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**Working Paper**

## The Comparative African Economics of Inclusive Development and Military Expenditure in Fighting Terrorism

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# A G D I Working Paper

WP/17/031

## **The Comparative African Economics of Inclusive Development and Military Expenditure in Fighting Terrorism**

Forthcoming: Journal of African Development

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**The Comparative African Economics of Inclusive Development and Military Expenditure in Fighting Terrorism****Simplice Asongu, Vanessa Tchamyou, Ndemaze Asongu & Nina Tchamyou**

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**Abstract**

This study investigates the role of inclusive human development and military expenditure in fighting terrorism in 53 African countries for the period 1998-2012. The empirical evidence is based on contemporary, non-contemporary and instrumental variable Fixed Effects regressions. Inclusive development is not a sufficient condition for the fight against terrorism whereas military expenditure can be effectively employed to mitigate the phenomenon. Significant negative effects are established only when endogeneity is accounted for by means of non-contemporary and instrumental-variables approaches. Hence, the policy effectiveness of employed tools is contingent on whether they are engaged proactively (i.e. non-contemporarily) or not. From the findings, the propensity of military expenditure to fight transnational terrorism is higher in: (i) middle income countries vis-à-vis their low income counterparts; (ii) oil-rich countries compared to oil-poor countries and (iii) Christian-dominated countries vis-à-vis their Islam-oriented counterparts. Furthermore military expenditure is also more effective at combating domestic and transnational terrorism in: (i) North African countries vis-à-vis their sub-Saharan Africa counterparts; (ii) landlocked countries compared to countries that are open to the sea and (iii) politically-stable countries vis-à-vis their politically-unstable counterparts. Contributions to the comparative economics are discussed. Practical and theoretical contributions are also provided.

*JEL Classification:* C52; D74; F42; O16; O38

*Keywords:* Terrorism; Inclusive development; Military expenditure; Africa

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## 1. Introduction

An inquiry into the comparative African economics of inclusive development and military expenditure in fighting terrorism has a fivefold motivation, notably: (i) growing extreme poverty trends in Africa and the post-2015 development agenda; (ii) debates on the impact of poverty and human development on terrorism; (iii) increasing terrorism in Africa; (iv) debates surrounding the effect of military expenditure on terrorism and (v) gaps in the literature. The motivations are discussed in chronological order.

First, an April 2015 World Bank report on attainment of Millennium Development Goals (MDGs) targets revealed that extreme poverty had been decreasing in all regions of the world with the exception of Africa. The report maintained that 45% of countries in sub-Saharan Africa (SSA) were substantially off-track from achieving the MDG extreme poverty target (World Bank, 2015). This is in spite of, *inter alia*: the continent enjoying more than two decades of growth resurgence that began in the mid 1990s (Fosu, 2015a, p. 44); evolving narratives of “Africa rising” (Leautier, 2012) and Africa being on time for the MDG extreme poverty target (Pinkivskiy & Sala-i-Martin, 2014). The poverty tragedy of the continent has motivated a growing stream of literature devoted to: understanding paradigm shifts that are essential to elucidating recent poverty trends (Kuada, 2015); examining the role of institutions in the continent’s recent growth resurgence and assessing whether the recent resurgence has been a reality or a myth (Fosu, 2015b, 2015c; Obeng-Odoom, 2015, 2017).

Second, there are ongoing debates surrounding the effect of poverty and human development on terrorism. These include a: positive relationship between “GDP (Gross Domestic Product) per capita in the venue country” and transnational terrorism (Blomberg et al., 2004); no nexus between GDP per capita and terrorism (Krueger & Maleckova, 2003); risk of terrorism not comparatively substantial in poor countries (Abadie, 2006); political repression encouraging transnational terrorism, instead of GDP per capita (Krueger & Laitin, 2008); no causality from the human development index to terrorism (Piazza, 2006); minority economic discrimination increasing domestic terrorism (Piazza, 2011); a positive relationship between GDP per capita and terrorism when the viewpoints of victims’ countries are considered (Gassenbner & Luechinger, 2011) and negative nexus between GDP per capita and terrorism (Li, 2005).

Third, recent narratives are consistent with the position that terrorism is increasingly becoming a development challenge to the continent. Whereas the employment of terror and violence as means to communicating grievances is not new in Africa, the scale by which terrorism has been increasing over the past decade represents a serious policy syndrome (Alfa-Wali et al., 2015; Asongu et al., 2016a, 2016b; Price & Elu, 2016). Several factors have been documented to facilitate the nursing and growth of terrorism, namely: tensions of ethnic and tribal nature; within- and between cross-country political instability and religious fundamentalism (Fazel, 2013). According to Clavarino (2014), compared to the Middle East, there has been less focus on terrorism in Africa: a continent that is experiencing increasing radicalisation with Islamic fundamentalists. Notable movements of terrorism that have been exerting politico-economic and social disruptions of massive scale include: Al-Qaeda in the Islamic Maghreb; the Boko Haram in Nigeria and Al-Shabab in Somalia.

Fourth, the effect of military expenditure on terrorism is debatable in the literature. As recently documented by Feridun and Shahbaz (2010, p.195), there is a consensus in the literature that military expenditure does not mitigate terrorism. Whereas from an intuitive perspective, the relationship is expected to be negative, empirical literature does not support the intuition because military interventions devoted to reducing terrorism are counterproductive. Measures of counterterrorism have been documented to further provoke terrorist attacks instead of preventing them (Sandler, 2005). This is consistent with the position that the absence of internationally recognised common comprehensive and long-term counterterrorism terrorism strategies renders the fight against terrorism ineffective (Omand, 2005). According to Lum et al. (2006), the United States' counter terrorism measures are ineffective because the measures instead tend to increase the likelihood for terrorism occurrence. More recently, Feridun and Shahbaz (2010) have established a unidirectional causality running from terrorism to defense-spending. In the light of the above: (i) the intuition that military spending can reduce terrorism still needs to be substantiated with empirical validity in the literature and (ii) exclusively anti-terrorism military measures are not enough to prevent terrorism.

Fifth, there are two main gaps in the terrorism literature, notably: the limited focus of empirical studies on Africa and controversial perspectives on the effect of inclusiveness in deterring terrorism. With the exception of Li and Schaub (2004) and Piazza (2011), there is very little empirical support for the positive relationship between poverty and terrorism. The literature on fighting terrorism in Africa has largely focused on: exploratory and review studies on the role of multilateral organisations like the African Union in the battle against

terror attacks (Ewi & Aning, 2006); examining the influence of freedoms and poverty on terrorism (Barros et al., 2008); the influence of geopolitical fluctuations (Straus, 2012) and the role of competition in military companies in the rate at which conflicts are brought to a swift end (Akcinaroglu & Radziszewski, 2013).

In the light of the above, this study complements existing literature by investigating the role of inclusive human development and military expenditure in the fight against terrorism in Africa. The conception and definition of inclusive human development which is consistent with recent literature (Asongu & Le Roux, 2017; Asongu & Nwachukwu, 2017a), is the human development index (HDI) that is adjusted for inequality. Hence, inclusive human development or the inequality adjusted human development index (IHDI) is the HDI that accounts for inequality. The HDI denotes a national average of achievements in three main areas, namely: health and long life, education or knowledge and basic standards of living. The IHDI goes a step further by adjusting the HDI to prevalent levels of inequality in the aforementioned three areas. In other words, the IHDI also takes into consideration the manner in which the three underlying achievements are distributed within the population.

In order to avail room for more policy implications, the comparative emphasis is articulated with fundamental characteristics of African development, namely: legal origins (English common law vs. French civil law), political stability (conflict-affected vs politically stable), resource-wealth (resource-rich vs resource-poor), income levels (low income vs middle income), regional proximity (SSA vs North Africa), openness to sea (landlocked vs unlandlocked) and religious domination (Islam vs Christianity). For instance, while emphasis on income-levels accounts for controversial positions in the literature on the income-terrorism relationship, the articulation of religious dominations aims to control for the intuition that compared to countries with a Christian-domination, those with Islamic-inclination are more likely to be affected by terrorist attacks.

The rest of the study is structured as follows. Section 2 discusses the theoretical underpinnings. The data and methodology are covered in Section 3. Section 4 presents the empirical results, discussion and policy implications while Section 5 concludes with future research directions.

## **2. Theoretical underpinnings and empirical evidence**

The theoretical underpinning motivating linkages between inclusive development, terrorism and military expenditure can be discussed in four main strands. First, consistent with Krieger and Meierrieks (2015), the theory of relative deprivation developed by Gurr (1970)

establishes the theoretical nexus between political violence and exclusive development. With the knowledge that relative deprivation can be understood as “*individuals’ expectations of economic or political goods exceed the actual distribution of those goods*” (Piazza, 2006, p.162), the theory “*is grounded in the assumption that people who engage in rebellious political behavior are motivated principally by anger resulting from [...] relative deprivation*” (Muller & Weede, 1994, p. 40). Therefore, poor economic governance is directly a cause of social deprivation. With the understanding that economic governance “*is the formulation and implementation of policies that deliver public commodities*” (see Asongu et al., 2016a), discontent over the unequal distribution of economic resources is a cause of political aggression (violence). This underpinning extends to indicators of exclusive human development such as inequality and poverty. Hence, in situations of relative deprivation, frustration can be voiced by the poor and marginalized who are challenging bad economic governance and poor distribution of economic resources. In summary, exclusive development directly induces terrorism by increasing discontent owing to relative deprivation and dissatisfaction with economic policies. Moreover, a stream in microeconomic studies has also established that unfavorable economic conditions (e.g. unemployment) have motivated terrorists to recruit more skilled workers (Bueno de Mesquita, 2005; Benmelech et al., 2012).

