease in terrorist attacks (p < 0.05, based on incidence-rate ratios, Appendix 13B).

Overall, the results demonstrate that when education aid responds to specific needs (i.e. increased primary and tertiary school enrollment, contributing to aid-recipient country's state budget on education, or providing assistance to secondary school repeaters[70]) education aid produces the expected negative, statistically significant impact on terrorism. Those results hold valid through several different models.

B. Health Aid, Related Grievances, And Terrorism

The model examining the impact of health aid conditional upon its ability to address health needs in aid-recipient countries includes the following measures related to health: health expenditures per capita, life expectancy at birth, and prevalence of undernourishment. Health expenditures per capita include the sum of public and private health expenditures covering the provision of both preventive and curative health services, family planning, and emergencies. Life expectancy at birth indicates the number of years a newborn would live if conditions of life at the time of its birth were to stay the same throughout his/her life. Finally,

[70] For instance, while a percent increase of secondary school repeaters (Appendix 13E) correlates positively with terrorism in a statistically significant way. However, when targeted with education aid, the combined impact inverses to a negative and statistically significant correlation (p < 0.01). Practically, each million dollars increase in education aid per one percent secondary school repeaters correlates with 0.04% decrease in terrorism, if all other variables are held constant. This variable is included in the Appendix only, because its inclusion decreases the total number of observations.

prevalence of undernourishment shows the percentage of the population whose food intake is insufficient to meet daily dietary requirements.

Table X. MODEL4: Terrorism regressed on Health Aid and Related Grievances (negative binomial regression)

	4a *No Interactives*		4b *With Interactives*
Health Aid	0.00218*** (0.000514)	Health Aid	-0.00479 (0.00329)
Health Expenditures/Capita	-0.00168* (0.000668)	Health Expenditures/Capita	-0.00131 (0.000703)
Life Expectancy	0.0980*** (0.0123)	Life Expectancy	0.0906*** (0.0135)
% Undernourished	-0.00803 (0.00808)	% Undernourished	-0.00246 (0.00959)
		xHealthAid*Expenditure/Cap	--0.0000104* (0.00000406)
		xHealthAid*LifeExpectancy	0.000169* (0.0000696)
		xHealthAid*%Undernourished	-0.000129* (0.0000493)
Population Density	0.00313** (0.000982)	Population Density	0.00243* (0.00102)
Political Competition	0.00639 (0.0341)	Political Competition	0.0105 (0.0337)
Corruption Control	-1.353*** (0.201)	Corruption Control	-1.338*** (0.199)
Ethnic Fractionalization	0.306 (0.482)	Ethnic Fractionalization	0.338 (0.490)
Constant	-5.186*** (1.083)	Constant	-4.840*** (1.156)
lnalpha Constant	2.009*** (0.0504)	lnalpha Constant	2.001*** (0.0506)
Observations	1418	Observations	1418
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results reported in Appendix 14A.
(2) Negative binomial regression of non-lagged variables reports similar results (Appendix 14C).
(3) Zero-inflated negative binomial regression results confirm the above reported results (Appendix 14D).

The results reported in Table X show that the effect of health aid on terrorism is most evident when addressed at decreasing the prevalence of undernourished population. While the percentage of undernourished people does not appear to be a strong predictor of terrorism (Model 4a, Table X), when health aid is conditioned upon addressing undernourishment, their combined effect exerts a negative, statistically significant impact on terrorism ($p < 0.05$, Model 4b, Table X). In other words, each million dollars of health aid spent per one percent of

malnourished population corresponds to 0.01% decrease of terrorism; a small, but nevertheless statistically significant impact (by extension, a one billion dollars of health aid spent per one percent of malnourished individuals would subside terrorism by 10%).[71] Similarly, health aid spent toward assisting with health expenditures (both public and private) exerts a negative impact on terrorism ($p < 0.05$, Model 4b, Table X). However significant, this impact is small and costly: one million dollars of foreign health aid per local dollar spent on preventive and curative health services corresponds to less than 1% decrease in terrorism.[72]

In addition, independently, life expectancy correlates positively with terrorism ($p < 0.001$, Model 4a, Table X). This may be explained by the fact that as people live longer, the number of individuals engaging in terrorism is also likely to increase as is the probability of terrorist attacks. In this aspect, health aid appears to have a rather pacifying, dissipating effect. In other words, when health aid is conditional upon improving life expectancy at birth, the latter's effect on terror incidents seems weakened in terms of statistical significance ($p < 0.05$, Model4b, Table X).

Overall, the results, as reported in Table X, Model 4 show that health aid correlates negatively with terrorist events in a statistically significant way ($p < 0.05$) when it is given to support aid-recipient country's public and private health expenditure per capita (covering the provision of health services, family planning activities, nutrition activities, and emergencies) as well as to combat the prevalence of undernourishment (referring to the part of the population that is below the minimum level of dietary energy consumption). However, such effects appear to be small and costly. The meaning of their magnitude is discussed in Chapter 7, the Discussion part of this study.

[71] Based on IRR values (Appendix 14B).

[72] When the model excludes prevalence of malnourishment, health expenditures per capita are still statistically significant, but correlate positively with terrorism: each dollar increase in health expenditures is linked to 0.03% spike in terrorism ($p < 0.001$, Appendix 14E). However, the impact of health aid conditional upon personal health expenses remains the same in terms of incidence-rate ratio (decreasing terrorism by 0.01%), but increases in statistical significance ($p < 0.001$, Appendix 14E).

C. Social Aid, Related Grievances, And Terrorism

The model examining the impact of social services aid conditional on its ability to address social needs in aid-recipient countries includes the following measures related to social services: access to sanitation facilities, improved water source, and number of scientific and technical journals published in a given year. While the first two variables measure the condition of basic services (sanitation and water), the latter reports the number of specialized journal articles published each year in a number of scientific fields[73]. Its inclusion helps to assess whether scientific and technical communities exist, and, if so, how 'healthy' they may be, in aid-recipient countries. Scientific progress is a marker of innovation and collaboration, and, as such, the existence of vibrant scientific communities could be indicative of subsided grievances. The overall goal is to examine whether the level of social aid corresponds to actual needs present in these three physical and intellectual well-being aspects of a society. The expectation is that by improving those needs, social services aid will correlate negatively with terrorist incidents.

The results reported in Table XI show that social sectoral aid directed at improving access to sanitation facilities and at increasing scientific collaboration within aid-recipient societies correlates negatively with terrorism in a statistically significant way (both at $p < 0.001$, Model 5b, Table XI). More specifically, one million dollars of social aid given per percent increased access to sanitation facilities would result in 0.009% decrease in terrorism; similarly, one million dollar of social aid given per each published scientific or technical article (in support of Research and Development) corresponds to less than 1% decrease in terrorist attacks, holding all other covariates constant (based on incidence-rate ratios as reported in Appendix 15B).

Overall, social aid is most effective when directed at improving sanitation facilities and increasing scientific and technical collaboration within aid-recipient societies. In those instances, the interactive effects of social services aid and improved sanitation as well as of social aid and increased research productivity correlate negatively with terrorist incidents.

[73] The following fields are included: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences.

Albeit small, both are statistically significant at the $p < 0.001$ level, which presents with very strong evidence against the null alternative.

Table XI. MODEL 5: Terrorism regressed on Social Aid and Related Grievances (negative binomial regression)

	5a *No Interactives*		5b *With Interactives*
Social Services Aid	0.00237*** (0.000319)	Social Services Aid	0.00490 (0.00348)
Access to Sanitation Facilities	0.0186*** (0.00430)	Access to Sanitation Facilities	0.0281*** (0.00488)
Improved Water Source	0.0174* (0.00709)	Improved Water Source	0.0114 (0.00770)
Science and Technology	0.0000363*** (0.00000102)	Science and Technology	0.0000369*** (0.00000867)
		xSocialAid*Sanitation	-0.0000901*** (0.0000188)
		xSocialAid*Water	0.0000452 (0.0000467)
		xSocialAid*Science/Tech	-9.61e-08*** (1.70e-08)
Population Density	0.00112 (0.000800)	Population Density	0.000647 (0.000678)
Political Competition	0.0982*** (0.0285)	Political Competition	0.0803** (0.0281)
Corruption Control	-1.297*** (0.0990)	Corruption Control	-1.364*** (0.0986)
Ethnic Fractionalization	1.317*** (0.363)	Ethnic Fractionalization	1.156*** (0.336)
Constant	-2.816*** (0.505)	Constant	-2.772*** (0.541)
lnalpha Constant	1.914*** (0.0408)	lnalpha Constant	1.892*** (0.0410)
Observations	2103	Observations	2103
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

(1) Detailed results reported in Appendix 15A.
(2) Negative binomial regression of non-lagged variables reports similar results (Appendix 15C).
(3) Zero-inflated negative binomial regression results also confirm the above reported results (Appendix 15D).

Those results are confirmed when research and development expenditures (as percent of aid-recipient government's GDP) are considered instead of the number of scientific and technical journal articles published in specific fields (Appendix 15E).[74] As such, when examining

[74] Results reported in Appendix 15E. Research and Development Expenditures (measured as a percent of GDP) refer to both public and private expenditures used for basic research, applied research, and experimental development. This variable is not included in the main results because, as it has many missing values, it decreases substantially the total number of total observations. The rationale behind including the number of scientific and

research and development spending as a percent of state GDP (instead of the number of published scientific and technical journal articles), social aid directed at boosting local governments' R&D budget also proves to be effective in decreasing terrorism ($p < 0.001$): one million dollars of social aid per one percent GDP spent on R&D would result in a 0.3% decrease in terrorism, when all other variables are held constant (results reported in Appendix 15E, incidence-rate ratios are reported in italic following the standard errors).

ECONOMIC GROWTH AID: 4 SUB-CATEGORIES

As economic growth aid encompasses several distinct categories, I broke it down into four main aid subcategories: microeconomic, economic opportunity, production sectors, and development. While all four aim to promote economic growth, each subtype focuses on a different facet of societal economic well-being: *microeconomic aid* supports business and private enterprises, *economic opportunity aid* targets employment policies and services, *production sectors aid* seeks to boost the local agricultural, industrial, and services-based sectors, while *development aid* aims to provide debt, food support, and commodity assistance.

D. Microeconomic Aid, Related Grievances, And Terrorism

The model examining the impact of microeconomic aid (aimed to encourage economic growth through business and private initiatives)[75] conditional on its ability to address microeconomic needs in the aid-recipient countries includes the following measures related to micro growth: income share held by the lowest 20%, household final consumption expenditures, and inflation (of consumer prices). Overall, all three measures assess private and business monetary economic resources. The first variable - income share held by the lowest twenty percent of society, is self explanatory. It reflects the parentage share of income or consumption accrued by the bottom twenty percent of the population. The remaining two variables warrant additional discussion as they measure similar phenomena (i.e. the act of purchasing vs. the potential ability to purchase).

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technical articles instead of R&D budget is that its inclusion produces a higher number of observations than R&D budget as percentage of GDP (2103 vs. 1104 respectively).

[75] For a detailed breakdown of sectoral aid codes and what those include, please refer to Appendix 5.

Household final consumption expenditures refer to the market value of all goods and services (including durable products, such as cars, computers, washing machines, etc) purchased by households as well as payments and fees made by individuals or businesses to government officials to obtain permits or licenses. It is measured in single dollars and presents the cumulative spending per year of all household consumption expenses in a country. Thus, it can reach extremely high values. For example, the total household final consumption expenditure for Afghanistan in 2010 was 15,507,519,221 (current US$),[76] while for the USA the figure for the same year was 10,201,900,000,000 (current US$).

While also measuring spending patterns, the inflation index (of consumer prices) differs from the final household expenditure indicator not only in how inflation values are presented namely as percent change that can take both positive and negative values[77], but also in how they are computed. While the household (private) consumption expenditure (or PCE) is based on a Fisher-ideal formula, the inflation index, also known as consumer price inflation index (or CPI) utilizes a modified Laspeyers formula.[78] Economists indicate that the former - household final consumption expenditures - is the preferred index because it better reflects "consumer substitution among detailed items as the relative prices of those items change" (McCully et al. 2007:9).[79] While household private consumption expenditures allow comparing costs of living across different places and people, the data is not as updated as that of the inflation prices index.

The two variables differ not only structurally, but also substantially. In contrast to household final consumption expenditures, the inflation index of consumer prices presents a more uniform and theoretical understanding of purchasing power. For instance, while a decrease in household expenses may indicate an increase in the cost of living that may vary by

[76] Over the examined twenty-year period, the value for this indicator in Afghanistan has fluctuated between 15,507,519,221 in 2010 and 3,787,000,000 in 1990.

[77] For instance, in 2008, Afghanistan had 30% inflation of consumer prices whereas, in the following year, 2009, the country saw a -8% drop in consumer prices.

[78] McCully et al. (2007) discuss in details differences between these two indices.

[79] Although it measures better substitute consumption, one of the shortcomings of the Fisher-Ideal index is that it is not easily updated as data reporting the most recent household consumer expenditures are not always readily available. Thus, if a researcher requires up-to-date data, the Laspeyres index (used to compute the inflation index) provides a better alternative.

region and person, the effects of inflation would be experienced by all and would apply to everything (paychecks, treasury bonds, trade agreements, etc.). Also, the inflation index carries a more theoretical meaning of monetary uncertainty. While an increase in the cost of living (as assessed by final household expenses) may hurt people immediately for it makes them poorer, the effect of inflation is more subtle for it erodes the real value of cash and other assets, discourages saving, and increases financial uncertainty. In other words, inflation makes it more difficult to plan for the future, to invest, and, thereby, to grow economically. In sum, the model assessing microeconomic aid includes household final consumption expenditures as a proxy for estimating the direct cost of living (for they are indicative of actual purchases) and the inflation index (of consumer prices) as a proxy for estimating the potential for economic growth.

The results reported in Table XII reveal two interesting observations. First, the independent relationship between income share held by the lowest twenty percent of society and terrorism is negative and statistically significant ($p < 0.05$, Model 6a, Table XII): for each percent increase of income held by the lowest twenty percent of the population, terrorism is set to subside by 13.6% ($p < 0.05$, based on incidence-rate-ratios reported in Appendix 16B), *ceteris paribus*. In other words, an increase in income equality corresponds to a decrease in terrorism. As an increase in income parity gives hope and options for the future, this is not an unexpected relationship. It is intriguing, therefore, to observe that microeconomic aid targeted at income disparity produces, in fact, the opposite effect: the combined effect is positively associated with increased terrorism: one million dollars of aid spent per one percent income share held by the lowest 20% corresponds to an increase of terrorist attacks by 0.01% ($p < 0.05$, based on incident-rate ratios reported in Appendix 16B), if all the other variables are held constant. This goes to show that, conditional on its ability to address income disparities, microeconomic aid is ineffective at decreasing terrorism; in fact, it may serve to exacerbate it. Three explanations may be offered in that regard: (1) microeconomic aid is simply ineffective; (2) microeconomic aid does not respond to existing microeconomic grievances (in terms of income distribution), and, thereby, is insufficient to produce greater income parity, or (3) microeconomic aid's impact is muted through the inner workings of aid-recipient countries. The latter explanation is particularly appealing when one considers the statistically significant

linkage of the corruption control index to terrorism as reported in both models in Table XII. Overall, in terms of income disparity, the results reported in Table XII lend empirical support to previous studies that have called aid "a curse" for its potential to create and perpetrate weak and corrupt societies (Djankov et al. 2008b, Swenson 1008, Alesina and Weder 2002).

Table XII. MODEL 6: Terrorism regressed on MicroEconomic Aid and Related Grievances (negative binomial regression)

	6a No Interactives		6b With Interactives
MicroEconomic Aid	0.000466* (0.000191)	MicroEconomic Aid	0.0000765 (0.000349)
Income share of low 20%	-0.146* (0.0583)	Income share of low 20%	-0.228** (0.0697)
Household Consumption $	0.00000608*** (0.00000154)	Household Consumption $	0.00000810*** (0.00000179)
Inflation, Consumer Prices	0.00811(0.00697)	Inflation, Consumer Prices	0.00309 (0.00898)
		xEcoAid*IncomeLow20%	0.000138* (0.0000582)
		xEcoAid*Consumption	-2.58e-09*** (3.54e-10)
		xEcoAid*Inflation	0.0000156 (0.0000391)
Population Density	0.00749*** (0.00139)	Population Density	0.00772*** (0.00147)
Political Competition	0.0350 (0.0394)	Political Competition	0.0193 (0.0422)
Corruption Control	-0.472** (0.157)	Corruption Control	-0.424* (0.170)
Ethnic Fractionalization	2.358*** (0.417)	Ethnic Fractionalization	2.245*** (0.404)
Constant	-0.401 (0.519)	Constant	0.0171 (0.576)
lnalpha Constant	1.822*** (0.0617)	lnalpha Constant	1.765*** (0.0660)
Observations	1174	Observations	1174
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Household Consumption Expenditures data were divided by 10^6 or 1,000,000 in order to facilitate the results' interpretation in unit of millions of dollars (instead of single dollars).
(2) Detailed results reported in Appendix 16A.
(3) Negative binomial regression of non-lagged variables reports somewhat similar results (Appendix 16C).
(4) Zero-inflated negative binomial regression results also confirm the above reported results (Appendix 16D).

Second, independently, household final consumption correlates positively with terrorism ($p < 0.001$, Model 6a, Table XII): as total consumption rises, terrorist incidents rise as

well.[80] These results corroborate the positive correlation between HDI and terrorist incidents, as reported in Model 1a, Table VI. The consumerism's effect is tempered down significantly by microeconomic aid; when the latter is factored in to alleviate household expenses, their interactive effect becomes negative and significant in relation to terrorism ($p < 0.001$, Model 6b, Table XIV). In fact, one million dollars of microeconomic aid spent per one million dollars of consumption expenditures would correspond to less than 1% decrease in terrorism ($p < 0.001$, based on incident-rate ratios reported in Appendix 16B). One explanation offered by the theoretical model of this study is that aid aimed at assisting private household expenditures takes away the opportunity for terrorist organizations to step in and provide for the everyday needs (i.e. household appliances, home computers, goods and services, permits and licenses) that may, in turn, motivate terrorist recruits. In this aspect, microeconomic aid serves to decrease the incentives used by terrorist networks to recruit and mobilize.

E. Economic Opportunity Aid, Related Grievances, And Terrorism

The model examining the impact of economic opportunity aid (aimed at improving employment policy and services) conditional on its ability to address employment needs in the aid-recipient countries includes the following measures related to employment: total unemployment and total youth unemployment (ages 15-24).[81] Both variables refer to the share of the labor force that is without work, but is available and seeking employment, with the second variable reporting unemployment figures among people 15 to 24 years old.

The results reported in Table XIII reveal interesting tendencies. On one hand, the independent linkage of youth unemployment to terrorism is consistent with the 'youth-bulge' society predictions, namely that the lack of licit economic opportunities may lead young people to engage in terrorist violence. The results indicate that youth unemployment correlates positively with terrorism in a statistically significant way ($p < 0.001$, Model 7a): one percent

[80] Household final consumption expenditures have remained consistently and positively related with terror incidents in several models ($p < 0.001$).

[81] In addition, third variable: long-term unemployment is included and examined in Appendix 17E. Its inclusion alters the results reported in Table XIII in outlining the importance of economic opportunity aid directed at youth employment. Long-term unemployment is only included in the Appendix because its inclusion decreases the number of observations substantially (from 2157 to 737) due to missing values.

increase in youth unemployment corresponds to a 10% increase in terrorism, when all other variables are held constant. However, additional models – including when controlling for long-term unemployment (Appendix 17E) do not report any significant linkage between youth unemployment and terrorist events (Appendix 17C, 17D, 17E).

Table XIII. MODEL 7: Terrorism regressed on Economic Opportunity Aid and Related Grievances (negative binomial regression)

	7a No Interactives		7b With Interactives
Economic Opportunity Aid	0.00724 (0.00394)	Economic Opportunity Aid	0.0336 (0.0350)
Total Unemployment	-0.128** (0.0423)	Total Unemployment	-0.137** (0.0425)
Youth Unemployment (15-24)	0.101*** (0.0231)	Youth Unemployment (15-24)	0.108*** (0.0233)
		xEcoOppAid*Total Unemployment	0.00209 (0.00179)
		xEcoOppAid*Youth Unemployment	-0.00233 (0.00134)
Population Density	0.00192 (0.00101)	Population Density	0.00180 (0.00103)
Political Competition	0.192*** (0.0352)	Political Competition	0.191*** (0.0349)
Corruption Control	-0.931*** (0.0990)	Corruption Control	-0.919*** (0.100)
Ethnic Fractionalization	1.078** (0.389)	Ethnic Fractionalization	1.062** (0.391)
Constant	-0.652 (0.394)	Constant	-0.689 (0.391)
lnalpha Constant	2.032*** (0.0409)	lnalpha Constant	2.029*** (0.0409)
Observations Adjusted R^2	2157	Observations Adjusted R^2	2157

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results reported in Appendix 17A.
(2) Negative binomial regression of non-lagged variables reports similar results; however, total unemployment and youth unemployment lose their independent statistical significance vis-à-vis terrorism (Appendix 17C)
(3) Zero-inflated negative binomial regression also confirms the above reported results; however, total unemployment and youth unemployment lose their independent statistical significance vis-à-vis terrorism (Appendix 17D).

On the other hand, total unemployment seems to have, in fact, the opposite effect on terrorist attacks: it is negative and significant ($p < 0.01$, Model 7a, Table XV). In this context, foreign aid aimed at developing employment opportunities, policies, and services does not

seem to be effective: its interactive effects with either type of unemployment do not exhibit a statistically significant impact on terrorism, except to lessen the statistical significant linkage of youth unemployment to terrorism (Model 7b, Table XIII). The lack of results indicate that economic opportunity aid is either ineffective (as argued by proponents of aid ineffectiveness) or does not respond to existing grievances (either in amount or in timing). This also appears to be the case for total unemployment as well. When targeted at total unemployment, not only does economic opportunity aid fail to produce the intended negative linkage to terrorism, but it also negates the independent negative impact total unemployment has on terrorism (Model 7b, Table XIII).

However, when long-term unemployment is factored in, the effect of economic opportunity aid on terrorism becomes negative and significant when targeting youth unemployment ($p < 0.001$, Appendix 17E): one million dollars in aid spent per one percent youth unemployment translates into 1.9% decrease in terrorism, when all other variables are held constant (based on IRR rates reported in italic in Appendix 17E).

F. Production Sectors Aid, Related Grievances, And Terrorism

Production sectors aid includes all foreign aid aimed at fostering the recipient country's agriculture (including forestry and fishing), industry (including mining and construction) and services (including trade and tourism). The model examining the impact of production sectors aid on its ability to address production needs in the aid-recipient countries includes the following measures related to production sectors: levels of employment in the sectors of agriculture, industry, and services (as percent of total employment) based on the rationale that higher employment would signify increased production. The objective is to assess whether aid aimed at those sectors has, in fact, been beneficial either in terms of creating employment opportunities, bettering existing ones, or facilitating employment and production in any other way, lessening, thereby, the incentives to engage in terrorism. The assumption is that the higher the employment and the production in those sectors, the fewer the grievances that may be used to fuel terrorism. Thus, aid channeled at increasing employment and production in those sectors is expected to correlate negatively with terrorist attacks.

The results presented in Table XIV show that production sectors aid, conditional upon improving production in any of the three sectors, does little in regard to terrorist events (Model 8b). At best, production sectors aid tempers down the independent, positive correlation between level of employment in any of the three sectors and terrorist events. The observation

Table XIV. MODEL 8: Terrorism regressed on Production Sectors Aid and Related Grievances (negative binomial regression)

	8a No Interactives		8b With Interactives
Production Sectors Aid	0.00212*** (0.000342)	Production Sectors Aid	0.0435 (0.105)
Agriculture	0.0711* (0.0329)	Agriculture	0.101 (0.0835)
Industry	0.0899* (0.0363)	Industry	0.137 (0.0803)
Services	0.0838** (0.0321)	Services	0.113 (0.0846)
		xProductionAid*Agriculture	-0.000375 (0.00105)
		xProductionAid*Industry	-0.000576 (0.00104)
		xProductionAid*Services	-0.000366 (0.00106)
Population Density	0.000621 (0.000872)	Population Density	0.000519 (0.000844)
Political Competition	0.182*** (0.0380)	Political Competition	0.181*** (0.0370)
Corruption Control	-0.938*** (0.130)	Corruption Control	-0.920*** (0.131)
Ethnic Fractionalization	1.188** (0.432)	Ethnic Fractionalization	1.182** (0.434)
Constant	-8.127* (3.331)	Constant	-11.43 (8.338)
lnalpha Constant	1.943*** (0.0462)	lnalpha Constant	1.933*** (0.0462)
Observations	1491	Observations	1491
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results reported in Appendix 18A.
(2) Negative binomial regression of non-lagged variables reports similar results (Appendix 18C). However, the independent positive impact of the three sectors of productions subsides in statistical significance.
(3) Zero-inflated negative binomial regression confirms the above reported results (Appendix 18D).

that increased employment in any of the three sectors correlates positively with terrorism in a statistically significant way (Model 8a, Table XIV) counters the conventional understanding that unemployment pushes some to engage in terrorism. In fact, the results reported in the previous section showed that total unemployment correlates negatively with terrorist events in a

statistically significant way (p < 0.01, Model 7a, Table XIII).[82] Such results lend credence to previous arguments that poverty (in this case viewed through the prism of unemployment) is not a reliable predictor of terrorism as those lacking employment may simply be concerned with more immediate survival needs or resort to less risky activities (such as crime) instead of terrorism.[83] Overall, production sectors aid reverses the reported independent, positive correlations between (the level of employment in any of) the three production sectors and terrorism, but not in a statistically significant way.

However, when running additional models, production sectors aid directed at assisting local industries (i.e. mining, construction, textile) begins to be negatively linked to terrorism in a statistically significant way. This is the case, for instance, for a model that excludes the agriculture sector (that was found by previous studies not to be statistically significant when examining the effect of sectoral aid, see Young and Findley 2011). In this model, production sectors aid directed at encouraging local industries correlates negatively with terrorism (p < 0.001, Appendix 18E). In practical terms, one million of production aid spent per one percent industry employment corresponds to 0.02% decrease in terrorism, holding all other covariates constant (based on IRR reported in italic, Appendix 18E).

G. Development Aid, Related Grievances, And Terrorism

Development aid includes all food, debt, import, and commodity assistance. The model examining the impact of development aid conditional on its ability to address development needs in the aid recipient countries includes the following measures related to development: food imports (measured as a percentage of all merchandise imports) and gross domestic savings (calculated as GDP less final consumption expenditure). As food imports are indicative of a country's economic dependence (on trade in agricultural commodities), this variable is included as a proxy to estimate a country's stable access to food and resources needed to maintain and enhance economic growth. Studies have found that natural disasters significantly

[82] The same observation can be made on the negative linkage between long-term unemployment and terrorism (p< 0.001 , Appendix 17E).

[83] For instance, Blair et al. (2012) report in a 6,000-person national survey of Pakistanis that poor Pakistanis, especially those living in urban and/or volatile areas, dislike and reject terrorist organizations more than middle-class citizens (as discussed in this paper's state of the literature part on poverty and terrorism).

increase the risk of violence with one of the predictors being an increased competition for scarce resources, including food (Nel and Richarts 2008). Thus, food and commodities scarcity can arguably impede economic development and destabilize a country. Such arguments underlying the volatility of agricultural commodities that are often subject to weather vagaries and other natural stochastic events (i.e pests, diseases) warrant the inclusion of food imports as a developmental variable relevant to the topic of terrorism. In addition, gross domestic savings are included as a proxy for examining local economic growth. The question: "can a country grow faster by saving more?" has been answered in the affirmative by some (Aghion et al. 2009). Empirical results have demonstrated that domestic savings matter for innovation, and "therefore growth, because it enables the local entrepreneur to put equity into its cooperative venture," particularly in poor countries (Aghion et al. 2009:1). As such, the expectation is that when developmental aid directed at stabilizing food demands and encouraging domestic savings (both indicative of lessened grievances) incentives for engaging in terrorism are expected to subside.

The results reported in Table XV show that development aid used to assist the rate of domestic savings proves correlates negatively and significantly with terrorism ($p < 0.01$, Model 9b, Table XV). Practically, one million dollars increase in development aid per percent domestic savings corresponds to less than 1% decrease in terrorism ($p < 0.01$, based on incidence-rate ratios reported in Appendix 19B), if all other variables are held constant. On the other hand, independently, food imports correlate negatively with terrorist events: as available commodities (food, animals, beverage, tobacco, oil, nuts, etc) increase, terrorist incidents decrease (Model 9a, Table XV). The correlation is statistically significant at $p < 0.001$. When development aid is targeted at helping with food imports, their combined impact on terrorism becomes positive and significant (Model 9b, Table XV). As to why development aid produces the inverse effect when directed at assisting with food imports, one needs to look into other factors (such as the statistically significant variable of corruption control) which is further examined in the discussion part of this study.

Table XV. MODEL 9: Terrorism regressed on Development Aid and Related Grievances (negative binomial regression)

	9a No Interactives		9b With Interactives
Development Aid	0.0000843 (0.0000694)	Development Aid	-0.000138 (0.0000843)
Food Imports	-0.0478** (0.0183)	Food Imports	-0.0601*** (0.0140)
Domestic Savings	0.00000180*** (0.000000403)	Domestic Savings	0.00000182*** (0.000000417)
		xDevelopAid*FoodImports	0.0000355* (0.0000166)
		xDevelopAid*DomesticSavings	--1.29e-09** (4.11e-10)
Population Density	0.000615 (0.000736)	Population Density	0.000555 (0.000702)
Political Competition	0.160*** (0.0350)	Political Competition	0.157*** (0.0342)
Corruption Control	-1.185*** (0.0920)	Corruption Control	-1.191*** (0.0917)
Ethnic Fractionalization	-0.237 (0.350)	Ethnic Fractionalization	-0.369 (0.354)
Constant	1.338** (0.495)	Constant	1.535*** (0.456)
lnalpha Constant	1.962*** (0.0454)	lnalpha Constant	1.950*** (0.0438)
Observations Adjusted R^2	1891	Observations Adjusted R^2	1891

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Domestic savings data were divided by 10^6 or 1,000,000 in order to facilitate the results' interpretation in unit of millions of dollars (instead of single dollars).
(2) Detailed results reported in Appendix 19A.
(3) Negative binomial regression of non-lagged variables report similar interactive results (Appendix 19C).
(5) Zero-inflated negative binomial regression results report similar interactive results (Appendix 19D)

Overall, both measures: food imports and domestic savings are meant to ensure availability and stability of basic commodities necessary for economic growth. As reported in Table XV, the model finds that development aid is effective when aimed at assisting aid-recipient countries' gross domestic savings rate (viewed as providing economic freedom for domestic entrepreneurship and innovation), but is counterproductive when targeted at food imports.

CHAPTER SIX – RESULTS: EXPECTATION III
SECTORAL AID AND TERRORISM: GOVERNMENTAL LEVEL

Focusing on the governmental level, the third expectation is that aid geared toward improving aid-recipient states' counterterrorist capacities and institutional quality would correlate positively with a decreased level of terrorism conditional upon aid's ability to address relevant political and security concerns. This expectation is similar to the second one in the fact that they both explore sectoral aid and related grievances. However, while the second expectation focuses on society and socio-economic grievances feeding into terror, the third expectation examines what the aid-recipient governments are doing in terms of counterterrorist actions (i.e. law enforcement and military spending) and institutional quality (i.e. institutional transparency and political inclusiveness) and whether aid directed at improving either one is an effective tool in combating terrorism.

6.1. Model Specifications and Descriptive Statistics

To test the third expectation, I examine the conditional impact of two types of sectoral aid: peace and security aid and governance aid (their independent effect on terrorism was reported in Chapter 5, p. 54-57). The conditional effect of each type of aid is represented in the following equation:

$$Y_t = \beta_0 + \beta_1 X_1 + \beta_2 X_{G1} + \beta_3 X_{G2} + \beta_5 X_1 * X_{G1} + \beta_6 X_1 * X_{G2} + \beta_{C1-3} X_{C1-3} + \varepsilon$$

where Y_t=Terrorism, X_1=Sectoral Aid Category; X_{G1}, X_{G2}=Corresponding Political Need/Grievance; X_{C1-3}= three control variables respectively: regime type, population density, and ethnic fractionalization. The two control variables - political competition and control of corruption, are used to construct two of the interactive variables testing Expectation III. As a result, Regime type – a conventional control variable in similar studies, is used instead as a control variable in both models to allow for consistency and comparison.[84]

[84] Regime Type is discussed in Appendix 3.

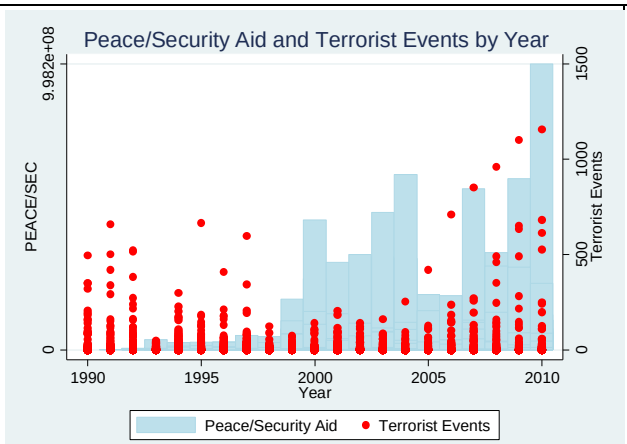
Table XVI presents a summary of the two sectoral aid categories and corresponding variables representative of security and governance grievances. Summary statistics of all employed variables are presented in Appendix 20. As discussed in the research design section, all independent variables are lagged by one period (year) to account for time-delayed effects. The control variables are also lagged by one year. STATA13 was used for running negative binomial regressions of both models.

