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Drivers and persistence of death in conflicts: global evidence

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Drivers and persistence of death in conflicts: global evidence

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Abstract

We investigate persistence and determinants of deaths from conflicts in a sample of 163 countries for the period 2010 to 2015. The empirical evidence is based on Generalised Method of Moments. First, the findings are contingent on income levels, religious-domination, landlockedness, regional proximity and legal origins. The persistence of deaths in internal conflict is more apparent in coastal, French civil-law and Islam-oriented countries, compared to landlocked, English common law, Christian-oriented countries, respectively. Second, the following factors are generally responsible for driving deaths from internal conflicts: homicides, conflict intensity and conflicts fought. Furthermore, incarcerations have negative effects on internal conflicts. Justifications for the established tendencies and policy implications are discussed.

JEL Classification: H56; L64; K42; P50
Keywords: War; Conflicts; Global evidence; Persistence

1. Introduction

Three main tendencies in scholarly and academic circles constitute the premise of this paper, notably: the growing cost of conflicts in the world; the policy relevance of elucidating the causes of deaths from conflicts and gaps in the literature. The points are substantiated in chronological order.

First, conflict-related negative externalities (including death) are increasingly a global concern. This fact is sustained by the 2015 Global Peace Index (GPI) report which maintains that about 13% of the annual wealth produced in the world is allocated to tackle conflict-

related issues (Anderson, 2015a; Asongu & Kodila-Tedika, 2017). To put this point into greater perspective, this annual wealth is equivalent to the Gross Domestic Product (GDP) of the following countries: Spain, France, Brazil, the United Kingdom, Canada and Germany. Given these sober stylized facts, the significant amount of wealth that is spent on managing deaths from conflicts could otherwise have been used to fund socio-economic projects related to sustainable development goals. This narrative is broadly consistent with contemporary and non-contemporary literature on what it takes to resolve conflicts and promote peace (Bodine & Crawford, 1998; Lenski, 2014; Malhotra, 2016; Rubenstein, 2017).

Second, building on the above, it is policy-relevant to understand drivers of internal and external conflicts in the world. Accordingly, understanding these drivers is important given that they could be leveraged upon to potentially prevent conflicts and the corresponding costs associated with deaths. Moreover, mitigating, avoiding and preventing such "deaths in conflicts" would logically have positive socio-economic externalities on society as a whole.

Third, from a scholarly viewpoint, this study is relevant because of the sparse scholarly literature on drivers of deaths from conflicts around the world. To the best of our knowledge, while there are studies on trends and patterns in battle deaths, the extant literature on drivers of deaths in conflicts around the world has not focused on persistence using more contemporary data. For instance, Lacina and Gleditsch (2005) engage patterns and trends in deaths from battles using a new dataset made available to the scientific community. Murray *et al*. (2002) have focused on deaths from conflicts within the framework that conflicts are understood as an issue of public health. Obermeyer *et al*. (2008) on their part, take into account "50 years of violent war deaths" in their study on Vietnam to Bosnia which builds on an analysis of data from the world health survey programme. Lacina (2006) views the "severity of civil wars" in the light of the number of deaths that are registered in civil wars while Lacina *et al*. (2006) have argued for a "declining risk of death in battle". The impact of conflicts on adult mortality using a time series cross-national analysis is examined by Li and Wen (2005). More studies in the literature on factors affecting conflicts is summarised in Table 1.

In order to increase options for policy implications, the empirical analysis places some emphasis on a multitude of comparative fundamentals. To this end, the dataset is decomposed into fundamental characteristics contingent on legal origins, income levels, religious

domination, landlockedness and regional proximity[1]. The rest of the paper is organized as follows. The stylized facts, theoretical underpinnings and related literature are disclosed in Section 2. Section 3 presents the data and methodology while the empirical results and corresponding discussion are covered in Section 4. We conclude in Section 5 with implications and future research directions.

2. Stylized facts, theoretical underpinnings, literature review and comparative characteristics

2.1 Some stylize facts

This section is discussed in five main strands with particular emphasis on major conflicts in the regions across world, namely: sub-Saharan Africa (SSA), the Middle East and North Africa, Latin America, Eastern Europe and Asia. The discussion on conflicts in these regions is expanded in the same chronology as highlighted.

First, SSA is experiencing substantial deaths from conflicts, partly because of increased levels of terrorism, partly because of its contemporary history of political strife and civil wars (Kossele & Shan, 2018; Kossele, 2020). (i) From the former perspective, among the terrorists' organisations inflicting casualties in SSA, the Boko Haram of Nigeria is the most prolific. The organisation has extended its activities to neighboring countries like Cameroon, Chad and Niger. To put this point into more perspective, in 2014, the Boko Haram was responsible for 6,664 deaths compared to 6074 from ISIL (Searcey & Santora, 2015). The following are other complementary insights that could be driving the persistence of deaths from conflicts in the continent in 2014: (i) South Sudan's civil war between the Dinkas and Nuers caused 1, 817 deaths and (ii) the al-Shabaab was responsible for 4,425 deaths, including 633 civilians (Anderson, 2015b; Asongu *et al.*, 2018a, 2018b).

(ii) With regard to the view of conflicts, in the contemporary era, SSA has been characterized by more political instability and violence, compared to other regions of the world. Though some of these conflicts are not in the sampled periodicity, there are recurrent pockets of political unrest across the region. The relative importance of SSA in political instability and violence is summarized by Asongu (2014b): "*seven of the nine cases of total chaos and*

[1] Another strand of the literature that has used the same dataset but has focused on different problem statements includes studies focusing on: the persistence of terrorism (Asongu, 2020) and incarcerations (Asongu, 2019); persistence of weapons (Asongu, Uduji & Okolo-Obasi, 2020a); contemporary drivers of global tourism (Asongu, Nnanna, Biekpe & Acha-Anyi, 2019); the right to life (Asongu & Nwachukwu, 2019) and the murder or homicide epidemic (Asongu & Acha-Anyi, 2019a). This study departs from the attendant studies by focusing on drivers and persistence of death in conflicts around the world.

societal breakdowns known in recent history have been registered in Africa (with the exceptions of Afghanistan and Syria): Angola, Burundi, Sierra Leone, Liberia, Zaire/Congo, Somalia, and Sudan" (p.1569). Moreover, recently the internal conflicts in South Sudan (Justin & de Vries, 2019; Krause, 2019) and the Western part of Cameroon (Keke, 2020; Mbih, 2020; Nganji & Cockburn, 2020) are indicative of the fact the internal conflicts remain a critical setback to economic development in SSA.

Second, conflicts in the Middle East and North Africa can be discussed in various streams pertaining to *inter alia*: the Israeli-Palestinian conflict; concerns surrounding Iranian nuclear weapons program; the Iraqi political stalemate; the proxy war in Yemen and the Syrian conflict. These underlying various streams are discussed in the same chronology as highlighted. (i) The Israeli-Palestinian conflict remains one of the oldest conflicts that have consistently resulted in deaths over the past 70 years (Ben-Meir, 2020). The issue is fundamentally based on the inability of either country to acknowledge the rights of the other country to the same piece of land (Pressman, 2019; Muller, 2019). Consequently, this has led to endless violence between Palestinians and Israelis and resolving the conflict would require courageous and visionary leaders that are prepared to make concessions for the peaceful co-existence of both countries on the same piece of land.

(ii) Concerns surrounding the Iranian nuclear weapons program began in the aftermath of the Iranian revolution in 1979; an era during which Iran sought to lead the region by becoming a nuclear power (Ben-Meir, 2020). According to the narrative, ramifications of Iran's quest to become a regional superpower include the complicity of the country in conflicts that are affecting political instability in neighboring countries, namely, in: Syria, Iraq, Yemen and Lebanon. The USA recently withdrew from a deal meant to contain Iran's nuclear weapons agenda and this has encouraged Iran to continue on her path to becoming a nuclear power in the region (Laipson, 2019; Pieper, 2019), in spite of crippling sanctions from the USA. Moreover, the recent assassination of general Soleimani (i.e. an Iranian general) in Iraq by the USA has increased tensions in the region because many are concerned that the US-Iranian strife could escalate (Singh, 2020).

(iii) The Iraq war of 2003 still continues to have repercussions on peace and stability in the Middle East today. Even prior to the 2003 war led by the USA, Iraq upon its establishment in 1932 has experienced many waves of political strife and turbulence, notably: the 1958 revolution, the assumption of power by Saddam Hussein in 1979 which engendered the Gulf and Iran-Iraq wars and recently the 2003 war that has led to more than 100 000 deaths and

substantially damaged infrastructure (Ben-Meir, 2020). Moreover, cross boarder conflicts and request for more autonomy by some regions of the country have led to recurrent conflicts in the contemporary era (Zarei, 2020; Akdedian & Hasan, 2020).