Second, whereas exclusive development can directly induce terrorism due to relative deprivation and frustration, it can also indirectly cause terrorism by consolidating dilapidated social conditions. For example, impaired socio-economic development and limited politico-economic participation could further incite terrorism. First, inequality has been documented to lead to a plethora of negative socio-economic outcomes, *inter alia*: the response of poverty to growth is a decreasing function of inequality and inequality decreases human capital accumulation that ultimately affects growth (Odhiambo, 2009, 2011; Fosu, 2008, 2009 2010a, 2010b, 2010c; Elu & Loubert, 2013). Hence deteriorating socio-economic development ultimately fuels terrorism. This postulation is consistent with recent empirical literature maintaining that poor socio-economic conditions are very likely to motivate the resort to violence by citizens as means to making their voices heard (Caruso & Schneider, 2011; Gries et al., 2011; Freytag et al., 2011). Second, on the politico-economic participation front, Krieger and Meierrieks (2015) have argued that the political influence of social factions in shaping institutions is contingent on the access of resources by various social factions and how resources are distributed within society. Under scenarios where institutional power is dominated by a selected number of citizens, the rich elite can mobilise sufficient resources to create politico-economic institutions that promote their vested interests or consolidate existing

institutions that protect such interests. Citizens in the lower socio-economic strata may resort to violence in order to change existing institutions that are not serving them. There is growing empirical evidence supportive of the likelihood of employing terrorism tactics as means to demanding more politico-economic participation (see Basuchoudhary & Shughart, 2010; Gassebner & Luechinger, 2011).

Third, in spite of above theoretical underpinnings, empirical evidence is still very conflicting on the nexus between inequality and terrorism or political violence. First, the nexus between civil conflict/war and inequality remains to be firmly established: “*Over the past few years, prominent large-N studies of civil war seem to have reached a consensus that inequality does not increase the risk of civil war*” (Østby, 2008, p. 143). Yet, there is also a stream of literature contending that civil conflict is more apparent in societies with high inequalities (see Cederman et al., 2011; Baten & Mumme, 2013; Krieger & Meierrieks, 2015). Second, with regards to the nexus between inequality and terrorism, the empirical evidence is also mixed at best. Whereas a stream of the literature is supportive of the fact that inequality leads to terrorism (Piazza, 2011; 2013), another stream of studies does not support the substantial role played by inequality (Li, 2005; Piazza, 2006; Abadie, 2006). On the possible relationship between inequality and domestic versus transnational terrorism, domestic terrorism is largely motivated by economic grievances (see Piazza, 2013) whereas the grievances fuelling transnational terrorism are traceable to disenchantments in foreign policy decisions by wealthy democracies (Savun & Phillips, 2009).

Fourth, consistent with Feridun and Shahbaz (2010), there are two main theoretical scenarios on the possible nexus between terrorism and military expenditure. On the one hand, increasing terrorism intuitively leads to growing defense spending as means to fighting terrorism. This is essentially because military expenditure is intuitively expected to be increased in response to growing terrorism. Therefore, when terrorists’ attacks are to explain military spending, a positive relationship is expected. On the other hand, increased military spending is also anticipated to mitigate terrorist activities, assuming that policies on increasing military spending are motivated by the need to fight increasing terrorism. Therefore, from a theoretical standpoint, defense spending and terrorism bear an inverse nexus when the former is the independent variable.

While the engaged theoretical underpinnings may not be exhaustive, the theoretical foundations are to the best of our knowledge. Moreover, it is important to note that reporting facts even in the absence of a formal theoretical model is a useful scientific activity. This is essentially because, applied econometrics should not be limited to the simple empirical



exercise of either refuting or validating economic theories (Costantini & Lupi, 2005; Narayan et al., 2011).

### **3. Data and methodology**

#### **3.1 Data**

This study investigates a panel of 53 African nations with data for the period 1998-2012. There are three sources of this data: (i) an updated computation of terrorism indicators from Enders et al. (2011) and Gailbulloev et al. (2012); (ii) the Global Terrorism Database and (iii) African Development Indicators (ADI) and World Governance Indicators from the World Bank. The choice of the periodicity is essentially motivated by constraints in the availability of data. Three points are note worthy. The updated terrorism dynamics from Enders et al. (2011) and Gailbulloev et al. (2012) are only available up to the year 2012. Moreover, the macroeconomic variables from ADI of the World Bank are also not available after the year 2012. The periodicity begins from 1996 because good governance indicators from the World Bank are only available from this year. In order to remain consistent with previous literature (Asongu et al., 2016a, 2016b), the adopted periodicity is 1998-2012.

Four different but related terrorism dependent variables are used, namely: domestic, transnational, unclear and total terrorism indicators. The terrorism indicators represent terrorism incidents experienced by a given country on a yearly basis. The positive skew and concerns about logarithmic transformation of zeros in the data are corrected by adding one to the base before taking natural logarithms of terrorism incidents. A similar approach has been recently adopted by Asongu and Nwachukwu (2016a, 2017b); Choi and Salehyan (2013); Bandyopadhyay et al. (2014), Efobi and Asongu (2016).

Terrorism is defined in this study as the actual and threatened use of force by subnational actors with the purpose of employing intimidation to meet political objectives (Enders & Sandler, 2006). Terrorism-specific definitions are from Efobi et al. (2015, p. 6). Domestic terrorism “*includes all incidences of terrorist activities that involves the nationals of the venue country: implying that the perpetrators, the victims, the targets and supporters are all from the venue country*” (p.6). Transnational terrorism is “*terrorism including those acts of terrorism that concerns at least two countries. This implies that the perpetrator, supporters and incidence may be from/in one country, but the victim and target is from another*”. Unclear terrorism is that, “*which constitutes incidences of terrorism that can neither be defined as domestic nor transnational terrorism*” (p.6). Total terrorism is the sum of domestic, transnational and unclear terrorisms.

Inclusive development and military expenditure are used as the principal independent variables. There is an evolving stream of literature documenting that the sympathy for and adherence to terrorist organisations is fundamentally motivated by exclusive socio-economic development (see Bass, 2014). Foster (2014) has confirmed this narrative with emphasis that Western-born and -educated youths are joining ISIL (the Islamic State of Iraq and the Levant ) principally because they feel excluded and/or are being treated as foreigners in developed nations they consider theirs. The narrative has also been maintained by Tonwe and Eke (2013) who have posited that asymmetric development is a fuel behind the burgeoning Nigerian Boko Haram. Accordingly, compared to the Southern region of the country, the Northern part is less developed. The inequality adjusted human development index (IHDI) is used as the indicator of inclusive development, in accordance with recent African inclusive development literature (see Asongu et al., 2015). This indicator is selected because of data availability constraints in other indicators like the Gini index for inequality. Moreover, recent inclusive growth indicators which are based on the Gini coefficient have issues of limited degrees of freedom because these indicators are based on non-overlapping intervals (e.g. see Mlachila et al., 2016). There is also an evolving strand of literature on the relationship between military expenditure and terrorism (see Feridum & Shahbaz, 2010; Sandler, 2005; Lum et al., 2006).

In order to control for omitted variable bias, four main control variables are used, namely: internet penetration, economic growth, inflation and political stability. According to Holbrook (2015) and Argomaniz (2015), the internet is growingly being used by mainstream terrorism organisations like ISIL to recruit and coordinate terrorist activities. As established by Asongu and Nwachukwu (2016b, 2017c), we expect high (low) inflation to be associated with high (low) possibilities of political strife and violence. This is essentially because; chaotic inflation decreases purchasing power and portrays a negative economic outlook for investment, employment and economic growth. These factors are likely to fuel socio-political unrests. From intuition and empirical evidence, economic prosperity is expected to reduce the likelihood for activities of terrorism because it is associated with the availability of more financial resources needed to fight the scourge. Recent empirical evidence supporting this intuition is from Gaibulloev and Sandler (2009). The authors have maintained that compared to high income countries, low income countries lack the financial resources to absorb terrorism-related shocks without substantial negative development externalities. Political stability is preferred to the other nine governance indicators used by Asongu et al. (2016b) because in Asongu et al. (2016a, 2016b) it is the most effective governance weapon for deterring terrorism, both in terms of significance and magnitude of significance. It is

important to note that some social variables like education and democracy are indirectly used in the analysis because they are positively correlated with variables in the conditioning information set. For instance, whereas education is a component of the IHDI, democracy is by definition captured by political stability.

The definitions of variables, summary statistics and correlation matrix have been disclosed respectively in Appendix 1, Appendix 2 and Appendix 3. It is apparent from the summary statistics that the variables are comparable from the perspective of mean values. Corresponding standard deviations show substantial variations. Hence, we can be confident that reasonable estimated nexuses would emerge from the regressions. The purpose of the correlation matrix is essentially to limit potential concerns about multicollinearity. From a preliminary examination, issues about high degrees of substitution are exclusively apparent between terrorism variables. Fortunately, the issues are not of the nature to bias specifications because, the terrorism variables are exclusively used as dependent variables in distinct specifications.

The theoretical and empirical justifications for the criteria used to determine fundamental features have been discussed by Asongu et al. (2016a). In essence, the comparative criteria is based on the following features: legal origins (English common law vs French civil law), political stability (conflict-affected vs politically stable), resource-wealth (resource-rich vs resource-poor), income levels (low- vs middle-income), regional proximity (SSA vs North Africa), openness to sea (landlocked and unlandlocked) and religious domination (Islam vs Christianity).

The definitions of fundamental characteristics are disclosed in Appendix 4. Furthermore, the statistical validity for the choice of fundamental features on the one hand and differences in terrorism dynamics within fundamental features on the other hand, are provided respectively in Appendix 5 and Appendix 6. The “difference in means” tests which are overwhelmingly significant support the statistical validity for the: (i) choice of fundamental characteristics and (ii) distinction of terrorism dynamics within fundamental characteristics. Owing to lack of space, in accordance with recent terrorism literature (Bandyopadhyay et al., 2014; Asongu & Nwachukwu, 2016a), the country-specific descriptive statistics is available upon request.