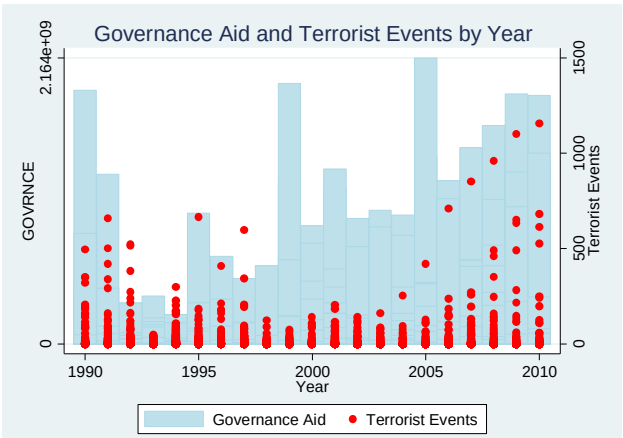
Table XVI: Employed Variables: Sectoral Aid and Corresponding Grievances

Sectoral Aid	Corresponding Social Need/Grievance
Peace and Security Aid **Peace and Security Aid** Counter-Terrorism/Military, conflict prevention, arms control, security system management	*Security needs measured by:* **Military Expenditures** (% of GDP) (MilBud2) **Political Stability** (index: -2.5 weak to +2.5 strong) (PolStability)
Governing Justly and Democratically Aid **Governance Aid** Rule of law, good governance, strengthening civil society (free and fair elections, free flow of information)	*Political needs measured by:* **Corruption Control** (index: -2.5 weak to +2.5 strong) (CorrupControl) **Political Competition** (index: 0 highly regulated to 10 least regulated) (PolCompt)

Plotting the two types of sectoral aid (peace/security and governance) against the number of terrorist events for the 1990-2010 period (Table XVII) reveals that both peace and security aid (aimed at conflict prevention, counter-terrorism, and security measures) as well as governance aid (aimed at improving governance, the rule of law, and participation in official decision making) have steadily increased, particularly post-2000. Over the same period, terrorist incidents (represented in red dots) have similarly continued their steady upward trend with some pronounced outliers post-2005 (most notably in Iraq, Pakistan, Afghanistan, and India – see Appendix 8, Fig. 8A for plots with country names). Overall, both types of aid and terrorist events have steadily increased.

Table XVII. Peace/Security Aid and Terrorism vs. Governance Aid and Terrorism (1990-2010).

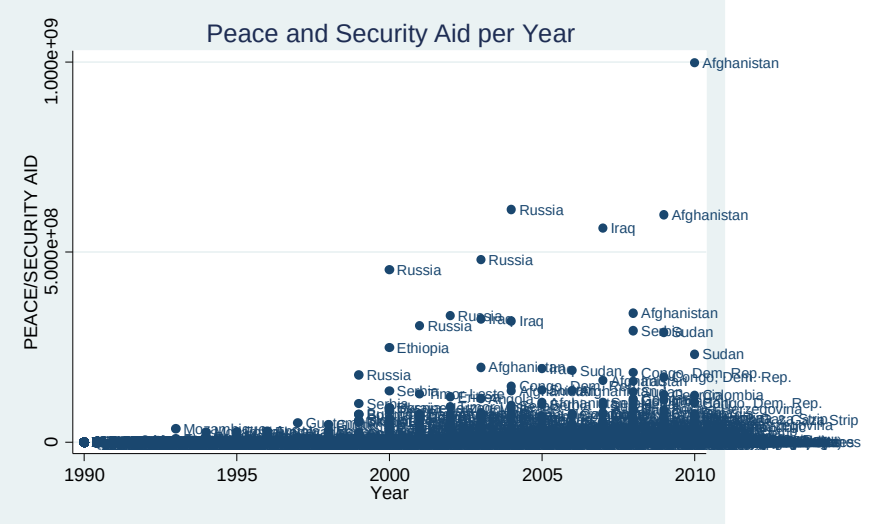




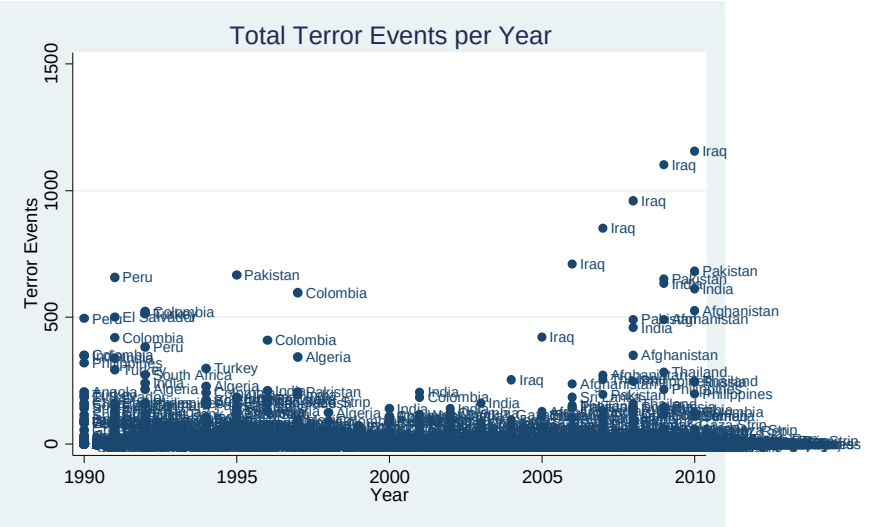
Thus, the overall trend is a positive correlation between aid and terrorism. However, when examining this trend in terms of specific countries, it becomes evident that the highest amount of aid (of either kind) and the highest number of terrorist attacks do not always occur in the same countries (Table XVIII).

Table XVIII. Terror Events, Peace and Security Aid, and Governance Aid, with Country Names (1990-2010).

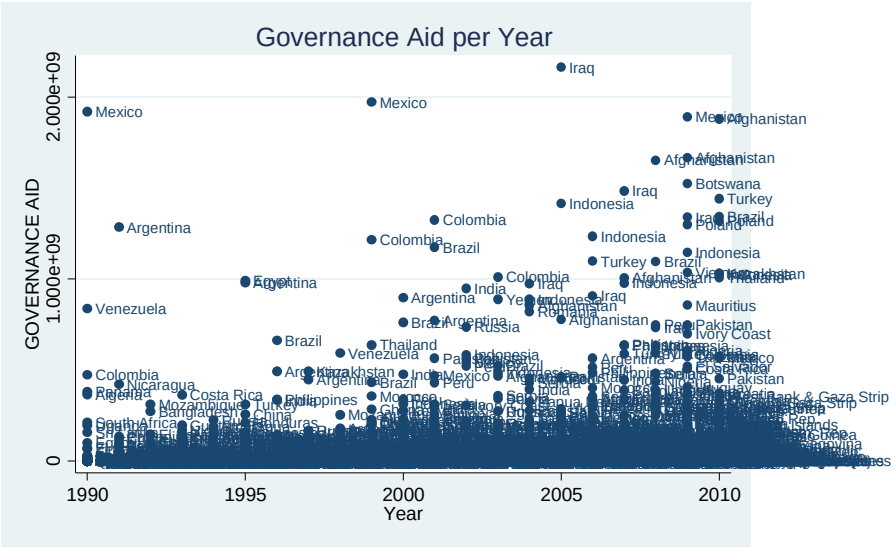
(a) Peace and Security Aid



(b) Terrorism



(c) Governance Aid



For example, Iraq, Pakistan, Afghanistan, India, Colombia, and Peru have witnessed some of highest numbers of terrorist attacks during the examined period (Table XVIII (b)). However, it is Afghanistan, Russia, and Iraq that have received some of the highest peace and security aid amounts (Table XVIII (a)) and Iraq, Mexico, Afghanistan, Botswana, Turkey, and Indonesia: some of the highest governance aid (Table XVIII (c)). Thus, although some countries have received some of the highest amounts of aid and have been home to some of the highest incidents of terrorism (i.e. Afghanistan and Iraq), this has not been always the case. The objective, therefore, is to examine those cases when aid (of either kind) has been received that parallels and/or precedes a decline of terrorist events and to determine whether the former has affected the latter by addressing existing government-level concerns (military or political in nature).

As previously reported, independently, the negative binomial regression of terrorist events on all types of sectoral aid showed that both peace and security aid and governance correlate positively with cases of terrorism in a statistically significant way (Model 2, Table VIII, p. 54-57). This section expands on these results by examining how these two types of aid respond to specific conditions existing at the government level in aid recipient countries and what their combined effect on terrorism is.

A. Peace And Security Aid, Related Grievances, And Terrorism

Peace and security aid includes funds given to support aid-recipient governments' counterterrorist operations including military activities, arms control, security system upgrades and management, etc. The model examining the impact of peace and security aid on terrorism conditional on the aid's ability to address security concerns in aid-recipient countries includes the following two measures related to peace and security: state military budget and political stability. The two measures are unrelated (Pierson's correlation coefficient = -.15) and tap into different aspects of local security needs. Military expenditures (measured as percent of GDP) include all current and capital expenditures on the armed forces, including military operations, peacekeeping, defense, security maintenance, and military research and development. The index of political stability, on the other hand, reflects perceptions as to how unstable the

incumbent government is or the likelihood that the government will be destabilized or overthrown by violent means (including politically motivated violence and terrorism)[85]. As it is a composite index, political stability ranges from approximately -2.5 (weak, unstable government) to +2.5 (strong, stable). In interacting peace and security aid with military budget and political stability, I seek to examine whether such aid has enhanced either and, as a result, impacted negatively terrorism.

The results reported in Table XIX show that peace and security aid is generally ineffective at decreasing terrorism when contributing to the country's military expenditures or political stability (Model 10b). Independently, political stability has a statistically significant negative impact on terrorism ($p< 0.001$, Model 10, Table XIX): one unit increase in political stability (raging from -2.5 to +2.5) would decrease the number of terrorist events by some 82% (based on incidence-rate ratios reported in Appendix 21B). However, rather than strengthening this negative impact, peace and security aid appears to weaken political stability, and their combined effect on terrorism – despite being negative, is statistically insignificant (Model 10b, Table XIX). An indication of either insufficient or ill-placed aid, this is a good example of how an injection of aid may produce adverse results.

In terms of contributing to aid-recipient countries' military expenditures (as a percent of GDP), peace and security aid proves equally ineffective in decreasing terrorism (Model 10b, Table XXI). However, a model examining only military budget reveals that peace and security aid becomes an effective, negative predictor of terrorist attack when supplementing governmental military expenditures ($p < 0.001$, Appendix 21E). More specifically, one million dollars increase of aid per percent increase in military spending (% of GDP) results in 0.6% decrease of terrorism (based on incidence-rate ratios, Appendix 12B). These findings corroborate earlier arguments that aid has been found effective when provided to recipient governments as a carrot-stick tool used to elicit counterterrorist actions (Azam and Delacroix 2006, Azam and Thelen 2008, Frey 2004). In this context, peace and security aid can either directly enhance local counterterrorist actions or indirectly provide incentives for recipient governments to fight terrorism domestically by stipulating certain terms of conditionality.

[85] Pearson's correlation coefficient between terrorism and political stability is r= -0.29 (relatively weak, negative) and between terrorism and military budget r= 0.03 (extremely weak, positive).

Table XIX. MODEL 10: Terrorism regressed on Peace/Security Aid and Related Grievances (negative binomial regression)

	10a No Interactives		10b With Interactives
Peace and Security Aid	0.000967 (0.000971)	Peace and Security Aid	-0.00612 (0.00793)
Military Budget	0.115* (0.0498)	Military Budget	0.124* (0.0524)
Political Stability	-1.759*** (0.0761)	Political Stability	-1.737*** (0.0780)
		xPeaceSec Aid * Military Budget	-0.000185 (0.00150)
		xPeaceSec Aid * Political Stability	-0.00469 (0.00243)
Regime Type	0.132*** (0.0133)	Regime Type	0.133*** (0.0134)
Population Density	-0.0000749 (0.000134)	Population Density	-0.0000710 (0.000135)
Ethnic Fractionalization	-1.794*** (0.273)	Ethnic Fractionalization	-1.752*** (0.272)
Constant	0.994*** (0.234)	Constant	0.957*** (0.242)
lnalpha Constant	1.545*** (0.0497)	lnalpha Constant	1.539*** (0.0500)
Observations Adjusted R^2	1974	Observations Adjusted R^2	1974

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results reported in Appendix 21A.
(2) Negative binomial regression of non-lagged variables report similar results with aid directed at political stability becoming statistically significant ($p < 0.01$) (Appendix 21C).
(3) Zero-inflated negative binomial regression results report similar results with aid directed at political stability becoming statistically significant ($p < 0.01$) (Appendix 21D)

B. Governance Aid, Related Grievances, And Terrorism

Governance aid aims to improve the aid-recipient country's rule of law, democratic institutions, and participation in government decision making. The model examining the impact of governance aid conditional on its ability to address political needs in aid-recipient countries includes the following two measures related to the quality and inclusiveness of the political process: control of corruption and political competition. Control of corruption is included as a proxy for the rule of law as it assesses the perception of the government's ability to control abuse of power and public corruption (the index, as compiled by the World Bank, ranges from approximately -2.5 (weak) to + 2.5 (strong) governance performance). Political competition

(available from the Policy IV Project) reflects the level of organized political participation in government decision making. It is a composite index merging values of two component variables (regulation of participation and competitiveness of participation). The final composite indices of political competition range from 0 (highly regulated/least competitive) to 10 (least regulated/most competitive).

Table XX. MODEL 11: Terrorism regressed on Governance Aid and Related Grievances (negative binomial regression)

	11a No Interactives		11b With Interactives
Governance Aid	0.00321*** (0.000430)	Governance Aid	0.00378 (0.00226)
Corruption Control	-0.732*** (0.0924)	Corruption Control	-0.751*** (0.0983)
Political Competition	0.0217 (0.0553)	Political Competition	0.0420 (0.0572)
		xGovAid*Corruption	-0.00218* (0.000989)
		xGovAid* Pol Competition	-0.000329 (0.000276)
Regime Type	0.0771** (0.0297)	Regime Type	0.0801** (0.0302)
Population Density	0.000345 (0.000567)	Population Density	0.000534 (0.000685)
Ethnic Fractionalization	-0.196 (0.359)	Ethnic Fractionalization	-0.166 (0.369)
Constant	1.351*** (0.349)	Constant	1.177** (0.358)
lnalpha Constant	1.976*** (0.0432)	lnalpha Constant	1.969*** (0.0436)
Observations	2171	Observations	2171
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

(1) Detailed results reported in Appendix 22A.
(2) Negative binomial regression of non-lagged variables report similar results (Appendix 22C).
(3) Zero-inflated negative binomial regression results report similar results (Appendix 22D)

The results reported in Table XX show that governance aid is effective in decreasing terrorism when conditioned upon improving the control of corruption within aid-recipient countries ($p < 0.05$, Model 11b). Substantively, each million dollars of governance aid spent per point increased in corruption control corresponds to 0.2% decrease in terrorism ($p < 0.05$, based on incidence-rate ratios reported in Appendix 22B). In this aspect, governance aid targeted at enhancing aid-recipient governments' efforts to control the exercise of public

power for private gain effectively supports the independent, negative impact that the control of corruption has on terrorism ($p < 0.01$, Model 11a, Table XX). In terms of political competition, this model indicates that governance aid does not effectively address issues of political participation and, as a result, has no statistically significant impact on terrorism (Model 11b, Table XX).

CHAPTER SEVEN - DISCUSSION

Table XXI presents a summary of the three expectations of this study along with the related findings. The first column lists all the independent variables that were examined in this study. The second and the fourth column report respectively the independent and conditional effect of aid on terrorism and indicate its nature: negative (-), positive (+), or insignificant (x). The third and fifth column report the percent change expected in the levels of terrorism associated with reported aid's independent or conditional impact. The percent change is to be interpreted as follows "for each unit change in *'X,'* the number of terrorist incidents can be expected to increase/decrease by *n*%, holding all other covariates constant." The sixth column indicates which model or appendix reports the indicated results. Finally, to highlight the types of aid that were found to have a negative relationship with terrorism, consistent with the expectations of this study, the final column categorizes the impact of each variable as

- "Yes" = effective, if there was a change of the independent linkage between aid and terrorism from positive, negative, or insignificant correlation to the expected negative effect of the interactive term on terrorism;
- "C" for counterproductive when aid's independent or interactive effect produced a positive correlation with terrorism, contrary to the study's expectations; and
- "No" = not effective, if the nature of the independent relation of a variable with terrorism has remained unchanged or not significant (even after interacting it with the corresponding sectoral aid category).

Thus, based on the results reported in the previous section and as summarized in Table XXI, the following observations can be made in regard to the impact of foreign aid on terrorism.

7.1. FINDINGS: SUPPORT FOR THE THREE EXPECTATIONS

The first expectation of this study stipulated that total aid would have no impact on terrorism when conditional upon aid's ability to address poverty in aid-recipient countries. The results largely support this expectation: when aid is conditioned by its ability to alleviate poverty (measured either as GDP per capita or the Human Development Index), it bears no

statistically significant impact on terrorism (Model 1b). Poverty, measured as GDP per capita, also does not correlate positively with terrorism (Model 1a). These findings support previous studies arguing against the poverty-terrorism linkage (Fair and Shepherd 2006, Jo 2011, Shapiro and Fair 2010, Von Hippel 2008, Abadie 2006, Berman and Laitin 2008, Bloomberg and Rosendorff 2009, Krueger and Maleckova 2002).[86] Similarly, although youth unemployment (used as a proxy for economic grievance that is related to, yet different from poverty) was found to have a positive correlation with terrorism (p<0.001, Model 7a), additional models do not report any significant linkage between youth unemployment and terrorist events.[87]

However, poverty measured by the HDI (Model1a) is found to have a positive, statistically significant correlation with terrorism. This, coupled with the fact that income inequality was also found to be a statistically significant positive predictor of terrorism (Model 6a),[88] supports arguments that a more nuanced experience of poverty may impact one's decision to engage in terrorism (Crenshaw 1990, Burgoon 2006). However, this study also shows that such correlation is not necessarily linear. As reported, HDI's positive linkage to terrorism seems to be valid only for countries that fall within specific human development dimensions (Figure 4, p.48): specifically, the number of terrorist attacks increases most dramatically in countries that rank between 0.4 and 0.65 on the HDI scale. The positive linkage between HDI and terrorism is confirmed by other individual, quality-of-life indicators such as education (Model3a), life expectancy (Model 4a), access to sanitation facilities (Model 5a), improved water sources (Model 5a), as well as occupational employment (Model 8a), all of which correlate positively with terrorist events in a statistically significant way. Again, such findings lend support to previous studies arguing that individuals engaging in terrorism often have a high level of education and come predominantly from relatively wealthy families (Krueger and Maleckova 2003, Krueger and Laitin 2008, Pape 2005, Bueno de Mesquita 2005).

[86] For a complete reference list, refer back to the state of the literature part, p. …

[87] Including a negative binomial regression model of nonlagged variables (Appendix 17C), a zero-inflated negative binomial regression (Appendix 17D), and a negative binomial regression model of lagged variables that includes "long-term unemployment" as an additional variable (Appendix 17E).

[88] Income inequality is measured as income share held by the lowest 20 percent of the population. Model 6a reports that as the percentage of income share held by the lowest 20 percent of the population increases, the number of terrorist events decreases (p<0.05). Substantively, one percent increase in income parity translates in 13% decrease in terrorism, holding all other covariates constant.

Table XXI. Summary of all models. Dependent variable: Terrorism

Variables	*Independent Effect*	*% Change*	*Conditional Effect (x Aid)*	*% Change*	*Reported in*	*Impact*
Expectation I						
Total Aid	+	+0.1%			Model 1a	C
GDP/cap	x		x		Model 1a/b	No
HDI	+	~	x		Model 1a/b	No
Expectation II and III						
Education Aid	+	+0.2%			Model 2	C
Health Aid	x				Model 2	No
Social Aid[1]	x	+0.07%			Model 2, Appendix 12C	No
Eco Growth Aid	+	+0.04%			Model 2	C
MicoEco Growth Aid	+	+0.05%			Model 6a	C
Eco Opportunity Aid	x				Model 7a	No
Production Sectors Aid	+	+0.2%			Model 8a	C
Development Aid	x				Model 9a	No
Peace & Security Aid	+	+0.9%			Model 2	C
Governance Aid	+	+0.1%			Model 2	C
Unallocated[1]	x	+0.2%			Model 2, Appendix 12C	No
Education	*+*	*+0.4%*			*Model 3a*	*C*
Primary School Enrollment	**x**		**–**	**-0.01%**	**Model 3a/b**	**Yes**
Secondary School Enrollment	+	+1.5%	+	+0.03%	Model 3a/b	No
Tertiary School Enrollment	**+**	**+1.5%**	**–**	**-0.03%**	**Model 3a/b**	**Yes**
Public Spending on Education	**–**	**-20%**	**–**	**-0.2%**	**Model 3a/b**	**Yes**
Repeaters, Secondary[1]	**+**	**+2.2%**	**–**	**-0.04%**	**Appendix 13E**	**Yes**
Health	*+*	*+0.2%*			*Model 4a*	*C*
Health Expenditures/Cap	**–**	**-0.2%**	**–**	**-0.001%**	**Model 4a/b, Appendix 14E**	**Yes**
Life Expectancy	+	+10%	+	+0.02%	Model 4a/b	No
Percent Undernourished	**x**		**–**	**-0.01%**	**Model 4a/b**	**Yes**
Social	*+*	*+0.2%*			*Model 5a*	*C*
Access to Sanitation	**+**	**+1.9%**	**–**	**-0.009%**	**Model 5a/b**	**Yes**
Improved Water Source	+	+1.8%	x		Model 5a/b	No
Scientific/tech articles	**+**	**+0.004%**	**–**	**-0.001%**	**Model 5a/b**	**Yes**
R&D Expenditures[1]	**x**		**–**	**-0.3%**	**Appendix 15E**	**Yes**
Microeconomic Growth	*+*	*+0.05%*			*Model 6a*	*C*
Income shared by lowest 20%	–	-13%	+	+0.01%	Model 6a/b	C
Household consumption	**+**	**+0.01%**	**–**	**-0.001%**	**Model 6a/b**	**Yes**
Inflation, consumer prices	x		x		Model 6a/b	No
Economic Opportunity						*No*
Total Unemployment	–	-12%	x		Model 7a/b	No
Youth Unemployment	**+**	**+10%**	**–**	**-1.9%[1]**	**Model 7a/Appendix 17E**	**Yes**
Long-term Unemployment[1]	–	-1.9%	+	+0.2%	Appendix 17E	C
Production Sectors	*+*	*+0.2%*			*Model8a*	*C*
Agriculture (employment)	+	+7%	x		Model 8a/b	No
Industry (employment)	**+**	**+9%**	**–**	**-0.02%[1]**	**Model 8a/Appendix 18E**	**Yes**
Services (employment)	+	+8%	x		Model 8a/b	No
Development						*No*
Food Imports	–	-4.7%	+	+0.004%	Model 9a/b	C
Gross Domestic Savings	**+**	**+0.0002%**	**–**	**-0.001%**	**Model 9a/b**	**Yes**
Peace and Security						*No*
Military Budget[1]	**+**	**+12%**	**–**	**-0.58%[1]**	**Model 10a/Appendix 21E**	**Yes**
Political Stability[1]	**–**	**-82%**	**–**	**-0.62%[1]**	**Model 10a/Appendix21C/D**	**Yes**
Governance	*+*	*+0.3%*			*Model 11a*	*C*
Control of Corruption	**–**	**-52%**	**–**	**-0.2%**	**Model 11a/b**	**Yes**
Political Competition	x		x		Model 11a/b	No

Only statistically significant impact reported. Percentages rounded to the first decimal whenever possible. 1. Only in Appendixes.

The theoretical model of this study offers an explanation as to the positive impact such individual indicators of life quality may exercise on terrorism. Namely, terrorist organizations may exploit extant socio-economic grievances as incentives to recruit followers and mobilize them for committing violent crime. In that regard, aid targeted at specific sectors may be more effective in decreasing terrorism as it would serve as a tool to satisfy demands and to fill a void that may otherwise be filled by terrorist networks.

Thus, the second and the third expectations of this study predicted that aid channeled to specific purposes would be negatively related to the magnitude of terrorism conditional upon aid's ability to address relevant socio-economic (Expectation II) or political/security (Expectation III) grievances. While the second expectation focused on the societal level at large, the third explored grievances directed at the inner workings of the governmental (political and security) apparatus.

The findings generally lend support to the second and third expectations.

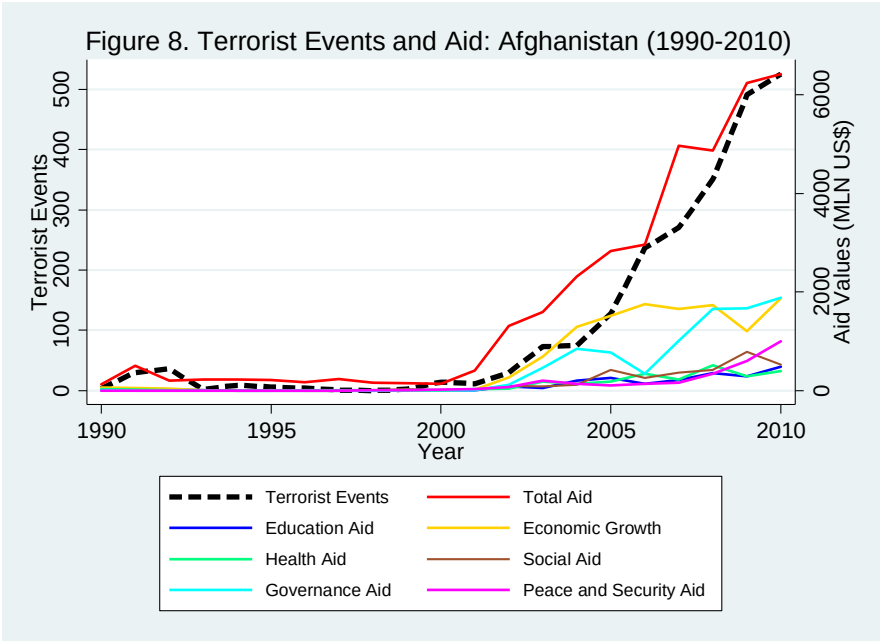
First, sectoral aid, much like total aid, is found to generally have a positive correlation with terrorism (Model 2). More specifically, an increase in education aid, economic growth aid, peace and security aid, or governance aid correlates positively with an increase in terrorist attacks in a statistically significant way.[89] For example, one million dollars increase in education aid would result in a 0.2% increase of terrorist attacks (p<0.05, Model 2) while one million dollars increase in peace and security aid corresponds to a 0.9% rise in terrorist events (p<0.001, Model2), *ceteris paribus.* In addition, the independent positive effect of different types of sectoral aid was confirmed when running the individual models of each type of aid and its corresponding grievances (reported also in Table XXI, p.87). As such, education aid (Model 3a), health aid (Model 4a), social services aid (Model 5a), microeconomic aid (Model 6a), production sectors aid (Model 8a), and governance aid (Model 11a) were found to correlate positively with terrorism on a statistically significant level.

These positive tendencies between sectoral aid and terrorist events can be exemplified in several specific countries and Afghanistan is given as an example below. From 1990 through 2010, Afghanistan experienced an average of 110 terrorist attacks per year (with zero incidents

[89] Additional models confirm that other types of sectoral aid (social and unallocated aid) may also have a positive linkage with terrorism (Appendix 12 C).

in 1998 and 526, the highest number of attacks, in 2010). For the same period, the total amount of aid has steadily increased from 121 MLN US$ in 1990 to 6,426 BLN in 2010. Similarly, all types of sectoral aid have generally increased at a different rate over the examined time period for this country. Figure 8 depicts visually these increases and the positive correlations between aid and terrorism in Afghanistan, 1990-2010. Detailed statistics are available in Appendix 25.

Figure 8. Terrorist Events and Aid: Afghanistan (1990-2010)



However, when sectoral aid is conditioned upon addressing specific needs, its positive correlation with terrorism reverses to the predicted negative linkage as reported in most cases. Expectations II and III include a total of 27 independent variables that are used as proxies for socio-economic and political needs. When sectoral aid is interacted with those 27 variables, 59% (or 16) show a statistically significant *negative* correlation with terrorism, 19% (or 5) demonstrate a statistically significant *positive* correlation with terrorist events, and 22% (or 6) remain statistically insignificant (Table XXI).

As summarized in Table XXI, the following sectoral aid categories were found to be effective in decreasing terrorism when targeted at specific socio-economic or political/security concerns:

- education aid targeting primary school enrollment, tertiary school enrollment, secondary school repeaters, and public spending on education;
- health aid spent on health expenditures per capita and undernourishment;
- social services aid aimed at increasing access to sanitation facilities, number of published scientific and technical articles, and research and development expenditures;
- microeconomic growth aid assisting household consumption expenditures;
- economic opportunity aid geared toward youth unemployment;
- production sectors aid aimed at assisting local industries;
- development aid supporting gross domestic savings;
- peace and security aid targeting state military budget and political stability; and
- governance aid geared toward strengthening state control of corruption.

Although sectoral types of aid have proven effective when targeted at specific sectors, their reported effects may be costly. The following section examines the magnitude of all reported effects and their practical significance in terms of long-term sustainability.

7.2. MAGNITUDE OF AID EFFECTIVENESS AND PREDICTIONS

In order to determine the practical importance of reported statistically significant effects, I calculated the minimum and maximum percent change (in terrorism) based on the IRR 95% confidence intervals range using the standard $\beta_2 \pm SE_{\beta_2}$ (1.96) formula. Those minimum/maximum percent decrease values are presented in Table XXII.[90]

[90] IRR's 95% confidence intervals are reported in each model's corresponding appendixes.

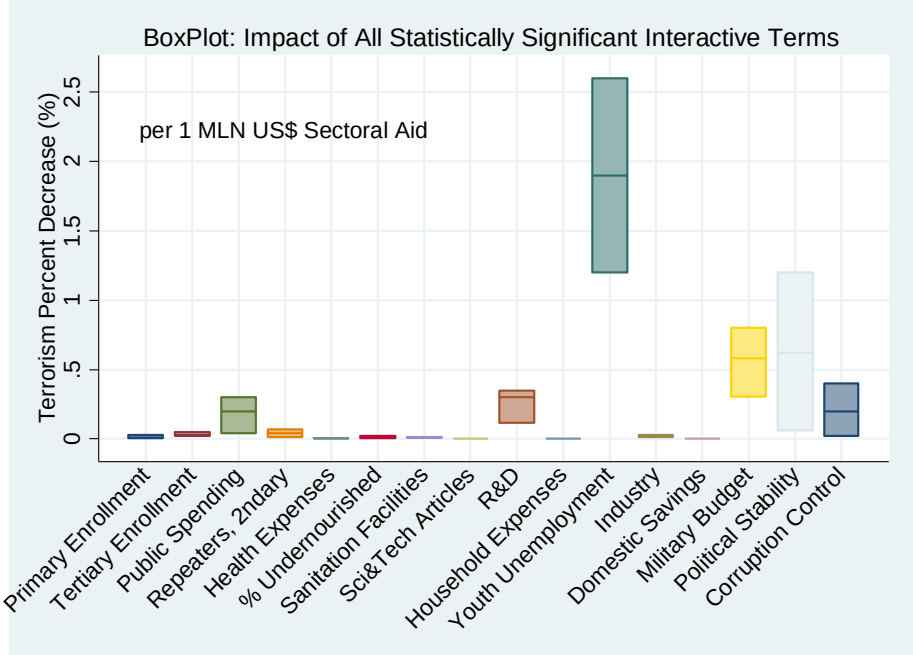
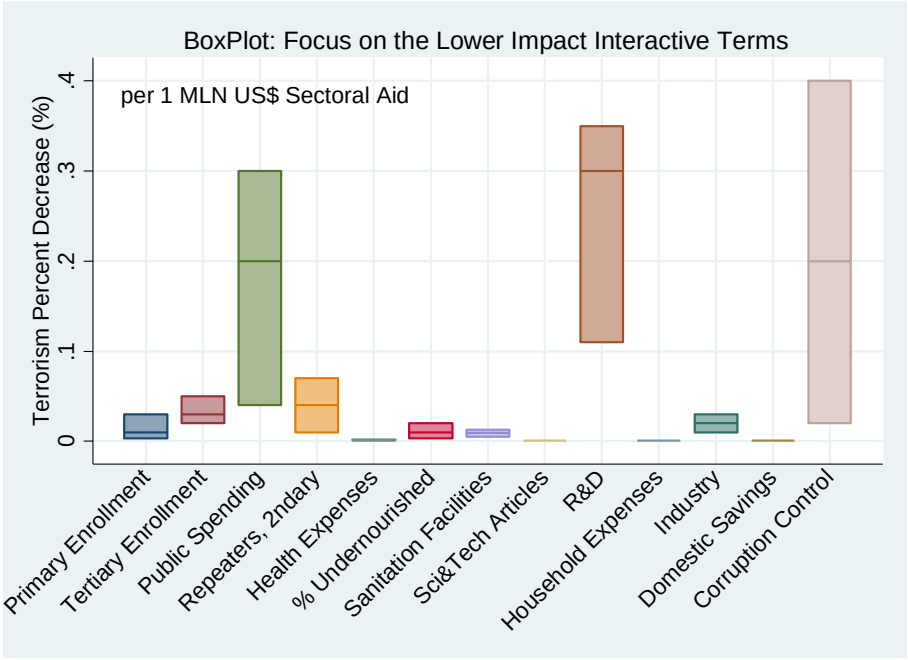
Table XXII. Maximum and Minimum Percent Change (in Terrorism) based on IRR 95% CI.

Interactive Terms	IRR 95% Confidence Intervals[1]	Min (%)	Max (%)
EDUCATION AID x	*max* *min*		
x Primary Enrollment	- .9997484 -.999975	0.003	0.03
x Tertiary Enrollment	-.9995473 - .9998204	0.02	0.05
x Repeaters, Secondary[2]	- .9992974 -.9998892	0.01	0.07
x Public Spending Education	-.9972502 -.9995879	0.04	0.3
HEALTH AID x			
x Health Expense/Capita	- .9999817 - .99999761	0.001	0.002
x Prevalence Undernourished	- .9997747 -.9999678	0.003	0.02
SOCIAL AID x			
x Sanitation Facilities	- .9998731 -.9999467	0.005	0.013
x Scientific Articles[4]	- .99999 - .99999	0.001	0.001
x Research and Development[2]	- .9964578 - .9989463	0.11	0.35
MICROECONOMIC AID x			
x Household Consumption[4]	- .99999 -.99999	0.001	0.001
ECONOMIC OPPORTUNITY AID x			
x Youth Unemployment[2]	- .9731539 - .9871405	1.2	2.6
PRODUCTION SECTORS AID x			
x Industry[2]	- .999697 - .9998876	0.01	0.03
DEVELOPMENT AID x			
x Domestic Savings[4]	- .99999 - .99999	0.001	0.001
PEACE AND SECURITY AID x			
x Military Budget[2]	- .9915753 -.9967427	0.3	0.8
x Political Stability[3]	- .9881446 -.9994313	0.06	1.2
GOVERNANCE AID			
x Control of Corruption	-.9958869 .9997543	0.02	0.4

1.IRR Results reported in Appendixes – under corresponding model's Appendix B Detailed Results, 2. Reported only in the appendixes, 3.only confirmed in alternative models (Nonlagged Negative Binomial and Zero-Inflated Negative Binomial Regression, Appendix 12C and 12D); 4. Rounded to the third decimal.