(iv)The Yemeni war is considered by most analysts as one of the most horrific human disasters in modern history, not least because it is proxy war involving, *inter alia*, two countries also fighting to become regional superpowers, namely: Iran and Saudi Arabia (Ben-Meir, 2020). While Iran is backing the leader of Shite Muslims through Houthi rebels, Saudi Arabia is supporting an internationally recognized government that is led by Sunni Muslims (Darwich, 2020). The ongoing war has led to over one million children sick of cholera, thousands of deaths and millions left to starve, with many dying of starvation (Blackburn et al., 2020; Ben-Meir, 2020).

(v) Despite the fact that the Syrian government now has an upper hand in the Syrian conflict, the underlying conflict is one of the deadly externalities of the Arab Spring which has had very devastating consequences both in terms of the number of refugees and internally displaced persons (i.e. over 11 million) as well as the number of people killed as a result of the war (i.e. about 700 000 people) (Ben-Meir, 2020; David et al., 2020). In spite of some evidence that a proxy war is also being fought in the country between the USA, Turkey, Russia and Iran, it is apparent that President Assad is increasingly restoring his authority across the country (Walther & Perdersen, 2020). However, until external forces leave the country and the rebels surrender, the conflict is less likely to stop abruptly.

Third, in Latin America, the persistence in deaths from internal conflicts can be fundamentally traceable to the high rate of homicides in the region. For instance, according to Muggah and de Carvalho (2017), a youth in Latin America is murdered every fifteen minutes. The continent has registered approximately 2.5 million citizens since the beginning of the third millennium. There are seven countries that account for approximately a quarter of annual deaths in the world, namely: Venezuela, Mexico, Honduras, Guatemala, El Salvador, Colombia and Brazil. It is important to note that Latin America is host to 23 of the 25 most murderous cities and 44 of the 50 most homicidal countries.

Fourth, the most notable contemporary crisis in Europe is the Ukraine crisis which has been a power struggle between two factions in the country. While one of the factions is aligned with Russia, the other is supported by the European Union (Amadeo, 2020). It is important to note that Ukraine was a crucial contributor to the economy of the Soviet Union between 1920 and 1991. However, following a political crisis in the country between 2014

and 2018, there was a military conflict between Russian-backed separatists and Ukrainian soldiers.

A possible reason for an anticipated low persistence of death from conflicts in Europe is because of its comparatively high capacity to resolve concerns surrounding internal conflicts. For instance, while only 20% of murders are solved in the Latin American continent, approximately 80% of homicides are resolved in European countries (Muggah & de Carvalho, 2017). This comparative ability to address conflicting scenarios may be fundamentally traceable to the peoples' believe in government institutions for the resolution of conflicts. Accordingly, people often resort to conflicts as means of making their voices heard in the absence of a stringent rule of law (Choi, 2010) and good governance (Asongu & Nwachukwu, 2017d).

Fifth, in Asia, *inter alia* (i.e. Myanmar crisis, Kashmir issue, Tamil crisis in Sri Lanka, Sikh Minority in Pakistan), the most notable contemporary crisis over the past decade have been the crackdown of the Rohingya Muslims by Myanmar's army which has led to hundreds of thousands of Rohingya Muslims fleeing into Bangladesh across the border. The crackdown which began in August 2017 has been considered by the United Nations as a "textbook example of ethnic cleansing" (BBC, 2020; Druce, 2020). According to the narrative, as of January 2020, a top court at the United Nations ordered that measures should be taken by the Buddhist-majority of the country in order to protect Rohingya community members from genocide. While some measures are being taken by the government, the army of the country is still denying allegations of genocide by arguing that they are targeting Rohingya militants and not civilians (Islam, 2020).

2.2. Theoretical underpinnings and literature review

The theoretical framework of persistence has underpinned a bulk of the literature, notably in: inclusive development (Asongu & Nwachukwu, 2017a) and financial development (Stephan & Tsapin, 2008; Goddard *et al*., 2011). In addition, the theoretical insights build on studies focusing on income level convergence which constitute a substantial part of neoclassical growth models (Barro, 1991; Barro & Sala-i-Martin, 1992, 1995; Mankiw *et al*., 1992; Baumol, 1986). These theoretical insights are increasingly being transplanted to other development areas, namely: the development of stock markets (Asongu, 2013; Bruno *et al*., 2012; Narayan *et al*., 2011) and non-exclusive human progress (Mayer-Foulkes, 2010; Asongu, 2014a).

It is worthwhile to lay emphasis on the fact that novel theories of economic growth were proposed and developed in the area of post-Keynesianism. The theoretical inquiries became relevant principally as a result of remarkable improvements in the neoclassical revolution that led to a considerable shift in income differences across nations. Under this theoretical canopy, concepts of market equilibrium were developed to emphasis the importance of theories of economic growth which predicted absolute decreases in income levels across countries. Consistent with Mayer-Foulkes (2010), successful convergence trends are fundamentally traceable to positive externalities from "free market competition". There are two main strands in the attendant literature. There is a strand which argues that only divergence (i.e. lack of convergence) is feasible because of, *inter alia*: disparities in initial conditions, the presence of multiple equilibria and multiple endowments (Barro, 1991; Pritchett, 1997). There is another strand of theoretical literature which is of the position that, in spite of heterogeneities in initial conditions, cross-country variations in levels of income are feasible, especially when countries converge to a steady state or long-run equilibria (Asongu & Nwachukwu, 2017a).

The purpose of this study is not to take positions for or against any of the contending schools of thought. What is relevant for our study is a common denominator, notably: the criterion used to assess and conclude on the presence or absence of convergence. The common criterion applied in this study is that for convergence to be established, the estimated lagged dependent variable should be with the interval of zero and one.

Table 1 summarizes some extant literature on factors driving or deterring conflicts across the world. It is important to note that we are briefly discussing this strand of the literature because to the best of our knowledge and as substantiated in the introduction, while there are extant studies on patterns and trends in deaths from battles, scholarship on the persistence and drivers of death in conflicts using more contemporary global data is sparse. Hence, the added value of this study is to complement the existing literature by using more contemporary world data and focusing on deaths as a specific outcome of conflicts, namely: internal and external deaths.

Table 1: Factors affecting Conflicts

Author(s)	Period	Countries/Others	Methodology	Conflicts	Instruments	Results
Costa et al. (2008)	Undisclosed	Two groups of 100 participants	Error analysis	conflicting information	Bilingualism	Resolves conflicting information
Gubler & Selway (2012)	1945-1999	159 countries	logit model	Civil wars	Societies where ethnicity is cross cut by socioeconomic class, geographic region and religion	civil war onset is an average of nearly *twelve times* less probable
Jo & Namgung, (2012)	1957-2008	221 PTAs	Probit analysis	Conflicts in Preferential trade agreements (PTAs)	Dispute settlement mechanisms (DSMs)	Democracies are more likely to engage DSMs
Akcinaroglu, & Radziszewski, (2013)	1990-2008	African countries with civil wars	Cox proportional hazards model	Civil wars in Africa	private military companies (PMCs)	Duration of conflict reduces with PMCs are in competition
Brancati & Snyder (2013)	1945-2008	Post World War II civil war cases	matching methods and logistic regression	World civil wars	Hold post-war elections after establishing strong institutions.	Quick post-war elections fuel post-war conflicts
Adhikari et al. (2012)	1996-2006	Nepal	Pobit analysis	Civil war	understanding loss and risk factors	redress of war grievances
Walter (2015)	1945-2009	Oslo (UCDP/PRIO) Armed Conflict Database (ACD) Version 4.0 (181 countries)	Cox Proportional Hazards Models—Reduced Models and Fixed effects models	Inter-state conflicts	Political institutions	Strong political institutions mitigate war in post-conflict societies.
Asongu & Nwachukwu (2016a)	1996-2006	MENA countries	GMM System	Political and socio-economic chaos	Catch-up in negative signals like inflation, unemployment and bad governance	From 2007, the Arab Spring could occur between 2011 and 2012
Asongu & Nwachukwu (2016b)	1996-2010	53 African countries	GMM System	Political stability and non-violence	Education and lifelong learning	Instruments favour political stability
Asongu & Kodila-Tedika (2016)	2009-2010	38 African countries	OLS	Conflicts and crimes	Six good governance tools	Corruption-control is the best tool

MENA: Middle East & North Africa. GMM: Generalised Methods of Moments. OLS: Ordinary Least Squares.

In what follows, we briefly discuss studies summarised in the table. Building on the curiosity that the imperative of bilinguals to continuously employ two languages during a speech could affect their networks of attention, Costa *et al*. (2008) have explored the concern by comparing the performance of monolinguals and bilinguals in a previously developed attentional network task. Under the premise that the underlying task is supposed to build on three principal attentional networks (executive control, orienting and alerting), the findings show that participants with a bilingual culture were faster at task performance on the one hand

and on the other, more efficient when it came to executive alerting and executive control networks. Moreover, bilinguals were not only better at resolving conflicting information, but could also leverage more on an alerting cue. In addition, reduced switching cost between a multitude of trials was experienced by bilinguals when compared with monolinguals. Bilingualism is also established to exert some influence on the young adults' abilities to attain efficient attentional channels, notably young individuals who are supposed to be at the apogee of their attentional capabilities.