### 3.2 Methodology

For the purpose of simplicity, common sense and evidence from the engaged literature, the study assumes the presence of endogeneity<sup>1</sup>. As recently shown by Krieger and Meierrieks (2015), the nexus between exclusive developments (e.g. inequality) only becomes apparent “*once endogeneity is properly accounted for by means of an instrumental-variable approach*” (p. 1). Eq. (1), Eq. (2) and Eq. (3) respectively represent contemporary, non-contemporary and instrument variable (IV) fixed effects (FE) specifications.

$$T_{i,t} = \alpha_0 + \sigma_1 H_{i,t} + \sigma_2 M_{i,t} + \sum_{h=1}^4 \delta_h W_{h,i,t} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (1)$$

$$T_{i,t} = \alpha_0 + \sigma_1 H_{i,t-1} + \sigma_2 M_{i,t-1} + \sum_{h=1}^4 \delta_h W_{h,i,t-1} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (2)$$

$$T_{i,t} = \alpha_0 + \sigma_1 IVH_{i,t} + \sigma_2 IVM_{i,t} + \sum_{h=1}^4 \delta_h W_{h,i,t} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (3)$$

where,  $T_{i,t}$ , is a terrorism variable (domestic, transnational, unclear and total) of country  $i$  at period  $t$ ;  $H_{i,t}$  denotes inclusive human development;  $M_{i,t}$  is military expenditure ;  $\alpha_0$  is a constant;  $W$  is the vector of control variables (*Internet, economic growth, inflation and political stability*),  $\eta_i$  is the country-specific effect,  $\xi_t$  is the time-specific constant,  $\varepsilon_{i,t}$  the error term,  $H_{i,t-1}$ , represents inclusive human development in country  $i$  at period  $t-1$  term,  $M_{i,t-1}$ , denotes military expenditure in country  $i$  at period  $t-1$ ,  $IVH_{i,t}$ , represents instrumented inclusive human development in country  $i$  at period  $t$  and  $IVM_{i,t}$  denotes instrumented military expenditure in country  $i$  at period  $t$ .  $IVH_{i,t}$  and  $IVM_{i,t}$  are instrumented respectively with Eq. (4) and Eq. (5) below.

$$H_{i,t} = \alpha + \delta_j (H_{i,t-1}) + \varepsilon_{i,t} \quad (4)$$

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<sup>1</sup> The problem of endogeneity is so fundamental in regressions. This is why most regression techniques are designed to address the issue. For instance, the use of Generalised Method of Moments (GMM) addresses endogeneity of: (i) simultaneity by means of the instrumentation process and (ii) the unobserved heterogeneity by controlling for time invariant omitted variables. To the best of our knowledge, most studies applying the GMM do not test for endogeneity before adopting the technique because there is hardly a specification that is free from the concern of endogeneity. The GMM technique is not employed here in because the N>T criterion for its application is not met by some sub-samples or fundamental characteristics.

$$M_{i,t} = \alpha + \delta_j(M_{i,t-1}) + \varepsilon_{i,t} \quad (5)$$

The instrumentation procedure consists of regressing the independent variables of interest on their first lags and then saving the fitted values that are subsequently used as the main independent variables in Eq. (3). The specifications are Heteroscedasticity and Autocorrelation Consistent (HAC) consistent in standard errors. The instrumentation procedure is consistent with recent African comparative development literature (Asongu & Nwachukwu, 2016c).

## 4. Empirical results

### 4.1 Presentation of results

Table 1 presents initial regressions, while Table 2 displays findings based on fundamental characteristics. For brevity and lack of space, only the estimated coefficients corresponding to the independent variables of interest (inclusive development and military expenditure) are presented in Table 2. Panel A, B, C and D respectively present results corresponding to domestic terrorism, transnational terrorism, unclear terrorism and total terrorism. Each panel is further decomposed into three sub-panels for contemporary, non-contemporary and instrumental variable (IV) Two-Stage-Least-Squares (2SLS) regressions.

The following findings can be established from Table 1. (1) Inclusive human development consistently has an unexpected positive sign on domestic terrorism and total terrorism in contemporary, non-contemporary and 2SLS, with the exception of unclear terrorism in contemporary regressions where the effect is not significant. (2) The effect of military expenditure has expected signs exclusively in non-contemporary and 2SLS regressions, with: (i) a negative (positive) effect on transnational (total) terrorism in non-contemporary specifications and (ii) negative impacts on transnational, domestic and total terrorisms, in increasing order to negative magnitude. (3) With the exception of inflation which displays an unexpected negative sign, significant control variables have expected signs. However, it is important to note that low/stable inflation could be a deterrent to socio-political unrest because it maintains purchasing power while at the same improving the economic outlook for employment and development.

**Table 1: Baseline results**

	Dependent variables: terrorism dynamics											
	Contemporary FE				Non Contemporary FE				2SLS			
	Domestic Terror	Trans. Terror	Unclear Terror	Total Terror	Domestic Terror	Trans. Terror	Unclear Terror	Total Terror	Domestic Terror	Trans. Terror	Unclear Terror	Total Terror
Constant	<b>0.215*</b> (0.077)	0.008 (0.190)	0.025 (0.702)	<b>0.284**</b> (0.025)	<b>0.226**</b> (0.043)	<b>0.181***</b> (0.009)	0.033 (0.454)	<b>0.361***</b> (0.002)	<b>0.324**</b> (0.014)	<b>0.223***</b> (0.007)	0.035 (0.515)	<b>0.471***</b> (0.001)
Inclusive development	<b>0.041***</b> (0.000)	0.008 (0.190)	<b>0.019***</b> (0.001)	<b>0.047***</b> (0.000)	---	---	---	---	---	---	---	---
Inclusive development (-1)	---	---	---	---	<b>0.026***</b> (0.009)	0.008 (0.147)	0.001 (0.639)	<b>0.026**</b> (0.011)	---	---	---	---
Inclusive development (IV)	---	---	---	---	---	---	---	---	<b>0.035***</b> (0.009)	0.013 (0.113)	0.003 (0.476)	<b>0.035**</b> (0.011)
Military Expenditure	-0.020 (0.649)	-0.009 (0.726)	0.011 (0.645)	-0.012 (0.795)	---	---	---	---	---	---	---	---
Military Expenditure (-1)	---	---	---	---	-0.061 (0.140)	<b>-0.062**</b> (0.017)	0.004 (0.773)	<b>0.079*</b> (0.065)	---	---	---	---
Military Expenditure (IV)	---	---	---	---	---	---	---	---	<b>-0.095*</b> (0.058)	<b>-0.077**</b> (0.014)	0.004 (0.828)	<b>-0.114**</b> (0.027)
Internet	<b>0.016***</b> (0.001)	0.002 (0.423)	0.001 (0.480)	<b>0.014***</b> (0.006)	<b>0.025***</b> (0.000)	0.003 (0.207)	<b>0.005***</b> (0.003)	<b>0.022***</b> (0.000)	<b>0.024***</b> (0.000)	0.003 (0.313)	<b>0.006***</b> (0.004)	<b>0.021***</b> (0.000)
GDPg	-0.004 (0.590)	-0.006 (0.265)	-0.007 (0.133)	-0.008 (0.377)	-0.006 (0.469)	<b>-0.011**</b> (0.037)	<b>-0.006*</b> (0.063)	-0.013 (0.127)	-0.010 (0.273)	<b>-0.011**</b> (0.039)	<b>-0.007*</b> (0.057)	<b>-0.015*</b> (0.098)
Inflation	<b>-0.002***</b> (0.005)	0.0004 (0.464)	0.0006 (0.227)	-0.001 (0.176)	<b>-0.004***</b> (0.001)	<b>-0.002***</b> (0.005)	-0.0005 (0.320)	<b>-0.005***</b> (0.000)	<b>-0.004***</b> (0.001)	<b>-0.002***</b> (0.006)	-0.0005 (0.313)	<b>-0.005***</b> (0.000)
Political Stability	<b>-0.446***</b> (0.000)	<b>-0.365***</b> (0.000)	<b>-0.116**</b> (0.025)	<b>-0.549***</b> (0.000)	<b>-0.467***</b> (0.000)	<b>-0.377***</b> (0.000)	-0.058 (0.115)	<b>-0.603***</b> (0.000)	<b>-0.477***</b> (0.000)	<b>-0.368***</b> (0.000)	-0.066 (0.108)	<b>-0.587***</b> (0.000)
R <sup>2</sup> (Within)	0.123	0.106	0.058	0.134	0.163	0.145	0.043	0.187	0.162	0.133	0.046	0.177
Fisher	<b>9.78***</b>	<b>8.30***</b>	<b>4.33***</b>	<b>10.76***</b>	<b>12.50***</b>	<b>10.85***</b>	<b>2.88***</b>	<b>14.77***</b>	<b>11.31***</b>	<b>9.04***</b>	<b>2.86***</b>	<b>12.62***</b>
Countries	49	49	49	49	48	48	48	48	45	45	45	45
Observations	471	471	471	471	471	437	437	437	402	402	402	402

Notes. \*\*\*, \*\*, \*: significance levels of 1%, 5% and 10% respectively. IHDI: Inequality Adjusted Human Development Index. FE: Fixed Effects. Trans: transnational. 2SLS: Two-Stage-Least Squares. (-1): non contemporary. (IV): instrumental variable. GDPg: Gross Domestic Product growth.