The minimum and maximum values, as reported in Table XXII, are used to construct a boxplot in order to give a visual representation of the range of impact that each statistically significant interactive has on terrorism (Table XXIII, BoxPlot 1 and 2).

Table XXIII. Boxplot: Percent Decrease in Terrorism per 1 MLN Aid (US$) and Interactive Grievances.

(a) BOXPLOT 1. ALL. All statistically significant interactive variables and their negative impact on terrorism. The impact is expressed in percentages and is based on 1 MLN US$ of sectoral aid given per measuring unit of respective grievances.	
(b) BOXPLOT 2: ZOOM IN. Excluding the top three most influential interactives (Youth Unemployment, Military Budget, and Political Stability). The impact is expressed in percentages and is based on 1 MLN US$ of sectoral aid given per measuring unit of respective grievances.	

Overall, the results reveal that (1) economic opportunity aid spent on youth unemployment has the biggest negative impact on terrorism where one million dollars of economic opportunity aid spent per percent unemployed young people (15-24 years old) corresponds to a 1.2% minimum and a 2.6% maximum decrease in terrorism, when all other covariates are held constant (Boxplot 1 and Table XXII). In second place comes peace and

security aid targeted at aid-recipient states' (2) political stability or (3) their military budget: one million dollars of peace and security aid spent per unit increase in political stability (measured on a scale of 2.5 to +2.5) translates into a 0.06% minimum and 1.2% maximum decrease in terrorist activities while one million dollars of peace and security aid per percent military spending (measured as a percentage of GDP) results in a 0.3% minimum and 0.8% maximum decrease in terrorism, *ceteris paribus* (Boxplot 1 and Table XXII).

By order of their impact's magnitude, the remaining interactive variables can be ranked as follows: (4) social services aid targeted at assisting with aid-recipient countries' research and development budget (% GDP) translates in a 0.11% minimum and 0.35% maximum decrease in terrorism (per one million dollars of aid), (5) governance aid aimed at improving state control of corruption corresponds to a 0.02% minimum and 0.4% maximum decrease in terrorist events, (6) education aid aimed at assisting public spending on education (% of GDP) leads to a 0.04% minimum and 0.3% maximum decrease in terrorism, (7) education aid aimed at assisting with secondary school repeaters corresponds to 0.01% minimum and 0.07% maximum decrease in terrorism, (8) education aid spent on tertiary enrollment leads to 0.02% minimum and 0.05% maximum decrease in terrorism, and (9) production sectors aid targeting increased production in local industries is linked to a 0.01% minimum and 0.03% maximum decrease in terrorism. The rest of the interactive variables and their corresponding effects are presented in Table XXIV by order of the magnitude of their average negative impact on terrorism.

Overall, the results indicate that sectoral aid is effective at decreasing terrorism when targeted at specific sectors. The findings, therefore, support expectations II and III and are even more significant when noting the positive independent correlation of most types of sectoral aid with terrorism. (Model 2, Table VII as well as individual models summarized in Table XXI).

Despite the evidence that sectoral aid – when targeted at specific societal and governmental needs in aid-recipient countries - produces the desired and intended decrease in terrorism, using aid to produce a significant decline in terrorism may be a very costly counterterrorist strategy. Assuming that the relationship between the interactive variables and terrorism stays linear, the amount of aid needs to be increased by two, and often more, orders of magnitude in order to result in a significant decline in terrorist attacks. In few cases, an aid

increase by a factor of 10 (from 1 MLN to 10 MLN) will result in single-digit percent decrease in terrorism. This will be the case for sectoral aid categories whose average impact ranks from (1) through (6) in Table XXIV.

Table XXIV. Effect of Sectoral Aid and Interactive Grievances on Terrorism by Order of Magnitude

	Sectoral Aid	Grievances	Average -%	Max -%	Min -%
(1)	Economic Opportunity	Youth Unemployment	1.9	2.6	1.2
(2)	Peace and Security	Political Stability	0.62	1.2	0.06
(3)	Peace and Security	Military Budget	0.58	0.8	0.3
(4)	Social Services	Research & Development	0.3	0.35	0.11
(5)	Governance	Corruption Control	0.2	0.4	0.02
(6)	Education	Public Spending Education	0.2	0.3	0.04
(7)	Education	Repeaters, 2ary	0.04	0.07	0.01
(8)	Education	Tertiary Enrollment	0.03	0.05	0.02
(9)	Production Sectors	Industry	0.02	0.03	0.01
(10)	Education	Primary Enrollment	0.01	0.03	0.003
(11)	Development	% Undernourished	0.01	0.02	0.003
(12)	Social Services	Sanitation Facilities	0.009	0.013	0.005
(13)	Health	Health Expenses	0.001	0.002	0.001
(14)	Social Services	Sci & Tech Articles	0.001	0.001	0.001
(14)	Microeconomic Growth	Household Expenses	0.001	0.001	0.001
(14)	Development	Domestic Savings	0.001	0.001	0.001

In most cases, however, in order to observe a more substantive decline in terrorism, the amount of sectoral aid must be increased by two (100 times), even three orders of magnitude (1,000 times). For example, in order for development aid (#14 in Table XXVI) supporting gross domestic savings to decrease terrorism more significantly, developmental aid must be increased by three orders of magnitude, that is, into the billions of dollars. As such, 1 billion dollars of developmental aid spent per one million dollars increase in gross domestic savings will lead to a 1% drop in terrorist attacks. This is obviously an enormous sum spent to encourage a small increase in domestic savings rate that will translate in a small decrease in terrorism. Although some of the higher impact sectoral aid categories would require smaller

orders of magnitude to produce observable decline in terrorism, a question remains as to the sustainability in the long run of such costly aid operations. Foreign aid, therefore, should be justified on other grounds as, on this level, it exercises only a minimum effect on decreasing terrorism.[91]

7.3. AID NOT EFFECTIVE

In contrast to instances when sectoral aid was found to be effective, in some cases aid proved counterproductive in decreasing terrorism. For instance, microeconomic growth aid directed at increasing income parity was, in fact, found to exacerbate instances of terrorism: one million dollars of microeconomic aid spent per one percent income share held by the lowest 20 % led to a 0.01% increase in terrorism, when all other variables are held constant (Table XIV, Model 6a/b). The same statistically significant positive tendencies with terrorism were observed with economic opportunity aid directed at alleviating long-term unemployment and development aid aimed at stabilizing food imports (Table XXI). In addition, independently, most sectoral aid categories exhibited statistically significant positive linkage to terrorism that mirrors the positive correlation between total aid and terrorist events (all models summarized in Table XXI, p. 87).

These findings bridge the scholarship divide between general and sectoral aid in two important ways. First, they confirm that general or total aid is, at best, ineffective - as argued in studies on general aid effectiveness (Easterly 2003 a,b, 2006, Easterly et al. 2004, Cohen and Easterly 2009) - and, at worst, contributing to terrorist violence as affirmed in the aid-conflict literature suggesting that foreign aid may be linked to the onset and dynamics of conflict (Strandow and Tanner 2011). Second, the reported results demonstrate that sectoral aid can also be counterproductive when targeted at specific sectors. This confirms arguments that development aid can exacerbate conflict (Esman and Herring 2003, Humphreys and Varshney 2004) by promoting 'wasteful public corruption' and impacting negatively economic growth and domestic political institutions (Alesian and Weder 2002, Djankov et al. 2008b, Svensson 1998).

[91] Note that this study does not control for the intensity or the deadliness of terrorist attacks. In other words, aid spent in states that are not "hot spots" of terrorism, but experience on average 1-5 terrorist events per year, a 0.8% decrease in terrorism may be significant, thus, the aid may be worth spending.

In this case, development aid has been shown to exacerbate terrorist violence when targeted explicitly at stabilizing food imports – a component that is seen by some as indicative of a country's economic independence needed for economic growth and stability (Nel and Richarts 2009).

CONCLUSION

Most of society's arguments are kept alive by a failure to acknowledge nuance.
Tim Minchin, Occasional Address, 2013

The "war on terror" has been one of the most dominant security issues for the US and other developed countries since 9/11. Foreign aid has been promoted as one of the preferred, nonmilitary tools to fight terrorism. Over the last twenty years, foreign aid has steadily increased premised on the belief that it effectively reduces acts of terrorism and assumed ills that bring about terrorist tendencies (Bandyopadhyay et al. 2011, Young and Findley 2011). Within this context, this research investigated the effectiveness of aid in decreasing terrorism. At the onset of this project, I asked: when is aid an effective tool in the fight against terrorism? To answer this question I examined both total, aggregate aid as well as sector-specific, disaggregated aid. In addition, I also included specific socio-economic and political grievances expected to play a role in conditioning the effectiveness of aid in preventing terrorist attacks.

The results indicate that the question "when is aid an effective tool in decreasing terrorism?" does not have a simple answer, but needs to be examined within the complexities of specific grievances that aid seeks to address in aid-recipient countries. As such, while the independent effects of both total and sectoral aid were found to correlate positively with terrorism, aid's conditional (that is when responding to specific needs) impact on terrorism became, as predicted, negative and statistically significant in most, but not all cases. In 16 instances (out of 27), certain types of sectoral aid directed at certain socio-economic or political needs were found to become statistically significant, negative predictors of terrorism as hypothesized in the expectations of this study. Examples of exercising a negative impact on terrorism in aid-recipient states include education aid spent on tertiary school enrollment or assisting public spending on education, social services aid enhancing research and development, governance aid geared toward strengthening state control of corruption as well as twelve additional instances when sectoral aid targeted at specific needs was found to correlated negatively with terrorism in a statistically significant way. The top five sectoral aid

categories that had the most significant negative impact on terrorism included economic opportunity aid spent on youth unemployment, peace and security aid targeted at assisting with political stability and military expenditures, social services aid aimed at increasing state budget on research and development, and governance aid geared toward strengthening state control of corruption.

The empirical results also revealed several intriguing observations. First, poverty, measured as GDP per capita, does not correlate positively with terrorism. This finding, supported in several different models, contradicts the conventional wisdom or the 'economics of terrorism' narrative that has been often affirmed by leading media outlets and policy practitioners namely that poverty breeds terrorism and that terrorism thrives in poverty-stricken environment. Instead, the findings support the counterview that there is a positive association between economic development and terrorism (Bravo and Dias 2006, Piazza 2006, Blomberg and Hess 2008, Krueger and Malecova 2003, Drakos and Gofas 2006). As such, the results report positive correlations between terrorism and the human development index as well as between terrorism and individual indices of bettered life such as life longevity, higher education, access to sanitation facilities, improved water sources, increased consumption, occupational employment and domestic savings. However, the findings also suggest that the positive linkage between an overall bettered life and terrorism is not linear: instances of terrorism appear to intensify in countries that rank in the middle: between 0.4 and 0.65, of the of the human development index scale. Some previous arguments affirmed that the relationship between income and terrorism is nonlinear with the middle income class being more prone to support or engage in terrorism (Enders and Hoover 2012, Calle and Sanches-Cuenca 2012, Blair et al. 2013). However, as composite indices, such as the HDI, indicate national tendencies, this research demonstrates that a bettered life (up to a certain level) in a country as a whole corresponds to more terrorist incidents. In addition, an increase in income disparity also correlates positively with terrorism. All together, the findings support the resource scarcity thesis placed within the context of relative depravation: terrorism is more likely to occur in states where, while not poor in absolute terms, one is perceived unequal in relation to others. Thus, the context within which terrorism is more likely to take place is

characterized by an increase in economic development (along its main indicators) as well as in income disparity.

Second, from among the control variables, control of corruption has consistently ranked, in all models, as a statistically significant negative predictor of terrorism (Appendix 24). Its independent effect fluctuated between 37% to 74% decrease in terrorism per point increase in control of corruption (measured on a scale -2.5 (weak) to +2.5 (strong) government control of corruption) (Appendix 24). This variable, which has been largely overlooked in studies on aid and terrorism, appears to have one of the larger impacts on decreasing terrorism when targeted by governance aid (BoxPlot1, Table XXI). Such findings confirm arguments that official corruption plays an important role in the fight against terrorism. Arguably, official corruption is, in fact, one of the primary ways in which terrorist organizations sustain themselves and perpetuate violent attacks (Shelley 2014). However, more research is needed to examine how the reported importance of corruption control can be integrated in the fight against terrorism, in general, and aid allocation, in particular.

Third, in practical terms, it may be difficult to achieve, and subsequently sustain, observable decline in terrorism based on the reported statistically significant correlations. All reported impacts are per one million dollars of aid. Depending on the type of aid and interactive grievance, aid's conditional impact results in a minimum 0.001% to a maximum 2.6% decrease in terrorism per one million dollars of aid. Thus, in order for sectoral aid to produce two-digit percent decrease in terrorism, its amount needs to be increased, most often, by two (100 times) and, at times, by three (1,000 times) orders of magnitude raising aid's numbers into the billions. This is the case for most sectoral aid categories that were found to have a negative, statistically significant impact on terrorism. Only for very few, would an increase of the amount by a factor of 10 (from 1 MLN to 10 MLN) be sufficient to result in single-digit percent decrease in terrorism (based on minimum and maximum effects reported in Table XXII, p.91), assuming that the relationship between the interactive variables and terrorism remains linear. Thus, it becomes obvious that using aid to produce a more significant decrease in terrorism may be costly and unsustainable in the long run. Foreign aid, therefore, must be justified on other grounds (i.e. humanitarian) as, on this level, it exercises only a minimum effect on decreasing

terrorism. This study does not control, however, for the deadliness of terrorist attacks. Future research is needed to examine whether aid spent in states that are not 'hot spots' of terrorism is aid worth spending, in terms of producing short-term significant results and having long-term sustainability. In other words, aid spent in a country that experiences on average 1-5 terrorist events per year, a 0.8% decrease in terrorism may be significant; thus, aid (in this case: peace and security aid aimed at assisting with military expenditures) may be worth spending for it produces both a short-term significant decline and it is of amount that is sustainable in the long-term.

Overall, this study makes important contributions to the field of foreign aid and terrorism in five main ways. First, it assessed the effectiveness of total aid – previously examined mainly in conflict studies, within the context of terrorism. Second, it bridged the empirical divide between studies investigating total aid and studies focusing exclusively on sectoral aid and their respective impact on conflict/terrorism by integrating and examining them within the same theoretical framework. Third, while the study included standard measures of poverty to assess the latter's linkage to terrorism, the quantitative part also tested additional, more nuanced measures of socio-economic grievances including income inequality, access to education, sanitation facilities, improved water sources, occupational employment, savings, and household consumption expenditures. Fourth, it expanded on sectoral aid research by matching different types of sector-specific aid to existing socio-economic and political needs with the aim to examine their interactive effects on terrorism. To my knowledge, this is a first in the field of sectoral aid and terrorism and, undoubtedly, needs to be further refined in terms of methodology and analysis. Finally, it discussed the magnitude of reported statistically significant aid effects on subsiding terrorism with the aim to demonstrate how sustainable and applicable those are in terms of actual foreign policy practice.

As interspersedly noted, this study leaves several questions in need of further research including an investigation into (1) additional indicators of socio-economic and political grievances and the role they play in attenuating or intensifying the impact of aid on terrorism, (2) country-specific quantitative and qualitative analyses seeking to examine how each one informs the effect of aid on terrorism in specific case studies, (3) the nature of the relation

between aid and state control of corruption that, consistently, has shown to be negatively related to terrorism in a statistically significant way, and (4) a consideration of the brutality or the deadliness of terrorist attacks by examining the role of aid in countries that experience low-levels of terrorism. Finally, foreign aid may not have the same impact at different temporal periods as its impact may change depending on the nature of the international system (Young and Findley 2011). This merits further investigation by (5) breaking down the quantitative analysis into temporal periods as defined by major shifts in the structure of the international system (i.e. the Cold War, the 1990s, the Global War on Terrorism), and by further placing observed tendencies within case-specific qualitative discussion with the objective to gain deeper understanding of the processes underpinning theory and quantitative analyses.

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APPENDIX 1 LIST OF INCLUDED COUNTRIES AND TERRITORIES

Note1: Generally, the period is 1990-2010. Some countries are marked when they gained their independence (i.e. the former-Communist block)
Note2: Originally 214 countries and territories. 24 were deleted for lack of data in key variables, leaving a total of 190 used in this study.

1. **Afghanistan** (1990-2010)
2. **Albania** (1991-2010)
3. **Algeria** (1990-2010)
4. **Angola** (1990-2010)
5. *Anguilla –deleted – no data*
6. **Antigua and Barbuda** (1990-2010)
7. **Argentina** (1990-2010)
8. **Armenia** (1991-2010)
9. *Aruba – deleted – no data*
10. **Australia** (1990-2010)
11. **Austria** (1990-2010)
12. **Azerbaijan** (1991-2010)
13. **Bahamas** (1990-2010)
14. **Bahrain** (1990-2010)
15. **Bangladesh** (1990-2010)
16. **Barbados** (1990-2010)
17. **Belarus** (1992-2010)
18. **Belgium** (1990-2010)
19. **Belize** (1990-2010)
20. **Benin** (1990-2010)
21. **Bermuda** (1990-2004)
22. **Bhutan** (1990-2010)
23. **Bolivia** (1990-2010)
24. **Bosnia-Herzegovina** (1992-2010)
25. **Botswana** (1990-2010)
26. **Brazil** (1990-2010)
27. **Brunei** (1990-2006)
28. **Bulgaria** (1990-2010)
29. **Burkina Faso** (1990-2010)
30. **Burundi** (1990-2010)
31. **Cambodia** (1990-2010)
32. **Cameroon** (1990-2010)
33. **Canada** (1990-2010)
34. **Cape Verde** (1990-2010)
35. *Cayman Islands – deleted no data*
36. **Central African Republic** (1990-2010)
37. **Chad** (1990-2010)
38. **Chile** (1990-2010)
39. **China** (1990-2010)
40. **Colombia** (1990-2010)
41. **Comoros** (1990-2010)
42. **Congo, Dem. Rep**. (Congo Kinshasa) (1990-2010)
43. **Congo, Republic** (Congo Brazzaville) (1990-2010)
44. *Cook Islands – deleted – no data*
45. **Costa Rica** (1990-2010)
46. **Croatia** (1991-2010)
47. **Cuba** (1990-2010)
48. **Cyprus** (1990-2010)
49. **Czech Republic** (1993-2010)
50. **Denmark** (1990-2010)
51. **Djibouti** (1990-2010)
52. **Dominica** (1990-2010)
53. **Dominican Republic** (1990-2010)
54. **Ecuador** (1990-2010)
55. **Egypt** (1990-2010)
56. **El Salvador** (1990-2010)
57. **Equatorial Guinea** (1990-2010)
58. **Eritrea** (1990-2010)
59. **Estonia** (1990-2010)
60. **Ethiopia** (1990-2010)
61. *Falkland Islands – deleted no data*
62. **Fiji** (1990-2010)
63. **Finland** (1990-2010)
64. **France** (1990-2010)
65. *French Guiana – deleted*
66. **Gabon** (1990-2010)
67. **Gambia** (1990-2010)
68. **Georgia** (1991-2010)
69. **Germany** (1990-2010)
70. **Ghana** (1990-2010)
71. *Gibraltar – deleted - no data*
72. **Great Britain** (1990-2010)
73. **Greece** (1990-2010)
74. **Grenada** (1990-2010)
75. *Guateloupe – deleted no data*
76. **Guatemala** (1990-2010)
77. **Guinea** (1990-2010)
78. **Guinea-Bissau** (1990-2010)
79. **Guyana** (1990-2010)
80. **Haiti** (1990-2010)
81. **Honduras** (1990-2010)
82. *Hong Kong, China - deleted*
83. **Hungary** (1990-2010)
84. **Iceland** (1990-2010)
85. **India** (1990-2010)
86. **Indonesia** (1990-2010)
87. **Iran** (1990-2010)
88. **Iraq** (1990-2010)
89. **Ireland** (1990-2010)
90. **Israel** (1990-2010)
91. **Italy** (1990-2010)
92. **Ivory Coast** (1990-2010)
93. **Jamaica** (1993-2010)
94. **Japan** (1990-2010)
95. **Jordan** (1990-2010)
96. **Kazakhstan** (1991-2010)
97. **Kenya** (1990-2010)
98. **Kiribati** (1990-2010)
99. **Korea (S)** (1990-2010)
100. **Korea, Dem. Rep. (N)** (1990-2010)
101. *Kosovo – deleted, no data*
102. **Kuwait** (1990-2010)
103. **Kyrgyz Republic** (1991-2010)
104. **Laos** (1990-2010)
105. **Latvia** (1991-2010)
106. **Lebanon** (1990-2010)
107. **Lesotho** (1990-2010)
108. **Liberia** (1990-2010)
109. **Libya** (1990-2010)
110. **Lithuania** (1990-2010)
111. **Luxembourg** (1990-2010)
112. **Macao** (1990-2004)
113. **Macedonia** (1991-2010)
114. **Madagascar** (1990-2010)
115. **Malawi** (1990-2010)
116. **Malaysia** (1990-2010)
117. **Maldives** (1990-2010)
118. **Mali** (1990-2010)
119. **Malta** (1990-2004)
120. *Martinique – deleted no data*
121. **Marshall Islands** (1990-

2010)
122. **Mauritania** (1990-2010)
123. **Mauritius** (1990-2010)
124. **Mexico** (1990-2010)
125. **Micronesia,** Fed. States (1990-2010)
126. **Moldova** (1991-2010)
127. **Mongolia** (1990-2010)
128. **Montenegro** (2000-2010)
129. Montserrat – deleted, no data
130. **Morocco** (1990-2010)
131. **Mozambique** (1990-2010)
132. **Myanmar** (1990-2010)
133. **Namibia** (1990-2010)
134. Nauru - deleted – no data
135. **Nepal** (1990-2010)
136. **Netherlands** (1990-2010)
137. New Caledonia – deleted – no data
138. **New Zealand** (1990-2010)
139. **Nicaragua** (1990-2010)
140. **Niger** (1990-2010)
141. **Nigeria** (1990-2010)
142. Niue - deleted – no data
143. North Ireland – deleted – no data
144. Northern Marianas – deleted – no data
145. **Norway** (1990-2010)
146. **Oman** (1990-2010)
147. **Pakistan** (1990-2010)
148. **Palau** (1990-2010)
149. **Panama** (1990-2010)
150. **Papua New Guinea** (1990-2010)
151. **Paraguay** (1990-2010)
152. **Peru** (1990-2010)
153. **Philippines** (1990-2010)
154. **Poland** (1990-2010)
155. **Portugal** (1990-2010)
156. Puerto Rico – deleted, no data
157. **Qatar** (1990-2005)
158. **Romania** (1991-2010)
159. **Russia** (199-2010)
160. **Rwanda** (1990-2010)
161. **Samoa** (1990-2010)
162. **Sao Tome & Principe** (1990-2010)
163. **Saudi Arabia** (1990-2010)
164. **Senegal** (1990-2010)
165. **Serbia** (1994-2010)
166. **Seychelles** (1990-2010)
167. **Sierra Leone** (1990-2010)
168. **Singapore** (1990-2005)
169. **Slovak Republic** (1993-2007)
170. **Slovenia** (1991-2007)
171. **Solomon Islands** (1990-2010)
172. **Somalia** (1990-2010)
173. **South Africa** (1990-2010)
174. **Spain** (1990-2010)
175. **Sri Lanka** (1990-2010)
176. St. Helena – deleted, no data
177. **St. Kitts-Nevis** (1990-2010)
178. **St. Lucia** (1990-2010)
179. **St.Vincent & Grenadines** (1990-2010)
180. **Sudan** (1990-2010)
181. **Suriname** (1990-2010)
182. **Swaziland** (1990-2010)
183. **Sweden** (1990-2010)
184. **Switzerland** (1990-2010)
185. **Syria** (1990-2010)
186. Taiwan – deleted, no data
187. **Tajikistan** (1990-2010)
188. **Tanzania** (1990-2010)
189. **Thailand** (1990-2010)
190. **Timor-Leste** (1990-2010)
191. **Togo** (1990-2010)
192. Tokelau – deleted, no data
193. **Tonga** (1990-2010)
194. **Trinidad and Tobago** (1990-2010)
195. **Tunisia** (1990-2010)
196. **Turkey** (1990-2010)
197. **Turkmenistan** (1991-2010)
198. Turks and Caicos Islands – deleted, no data
199. **Tuvalu** (1990-2010)
200. **Uganda** (1990-2010)
201. **Ukraine** (1991-2010)
202. **United Arab Emirates** (1990-2010)
203. **United States** (1990-2010)
204. **Uruguay** (1990-2010)
205. **Uzbekistan** (1990-2010)
206. **Vanuatu** (1990-2010)
207. **Venezuela** (1990-2010)
208. **Vietnam** (1990-2010)
209. Wallis & Futuna- deleted, no data
210. **West Bank & Gaza Strip** (1990-2010)
211. **Yemen** (1990-2010)
212. Yugoslavia - deleted, no data
213. **Zambia** (1990-2010)
214. **Zimbabwe** (1990-2010)

APPENDIX 2: DESCRIPTIVE STATISTICS OF ALL VARIABLES WITH AND WITHOUT INTERPOLATED VALUES

Note: Variables with * at the end of their name or "2" at the end of their code name have been linearly interpolated.

Variable	Code Name	Obs	Mean	Std. Dev.	Min	Max	Source
Year	Year	3895			1990	2010	
Country		3895			1	214**	
Dependent							
Terrorism	Terror1	3895	13.25623	59.31355	0	1155	GTD
Aid							
Total Aid	TotalAid1	3895	309.8997	715.3978	-943.15	22057.09	OECD
Sectoral Aid							
Education Aid	EDUCATION	3895	4.53e+07	1.06e+08	0	1.48e+09	AidData
Health Aid	HEALTH	3895	4.58e+07	2.31e+08	0	1.17e+10	AidData
Social Aid	SOCIAL	3895	7.56e+07	2.11e+08	0	3.31e+09	AidData
Eco Growth (Total)	ECOGRWTH	3895	3.52e+08	9.72e+08	0	3.08e+10	AidData
MicroEco Growth	ECOSUB1	3895	2.58e+08	8.03e+08	0	3.04e+10	AidData
Eco Opportunity	ECOSUB2	3895	2527162	1.72e+07	0	4.54e+08	AidData
Production Sectors	ECOSUB3	3895	9.04e+07	2.50e+08	0	5.34e+09	AidData
Development Aid	ECOSUB4	3895	2.48e+08	1.57e+09	0	5.16e+10	AidData
Governance	GOVRNCE	3895	4.75e+07	1.53e+08	0	2.16e+09	AidData
Peace/Security Aid	PEACESEC	3895	5473496	3.27e+07	0	9.98e+08	AidData
Unallocated	UNALLOCATED	3895	5624200	3.57e+07	0	1.55e+09	AidData
Poverty							
GDP per Capita	GDPCap	3771	7444.268	12284.37	64.81015	112028.5	World Bank
GDP per Capita*	GDPCap2	3798	7405.021	12252.94	64.81015	112028.5	
HDI	HDI	1311	.6466049	.1661818	.216	.939	UNDP
HDI*	HDI2	3161	.6326901	.1688406	.216	.939	
Grievances							
EDUCATION							
Primary School Enroll	GEduc4	3192	99.461	18.47421	19.86796	161.1266	World Bank
Primary School Enroll*	GEduc4x2	3598	99.04305	19.45871	18.36994	171.0697	
Secondary School Enroll	GEduc2	2693	72.03179	31.90238	4.81315	162.3487	World Bank
Secondary School Enroll*	GEduc2x2	3493	67.89053	32.69088	4.81315	162.3487	
Tertiary School Enroll	GEduc3	2369	27.94467	23.27368	.09376	117.8914	World Bank
Tertiary School Enroll*	GEduc3x2	3189	23.89545	22.13872	.09376	117.8914	
Repeaters, secondary	GEduc5	1680	7.43178	7.490746	.00424	41.89994	World Bank
Repeaters, secondary*	GEduc5x2	2759	8.423078	7.967225	.00424	41.89994	
Public Spending Education	GEduc9	1918	4.669572	2.157398	.57419	44.33398	World Bank
Public Spending Education*	GEduc9x2	2885	4.637234	2.685703	.57419	44.33398	
HEALTH							
Health Expense per Cap	GHealth1	2886	605.7896	1202.72	1.798486	8694.291	World Bank
Health Expense per Cap*	GHealth1x2	2886	605.7896	1202.72	1.798486	8694.291	
Life Expectancy	GHealth3	3781	66.49613	10.12533	26.76378	85.16341	World Bank
Life Expectancy*	GHealth3x2	3830	66.57186	10.08698	26.76378	85.16341	
Undernourished	GHealth4	2444	20.65953	15.16399	5	77	World Bank
Undernourished*	GHealth4x2	2444	20.65953	15.16399	5	77	
SOCIAL							
Improved Sanitation	GSocial2	3646	66.71105	31.55377	2.4	100	World Bank
Improved Sanitation*	GSocial2x2	3646	66.71105	31.55377	2.4	100	
Improved Water	GSocial3	3718	82.43854	19.32709	4.8	100	World Bank
Improved Water*	GSocial3x2	3718	82.43854	19.32709	4.8	100	
Scientific/Technical Articles	GSocial6	3553	3606.442	16540.97	.1	212883	World Bank
Scientific/Technical Articles*	GSocial6x2	3678	3483.915	16270.5	.1	212883	

MICROGROWTH							
Income Lowest 20%	GMicroG5	770	5.741286	2.275572	.01	11.12	World Bank
Income Lowest 20%*	GMicroG5x2	1684	5.953328	2.114239	.01	11.12	
Household consumption	GMicroG7	3400	1.36e+11	6.27e+11	1.55e+07	1.02e+13	World Bank
Household consumption*	GMicroG7x2	3445	1.34e+11	6.23e+11	1.55e+07	1.02e+13	
Inflation, consumer prices	GMicroG9	3646	43.27043	607.2372	-33.20603	24411.03	World Bank
Inflation, consumer prices*	GMicroG9x2	3656	43.32893	606.4436	-33.20603	24411.03	
ECO OPPORTUNITY							
Total unemployment	GUnempl1	3379	9.03211	6.339844	.3	39.3	World Bank
Total unemployment*	GUnempl1x2	3379	9.03211	6.339844	.3	39.3	
Youth unemployment	GUnempl3	3379	17.73294	11.41404	.7	71.9	World Bank
Youth unemployment*	GUnempl3x2	3379	17.73294	11.41404	.7	71.9	
Long-term unemployment	GUnempl5	1008	33.30833	18.62888	.6	86.5	World Bank
Long-term unemployment*	GUnempl5x2	1099	34.2353	18.89451	.6	86.5	
PRODUCTION							
Agriculture, employment	GAgricltr	1886	19.49552	18.36088	.1	92.2	World Bank
Agriculture, employment*	GAgricltr2	2386	22.87211	21.35177	.1	92.2	
Industry, employment	GIndustry	1890	23.74028	7.282094	2.1	48.9	World Bank
Industry, employment*	GIndustry2	2388	22.64763	8.151797	2.1	48.9	
Services, employment	GServices	1890	55.87118	15.4253	5.6	89.8	World Bank
Services, employment*	GServices2	2388	53.43347	17.08679	5.6	89.8	
DEVELOPMENT							
Food imports	GFoodImp	2835	13.91202	7.667124	.473915	62.41602	World Bank
Food imports*	GFoodImp2	3284	14.68339	8.03132	.473915	62.41602	
Domestic Savings	GDomSav	3495	5.19e+10	2.09e+11	-7.37e+09	3.08e+12	World Bank
Domestic Savings*	GDomSav2	3537	5.13e+10	2.08e+11	-7.37e+09	3.08e+12	
PEACE/SECURITY							
Political Stability	PolStability	2179	-.128201	.9971124	-3.32	1.67	World Bank
Political Stability*	PolStability2	2728	-.126393	.9955464	-3.32	1.67	
Military Budget	MilBudGDP	2893	2.602799	3.523946	.0349045	117.3877	World Bank
Military Budget*	MilBudGDP2	3002	2.605507	3.545436	.0349045	117.3877	
GOVERNANCE							
Political Competition	PolCompt	3226	6.433664	3.355907	0	10	Polity IV
Political Competition*	PolCompt2	3301	6.378219	3.352168	0	10	
Control of Corruption	CorrupControl	2185	-.0947094	.9953096	-2.06	2.59	World Bank
Control of Corruption*	CorrupControl2	2737	-.0874808	.9964834	-2.06	2.59	
Control							
Population Density	PopDensity	3830	147.0207	398.6395	1.41	6191.29	World Bank
Population Density*	PopDensity2	3833	146.9843	398.4855	1.41	6191.29	
Political Competition	*PolCompt*	3226	6.433664	3.355907	0	10	Polity IV
Political Competition*	*PolCompt2*	3301	6.378219	3.352168	0	10	
Regime Type	RegimeT	3284	2.813946	6.752248	-10	10	Polity IV
Regime Type*	RegimeT2	3308	2.799123	6.738745	-10	10	
Control of Corruption	*CorrupControl*	2185	-.0947094	.9953096	-2.06	2.59	World Bank
Control of Corruption*	*CorrupControl2*	2737	-.0874808	.9964834	-2.06	2.59	
Ethnic Fractionalization	FracEthnic	3744	.4383097	.2585967	0	.930175	Different

**Country: Each country was assigned a number in order to transform it from a string to an interval variable. Initially, there were 214 countries and territories. However, due to lack of data, 24 countries and territories were subsequently omitted which did not change the interval numbering, but reduced the number of countries and territories from the original 214 to 190. (The following were omitted: Anguilla, Aruba, Cayman Islands, Cook Islands, Falkland Islands, French Polynesia, Gibraltar, Guadeloupe, Hong-Kong, Kosovo, Martinique, Montserrat, Nauru, New Caledonia, Niue, Northern Ireland, Northern Marianas, St Helena, Taiwan, Tokelau, Wallis and Futuru, Yugoslavia, Puerto Rico, Turks and Cacos.)