Using a data set on Preferential Trade Agreements (PTAs) between 1957 and 2008 to assess what factors determine the legal arrangements of Dispute Settlement Mechanisms (DSMs), Jo and Namgung (2012) have established three main findings, notably: (i) it is more likely for democracies to prefer DSMs that are moderately strict, when compared with autocracies; (ii) similar templates are increasingly adopted by each trading partner in their attempt to emulate each other and (iii) recent evidence of legalistic channels substantially build on the development of trade regimes that are multilateral. By highlighting the relevance of both macro-level and member-specific factors, the results have valuable implications for the conception of international institutions.

Gubler and Selway (2012) present a comprehensive theory of civil war onset and ethnic structure based on ethnic groups, geographic dispersion and horizontal inequality. According to the authors, the mobilization efforts of rebel leaders are thwarted in societies with highly cross-cutting tendencies. This is essentially because of *inter alia*: lower possibility of potential combatants to identify with nationalist ambitions, reduced communication in groups and limited ability to manifest social control. Building on a cross-national sample of more than 100 nations, the authors conclude that, on average the onset of a civil war is about twelve times less likely in environments where ethnicity is influenced by religion, geographic region and socioeconomic class.

Adhikari *et al*. (2012) have used data in Nepal to assess the demand for post-conflict reparations by individuals. The authors conclude that the understanding of risk and loss features is imperative in civil reconciliation and settlement. Brancati and Snyder (2013) have argued that when elections are held immediately following a civil war, it could increase the possibility of renewed fighting. Moreover, the authors conclude that the following conditions can mitigate risks, namely: peacekeeping, demobilization, power sharing, decisive victories and strong institutions (judicial, administrative and political). Asongu and Kodila-Tedika (2016) analyse the role of governance tools (corruption-control, rule of law, regulation quality, voice & accountability, government effectiveness and political stability/non violence)

in fighting conflicts and crimes to conclude that corruption-control is the most effective. This is broadly consistent with Walter (2015) who has concluded that bad governance leads to a repeat of war and conflict trap.

The effect of private military companies (PMCs) on the length of a conflict is investigated by Akcinaroglu and Radziszewski (2013) in Africa from 1990 to 2008. The empirical findings show that, with increasing competition in among government-hired PMCs, optimal service delivery is enhanced and therefore, the swift end of conflicts. Asongu and Nwachukwu (2016a) predict the occurrence of the Arab Spring in a sample of Middle East and North African (MENA) countries whereas Asongu and Nwachukwu (2016b) demonstrate that education and lifelong learning can be used to reduce political conflicts and violence.

2. 3 Intuition for comparative development fundamentals

This section substantiates the premise for disaggregating the sample in terms of legal origins, regions, religious dominations, landlockedness and income levels. These fundamental features of comparative economic development have been documented in comparative development studies (Narayan *et al*., 2011; Beegle et al., 2016; Mlachila *et al*., 2017; Asongu & le Roux, 2017). The above comparative features are discussed in more detail in the subsequent paragraphs.

First, consistent with the argument of Asongu *et al*. (2020a) that income levels elucidate the persistence of weapons and Asongu *et al*. (2020b), that income levels explain cross-country political instability and political terror, by extension, low income levels can be expected to be linked with higher levels of deaths from conflicts. Given that the authors argue that the wealth of nations explains political stability, political terrorism and persistence in weapons, it therefore logical for this study to also argue that income levels can explain deaths from conflicts because low income countries are likely to be more associated with political instability and conflicts owing to their limited financial resources needed to prevent conflicts as well as their corresponding negative externalities which include death from conflicts and political stability. The underlying arguments have been employed in contemporary studies to justify why foreign aid flows from developed to developing countries in order to mitigate the negative externalities of terrorism that are more apparent in the latter set of countries (Asongu & Kodila-Tedika, 2017; Efobi et al., 2015).

Second, as documented in Arvis et al. (2017) and Asongu and le Roux (2017), landlockedness is closely associated with institutional and socio-economic costs which are more likely to spark political conflicts according to Asongu et al. (2020b). This extension is

based on the fact that political instability is among the attendant institutional costs. Hence, it follows that coastal countries should be linked with less persistence in deaths in conflicts, compared to landlocked countries.

Third, as argued in contemporary comparative literature (Asongu & Nwachukwu, 2017b), owing to the liberal nature of Christian-oriented countries relative to their Islam-related counterparts which are comparatively more conservative, Christian-related countries are likely to be more linked to civil unrests and political terror since, citizens in such countries are liberal in the rights to express their grievances. This argument is broadly supported by Li (2005) who has posited that institutions that are democratic do provide an enabling environment for citizens that are aggrieved to employ mechanisms (that may lead to political instability) as means to resolving the corresponding conflicts. Conflicts naturally engender deaths which are captured by the outcome variables used in the study. In essence, according to the narrative, compared to less liberal nations (which are mostly Islam-oriented countries), that are largely characterized as stable autocracies, more deaths owing to political instability could be related to unstable democracies because they do less to curtail ex-ante violence. In essence, compared to failed democracies, deaths from conflicts could be less linked to stable autocracies because such stable autocracies are more able to prevent political instability (Schmid, 1992; Eubank & Weinberg, 1994; Drakos & Gofas, 2006; Piazza, 2017, 2018; Lai, 2007; Asongu *et al*., 2020a, 2020b). In summary, the nexus between religion and deaths from conflicts, owing to political instability is elicited in this paragraph using both intuition and the relevant studies.

Fourth, building on the law and economic development literature (La Porta *et al*., 1998, 1999; Beck *et al*., 2013; Agbor, 2015), legal origins influence political instability/violence and corresponding deaths from conflicts owing to political and adaptability frameworks. French civil law countries are more likely to be associated with deaths conflicts from because the post-independence politico-economic structure left by their former colonial power (i.e. France) entails the substantial presence of the former colonial power (i.e. France's influence). For instance, in addition to France having a tight control on the currency used by most of her former colonies in Africa, as of 2014, compared to countries with English common law, French civil law countries (almost all of which are former colonies of France) had registered substantially more coup d'états with the help of France; most of the coup d'états subsequently led to conflicts and deaths from conflicts (Koutonin, 2014).

Fifth, regarding income levels, high income nations are less associated with persistence in deaths from conflicts because they are less linked to political instability, civil

wars, political strife and violence (Asongu *et al*., 2020a). Moreover, even in event of political instability and terror, high income countries have the financial resources with which to dampen the unfavourable political externalities that such as loss in human life (Gaibulloev & Sandler, 2009; Asongu et al., 2020b). This narrative aligns with the premise that high income countries are associated with better institutions with which to mitigate risks that *inter alia*, are linked to deaths from civil wars and political strife (Asongu, 2012; Anyanwu & Erhijakpor, 2014; Efobi, 2015; Pelizzo & Nwokora, 2016, 2018; Pelizzo *et al*., 2016; Asongu & Nnanna, 2019a). Note should be taken of the fact that the argument of income levels and regions can be valid in respect of employing them as fundamental characteristics of comparative development because: (i) in regions that mostly consist of high income nations, not all corresponding countries are high income nations and (ii) in regions that consists of mostly countries with low income, some higher income countries are also apparent.

3. Data and methodology

3.1 Data

This paper investigates a sample of one hundred and sixty-three countries for the period 2010 to 2015. The data is obtained from a multitude of sources, namely: the Operations of Criminal Justice Systems (CTS); Institute for Economics and Peace (IEP); the Uppsala Conflict Data Program (UCDP) Battle-Related Deaths Dataset; the United Nations Committee on Contributions; the United Nations Office on Drugs and Crime (UNODC) Surveys on Crime Trends and a Qualitative assessment by the Economic Intelligence Unit (EIU) analysts' estimates. The choice of the periodicity has been motivated by the need to have findings with more updated policy implications. A strand of studies that has used the same dataset has focused on: determinants of access to weapons (Asongu & Nnanna, 2019b); contemporary drivers of global tourism (Asongu, Nnanna, Biekpe & Acha-Anyi, 2019) and linkages between military expenditure, insecurity dynamics and tourism (Asongu & Acha-Anyi, 2020; Asongu, Uduji & Okolo-Obasi, 2019).

Two outcome variables are employed, namely: deaths from external conflict and deaths from internal conflict. The independent variable of interest is the lagged dependent variable while the control variables include: security officers and police, homicides, incarcerations, conflict intensity, conflicts fought and the United Nations Peace Keeping Force (UNPKF). The variables in the conditioning information set have been documented in the conflicts and political instability literature (Gubler & Selway, 2012; Jo & Namgung, 2012;

Akcinaroglu, & Radziszewski, 2013; Adhikari *et al*., 2012; Walter, 2015; Asongu & Kodila-Tedika, 2016).