Table 2 provides findings based on the engaged fundamental characteristics. The following results are apparent for domestic terrorism. (i) In contemporary regressions, whereas the effect of military expenditure is not significant, the impact of inclusive development is negative (positive) in resource-rich and North African countries (middle income, upper middle income, resource-poor, unlandlocked, conflict-free, SSA, Christian-dominated and African nations). (ii) In non-contemporary regressions, the effect of military expenditure is positive in landlocked, conflict-free and North African countries while the impact is positive from inclusive development in middle income, lower middle income, English common law, French civil law, resource-poor, unlandlocked, conflict-free, SSA, Christian-dominated and African countries. (iii) In 2SLS, the impact of military expenditure is negative in SSA, low income, African, landlocked, North African and conflict-free countries, in order of increasing negative magnitude.

We notice the following for transnational terrorism. (i) In contemporary regressions, while the impact of military expenditure is not significant, the impact of inclusive development is positive in low income, lower middle income, French civil law, landlocked, conflict-affected, SSA and Islam-oriented countries. (ii) In non-contemporary regressions, inclusive human development is positive in low income, lower middle income, French civil law, resource-rich, landlocked, SSA and Islam-oriented countries whereas military expenditure is negative on SSA, low-income, landlocked, African, Christian-dominated, resource-rich, resource poor, conflict free, upper middle income and North African countries. (iii) In 2SLS, inclusive human development is positive in low income, lower middle income, English common law, French civil law, resource-rich, landlocked, unlandlocked, SSA, Islam-oriented countries while military expenditure is negative in low-income, landlocked, SSA, African, Christian-dominated, resource-poor, resource-rich, conflict-free, North African and upper middle income countries.

The following can be established for unclear terrorism. (i) In contemporary regressions, military expenditure is not significant, whereas it is positive (negative) in middle income, English common law, resource-poor, unlandlocked, conflict-free, SSA, Christian-dominated and African countries (landlocked, low income and North African nations). (ii) In non-contemporary regressions, inclusive development (military expenditure) is positive in lower middle income (upper middle income) countries. (iii) In 2SLS regressions, inclusive development (military expenditure) is positive in lower middle income and SSA (upper middle income and North Africa) countries.

The following are note-worthy for total terrorism. (i) In contemporary regressions, military expenditure is not significant whereas in inclusive development, it is negatively significant in North African countries, and positive in middle income, upper middle income, English common law, French civil law, resource-poor, unlandlocked, conflict-free, SSA, Christian-dominated and African countries. (ii) In non-contemporary regressions, military expenditure is negative on SSA, Africa, low income, landlocked, resource-poor and conflict-free countries. On the other hand, inclusive human development is positive in middle income, lower middle income, upper middle income, English common law, French civil law, conflict-free, unlandlocked, SSA, Islam-oriented and African countries. (iii) In 2SLS, on the one hand, inclusive human development is positive in middle-income, lower-middle-income, English common law, French civil law, resource-poor, unlandlocked, conflict-free, SSA, Christian-dominated, Islam-oriented and African countries. On the other hand, military expenditure has a negative effect in low income, resource-poor, landlocked, conflict-free, SSA, Christian-dominated and African countries.



**Table 2: Summary of comparative results**

<b>Panel A: Domestic Terrorism</b>																	
	Income Levels				Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		Africa
	Low	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
<b>Panel A1: Contemporary FE</b>																	
IHDI	-1.716	<b>0.038***</b>	4.708	<b>0.029***</b>	<b>0.044***</b>	0.707	<b>-13.218*</b>	<b>0.038***</b>	-0.063	<b>0.044***</b>	4.767	<b>0.035***</b>	<b>0.052***</b>	<b>-16.45**</b>	<b>0.043***</b>	-0.381	<b>0.041***</b>
	(0.224)	<b>(0.001)</b>	(0.283)	<b>(0.000)</b>	<b>(0.000)</b>	(0.616)	<b>(0.054)</b>	<b>(0.000)</b>	(0.965)	<b>(0.000)</b>	(0.264)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.013)</b>	<b>(0.000)</b>	(0.868)	<b>(0.000)</b>
MilitaryE	-0.033	-0.022	0.003	-0.144	0.037	-0.015	0.002	-0.004	-0.065	0.004	0.021	-0.064	-0.012	-0.270	0.028	-0.048	-0.020
	(0.517)	(0.842)	(0.981)	(0.311)	(0.752)	(0.751)	(0.979)	(0.931)	(0.197)	(0.960)	(0.775)	(0.249)	(0.781)	(0.204)	(0.629)	(0.502)	(0.649)
<b>Panel A2: Non Contemporary FE</b>																	
IHDI(-1)	-1.876	<b>0.021**</b>	<b>13.868***</b>	0.012	<b>0.028**</b>	<b>2.658*</b>	-3.965	<b>0.022**</b>	0.681	<b>0.028***</b>	0.558	<b>0.021**</b>	<b>0.037***</b>	-8.059	<b>0.028***</b>	2.143	<b>0.026***</b>
	(0.176)	<b>(0.046)</b>	<b>(0.005)</b>	(0.158)	<b>(0.011)</b>	<b>(0.073)</b>	(0.517)	<b>(0.014)</b>	(0.626)	<b>(0.008)</b>	(0.841)	<b>(0.014)</b>	<b>(0.000)</b>	(0.251)	<b>(0.005)</b>	(0.385)	<b>(0.009)</b>
MilitaryE(-1)	-0.063	-0.142	-0.164	-0.087	-0.132	-0.037	-0.061	-0.059	<b>-0.075*</b>	-0.075	-0.024	<b>-0.126**</b>	-0.056	<b>-0.478**</b>	-0.023	-0.092	-0.061
	(0.158)	(0.176)	(0.206)	(0.616)	(0.237)	(0.380)	(0.385)	(0.243)	<b>(0.087)</b>	(0.447)	(0.718)	<b>(0.014)</b>	(0.169)	<b>(0.033)</b>	(0.678)	(0.144)	(0.140)
<b>Panel A3: IV 2SLS</b>																	
IHDIIV	-1.835	<b>0.027*</b>	<b>13.881***</b>	0.004	<b>0.049***</b>	<b>2.785*</b>	-4.141	<b>0.029**</b>	0.666	<b>0.039***</b>	1.317	<b>0.026**</b>	<b>0.060***</b>	-7.411	<b>0.040***</b>	1.687	<b>0.035***</b>
	(0.207)	<b>(0.056)</b>	<b>(0.006)</b>	(0.736)	<b>(0.002)</b>	<b>(0.072)</b>	(0.512)	<b>(0.022)</b>	(0.637)	<b>(0.007)</b>	(0.654)	<b>(0.028)</b>	<b>(0.000)</b>	(0.288)	<b>(0.005)</b>	(0.505)	<b>(0.009)</b>
MilitaryEIV	<b>-0.093*</b>	-0.199	-0.216	-0.122	-0.187	-0.062	-0.102	-0.099	<b>-0.112**</b>	-0.121	-0.065	<b>-1.479***</b>	<b>-0.087*</b>	<b>-0.516**</b>	-0.056	-0.124	<b>-0.095*</b>
	<b>(0.089)</b>	(0.106)	(0.155)	(0.550)	(0.159)	(0.225)	(0.236)	(0.108)	<b>(0.031)</b>	(0.331)	(0.443)	<b>(0.015)</b>	<b>(0.079)</b>	<b>(0.042)</b>	(0.411)	(0.102)	<b>(0.058)</b>
<b>Panel B: Transnational Terrorism</b>																	
	Low	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	Africa
<b>Panel B1: Contemporary FE</b>																	
IHDI	<b>2.769***</b>	0.008	<b>5.514*</b>	0.007	0.008	<b>3.495***</b>	7.937	0.006	<b>1.924**</b>	0.010	<b>7.072*</b>	0.006	<b>0.011*</b>	0.969	0.007	<b>3.320**</b>	0.008
	<b>(0.000)</b>	(0.259)	<b>(0.070)</b>	(0.219)	(0.144)	<b>(0.000)</b>	(0.177)	(0.195)	<b>(0.015)</b>	(0.145)	<b>(0.066)</b>	(0.189)	<b>(0.061)</b>	(0.840)	(0.183)	<b>(0.030)</b>	(0.190)
MilitaryE	<b>0.044*</b>	-0.055	-0.018	-0.092	-0.039	0.047	-0.035	-0.021	0.010	-0.054	0.016	-0.046	-0.004	0.032	-0.002	0.008	-0.009
	<b>(0.093)</b>	(0.479)	(0.861)	(0.419)	(0.544)	(0.155)	(0.621)	(0.469)	(0.705)	(0.399)	(0.800)	(0.121)	(0.869)	(0.835)	(0.950)	(0.857)	(0.726)
<b>Panel B2: Non Contemporary FE</b>																	
IHDI(-1)	<b>2.105***</b>	0.009	<b>9.437***</b>	0.008	0.009	<b>3.096***</b>	<b>12.071**</b>	0.006	<b>1.733**</b>	0.010	2.999	0.007	<b>0.012**</b>	8.277	0.007	<b>5.408***</b>	0.008
	<b>(0.004)</b>	(0.221)	<b>(0.007)</b>	(0.184)	(0.111)	<b>(0.000)</b>	<b>(0.019)</b>	(0.202)	<b>(0.028)</b>	(0.131)	(0.227)	(0.144)	<b>(0.044)</b>	(0.149)	(0.144)	<b>(0.002)</b>	(0.147)
MilitaryE(-1)	<b>-0.049**</b>	-0.060	0.032	<b>-0.275**</b>	0.019	-0.045	<b>-0.098*</b>	<b>-0.084***</b>	<b>-0.050**</b>	-0.070	-0.019	<b>-0.114***</b>	<b>-0.048*</b>	<b>-0.309*</b>	<b>-0.075**</b>	-0.048	<b>-0.062**</b>
	<b>(0.034)</b>	(0.422)	(0.725)	<b>(0.026)</b>	(0.734)	(0.133)	<b>(0.099)</b>	<b>(0.004)</b>	<b>(0.039)</b>	(0.277)	(0.755)	<b>(0.000)</b>	<b>(0.052)</b>	<b>(0.088)</b>	<b>(0.011)</b>	(0.272)	<b>(0.017)</b>
<b>Panel B3: IV 2SLS</b>																	
IHDIIV	<b>2.203***</b>	0.013	<b>9.403***</b>	0.011	<b>0.015**</b>	<b>4.100***</b>	<b>11.995**</b>	0.009	<b>1.781**</b>	<b>0.015*</b>	3.282	0.009	<b>0.019**</b>	8.029	0.010	<b>5.412***</b>	0.013
	<b>(0.004)</b>	(0.182)	<b>(0.008)</b>	(0.239)	<b>(0.047)</b>	<b>(0.000)</b>	<b>(0.024)</b>	(0.193)	<b>(0.027)</b>	<b>(0.090)</b>	(0.213)	(0.140)	<b>(0.021)</b>	(0.168)	(0.175)	<b>(0.002)</b>	(0.113)
MilitaryEIV	<b>-0.051*</b>	-0.108	0.010	<b>-0.380**</b>	-0.018	-0.045	<b>-0.125*</b>	<b>-0.096***</b>	<b>-0.055*</b>	-0.122	-0.030	<b>-0.126***</b>	<b>-0.061**</b>	<b>-0.361*</b>	<b>-0.093**</b>	-0.063	<b>-0.077**</b>
	<b>(0.069)</b>	(0.225)	(0.918)	<b>(0.018)</b>	(0.780)	(0.221)	<b>(0.081)</b>	<b>(0.006)</b>	<b>(0.058)</b>	(0.128)	(0.691)	<b>(0.000)</b>	<b>(0.042)</b>	<b>(0.085)</b>	<b>(0.010)</b>	(0.230)	<b>(0.014)</b>
<b>Panel C: Unclear Terrorism</b>																	
	Low	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	Africa