APPENDIX 3 CODEBOOK: EMPLOYED VARIABLES

DEPENDENT VARIABLE:

TERRORISM (Terror1) yearly count of events *Source:* GTD http.www.start.umd.edu/gtd/

Terrorism is defined as "the threatened or actual use of illegal force and violence by a non state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" (START-GTD Codebook 2013:7). An incident is considered a terror event if it fulfills at least 2 of the 3 preconditions as defined in the GTD codebook (p.8) and as discussed in this dissertation on page…. Thus, the following were excluded: Any event coded as 1 in doubter category (indicating that there was doubt as to whether the incident was an act of terrorism), 1=Insurgency/Guerilla Action, 2= Other Crime Type, 3= Inter/Intra-Group Conflict, and 4= Lack of Intentionality.

INDEPENDENT VARIABLES

TOTAL AID (TotalAid1) in USD Millions (current prices) *Source:* OECD http://stats.oecd.org/qwids/

The sum of all aid flows (actual disbursements) provided to countries that are concessional in character and convey a grant element of at least twenty-five per cent. Total Aid includes all aid given by DAC and Non-DAC Countries as well as b Multilateral Agencies (For a complete list of aid donors, see Appendix 4A).

POVERTY *(2 measures)*

1. **Gross Domestic Product** (GDP/Cap) in current US$ *Source:* the World Bank http://databank.worldbank.org/data/

   GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.

2. **Human Development Index** (HDI) 0(low)-1(high) *Source:* the UNDP http://hdr.undp.org/en/content/human-development-index-hdi

   The Human Development Index (HDI) is a summary measure of average achievement in three key dimensions of human development: a long and healthy life, knowledge, and standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions and it ranges from low (close to 0) to high (close to 1) human development. Detailed methodology is available on the UNDP's website.

SECTORAL AID *(10 measures, 4 categories)* in USD Millions (constant prices) *Source:* AIDData http://aiddata.org

The yearly sum of all aid commitments provided to a country for specific purposes. Those purposes are divided into 4 general categories: investing in people, promoting economic growth, governing justly and democratically, and peace and security. For further details, see Appendix 5B.

Investing in People Aid: included sectors are: **(Expectation 2)**

EDUCATION
HEALTH
SOCIAL SERVICES

Promoting Economic Growth Aid: included sectors are: **(Expectation 2)**

MACROECONOMIC GROWTH (ECOSUB1)
ECONOMIC OPPORTUNITY (ECOSUB2)
PRODUCTION SECTORS (ECOSUB3)
DEVELOPMENT/ASSISTANCE AID (ECOSUB4)

Governance/Governing Justly and Democratically Aid: included sectors are the rule of law and human rights, good governance, political competition, civil society and participation in government decision making. **(Expectation 3)**

GOVERNANCE

Peace and Security Aid: sectors included here are military budget (counter-terrorism, combating WMD, security reform) and regional/local political stability. **(Expectation 3)**

PEACE AND SECURITY

Aid that has not been given a specific purpose has been included in the following category:

UNALLOCATED

CONTROL VARIABLES

POPULATION DENSITY People per squared kilometer of land area *Source:* the World Bank

http://databank.worldbank.org/data/

Population density is midyear population divided by land area in square kilometers. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. Land area is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes.

POLITICAL COMPETITION (0 = highly regulated/least, 10 = highly competitive/most) *Source:* Polity IV http://www.systemicpeace.org/polity/polity4.htm

Political Competition is a composite index raging from 0 (highly regulated/least) to 10 (highly competitive/most competitive). It is comprised of two component variables: Regulation of Participation (or PARREG divided in 5 categories ranging from unregulated to regulated political participation) and Competiveness of Participation (or PARCOMP that includes 5 categories ranging from repressed to competitive). Detailed methodology is available online in the Polity IV Dataset manual (p. 26-29).

CORRUPTION CONTROL -2.5 (weak) to + 2.5 (strong) *Source:* the World Bank http://databank.worldbank.org/data/

Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Index ranges from approximately -2.5 (weak) to 2.5 (strong) governance control of corruption.

ETHNIC FRACTIONALIZATION 0 (low) to 1 (high) *Different Sources* http://www.nsd.uib.no/macrodataguide (under Minorities)

- The Ethnic Fractionalization Index measures the degree of ethnic heterogeneity in a country and ranges from 0 (low) to 1 (high) fractionalization. Indices based on population data are collected from

Encyclopaedia Britannica, CIA's World Factbook, Levinson's Ethnic Groups Worldwide, and Minority Rights Group International's World Directory of Minorities (and Mozaffar & Scarrit, 1999 for selected African countries). In most cases the primary source is national censuses. The methodology is discussed in detail by Alesina et al. (2003). The Fractionalization dataset was compiled by Alberto Alesina and associates, and measures the degree of ethnic, linguistic and religious heterogeneity in various countries. The dataset was used in Alesina et al. (2003) to test the effects of fractionalization on the quality of institutions and economic growth. The Ethnic Fractionalization Index is also available on the Quality of Government dataset at http://qog.pol.gu.se/data/datadownloads/qogstandarddata.

REGIME TYPE -10 (hereditary monarchy) to +10 (consolidated democracy) POLITY IV www.systemicpeace.org/polity/polity4.htm

Regime types uses the "Polity Score" compiled by the POLITY IV database which captures this regime authority spectrum on a 21-pont scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy).The Polity scheme consists of six component measures that record key qualities of of executive recruitment, constraints on executive authority and political competition. It also records changes in the institutionalized qualities of governing authority. For this study, I used Polity2 variable – a revised polity score version of the original Polity variable which modifies the "standardized authority scores" (i.e., -66, -77, and -88) to conventional polity scores (i.e. within the range -10 to +10).

INTERACTIVE VARIABLES: GRIEVANCES

Data from the World Bank unless otherwise noted. Assigned codes in parentheses.

EDUCATION GRIEVANCES

Primary School Enrollment (% gross) (GEduc4)

Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music. Normally starting between the ages of 5-7, according to the International Standard Classification of Education (ISCED), primary education is the first stage of basic education.

Secondary School Enrollment (% gross) (GEduc2)

Total is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age. Secondary education is the second stage of basic education with more specialized education, or upper secondary education, typically beginning at age 15 or 16 (ISCED). In some instances, it can exceed 100% due to the inclusion of over-aged and under-aged students because of early or late school entrance and grade repetition.

Tertiary School Enrollment (% gross) (GEduc3)

Total is the total enrollment in tertiary education (ISCED levels 5 and 6), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving. Tertiary education may comprise academically and/or practically oriented/occupationally specific post-secondary degree programs all the way to advanced research qualifications (e.g. PhD).

Repeaters, secondary, total (% of total enrollment) (GEduc5) ONLY IN APPENDIX

Repeaters in secondary school are the number of students enrolled in the same grade as in the previous year, as a percentage of all students enrolled in secondary school.

Public spending on education, total (% of GDP) (GEduc9)

Public expenditure on education consists of current and capital government spending on educational institutions (both public and private), education administration as well as subsidies for private entities (students/households and other privates entities).

HEALTH GRIEVANCES

Health Expenditure per Capita (current US$) (GHealth1)

Total health expenditure is the sum of public and private health expenditures as a ratio of total population. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. Data are in current U.S. dollars.

Life expectancy at birth, total (years) (GHealth3)

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.

Prevalence of undernourishment (% of population) (GHealth4)

Population below minimum level of dietary energy consumption (also referred to as prevalence of undernourishment) shows the percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously. For instance, data showing as 2.5 signifies a prevalence of undernourishment below 2.5%.

SOCIAL SERVICES GRIEVANCES

Improved sanitation facilities (% of population with access) (GSocial2)

Access to improved sanitation facilities refers to the percentage of the population using improved sanitation facilities. The improved sanitation facilities include flush/pour flush (to piped sewer system, septic tank, pit latrine), ventilated improved pit (VIP) latrine, pit latrine with slab, and composting toilet.

Improved water source (% of population with access) (GSocial3)

Access to an improved water source refers to the percentage of the population using an improved drinking water source. The improved drinking water source includes piped water on premises (piped household water connection located inside the user's dwelling, plot or yard), and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection).

Scientific and technical journal articles (number) (GSocial6)

Scientific and technical journal articles refer to the number of scientific and engineering articles published within a given year in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences.

Research and development expenditure (% of GDP) (GSocial7)

Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development.

ECONOMIC GROWTH GRIEVANCES *(4 categories):*

1. MICROGROWTH GRIEVANCES

Income share held by lowest 20% (% population) (GMicroG5)

Percentage share of income or consumption is the share that accrues to subgroups of population indicated by deciles or quintiles. Percentage shares by quintile may not sum to 100 because of rounding.

Household final consumption expenditure (current US$) (GMicroG7)

Household final consumption expenditure (formerly private consumption) is the market value of all goods and services, including durable products (such as cars, washing machines, and home computers), purchased by households. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings. It also includes payments and fees to governments to obtain permits and licenses. Here, household consumption expenditure includes the expenditures of nonprofit institutions serving households, even when reported separately by the country.

Inflation, consumer prices (annual % change)* **(GMicroG9)**

Inflation, as measured by the consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.

*values complemented by the IMF as reported by the Quality of Government Standard database (values very close)

2. ECONOMIC OPPORTUNITY GRIEVANCES

Total unemployment (% of total labor force) (modeled ILO estimate) (GUnempl1)

Unemployment refers to the share of the labor force that is without work but available for and seeking employment.

Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate) (GUnempl3)

Youth unemployment refers to the share of the labor force ages 15-24 without work but available for and seeking employment.

Long term unemployment (% of male unemployment) (GUnempl5) ONLY IN APPENDIX

Long-term unemployment refers to the number of people with continuous periods of unemployment extending for a year or longer, expressed as a percentage of the total unemployed

3. PRODUCTION SECTORS GRIEVANCES

Employment in agriculture (% of total employment) (GAgricltr)

Employees are people who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or pay in kind. Agriculture includes hunting, forestry, and fishing.

Employment in industry (% of total employment) (GIndustry)

Employees are people who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or pay in kind. Industry includes mining and quarrying (including oil production), manufacturing, construction, and public utilities (electricity, gas, and water).

Employment in services (% of total employment) (GServices)

Employees are people who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or pay in kind. Services include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services.

4. DEVELOPMENT ASSISTANCE GRIEVANCES

Food imports (% of merchandise imports) (GFoodImp)

Food comprises the commodities in Standard International Trade Classification or SITC sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds, oil nuts, and oil kernels).

Gross domestic savings (current US$) (GDomSav)

Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption). They can take negative values if the final consumption expenditures exceed actual savings.

PEACE AND SECURITY GRIEVANCES

Political Stability (-2.5 (weak) to 2.5 (strong)) (PolStability)

Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.
Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)

Military expenditure (% of GDP) (MilBud2)

Military expenditures data are derived from the NATO definition, which includes all current and capital expenditures on the armed forces, including peacekeeping forces; defense ministries and other government agencies engaged in defense projects, paramilitary forces, if those are judged to be trained and equipped for military operations; and military space activities. Such expenditures include military and civil personal, including retirement pensions of military personal and social services for personnel; operation and maintenance; procurement; military research and development; and military aid (in the military expenditures of the donor country).

GOVERNANCE GRIEVANCES

Corruption Control (-2.5 (weak) to 2.5 (strong)) (CorrupControl)

Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Index ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance on control of corruption.

Regime Openness (1=highest freedom, 7=lowest freedom) (RegimeO)

Regime Openness is the average of two composite measures: Political Rights (PR) and Civil Liberties (CL). Political Rights cover the electoral process, political pluralism and participation, the functioning of the government, and several additional discretionary political rights questions. Civil Liberties include the freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights. Each country is assigned a numerical rating from 1 to 7 for both political rights and civil liberties, with 1 representing the most free and 7 the least free. The ratings are determined

by the total number of points (up to 100) each country receives on 10 political rights questions and 15 civil liberties questions; countries receive 0 to 4 points on each question, with 0 representing the smallest degree and 4 the greatest degree of freedom. The average of the political rights and civil liberties ratings, known as the freedom rating, determines the overall status: Free (1.0 to 2.5), Partly Free (3.0 to 5.0), or Not Free (5.5 to 7.0). Detailed methodology is available on the Freedom House website. *Source:* Freedom House.

Political Competition (0 = highly regulated/least, 10 = highly competitive/most) (PolCompt)

This variable is a composite, concept variable combining information presented in two component variables: PARREG – regulation of participation depicted as 1-unregulated, 2-multiple identity, 3-sectarian, 4-restricted, 5-regulated; and PARCOMP – competitiveness of participation including 0-na, 1-repressed, 2-supressed, 3-factional, 4-transitional, 5-competitive. *Source:* Polity IV.

APPENDIX 4 **AID DONORS**

List of DAC countries, non-DAC countries, and Multilateral Agencies

DAC Countries (29 Countries)
Development Co-operation Directorate

Australia
Austria
Belgium
Canada
Denmark
Finland
France
Germany
Greece
Iceland
Ireland
Italy
Japan
Korea
Luxembourg
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom
United States

Non-DAC Countries
OECD Non-DAC Countries Grouping

Czech Republic
Hungary
Israel
Poland
Slovak Republic
Slovenia
Turkey
Bulgaria
Chinese Taipei
Cyprus
Estonia
Kuwait (KFAED)
Latvia
Liechtenstein
Lithuania
Malta
Romania
Russia
Saudi Arabia
Thailand
United Arab Emirates

Multilateral Agencies

AfDB (African Dev.Bank)
AfDF (African Dev.Fund)
Arab Fund (AFESD)
AsDB (Asian Dev.Bank)
AsDB Special Funds
CarDB (Carribean Dev. Bank)
EBRD
EU Institutions
GAVI
GEF
Global Fund
IAEA
IBRD
IDA
IDB
IDB Spec. Fund
IFAD
IFC
IMF Trust Fund
IMF (Concessional Trust Funds)
MONTREAL PROTOCOL
Nordic Dev. Fund
OFID
OSCE
UNAIDS
UNDP
UNECE
UNEP
UNFPA
UNHCR
UNICEF
UNPBF
UNRWA
UNTA
WFP
WHO

APPENDIX 5 **SECTORAL AID** (with codes) **AND CORESPONDING GRIEVANCES**

General Category	SECTORAL AID with Included Codes	Corresponding Grievances:
Investing in People Aid (EXPECATION II) 11000, 11220, 11320, 11420 43081, 43082	**Education** all **11000**… - Basic education - Secondary education - Post-secondary education - System-wide improvements (such as education policy development, facilities, training, research) AND **43081**– Multisector education/training and **43082** – Research/Scientific Institutions	**Education:** - Total primary completion rate (% of primary age group) - Secondary school enrollment (% gross) - Tertiary school enrollment (% gross) - Public Spending on Education - Secondary School Repeaters
12000, 13000	**Health** all 12000 - Basic and specialized medical services, - basic health and nutrition - infectious disease control, **all 13000** - reproductive healthcare, family planning, and control of sexually transmitted diseases. - health-specific policy development, education, training, and research.	**Health:** - health expenditure per capita (current US$), - Life expectancy at birth (years) - Prevalence of undernourishment (% of population)
14000 16010, 16030, 16040, 16050, 16060, 16081	**Social Services** - **all 14000** - water supply and sanitation **all 16000** - social infrastructure, welfare services (16010) and housing (16030, 16040) general social aid (16050) culture and recreation (16060), social services (16030, 16050, 16081)	**Social Services** - Improved sanitation facilities (% of population with access) - Improved water source (% of population with access - Scientific and Technical Journal Articles - Research and Development Expenditure (% of GDP)
Promoting Economic Growth (EXPECATION II) 21000, 22000, 23000, 24000, 25000	**Microeconomic Growth** - Eco development – economic infrastructure and Services (all 21000, 22000, 23000, 24000) - Business and private enterprises (25000) - Urban, rural Development (all 43030) - Rural Development (all 43040) - Non-agricultural alternative	**Macroeconomic Growth** - Income share held by lowest 20% - Gross domestic savings (current US$) - Household final consumption expenditure (current US$) - Inflation, consumer prices (annual %)

	development (all 43050)	
16020 42000, 43030, 43040, 43050	**Economic Opportunity** - Employment policy and services (16020) - Women (all 42000)	**Economic Opportunity** - Total unemployment (% of total labor force) (modeled ILO estimate) - Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate) - Long term unemployment (% of male unemployment)
31000, 32000, 33000	**Production Sectors** - Agriculture, forestry, fishing (all 31000) - Industry, Mining, Construction (all 32000) - Trade Policy and Regulation and tourism (all 33000)	**Production Sectors** - Employment in agriculture (% of total employment) - Employment in industry (% of total employment) - Employment in services (% of total employment)
51000, 52000, 53000 60010, 60020, 60030, 60040, 60061/2/3	**Development Aid** - General (51000) - Food support (52000) - Import and Commodity Assistance (53000) - Debt Assistance (60010, 60020, 60030, 60040	**Development Aid** - food imports (% of merchandise imports) - Gross domestic savings (current US$)
Peace and Security Aid (H3) (EXPECATION III) 15200	**Counter-Terrorism** - Conflict prevention and resolution – all 15200 **Combating WMD** - Arms control **Security Reform** - Security system management - Civilian peace-building efforts - Land mine clearance - Reintegration of former soldiers	**Peace and Security:** - Military Budget (World Bank) - Political Stability (Polity IV)
Governance/Governing Justly and Democratically Aid (H3) (EXPECATION III) 15000 15100	**Rule of law** - Judicial Development (15130) **Good governance** - Gov administration (15140) **Strengthening Civil Society** - General (all 15100) - Strengthening civil Society (all 15150)	**Rule of Law** - Corruption Control (World Bank) **Participation in Government Decision Making** - Political Competition (Polity IV)

APPENDIX 6 EXPECTATION I - SUMMARY STATISTICS

Expectation I, Summary Statistics.

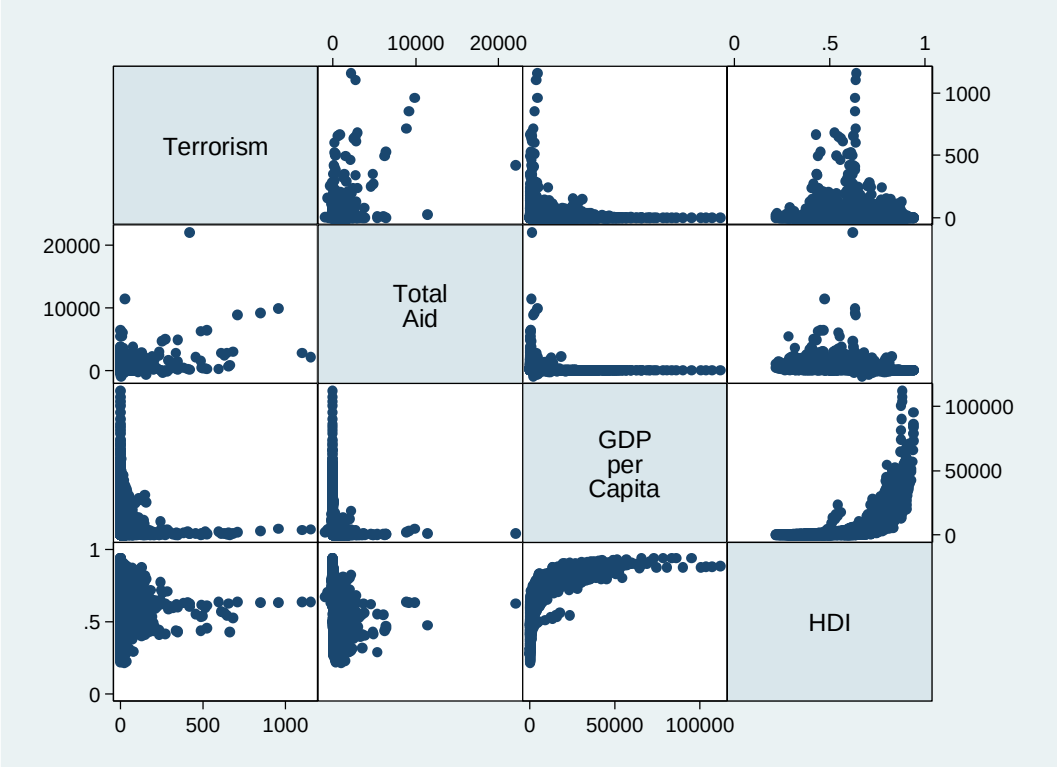
Variable	Obs	Mean	St.Dev.	Min	Max
Total Terrorist Incidents	3895	13.25623	59.31355	0	1155
Total Aid	3895	309.8997	715.3978	-943.15	22057.09
GDP per Capita*	3798	7405.021	12252.94	64.81015	112028.5
Human Development Index*	3161	.6326901	.1688406	.216	.939
Population Density*	3833	146.9843	398.4855	1.41	6191.29
Political Competition*	3301	6.378219	3.352168	0	10
Corruption Control*	2737	-.0874808	.9964834	-2.06	2.59
Ethnic Fractionalization	3744	.4383097	.2585967	0	.930175

**linearly interpolated for missing variables*

APPENDIX 7 PEARSON'S CORRELATION COEFFICIENTS

	Terrorism	Total Aid	GDP per Cap	HDI
Terrorism	1.0000			
Total Aid	0.4015	1.0000		
GDP per Cap	-0.0744	-0.2356	1.0000	
HDI	-0.0454	-0.3058	-0.3058	1.0000

MATRIX CORRELATION GRAPH



APPENDIX 8 PLOTS WITH COUNTRIES' NAMES

Figure 8A. Terror Events per Year (with countries)

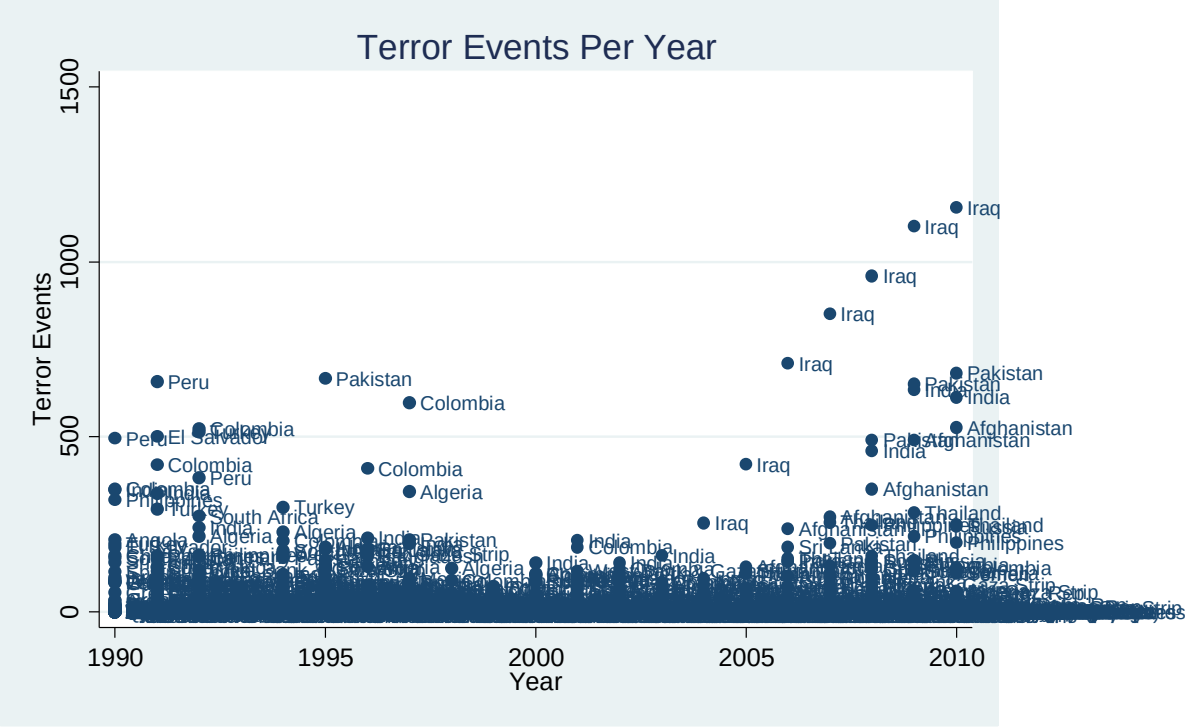
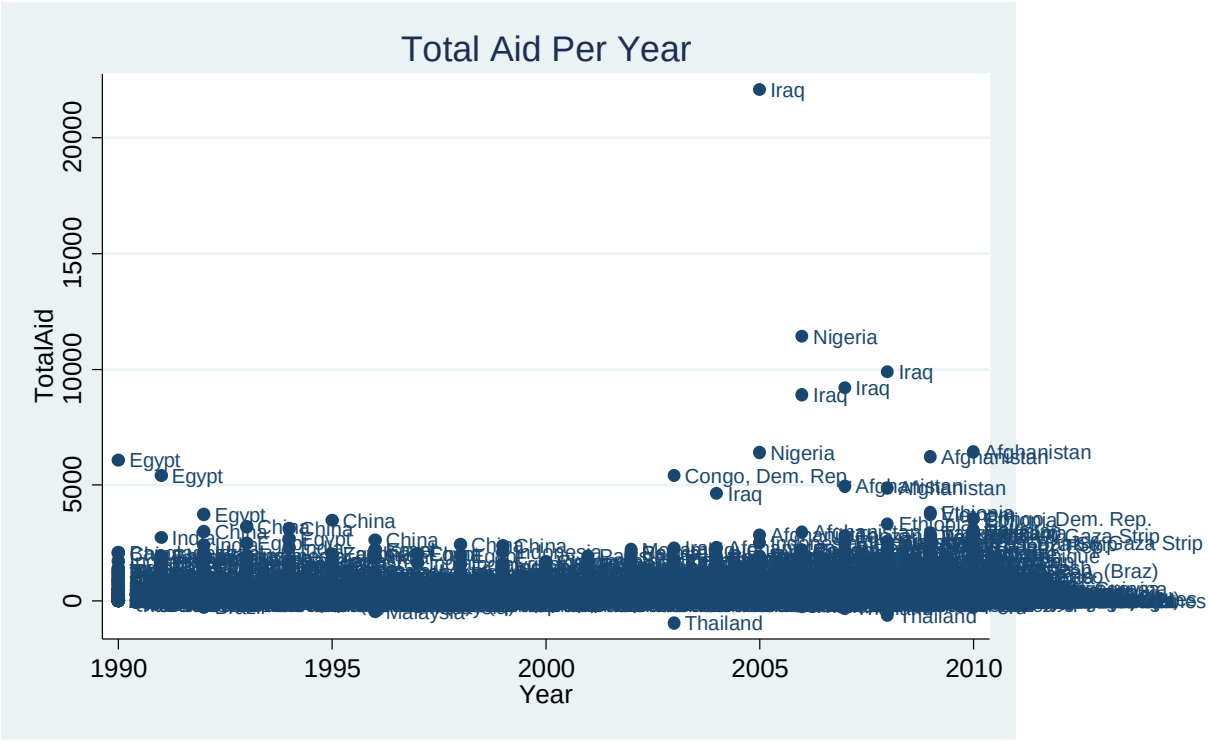
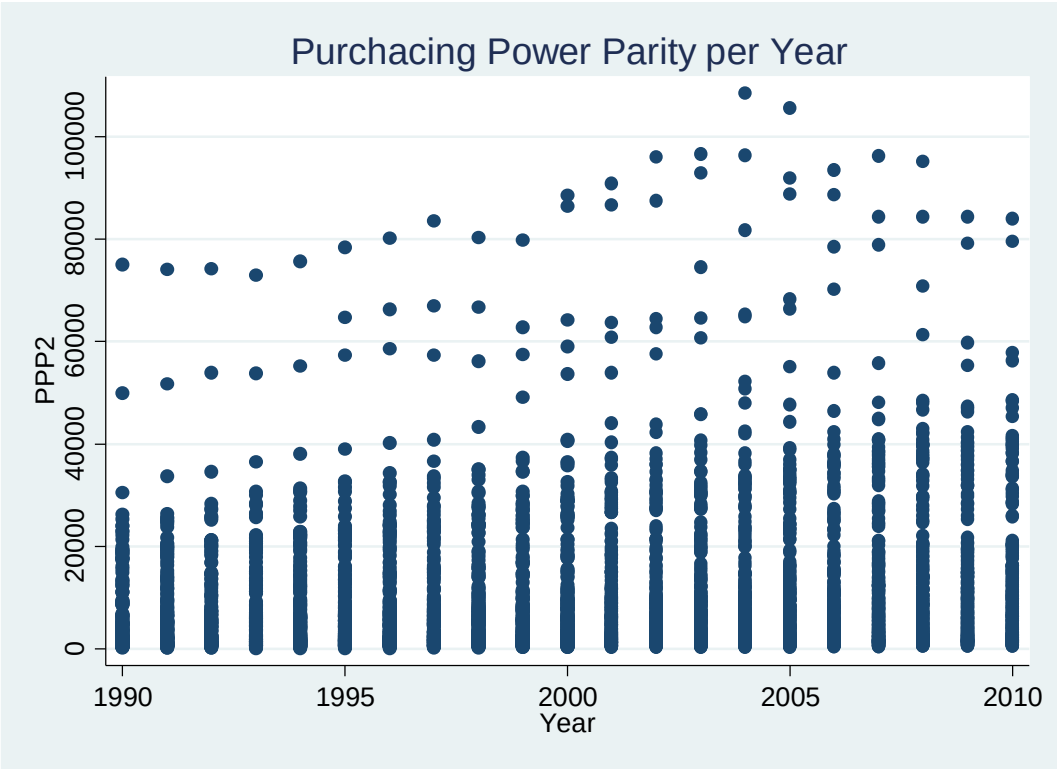


Figure 8B. Total Aid per Year (with countries)



8C. GDP per capita based on Purchasing Power Parity (PPP).



APPENDIX 9A **MODEL 1: Total Aid, Poverty, and Terrorism**
NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Poverty Variables: GDP per Capita (GDP/Cap2) and Human Development Index (HDI2)
Interactive variables between Total Aid and the two measures of poverty are indicated by x.

```
Negative binomial regression                    Number of obs   =       1936
                                                Wald chi2(9)    =     243.22
Dispersion           = mean                     Prob > chi2     =     0.0000
Log pseudolikelihood = -4255.6857               Pseudo R2       =     0.0353
```

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
TotalAid1 L1.	.0010143	.0007721	1.31	0.189	-.000499	.0025275
GDPCap2 L1.	-.0000171	9.17e-06	-1.87	0.062	-.0000351	8.47e-07
HDI2 L1.	5.717783	.9995623	5.72	0.000	3.758677	7.676889
xTotalAidGDPCap2 L1.	-5.74e-08	3.34e-08	-1.72	0.085	-1.23e-07	8.00e-09
xTotalAidHDI2 L1.	-.0000936	.0014621	-0.06	0.949	-.0029592	.002772
PopDensity3 L1.	.0005874	.0008315	0.71	0.480	-.0010423	.0022172
PolCompt2 L1.	.1276315	.0349689	3.65	0.000	.0590936	.1961693
CorrupControl2 L1.	-1.029747	.1229802	-8.37	0.000	-1.270784	-.7887107
FracEthnic L1.	.5898502	.4295534	1.37	0.170	-.252059	1.431759
_cons	-3.175285	.7402107	-4.29	0.000	-4.626071	-1.724499
/lnalpha	1.924313	.043217			1.839609	2.009017
alpha	6.850442	.2960556			6.294079	7.455984

	Model 1b *With Interactives*
Total Aid	0.00101 (0.000772)
GDP/Capita	-0.0000171 (0.00000917)
HDI	5.718*** (1.000)
xTotalAid*GDP/Capita	-5.74e-08 (3.34e-08)
xTotalAid*HDI	-0.0000936 (0.00146)
Population Density	0.000587 (0.000832)
Political Competition	0.128*** (0.0350)
Corruption Control	-1.030*** (0.123)
Ethnic Fractionalization	0.590 (0.430)
Constant	-3.175*** (0.740)
lnalpha	
Constant	1.924*** (0.0432)
Observations	1936
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Standard Robust Errors in parentheses.

APPENDIX 9B **MODEL 1: TOTAL AID, POVERTY, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED - INCIDENCE-RATE RATIOS

Poverty Variables: GDP per Capita (GDP/Cap2) and Human Development Index (HDI2)
Interactive variables between Total Aid and the two measures of poverty are indicated by ***x***.

NO INTERACTIVES

Negative binomial regression — Number of obs = 1936
Wald chi2(7) = 240.15
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4256.9949 — Pseudo R2 = 0.0351

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
TotalAid1 L1.	1.000849	.0001565	5.43	0.000	1.000543	1.001156
GDPCap2 L1.	.9999839	8.51e-06	-1.90	0.058	.9999672	1.000001
HDI2 L1.	256.601	212.7988	6.69	0.000	50.5078	1303.642
PopDensity3 L1.	1.000711	.000892	0.80	0.425	.9989642	1.002461
PolCompt2 L1.	1.140276	.0397205	3.77	0.000	1.065024	1.220846
CorrupControl2 L1.	.3548465	.0432568	-8.50	0.000	.2794323	.4506136
FracEthnic L1.	1.948107	.8650381	1.50	0.133	.8159151	4.651367
_cons	.0434208	.0296976	-4.59	0.000	.0113637	.1659112
/lnalpha	1.92655	.0432431			1.841795	2.011305
alpha	6.865782	.2968975			6.307851	7.473062

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1936
Wald chi2(9) = 243.22
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4255.6857 — Pseudo R2 = 0.0353

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
TotalAid1 L1.	1.001015	.0007729	1.31	0.189	.9995012	1.002531
GDPCap2 L1.	.9999829	9.17e-06	-1.87	0.062	.9999649	1.000001
HDI2 L1.	304.2297	304.0966	5.72	0.000	42.89164	2157.897
xTotalAidGDP~2 L1.	.9999999	3.34e-08	-1.72	0.085	.9999999	1
xTotalAidHDI2 L1.	.9999064	.0014619	-0.06	0.949	.9970451	1.002776
PopDensity3 L1.	1.000588	.000832	0.71	0.480	.9989582	1.00222
PolCompt2 L1.	1.136134	.0397294	3.65	0.000	1.060875	1.216733
CorrupControl2 L1.	.3570972	.0439159	-8.37	0.000	.2806115	.4544303
FracEthnic L1.	1.803718	.7747933	1.37	0.170	.7771989	4.186058
_cons	.0417822	.0309276	-4.29	0.000	.0097932	.1782624
/lnalpha	1.924313	.043217			1.839609	2.009017
alpha	6.850442	.2960556			6.294079	7.455984

Total Aid: Exponentiation of .000849 (reported in Table IV, Model 1-1, p.) = 1.000849 (above, in Appendix 9B – NO INTERACTIVES)
or Rate = (1-1.000849) * 100 = -0.0849 or 0.08 --> ~0.1% increase of terror incidents

APPENDIX 9C MODEL 1: TOTAL AID, POVERTY, AND TERRORISM
NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Poverty Variables: GDP per Capita (GDP/Cap2) and Human Development Index (HDI2)
Interactive variables between Total Aid and the two measures of poverty are indicated by x.