In the light of the motivation of increasing policy implications discussed in the introduction, the dataset is disaggregated into fundamental features based on: (i) regions (North America; Latin America; South Asia; East Asia & the Pacific; Europe & Central Asia; Middle East & North Africa (MENA); sub-Saharan Africa (SSA)); (ii) landlockedness (Landlocked and Coastal); (iii) religious domination (Christian with Catholic domination; Christian with Protestant inclination; Christian countries in which another Christian religion apart from Catholicism and Protestantism is dominant; Buddhist-oriented and Islam-dominated countries); and (iv) legal origins (French civil law, English common law, German civil law, and Scandinavian civil law and Socialist countries). It is also worthwhile to emphasize that the fundamental features have been adopted in recent literature on comparative economic development (Asongu & Nwachukwu, 2017b; Mlachila *et al*., 2017; Beegle *et al*., 2016; Asongu & le Roux, 2017; Narayan *et al*., 2011; D'Amico, 2010). In what follows, we discuss the information criteria used to select the highlighted fundamental features.

First, the basis for legal origins is obtained from La Porta *et al*. (2008, p. 289). Whereas the categorisation by religious-domination is from the World Fact Book (CIA, 2011) of the Central Intelligence Agency (CIA), the World Bank's income level categorization is used to classify countries in terms of income levels[2]. Landlocked countries are directly apparent from a world map. Appendix 1 provides the definitions of variables and sampled countries while the summary statistics is disclosed in Appendix 2. Appendix 3 provides the correlation matrix.

3.2 Methodology

The choice of the estimation technique is consistent with the behaviour of the dependent variables and characteristics of the data structure. Following recent literature on the persistence of macroeconomic variables, we adopt the Generalised Method of Moments (GMM) as estimation strategy (Asongu & Nwachukwu, 2017a; Doyle, 2017; Tchamyou, 2019, 2020). At least four main motivations underpin the selection of this empirical strategy. First of all, the number of agents is higher than the number of periods. Hence, the N(163)>T(6) premise is satisfied because T represents the number of years while N denotes

[2] There are four main World Bank income groups: (i) high income, $12,276 or more; (ii) upper middle income, $3,976-$12,275; (iii) lower middle income, $1,006-$3,975 and (iv) low income, $1,005 or less.

the number of countries. Second, given that the estimation approach is panel-oriented, cross-country variations are considered in the estimations. Third, inherent biases in the *difference* estimator are corrected with the *system* estimator. Fourth, the technique accounts for endogeneity by employing instruments to address the concern of simultaneity. Furthermore, the control for time invariant variables also enhances the control for endogeneity because it accounts for the unobserved heterogeneity.

This study adopts the Roodman (2009a, 2009b) extension of Arellano and Bover (1995) which has been established to better control for cross-sectional dependence and reduce over-identification and hence it is more efficient compared to traditional difference and system GMM approaches (Love & Zicchino, 2006; Baltagi, 2008; Boateng *et al.*, 2018; Asongu & Nwachukwu, 2016c; Tchamyou *et al*., 2019).

The following equations in level (1) and first difference (2) summarize the standard *system* GMM estimation procedure.

$$W_{i,t} = \sigma_0 + \sigma_1 W_{i,t-\tau} + \sum_{h=1}^{6} \delta_h X_{h,i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (1)$$

$$W_{i,t} - W_{i,t-\tau} = \sigma_1 (W_{i,t-\tau} - W_{i,t-2\tau}) + \sum_{h=1}^{6} \delta_h (X_{h,i,t-\tau} - X_{h,i,t-2\tau}) + (\xi_t - \xi_{t-\tau}) + (\varepsilon_{i,t} - \varepsilon_{i,t-\tau}) , \quad (2)$$

where, $W_{i,t}$ is an indicator of the conflicts (internal or external), in country i at period t, σ_0 is a constant, X is the vector of control variables (security officers & police; homicides, incarcerations, conflict intensity, conflicts fought and the United Nations Peace Keeping Forces (UNPKP)), τ represents the coefficient of auto-regression which is one for the specification, ξ_t is the time-specific constant, η_i is the country-specific effect and $\varepsilon_{i,t}$ the error term.

In accordance with the extant literature, it is important to devote space to articulate the process of corresponding exclusion restrictions because these are essential for a robust GMM specification. As far as exclusion restrictions are concerned, all explanatory variables are considered as suspected endogenous or predetermined variables and exclusively time invariant omitted indicators are considered as strictly exogenous variables. This identification approach is consistent with recent literature, notably: Boateng *et al*. (2018) and Asongu and Nwachukwu (2016d). Moreover, this identification process has been substantiated by

Roodman (2009b) who has argued that it is very unfeasible for years or time invariant omitted variables to be first-differenced endogenous[3].

With regard to exclusion restrictions, consistent with the identification process, the outcome variables are influenced by the strictly exogenous indicators exclusively via the suggested endogenous or predetermined channels, which are explaining variables. In addition, for the suggested exclusion restrictions to hold, the alternative hypothesis underpinning such a restriction should be rejected. It is important to note that the alternative hypothesis to the Difference in Hansen Test (DHT) argues for the position that the time invariant variables are not strictly exogenous. In other words, the null hypothesis argues that invariant indicators affect conflicts exclusively through the endogenous explaining channels.

Given the above clarifications, in the findings that are presented in Section 4, the assumption of exclusion restriction holds if the DHT linked to the time invariant instrumental variables (IV) (i.e. years, eq(diff)) is not rejected. It worthwhile to emphasize that such a criterion for validating exclusion restrictions is not different from the standard IV procedure which requires a rejection of the alternative hypothesis of the Sargan Overidentifying Restrictions (OIR) test, in order for the engaged instruments to affect the dependent variable exclusively via the suggested channels or endogenous explaining mechanisms (Beck *et al*., 2003; Asongu & Nwachukwu, 2016e).

4. Empirical results

4.1 Presentation of results

The empirical findings are presented in Tables 2-5. Whereas Tables 2-3 shows findings on deaths from internal conflicts, deaths from external conflicts are disclosed in Tables 4-5. The first table for each dependent variable category discloses findings corresponding to income levels, religious domination and landlockedness while second table discloses estimated results corresponding to regions and legal origins. The last column of all tables shows results of the full sample. Four main information criteria are used to examine the validity of the GMM models[4]. Based on these criteria, models of the first-two tables pertaining to death from

[3] Hence, the procedure for treating *ivstyle* (years) is 'iv (years, eq(diff))' whereas the *gmmstyle* is employed for predetermined variables.

[4] "*First, the null hypothesis of the second-order Arellano and Bond autocorrelation test (AR(2)) in difference for the absence of autocorrelation in the residuals should not be rejected. Second the Sargan and Hansen overidentification restrictions (OIR) tests should not be significant because their null hypotheses are the positions that instruments are valid or not correlated with the error terms. In essence, while the Sargan OIR test is not robust but not weakened by instruments, the Hansen OIR is robust but weakened by instruments. In order to restrict identification or limit the proliferation of instruments, we have ensured that instruments are lower than the number of cross-sections in most specifications. Third, the Difference in*

internal conflict are overwhelmingly valid whereas corresponding models focusing on death from external conflicts are not valid for the most part because of post-estimation presence of residuals in the estimations. Hence, in the discussion that follows, we exclusively discuss valid findings in Tables 2-3, while the results in Tables 4-5 are presented at the end of the paper to avoid publication bias, especially the bias of exclusively disclosing positive, significant or strong results in scholarly circles (Franco *et al*., 1991; Rosenberg, 2005; Asongu & Nwachukwu, 2017c).

It is important to emphasis that while the validity of models is relevant for assessing the significance of determinants of deaths from external conflicts, for persistence to be established, other complementary criteria should be met. These complementary criteria are consistent with recent literature from which two conditions are needed for convergence to be established (Fung, 2009, p. 58; Asongu, 2013, p. 192). First of all, the estimated lagged endogenous variable has to be statistically significant. Second, the statistically significant estimated lagged endogenous variable should be within the interval of zero and one.

It is worthwhile to emphasis why the criterion is based on the lagged endogenous variable is employed instead of the beta coefficient which is traditionally reported in GMM estimation output. When the underlying beta is reported, the criterion for convergence is that it should be less than zero. Alternatively, the estimated lagged dependent variable is directly reported, from which one is subtracted in order to obtain the underlying beta. In order to avoid such arithmetic concerns, we directly report the estimated lagged outcome variable and employ the alternative information criterion to assess convergence. This information criterion which requires that the absolute value corresponding to the estimated lagged outcome variable falls within the suggested interval (i.e. zero and one), is consistent with recent literature (Prochniak & Witkowski, 2012a, p. 20; Prochniak & Witkowski, 2012b, p. 23; Asongu & Nwachukwu, 2016a, p. 459).