**Panel C1: Contemporary FE**

IHDI	<b>-1.381**</b> (0.038)	<b>0.017**</b> (0.010)	3.149 (0.104)	0.010 (0.279)	<b>0.019***</b> (0.004)	-0.978 (0.179)	-8.780 (0.100)	<b>0.018***</b> (0.000)	<b>-1.284*</b> (0.087)	<b>0.019***</b> (0.001)	1.780 (0.512)	<b>0.017***</b> (0.000)	<b>0.022***</b> (0.000)	<b>-9.878***</b> (0.005)	<b>0.018***</b> (0.000)	-1.256 (0.351)	<b>0.019***</b> (0.001)
MilitaryE	0.007 (0.762)	-0.005 (0.934)	-0.040 (0.555)	-0.060 (0.714)	-0.015 (0.834)	0.008 (0.751)	-0.006 (0.921)	0.044 (0.107)	0.0004 (0.988)	0.017 (0.750)	-0.013 (0.782)	0.029 (0.338)	0.012 (0.613)	0.031 (0.776)	0.045 (0.144)	-0.021 (0.623)	0.011 (0.645)

**Panel C2: Non Contemporary FE**

IHDI(-1)	-0.213 (0.642)	0.0006 (0.892)	<b>6.139***</b> (0.009)	-0.002 (0.485)	0.002 (0.665)	0.694 (0.176)	-0.947 (0.812)	0.0007 (0.799)	0.129 (0.758)	0.002 (0.606)	0.649 (0.656)	0.0002 (0.940)	0.005 (0.210)	-1.072 (0.728)	0.001 (0.657)	1.065 (0.422)	0.001 (0.639)
MilitaryE(-1)	0.006 (0.671)	-0.005 (0.921)	-0.056 (0.365)	<b>0.153*</b> (0.063)	-0.040 (0.447)	0.021 (0.145)	-0.004 (0.926)	0.009 (0.558)	0.005 (0.667)	0.031 (0.486)	-0.020 (0.572)	0.022 (0.253)	-0.004 (0.813)	0.160 (0.102)	0.002 (0.874)	0.004 (0.895)	0.004 (0.773)

**Panel C3: IV 2SLS**

IHDIV	-0.206 (0.673)	0.001 (0.803)	<b>6.587***</b> (0.006)	-0.003 (0.566)	0.007 (0.322)	0.740 (0.173)	-0.918 (0.826)	0.001 (0.708)	0.123 (0.775)	0.004 (0.458)	0.858 (0.586)	0.0007 (0.864)	<b>0.011*</b> (0.051)	-0.927 (0.767)	0.003 (0.467)	1.094 (0.434)	0.003 (0.476)
MilitaryEIV	0.005 (0.756)	-0.002 (0.972)	-0.052 (0.469)	<b>0.192*</b> (0.082)	-0.049 (0.442)	0.024 (0.176)	-0.011 (0.837)	0.009 (0.663)	0.005 (0.731)	0.041 (0.469)	-0.024 (0.600)	0.024 (0.291)	-0.005 (0.785)	<b>0.188*</b> (0.095)	0.001 (0.939)	0.0006 (0.987)	0.004 (0.828)

**Panel D: Total Terrorism**

	Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		Africa
		Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
<b>Panel D1: Contemporary FE</b>																	
IHDI	0.255 (0.864)	<b>0.044***</b> (0.000)	7.381 (0.103)	<b>0.038***</b> (0.000)	<b>0.049***</b> (0.000)	<b>3.385**</b> (0.029)	-6.385 (0.331)	<b>0.045***</b> (0.000)	1.654 (0.280)	<b>0.050***</b> (0.000)	7.483 (0.124)	<b>0.042***</b> (0.000)	<b>0.057***</b> (0.000)	<b>-11.649*</b> (0.087)	<b>0.050***</b> (0.000)	2.373 (0.288)	<b>0.047***</b> (0.000)
MilitaryE	-0.001 (0.977)	0.003 (0.978)	0.038 (0.812)	-0.083 (0.582)	0.044 (0.706)	0.030 (0.581)	0.040 (0.622)	-0.026 (0.648)	-0.040 (0.460)	0.018 (0.853)	0.067 (0.429)	-0.091 (0.119)	-0.006 (0.890)	-0.115 (0.603)	0.006 (0.923)	0.009 (0.896)	-0.012 (0.795)
<b>Panel D2: Non Contemporary FE</b>																	
IHDI(-1)	0.024 (0.986)	<b>0.022**</b> (0.044)	<b>17.219***</b> (0.001)	<b>0.015*</b> (0.071)	<b>0.028***</b> (0.008)	<b>5.843***</b> (0.000)	2.242 (0.704)	<b>0.023**</b> (0.019)	2.315 (0.116)	<b>0.029***</b> (0.008)	1.392 (0.657)	<b>0.022**</b> (0.014)	<b>0.037***</b> (0.000)	-1.665 (0.820)	1.392 (0.657)	<b>0.029***</b> (0.005)	<b>0.026**</b> (0.011)
MilitaryE(-1)	<b>-0.086*</b> (0.060)	-0.074 (0.491)	-0.051 (0.702)	-0.106 (0.519)	-0.072 (0.502)	-0.043 (0.342)	-0.062 (0.363)	<b>-0.108**</b> (0.048)	<b>-0.096**</b> (0.036)	-0.013 (0.897)	0.002 (0.976)	<b>-0.177***</b> (0.001)	<b>-0.072*</b> (0.088)	-0.356 (0.127)	0.002 (0.976)	-0.090 (0.128)	<b>-0.079*</b> (0.065)
<b>Panel D3: IV 2SLS</b>																	
IHDIV	0.156 (0.916)	<b>0.027*</b> (0.058)	<b>17.230***</b> (0.001)	0.009 (0.437)	<b>0.047***</b> (0.002)	<b>6.131***</b> (0.000)	2.058 (0.734)	<b>0.029**</b> (0.028)	2.373 (0.111)	<b>0.040***</b> (0.007)	2.099 (0.524)	<b>0.027**</b> (0.027)	<b>0.058***</b> (0.000)	-1.506 (0.840)	<b>0.042***</b> (0.005)	<b>5.450**</b> (0.027)	<b>0.035**</b> (0.011)
MilitaryEIV	<b>-0.114**</b> (0.043)	-0.130 (0.303)	-0.090 (0.559)	-0.158 (0.407)	-0.127 (0.315)	-0.061 (0.269)	-0.092 (0.268)	<b>-0.155**</b> (0.019)	<b>-0.131**</b> (0.016)	-0.057 (0.649)	-0.031 (0.746)	<b>-0.203***</b> (0.001)	<b>-0.105**</b> (0.038)	-0.397 (0.142)	<b>-0.138*</b> (0.054)	-0.081 (0.267)	<b>-0.114**</b> (0.027)

Notes. \*\*\*, \*\*, \* : significance levels of 1%, 5% and 10% respectively. IHDI: Inequality Adjusted Human Development Index. MilitaryE: Military Expenditure. (-1): non contemporary. (IV): instrumental variable. FE: Fixed Effects. Trans: transnational. 2SLS: Two-Stage-Least Squares. GDPg: Gross Domestic Product growth. Low: Low Income countries. Mid: Middle Income countries. LMid: Lower Middle Income countries. UMid: Upper Middle Income countries. English: English Common law countries. French: French Civil law countries. Oil: Petroleum Exporting countries. NOil: Non-petroleum Exporting countries. Closed: Landlocked countries. Open: Countries open to the sea. Conf: Conflict Affected countries. NConf: Countries not Affected by Conflicts. SSA: Sub-Saharan Africa. NA: North Africa. Chrit: Christian dominated countries. Islam: Muslim dominated countries.

## **4. 2 Further discussion of results and implications**

### *4.2.1 Nexus with debates in the literature*

From a broad African perspective, the positive and insignificant effects of inclusive human development on terrorism are consistent with the strand of literature maintaining that human and economic developments have no (positive) effect(s) on terrorism. These include studies that have established: a positive nexus between economic development and terrorism (Gassenbner & Luechinger, 2011; Blomberg et al., 2004) and no relationship between economic development and terrorism/civil wars (Piazza, 2006; Krueger & Maleckova, 2003; Østby, 2008, p. 143). Moreover, the findings also run counter to the stream of literature on the absence of a relationship between inclusive/exclusive development and terrorism (Li, 2005; Piazza, 2006; Abadie, 2006).