	Model 1a *No Interactives*		Model 1b *With Interactives*
Total Aid	0.000847** (0.000269)	Total Aid	0.000338 (0.00123)
GDP/Capita	-0.0000212 (0.0000165)	GDP/Capita	-0.0000197 (0.0000176)
Human Development Index	4.902** (1.665)	Human Development Index	4.741* (1.895)
		xTotalAid*GDP/Capita	**-5.80e-08 (5.80e-08)**
		xTotalAid*HDI	**0.00111 (0.00234)**
Population Density	0.000519 (0.00195)	Population Density	0.000484 (0.00189)
Political Competition	0.129* (0.0622)	Political Competition	0.128* (0.0624)
Corruption Control	-0.889*** (0.223)	Corruption Control	-0.882*** (0.225)
Ethnic Fractionalization	0.234 (0.932)	Ethnic Fractionalization	0.257 (0.938)
Constant	-2.380*** (1.265)	Constant	-2.285 (1.336)
lnalpha Constant	1.878*** (0.0782)	lnalpha Constant	1.877*** (0.0386)
Observations Adjusted R^2	2086	Observations Adjusted R^2	2086

Standard Robust errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 9D **MODEL 1: TOTAL AID, POVERTY, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION - Coefficients

Poverty Variables: GDP per Capita (GDP/Cap2) and Human Development Index (HDI2)
Interactive variables between Total Aid and the two measures of poverty are indicated by x.

	No Interactives		*With Interactives*
Total Aid	0.000844**	Total Aid	0.000320
	(0.000266)		(0.00122)
GDP/Capita	-0.0000222	GDP/Capita	-0.0000207
	(0.0000164)		(0.0000175)
HDI	4.857**	HDI	4.685*
	(1.658)		(1.889)
		xTotalAid*GDP/Capita	-5.70e-08
			(5.86e-08)
		xTotalAid*HDI	0.00113
			(0.00232)
Population Density	0.000483	Population Density	0.000453
	(0.00189)		(0.00184)
Political Competition	0.129*	Political Competition	0.128*
	(0.0621)		(0.0624)
Corruption Control	-0.869***	Corruption Control	-0.862***
	(0.223)		(0.225)
Ethnic Fractionalization	0.217	Ethnic Fractionalization	0.244
	(0.927)		(0.934)
Constant	-2.315	Constant	-2.216
	(1.257)		(1.328)
inflate		inflate	
datadummy	-54.82***	datadummy	-54.73***
	(0.818)		(0.816)
Constant	27.89***	Constant	28.02***
	(0.758)		(0.759)
lnalpha		lnalpha	
Constant	1.868***	Constant	1.867***
	(0.0781)		(0.0781)
Observations	2086	Observations	2086
Adjusted R^2		Adjusted R^2	

Robust Standard Errors in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

Incidence-Rate Ratios – next page

APPENDIX 9D **MODEL 1: TOTAL AID, POVERTY, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Poverty Variables: GDP per Capita (GDP/Cap2) and Human Development Index (HDI2)
Interactive variables between Total Aid and the two measures of poverty are indicated by x.

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2086; Nonzero obs = 964; Zero obs = 1122
Inflation model = logit — Wald chi2(7) = 54.56
Log pseudolikelihood = -4747.53 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 156 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
TotalAid1	1.000844	.0002667	3.17	0.002	1.000321	1.001367
GDPCap2	.9999778	.0000164	-1.35	0.176	.9999456	1.00001
HDI2	128.6024	213.1788	2.93	0.003	4.991685	3313.223
PopDensity3	1.000483	.0018949	0.25	0.799	.9967759	1.004204
PolCompt2	1.137317	.0706482	2.07	0.038	1.006946	1.284566
CorrupControl2	.4195323	.0936273	-3.89	0.000	.2708957	.6497236
FracEthnic	1.242706	1.152452	0.23	0.815	.2018306	7.651556
_cons	.0987429	.1241308	-1.84	0.066	.0084033	1.160273
inflate						
datadummy	-54.81973	.8178461	-67.03	0.000	-56.42268	-53.21679
_cons	27.88513	.7580027	36.79	0.000	26.39947	29.37078
/lnalpha	1.868417	.0781227	23.92	0.000	1.715299	2.021534
alpha	6.478031	.506081			5.558337	7.549899

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2086; Nonzero obs = 964; Zero obs = 1122
Inflation model = logit — Wald chi2(9) = 58.73
Log pseudolikelihood = -4746.875 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 156 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
TotalAid1	1.00032	.0012192	0.26	0.793	.997933	1.002712
GDPCap2	.9999793	.0000175	-1.18	0.237	.999945	1.000014
HDI2	108.3305	204.5965	2.48	0.013	2.673888	4388.924
xTotalAidGDP~2	.9999999	5.86e-08	-0.97	0.330	.9999998	1
xTotalAidHDI2	1.001132	.0023225	0.49	0.626	.99659	1.005694
PopDensity3	1.000453	.0018382	0.25	0.805	.9968564	1.004062
PolCompt2	1.136282	.0708562	2.05	0.040	1.005557	1.284
CorrupControl2	.4225114	.0952126	-3.82	0.000	.271657	.6571371
FracEthnic	1.276047	1.191406	0.26	0.794	.2047039	7.954397
_cons	.1090137	.1448029	-1.67	0.095	.0080692	1.472761
inflate						
datadummy	-54.73139	.8158209	-67.09	0.000	-56.33037	-53.13241
_cons	28.02265	.7592292	36.91	0.000	26.53459	29.51071
/lnalpha	1.867405	.0781266	23.90	0.000	1.71428	2.020531
alpha	6.471483	.5055947			5.552677	7.542325

APPENDIX 10 EXPECTATION II - SUMMARY STATISTICS

Note: The names in brackets are the ones given when collecting the data. For detailed explanations of all variables, see Appendix 3.

Expectation II. Summary Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Country	3895	106.1728	61.83228	1	214
Terror Events	3895	13.25623	59.31355	0	1155
Sectoral Aid					
EDUCATION AID	3895	4.53e+07	1.06e+08	0	1.48e+09
HEALTH AID	3895	4.58e+07	2.31e+08	0	1.17e+10
SOCIAL SERVICES AID	3895	7.56e+07	2.11e+08	0	3.31e+09
ECO GROWTH (TOTAL)	3895	3.52e+08	9.72e+08	0	3.08e+10
MICROECO GROWTH AID (ECOSUB1)	3895	2.58e+08	8.03e+08	0	3.04e+10
ECONOMIC OPPORTUNITY AID (ECOSUB2)	3895	2527162	1.72e+07	0	4.54e+08
PRODUCTION SECTORS AID (ECOSUB3)	3895	9.04e+07	2.50e+08	0	5.34e+09
DEVELOPMENT AID (ECOSUB4)	3895	2.48e+08	1.57e+09	0	5.16e+10
GOVERNANCE AID	3895	4.75e+07	1.53e+08	0	2.16e+09
PEACE & SECURITY AID	3895	5473496	3.27e+07	0	9.98e+08
UNALLOCATED	3895	5624200	3.57e+07	0	1.55e+09
Education Grievances					
Primary School Enrollment (GEduc4x2)	3598	99.04305	19.45871	18.36994	171.0697
Secondary School Enrollment (GEduc2x2)	3493	67.89053	32.69088	4.81315	162.3487
Tertiary School Enrollment (GEduc3x2)	3189	23.89545	22.13872	.09376	117.8914
Public Spending on Education (GEduc9x2)	2885	4.637234	2.685703	.57419	44.33398
Repeaters, Secondary School (GEduc5x2)	2759	8.423078	7.967225	.00424	41.89994
Health Grievances					
Health Expenditure/Cap (GHealth1x2)	2886	605.7896	1202.72	1.798486	8694.291
Life expectancy (GHealth3x2)	3830	66.57186	10.08698	26.76378	85.16341
Percent undernourished (GHealth4x2)	2444	20.65953	15.16399	5	77
Social Grievances					
Access to Sanitation Facilities (GSocial2x2)	3646	66.71105	31.55377	2.4	100
Improved Water Source (GSocial3x2)	3718	82.43854	19.32709	4.8	100
Scientific and technical articles (GSocial6x2)	3678	3483.915	16270.5	.1	212883
Research & Development Expenses (GSocial7x2)	1277	.9131477	.9426714	.00614	4.83528
MicroEconomic Grievances					
Income shared by lowest 20% (GMicroG5x2)	1684	5.953328	2.114239	.01	11.12
Household consumption expenses (GMicroG7x2)	3445	1.34e+11	6.23e+11	1.55e+07	1.02e+13
Inflation, consumer prices (GMicroG9x2)	3656	43.32893	606.4436	-33.20603	24411.03
Economic Opportunity Grievances					
Total Unemployment (GUnempl1x2)	3379	9.03211	6.339844	.3	39.3
Youth Unemployment (GUnempl3x2)	3379	17.73294	11.41404	.7	71.9
Long-Term Unemployment (GUnempl5x2)	1099	34.2353	18.89451	.6	86.5
Production Sectors Grievances					
Employment Agriculture (GAgricltr2x2)	2386	22.87211	21.35177	.1	92.2
Employment Industry (GIndustry2x2)	2388	22.64763	8.151797	2.1	48.9
Employment Services (GServices2x2)	2388	53.43347	17.08679	5.6	89.8
Development Grievances					
Food Imports (GFoodImp2)	3284	14.68339	8.03132	.473915	62.41602
Gross Domestic Savings (GDomSav2)	3537	5.13e+10	2.08e+11	-7.37e+09	3.08e+12
Control Variables					
POPULATION DENSITY	3833	146.9843	398.4855	1.41	6191.29
POLITICAL COMPETITION	3301	6.378219	3.352168	0	10
CORRUPTION CONTROL	2737	-.0874808	.9964834	-2.06	2.59
ETHNIC FRACTIONALIZATION	3744	.4383097	.2585967	0	.930175

APPENDIX 11 ALL TYPES OF SECTORAL AID: PEARSON'S CORRELATION COEFFICIENTS

Pearson Coefficient of Correlation: Types of Sectoral Aid and Terrorism

```
. corr Terror1 EDUCATION HEALTH SOCIAL ECOGRWTH GOVRNCE PEACESEC UNALLOCATED
(obs=3895)
```

	Terror1	EDUCAT~N	HEALTH	SOCIAL	ECOGRWTH	GOVRNCE	PEACESEC	UNALLO~D
Terror1	1.0000							
EDUCATION	0.2396	1.0000						
HEALTH	0.0816	0.2145	1.0000					
SOCIAL	0.2254	0.4483	0.1731	1.0000				
ECOGRWTH	0.2202	0.4640	0.1637	0.4273	1.0000			
GOVRNCE	0.3231	0.3321	0.1564	0.3629	0.2664	1.0000		
PEACESEC	0.3009	0.1419	0.0716	0.1229	0.0935	0.3902	1.0000	
UNALLOCATED	0.2529	0.1408	0.0626	0.1453	0.1222	0.1223	0.0753	1.0000

MATRIX CORRELATION GRAPH

APPENDIX 12A MODEL 2: ALL SECTORAL AID CATEGORIES – INDEPENDENT EFFECT NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

DETAILED RESULTS

Negative binomial regression — Number of obs = 2171; Wald chi2(11) = 228.10; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -4678.1884; Pseudo R2 = 0.0350

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
EDUCATIONM L1.	.0016674	.0007112	2.34	0.019	.0002734	.0030614
HEALTHM L1.	-.0001351	.0001023	-1.32	0.187	-.0003355	.0000654
SOCIALM L1.	.0005592	.0003193	1.75	0.080	-.0000666	.001185
ECOGRWTHM L1.	.0003617	.0001402	2.58	0.010	.0000869	.0006364
PEACESECM L1.	.008717	.0022312	3.91	0.000	.004344	.01309
GOVRNCEM L1.	.0008204	.0004001	2.05	0.040	.0000362	.0016045
UNALLOCATEDM L1.	.0002692	.0017687	0.15	0.879	-.0031973	.0037358
PopDensity3 L1.	.0000277	.0003373	0.08	0.935	-.0006334	.0006888
PolCompt2 L1.	.115299	.0356595	3.23	0.001	.0454076	.1851904
CorrupControl2 L1.	-.4640902	.1031436	-4.50	0.000	-.666248	-.2619323
FracEthnic L1.	.0660849	.3687151	0.18	0.858	-.6565835	.7887532
_cons	.627303	.3249085	1.93	0.054	-.0095059	1.264112
/lnalpha	1.932887	.0446831			1.84531	2.020465
alpha	6.909432	.3087349			6.330063	7.541829

	Terrorism
EDUCATION AID	0.00167* (0.000711)
HEALTH AID	-0.000135 (0.000102)
SOCIAL AID	0.000559 (0.000319)
ECONOMIC GROWTH AID	0.000362** (0.000140)
PEACE AND SECURITY AID	0.00872*** (0.00223)
GOVERNANCE AID	0.000820* (0.000400)
UNALLOCATED AID	0.000269 (0.00177)
Population Density	0.0000277 (0.000337)
Political Competition	0.115** (0.0357)
Corruption Control	-0.464*** (0.103)
Ethnic Fractionalization	0.0661 (0.369)
Constant	0.627 (0.325)
lnalpha Constant	1.933*** (0.0447)
Observations	2171
Adjusted R^2	

*Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

APPENDIX 12B MODEL 2: ALL SECTORAL AID CATEGORIES – INDEPENDENT EFFECT NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Negative binomial regression — Number of obs = 2171
Wald chi2(11) = 228.10
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4678.1884 — Pseudo R2 = 0.0350

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
EDUCATIONM L1.	1.001669	.0007124	2.34	0.019	1.000273	1.003066
HEALTHM L1.	.999865	.0001023	-1.32	0.187	.9996645	1.000065
SOCIALM L1.	1.000559	.0003195	1.75	0.080	.9999334	1.001186
ECOGRWTHM L1.	1.000362	.0001402	2.58	0.010	1.000087	1.000637
PEACESECM L1.	1.008755	.0022507	3.91	0.000	1.004353	1.013176
GOVRNCEM L1.	1.000821	.0004004	2.05	0.040	1.000036	1.001606
UNALLOCATEDM L1.	1.000269	.0017692	0.15	0.879	.9968078	1.003743
PopDensity3 L1.	1.000028	.0003373	0.08	0.935	.9993668	1.000689
PolCompt2 L1.	1.122209	.0400175	3.23	0.001	1.046454	1.203448
CorrupControl2 L1.	.6287069	.0648471	-4.50	0.000	.5136321	.7695631
FracEthnic L1.	1.068317	.3939048	0.18	0.858	.5186202	2.200651
_cons	1.872553	.6084085	1.93	0.054	.9905392	3.539947
/lnalpha	1.932887	.0446831			1.84531	2.020465
alpha	6.909432	.3087349			6.330063	7.541829

	(1) Terror1
Terror1	
L.EDUCATIONM	1.002*
	(2.34)
L.HEALTHM	1.000
	(-1.32)
L.SOCIALM	1.001
	(1.75)
L.ECOGRWTHM	1.000**
	(2.58)
L.PEACESECM	1.009***
	(3.91)
L.GOVRNCEM	1.001*
	(2.05)
L.UNALLOCATEDM	1.000
	(0.15)
L.PopDensity3	1.000
	(0.08)
L.PolCompt2	1.122**
	(3.23)
L.CorrupControl2	0.629***
	(-4.50)
L.FracEthnic	1.068
	(0.18)
N	2171

Exponentiated coefficients; *z* statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

APPENDIX 12C MODEL 2: ALL SECTORAL AID CATEGORIES
NEGATIVE BINIOMIAL NOT LAGGED + ZERO-NEGATIVE BINOMIAL NOT LAGGED

	NEGATIVE BINOMIAL NON LAGGED
EDUCATION AID	0.00206 (0.00108)
HEALTH AID	-0.000452 (0.000369)
SOCIAL AID	0.000667* (0.000329), *1.000668 (irr)*
ECONOMIC GROWTH AID	0.000249 (0.000136)
PEACE AND SECURITY AID	0.00689 (0.00407)
GOVERNANCE AID	0.000939* (0.000420), *1.000939 (irr)*
UNALLOCATED AID	0.00150** (0.000461) *1.001496 (irr)*
Population Density	0.000171 (0.00113)
Political Competition	0.126* (0.0569) *1.134803 (irr)*
Corruption Control	-0.485* (0.194) *.61568 (irr)*
Ethnic Fractionalization	-0.104 (0.812)
Constant	0.689 (0.615)
lnalpha	
Constant	1.878*** (0.0795)
Observations	2325
Adjusted R^2	

	ZERO INFLATED NEGATIVE BINOMIAL
EDUCATION AID	0.00205 (0.00107)
HEALTH AID	-0.000450 (0.000367)
SOCIAL AID	0.000659* (0.000328) *1.00066 (irr)*
ECONOMIC GROWTH AID	0.000252 (0.000137)
PEACE AND SECURITY AID	0.00688 (0.00407)
GOVERNANCE AID	0.000934* (0.000421) *1.000934 (irr)*
UNALLOCATED AID	0.00151** (0.000462) *1.001506 (irr)*
Population Density	0.000131 (0.00107)
Political Competition	0.120* (0.0570) *1.127678 (irr)*
Corruption Control	-0.466* (0.194) *.6272657 (irr)*
Ethnic Fractionalization	-0.125 (0.811)
Constant	0.761 (0.615)
inflate	
datadummy	-52.80*** (0.746)
Constant	28.11*** (0.714)
lnalpha	
Constant	1.865*** (0.0791)
Observations	2325
Adjusted R^2	

Robust standard errors in parentheses.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 13A MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, and Public Spending on Education (%of GDP) (9) and their respective interactive (xEducation Aid)

Negative binomial regression — Number of obs = 1619
Wald chi2(13) = 244.89
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -3598.3773 — Pseudo R2 = 0.0365

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
EDUCATIONM L1.	.0140127	.0058236	2.41	0.016	.0025987	.0254267
GEduc4x2 L1.	.0145998	.0075129	1.94	0.052	-.0001253	.0293248
GEduc2x2 L1.	.0043653	.0052434	0.83	0.405	-.0059116	.0146422
GEduc3x2 L1.	.02581	.0077747	3.32	0.001	.0105719	.041048
GEduc9x2 L1.	-.1778378	.0660295	-2.69	0.007	-.3072532	-.0484224
xEdGEd4x2M L1.	-.0001383	.0000578	-2.39	0.017	-.0002517	-.000025
xEdGEd2x2M L1.	.0002679	.0000549	4.88	0.000	.0001603	.0003756
xEdGEd3x2M L1.	-.0003162	.0000697	-4.54	0.000	-.0004528	-.0001797
xEdGEd9x2M L1.	-.0015829	.0005973	-2.65	0.008	-.0027536	-.0004122
PopDensity3 L1.	.0031427	.0009608	3.27	0.001	.0012595	.0050259
PolCompt2 L1.	.0445766	.0350039	1.27	0.203	-.0240298	.113183
CorrupControl2 L1.	-.8018666	.1233383	-6.50	0.000	-1.043605	-.560128
FracEthnic L1.	1.03364	.5147085	2.01	0.045	.0248296	2.04245
_cons	-1.197249	.7733547	-1.55	0.122	-2.712996	.3184985
/lnalpha	1.814911	.0594669			1.698358	1.931464
alpha	6.140529	.3651581			5.464966	6.899602

	Model 3b *With Interactives*
Terror1	
Education Aid	0.0140* (0.00582)
Primary School Enrollment	0.0146 (0.00751)
Secondary School Enrollment	0.00437 (0.00524)
Tertiary School Enrollment	0.0258*** (0.00777)
Public Spending on Education	-0.178**(0.0660)
xEdAID*Primary	-0.000138* (0.0000578)
xEdAID*Secondary	0.000268*** (0.0000549)
xEdAID*Tertiary	-0.000316*** (0.0000697)
xEdAID*Public Spending on Education	-0.00158** (0.000597)
Population Density	0.00314** (0.000961)
Political Competition	0.0446 (0.0350)
Corruption Control	-0.802***(0.123)
Ethnic Fractionalization	1.034* (0.515)
Constant	-1.197 (0.773)
lnalpha	
Constant	1.815*** (0.0595)
Observations	1619
Adjusted R^2	

APPENDIX 13B **MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM**

NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, and Public Spending on Education (%of GDP) (9)

NO INTERACTIVES

Negative binomial regression — Number of obs = 1619; Wald chi2(9) = 210.94; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -3607.2048; Pseudo R2 = 0.0341

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
EDUCATIONM L1.	1.004068	.0008644	4.72	0.000	1.002375	1.005763
GEduc4x2 L1.	1.007097	.0059443	1.20	0.231	.9955132	1.018815
GEduc2x2 L1.	1.015087	.0044678	3.40	0.001	1.006368	1.023881
GEduc3x2 L1.	1.015009	.0072931	2.07	0.038	1.000815	1.029404
GEduc9x2 L1.	.7930856	.0460557	-3.99	0.000	.7077657	.8886907
PopDensity3 L1.	1.003275	.0009146	3.59	0.000	1.001484	1.005069
PolCompt2 L1.	1.053027	.0368742	1.48	0.140	.9831794	1.127837
CorrupControl2 L1.	.4493421	.0518199	-6.94	0.000	.3584373	.5633016
FracEthnic L1.	2.857326	1.420553	2.11	0.035	1.078388	7.570849
_cons	.4889984	.3335094	-1.05	0.294	.1284595	1.861438
/lnalpha	1.831529	.0583095			1.717244	1.945813
alpha	6.243425	.3640508			5.569161	6.999322

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1619; Wald chi2(13) = 244.89; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -3598.3773; Pseudo R2 = 0.0365

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
EDUCATIONM L1.	1.014111	.0059058	2.41	0.016	1.002602	1.025753
GEduc4x2 L1.	1.014707	.0076234	1.94	0.052	.9998747	1.029759
GEduc2x2 L1.	1.004375	.0052663	0.83	0.405	.9941059	1.01475
GEduc3x2 L1.	1.026146	.0079779	3.32	0.001	1.010628	1.041902
GEduc9x2 L1.	.8370782	.0552718	-2.69	0.007	.7354644	.9527313
xEdGEd4x2M L1.	.9998617	.0000578	-2.39	0.017	.9997484	.999975
xEdGEd2x2M L1.	1.000268	.0000549	4.88	0.000	1.00016	1.000376
xEdGEd3x2M L1.	.9996838	.0000697	-4.54	0.000	.9995473	.9998204
xEdGEd9x2M L1.	.9984183	.0005964	-2.65	0.008	.9972502	.9995879
PopDensity3 L1.	1.003148	.0009639	3.27	0.001	1.00126	1.005039
PolCompt2 L1.	1.045585	.0365996	1.27	0.203	.9762567	1.119837
CorrupControl2 L1.	.448491	.0553161	-6.50	0.000	.3521827	.571136
FracEthnic L1.	2.81128	1.44699	2.01	0.045	1.02514	7.709474
_cons	.302024	.2335717	-1.55	0.122	.0663377	1.375062
/lnalpha	1.814911	.0594669			1.698358	1.931464
alpha	6.140529	.3651581			5.464966	6.899602

APPENDIX 13C MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, and Public Spending on Education (%of GDP) (9) and their respective interactive (xEducation Aid)

	No Interactives		*With Interactives*
Education Aid	0.00358***	Education Aid	0.00904
	(0.00109)		(0.00977)
Primary School Enrollment	0.00651	Primary School Enrollment	0.0106
	(0.0105)		(0.0108)
Secondary School Enrollment	0.0172	Secondary School Enrollment	0.00877
	(0.0101)		(0.0108)
Tertiary School Enrollment	0.00993	Tertiary School Enrollment	0.0177
	(0.0131)		(0.0131)
Public Spending on Education	-0.286*	Public Spending on Education	-0.234
	(0.114)		(0.122)
		xEdAID*Primary	-0.0000807
			(0.0000909)
		xEdAID*Secondary	0.000220*
			(0.0000927)
		xEdAID*Tertiary	-0.000243**
			(0.0000867)
		xEdAID*Public Spending on Education	-0.00151
			(0.00131)
Population Density	0.00317	Population Density	0.00302
	(0.00191)		(0.00187)
Political Competition	0.0410	Political Competition	0.0405
	(0.0552)		(0.0554)
Corruption Control	-0.705**	Corruption Control	-0.692*
	(0.274)		(0.271)
Ethnic Fractionalization	0.833	Ethnic Fractionalization	0.878
	(1.012)		(1.014)
Constant	-0.173	Constant	-0.449
	(1.219)		(1.247)
lnalpha		lnalpha	
Constant	1.772***	Constant	1.759***
	(0.0954)		(0.0941)
Observations	1684	Observations	1684
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 13D MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, and Public Spending on Education (%of GDP) (9) and their respective interactive (xEducation Aid)

	No Interactives		*With Interactives*
Terror1		Terror1	
Education Aid	0.00352** (0.00108)	Education Aid	0.00884 (0.00979)
Primary School Enrollment	0.00621 (0.0104)	Primary School Enrollment	0.0103 (0.0108)
Secondary School Enrollment	0.0187 (0.0103)	Secondary School Enrollment	0.0104 (0.0111)
Tertiary School Enrollment	0.00735 (0.0131)	Tertiary School Enrollment	0.0148 (0.0132)
Public Spending on Education	-0.288* (0.114)	Public Spending on Education	-0.237 (0.122)
		xEdAID*Primary	-0.0000787 (0.0000908)
		xEdAID*Secondary	0.000214* (0.0000939)
		xEdAID*Tertiary	-0.000235** (0.0000874)
		xEdAID*Public Spending on Education	-0.00147 (0.00132)
Population Density	0.00311 (0.00190)	Population Density	0.00297 (0.00187)
Political Competition	0.0332 (0.0550)	Political Competition	0.0330 (0.0553)
Corruption Control	-0.666* (0.271)	Corruption Control	-0.654* (0.270)
Ethnic Fractionalization	0.863 (1.018)	Ethnic Fractionalization	0.906 (1.021)
Constant	-0.0930 (1.212)	Constant	-0.365 (1.242)
inflate		inflate	
datadummy	-46.87*** (0.768)	datadummy	-51.20*** (0.765)
Constant	25.17*** (0.718)	Constant	27.10*** (0.717)
lnalpha		lnalpha	
Constant	1.756*** (0.0942)	Constant	1.743*** (0.0929)
Observations	1684	Observations	1684
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 13D **MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, and Public Spending on Education (%of GDP) (9) and their respective interactive (xEducation Aid)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1684; Nonzero obs = 806; Zero obs = 878
Inflation model = logit — Wald chi2(9) = 64.66
Log pseudolikelihood = -3873.494 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 141 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
EDUCATIONM	1.003527	.0010851	3.26	0.001	1.001402	1.005656
GEduc4x2	1.006229	.010497	0.60	0.552	.9858641	1.027014
GEduc2x2	1.018827	.0105198	1.81	0.071	.9984162	1.039656
GEduc3x2	1.007374	.0132301	0.56	0.576	.9817746	1.033641
GEduc9x2	.7499329	.0856901	-2.52	0.012	.5994611	.938175
PopDensity3	1.003116	.0019084	1.64	0.102	.9993824	1.006863
PolCompt2	1.033752	.056826	0.60	0.546	.9281653	1.15135
CorrupControl2	.5138332	.1394305	-2.45	0.014	.3018879	.8745784
FracEthnic	2.370315	2.412116	0.85	0.396	.3225473	17.41882
_cons	.9111658	1.104549	-0.08	0.939	.084672	9.805172
inflate						
datadummy	-46.86851	.767518	-61.07	0.000	-48.37282	-45.36421
_cons	25.1739	.7178548	35.07	0.000	23.76693	26.58087
/lnalpha	1.755641	.0941768	18.64	0.000	1.571057	1.940224
alpha	5.787154	.5450155			4.811734	6.960308

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1684; Nonzero obs = 806; Zero obs = 878
Inflation model = logit — Wald chi2(13) = 73.31
Log pseudolikelihood = -3866.562 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 141 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
EDUCATIONM	1.008881	.0098796	0.90	0.367	.9897019	1.028431
GEduc4x2	1.010306	.0108952	0.95	0.342	.9891762	1.031888
GEduc2x2	1.010489	.0111798	0.94	0.346	.9888127	1.03264
GEduc3x2	1.014956	.0133886	1.13	0.260	.9890514	1.04154
GEduc9x2	.788871	.0961889	-1.94	0.052	.6211794	1.001832
xEdGEd4x2M	.9999213	.0000908	-0.87	0.386	.9997433	1.000099
xEdGEd2x2M	1.000214	.0000939	2.28	0.022	1.00003	1.000399
xEdGEd3x2M	.9997648	.0000874	-2.69	0.007	.9995935	.9999361
xEdGEd9x2M	.9985262	.0013153	-1.12	0.263	.9959515	1.001107
PopDensity3	1.002975	.0018791	1.59	0.113	.9992991	1.006665
PolCompt2	1.033596	.0571776	0.60	0.550	.9273912	1.151963
CorrupControl2	.5197165	.1404164	-2.42	0.015	.3060482	.8825579
FracEthnic	2.473272	2.524289	0.89	0.375	.3345896	18.28232
_cons	.6940567	.862321	-0.29	0.769	.0607899	7.924254
inflate						
datadummy	-51.20153	.7650339	-66.93	0.000	-52.70097	-49.7021
_cons	27.09969	.7170203	37.79	0.000	25.69435	28.50502
/lnalpha	1.743479	.0928753	18.77	0.000	1.561446	1.925511
alpha	5.717197	.5309864			4.76571	6.858652

APPENDIX 13E **MODEL 3: EDUCATION AID, GRIEVANCES, AND TERRORISM**
SECONDARY SCHOOL REPEATERS
Negative Binomial Regression, Lagged

Education Variables: Primary School (4), Secondary (2), Tertiary (3) School Enrollment, **Repeaters, secondary** (5), and Public Spending on Education (%of GDP) (9) and their respective interactives (xEducation Aid)

	(1) No Interactives		(2) With Interactives
Terror1		Terror1	
EDUCATION AID	0.00274***	EDUCATION AID	0.00187
	(0.000620), *1.003****		(0.00576)
		Primary School Enrollment	0.0268**
Primary School Enrollment	0.0248***	(GEduc4x2)	(0.00839)
	(0.00629), *1.025****	Secondary School	0.0152*
		Enrollment (GEduc2x2)	(0.00637)
Secondary School	0.0217***	Tertiary School Enrollment	0.0184*
Enrollment	(0.00492), *1.022****	(GEduc3x2)	(0.00839)
		Secondary Repeaters	0.103***
Tertiary School Enrollment	0.0101	(L.GEduc5x2)	(0.0245)
	(0.00757), *1.010*	Public Spending	-0.246***
		(GEduc9x2)	(0.0563)
Repeaters, Secondary	0.0772***		
	(0.0138), *1.080****	EdAid*Primary	-0.0000107
		(xEdGEd4x2)	(0.0000667)
Public Spending on	-0.267***		
Education	(0.0535), *-0.766****	EdAid*Secondary	0.000158**
		(xEdGEd2x2)	(0.0000601), *1.000158*
		EdAid*Tertiary	-0.000214**
		(xEdGEd3x2)	(0.0000829), *-.9997858*
		Secondary, Repeaters	**-0.000407****
		(xEdGEd5x2)	**(0.000151), -.***9995932*
		EdAid*Public$	--0.000235
		(xEdGEd9x2)	(0.000704)
Population Density	0.00405***	Population Density	0.00353***
	(0.000894), *1.004****		(0.000903), *1.004****
Political Competition	0.0321	Political Competition	0.0313
	(0.0394), *1.033*		(0.0395), *1.032*
Corruption Control	-0.883***	Corruption Control	-0.844***
	(0.133), *-0.414****		(0.141), *-0.430****
Ethnic Fractionalization	0.172	Ethnic Fractionalization	0.269
	(0.522), *1.187*		(0.516), *1.309*
Constant	-2.933***	Constant	-3.133***
	(0.828)		(0.987)
lnalpha		lnalpha	
Constant	1.819***	Constant	1.802***
	(0.0595)		(0.0584)
Observations	1376	Observations	1376
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - Incidence-Rate Ratios - IRR in italic

APPENDIX 14A MODEL 4: HEALTH AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Health Variables: Health Expenditures per Capita (1), Life expectancy (3), Prevalence of undernourishment (4)

Negative binomial regression — Number of obs = 1418
Wald chi2(11) = 276.53
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -3064.8723 — Pseudo R2 = 0.0403