Before we discuss the results in detail, one final (but not the least) clarification is essential. In the presence of more than one sample within a fundamental characteristic, in order to establish which sub-sample exhibits more persistence in deaths from internal conflicts, the sub-sample associated with a higher estimated lagged value in deaths from internal conflicts is acknowledged as reflecting more persistence. This is for the most part because; relevance in magnitude translates the importance of a comparative scope. In other

Hansen Test (DHT) for exogeneity of instruments isalso employed to assess the validity of results from the Hansen OIR test. Fourth, a Fisher test for the joint validity of estimated coefficients is also provided" (Asongu & De Moor, 2017, p.200).

words, a higher magnitude implies that past values in deaths from internal conflicts more proportionately affect future values of death from internal conflicts.

The following findings can be established from Table 2. First, the deaths from internal conflicts are more persistent in high income countries compared to low income countries on the one hand and on the other hand, in middle income countries, the corresponding deaths are more persistent in lower middle income countries compared to their upper middle income counterparts. It follows that the narrative in Section 2 pertaining to cross-country differences based on income levels is only partially valid because it only holds when lower middle income countries are compared with their upper middle income counterparts. Second, in relation to religious domination, persistence of deaths from internal conflicts is apparent in the following order of increasing magnitude: Christian protestant countries, Christian catholic countries and Islam-dominated countries. However only the findings from Christian-catholic and Islam-oriented countries are used for comparative purpose because of the presence of instrument proliferation in the other specifications (i.e. in the post-estimation diagnostic tests, the number of instruments are respectively higher than the corresponding number of countries). The comparative tendency in cross-sections that pass the instrument proliferation test is not consistent with the narrative in Section 2 because of the persistence in deaths from conflicts that is more apparent in Islam-oriented countries. This unexpected finding can be traceable to the facts that during the sampled periodicity, most conflicts in the world have been in the Middle East and North Africa owing the Arab Spring (Asongu & Nwachukwu, 2016a; El-Haddad, 2020). Third, persistence in deaths from internal conflicts is more apparent in coastal countries vis-à-vis their landlocked counterparts. This may be explained by the tendency of globalization to drive conflicts, in which, coastal countries are more exposed.

In Table 3, results in some sub-samples are not provided because of lack of degrees of freedom. First, from a regional perspective the following regions experience more persistence in deaths from internal conflict in the following increasing order of magnitude: Europe & Central Asia; East Asia & the Pacific; Latin America; sub-Saharan Africa (SSA) and Middle East & North Africa (MENA). Unfortunately, a comparative emphasis is not worthwhile in the light of the intuition in Section 2 because only the 'Europe & Central Asia" sub-sample passes the post-estimation diagnostic test related to instrument proliferation. Second, French civil law countries experience more persistence in the deaths compared to their English common law counterparts. This is consistent with the narrative in Section 2.2.

As concerns determinants of persistence in the outcome variable, the following factors are broadly responsible for driving deaths from internal conflicts: homicides, conflict intensity

and conflicts fought. Conversely, the number of incarcerations deters deaths from internal conflicts and on average the sign of the UNPKF indicator cannot be established with certainty because it reflects both positive and negative effects, contingent on fundamental characteristics.

Table 2: Persistence in Internal Conflict with income levels, religious domination and landlockedness

	Dependent Variable: Internal Conflict											
	Income Levels				**Religious Domination**					**Openness to sea**		Full
	HI	UMI	LMI	LI	CC	CP	CO	Islam	Bhu	LL	NLL	Sample
Constant	**0.225*** **	**-0.273**	**-0.928** **	-0.561	**-0.469*** **	**1.140*** **	-0.412	-0.335	1.391	**-1.224** **	-0.139	-0.336
	(0.000)	**(0.381)**	**(0.038)**	(0.125)	**(0.000)**	**(0.000)**	(0.765)	(0.541)	(0.672)	**(0.000)**	(0.721)	(0.381)
Internal Conflict (-1)	**0.774*** **	**0.470*** **	**0.639*** **	**0.700*** **	**0.703*** **	**0.493*** **	0.689	**0.709*** **	0.733	**0.688** **	**0.775** **	**0.742*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.560)	**(0.000)**	(0.528)	**(0.000)**	**(0.000)**	**(0.000)**
Security Officers & Police	0.0002	-0.032	0.070	-0.001	0.041	**-0.290*** **	0.375	**0.157***	-0.274	-0.083	0.023	-0.040
	(0.586)	(0.455)	(0.238)	(0.982)	(0.231)	**(0.000)**	(0.130)	**(0.052)**	(0.688)	(0.212)	(0.752)	(0.663)
Homicides	0.0001	0.041	**0.185** **	-0.170	0.006	**0.060** **	-0.175	-0.239	-0.291	**0.159** **	-0.061	-0.016
	(0.900)	(0.463)	**(0.013)**	(0.163)	(0.774)	**(0.027)**	(0.708)	(0.217)	(0.718)	**(0.004)**	(0.624)	(0.885)
Incarcerations	**-0.0007***	-0.111	**-0.288*** **	**0.493*** **	0.052	**-0.181*** **	-0.243	-0.010	0.050	**0.198** **	-0.061	-0.089
	(0.089)	(0.195)	**(0.000)**	**(0.001)**	(0.157)	**(0.006)**	(0.317)	(0.867)	(0.870)	**(0.000)**	(0.484)	(0.334)
Conflict Intensity	-0.00006	**0.278*** **	**0.339*** **	0.089	**0.025** **	**0.180*** **	0.541	**0.231*** **	0.117	**0.215** **	**0.205** **	**0.286*** **
	(0.903)	**(0.000)**	**(0.000)**	(0.263)	**(0.049)**	**(0.000)**	(0.126)	**(0.000)**	(0.792)	**(0.004)**	**(0.000)**	**(0.000)**
Conflict Fought	0.0001	**0.617*** **	**0.144*** **	0.172	**0.421*** **	**-0.143*** **	-0.030	0.091	-0.154	**0.268** **	0.077	**0.226*** **
	(0.757)	**(0.000)**	**(0.000)**	(0.101)	**(0.000)**	**(0.004)**	(0.979)	(0.290)	(0.937)	**(0.00)**	(0.311)	**(0.000)**
UNPKF	-0.0001	-0.023	**0.078** **	0.015	0.004	-0.033	-0.051	0.056	0.015	**-0.030***	**0.054** **	0.032
	(0.723)	(0.123)	**(0.016)**	(0.476)	(0.695)	(0.125)	(0.847)	(0.118)	(0.853)	**(0.067)**	**(0.027)**	(0.168)
AR(1)	**(0.117)**	**(0.157)**	(0.038)	(0.052)	**(0.329)**	**(0.155)**	**(0.221)**	(0.003)	**(0.504)**	(0.026)	(0.015)	(0.005)
AR(2)	**(0.193)**	**(0.290)**	**(0.581)**	**(0.054)**	**(0.390)**	**(0.304)**	**(0.552)**	**(0.193)**	**(0.812)**	**(0.043)**	**(0.550)**	**(0.453)**
Sargan OIR	(0.003)	(0.000)	(0.016)	(0.000)	(0.000)	(0.000)	(0.000)	(0.041)	(0.002)	(0.001)	(0.000)	(0.000)
Hansen OIR	**(0.995)**	**(0.865)**	**(0.447)**	**(0.465)**	**(0.347)**	**(0.508)**	**(1.000)**	**(0.660)**	**(1.000)**	**(0.359)**	**(0.737)**	**(0.479)**
DHT for instruments												
(a)Instruments in levels												
H excluding group	**(0.664)**	**(0.600)**	**(0.631)**	**(0.118)**	**(0.588)**	**(0.895)**	**(0.986)**	**(0.323)**	**(0.972)**	**(0.566)**	**(0.598)**	**(0.348)**
Dif(null, H=exogenous)	**(0.999)**	**(0.851)**	**(0.319)**	**(0.794)**	**(0.241)**	**(0.251)**	**(1.000)**	**(0.774)**	**(1.000)**	**(0.262)**	**(0.679)**	**(0.532)**
(b) IV (years, eq (diff))	**(0.975)**	**(0.680)**	**(0.867)**	**(0.746)**	**(0.617)**	**(0.797)**	**(1.000)**	**(0.728)**	**(1.000)**	**(0.353)**	**(0.707)**	**(0.399)**
H excluding group												
Dif(null, H=exogenous)	**(0.973)**	**(0.976)**	(0.041)	(0.099)	(0.091)	(0.097)	**(1.000)**	**(0.328)**	**(0.986)**	**(0.385)**	**(0.534)**	**(0.573)**
Fisher	**24488*** **	**5012*** **	**291.55** **	**46.84*** **	**12405** **	**772.5*** **	**31.66*** **	**86.69*** **	**47.37*** **	**3007*** **	**44.51** **	**47.95*** **
Instruments	31	31	31	31	31	31	31	31	31	31	31	31
Countries	43	36	46	38	54	26	14	49	13	34	129	163
Observations	215	180	230	190	270	130	70	245	65	170	645	815

***,**,*: significance levels at 1%, 5% and 10% respectively. DHT: Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen OIR tests. HI: High Income countries. UMI: Upper Middle Income countries. LMI: Lower Middle Income countries. LI: Low Income countries. CC: Christian countries with Catholic domination. CP: Christian countries with Protestant domination. CO: Christian countries in which another Christian religion apart from Catholicism and Protestantism is dominant. Islam: Islam-dominated countries. Bhu: Bhuddism dominated countries. LL: Landlocked countries. NLL: Not Landlocked countries.