The findings on military expenditure are contingent on the treatment for endogeneity. Whereas positive effects are established in the presence of endogeneity, negative effects are apparent in some non-contemporary regressions (with the exception of total terrorism) after some partial treatment for endogeneity and consistently negative in 2SLS regressions probably because of a better treatment for endogeneity through an instrumental variable approach. The contemporary findings are consistent with the literature maintaining that: military measures alone are insufficient in fighting terrorism and could even fuel more terrorism (Sandler, 2005; Lum et al., 2006; Feridun & Shahbaz, 2010). We argue that the strand of literature consistently documenting positive nexuses between military spending and terrorism may be statistically fragile in terms of the treatment of endogeneity. For instance, Krieger and Meierrieks (2015) have recently established that expected signs between macroeconomic variables and terrorism are apparent exclusively after controlling for endogeneity. This is a theoretical contribution we engage in more depth in Section 4.2.3.

### *4.2.2 Contributions to the comparative economics*

Whereas from baseline or broad African findings, we have seen that inclusive human development increases terrorism, there are some pockets of negative relationships from certain fundamental characteristics of African development. Accordingly, in contemporary specifications, inclusive human development negatively affects: (i) domestic terrorism in North African and resource-rich countries; (ii) unclear terrorism in low income, landlocked and North African countries and (iii) total terrorism in North African countries. It is

consistently apparent that contemporary inclusive human development reduces terrorism in North Africa.

On the other hand, when the effect of military expenditure is observed from the prism of fundamental characteristics, the negative relationship established based on a full African sample is confirmed with the following additional insights: (i) many significant negative effects across fundamental characteristics and (ii) some scanty evidence of positive relationships in a few fundamental features (e.g. see “unclear terrorism”-related regressions where there is a significant effect in North African and Upper middle income countries in 2SLS and Upper middle income in non-contemporary regressions). In addition to between-comparison of fundamental features, within-comparison in fundamental characteristics also provides valuable insights.

The following comparative insights are apparent from within-fundamental features. (1) For income-levels, after controlling for endogeneity, only military expenditure in low income and upper middle income countries have negative effects, with: (i) the effect exclusively significant in low income countries for domestic and total terrorisms and (ii) a higher significant magnitude from upper middle income countries in transnational terrorism regressions. (2) Significant effects are not apparent from both types of legal origins. (3) In terms of petroleum exports, military expenditure is significant: (i) in both resource-rich and resource-poor countries on transnational terrorism, with a higher magnitude from the former; (ii) exclusively in resource-poor countries for total terrorism. (4) Only landlocked countries significantly use military expenditure to reduce terrorism and this is true of domestic, transnational and total terrorism dynamics. (5) In the same vein, only conflict-free countries can significantly use increased military spending to mitigate terrorism. A nexus that is also apparent in domestic, transitional and total terrorism dynamics. (6) Both SSA and North African countries can employ the military expenditure policy instrument to mitigate terrorism with a higher magnitude in North African countries for domestic and transnational terrorism dynamics. On the other hand, a negative nexus is apparent only in SSA for total terrorism. (7) Only Christian-dominated countries significantly reduce transnational and total terrorisms with military expenditure.

It is apparent from the above findings that the effect of income levels in the role of military expenditure in the battle against terrorism is significant at the tails of the income-distributions, notably in low income and upper middle income countries (see transnational terrorism regressions). This direction of results confirms previous literature on the position that wealth *per se* may not be sufficient in explaining why military expenditure works in

certain countries. This is essentially because; effects in lower middle and middle income countries are not consistently significant. In what follows, we discuss some of the reasons underlying the comparative advantages in the propensity to use military expenditure in fighting terrorism.

First, we have established that the propensity of military expenditure to fight transnational terrorism is higher in upper middle income countries vis-à-vis their low income counterparts. This finding is consistent with our intuition because compared to high income countries, low income countries are expected to reflect more persistence in terrorism because wealthier nations are endowed with more military capabilities with which to mitigate and prevent terrorism. This narrative on high income countries is consistent with Gaibullov and Sandler (2009) and Asongu and Nwachukwu (2016a) in the perspective that foreign aid flows from high income to low income countries because the latter lack the resources and facilities with which to mitigate the negative consequences of terrorism in developing countries.

Second, it is also apparent from the findings that the sensitivity of transnational terrorism to military expenditure is higher in oil-rich countries vis-à-vis their oil-poor counterparts. This finding can also be logical given the premise that oil-rich countries are comparatively higher income countries vis-à-vis their oil-poor countries. This explanation is consistent with the previous paragraph on the basis of income levels in the effectiveness of military expenditure in fighting terrorism.

Third, it is also apparent from the findings that the sensitivity of domestic and transnational terrorism to military expenditure is higher in landlocked countries compared to their unlandlocked counterparts. This may be explained by the fact that landlocked countries may be more specialised in dealing with political instability and political terror which, are inherent costs associated with landlockedness. It is important to note that recent literature has established that compared to countries that are open to the sea, there are economic and institutional costs associated with landlockedness (Arvis et al., 2007; Asongu & Le Roux, 2017).

Fourth, the finding that the propensity of military expenditure to fighting domestic and transnational terrorism is higher in non-conflict countries vis-à-vis their conflict-affected counterpart is quite logical and straight forward. This is essentially because non-conflict countries are also associated with a lower propensity to political instability and political terror. Fifth, the ability of North African countries to use military expenditure more effectively in fighting terrorism is consistent with previous narratives in fact that compared countries in SSA, North African countries are wealthier. Sixth, given that terrorism is largely

perpetrated by Islamic fundamentalists, political terror could be more persistent in Islamic-oriented countries. Hence, the higher propensity of military expenditure in combating transnational terrorism in Christian-dominated countries compared to their Islam-oriented counterparts.

#### *4.2.3 Practical and theoretical contributions*

We discuss four main practical and theoretical contributions, notably: (i) military spending having the expected sign and inclusive human development not displaying the expected sign for the most part; (ii) the magnitude of effect on terrorism dynamics; (iii) the need to control for fundamental characteristics and (iv) the imperative to account for endogeneity in specifications.

First, we have for the most part observed that military spending is more effective in fighting terrorism. Assuming that increasing military expenditure is in response to terrorism threats and activities, the findings make practical sense because while inclusive human development is meant to deter citizens from resorting to violent means to question the socio-political and institutional status quo, military spending has a more direct effect in swiftly curbing terrorists' activities. Moreover, the positive effect of inclusive human development may imply that, in spite of inclusive development and better economic governance efforts by sampled countries, motivations for terrorism are traceable to frustrations from some circles (e.g. the elite and middle class) which do not perceive growing equitable distribution of economic resources as positive for their interests.

Within this framework, frustration (discontent) over the unequal distribution of economic resources as a cause of political aggression (violence) may not be so apparent. Instead, such discontent may be from the elites governing existing politico-economic institutions that are infuriated over the redistribution of economic resources. Hence, the elite can mobilize sufficient resources to coordinate activities of political instability and violence that would enable them promote their vested interests or consolidate existing institutions that protect such interests.

The above narrative accords with the view that the middle class in Africa which is composed of the elite (for the most part) may not be sympathetic to demands for better economic governance because of its dependence on the resources of the state and preferences to specific markets (see Poulton, 2014). Moreover, Poulton (2014) and Resnick (2015) have suggested that the African middle class may stall socio-economic transformations by skilfully

using external threats like terrorism to retain a tight grip on power. Hence, our inferences are contingent on the perspective that frustrations on the improvement of economic governance are substantially traceable to the elite with political connections as opposed to the elite that is genuinely earning from innovation, free enterprise and the market economy. This narrative is in line with the skepticism of Rodrik (2015) on the role of the African elite and middle class in governance transformations.

Second, we have established that the negative effect from military expenditure is highest in total terrorism, followed by domestic terrorism and last by transnational terrorism. The fact that effects on unclear terrorism are not overwhelmingly significant is consistent with intuition because military measures are specifically designed to target terrorism that can be explicitly evaluated, certified or established. The effect on total terrorism is highest because total terrorism is the sum of three terrorism dynamics, namely: domestic, transnational and unclear terrorism. The higher magnitude on domestic terrorism compared to transnational terrorism is also consistent with intuition and specificities of variables employed. Accordingly, whereas domestic terrorism is for the most part motivated by economic grievances (see Piazza, 2013), frustrations fuelling transnational terrorism are substantially traceable to disenchantment in foreign policy decisions by wealthy democracies (see Savun & Phillips, 2009).

Third, it is important to control for fundamental characteristics for two main reasons. On the one hand, from broad African findings, we have found that the effect of inclusive human development is either not significant or positively significant, whereas the impact is negatively significant in some fundamental characteristics. On the other hand, while the impact of military spending is overwhelmingly significant with negative effects on some terrorism dynamics in baseline regressions, the negative nexus is not significant in all fundamental characteristics. It follows that blanket inclusive development policies in the fight against terrorism may not be effective unless they are contingent on fundamental features and tailored based on established linkages.

Fourth, there is need to account for endogeneity in order to establish effects that are consistent with intuition and theoretical underpinnings. This contribution confirms the caution by Krieger and Meierrieks (2015) on the need to control for endogeneity with an instrumental variable approach. Accordingly, we have observed both from the African sample and fundamental characteristics that military expenditure significantly decreases terrorism exclusively when endogeneity is accounted for.