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
HEALTHM L1.	-.0047878	.0032901	-1.46	0.146	-.0112362	.0016607
GHealth1x2 L1.	-.0013095	.0007031	-1.86	0.063	-.0026876	.0000686
GHealth3x2 L1.	.0906004	.0134664	6.73	0.000	.0642068	.1169941
GHealth4x2 L1.	-.0024642	.0095945	-0.26	0.797	-.021269	.0163406
xHeGHe1x2M L1.	-.0000104	4.06e-06	-2.56	0.010	-.0000183	-2.44e-06
xHeGHe3x2M L1.	.0001692	.0000696	2.43	0.015	.0000328	.0003055
xHeGHe4x2M L1.	-.0001288	.0000493	-2.61	0.009	-.0002253	-.0000322
PopDensity3 L1.	.0024283	.0010207	2.38	0.017	.0004278	.0044288
PolCompt2 L1.	.0104638	.0336636	0.31	0.756	-.0555156	.0764433
CorrupControl2 L1.	-1.338437	.1992301	-6.72	0.000	-1.728921	-.9479534
FracEthnic L1.	.3383233	.4901895	0.69	0.490	-.6224304	1.299077
_cons	-4.83968	1.155674	-4.19	0.000	-7.10476	-2.5746
/lnalpha	2.000561	.0505909			1.901405	2.099717
alpha	7.393202	.3740287			6.695292	8.163861

	4b *With Interactives*
Health Aid	-0.00479 (0.00329)
Health Expenditures/Capita	-0.00131 (0.000703)
Life Expectancy	0.0906*** (0.0135)
% Undernourished	-0.00246 (0.00959)
xHealthAid*Expenditure/Cap	--0.0000104* (0.00000406)
xHealthAid*LifeExpectancy	0.000169* (0.0000696)
xHealthAid*%Undernourished	-0.000129* (0.0000493)
Population Density	0.00243* (0.00102)
Political Competition	0.0105 (0.0337)
Corruption Control	-1.338*** (0.199)
Ethnic Fractionalization	0.338 (0.490)
Constant	-4.840*** (1.156)
lnalpha	
Constant	2.001*** (0.0506)
Observations	1418
Adjusted R^2	

APPENDIX 14B **MODEL 4: HEALTH AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Health Variables: Health Expenditures per Capita (1), Life expectancy (3), Prevalence of undernourishment (4)

NO INTERACTIVES

Negative binomial regression — Number of obs = 1418; Wald chi2(8) = 265.80; Prob > chi2 = 0.0000; Pseudo R2 = 0.0391
Dispersion = mean
Log pseudolikelihood = -3068.8865

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
HEALTHM L1.	1.002183	.0005153	4.24	0.000	1.001174	1.003194
GHealth1x2 L1.	.9983216	.0006672	-2.51	0.012	.9970147	.9996302
GHealth3x2 L1.	1.10293	.0136013	7.94	0.000	1.076591	1.129913
GHealth4x2 L1.	.9920069	.0080116	-0.99	0.320	.9764282	1.007834
PopDensity3 L1.	1.003137	.0009846	3.19	0.001	1.001209	1.005069
PolCompt2 L1.	1.006408	.0343357	0.19	0.851	.941312	1.076006
CorrupControl2 L1.	.2585076	.0519159	-6.74	0.000	.1743922	.3831949
FracEthnic L1.	1.358519	.654916	0.64	0.525	.528102	3.494731
_cons	.0055968	.0060609	-4.79	0.000	.0006701	.0467432
/lnalpha	2.008783	.0504118			1.909978	2.107589
alpha	7.454241	.375782			6.752938	8.228375

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1418; Wald chi2(11) = 276.53; Prob > chi2 = 0.0000; Pseudo R2 = 0.0403
Dispersion = mean
Log pseudolikelihood = -3064.8723

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
HEALTHM L1.	.9952237	.0032744	-1.46	0.146	.9888267	1.001662
GHealth1x2 L1.	.9986914	.0007022	-1.86	0.063	.997316	1.000069
GHealth3x2 L1.	1.094831	.0147434	6.73	0.000	1.066313	1.124113
GHealth4x2 L1.	.9975389	.0095709	-0.26	0.797	.9789556	1.016475
xHeGHe1x2M L1.	.9999896	4.06e-06	-2.56	0.010	.9999817	.9999976
xHeGHe3x2M L1.	1.000169	.0000696	2.43	0.015	1.000033	1.000306
xHeGHe4x2M L1.	.9998712	.0000493	-2.61	0.009	.9997747	.9999678
PopDensity3 L1.	1.002431	.0010232	2.38	0.017	1.000428	1.004439
PolCompt2 L1.	1.010519	.0340177	0.31	0.756	.9459973	1.079441
CorrupControl2 L1.	.2622552	.0522491	-6.72	0.000	.1774758	.3875333
FracEthnic L1.	1.402594	.6875368	0.69	0.490	.5366386	3.665911
_cons	.0079096	.0091409	-4.19	0.000	.0008212	.0761843
/lnalpha	2.000561	.0505909			1.901405	2.099717
alpha	7.393202	.3740287			6.695292	8.163861

APPENDIX 14C MODEL 4: HEALTH AID, GRIEVANCES, AND TERRORISM
NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Health Variables: Health Expenditures per Capita (1), Life expectancy (3), Prevalence of undernourishment (4)

	No Interactives		*With Interactives*
Health Aid	0.00162 (0.000953)	Health Aid	-0.00372 (0.00497)
Health Expenditures/Capita	-0.00150 (0.00114)	Health Expenditures/Capita	-0.00105 (0.00126)
Life Expectancy	0.0947*** (0.0271)	Life Expectancy	0.0886** (0.0301)
% Undernourished	-0.00803 (0.0182)	% Undernourished	-0.0000921 (0.0213)
		xHealthAid*Expenditure/Cap	-0.0000113* (0.00000489)
		xHealthAid*LifeExpectancy	0.000153 (0.000103)
		xHealthAid*%Undernourished	-0.000153* (0.0000757)
Population Density	0.00336 (0.00226)	Population Density	0.00252 (0.00215)
Political Competition	0.0276 (0.0662)	Political Competition	0.0311 (0.0682)
Corruption Control	-1.300*** (0.364)	Corruption Control	-1.288*** (0.363)
Ethnic Fractionalization	0.317 (1.064)	Ethnic Fractionalization	0.329 (1.089)
Constant	-4.987* (2.285)	Constant	-4.751 (2.489)
lnalpha Constant	1.976*** (0.0996)	lnalpha Constant	1.967*** (0.0996)
Observations Adjusted R^2	1517	Observations Adjusted R^2	1517

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 14D MODEL 4: HEALTH AID, GRIEVANCES, AND TERRORISM
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Health Variables: Health Expenditures per Capita (1), Life expectancy (3), Prevalence of Undernourishment (4)

	No Interactives		*With Interactives*
Terror1		Terror1	
Health Aid	0.00159	Health Aid	-0.00344
	(0.000944)		(0.00494)
Health Expenditures/Capita	-0.00162	Health Expenditures/Capita	-0.00118
	(0.00112)		(0.00123)
Life Expectancy	0.0956***	Life Expectancy	0.0898**
	(0.0270)		(0.0300)
% Undernourished	-0.00767	% Undernourished	0.000369
	(0.0182)		(0.0213)
		xHealthAid*Expenditure/Cap	-0.0000111*
			(0.00000488)
		xHealthAid*LifeExpectancy	0.000148
			(0.000103)
		xHealthAid*%Undernourished	-0.000154*
			(0.0000760)
Population Density	0.00334	Population Density	0.00250
	(0.00227)		(0.00216)
Political Competition	0.0307	Political Competition	0.0343
	(0.0663)		(0.0683)
Corruption Control	-1.270***	Corruption Control	-1.257***
	(0.365)		(0.364)
Ethnic Fractionalization	0.295	Ethnic Fractionalization	0.306
	(1.062)		(1.087)
Constant	-5.011*	Constant	-4.799
	(2.283)		(2.485)
inflate		inflate	
datadummy	-47.30***	datadummy	-46.84
	(1.062)		(32.26)
Constant	25.60***	Constant	25.96***
	(1.010)		(1.011)
lnalpha		lnalpha	
Constant	1.966***	Constant	1.956***
	(0.0994)		(0.0995)
Observations	1517	Observations	1517
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 14D **MODEL 4: EDUCATION AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Health Variables: Health Expenditures per Capita (1), Life expectancy (3), Prevalence of Undernourishment (4)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1517; Nonzero obs = 668; Zero obs = 849

Inflation model = logit — Wald chi2(8) = 62.71

Log pseudolikelihood = -3413.084 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 102 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
HEALTHM	1.001594	.0009458	1.69	0.092	.9997423	1.00345
GHealth1x2	.9983857	.001115	-1.45	0.148	.9962027	1.000573
GHealth3x2	1.100269	.0297425	3.53	0.000	1.043492	1.160135
GHealth4x2	.992359	.0180227	-0.42	0.673	.9576565	1.028319
PopDensity3	1.003346	.0022779	1.47	0.141	.9988917	1.007821
PolCompt2	1.031186	.0683682	0.46	0.643	.9055281	1.174281
CorrupControl2	.2807822	.1024638	-3.48	0.001	.1373241	.5741065
FracEthnic	1.342769	1.426001	0.28	0.781	.1675086	10.76379
_cons	.0066621	.0152091	-2.20	0.028	.0000759	.5845666
inflate						
datadummy	-47.30282	1.062487	-44.52	0.000	-49.38525	-45.22038
_cons	25.59687	1.010161	25.34	0.000	23.61699	27.57675
/lnalpha	1.965606	.0994245	19.77	0.000	1.770737	2.160474
alpha	7.139235	.7098149			5.875183	8.675249

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1517; Nonzero obs = 668; Zero obs = 849

Inflation model = logit — Wald chi2(11) = 80.48

Log pseudolikelihood = -3407.988 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 102 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
HEALTHM	.9965701	.0049253	-0.70	0.487	.9869632	1.00627
GHealth1x2	.9988255	.0012306	-0.95	0.340	.9964164	1.00124
GHealth3x2	1.093939	.0328364	2.99	0.003	1.031438	1.160228
GHealth4x2	1.000369	.0213087	0.02	0.986	.9594648	1.043017
xHeGHe1x2M	.9999889	4.88e-06	-2.27	0.023	.9999793	.9999985
xHeGHe3x2M	1.000148	.0001032	1.43	0.152	.9999455	1.00035
xHeGHe4x2M	.9998464	.000076	-2.02	0.043	.9996975	.9999953
PopDensity3	1.002507	.002164	1.16	0.246	.9982749	1.006757
PolCompt2	1.034899	.0707118	0.50	0.616	.905186	1.1832
CorrupControl2	.2844589	.1034881	-3.46	0.001	.1394269	.5803533
FracEthnic	1.357766	1.476177	0.28	0.778	.1612093	11.43563
_cons	.0082406	.0204742	-1.93	0.053	.0000633	1.073545
inflate						
datadummy	-46.8432	32.25669	-1.45	0.146	-110.0652	16.37875
_cons	25.96229	1.010526	25.69	0.000	23.9817	27.94289
/lnalpha	1.956142	.0994904	19.66	0.000	1.761144	2.15114
alpha	7.071991	.7035955			5.819093	8.594648

APPENDIX 14E **MODEL 4: HEALTH AID, GRIEVANCES, AND TERRORISM OMITTING UNDERNOURISHED POPULATION**

Negative Binomial Regression, Lagged

Health Variables: Health Expenditures per Capita (1), Life expectancy (3)

	No Interactives		*With Interactives*
Terror1		Terror1	
Health Aid	0.00359***	Health Aid	-0.00499
	(0.000579), *1.004****		(0.00313), *0.995*
Health Expenditures/Capita	**0.000248***	Health Expenditures/Capita	0.000278***
	(0.0000704), *1.0003****		(0.0000684), *1.0003****
Life Expectancy	0.0889***	Life Expectancy	0.0828***
	(0.0112), *1.093****		(0.0117), *1.086****
		xHealthAid*Expenditure/Cap	**-0.0000124***
			(0.00000244), -0.9999876***
		xHealthAid*LifeExpectancy	0.000153**
			(0.0000564), *1.00072***
Population Density	0.000206	Population Density	0.0000719
	(0.000378), *1.000*		(0.000258), *1.00007*
Political Competition	0.0824**	Political Competition	0.0841**
	(0.0295), *1.086***		(0.0291), *1.088***
Corruption Control	-1.378***	Corruption Control	-1.344***
	(0.120), *-0.252****		(0.122), *0.261****
Ethnic Fractionalization	0.236	Ethnic Fractionalization	0.310
	(0.388), *1.266*		(0.384), *1.363*
Constant	-5.259***	Constant	-4.896***
	(0.920)		(0.944)
lnalpha		lnalpha	
Constant	1.929***	Constant	1.920***
	(0.0408)		(0.0410)
Observations	2122	Observations	2122
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses. IRR in italic.

APPENDIX 15A MODEL 5: SOCIAL SERVICES AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), Number of Scientific and Technical Journal Articles (6)

```
Negative binomial regression                    Number of obs   =       2103
                                                Wald chi2(11)   =     389.61
Dispersion           = mean                     Prob > chi2     =     0.0000
Log pseudolikelihood = -4502.5006               Pseudo R2       =     0.0425
```

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
SOCIALM L1.	.0048961	.0034833	1.41	0.160	-.001931	.0117232
GSocial2x2 L1.	.0281148	.0048797	5.76	0.000	.0185508	.0376788
GSocial3x2 L1.	.0114312	.0077028	1.48	0.138	-.003666	.0265283
GSocial6x2 L1.	.0000369	8.67e-06	4.26	0.000	.0000199	.0000539
xSoGSo2x2M L1.	-.0000901	.0000188	-4.80	0.000	-.0001269	-.0000533
xSoGSo3x2M L1.	.0000452	.0000467	0.97	0.334	-.0000464	.0001367
xSoGSo6x2M L1.	-9.61e-08	1.70e-08	-5.65	0.000	-1.29e-07	-6.27e-08
PopDensity3 L1.	.0006472	.0006783	0.95	0.340	-.0006821	.0019766
PolCompt2 L1.	.0802551	.0281156	2.85	0.004	.0251496	.1353606
CorrupControl2 L1.	-1.363685	.098594	-13.83	0.000	-1.556926	-1.170444
FracEthnic L1.	1.155944	.3558916	3.25	0.001	.4584098	1.853479
_cons	-2.772348	.5408508	-5.13	0.000	-3.832396	-1.7123
/lnalpha	1.892041	.0410432			1.811597	1.972484
alpha	6.632889	.2722352			6.120215	7.188509

	5b *With Interactives*
Social Services Aid	0.00490 (0.00348)
Access to Sanitation Facilities	0.0281*** (0.00488)
Improved Water Source	0.0114 (0.00770)
Science and Technology	0.0000369*** (0.00000867)
xSocialAid*Sanitation	-0.0000901*** (0.0000188)
xSocialAid*Water	0.0000452 (0.0000467)
xSocialAid*Science/Tech	-9.61e-08*** (1.70e-08)
Population Density	0.000647 (0.000678)
Political Competition	0.0803** (0.0281)
Corruption Control	-1.364*** (0.0986)
Ethnic Fractionalization	1.156*** (0.336)
Constant	-2.772*** (0.541)
lnalpha	
Constant	1.892*** (0.0410)
Observations	2103
Adjusted R^2	

APPENDIX 15B **MODEL 5: SOCIAL AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), Number of Scientific and Technical Journal Articles (6)

NO INTERACTIVES

Negative binomial regression — Number of obs = 2103
Wald chi2(8) = 397.82
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4517.0232 — Pseudo R2 = 0.0394

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
SOCIALM L1.	1.002368	.0003196	7.42	0.000	1.001742	1.002995
GSocial2x2 L1.	1.018748	.0043827	4.32	0.000	1.010194	1.027374
GSocial3x2 L1.	1.01752	.0072193	2.45	0.014	1.003469	1.031769
GSocial6x2 L1.	1.000036	.0000102	3.55	0.000	1.000016	1.000056
PopDensity3 L1.	1.001119	.0008012	1.40	0.162	.9995498	1.00269
PolCompt2 L1.	1.103218	.031461	3.44	0.001	1.043247	1.166636
CorrupControl2 L1.	.2733361	.0270495	-13.11	0.000	.2251446	.3318427
FracEthnic L1.	3.730372	1.353924	3.63	0.000	1.83152	7.597881
_cons	.0598679	.0302452	-5.57	0.000	.0222417	.1611462
/lnalpha	1.914486	.040813			1.834494	1.994478
alpha	6.783452	.2768529			6.261966	7.348367

WITH INTERACTIVES

Negative binomial regression — Number of obs = 2103
Wald chi2(11) = 389.61
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4502.5006 — Pseudo R2 = 0.0425

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
SOCIALM L1.	1.004908	.0035004	1.41	0.160	.9980708	1.011792
GSocial2x2 L1.	1.028514	.0050188	5.76	0.000	1.018724	1.038398
GSocial3x2 L1.	1.011497	.0077913	1.48	0.138	.9963407	1.026883
GSocial6x2 L1.	1.000037	8.67e-06	4.26	0.000	1.00002	1.000054
xSoGSo2x2M L1.	.9999099	.0000188	-4.80	0.000	.9998731	.9999467
xSoGSo3x2M L1.	1.000045	.0000467	0.97	0.334	.9999536	1.000137
xSoGSo6x2M L1.	.9999999	1.70e-08	-5.65	0.000	.9999999	.9999999
PopDensity3 L1.	1.000647	.0006787	0.95	0.340	.9993181	1.001979
PolCompt2 L1.	1.083563	.030465	2.85	0.004	1.025468	1.14495
CorrupControl2 L1.	.2557167	.0252121	-13.83	0.000	.2107831	.3102291
FracEthnic L1.	3.177023	1.130676	3.25	0.001	1.581557	6.381985
_cons	.0625151	.0338113	-5.13	0.000	.0216577	.1804503
/lnalpha	1.892041	.0410432			1.811597	1.972484
alpha	6.632889	.2722352			6.120215	7.188509

APPENDIX 15C MODEL 5: SOCIAL SERVICES AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), Number of Scientific and Technical Journal Articles (6)

	No Interactives		*With Interactives*
Social Services Aid	0.00249***	Social Services Aid	0.00182
	(0.000679)		(0.00586)
Access to Sanitation Facilities	0.0179	Access to Sanitation Facilities	0.0255*
	(0.0109)		(0.0118)
Improved Water Source	0.0104	Improved Water Source	0.00398
	(0.0158)		(0.0165)
Science and Technology	0.0000385	Science and Technology	0.0000419
	(0.0000312)		(0.0000312)
		xSocialAid*Sanitation	-0.0000803*
			(0.0000373)
		xSocialAid*Water	0.0000754
			(0.0000828)
		xSocialAid*Science/Tech	-0.000000110**
			(3.54e-08)
Population Density	0.00120	Population Density	0.000862
	(0.00204)		(0.00192)
Political Competition	0.108*	Political Competition	0.0956
	(0.0540)		(0.0536)
Corruption Control	-1.216***	Corruption Control	-1.274***
	(0.206)		(0.207)
Ethnic Fractionalization	1.026	Ethnic Fractionalization	0.880
	(0.774)		(0.767)
Constant	-2.072*	Constant	-1.911*
	(0.895)		(0.940)
lnalpha		lnalpha	
Constant	1.865***	Constant	1.848***
	(0.0755)		(0.0755)
Observations	2245	Observations	2245
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 15D **MODEL 5: SOCIAL SERVICES AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), Number of Scientific and Technical Journal Articles (6)

	No Interactives		*With Interactives*
Social Services Aid	0.00248***	Social Services Aid	0.00179
	(0.000683)		(0.00588)
Access to Sanitation Facilities	0.0174	Access to Sanitation Facilities	0.0252*
	(0.0110)		(0.0118)
Improved Water Source	0.0110	Improved Water Source	0.00452
	(0.0159)		(0.0166)
Science and Technology	0.0000369	Science and Technology	0.0000402
	(0.0000307)		(0.0000302)
		xSocialAid*Sanitation	-0.0000808*
			(0.0000373)
		xSocialAid*Water	0.0000760
			(0.0000829)
		xSocialAid*Science/Tech	-0.000000109**
			(3.46e-08)
Population Density	0.00115	Population Density	0.000803
	(0.00203)		(0.00190)
Political Competition	0.103	Political Competition	0.0892
	(0.0543)		(0.0538)
Corruption Control	-1.192***	Corruption Control	-1.251***
	(0.206)		(0.207)
Ethnic Fractionalization	0.997	Ethnic Fractionalization	0.849
	(0.781)		(0.772)
Constant	-2.011*	Constant	-1.847
	(0.899)		(0.943)
inflate		inflate	
datadummy	-49.80***	datadummy	-49.24***
	(0.862)		(0.795)
Constant	26.10***	Constant	26.12***
	(0.715)		(0.717)
lnalpha		lnalpha	
Constant	1.854***	Constant	1.836***
	(0.0753)		(0.0753)
Observations	2245	Observations	2245
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 15D **MODEL 5: SOCIAL SERVICES AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), Number of Scientific and Technical Journal Articles (6)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2245; Nonzero obs = 1019; Zero obs = 1226

Inflation model = logit — Wald chi2(8) = 86.48

Log pseudolikelihood = -5002.919 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 156 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
SOCIALM	1.002486	.0006842	3.64	0.000	1.001146	1.003828
GSocial2x2	1.017584	.0111635	1.59	0.112	.9959376	1.039701
GSocial3x2	1.011092	.0160291	0.70	0.487	.9801584	1.043001
GSocial6x2	1.000037	.0000307	1.20	0.228	.9999768	1.000097
PopDensity3	1.001148	.0020356	0.56	0.573	.9971659	1.005145
PolCompt2	1.107944	.0601361	1.89	0.059	.9961317	1.232306
CorrupControl2	.3037172	.0625691	-5.78	0.000	.2028209	.454806
FracEthnic	2.7099	2.11683	1.28	0.202	.586192	12.52757
_cons	.1337992	.1202646	-2.24	0.025	.0229803	.7790242
inflate						
datadummy	-49.80449	.861753	-57.79	0.000	-51.4935	-48.11549
_cons	26.10133	.7148829	36.51	0.000	24.70019	27.50248
/lnalpha	1.854107	.0753264	24.61	0.000	1.70647	2.001743
alpha	6.38599	.4810334			5.509476	7.40195

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2245; Nonzero obs = 1019; Zero obs = 1226

Inflation model = logit — Wald chi2(11) = 120.93

Log pseudolikelihood = -4990.131 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 156 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
SOCIALM	1.001792	.005892	0.30	0.761	.9903098	1.013406
GSocial2x2	1.025537	.0121361	2.13	0.033	1.002025	1.049601
GSocial3x2	1.004528	.0166565	0.27	0.785	.9724067	1.03771
GSocial6x2	1.00004	.0000302	1.33	0.183	.999981	1.000099
xSoGSo2x2M	.9999192	.0000373	-2.16	0.030	.9998461	.9999924
xSoGSo3x2M	1.000076	.0000829	0.92	0.359	.9999135	1.000239
xSoGSo6x2M	.9999999	3.46e-08	-3.14	0.002	.9999998	1
PopDensity3	1.000803	.0019032	0.42	0.673	.9970803	1.004541
PolCompt2	1.093298	.0587983	1.66	0.097	.9839218	1.214834
CorrupControl2	.2862852	.0591927	-6.05	0.000	.1908989	.4293331
FracEthnic	2.337597	1.804833	1.10	0.271	.5147142	10.6163
_cons	.1576525	.1486971	-1.96	0.050	.0248228	1.001267
inflate						
datadummy	-49.24055	.7946536	-61.96	0.000	-50.79804	-47.68306
_cons	26.11501	.7170585	36.42	0.000	24.7096	27.52042
/lnalpha	1.836348	.0752761	24.39	0.000	1.68881	1.983887
alpha	6.273587	.4722509			5.413035	7.270948

APPENDIX 15E **MODEL 5: SOCIAL SERVICES AID, GRIEVANCES, AND TERRORISM INCLUDING RESEARCH AND DEVELOPMENT BUDGET (% GDP)**

Negative Binomial Regression, not lagged

Social Services Variables: Improved Sanitation Facilities (2), Improved Water Sources (3), **Research and Development Expenditure (7)**

	No Interactives		*With Interactives*
Terror1		Terror1	
Social Services Aid	0.00214*	Social Services Aid	0.0143
	(0.000839), *1.002**		(0.00783), *1.014*
Access to Sanitation Facilities	0.000929	Access to Sanitation Facilities	0.00488
	(0.0138), *1.001*		(0.0174), *1.005*
Improved Water Source	0.0447	Improved Water Source	0.0604*
	(0.0258), *1.046*		(0.0290), *1.062**
R&D	0.384	Science and Technology	0.427*
	(0.206), *1.467*		(0.213), *1.533**
		xSocialAid*Sanitation	-0.0000323
			(0.0000335), *-.9999677*
		xSocialAid*Water	-0.000102
			(0.000103), *-.9998978*
		xSocialAid*R&D	-0.00262*
			(0.00108), ***-.9973836****
Population Density	-0.000149	Population Density	-0.000230
	(0.000659), *-.999851*		(0.000550), *.9997703*
Political Competition	0.0737	Political Competition	0.0622
	(0.0801), *1.077**		(0.0756), *1.064*
Corruption Control	-1.041***	Corruption Control	-1.112***
	(0.263) *-0.353****		(0.271), *-0.329****
Ethnic Fractionalization	1.911	Ethnic Fractionalization	2.058*
	(1.009) *6.757*		(1.030), *7.830**
Constant	-3.649	Constant	-5.403*
	(1.993)		(2.211)
lnalpha		lnalpha	
Constant	1.810***	Constant	1.783***
	(0.102)		(0.102)
Observations	1168	Observations	1168
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - Incidence-Rate Ratios - IRR in italic

APPENDIX 16A MODEL 6: MICROECONOMIC AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Microeconomic Variables: Income share held by lowest 20% (5), Household Final Consumption Expenditure (7), Inflation (9)

```
Negative binomial regression                    Number of obs   =       1174
                                                Wald chi2(10)   =          .
Dispersion          = mean                      Prob > chi2     =          .
Log pseudolikelihood = -2585.2572               Pseudo R2       =     0.0514
```

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB1M L1.	.0000765	.0003487	0.22	0.826	-.000607	.00076
GMicroG5x2 L1.	-.2277769	.0697188	-3.27	0.001	-.3644232	-.0911306
GMicroG7x2M L1.	8.10e-06	1.79e-06	4.52	0.000	4.59e-06	.0000116
GMicroG9x2 L1.	.0030852	.0089787	0.34	0.731	-.0145127	.0206832
xEcoGMicroG5~M L1.	.0001376	.0000582	2.36	0.018	.0000235	.0002517
xEcoGMicroG~MM L1.	-2.58e-09	3.54e-10	-7.27	0.000	-3.27e-09	-1.88e-09
xEcoGMicroG9~M L1.	.0000156	.0000391	0.40	0.690	-.000061	.0000923
PopDensity3 L1.	.0077196	.001467	5.26	0.000	.0048442	.0105949
PolCompt2 L1.	.0192802	.042232	0.46	0.648	-.063493	.1020534
CorrupControl2 L1.	-.4235167	.1696988	-2.50	0.013	-.7561202	-.0909132
FracEthnic L1.	2.244685	.4036926	5.56	0.000	1.453462	3.035908
_cons	.0171464	.5757553	0.03	0.976	-1.111313	1.145606
/lnalpha	1.764715	.0659854			1.635386	1.894044
alpha	5.83991	.3853489			5.13144	6.646194

	6b With Interactives
MicroEconomic Aid	0.0000765 (0.000349)
Income share of low 20%	-0.228** (0.0697)
Household Consumption $	0.00000810** (0.00000179)
Inflation, Consumer Prices	0.00309 (0.00898)
xEcoAid*IncomeLow20%	0.000138* (0.0000582)
xEcoAid*Consumption	-2.58e-09*** (3.54e-10)
xEcoAid*Inflation	0.0000156 (0.0000391)
Population Density	0.00772*** (0.00147)
Political Competition	0.0193 (0.0422)
Corruption Control	-0.424* (0.170)
Ethnic Fractionalization	2.245*** (0.404)
Constant	0.0171 (0.576)
lnalpha	
Constant	1.765*** (0.0660)
Observations	1174
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 16B **MODEL 6: MICROECONOMIC AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Microeconomic Variables: Income share held by lowest 20% (5), Household Final Consumption Expenditure (7), Inflation (9)

NO INTERACTIVES

Negative binomial regression — Number of obs = 1174; Wald chi2(8) = 146.97; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -2606.5544; Pseudo R2 = 0.0436

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB1M L1.	1.000466	.0001911	2.44	0.015	1.000092	1.000841
GMicroG5x2 L1.	.8637562	.0503588	-2.51	0.012	.7704853	.968318
GMicroG7x2M L1.	1.000006	1.54e-06	3.94	0.000	1.000003	1.000009
GMicroG9x2 L1.	1.008144	.0070305	1.16	0.245	.9944578	1.022018
PopDensity3 L1.	1.00752	.0014035	5.38	0.000	1.004773	1.010274
PolCompt2 L1.	1.035586	.0407633	0.89	0.374	.9586951	1.118643
CorrupControl2 L1.	.6240547	.0980144	-3.00	0.003	.4587039	.8490101
FracEthnic L1.	10.56921	4.409784	5.65	0.000	4.665477	23.94356
_cons	.6697905	.3474003	-0.77	0.440	.2423517	1.851108
/lnalpha	1.821953	.0617205			1.700984	1.942923
alpha	6.183927	.3816749			5.479334	6.979124

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WITH INTERACTIVES

Negative binomial regression — Number of obs = 1174; Wald chi2(10) = .; Prob > chi2 = .; Dispersion = mean; Log pseudolikelihood = -2585.2572; Pseudo R2 = 0.0514

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB1M L1.	1.000076	.0003488	0.22	0.826	.9993932	1.00076
GMicroG5x2 L1.	.7963019	.0555172	-3.27	0.001	.6945972	.9128985
GMicroG7x2M L1.	1.000008	1.79e-06	4.52	0.000	1.000005	1.000012
GMicroG9x2 L1.	1.00309	.0090065	0.34	0.731	.9855921	1.020899
xEcoGMicroG5~M L1.	1.000138	.0000582	2.36	0.018	1.000024	1.000252
xEcoGMicroG~MM L1.	1	3.54e-10	-7.27	0.000	1	1
xEcoGMicroG9~M L1.	1.000016	.0000391	0.40	0.690	.999939	1.000092
PopDensity3 L1.	1.007749	.0014784	5.26	0.000	1.004856	1.010651
PolCompt2 L1.	1.019467	.0430542	0.46	0.648	.9384807	1.107443
CorrupControl2 L1.	.6547402	.1111086	-2.50	0.013	.4694844	.913097
FracEthnic L1.	9.437441	3.809825	5.56	0.000	4.277898	20.81987
_cons	1.017294	.5857126	0.03	0.976	.3291264	3.144347
/lnalpha	1.764715	.0659854			1.635386	1.894044
alpha	5.83991	.3853489			5.13144	6.646194

APPENDIX 16C MODEL 6: MICROECONOMIC AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Microeconomic Variables: Income share held by lowest 20% (5), Household Final Consumption Expenditure (7), Inflation (9)

	No Interactives		*With Interactives*
MicroEconomic Aid	0.000413 (0.000262)	MicroEconomic Aid	0.000326 (0.000270)
Income share of low 20%	-0.123 (0.120)	Income share of low 20%	-0.180 (0.120)
Household Consumption $	0.00000523 (0.00000271)	Household Consumption $	0.00000737* (0.00000339)
Inflation, Consumer Prices	0.00573 (0.00787)	Inflation, Consumer Prices	0.00515 (0.0132)
		xEcoAid*IncomeLow20%	0.0000972* (0.0000451)
		xEcoAid*Consumption	-2.09e-09*** (5.48e-10)
		xEcoAid*Inflation	0.00000211 (0.0000388)
Population Density	0.00614* (0.00263)	Population Density	0.00638* (0.00272)
Political Competition	0.0211 (0.0653)	Political Competition	0.0170 (0.0578)
Corruption Control	-0.418 (0.226)	Corruption Control	-0.407 (0.209)
Ethnic Fractionalization	1.766* (0.796)	Ethnic Fractionalization	1.608* (0.725)
Constant	0.258 (1.066)	Constant	0.421 (1.050)
lnalpha Constant	1.786*** (0.0955)	lnalpha Constant	1.743*** (0.0971)
Observations Adjusted R^2	1207	Observations Adjusted R^2	1207

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 16D MODEL 6: MICROECONOMIC AID, GRIEVANCES, AND TERRORISM
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

MicroEconomic Variables: Income share held by lowest 20% (5), Household Final Consumption Expenditure (7), Inflation (9)

	No Interactives		*With Interactives*
MicroEconomic Aid	0.000400	MicroEconomic Aid	0.000345
	(0.000262)		(0.000273)
Income share of low 20%	-0.134	Income share of low 20%	-0.189
	(0.120)		(0.121)
Household Consumption $	0.00000526	Household Consumption $	0.00000734*
	(0.00000270)		(0.00000334)
Inflation, Consumer Prices	0.00639	Inflation, Consumer Prices	0.00559
	(0.00828)		(0.0140)
		xEcoAid*IncomeLow20%	0.0000916*
			(0.0000450)
		xEcoAid*Consumption	-2.10e-09***
			(5.51e-10)
		xEcoAid*Inflation	0.00000293
			(0.0000406)
Population Density	0.00688*	Population Density	0.00722*
	(0.00287)		(0.00289)
Political Competition	0.0175	Political Competition	0.0134
	(0.0663)		(0.0584)
Corruption Control	-0.398	Corruption Control	-0.384
	(0.231)		(0.211)
Ethnic Fractionalization	1.768*	Ethnic Fractionalization	1.616*
	(0.799)		(0.724)
Constant	0.287	Constant	0.432
	(1.077)		(1.055)
inflate		inflate	
datadummy	0	datadummy	0
	(.)		(.)
Constant	-4.462***	Constant	-4.505***
	(1.100)		(1.071)
lnalpha		lnalpha	
Constant	1.756***	Constant	1.712***
	(0.0985)		(0.0995)
Observations	1207	Observations	1207
Adjusted R^2		Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 16D MODEL 6: MICROECONOMIC AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

MicroEconomic Variables: Income share held by lowest 20% (5), Household Final Consumption Expenditure (7), Inflation (9)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1207; Nonzero obs = 572; Zero obs = 635

Inflation model = logit — Wald chi2(8) = 30.48

Log pseudolikelihood = -2819.145 — Prob > chi2 = 0.0002

(Std. Err. adjusted for 132 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB1M	1.0004	.0002618	1.53	0.127	.9998869	1.000913
GMicroG5x2	.8746478	.105166	-1.11	0.265	.6910132	1.107083
GMicroG7x2M	1.000005	2.70e-06	1.95	0.051	1	1.000011
GMicroG9x2	1.006414	.0083284	0.77	0.440	.9902226	1.022871
PopDensity3	1.006903	.0028911	2.40	0.017	1.001253	1.012586
PolCompt2	1.017657	.0674223	0.26	0.792	.8937318	1.158766
CorrupControl2	.6713918	.1549388	-1.73	0.084	.4271123	1.055383
FracEthnic	5.861381	4.684013	2.21	0.027	1.223991	28.06866
_cons	1.333013	1.435078	0.27	0.789	.1616065	10.99538
inflate						
datadummy	0	(omitted)				
_cons	-4.461817	1.099757	-4.06	0.000	-6.617301	-2.306333
/lnalpha	1.755821	.0985295	17.82	0.000	1.562707	1.948935
alpha	5.788198	.5703084			4.77172	7.021209

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1207; Nonzero obs = 572; Zero obs = 635

Inflation model = logit — Wald chi2(11) = .