Table 3: Persistence in Internal Conflict with regions and legal origin dynamics

	Dependent variable: Internal Conflict												
	Regions							Legal origins					Full
	SA	ECA	EAP	MENA	SSA	LA	NA	Eng.	Frch.	Ger.	Scand.	Social.	Sample
Constant	na	**0.552****	0.035	-1.316	-0.311	-0.204		**-1.235*****	-0.619	**0.488*****			-0.336
		(0.038)	(0.887)	(0.174)	(0.407)	(0.639)		**(0.001)**	(0.148)	**(0.001)**			(0.381)
Internal Conflict (-1)		**0.453*****	**0.596*****	**0.808*****	**0.719*****	**0.680*****		**0.668*****	**0.736*****	**1.512*****			**0.742*****
		(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		**(0.000)**	**(0.000)**	**(0.000)**			**(0.000)**
Security Officers & Police		0.044	0.0006	-0.112	-0.025	0.052		**0.132****	-0.121	-0.0005			-0.040
		(0.260)	(0.993)	(0.558)	(0.703)	(0.158)		**(0.023)**	(0.135)	(0.934)			(0.663)
Homicides		**-0.102*****	-0.004	0.348	-0.117	0.028		**0.118***	0.121	0.0004			-0.016
		(0.000)	(0.937)	(0.186)	(0.324)	(0.613)		**(0.078)**	(0.341)	(0.947)			(0.885)
Incarcerations		**-0.039****	-0.017	0.177	-0.028	-0.009		0.084	-0.093	0.0003			-0.089
		(0.033)	(0.788)	(0.396)	(0.884)	(0.885)		(0.256)	(0.331)	(0.951)			(0.334)
Conflict Intensity		**0.201*****	-0.034	**0.395*****	**0.301*****	-0.072		**0.315*****	**0.331*****	-0.0004			**0.286*****
		(0.000)	(0.509)	**(0.003)**	**(0.006)**	(0.286)		**(0.000)**	**(0.000)**	(0.916)			**(0.000)**
Conflict Fought		-0.032	**0.436****	-0.134	**0.242*****	**0.401*****		**0.113****	**0.240*****	**-1.000*****			**0.226*****
		(0.899)	**(0.021)**	(0.282)	**(0.005)**	**(0.001)**		**(0.032)**	**(0.001)**	**(0.000)**			**(0.000)**
UNPKF		**-0.072*****	0.004	0.010	0.026	0.011		-0.012	0.031	0.0002			0.032
		(0.000)	(0.651)	(0.871)	(0.314)	(0.673)		(0.566)	(0.326)	(0.916)			(0.168)
AR(1)		(0.016)	(0.121)	(0.065)	(0.148)	(0.409)		(0.108)	(0.031)	(0.338)			(0.005)
AR(2)		**(0.217)**	**(0.103)**	**(0.179)**	**(0.504)**	**(0.276)**		**(0.243)**	**(0.756)**	**(0.336)**			**(0.453)**
Sargan OIR		(0.000)	(0.000)	(0.074)	(0.001)	(0.000)		(0.000)	(0.005)	(0.000)			(0.000)
Hansen OIR		**(0.609)**	**(0.995)**	**(0.993)**	**(0.541)**	**(0.998)**		**(0.157)**	**(0.221)**	**(1.000)**			**(0.479)**
DHT for instruments													
(a)Instruments in levels													
H excluding group		**(0.201)**	**(0.482)**	**(0.469)**	**(0.894)**	**(0.957)**		**(0.797)**	**(0.241)**	**(0.981)**			**(0.348)**
Dif(null, H=exogenous)		**(0.832)**	**(1.000)**	**(1.000)**	**(0.280)**	**(0.987)**		**(0.055)**	**(0.282)**	**(1.000)**			**(0.532)**
(b) IV (years, eq (diff)) H excluding group		**(0.401)**	**(0.971)**	**(0.771)**	**(0.385)**	**(0.989)**		**(0.112)**	**(0.224)**	**(1.000)**			**(0.399)**
Dif(null, H=exogenous)		**(0.911)**	**(0.988)**	**(1.000)**	**(0.778)**	**(0.969)**		**(0.515)**	**(0.333)**	**(1.000)**			**(0.573)**
Fisher		**289.49*****	**437.15*****	**1146*****	**129.27*****	**4471*****		**212.66*****	**37.7*****	**1910*****			**47.95*****
Instruments		31	31	31	31	31		31	31	30			31
Countries		48	18	20	44	23		50	87	20			163
Observations		240	90	100	220	115		250	435	100			815

***,**,*: significance levels at 1%, 5% and 10% respectively. DHT: Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen OIR tests. ECA: Europe & Central Asia. EAP: East Asia & the Pacific. MENA: Middle East & North Africa. SSA: sub-Saharan Africa. LA: Latin America. NA: North America. Eng: English Common Law countries. Frch: French Civil Law countries. Ger: German Civil law countries. Scand: Scandinavian Civil law countries. Social: Socialists countries.

4.2 Further discussion of results

Before the findings are discussed further, it is relevant to provide more insights into the concept of convergence underlying the determination of persistence. The analysis is a form of conditional convergence because a conditioning information set is used in the modelling exercise (Asongu, 2013). This is contrary to the absolute convergence modelling framework in which only the lagged dependent variable features as an independent variable. Conditional convergence is the type of convergence that shows decreasing dispersions towards a country's own long term equilibrium or steady state (Barro, 1991; Prichett, 1997; Narayan *et al.*, 2011; Bruno *et al.*, 2012). Hence, the conditional approach to convergence is contingent on characteristics that determine cross-country differences in the outcome variable. In the same vein, in the light of the established findings, the leading roles of the Islam-dominated countries (compared to Christian-oriented countries) and French civil law

countries (vis-à-vis English common law countries), are fundamentally traceable to conflict intensity and conflicts fought (which constitute variables or determinants in the conditioning information set). In what follows we provide some explanations to the established tendencies.

The leading role of the Islam-dominated countries in driving deaths from internal conflicts is consistent with events in the post-"2011 Arab Spring" on the one hand and periodicity of the study on the other. With respect to the latter, the periodicity employed in this study broadly aligns with the beginning of the Arab Spring. Concerning post-"2011 Arab Spring" events, the conflicts in the MENA have dominated media spotlights since the overthrow of the Libyan leader Colonel Muammar Gaddafi. Some features in the MENA that have contributed to the deaths from internal conflicts include: (i) the failed Libyan state in the post-Gaddafi era, in which various rebel factions are fighting to take decisions on the country's destiny and determine the law of the land; (ii) the scenario in Yemen which is deteriorating because of a proxy war largely being fought by Iran and Saudi Arabia who are in support of opposition rebel factions and (iii) the war in Syria which has generated fragile politico-economic environments in neighboring countries (e.g. Iraq and Lebanon), for the most part because of the birth of the Islamic State of Iraq and the Levant (ISIL). Since MENA countries are Islam-dominated; the narrative above also partly explains why Islam-dominated countries reflect more persistence in deaths from civil conflicts vis-à-vis their Christian-oriented counterparts.

The comparative persistence of French civil law countries vis-à-vis English common law countries can be elicited by the fact that French civil law countries are traditionally less flexible to adapt to evolving and changing environments (Agbor, 2015, Beck *et al*., 2003; La Porta *et al*., 1998, 1999). In the light of this insight, the English common law system has advantages from the political and adaptability channels (Beck *et al*., 2013). According to political channel, English common law systems prioritize the rights of individuals instead of the power of the State. With respect to the adaptability mechanism, French civil law countries adapt less to changing circumstances. Therefore, the English common law system is more likely to provide enabling socio-economic and legal conditions that mitigate the hysteresis hypothesis in deaths from conflicts, notably: past observations in deaths from conflicts influencing future observations from deaths in conflicts. Let us substantiate this perspective with the example of SSA which eloquently represents both English common law and French civil law countries. Accordingly, in the post-colonial époque, as of 2014, former French colonies had registered more than half of all documented political coup d'états in Africa, notably: 45 versus 22 for English common law countries (Koutonin, 2014). These political

coup d'états are often surrounded by civil wars and political strife that substantially lead to deaths.