## 5. Conclusion and further research directions

This study has investigated the role of inclusive human development and military expenditure in fighting terrorism in 53 African countries for the period 1998-2012. In order to avail room for more policy implications, the comparative emphasis has been articulated on the fundamental characteristics of African development, namely: legal origins (English common law vs French civil law), political stability (conflict-affected vs politically stable), resource-wealth (resource-rich vs resource-poor), income levels (low- vs middle-income), regional proximity (SSA vs North Africa), openness to sea (landlocked and unlandlocked) and religious domination (Islam vs Christianity). The empirical evidence is based on contemporary, non-contemporary and instrumental variable Fixed Effects regressions. Compared to inclusive development, military expenditure is a better tool at fighting terrorism. Significant negative effects are established only when endogeneity is accounted for by means of non-contemporary and instrumental variables approaches. The signs and magnitudes of estimated coefficients are significantly contingent on adopted fundamental characteristics.

Contributions to the comparative economics have been discussed in Section 4.2.1. Practical and theoretical contributions are also provided, notably: military spending having the expected sign while inclusive human development not displaying the expected sign for the most part; the magnitude of effect on terrorism dynamics; the need to control for fundamental characteristics and imperative to account for endogeneity in specifications. From the findings, the propensity of military expenditure to fight transnational terrorism is higher in: (i) middle income countries vis-à-vis their low income counterparts; (ii) oil-rich countries compared to oil-poor countries and (iii) Christian-dominated countries vis-à-vis their Islam-oriented counterparts. Furthermore, military expenditure is also more effective at combating domestic and transnational terrorism in: (i) North African countries vis-à-vis their SSA counterparts; (ii) landlocked countries compared to countries that are open to the sea and (iii) politically-stable countries vis-à-vis their politically-unstable counterparts.

Overall, the main policy implication is that inclusive development is not a sufficient condition for the fight against terrorism whereas military expenditure can be effectively employed to mitigate terrorism. Hence, inclusive development (as a policy tool in the fight against terrorism) could be combined with other factors that have been confirmed to establish negative effects. Moreover, the policy effectiveness of employed tools is contingent on whether they are engaged proactively (i.e. non-contemporarily) or not. In this light, future



inquiries devoted to improving established linkages could focus on assessing complementary factors with which inclusive human development can significantly reduce terrorism.

## Appendices

### Appendix 1: Definitions of variables

Variables	Signs	Definitions of variables (Measurement)	Sources
Political Stability	PS	“Political stability/no violence (estimate): measured as the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional and violent means, including domestic violence and terrorism”	World Bank (WDI)
Domestic terrorism	Domter	Number of Domestic terrorism incidents (in Ln)	
Transnational terrorism	Tranter	Number of Transnational terrorism incidents (in Ln)	Ender et al. (2011) and Gailbulloev et al. (2012)
Unclear terrorism	Unclter	Number of terrorism incidents whose category is unclear (in Ln)	
Total terrorism	Totter	Total number of terrorism incidents (in Ln)	
Internet	Internet	Internet penetration (per 100 people)	World Bank (WDI)
Inclusive development	IHDI	Inequality Adjusted Human Development Index	UNDP
Growth	GDPg	Gross Domestic Product (GDP) growth rates (annual %)	World Bank (WDI)
Inflation	Inflation	Consumer Price Index (annual %)	World Bank (WDI)
Military Expense	Milit	Military Expenditure (% of GDP)	World Bank (WDI)

WDI: World Bank Development Indicators. PCA: Principal Component Analysis. UNDP: United Nations Development Program. Ln: Natural logarithm.

### Appendix 2: Summary statistics (1996-2012)

	Mean	SD	Minimum	Maximum	Observations
Political Stability	-0.550	0.948	-3.220	1.188	742
Domestic terrorism	0.414	0.892	0.000	6.234	901
Transnational terrorism	0.221	0.541	0.000	3.332	901
Unclear terrorism	0.097	0.389	0.000	4.888	901
Total terrorism	0.540	1.002	0.000	6.300	901
Internet penetration	4.243	7.773	0.000	55.416	874
Inclusive development	0.912	4.448	0.127	45.325	687
GDP growth	5.080	9.317	-62.075	149.973	875
Inflation	16.586	150.256	-9.797	4145.108	803
Military Expenditure	2.278	3.034	0.145	39.606	722

S.D: Standard Deviation.

### Appendix 3: Correlation analysis (uniform sample size: 471)

PS	Internet	IHDI	GDPg	Inflation	Milit	Domter	Tranter	Unclter	Totter	
1.000	0.205	0.028	0.005	-0.191	-0.238	-0.492	-0.492	-0.265	-0.554	PS
	1.000	0.002	-0.053	-0.057	-0.067	0.076	0.025	0.041	0.053	Internet
		1.000	-0.045	-0.011	-0.026	0.142	0.036	0.174	0.149	IHDI
			1.000	-0.143	-0.101	-0.010	0.003	-0.072	-0.016	GDPg
				1.000	-0.081	0.006	0.146	0.087	0.068	Inflation
					1.000	0.141	0.081	0.081	0.155	Milit
						1.000	0.580	0.625	0.957	Domter
							1.000	0.461	0.743	Tranter
								1.000	0.664	Unclter
									1.000	Totter

PS: Political Stability/Non violence. Internet: Internet Penetration. IHDI: Inequality Adjusted Human Development Index. GDPg: Gross Domestic Product Growth. Milit: Military Expenditure. Domter: Domestic Terrorism. Tranter: Transnational Terrorism. Unclter: Unclear Terrorism. Totter: Total Terrorism.

#### Appendix 4: Categorization of Countries

Categories	Panels	Countries	Num
Income levels	Middle Income	Algeria, Angola, Botswana, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Equatorial Guinea, Gabon, Lesotho, Libya, Mauritius, Morocco, Namibia, Nigeria, Sao Tome & Principe, Senegal, Seychelles, South Africa, Sudan, Swaziland, Tunisia.	22
	Low Income	Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Djibouti, Eritrea, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	31
Legal Origins	English Common-law	Botswana, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Namibia, Nigeria, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.	20
	French Civil-law	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Guinea, Guinea-Bissau, Libya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Sao Tomé & Principe, Senegal, Togo, Tunisia.	33
Regions	Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Chad, Central African Republic, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	47
	North Africa	Algeria, Egypt, Libya, Mauritania, Morocco, Tunisia.	6
Religion	Christianity	Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	33
	Islam	Algeria, Burkina Faso, Chad, Comoros, Djibouti, Egypt, The Gambia, Guinea, Guinea Bissau, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tunisia.	20
Resources	Petroleum Exporting	Algeria, Angola, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan.	10
	Non-Petroleum Exporting	Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Central African Republic, Comoros, Congo Democratic Republic, Côte d'Ivoire, Djibouti, Eritrea, Ethiopia, Egypt, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Sierra Leone, Somalia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.	43
Stability	Conflict	Angola, Burundi, Chad, Central African Republic, Congo Democratic Republic, Côte d'Ivoire, Liberia, Nigeria, Sierra Leone, Somalia, Sudan, Zimbabwe.	12
	Non-Conflict	Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cape Verde, Comoros, Congo Republic, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger,	41

Senegal, Rwanda, Sao Tomé & Príncipe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia.

Openness to Sea	Landlocked	Botswana, Burkina Faso, Burundi, Chad, Central African Republic, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, Swaziland, Uganda, Zambia, Zimbabwe	15
	Not landlocked	Algeria, Angola, Benin, Cameroon, Cape Verde, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Libya, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Sao Tomé & Príncipe, Seychelles, South Africa, Tanzania, Togo, Tunisia.	38

Num: Number of cross sections (countries)

### Appendix 5: Differences in means of fundamental characteristics

Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		
	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
na	<b>(0.005)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.362)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.004)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.385)	<b>(0.000)</b>	Low
	na	<b>(0.000)</b>	<b>(0.000)</b>	(0.362)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.004)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.381)</b>	Mid
		na	(0.341)	<b>(0.000)</b>	<b>(0.000)</b>	(0.232)	<b>(0.000)</b>	(0.163)	<b>(0.000)</b>	(1.000)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	LMid
			na	<b>(0.000)</b>	<b>(0.000)</b>	(1.000)	<b>(0.000)</b>	<b>(0.095)</b>	<b>(0.000)</b>	<b>(0.341)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.009)</b>	<b>(0.000)</b>	<b>(0.000)</b>	UMid
				na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.014)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(1.000)</b>	English
					na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.014)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(1.000)</b>	<b>(0.000)</b>	Closed
						na	<b>(0.000)</b>	<b>(0.019)</b>	<b>(0.000)</b>	(0.232)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.009)</b>	<b>(0.000)</b>	<b>(0.000)</b>	Oil
							na	<b>(0.019)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.232)	<b>(0.009)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NOil
								na	<b>(0.000)</b>	(0.124)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.031)</b>	<b>(0.000)</b>	Closed
									na	<b>(0.000)</b>	(0.124)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.031)</b>	<b>(0.000)</b>	Open
										na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	Conf
											na	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NConf
												na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	SSA
													na	<b>(0.000)</b>	<b>(0.000)</b>	NA
														na	<b>(0.000)</b>	Chrit
														na	<b>(0.000)</b>	Islam

Low: Low Income countries. Mid: Middle Income countries. LMid: Lower Middle Income countries. UMid: Upper Middle Income countries. English: English Common law countries. French: French Civil law countries. Oil: Petroleum Exporting countries. NoOil: Non-petroleum Exporting countries. Closed: Landlocked countries. Open: Countries open to the sea. Conf: Conflict Affected countries. NConf: Countries not Affected by Conflicts. SSA: Sub-Saharan Africa. NA: North Africa. Chrit: Christian dominated countries. Islam: Muslim dominated countries. Null Hypothesis: Difference in means = 0. P-values in brackets. Bold values represent significant differences in means at the 1%, 5% and 10% significance levels.