Log pseudolikelihood = -2801.343 — Prob > chi2 = .

(Std. Err. adjusted for 132 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB1M	1.000345	.0002732	1.26	0.207	.9998097	1.000881
GMicroG5x2	.8275453	.0998065	-1.57	0.117	.6533295	1.048217
GMicroG7x2M	1.000007	3.34e-06	2.20	0.028	1.000001	1.000014
GMicroG9x2	1.005605	.0141276	0.40	0.691	.9782935	1.03368
xEcoGMicroG5~M	1.000092	.000045	2.03	0.042	1.000003	1.00018
xEcoGMicroG~MM	1	5.51e-10	-3.82	0.000	1	1
xEcoGMicroG9~M	1.000003	.0000406	0.07	0.943	.9999233	1.000083
PopDensity3	1.007243	.0029062	2.50	0.012	1.001563	1.012955
PolCompt2	1.01353	.0591972	0.23	0.818	.9039004	1.136456
CorrupControl2	.6810219	.1436535	-1.82	0.069	.4504123	1.029703
FracEthnic	5.03435	3.643288	2.23	0.026	1.218824	20.79438
_cons	1.540266	1.625243	0.41	0.682	.1947299	12.18312
inflate						
datadummy	0	(omitted)				
_cons	-4.505084	1.07065	-4.21	0.000	-6.60352	-2.406649
/lnalpha	1.711907	.099518	17.20	0.000	1.516856	1.906959
alpha	5.539518	.5512818			4.557872	6.732585

APPENDIX 17A MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3)

Negative binomial regression — Number of obs = 2157
Wald chi2(9) = 198.69
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4734.1418 — Pseudo R2 = 0.0211

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB2M L1.	.033609	.0349618	0.96	0.336	-.0349149	.1021329
GUnempl1x2 L1.	-.1373333	.0424718	-3.23	0.001	-.2205764	-.0540901
GUnempl3x2 L1.	.1081059	.0233267	4.63	0.000	.0623863	.1538254
xEcoGUnempl1~M L1.	.0020889	.0017886	1.17	0.243	-.0014166	.0055945
xEcoGUnempl3~M L1.	-.0023307	.0013386	-1.74	0.082	-.0049542	.0002928
PopDensity3 L1.	.0018006	.0010298	1.75	0.080	-.0002178	.0038191
PolCompt2 L1.	.1905521	.0349126	5.46	0.000	.1221246	.2589796
CorrupControl2 L1.	-.9187331	.1000589	-9.18	0.000	-1.114845	-.7226213
FracEthnic L1.	1.061418	.3906125	2.72	0.007	.2958317	1.827004
_cons	-.6891503	.3907947	-1.76	0.078	-1.455094	.0767932
/lnalpha	2.028698	.0408935			1.948548	2.108848
alpha	7.60418	.3109614			7.018492	8.238744

	7b With Interactives
Economic Opportunity Aid	0.0336 (0.0350)
Total Unemployment	-0.137** (0.0425)
Youth Unemployment (15-24)	0.108*** (0.0233)
xEcoOppAid*Total Unemployment	0.00209 (0.00179)
xEcoOppAid*Youth Unemployment	-0.00233 (0.00134)
Population Density	0.00180 (0.00103)
Political Competition	0.191*** (0.0349)
Corruption Control	-0.919*** (0.100)
Ethnic Fractionalization	1.062** (0.391)
Constant	-0.689 (0.391)
lnalpha Constant	2.029*** (0.0409)
Observations	2157
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 17B **MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3)

NO INTERACTIVES

Negative binomial regression — Number of obs = 2157
Wald chi2(7) = 199.71
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4736.2987 — Pseudo R2 = 0.0206

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB2M L1.	1.007268	.0039664	1.84	0.066	.9995241	1.015072
GUnempl1x2 L1.	.879617	.0371674	-3.04	0.002	.8097051	.9555653
GUnempl3x2 L1.	1.105796	.0254997	4.36	0.000	1.05693	1.156922
PopDensity3 L1.	1.001924	.0010131	1.90	0.057	.9999401	1.003911
PolCompt2 L1.	1.211411	.0426008	5.45	0.000	1.130728	1.297852
CorrupControl2 L1.	.3942942	.0390402	-9.40	0.000	.3247436	.4787405
FracEthnic L1.	2.938269	1.141909	2.77	0.006	1.371786	6.293566
_cons	.5210885	.2051371	-1.66	0.098	.2408899	1.127209
/lnalpha	2.031806	.0408509			1.951739	2.111872
alpha	7.627847	.3116044			7.040924	8.263696

WITH INTERACTIVES

Negative binomial regression — Number of obs = 2157
Wald chi2(9) = 198.69
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4734.1418 — Pseudo R2 = 0.0211

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB2M L1.	1.03418	.0361568	0.96	0.336	.9656876	1.107531
GUnempl1x2 L1.	.8716797	.0370218	-3.23	0.001	.8020563	.9473468
GUnempl3x2 L1.	1.114166	.0259899	4.63	0.000	1.064373	1.166287
xEcoGUnempl1~M L1.	1.002091	.0017923	1.17	0.243	.9985844	1.00561
xEcoGUnempl3~M L1.	.997672	.0013354	-1.74	0.082	.995058	1.000293
PopDensity3 L1.	1.001802	.0010317	1.75	0.080	.9997822	1.003826
PolCompt2 L1.	1.209917	.0422414	5.46	0.000	1.129895	1.295607
CorrupControl2 L1.	.3990243	.0399259	-9.18	0.000	.3279661	.485478
FracEthnic L1.	2.890467	1.129052	2.72	0.007	1.344244	6.215241
_cons	.5020024	.1961799	-1.76	0.078	.2333785	1.079819
/lnalpha	2.028698	.0408935			1.948548	2.108848
alpha	7.60418	.3109614			7.018492	8.238744

APPENDIX 17C MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3)

	No Interactives		*With Interactives*
Economic Opportunity Aid	0.00547 (0.00387)	Economic Opportunity Aid	0.0267 (0.0347)
Total Unemployment	-0.105 (0.0826)	Total Unemployment	-0.106 (0.0836)
Youth Unemployment (15-24)	0.0765 (0.0458)	Youth Unemployment (15-24)	0.0800 (0.0461)
		xEcoOppAid*Total Unemployment	-0.000595 (0.00163)
		xEcoOppAid*Youth Unemployment	-0.000825 (0.00154)
Population Density	0.00135 (0.00266)	Population Density	0.00127 (0.00264)
Political Competition	0.197** (0.0640)	Political Competition	0.195** (0.0633)
Corruption Control	-0.940*** (0.224)	Corruption Control	-0.926*** (0.220)
Ethnic Fractionalization	0.460 (0.982)	Ethnic Fractionalization	0.474 (0.968)
Constant	-0.0545 (0.856)	Constant	-0.0942 (0.846)
lnalpha Constant	1.978*** (0.0822)	lnalpha Constant	1.977*** (0.0818)
Observations Adjusted R^2	2310	Observations Adjusted R^2	2310

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 17D **MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients**

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3)

	No Interactives		*With Interactives*
Economic Opportunity Aid	0.00537	Economic Opportunity Aid	0.0267
	(0.00383)		(0.0345)
Total Unemployment	-0.109	Total Unemployment	-0.110
	(0.0830)		(0.0841)
Youth Unemployment (15-24)	0.0783	Youth Unemployment (15-24)	0.0819
	(0.0462)		(0.0465)
		xEcoOppAid*Total Unemployment	-0.000600
			(0.00162)
		xEcoOppAid*Youth Unemployment	-0.000833
			(0.00153)
Population Density	0.00129	Population Density	0.00121
	(0.00266)		(0.00264)
Political Competition	0.192**	Political Competition	0.190**
	(0.0643)		(0.0636)
Corruption Control	-0.925***	Corruption Control	-0.911***
	(0.225)		(0.220)
Ethnic Fractionalization	0.453	Ethnic Fractionalization	0.467
	(0.991)		(0.977)
Constant	0.00312	Constant	-0.0362
	(0.863)		(0.853)
inflate		inflate	
datadummy	-44.02***	datadummy	-46.32***
	(0.970)		(0.922)
Constant	23.95***	Constant	25.08***
	(0.714)		(0.714)
lnalpha		lnalpha	
Constant	1.966***	Constant	1.964***
	(0.0820)		(0.0816)
Observations	2310	Observations	2310
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 17D **MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2310; Nonzero obs = 1054; Zero obs = 1256

Inflation model = logit — Wald chi2(7) = 32.45

Log pseudolikelihood = -5248.621 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 158 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB2M	1.005384	.0038531	1.40	0.161	.9978603	1.012964
GUnempl1x2	.8970458	.0744955	-1.31	0.191	.7623006	1.055609
GUnempl3x2	1.081499	.0499381	1.70	0.090	.9879204	1.183941
PopDensity3	1.001292	.0026657	0.49	0.628	.9960813	1.006531
PolCompt2	1.211494	.0778974	2.98	0.003	1.068047	1.374208
CorrupControl2	.3965843	.0893219	-4.11	0.000	.2550474	.616666
FracEthnic	1.573645	1.559914	0.46	0.647	.2254925	10.98199
_cons	1.003129	.8660628	0.00	0.997	.1846981	5.448177
inflate						
datadummy	-44.0158	.9696292	-45.39	0.000	-45.91624	-42.11536
_cons	23.95262	.7142002	33.54	0.000	22.55281	25.35242
/lnalpha	1.965811	.0819592	23.99	0.000	1.805174	2.126448
alpha	7.140702	.5852463			6.081029	8.385031

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2310; Nonzero obs = 1054; Zero obs = 1256

Inflation model = logit — Wald chi2(9) = 34.05

Log pseudolikelihood = -5247.292 — Prob > chi2 = 0.0001

(Std. Err. adjusted for 158 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB2M	1.027055	.0354832	0.77	0.440	.9598115	1.099009
GUnempl1x2	.8957114	.0753008	-1.31	0.190	.7596424	1.056153
GUnempl3x2	1.085344	.0504227	1.76	0.078	.9908828	1.188809
xEcoGUnempl1~M	.9994003	.0016156	-0.37	0.711	.9962389	1.002572
xEcoGUnempl3~M	.9991678	.0015331	-0.54	0.587	.9961675	1.002177
PopDensity3	1.001213	.0026427	0.46	0.646	.9960467	1.006406
PolCompt2	1.208762	.0769205	2.98	0.003	1.067023	1.369328
CorrupControl2	.4023186	.0886119	-4.13	0.000	.2612705	.6195123
FracEthnic	1.595825	1.559208	0.48	0.632	.2351339	10.83067
_cons	.9644649	.8223803	-0.04	0.966	.1813358	5.129668
inflate						
datadummy	-46.31778	.9217572	-50.25	0.000	-48.12439	-44.51117
_cons	25.08072	.7139714	35.13	0.000	23.68136	26.48008
/lnalpha	1.964109	.0816222	24.06	0.000	1.804132	2.124085
alpha	7.128555	.5818486			6.074695	8.365241

APPENDIX 17E **MODEL 7: ECONOMIC OPPORTUNITY AID, GRIEVANCES, AND TERRORISM WITH LONG-TERM UNEMPLOYMENT**

Negative Binomial Regression, Lagged

Unemployment Variables: Unemployment, total (1), Youth Unemployment (3), Long-Term Unemployment (5)

	No Interactives		*With Interactives*
Economic Opportunity Aid	0.000370 (0.00327), *1.00037*	Economic Opportunity Aid	0.0182 (0.0153), *1.018*
Total Unemployment	-0.0964* (0.0410), *-0.908**	Total Unemployment	-0.115** (0.0411), *-0.891***
Youth Unemployment	0.0219 (0.0221), *1.022*	Youth Unemployment	0.0398 (0.0225), *1.041*
Long-Term Unemployment	-0.0190*** (0.00576), *-0.981****	Long-Term Unemployment	-0.0238*** (0.00596), *-0.976****
		xEcoOppAid*Total	0.0306*** (0.00654), *1.031****
		xEcoOppAid*Youth	**-0.0201***** **(0.00364), *-0.980******
		xEcoOppAid*Long-Term	0.00213** (0.000664), *1.002***
Population Density	-0.000115 (0.000179), *.9998*	Population Density	-0.0000804 (0.000179), *.9999*
Political Competition	0.251*** (0.0643), *1.285****	Political Competition	0.283*** (0.0677), *1.327****
Corruption Control	-1.132*** (0.116), *-0.323****	Corruption Control	-1.128*** (0.116), *0.324****
Ethnic Fractionalization	1.952** (0.616), *7.041***	Ethnic Fractionalization	1.958** (0.601)
Constant	1.029 (0.718)	Constant	0.699 (0.738)
lnalpha Constant	1.803*** (0.0673)	lnalpha Constant	1.773*** (0.0675)
Observations	737	Observations	737
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - Incidence-Rate Ratios - IRR in italic

APPENDIX 18A **MODEL 8: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM**
Negative Binomial Regression, Lagged - DETAILED RESULTS

Production Sectors Variables: Employment in Agriculture, Industry, and Services (and related interactive xAgriculture(1), xIndustry (2), and xServices (3)).

```
Negative binomial regression                    Number of obs   =       1491
                                                Wald chi2(11)   =     255.02
Dispersion           = mean                     Prob > chi2     =     0.0000
Log pseudolikelihood = -3331.6716               Pseudo R2       =     0.0336
```

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB3M L1.	.0435009	.1053769	0.41	0.680	-.1630341	.2500358
GAgricltr2 L1.	.1014743	.0835078	1.22	0.224	-.062198	.2651466
GIndustry2 L1.	.136517	.0803454	1.70	0.089	-.0209571	.2939911
GServices2 L1.	.1125211	.0845553	1.33	0.183	-.0532043	.2782465
xEcoGProd~1x2M L1.	-.0003746	.0010548	-0.36	0.723	-.002442	.0016928
xEcoGProd~2x2M L1.	-.0005764	.0010448	-0.55	0.581	-.0026241	.0014714
xEcoGProd~3x2M L1.	-.0003658	.0010587	-0.35	0.730	-.0024408	.0017093
PopDensity3 L1.	.0005189	.0008439	0.61	0.539	-.0011352	.0021729
PolCompt2 L1.	.1805846	.0369709	4.88	0.000	.1081229	.2530463
CorrupControl2 L1.	-.9198122	.130543	-7.05	0.000	-1.175672	-.6639527
FracEthnic L1.	1.181521	.434077	2.72	0.006	.3307456	2.032296
_cons	-11.42817	8.337501	-1.37	0.170	-27.76937	4.913034
/lnalpha	1.932927	.0462478			1.842283	2.023571
alpha	6.909707	.319559			6.310931	7.565295

	8b With Interactives
Production Sectors Aid	0.0435 (0.105)
Agriculture	0.101 (0.0835)
Industry	0.137 (0.0803)
Services	0.113 (0.0846)
xProductionAid*Agriculture	-0.000375 (0.00105)
xProductionAid*Industry	-0.000576 (0.00104)
xProductionAid*Services	-0.000366 (0.00106)
Population Density	0.000519 (0.000844)
Political Competition	0.181*** (0.0370)
Corruption Control	-0.920*** (0.131)
Ethnic Fractionalization	1.182** (0.434)
Constant	-11.43 (8.338)
lnalpha Constant	1.933*** (0.0462)
Observations	1491
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 18B **MODEL 8: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Production Sectors Variables: Employment in Agriculture, Industry, and Services

NO INTERACTIVES

Negative binomial regression — Number of obs = 1491
Wald chi2(8) = 237.34
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -3336.3381 — Pseudo R2 = 0.0323

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB3M L1.	1.00212	.000343	6.19	0.000	1.001448	1.002793
GAgricltr2 L1.	1.073718	.0353208	2.16	0.031	1.006675	1.145226
GIndustry2 L1.	1.094016	.039744	2.47	0.013	1.018827	1.174753
GServices2 L1.	1.087361	.0349065	2.61	0.009	1.021053	1.157975
PopDensity3 L1.	1.000621	.0008721	0.71	0.477	.9989128	1.002331
PolCompt2 L1.	1.199638	.0456024	4.79	0.000	1.113507	1.292431
CorrupControl2 L1.	.3912682	.0508356	-7.22	0.000	.3033068	.5047392
FracEthnic L1.	3.280079	1.415992	2.75	0.006	1.407425	7.644396
_cons	.0002955	.0009844	-2.44	0.015	4.32e-07	.2023465
/lnalpha	1.942733	.0461675			1.852246	2.03322
alpha	6.977796	.3221475			6.374123	7.638642

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1491
Wald chi2(11) = 255.02
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -3331.6716 — Pseudo R2 = 0.0336

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB3M L1.	1.044461	.1100621	0.41	0.680	.8495622	1.284071
GAgricltr2 L1.	1.106802	.0924266	1.22	0.224	.9396968	1.303622
GIndustry2 L1.	1.146274	.0920979	1.70	0.089	.9792609	1.341772
GServices2 L1.	1.119096	.0946255	1.33	0.183	.9481863	1.320812
xEcoGProd~1x2M L1.	.9996255	.0010544	-0.36	0.723	.997561	1.001694
xEcoGProd~2x2M L1.	.9994238	.0010442	-0.55	0.581	.9973794	1.001472
xEcoGProd~3x2M L1.	.9996343	.0010583	-0.35	0.730	.9975621	1.001711
PopDensity3 L1.	1.000519	.0008444	0.61	0.539	.9988655	1.002175
PolCompt2 L1.	1.197917	.0442881	4.88	0.000	1.114185	1.287943
CorrupControl2 L1.	.3985939	.0520336	-7.05	0.000	.3086116	.5148124
FracEthnic L1.	3.259328	1.414799	2.72	0.006	1.392006	7.631591
_cons	.0000109	.0000907	-1.37	0.170	8.71e-13	136.0516
/lnalpha	1.932927	.0462478			1.842283	2.023571
alpha	6.909707	.319559			6.310931	7.565295

APPENDIX 18C MODEL 8: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Production Sectors Variables: Employment in Agriculture, Industry, and Services (and related interactive xAgriculture(1), xIndustry (2), and xServices (3)).

	No Interactives		*With Interactives*
Production Sectors Aid	0.00192***	Production Sectors Aid	0.0452
	(0.000565)		(0.0848)
Agriculture	0.0743	Agriculture	0.115
	(0.0414)		(0.0838)
Industry	0.0988	Industry	0.153
	(0.0550)		(0.0883)
Services	0.0840	Services	0.124
	(0.0448)		(0.0874)
		xProductionAid*Agriculture	-0.000396
			(0.000851)
		xProductionAid*Industry	-0.000575
			(0.000852)
		xProductionAid*Services	-0.000394
			(0.000845)
Population Density	0.000793	Population Density	0.000668
	(0.00246)		(0.00255)
Political Competition	0.180*	Political Competition	0.176*
	(0.0756)		(0.0712)
Corruption Control	-0.901***	Corruption Control	-0.890***
	(0.223)		(0.232)
Ethnic Fractionalization	0.930	Ethnic Fractionalization	0.903
	(1.073)		(1.050)
Constant	-8.239	Constant	-12.52
	(4.548)		(8.679)
lnalpha		lnalpha	
Constant	1.883***	Constant	1.874***
	(0.0898)		(0.0900)
Observations	1571	Observations	1571
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 18D MODEL 7: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Production Sectors Variables: Employment in Agriculture, Industry, and Services (and related interactive xAgriculture(1), xIndustry (2), and xServices (3)).

	No Interactives		*With Interactives*
Production Sectors Aid	0.00192***	Production Sectors Aid	0.0450
	(0.000568)		(0.0824)
Agriculture	0.0740	Agriculture	0.115
	(0.0399)		(0.0837)
Industry	0.0972	Industry	0.151
	(0.0541)		(0.0883)
Services	0.0849*	Services	0.126
	(0.0433)		(0.0874)
		xProductionAid*Agriculture	-0.000394
			(0.000828)
		xProductionAid*Industry	-0.000568
			(0.000829)
		xProductionAid*Services	-0.000395
			(0.000822)
Population Density	0.000786	Population Density	0.000648
	(0.00251)		(0.00259)
Political Competition	0.165*	Political Competition	0.161*
	(0.0777)		(0.0731)
Corruption Control	-0.883***	Corruption Control	-0.879***
	(0.222)		(0.232)
Ethnic Fractionalization	0.917	Ethnic Fractionalization	0.888
	(1.091)		(1.068)
Constant	-8.119	Constant	-12.44
	(4.413)		(8.678)
inflate		inflate	
datadummy	-48.61***	datadummy	-49.09***
	(1.195)		(1.155)
Constant	25.96***	Constant	25.96***
	(1.014)		(1.014)
lnalpha		lnalpha	
Constant	1.875***	Constant	1.866***
	(0.0893)		(0.0895)
Observations	1571	Observations	1571
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce(cluster Country))

APPENDIX 18D **MODEL 8: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Production Sectors Variables: Employment in Agriculture, Industry, and Services (and related interactive xAgriculture(1), xIndustry (2), and xServices (3)).

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1571; Nonzero obs = 737; Zero obs = 834

Inflation model = logit — Wald chi2(8) = 50.11

Log pseudolikelihood = -3649.916 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 135 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB3M	1.001926	.0005691	3.39	0.001	1.000811	1.003042
GAgricltr2	1.076823	.0429969	1.85	0.064	.9957641	1.164481
GIndustry2	1.10208	.059606	1.80	0.072	.9912335	1.225323
GServices2	1.088634	.0471677	1.96	0.050	1.000004	1.18512
PopDensity3	1.000786	.0025155	0.31	0.755	.995868	1.005729
PolCompt2	1.179095	.0916295	2.12	0.034	1.012513	1.373084
CorrupControl2	.4135278	.091991	-3.97	0.000	.2673938	.639526
FracEthnic	2.50259	2.729475	0.84	0.400	.2951333	21.22077
_cons	.0002977	.0013138	-1.84	0.066	5.22e-08	1.69776
inflate						
datadummy	-48.60646	1.19542	-40.66	0.000	-50.94944	-46.26348
_cons	25.96208	1.013805	25.61	0.000	23.97506	27.9491
/lnalpha	1.874845	.0892586	21.00	0.000	1.699901	2.049788
alpha	6.519807	.5819488			5.473406	7.766257

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 1571; Nonzero obs = 737; Zero obs = 834

Inflation model = logit — Wald chi2(11) = 64.31

Log pseudolikelihood = -3645.181 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 135 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB3M	1.046067	.086246	0.55	0.585	.8899784	1.22953
GAgricltr2	1.121798	.0939463	1.37	0.170	.9519845	1.321903
GIndustry2	1.16285	.1027187	1.71	0.088	.9779886	1.382653
GServices2	1.134121	.0991123	1.44	0.150	.9555901	1.346006
xEcoGProd~1x2M	.9996065	.0008272	-0.48	0.634	.9979865	1.001229
xEcoGProd~2x2M	.9994324	.0008282	-0.69	0.493	.9978105	1.001057
xEcoGProd~3x2M	.9996056	.0008213	-0.48	0.631	.9979972	1.001217
PopDensity3	1.000648	.0025918	0.25	0.802	.9955814	1.005741
PolCompt2	1.174514	.085817	2.20	0.028	1.017805	1.355352
CorrupControl2	.4152957	.0964135	-3.79	0.000	.2634788	.6545897
FracEthnic	2.429731	2.594176	0.83	0.406	.2997415	19.69561
_cons	3.96e-06	.0000344	-1.43	0.152	1.63e-13	96.46134
inflate						
datadummy	-49.09059	1.154652	-42.52	0.000	-51.35366	-46.82751
_cons	25.95973	1.014241	25.60	0.000	23.97185	27.9476
/lnalpha	1.865888	.0895118	20.85	0.000	1.690448	2.041328
alpha	6.461672	.578396			5.421911	7.70083

APPENDIX 18 E **MODEL 8: PRODUCTION SECTORS AID, GRIEVANCES, AND TERRORISM OMITTING AGRICULTURE**

Negative Binomial Regression, Lagged

Production Sectors Variables: Employment in Industry and Services (and related interactive xIndustry (2), and xServices (3)).

	No Interactives		*With Interactives*
Production Sectors Aid	0.00219***	Production Sectors Aid	0.00638***
	(0.000340), *1.002****		(0.00138), *1.006****
Industry	0.0161	Industry	0.0339*
	(0.0143), *1.016*		(0.0159), *1.034**
Services	0.0130	Services	0.0121
	(0.00694), *1.013*		(0.00807), *1.012*
		xProductionAid*Industry	-0.000208***
			(0.0000486), *-.9997923****
		xProductionAid*Services	0.00000624
			(0.0000224), *1.000006*
Population Density	0.000401	Population Density	0.000288
	(0.000630), *1.0004*		(0.000522), *1.00003*
Political Competition	0.187***	Political Competition	0.183***
	(0.0372), *1.206****		(0.0368), *1.201****
Corruption Control	-0.923***	Corruption Control	-0.926***
	(0.126), *0.397****		(0.132), *-0.396****
Ethnic Fractionalization	1.235**	Ethnic Fractionalization	1.221**
	(0.427), *3.439***		(0.433), *3.390***
Constant	-1.059	Constant	-1.364*
	(0.565)		(0.586)
lnalpha		lnalpha	
Constant	1.946***	Constant	1.937***
	(0.0457)		(0.0461)
Observations	1491	Observations	1491
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - Incidence-Rate Ratios - IRR in italic

APPENDIX 19A MODEL 9: DEVELOPMENT AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Development Variables: Food Imports (GFoodImp2) and Gross Domestic Savings(GDomSav2M)and respective interactive variables: xECoGDevlop2x2M (Development Aid x Food Imports) and xEcoGDevelop4x2MM (Development Aid x Domestic Savings)

```
Negative binomial regression                    Number of obs   =       1891
                                                Wald chi2(8)    =          .
Dispersion           = mean                     Prob > chi2     =          .
Log pseudolikelihood = -4104.1657               Pseudo R2       =     0.0239
```

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB4M L1.	-.000138	.0000843	-1.64	0.102	-.0003033	.0000272
GFoodImp2 L1.	-.060122	.0139634	-4.31	0.000	-.0874897	-.0327543
GDomSav2M L1.	1.82e-06	4.17e-07	4.36	0.000	1.00e-06	2.64e-06
xEcoGDevlop2~M L1.	.0000355	.0000166	2.14	0.032	2.98e-06	.000068
xEcoGDevlop~MM L1.	-1.29e-09	4.11e-10	-3.13	0.002	-2.09e-09	-4.82e-10
PopDensity3 L1.	.0005551	.0007023	0.79	0.429	-.0008213	.0019315
PolCompt2 L1.	.1566435	.0341676	4.58	0.000	.0896763	.2236107
CorrupControl2 L1.	-1.191088	.0916741	-12.99	0.000	-1.370766	-1.01141
FracEthnic L1.	-.369068	.3541195	-1.04	0.297	-1.063129	.3249934
_cons	1.53476	.455509	3.37	0.001	.6419787	2.427541
/lnalpha	1.950405	.0438275			1.864505	2.036306
alpha	7.031537	.3081749			6.452741	7.662251

	9b With Interactives
Development Aid	-0.000138 (0.0000843)
Food Imports	-0.0601*** (0.0140)
Domestic Savings	0.00000182*** (0.000000417)
xDevelopAid*FoodImports	0.0000355* (0.0000166)
xDevelopAid*DomesticSavings	--1.29e-09** (4.11e-10)
Population Density	0.000555 (0.000702)
Political Competition	0.157*** (0.0342)
Corruption Control	-1.191*** (0.0917)
Ethnic Fractionalization	-0.369 (0.354)
Constant	1.535*** (0.456)
lnalpha	
Constant	1.950*** (0.0438)
Observations	1891
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 19B **MODEL 9: DEVELOPMENT AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Development Variables: Food Imports (GFoodImp2) and Gross Domestic Savings(GDomSav2M)and respective interactive variables: xECoGDevlop2x2M (Development Aid x Food Imports) and xEcoGDevelop4x2MM (Development Aid x Domestic Savings)

NO INTERACTIVES

Negative binomial regression — Number of obs = 1891
Wald chi2(7) = 213.44
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4111.4321 — Pseudo R2 = 0.0222

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB4M L1.	1.000084	.0000694	1.21	0.225	.9999482	1.00022
GFoodImp2 L1.	.9533238	.0174101	-2.62	0.009	.9198042	.988065
GDomSav2M L1.	1.000002	4.03e-07	4.48	0.000	1.000001	1.000003
PopDensity3 L1.	1.000615	.000736	0.84	0.403	.9991733	1.002058
PolCompt2 L1.	1.173187	.0410585	4.56	0.000	1.095412	1.256485
CorrupControl2 L1.	.3056721	.0281106	-12.89	0.000	.2552563	.3660456
FracEthnic L1.	.7890207	.2764315	-0.68	0.499	.3970745	1.567851
_cons	3.812096	1.887342	2.70	0.007	1.444574	10.05976
/lnalpha	1.962325	.0453594			1.873422	2.051228
alpha	7.115852	.3227705			6.510539	7.777443

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1891
Wald chi2(8) = .
Dispersion = mean — Prob > chi2 = .
Log pseudolikelihood = -4104.1657 — Pseudo R2 = 0.0239

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ECOSUB4M L1.	.999862	.0000843	-1.64	0.102	.9996968	1.000027
GFoodImp2 L1.	.9416497	.0131486	-4.31	0.000	.9162283	.9677764
GDomSav2M L1.	1.000002	4.17e-07	4.36	0.000	1.000001	1.000003
xEcoGDevlop2~M L1.	1.000036	.0000166	2.14	0.032	1.000003	1.000068
xEcoGDevlop~MM L1.	1	4.11e-10	-3.13	0.002	1	1
PopDensity3 L1.	1.000555	.0007026	0.79	0.429	.9991791	1.001933
PolCompt2 L1.	1.169579	.0399617	4.58	0.000	1.09382	1.250584
CorrupControl2 L1.	.3038904	.0278589	-12.99	0.000	.2539124	.3637057
FracEthnic L1.	.6913784	.2448305	-1.04	0.297	.3453733	1.384022
_cons	4.640212	2.113658	3.37	0.001	1.900237	11.33099
/lnalpha	1.950405	.0438275			1.864505	2.036306
alpha	7.031537	.3081749			6.452741	7.662251

APPENDIX 19C MODEL 9: DEVELOPMENT AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Development Variables: Food Imports (GFoodImp2) and Gross Domestic Savings(GDomSav2M)and respective interactive variables: xECoGDevlop2x2M (Development Aid x Food Imports) and xEcoGDevelop4x2MM (Development Aid x Domestic Savings)

	No Interactives		*With Interactives*
Development Aid	0.0000492 (0.0000576)	Development Aid	-0.0000999 (0.0000990)
Food Imports	-0.0421 (0.0322)	Food Imports	-0.0480 (0.0328)
Domestic Savings	0.00000179 (0.00000110)	Domestic Savings	0.00000181 (0.00000113)
		xDevelopAid*FoodImports	0.0000236 (0.0000131)
		xDevelopAid*DomesticSavings	-8.40e-10** (3.17e-10)
Population Density	0.000681 (0.00202)	Population Density	0.000651 (0.00198)
Political Competition	0.149** (0.0570)	Political Competition	0.151** (0.0563)
Corruption Control	-1.134*** (0.214)	Corruption Control	-1.139*** (0.213)
Ethnic Fractionalization	-0.343 (0.863)	Ethnic Fractionalization	-0.395 (0.851)
Constant	1.471 (0.968)	Constant	1.525 (0.946)
lnalpha Constant	1.908*** (0.0855)	lnalpha Constant	1.902*** (0.0854)
Observations	2005	Observations	2005
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 19D MODEL 9: DEVELOPMENT AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Development Variables: Food Imports (GFoodImp2) and Gross Domestic Savings(GDomSav2M)and respective interactive variables: xECoGDevlop2x2M (Development Aid x Food Imports) and xEcoGDevelop4x2MM (Development Aid x Domestic Savings)

	No Interactives		*With Interactives*
Development Aid	0.0000480 (0.0000568)	Development Aid	-0.0000977 (0.0000968)
Food Imports	-0.0418 (0.0323)	Food Imports	-0.0477 (0.0329)
Domestic Savings	0.00000177 (0.00000108)	Domestic Savings	0.00000179 (0.00000112)
		xDevelopAid*FoodImports	0.0000230 (0.0000127)
		xDevelopAid*DomesticSavings	-8.28e-10** (3.16e-10)
Population Density	0.000647 (0.00201)	Population Density	0.000618 (0.00196)
Political Competition	0.141* (0.0570)	Political Competition	0.144* (0.0565)
Corruption Control	-1.115*** (0.215)	Corruption Control	-1.120*** (0.214)
Ethnic Fractionalization	-0.350 (0.872)	Ethnic Fractionalization	-0.402 (0.859)
Constant	1.538 (0.974)	Constant	1.593 (0.952)
inflate		inflate	
datadummy	-48.22*** (0.849)	datadummy	-47.96*** (0.849)
Constant	25.80*** (0.794)	Constant	25.67*** (0.796)
lnalpha		lnalpha	
Constant	1.902*** (0.0853)	Constant	1.896*** (0.0853)
Observations	2005	Observations	2005
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 19D **MODEL 9: DEVELOPMENT AID, GRIEVANCES, AND TERRORISM**
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Development Variables: Food Imports (GFoodImp2) and Gross Domestic Savings(GDomSav2M)and respective interactive variables: xECoGDevlop2x2M (Development Aid x Food Imports) and xEcoGDevelop4x2MM (Development Aid x Domestic Savings)

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2005; Nonzero obs = 921; Zero obs = 1084

Inflation model = logit — Wald chi2(7) = 41.14

Log pseudolikelihood = -4548.387 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 147 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB4M	1.000048	.0000568	0.84	0.398	.9999366	1.000159
GFoodImp2	.9590344	.0309825	-1.29	0.195	.9001924	1.021723
GDomSav2M	1.000002	1.08e-06	1.63	0.103	.9999996	1.000004
PopDensity3	1.000647	.0020129	0.32	0.748	.9967098	1.0046
PolCompt2	1.151795	.0656967	2.48	0.013	1.029968	1.288031
CorrupControl2	.3278179	.0704462	-5.19	0.000	.2151366	.4995177
FracEthnic	.704465	.6140687	-0.40	0.688	.1276096	3.888979
_cons	4.6542	4.53386	1.58	0.114	.6896872	31.40782
inflate						
datadummy	-48.21851	.8490627	-56.79	0.000	-49.88264	-46.55438
_cons	25.79876	.7944656	32.47	0.000	24.24164	27.35589
/lnalpha	1.901981	.0852913	22.30	0.000	1.734813	2.069149
alpha	6.69915	.5713795			5.667867	7.918079

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2005; Nonzero obs = 921; Zero obs = 1084

Inflation model = logit — Wald chi2(9) = .