5. Conclusion and future research directions

We investigate persistence and determinants of deaths from conflicts around the world using a sample of 163 countries for the period 2010 to 2015. The empirical evidence is based on Generalised Method of Moments. In order to increase room for policy implications the dataset is decomposed into fundamentals based on income levels, legal origins, religious domination, landlockedness and regional proximity. First, the deaths from internal conflicts are more persistent in: (i) high income countries compared to low income countries on the one hand and on the other hand, in lower middle income countries compared to their upper middle income counterparts. Second, the persistence of deaths from internal conflict is more apparent in coastal, French civil-law and Islam-oriented countries, compared to landlocked, English common law, Christian-oriented countries, respectively. Third, with regard to determinants of persistence, the following factors are significantly responsible for driving deaths from internal conflicts: homicides, conflict intensity and conflict fought. Furthermore, incarcerations have negative effects. Justifications for the established tendencies have been discussed.

The findings have implications for, *inter alia*: foreign aid, foreign investment and tourism location decisions. Accordingly, given that public spending is often not sufficient in developing countries in order to prevent and mitigate deaths from conflicts (especially those associated with terrorism), the allocation foreign aid to developing countries for the purpose of preventing human causalities from conflicts should prioritize regions (and by extension counties) which reflect the highest levels of persistence. In the same vein, tourists' arrivals and the location decisions of some types foreign direct investments (especially those related to the high traffic of individuals) are most likely to be influenced by evidence of how past deaths from conflicts will influence future deaths from the same cause.

It is also important note that the established persistence is contingent on the adopted determinants which we have integrated into the models and empirically tested. Future studies can improve the extant literature by focusing on country-specific studies for more targeted policy implications.

6. Conflict of interest statement

There is no conflict of interest.

Table 4: Persistence in External Conflicts with income levels, religious domination and landlockedness

	Dependent Variable: External Conflicts											
	Income Levels				Religious Domination					Openness to sea		Full
	HI	UMI	LMI	LI	CC	CP	CO	Islam	Bhu	LL	NLL	Sample
Constant	**0.631*** **	**1.297*** **	**1.801*** **	**0.887*** **	**1.259*** **	**0.761*** **	-1.388	**0.890*** **	0.975	**1.267*** **	**1.598*** **	**1.229*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.001)**	(0.396)	**(0.000)**	(0.363)	**(0.000)**	**(0.000)**	**(0.000)**
External conflicts (-1)	**0.217*** **	**-0.061*** **	**-0.140*** **	**0.063*** **	0.016	**-0.129*** **	1.169	-0.029	0.349	**-0.079*** **	**-0.071***	**-0.061***
	(0.000)	**(0.000)**	**(0.000)**	**(0.008)**	(0.702)	**(0.000)**	(0.127)	(0.146)	(0.626)	**(0.000)**	**(0.085)**	**(0.050)**
Security Officers & Police	-0.026	-0.003	**-0.049***	0.060	**-0.055*** **	**0.303*** **	0.063	0.010	-0.043	-0.0006	**-0.075***	-0.051
	(0.197)	(0.867)	**(0.098)**	(0.258)	**(0.026)**	**(0.003)**	(0.564)	(0.800)	(0.889)	(0.988)	**(0.068)**	(0.112)
Homicides	0.009	0.016	-0.072	0.015	**-0.024***	-0.035	0.192	**0.083** **	-0.0005	**-0.037** **	-0.021	-0.006
	(0.835)	(0.328)	(0.231)	(0.654)	**(0.087)**	(0.424)	(0.271)	**(0.011)**	(0.998)	**(0.042)**	(0.709)	(0.862)
Incarcerations	**0.132** **	**-0.057*** **	-0.083	**0.135** **	0.008	-0.132	-0.178	**-0.021***	-0.086	-0.092	-0.016	0.020
	(0.011)	**(0.005)**	(0.105)	**(0.029)**	(0.744)	(0.323)	(0.215)	**(0.068)**	(0.848)	(0.231)	(0.737)	(0.650)
Conflict Intensity	-0.010	**-0.024*** **	-0.031	**-0.115*** **	**-0.023***	0.004	0.211	0.0002	-0.0004	0.039	-0.038	0.0007
	(0.707)	**(0.001)**	(0.200)	**(0.003)**	**(0.058)**	(0.962)	(0.207)	(0.993)	(0.997)	(0.143)	(0.239)	(0.979)
Conflict Fought	**0.126** **	**-0.024** **	0.008	0.003	0.013	0.012	-0.051	**-0.027***	-0.152	0.012	-0.031	-0.012
	(0.012)	**(0.026)**	(0.684)	(0.880)	(0.448)	(0.801)	(0.785)	**(0.065)**	(0.557)	(0.505)	(0.497)	(0.653)
UNPKF	-0.028	-0.006	0.007	0.012	0.005	**0.042*** **	0.243	-0.0001	0.103	**0.031** **	0.004	0.017
	(0.215)	(0.247)	(0.724)	(0.146)	(0.561)	**(0.004)**	(0.165)	(0.991)	(0.451)	**(0.035)**	(0.782)	(0.116)
AR(1)	(0.022)	**(0.839)**	(0.068)	(0.068)	(0.071)	**(0.959)**	**(0.265)**	**(0.995)**	**(0.670)**	**(0.381)**	**(0.886)**	**(0.434)**
AR(2)	(0.028)	**(0.197)**	(0.055)	**(0.100)**	(0.016)	(0.026)	(0.302)	(0.090)	**(0.194)**	(0.065)	(0.001)	(0.000)
Sargan OIR	(0.000)	**(0.649)**	(0.000)	(0.017)	**(0.984)**	(0.001)	(0.006)	(0.000)	**(0.976)**	(0.010)	(0.022)	(0.001)
Hansen OIR	**(0.445)**	**(0.984)**	**(0.466)**	**(0.775)**	**(0.711)**	**(0.674)**	**(1.000)**	**(0.957)**	**(1.000)**	**(0.708)**	**(0.853)**	**(0.773)**
DHT for instruments												
(a)Instruments in levels												
H excluding group	**(0.191)**	**(0.625)**	**(0.302)**	**(0.626)**	**(0.227)**	**(0.550)**	**(0.941)**	**(0.382)**	**(1.000)**	**(0.355)**	**(0.563)**	**(0.373)**
Dif(null, H=exogenous)	**(0.655)**	**(0.992)**	**(0.557)**	**(0.713)**	**(0.901)**	**(0.628)**	**(1.000)**	**(0.996)**	**(1.000)**	**(0.803)**	**(0.853)**	**(0.861)**
(b) IV (years, eq (diff))	**(0.360)**	**(0.961)**	**(0.535)**	**(0.737)**	**(0.588)**	**(0.569)**	**(1.000)**	**(0.950)**	**(1.000)**	**(0.654)**	**(0.807)**	**(0.780)**
H excluding group												
Dif(null, H=exogenous)	**(0.583)**	**(0.842)**	**(0.290)**	**(0.572)**	**(0.737)**	**(0.679)**	**(1.000)**	**(0.630)**	**(1.000)**	**(0.573)**	**(0.643)**	**(0.466)**
Fisher	**508.68*** **	**13.31*** **	**8.77*** **	**8.83*** **	**2.63*** **	**96.75*** **	**18.05*** **	**3.04*** **	**4.85*** **	**89.46*** **	**4.82*** **	**3.66*** **
Instruments	31	31	31	31	31	31	31	31	31	31	31	31
Countries	43	36	46	38	54	26	14	49	13	34	129	163
Observations	215	180	230	190	270	130	70	245	64	170	645	815

***,**,*: significance levels at 1%, 5% and 10% respectively. DHT: Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen OIR tests. HI: High Income countries. UMI: Upper Middle Income countries. LMI: Lower Middle Income countries. LI: Low Income countries. CC: Christian countries with Catholic domination. CP: Christian countries with Protestant domination. CO: Christian countries in which another Christian religion apart from Catholicism and Protestantism is dominant. Islam: Islam-dominated countries. Bhu: Bhuddism dominated countries. LL: Landlocked countries. NLL: Not Landlocked countries.