### Appendix 6: Differences in means of fundamental characteristics in terrorism dynamics

#### Panel A: Domestic Terrorism

Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		
	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
na	<b>(0.013)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.723)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.216)	<b>(0.000)</b>	(0.139)	<b>(0.000)</b>	<b>(0.000)</b>	(0.803)	<b>(0.002)</b>	Low
	na	<b>(0.000)</b>	<b>(0.000)</b>	(0.723)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.216)	<b>(0.000)</b>	(0.139)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.002)</b>	<b>(0.803)</b>	Mid
		na	<b>(0.001)</b>	(0.055)	<b>(0.000)</b>	(0.140)	<b>(0.000)</b>	(0.438)	<b>(0.000)</b>	(0.432)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.005)</b>	<b>(0.000)</b>	LMid
			na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.005)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.695)	<b>(0.000)</b>	<b>(0.000)</b>	UMid
				na	<b>(0.003)</b>	<b>(0.002)</b>	<b>(0.000)</b>	(0.258)	<b>(0.000)</b>	(0.205)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.597)	English
					na	<b>(0.000)</b>	<b>(0.002)</b>	<b>(0.000)</b>	(0.258)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.597)</b>	<b>(0.000)</b>	French
						na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.052)</b>	<b>(0.017)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.030)</b>	<b>(0.000)</b>	<b>(0.000)</b>	Oil
							na	<b>(0.000)</b>	<b>(0.052)</b>	<b>(0.000)</b>	<b>(0.017)</b>	<b>(0.030)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NOil
								na	<b>(0.000)</b>	(0.904)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.149)	Closed
									na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.149)</b>	<b>(0.000)</b>	Open
										na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.079)</b>	<b>(0.000)</b>	Conf
											na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.079)</b>	<b>(0.000)</b>	NConf
												na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	SSA
													na	<b>(0.000)</b>	<b>(0.000)</b>	NA
														na	<b>(0.031)</b>	Chrit
														na	<b>(0.000)</b>	Islam

#### Panel B: Transnational Terrorism

Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		
	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
na	<b>(0.047)</b>	<b>(0.002)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.250)	<b>(0.000)</b>	<b>(0.001)</b>	<b>(0.000)</b>	(0.234)	<b>(0.001)</b>	(0.702)	<b>(0.000)</b>	<b>(0.000)</b>	(0.437)	<b>(0.061)</b>	Low
	na	<b>(0.003)</b>	<b>(0.000)</b>	(0.250)	<b>(0.001)</b>	<b>(0.001)</b>	<b>(0.000)</b>	(0.243)	<b>(0.000)</b>	(0.702)	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.061)</b>	<b>(0.437)</b>	Mid
		na	<b>(0.000)</b>	(0.895)	<b>(0.000)</b>	(0.195)	<b>(0.000)</b>	(0.908)	<b>(0.000)</b>	(0.329)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.001)</b>	<b>(0.002)</b>	<b>(0.024)</b>	LMid
			na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.007)</b>	<b>(0.000)</b>	<b>(0.000)</b>	UMid
				na	<b>(0.000)</b>	(0.226)	<b>(0.000)</b>	(0.782)	<b>(0.000)</b>	(0.356)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.007)</b>	<b>(0.000)</b>	<b>(0.080)</b>	English
					na	<b>(0.000)</b>	<b>(0.000)</b>	(0.782)	<b>(0.000)</b>	(0.356)	<b>(0.000)</b>	<b>(0.007)</b>	<b>(0.000)</b>	<b>(0.080)</b>	<b>(0.000)</b>	French
						na	<b>(0.000)</b>	(0.380)	<b>(0.000)</b>	<b>(0.018)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.057)</b>	<b>(0.000)</b>	<b>(0.000)</b>	Oil
							na	<b>(0.000)</b>	(0.380)	<b>(0.018)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.057)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NOil
								na	<b>(0.000)</b>	(0.295)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.014)</b>	<b>(0.000)</b>	<b>(0.062)</b>	Closed
									na	<b>(0.000)</b>	(0.295)	<b>(0.014)</b>	<b>(0.000)</b>	<b>(0.062)</b>	<b>(0.000)</b>	Open
										na	<b>(0.011)</b>	<b>(0.000)</b>	<b>(0.011)</b>	<b>(0.011)</b>	(0.303)	Conf
											na	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.303)</b>	<b>(0.011)</b>	NConf
												na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	SSA
													na	<b>(0.000)</b>	<b>(0.000)</b>	NA

na (0.283)  
na Chrit  
Islam

**Panel C: Unclear Terrorism**

Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		
	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
na	<b>(0.069)</b>	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.057)</b>	(0.519)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.495)	<b>(0.002)</b>	(0.496)	<b>(0.000)</b>	<b>(0.000)</b>	(0.567)	<b>(0.068)</b>	Low
	na	<b>(0.001)</b>	<b>(0.000)</b>	(0.519)	<b>(0.057)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.497)	<b>(0.000)</b>	(0.496)	<b>(0.002)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.567)	<b>(0.068)</b>	Mid
		na	<b>(0.047)</b>	<b>(0.025)</b>	<b>(0.000)</b>	(0.109)	<b>(0.000)</b>	(0.459)	<b>(0.000)</b>	(0.222)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.006)</b>	<b>(0.001)</b>	<b>(0.008)</b>	LMid
			na	<b>(0.000)</b>	<b>(0.000)</b>	(0.227)	<b>(0.000)</b>	<b>(0.005)</b>	<b>(0.000)</b>	<b>(0.004)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.765)</b>	<b>(0.000)</b>	<b>(0.000)</b>	UMid
				na	(0.368)	<b>(0.000)</b>	<b>(0.000)</b>	(0.140)	<b>(0.007)</b>	(0.131)	<b>(0.022)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.117)	(0.882)	English
						<b>(0.000)</b>	<b>(0.000)</b>	(0.140)	<b>(0.007)</b>	(0.131)	<b>(0.022)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.882)	(0.117)	French
						na	<b>(0.000)</b>	<b>(0.085)</b>	<b>(0.000)</b>	<b>(0.006)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.134)	<b>(0.000)</b>	<b>(0.000)</b>	Oil
							na	<b>(0.000)</b>	<b>(0.085)</b>	<b>(0.000)</b>	<b>(0.006)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NOil
								na	<b>(0.002)</b>	(0.874)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.003)</b>	<b>(0.000)</b>	(0.250)	Closed
									na	<b>(0.000)</b>	(0.874)	<b>(0.003)</b>	<b>(0.000)</b>	(0.250)	<b>(0.000)</b>	Open
										na	<b>(0.005)</b>	<b>(0.000)</b>	<b>(0.002)</b>	<b>(0.007)</b>	(0.252)	Conf
											na	<b>(0.002)</b>	<b>(0.000)</b>	(0.252)	<b>(0.007)</b>	NConf
												na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	SSA
													na	<b>(0.000)</b>	<b>(0.000)</b>	NA
														na	(0.260)	Chrit
														na	na	Islam

**Panel D: Total Terrorism**

Low	Income Levels			Legal Origins		Petroleum		Openness to sea		Stability		Regions		Religion		
	Mid	LMid	UMid	English	French	Oil	NOil	Closed	Open	Conf	NConf	SSA	NA	Chrit	Islam	
na	<b>(0.007)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.736)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.139)	<b>(0.000)</b>	<b>(0.065)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.811)	<b>(0.001)</b>	Low
	na	<b>(0.000)</b>	<b>(0.000)</b>	(0.736)	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.139)	<b>(0.000)</b>	<b>(0.065)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.811)	<b>(0.001)</b>	Mid
		na	<b>(0.001)</b>	<b>(0.032)</b>	<b>(0.000)</b>	(0.116)	<b>(0.000)</b>	(0.454)	<b>(0.000)</b>	<b>(0.530)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.002)</b>	LMid
			na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.013)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.591)	<b>(0.000)</b>	<b>(0.000)</b>	UMid
				na	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.157)	<b>(0.000)</b>	<b>(0.089)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	English
					na	<b>(0.000)</b>	<b>(0.000)</b>	(0.157)	<b>(0.000)</b>	<b>(0.089)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	(0.620)	<b>(0.000)</b>	French
						na	<b>(0.000)</b>	<b>(0.023)</b>	<b>(0.000)</b>	<b>(0.023)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.076)</b>	<b>(0.000)</b>	<b>(0.000)</b>	Oil
							na	<b>(0.000)</b>	<b>(0.046)</b>	<b>(0.000)</b>	<b>(0.023)</b>	<b>(0.000)</b>	<b>(0.076)</b>	<b>(0.000)</b>	<b>(0.000)</b>	NOil
								na	<b>(0.000)</b>	(0.814)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.090)</b>	Closed
									na	(0.814)	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.090)</b>	<b>(0.000)</b>	Open
										na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.034)</b>	Conf
											na	<b>(0.001)</b>	<b>(0.000)</b>	<b>(0.034)</b>	<b>(0.000)</b>	NConf
												na	<b>(0.000)</b>	<b>(0.000)</b>	<b>(0.000)</b>	SSA
													na	<b>(0.000)</b>	<b>(0.000)</b>	NA
														na	<b>(0.018)</b>	Chrit
														na	na	Islam

Low: Low Income countries. Mid: Middle Income countries. LMid: Lower Middle Income countries. UMid: Upper Middle Income countries. English: English Common law countries. French: French Civil law countries. Oil: Petroleum Exporting countries. NOil: Non-petroleum Exporting countries. Closed: Landlocked countries. Open: Countries open to the sea. Conf: Conflict Affected countries. NoConf: Countries not Affected by Conflicts. SSA: Sub-Saharan Africa. NA: North Africa. Chrit: Christian dominated countries. Islam: Muslim dominated countries. Null Hypothesis: Difference in means =0. P-values in brackets. Bold values represent significant differences in means at the 1%, 5% and 10% significance levels.

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