Log pseudolikelihood = -4544.07 — Prob > chi2 = .

(Std. Err. adjusted for 147 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
ECOSUB4M	.9999023	.0000968	-1.01	0.313	.9997126	1.000092
GFoodImp2	.9534164	.0313624	-1.45	0.147	.8938868	1.01691
GDomSav2M	1.000002	1.12e-06	1.60	0.110	.9999996	1.000004
xEcoGDevlop2~M	1.000023	.0000127	1.82	0.069	.9999982	1.000048
xEcoGDevlop~MM	1	3.16e-10	-2.62	0.009	1	1
PopDensity3	1.000618	.0019641	0.31	0.753	.9967759	1.004475
PolCompt2	1.154613	.0652312	2.54	0.011	1.033587	1.289811
CorrupControl2	.3261516	.0696552	-5.25	0.000	.2146006	.4956875
FracEthnic	.6689419	.5746549	-0.47	0.640	.1242119	3.602579
_cons	4.916048	4.681249	1.67	0.094	.7604479	31.78065
inflate						
datadummy	-47.96242	.8491405	-56.48	0.000	-49.62671	-46.29814
_cons	25.66559	.7959206	32.25	0.000	24.10562	27.22557
/lnalpha	1.895587	.0852571	22.23	0.000	1.728486	2.062688
alpha	6.656452	.56751			5.632119	7.867084

APPENDIX 20 EXPECTATION III - SUMMARY STATISTICS

Expectation III. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Country	3895	106.1728	61.83228	1	214
Terror Events	3895	13.25623	59.31355	0	1155
PEACE AND SECURITY AID	3895	5473496	3.27e+07	0	9.98e+08
GOVERNANCE AID	3895	4.75e+07	1.53e+08	0	2.16e+09
Peace/Security					
Political Stability	2728	-.126393	.9955464	-3.32	1.67
Military Budget (%GDP)	3002	2.605507	3.545436	.0349045	117.3877
Governance					
Corruption Control	2737	-.0874808	.9964834	-2.06	2.59
Political Competition	3301	6.378219	3.352168	0	10
Control					
Regime Type	3308	2.799123	6.738745	-10	10
Population Density	3833	146.9843	398.4855	1.41	6191.29
Ethnic Fractionalization	3744	.4383097	.2585967	0	.930175

APPENDIX 21A MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Peace and Security Variables: Military Budget and Political Stability

Negative binomial regression — Number of obs = 1974
Wald chi2(8) = 757.59
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4131.5014 — Pseudo R2 = 0.0845

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
PEACESECM L1.	-.0061167	.0079309	-0.77	0.441	-.0216608	.0094275
MilBudGDP2 L1.	.1241033	.0523814	2.37	0.018	.0214376	.226769
PolStability2 L1.	-1.737214	.0780129	-22.27	0.000	-1.890117	-1.584312
xPeaceMilGDP2M L1.	-.0001846	.0014967	-0.12	0.902	-.0031182	.0027489
xPeacePolSt~2M L1.	-.0046882	.0024341	-1.93	0.054	-.009459	.0000826
RegimeT2 L1.	.1325373	.0134488	9.85	0.000	.1061781	.1588965
PopDensity3 L1.	-.000071	.0001345	-0.53	0.598	-.0003347	.0001927
FracEthnic L1.	-1.752345	.2720895	-6.44	0.000	-2.285631	-1.219059
_cons	.9568759	.2415622	3.96	0.000	.4834227	1.430329
/lnalpha	1.539397	.0500057			1.441388	1.637407
alpha	4.661779	.2331154			4.226558	5.141817

	10b With Interactives
Peace and Security Aid	-0.00612 (0.00793)
Military Budget	0.124* (0.0524)
Political Stability	-1.737*** (0.0780)
xPeaceSec Aid * Military Budget	-0.000185 (0.00150)
xPeaceSec Aid * Political Stability	-0.00469 (0.00243)
Regime Type	0.133*** (0.0134)
Population Density	-0.0000710 (0.000135)
Ethnic Fractionalization	-1.752*** (0.272)
Constant	0.957*** (0.242)
lnalpha Constant	1.539*** (0.0500)
Observations	1974
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 21B MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Peace and Security Variables: Military Budget and Political Stability

NO INTERACTIVES

Negative binomial regression — Number of obs = 1974; Wald chi2(6) = 776.91; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -4134.4594; Pseudo R2 = 0.0838

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
PEACESECM L1.	1.000967	.0009719	1.00	0.319	.9990642	1.002874
MilBudGDP2 L1.	1.122175	.0558776	2.31	0.021	1.017832	1.237216
PolStability2 L1.	.1722926	.0131186	-23.10	0.000	.1484071	.2000223
RegimeT2 L1.	1.140842	.015202	9.89	0.000	1.111432	1.17103
PopDensity3 L1.	.9999251	.0001339	-0.56	0.576	.9996626	1.000188
FracEthnic L1.	.1662511	.0453587	-6.58	0.000	.0973933	.2837919
_cons	2.700856	.6332834	4.24	0.000	1.705752	4.276486
/lnalpha	1.54456	.0496717			1.447205	1.641914
alpha	4.685908	.232757			4.251215	5.165048

WITH INTERACTIVES

Negative binomial regression — Number of obs = 1974; Wald chi2(8) = 757.59; Prob > chi2 = 0.0000; Dispersion = mean; Log pseudolikelihood = -4131.5014; Pseudo R2 = 0.0845

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
PEACESECM L1.	.993902	.0078825	-0.77	0.441	.9785721	1.009472
MilBudGDP2 L1.	1.132133	.0593027	2.37	0.018	1.021669	1.25454
PolStability2 L1.	.17601	.013731	-22.27	0.000	.1510542	.2050889
xPeaceMilGDP2M L1.	.9998154	.0014965	-0.12	0.902	.9968867	1.002753
xPeacePolSt~2M L1.	.9953228	.0024227	-1.93	0.054	.9905856	1.000083
RegimeT2 L1.	1.141722	.0153548	9.85	0.000	1.11202	1.172217
PopDensity3 L1.	.999929	.0001345	-0.53	0.598	.9996654	1.000193
FracEthnic L1.	.173367	.0471713	-6.44	0.000	.1017099	.2955081
_cons	2.60355	.6289193	3.96	0.000	1.621615	4.180075
/lnalpha	1.539397	.0500057			1.441388	1.637407
alpha	4.661779	.2331154			4.226558	5.141817

APPENDIX 21C MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Peace and Security Variables: Military Budget and Political Stability

	No Interactives		*With Interactives*
Terror1		Terror1	
Peace and Security Aid	0.000450	Peace and Security Aid	-0.0118
	(0.00158)		(0.00890)
Military Budget	0.0971	Military Budget	0.102
	(0.0982)		(0.1000)
Political Stability	-1.740***	Political Stability	-1.716***
	(0.146)		(0.153)
		xPeaceSec Aid * Military Budget	0.000797
			(0.00163)
		xPeaceSec Aid * Political Stability	-0.00617*
			(0.00284)
Regime Type	0.127***	Regime Type	0.128***
	(0.0195)		(0.0195)
Population Density	-0.0000249	Population Density	-0.0000228
	(0.000334)		(0.000339)
Ethnic Fractionalization	-2.126***	Ethnic Fractionalization	-2.081***
	(0.585)		(0.586)
Constant	1.271**	Constant	1.245**
	(0.426)		(0.430)
lnalpha		lnalpha	
Constant	1.484***	Constant	1.479***
	(0.0849)		(0.0845)
Observations	2106	Observations	2106
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 21D MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Peace and Security Variables: Military Budget and Political Stability

	No Interactives		*With Interactives*
Peace and Security Aid	0.000543 (0.00163)	Peace and Security Aid	-0.0113 (0.00904)
Military Budget	0.114 (0.107)	Military Budget	0.121 (0.109)
Political Stability	-1.714*** (0.146)	Political Stability	-1.689*** (0.154)
		xPeaceSec Aid * Military Budget	0.000654 (0.00165)
		xPeaceSec Aid * Political Stability	-0.00625* (0.00290)
Regime Type	0.126*** (0.0193)	Regime Type	0.126*** (0.0194)
Population Density	-0.0000390 (0.000334)	Population Density	-0.0000373 (0.000339)
Ethnic Fractionalization	-2.089*** (0.584)	Ethnic Fractionalization	-2.041*** (0.584)
Constant	1.238** (0.438)	Constant	1.207** (0.443)
inflate datadummy	-44.57*** (0.788)	inflate datadummy	-49.53*** (0.786)
Constant	22.13*** (0.756)	Constant	24.58*** (0.754)
lnalpha Constant	1.477*** (0.0845)	lnalpha Constant	1.472*** (0.0842)
Observations Adjusted R^2	2106	Observations Adjusted R^2	2106

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 21D MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Peace and Security Variables: Military Budget and Political Stability

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2106; Nonzero obs = 981; Zero obs = 1125

Inflation model = logit — Wald chi2(6) = 231.29

Log pseudolikelihood = -4562.737 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 150 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
PEACESECM	1.000543	.001628	0.33	0.738	.9973577	1.003739
MilBudGDP2	1.121041	.1197053	1.07	0.285	.9093476	1.382017
PolStability2	.1800727	.0263509	-11.72	0.000	.1351723	.2398878
RegimeT2	1.134469	.0219358	6.52	0.000	1.092281	1.178288
PopDensity3	.999961	.000334	-0.12	0.907	.9993067	1.000616
FracEthnic	.1238617	.0723262	-3.58	0.000	.0394364	.3890241
_cons	3.449107	1.511864	2.82	0.005	1.460815	8.14363
inflate						
datadummy	-44.56564	.7884844	-56.52	0.000	-46.11104	-43.02024
_cons	22.12723	.7557411	29.28	0.000	20.64601	23.60846
/lnalpha	1.477109	.0844558	17.49	0.000	1.311579	1.642639
alpha	4.380264	.3699387			3.712029	5.168794

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2106; Nonzero obs = 981; Zero obs = 1125

Inflation model = logit — Wald chi2(8) = 643.83

Log pseudolikelihood = -4559.062 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 150 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
PEACESECM	.9887636	.0089366	-1.25	0.211	.9714024	1.006435
MilBudGDP2	1.129053	.1227139	1.12	0.264	.9124293	1.397105
PolStability2	.1847357	.028376	-10.99	0.000	.1367109	.2496309
xPeaceMilGDP2M	1.000654	.0016471	0.40	0.691	.9974308	1.003887
xPeacePolSt~2M	.993772	.0028793	-2.16	0.031	.9881446	.9994313
RegimeT2	1.134824	.0220134	6.52	0.000	1.092489	1.178801
PopDensity3	.9999627	.0003394	-0.11	0.912	.9992976	1.000628
FracEthnic	.1299092	.075917	-3.49	0.000	.0413248	.4083845
_cons	3.342803	1.479641	2.73	0.006	1.40391	7.959435
inflate						
datadummy	-49.52702	.7855632	-63.05	0.000	-51.0667	-47.98735
_cons	24.57888	.7542191	32.59	0.000	23.10064	26.05712
/lnalpha	1.471534	.0842043	17.48	0.000	1.306496	1.636571
alpha	4.355911	.3667862			3.693212	5.137523

APPENDIX 21E **MODEL 10: PEACE AND SECURITY AID, GRIEVANCES, AND TERRORISM ONLY MILITARY BUDGET**

Negative Binomial Regression, Lagged

Peace and Security Variables: Military Budget

	No Interactives		*With Interactives*
Peace and Security Aid	0.0171***	Peace and Security Aid	0.0334***
	(0.00390), *1.017****		(0.00677), *1.034****
Military Budget	0.161**	Military Budget	0.188***
	(0.0494), *1.175***		(0.0515), *1.207****
		xPeaceSec Aid * Military Budget	-0.00586***
			(0.00133), *-0.994****
Regime Type	0.0499***	Regime Type	0.0511***
	(0.0115), *1.051****		(0.0114), *1.052****
Population Density	0.000653	Population Density	0.000673
	(0.000579), *1.001*		(0.000574), *1.001*
Ethnic Fractionalization	0.140	Ethnic Fractionalization	0.176
	(0.316), *1.150*		(0.315), *1.193*
Constant	1.710***	Constant	1.611***
	(0.265)		(0.264)
lnalpha		lnalpha	
Constant	1.849***	Constant	1.844***
	(0.0339)		(0.0338)
Observations	2720	Observations	2720
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - Incidence-Rate Ratios - IRR in italic

APPENDIX 22A MODEL 11: GOVERNANCE AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION, LAGGED - DETAILED RESULTS

Governance Variables: Corruption Control, Political Competition

Negative binomial regression — Number of obs = 2171
Wald chi2(8) = 144.00
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4701.654 — Pseudo R2 = 0.0301

Terror1	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
GOVRNCEM L1.	.003782	.0022604	1.67	0.094	-.0006482	.0082122
CorrupControl2 L1.	-.7512513	.0983011	-7.64	0.000	-.943918	-.5585847
PolCompt2 L1.	.0420172	.0571726	0.73	0.462	-.0700392	.1540735
xGovCorrupC2M L1.	-.0021837	.0009888	-2.21	0.027	-.0041216	-.0002457
xGovPolC2M L1.	-.0003291	.0002757	-1.19	0.233	-.0008695	.0002112
RegimeT2 L1.	.0801358	.0301815	2.66	0.008	.0209811	.1392905
PopDensity3 L1.	.0005338	.0006849	0.78	0.436	-.0008087	.0018762
FracEthnic L1.	-.1659724	.3687525	-0.45	0.653	-.8887141	.5567692
_cons	1.177104	.3580356	3.29	0.001	.4753674	1.878841
/lnalpha	1.968538	.0436437			1.882998	2.054078
alpha	7.160198	.3124975			6.573179	7.799641

	11b With Interactives
Governance Aid	0.00378 (0.00226)
Corruption Control	-0.751*** (0.0983)
Political Competition	0.0420 (0.0572)
xGovAid*Corruption	-0.00218* (0.000989)
xGovAid*Competition	-0.000329 (0.000276)
Regime Type	0.0801** (0.0302)
Population Density	0.000534 (0.000685)
Ethnic Fractionalization	-0.166 (0.369)
Constant	1.177** (0.358)
lnalpha	
Constant	1.969*** (0.0436)
Observations	2171
Adjusted R^2	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

APPENDIX 22B **MODEL 11: GOVERNANCE AID, GRIEVANCES, AND TERRORISM**
NEGATIVE BINOMIAL REGRESSION, LAGGED – INCIDENCE-RATE RATIOS

Governance Variables: Corruption Control, Political Competition

NO INTERACTIVES

Negative binomial regression — Number of obs = 2171
Wald chi2(6) = 183.41
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4707.195 — Pseudo R2 = 0.0290

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
GOVRNCEM L1.	1.003215	.0004313	7.47	0.000	1.00237	1.00406
CorrupControl2 L1.	.4809267	.044451	-7.92	0.000	.4012399	.5764393
PolCompt2 L1.	1.021932	.0565395	0.39	0.695	.9169138	1.138979
RegimeT2 L1.	1.080113	.0320633	2.60	0.009	1.019063	1.14482
PopDensity3 L1.	1.000345	.0005671	0.61	0.542	.9992347	1.001458
FracEthnic L1.	.822072	.2950813	-0.55	0.585	.4067921	1.661297
_cons	3.859927	1.349019	3.86	0.000	1.945762	7.657174
/lnalpha	1.976495	.0431536			1.891915	2.061074
alpha	7.2174	.3114568			6.632058	7.854403

WITH INTERACTIVES

Negative binomial regression — Number of obs = 2171
Wald chi2(8) = 144.00
Dispersion = mean — Prob > chi2 = 0.0000
Log pseudolikelihood = -4701.654 — Pseudo R2 = 0.0301

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
GOVRNCEM L1.	1.003789	.0022689	1.67	0.094	.999352	1.008246
CorrupControl2 L1.	.4717758	.0463761	-7.64	0.000	.3891004	.5720181
PolCompt2 L1.	1.042912	.0596261	0.73	0.462	.9323573	1.166577
xGovCorrupC2M L1.	.9978187	.0009866	-2.21	0.027	.9958869	.9997543
xGovPolC2M L1.	.9996709	.0002756	-1.19	0.233	.9991308	1.000211
RegimeT2 L1.	1.083434	.0326997	2.66	0.008	1.021203	1.149458
PopDensity3 L1.	1.000534	.0006853	0.78	0.436	.9991917	1.001878
FracEthnic L1.	.8470696	.312359	-0.45	0.653	.4111842	1.745026
_cons	3.244964	1.161813	3.29	0.001	1.608605	6.545914
/lnalpha	1.968538	.0436437			1.882998	2.054078
alpha	7.160198	.3124975			6.573179	7.799641

APPENDIX 22C MODEL 11: GOVERNANCE AID, GRIEVANCES, AND TERRORISM NEGATIVE BINOMIAL REGRESSION – VARIABLES NOT LAGGED

Governance Variables: Corruption Control, Political Competition

	No Interactives		*With Interactives*
Governance Aid	0.00282***	Governance Aid	0.00334
	(0.000706)		(0.00282)
Corruption Control	-0.751***	Corruption Control	-0.754***
	(0.192)		(0.197)
Political Competition	0.00403	Political Competition	0.0214
	(0.0960)		(0.1000)
		xGovAid*Corruption	-0.00223*
			(0.00106)
		xGovAid*Pol Competition	-0.000333
			(0.000423)
Regime Type	0.0915	Regime Type	0.0937
	(0.0503)		(0.0515)
Population Density	0.000494	Population Density	0.000660
	(0.00160)		(0.00178)
Ethnic Fractionalization	-0.471	Ethnic Fractionalization	-0.427
	(0.782)		(0.789)
Constant	1.592*	Constant	1.441*
	(0.638)		(0.676)
lnalpha		lnalpha	
Constant	1.920***	Constant	1.910***
	(0.0804)		(0.0814)
Observations	2325	Observations	2325
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 22D MODEL 11: GOVERNANCE AID, GRIEVANCES, AND TERRORISM ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – Coefficients

Governance Variables: Corruption Control, Political Competition

	No Interactives		*With Interactives*
Governance Aid	0.00282***	Governance Aid	0.00310
	(0.000705)		(0.00279)
Corruption Control	-0.735***	Corruption Control	-0.735***
	(0.192)		(0.197)
Political Competition	0.00179	Political Competition	0.0176
	(0.0957)		(0.0995)
		xGovAid*Corruption	-0.00227*
			(0.00105)
		xGovAid* Pol Competition	-0.000301
			(0.000421)
Regime Type	0.0901	Regime Type	0.0925
	(0.0503)		(0.0515)
Population Density	0.000457	Population Density	0.000615
	(0.00157)		(0.00177)
Ethnic Fractionalization	-0.481	Ethnic Fractionalization	-0.435
	(0.785)		(0.793)
Constant	1.635*	Constant	1.494*
	(0.639)		(0.677)
inflate		inflate	
datadummy	-49.95***	datadummy	-53.10***
	(0.770)		(0.779)
Constant	26.97***	Constant	28.48***
	(0.720)		(0.722)
lnalpha		lnalpha	
Constant	1.908***	Constant	1.898***
	(0.0800)		(0.0811)
Observations	2325	Observations	2325
Adjusted R^2		Adjusted R^2	

Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Not Lagged. Adjusted for autocorrelation and heteroskedasticity bias (vce (cluster Country)).

APPENDIX 22D MODEL 11: GOVERNANCE AID, GRIEVANCES, AND TERRORISM
ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION – INCIDENCE-RATE RATIOS

Governance Variables: Corruption Control, Political Competition

NO INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2325; Nonzero obs = 1056; Zero obs = 1269

Inflation model = logit — Wald chi2(6) = 45.30

Log pseudolikelihood = -5212.624 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 159 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
GOVRNCEM	1.002821	.0007067	4.00	0.000	1.001437	1.004207
CorrupControl2	.4795842	.0920524	-3.83	0.000	.3292179	.6986284
PolCompt2	1.001787	.0959024	0.02	0.985	.8304027	1.208543
RegimeT2	1.094313	.0550402	1.79	0.073	.9915828	1.207686
PopDensity3	1.000457	.0015701	0.29	0.771	.9973848	1.00354
FracEthnic	.6183285	.4854717	-0.61	0.540	.1327121	2.880898
_cons	5.129609	3.276622	2.56	0.010	1.466781	17.9392
inflate						
datadummy	-49.95091	.7698402	-64.88	0.000	-51.45977	-48.44205
_cons	26.96643	.7201162	37.45	0.000	25.55502	28.37783
/lnalpha	1.907529	.0799791	23.85	0.000	1.750772	2.064285
alpha	6.73642	.538773			5.759049	7.87966

WITH INTERACTIVES

Zero-inflated negative binomial regression — Number of obs = 2325; Nonzero obs = 1056; Zero obs = 1269

Inflation model = logit — Wald chi2(8) = 53.91

Log pseudolikelihood = -5205.378 — Prob > chi2 = 0.0000

(Std. Err. adjusted for 159 clusters in Country)

Terror1	IRR	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Terror1						
GOVRNCEM	1.003107	.0027967	1.11	0.266	.9976403	1.008603
CorrupControl2	.4795449	.0945071	-3.73	0.000	.3258947	.7056368
PolCompt2	1.017793	.1012698	0.18	0.859	.8374629	1.236954
xGovCorrupC2M	.9977291	.0010462	-2.17	0.030	.9956808	.9997816
xGovPolC2M	.9996989	.0004205	-0.72	0.474	.9988751	1.000523
RegimeT2	1.096945	.0564566	1.80	0.072	.9916904	1.213372
PopDensity3	1.000615	.0017665	0.35	0.728	.9971585	1.004083
FracEthnic	.6474323	.5131985	-0.55	0.583	.1369224	3.061358
_cons	4.455362	3.014434	2.21	0.027	1.182966	16.78007
inflate						
datadummy	-53.09862	.7789632	-68.17	0.000	-54.62536	-51.57188
_cons	28.48242	.7223039	39.43	0.000	27.06674	29.89811
/lnalpha	1.898074	.0810747	23.41	0.000	1.739171	2.056978
alpha	6.673031	.5410139			5.692621	7.822293

APPENDIX 23 AUTOCORRELATION AND HETEROSEDASTICITY TEST RESULTS applied to OLS, nonlagged models

EXPECTATION I

Model1 (Total Aid, Poverty, Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 152) = 13.382 Prob > F = 0.0003	chi2(1) = 13225.52 Prob > chi2 = 0.0000
WITH Interactives	F(1, 152) = 13.639 Prob > F = 0.0003	chi2(1) = 12784.23 Prob > chi2 = 0.0000

EXPECTATION II

Model 2 (All Sectoral Aid Categories, Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 158) = 13.594 Prob > F = 0.0003	chi2(1) = 15482.20 Prob > chi2 = 0.0000

Model 3 (Education Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 133) = 15.260 Prob > F = 0.0001	chi2(1) = 6472.09 Prob > chi2 = 0.0000
WITH Interactives	F(1, 133) = 16.087 Prob > F = 0.0001	chi2(1) = 7126.88 Prob > chi2 = 0.0000

Model 4 (Health Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 101) = 13.049 Prob > F = 0.0005	chi2(1) = 1336.83 Prob > chi2 = 0.0000
WITH Interactives	F(1, 101) = 12.985 Prob > F = 0.0005	chi2(1) = 1375.83 Prob > chi2 = 0.0000

Model 5 (Social Services Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 155) = 14.073 Prob > F = 0.0002	chi2(1) = 5333.91 Prob > chi2 = 0.0000
WITH Interactives	F(1, 155) = 14.045 Prob > F = 0.0003	chi2(1) = 3882.15 Prob > chi2 = 0.0000

Model 6 (Microeconomic Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 93) = 14.861 Prob > F = 0.0002	chi2(1) = 3463.53 Prob > chi2 = 0.0000
WITH Interactives	F(1, 93) = 25.390 Prob > F = 0.0000	chi2(1) = 1320.77 Prob > chi2 = 0.0000

Model 7 (Economic Opportunity Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 157) = 14.253 Prob > F = 0.0002	chi2(1) = 1711.63 Prob > chi2 = 0.0000
WITH Interactives	F(1, 157) = 14.267 Prob > F = 0.0002	chi2(1) = 1724.29 Prob > chi2 = 0.0000

Model 8 (Production Sectors Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 123) = 12.179 Prob > F = 0.0007	chi2(1) = 2789.82 Prob > chi2 = 0.0000
WITH Interactives	F(1, 123) = 12.277 Prob > F = 0.0006	chi2(1) = 4065.06 Prob > chi2 = 0.0000

Model 9 (Development Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 144) = 16.252 Prob > F = 0.0001	chi2(1) = 1255.80 Prob > chi2 = 0.0000
WITH Interactives	F(1, 144) = 16.242 Prob > F = 0.0001	chi2(1) = 1157.29 Prob > chi2 = 0.0000

EXPECTATION III

Model 10 (Peace and Security Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 149) = 15.189 Prob > F = 0.0001	chi2(1) = 8578.26 Prob > chi2 = 0.0000
WITH Interactives	F(1, 149) = 15.318 Prob > F = 0.0001	chi2(1) = 8665.46 Prob > chi2 = 0.0000

Model 11 (Governance Aid, Related Grievances, and Terrorism)

	Wooldridge Test For Autocorrelation In Panel Data	Breusch-Pagan / Cook-Weisberg Test For Heteroskedasticity
NO Interactives	F(1, 158) = 13.639 Prob > F = 0.0003	chi2(1) = 12937.32 Prob > chi2 = 0.0000
WITH Interactives	F(1, 158) = 13.638 Prob > F = 0.0003	chi2(1) = 16751.38 Prob > chi2 = 0.0000

APPENDIX 24 SUMMARY OF AID EFFECTIVENESS BY MODEL AND VARIABLE

AID EFECTIVE AT DECREASING TERRORISM

INDEPENDENT EFFECT

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Poverty	All sectoral aid	Education Aid	Health Aid	Social Services Aid	Microeconomic Growth Aid	Economic Opportunity Aid	Production Sectors Aid	Development Aid	Peace and Security Aid	Governance Aid
Independent Effect	x	x	Public Spending - 20%	Health $/Cap -0.2%	x	Income Share -13%	Total Unemploy -12%	x	Food Imports -4.7%	PolStability -82%	Corruption -52%
Population Density	x	x	x	x	x	x	x	x	x	x	x
Political Competition	x	x	x	x	x	x	x	x	x	x	x
Corruption Control	- 64%	- 37%	-55%	-74%	-72%	-38%	-60%	-61%	-69%	x	x
Ethnic Fractionalization	x	x	x	x	x	x	x	x	x	-varies	x

CONDITIONAL EFFECT

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Poverty	All sectoral aid	Education Aid	Health Aid	Social Services Aid	Microeconomic Growth Aid	Economic Opportunity Aid	Production Sectors Aid	Development Aid	Peace and Security Aid	Governance Aid
Grievances	x		xPrimary -0.01% xTertiary -0.03% xPublic$ -0.2% xRepeaters* -0.04%	xHealth $/Cap -0.01% xUndernourished -0.01%	xSanitation -0.01% xScience -0.01% (less) xR&D -0.2%	xConsumption -0.01% (less)	xYouth Unemployment* -2%	xIndustry* -0.02%	xDomesticS -0.01%	xMilitary* -0.6% xPolStability -0.6%	xCorruption -0.2%
Population Density	x		x	x	x	x	x	x	x	x	x
Political Competition	x		x	x	x	x	x	x	x	x	x
Corruption Control	- 64%		-55%	-74%	-74%	-34%	-60%	-60%	-70%	x	x
Ethnic Fractionalization	x		x	x	x	x	x	x	x	-varies	x

Percentages based on IRR values reported in respective sections' B Appendixes. Percentages rounded to the first decimal whenever possible.*only in Appendixes. When indicated 0.01, it is equal to 0.01 or less.

AID NOT EFECTIVE AT DECREASING TERRORISM

INDEPENDENT EFFECT

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Poverty	All Sectoral Aid	Education Aid	Health Aid	Social Services Aid	Microeconomic Growth Aid	Economic Opportunity Aid	Production Sectors Aid	Development Aid	Peace and Security Aid	Governance Aid
Independent Effect	General Aid +0.1% HDI + (varies)	Education +0.2% EcoGrowth +0.04% Peace&Sec +0.9% Governance* +0.1%	Education +0.4% Secondary +1.5% Tertiary +1.5% Repeaters +2.2%	Health +0.2% Life Expect +10%	Social +0.2% Sanitation +1.9 Water +1.8% Science/Tech +0.0036	MicroEconomic +0.05% Consumption +0.01% (less)	Youth Unemploy +10%	Production +0.2% Agriculture +7% Industry +9% Services +8%	DomSavings +0.01% (less)	Military B +12%	Governance +0.3%
Population Density	x	x	+0.3%	+0.3%	x	+0.8%	x	x	x	x	x
Political Competition	+14%	+12%	x	x	+10%	x	+21%	+19%	+17%	Regime +14%	Regime +8%
Corruption Control	x	x	x	x	x	x	x	x	x	x	x
Ethnic Fractionalization	x	x	+ (varies)	x	+ (varies)	+ (varies)	+ (varies)	+ (varies)	x	x	x

CONDITIONAL EFFECT

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Poverty	All Sectoral Aid	Education Aid	Health Aid	Social Services Aid	Microeconomic Growth Aid	Economic Opportunity Aid	Production Sectors Aid	Development Aid	Peace and Security Aid	Governance Aid
Grievances	x	x	xSecondary +0.03%	xLifeExpect +0.01	x	xIncome Share +0.01%	x	x	xFoodImport +0.01 (less)	x	x
Population Density	x	x	+0.3%	+0.2%	x	+0.8%	x	x	x	x	x
Political Competition	+14%	+12%	x	x	+8.4%	x	+21%	x	+16%	Regime +14%	Regime Type +8%
Corruption Control	x	x	x	x	x	x	x	x	x	x	x
Ethnic Fractionalization	x	x	+ (varies)	x	+ (varies)	+ (varies)	+ (varies)	+ (varies)	x	x	x

Percentages based on IRR values reported in respective sections' B Appendixes. Percentages rounded to the first decimal whenever possible.*Only in Appendixes. When indicated 0.01, it is equal to 0.01 or less.

APPENDIX 25 AFGHANISTAN: COUNTRY STATISTICS 1990-2010

Year	Terrorist Events	Total Aid	EDUCATION Aid	HEALTH Aid	SOCIAL Aid	ECO GROWTH Aid	GOVERNANCE Aid	PEACE/SEC Aid
1990	3	121.72	15918330	30124880	0	59496832	11244830	0
1991	30	507.53	18838050	19207560	0	55443940	0	0
1992	36	204.9	17311800	9366247	0	39071056	0	0
1993	2	223.8	9363536	9137520	5044700	10431057	0	0
1994	9	226.42	1321728	1625572	42501.4	210123	1917223	0
1995	6	212.53	1595664	1657422	1564935	7701295	143654.3	1985880
1996	4	169.63	1102198	5121012	908623.5	1110731	45171.8	654399.4
1997	1	230.75	679370.1	9929155	4541602	1664273	0	1860516
1998	0	164.2	1327895	3878488	4528051	4363460	594041	11967314
1999	2	142.86	8170094	4710457	29367984	5317044	7804804	10069935
2000	14	136.01	7892288	8423325	10883538	4957466	6724410	16870970
2001	11	410.36	12329990	31902804	18032634	22966276	8896881	29873328
2002	30	1309.77	85017624	42125864	92961656	270183100	112256300	73935744
2003	73	1593.67	49177620	176601570	83709056	684796800	465594720	197142780
2004	75	2311.49	202170340	142271310	113698870	1294699600	853243140	134890910
2005	128	2837.62	256596860	180214860	420946620	1514487700	776847740	104063200
2006	237	2961.67	136347340	337014530	260529020	1749318800	336999140	136182450
2007	271	4964.72	213517550	221141230	367360540	1656852100	1005594600	162473250
2008	351	4875.07	358015810	509370820	417689570	1737529600	1651998500	339727870
2009	491	6235.26	283648900	290297540	787812800	1204760300	1665176300	598223170
2010	526	6426.38	483642820	394380350	527082140	1872821600	1880074600	998151170

Afghanistan: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Terrorist Events	21	109.5238	165.7657	0	526
Total Aid	21	1726.97	2158.237	121.72	6426.38
EDUCATION Aid	21	103.0469	141.6644	.6793701	483.6428
HEALTH Aid	21	115.643	153.1821	1.625572	509.3708
SOCIAL Aid	21	149.8431	224.8772	0	787.8128
ECO GROWTH Aid	21	580.8659	748.948	.210123	1872.822
GOVERNANCE Aid	21	418.3408	634.3266	0	1880.075
PEACE/SEC Aid	21	134.1939	246.0846	0	998.1512
UNALLOCATED	21	14.27614	19.68551	0	66.30015