Table 5: Persistence in external conflicts with regions and legal origin dynamics

	Dependent variable: External Conflicts												
	Regions							Legal origins					Full
	SA	ECA	EAP	MENA	SSA	LA	NA	Eng.	Frch.	Ger.	Scand.	Social.	Sample
Constant	na	**0.534*** **	**0.642** **	**1.136** **	**0.789*** **	**1.046*** **	na	**1.028** **	**1.321*** **	**1.055*** **	na	na	**1.229*** **
		(0.004)	**(0.039)**	**(0.024)**	**(0.001)**	**(0.000)**		**(0.046)**	**(0.000)**	**(0.001)**			**(0.000)**
External Conflicts (-1)		**0.053***	**0.453*** **	0.017	**-0.059*** **	-0.001		**-0.135*** **	0.006	0.011			**-0.061***
		(0.066)	**(0.007)**	(0.901)	**(0.000)**	(0.969)		**(0.000)**	(0.870)	(0.902)			**(0.050)**
Security Officers & Police		**-0.056*** **	-0.001	-0.063	0.063	-0.002		0.038	**-0.059** **	-0.033			-0.051
		(0.001)	(0.989)	(0.620)	(0.294)	(0.834)		(0.466)	**(0.017)**	(0.318)			(0.112)
Homicides		-0.004	0.014	0.070	-0.018	0.0003		0.050	-0.029	0.011			-0.006
		(0.839)	(0.940)	(0.830)	(0.645)	(0.987)		(0.468)	(0.400)	(0.851)			(0.862)
Incarcerations		0.0001	-0.015	0.045	0.118	0.0004		-0.027	-0.011	0.021			0.020
		(0.986)	(0.957)	(0.568)	(0.349)	(0.984)		(0.780)	(0.678)	(0.593)			(0.650)
Conflict Intensity		-0.004	-0.068	-0.022	-0.036	-0.004		-0.032	-0.019	-0.006			0.0007
		(0.810)	(0.485)	(0.782)	(0.422)	(0.789)		(0.601)	(0.521)	(0.745)			(0.979)
Conflict Fought		**0.582*** **	0.046	-0.013	0.020	0.0004		-0.012	0.020	-0.010			-0.012
		(0.000)	(0.779)	(0.804)	(0.316)	(0.971)		(0.766)	(0.285)	(0.923)			(0.653)
UNPKF		0.012	0.028	-0.001	**0.018***	-0.0001		0.017	0.004	-0.004			0.017
		(0.406)	(0.524)	(0.986)	**(0.072)**	(0.982)		(0.551)	(0.670)	(0.697)			(0.116)
AR(1)		(0.046)	(0.081)	**(0.830)**	**(0.223)**	**(0.967)**		**(0.325)**	**(0.187)**	(0.048)			**(0.434)**
AR(2)		(0.017)	(0.087)	(0.750)	(0.130)	**(0.964)**		(0.022)	(0.027)	**(0.156)**			(0.000)
Sargan OIR		**(0.232)**	**(0.976)**	(0.067)	(0.007)	**(1.000)**		(0.000)	**(0.909)**	**(0.834)**			(0.001)
Hansen OIR		**(0.363)**	**(0.999)**	**(0.996)**	**(0.968)**	**(1.000)**		**(0.746)**	**(0.896)**	**(0.989)**			**(0.773)**
DHT for instruments													
(a)Instruments in levels													
H excluding group		**(0.593)**	**(0.387)**	**(0.570)**	**(0.504)**	**(0.871)**		**(0.117)**	**(0.549)**	**(0.462)**			**(0.373)**
Dif(null, H=exogenous)		**(0.254)**	**(1.000)**	**(1.000)**	**(0.991)**	**(1.000)**		**(0.985)**	**(0.913)**	**(1.000)**			**(0.861)**
(b) IV (years, eq (diff))		**(0.255)**	**(0.982)**	**(0.982)**	**(0.914)**	**(1.000)**		**(0.550)**	**(0.969)**	**(0.941)**			**(0.780)**
H excluding group													
Dif(null, H=exogenous)		**(0.665)**	**(1.000)**	**(0.960)**	**(0.900)**	**(0.999)**		**(0.917)**	**(0.267)**	**(0.994)**			**(0.466)**
Fisher		**21.61*** **	**103.6*** **	1.68	**25.93*** **	1.27		**17.87*** **	**1.96** **	1.13			**3.66*** **
Instruments		31	31	31	31	31		31	31	31			31
Countries		48	18	20	44	23		50	87	20			163
Observations		240	90	100	220	115		250	435	100			815

***,**,*: significance levels at 1%, 5% and 10% respectively. DHT: Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen OIR tests. Eng: English Common Law countries. Frch: French Civil Law countries. Ger: German Civil law countries. Scand: Scandinavian Civil law countries. Social: Socialists countries. ECA: Europe & Central Asia. EAP: East Asia & the Pacific. MENA: Middle East & North Africa. SSA: sub-Saharan Africa. LA: Latin America. NA: North America.

Appendices

Appendix 1: Definitions of variables and presentation of countries

Panel A: Variables

Variables	Definitions and sources of variables
Deaths from internal conflict	Number of deaths from organised conflict (internal)International Institute for Strategic Studies (IISS) Armed Conflict Database (ACD)
Deaths from external conflict	Number of deaths from organised conflict (external) UCDP Armed Conflict Dataset (ACD)
Security Officers & Police	Number of internal security officers and police per 100,000 people UNODC; EIU estimates
Homicides	Number of homicides per 100,000 people United Nations Office on Drugs and Crime (UNODC) Surveys on Crime Trends and the Operations of Criminal Justice Systems (CTS); EIU estimates
Incarceration	Number of jailed population per 100,000 people World Prison Brief, International Centre for Prison Studies, University of Essex
Intensity of internal conflict	Intensity of organised internal conflict Qualitative assessment by EIU analysts
Internal conflicts fought	Number and duration of internal conflicts Uppsala Conflict Data Program (UCDP) Battle-Related Deaths Dataset, Non-State Conflict Dataset and One-sided Violence Dataset; Institute for Economics and Peace (IEP)
United Nations Peacekeeping Funding.	Financial contribution to UN peacekeeping missions United Nations Committee on Contributions; IEP

Panel B: Presentation of countries (163)

"Afghanistan; Albania; Algeria; Angola; Argentina; Armenia; Australia; Austria; Azerbaijan; Bahrain; Bangladesh; Belarus; Belgium; Benin; Bhutan; Bolivia; Bosnia and Herzegovina; Botswana; Brazil; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Central African Republic; Chad; Chile; China; Colombia; Costa Rica; Cote d' Ivoire; Croatia; Cuba; Cyprus; Czech Republic; Democratic Republic of the Congo; Denmark; Djibouti; Dominican Republic; Ecuador; Egypt; El Salvador; Equatorial Guinea; Eritrea; Estonia; Ethiopia; Finland; France; Gabon; Georgia; Germany; Ghana; Greece; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hungary; Iceland; India; Indonesia; Iran; Iraq; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kazakhstan; Kenya; Kosovo; Kuwait; Kyrgyz Republic; Laos; Latvia; Lebanon; Lesotho; Liberia; Libya; Lithuania; Macedonia (FYR); Madagascar; Malawi; Malaysia; Mali; Mauritania; Mauritius; Mexico; Moldova; Mongolia; Montenegro; Morocco; Mozambique; Myanmar; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; North Korea; Norway; Oman; Pakistan; Palestine; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Qatar; Republic of the Congo; Romania; Russia; Rwanda; Saudi Arabia; Senegal; Serbia; Sierra Leone; Singapore; Slovakia; Slovenia; Somalia; South Africa; South Korea; South Sudan; Spain; Sri Lanka; Sudan; Swaziland; Sweden; Switzerland; Syria; Taiwan; Tajikistan; Tanzania; Thailand; The Gambia; Timor-Leste; Togo; Trinidad and Tobago; Tunisia; Turkey; Turkmenistan; Uganda; Ukraine; United Arab Emirates; United Kingdom; United States of America; Uruguay; Uzbekistan; Venezuela; Vietnam; Yemen; Zambia and Zimbabwe".

UNODC: United Nations Office on Drugs and Crime. EIU: Economic Intelligence Unit. UNHCR: United Nations High Commissioner for Refugees. GDP: Gross Domestic Product. IISS: The International Institute for Strategic Studies. UN: United Nations. IEP: Institute for Economics and Peace.

Appendix 2: Summary Statistics

Variables	Mean	Standard dev.	Minimum	Maximum	Obsers
Deaths from internal conflict	1.405	0.933	1.000	5.000	978
Deaths from external conflict	1.105	0.335	1.000	3.371	978
Security Officers & Police	2.728	0.911	1.081	5.000	978
Homicides	2.797	1.154	1.103	5.000	978
Incarceration	2.194	0.889	1.150	5.000	978
Intensity of internal conflict	2.412	1.162	1.000	5.000	978
Internal conflicts fought	1.458	1.024	1.000	5.000	977
United Nations Peacekeeping Funding.	2.291	1.164	1.000	5.000	978

Standard dev: Standard deviation. Obsers: Observations.

Appendix 3: Correlation matrix (uniform sample size: 977)

S O & P	Homicides	Incar	IIC	ICF	UNPKF	DFIC	DREC	
1.000	-0.022	0.279	0.063	-0.092	0.0002	0.030	-0.169	S O & P
	1.000	0.162	0.296	0.184	0.305	0.170	-0.141	Homicides
		1.000	-0.082	-0.168	-0.172	-0.142	0.066	Incar
			1.000	0.528	0.301	0.542	-0.012	IIC
				1.000	0.132	0.787	0.100	ICF
					1.000	0.093	-0.147	UNPKF
						1.000	0.033	DFIC
							1.000	DREC

S O & P: Security Officers & Police. Incar: Incarcerations. IIC: Intensity of Internal Conflict. ICF: Internal Conflict Fought. UNPKF: United Nations Peacekeeping Funding. DFIC: Death from Internal Conflicts. DREC: Death from External Conflicts.

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