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Forging stability? A data-driven examination of foreign aid's influence on sub-Saharan armed conflicts

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Abstract

This research investigates the relationship between foreign aid and armed conflict duration in sub-Saharan Africa in the 1996-2022 period. Drawing on a diverse range of aid sectors, including population policies, government support, financial services, agriculture, and humanitarian aid, it employs Cox proportional hazard regression models to discern sector-specific effects on conflict duration. Findings reveal significant impacts: while most sectors exhibit stabilizing effects, humanitarian aid appears to inadvertently prolong conflicts, primarily due to its deployment in insurgent-controlled regions where it becomes vulnerable to exploitation by rebel groups. Conversely, aid targeting economic development and livelihood improvement demonstrates potential in reducing conflict risk by addressing underlying socio-economic grievances that drive insurgency recruitment. The study underscores the importance of disaggregating aid data to understand sector-specific impacts on armed conflict dynamics, which allows to offer insights for policymakers and practitioners seeking effective strategies for conflict prevention and peacebuilding in sub-Saharan Africa.

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THE AUTHOR IS ITALIAN.

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INTRODUCTION

Since 1996, more than two thirds of sub-Saharan African countries have been affected by armed conflicts. During this period, civil war has emerged as a significantly greater affliction than interstate war, yet it has received far less scholarly attention (Fearon & Laitin, 2003, p. 75). In the public debate on the possibilities of preventing or resolving armed conflicts within states, attention is generally focused on the negotiation efforts of official diplomats and international organizations, or on the enforcement of military counterinsurgency operations and international peacekeeping forces. However, given the shortcomings of these interventions, questions have arisen regarding the potential contributions of alternative actors or approaches in reducing violence and fostering peace over the short, medium, and long terms.

In contrast to the aforementioned interventions, foreign aid initiatives aimed at poverty reduction began to gain traction during the 1990s as a relatively non-intrusive and potentially effective strategy for mitigating armed conflicts. While humanitarian aid has historically played a role in conflict and crisis situations, development cooperation only began to confront armed conflict scenarios in the early 1990s, as their prevalence surged. Nowadays, the majority of the partner countries of development cooperation experience political tensions or armed conflicts, or are affected by the aftermath of armed conflict or war (Paffenholz, 2006, p. 19).

The incorporation of foreign aid into stabilization programs, aimed at fostering stability, is founded on the theory according to which poverty acts as a driver for participating in armed rebellion for civilians. Indeed, the idea that more complex objectives may be attained by focusing on other intermediate targets is a fundamental tenet of most development initiatives. Nevertheless, although there is considerable evidence establishing a connection between poverty and underdevelopment with armed conflict, recent years have seen an increase in criticism regarding the presumed violence-

reducing effect of foreign aid. Certain aid workers, scholars, human rights observers, and journalists contend that aid not only proves ineffective but also fosters the promotion of armed conflict.

Various theories proposed by researchers seek to establish connections between foreign aid and armed conflict. A prevailing theme in the literature highlights aid predation as the primary mechanism through which aid contributes to armed conflicts (Anderson, 1999; De Waal, 1997). Then, some hypotheses propose that foreign aid raises the rewards for rebel groups to initiate civil wars by enhancing the value of seizing control of the state (Grossman, 1991, 1992), others that aid exacerbates existing ethnic divisions, thereby increasing the likelihood of armed conflict (Esman & Herring, 2003). Conversely, alternative studies argue that aid reduces the risk of civil war by fostering economic growth and bolstering state capabilities (Ahmed & Werker, 2015; Hoeffler & Collier, 2002).

A substantial corpus of individual case studies provides arguments for both the violence-increasing and violence-reducing effects of aid, implying that both mechanisms are feasible across various contexts. However, relying solely on anecdotal evidence presents challenges in refining aid policy design. For policymakers, a critical inquiry centres on whether these individual cases represent isolated incidents or are indicative of the average effect of foreign aid on armed conflict. This research aims to address this crucial question by quantifying the effect of different aid sectors on the duration of armed conflicts occurring in sub-Saharan Africa over the past three decades.

The primary contribution of this study lies in its examination of a diverse range of aid initiatives, encompassing five distinct aid sectors supported by international donors – population policies and reproductive health, government and civil society, banking and financial services, agriculture and, finally, humanitarian aid. This approach acknowledges the potential heterogeneity in the effects of various aid sector on the duration of armed conflict. Notably, previous research lacked such granularity, often analysing aggregated foreign aid data or focusing solely on a single aid sector, typically "front-line" assistance such as humanitarian aid, directed to the most unstable regions within countries affected by armed conflict. By disaggregating the data, the Cox proportional hazard regression models (Cox, 1972) utilized in this study reveal differing impacts on armed conflict

duration based on the aid sector. Remarkably, humanitarian aid emerges as the only sector with a potential negative impact, prolonging conflict duration, while all other sectors exhibited stabilizing effects.

The disparate effect of different aid sectors stems from a critical difference in their destination: peaceful growth zones versus acute crisis areas. While development cooperation is commonly directed toward stable regions fostering long-term with growth potential, humanitarian aid is often directed to regions of acute crisis, where it is most needed. These often coincide with insurgent-controlled territories, which make humanitarian aid vulnerable to predation and sabotage by rebel groups. Intended for immediate relief, humanitarian aid is exploited by insurgents for their own agenda, inadvertently fuelling the very conflict the aid seeks to extinguish.

On the contrary, other aid sectors can demonstrably contribute to reducing the risk of armed conflict by tackling its underlying drivers, which means addressing the limited economic opportunities that incentivize individual choices to join insurgent groups. Particularly vulnerable are disillusioned youth in regions like sub-Saharan Africa, grappling with rapid population growth, stagnant economies, and natural disasters. By providing legitimate income opportunities, foreign aid alters the cost-benefit calculus for potential recruits, making insurgency less attractive and paving the way for sustainable peace.

A challenge in estimating the impact of aid on the duration of armed conflict stems from the issues of reverse causality, which introduces bias into statistical analyses. This occurs when both variables, aid provision and duration of armed conflict, are jointly determined as they are shaped by common and often unobserved underlying factors, such as poverty, political instability, or regional tensions. To mitigate the risk of reverse causality, in this research aid commitments are considered lagged by one year in model specifications, to consider the temporal delay between commitment and distribution.

The thesis is organized as follows. In Chapter One, the research's aim and methodology are outlined. This includes formulating the research question, establishing the theoretical framework

guiding the analysis, and reviewing existing literature on the topic. Additionally, this Chapter thoroughly defines the dependent variable (armed conflict) and independent variable (foreign aid), providing a historical overview of their trends in sub-Saharan Africa.

Chapter Two presents the empirical analysis utilizing the Cox proportional hazard regression model. It details the statistical modelling approach employed, encompassing the dependent, independent, and control variables. Furthermore, it examines the estimation results, assessing the statistical significance and substantive interpretation of the regression coefficients.

Chapter Three delves into the mechanisms by which foreign aid can impact the duration of armed conflicts, distinguishing between positive (stabilization) and negative (prolongation) effects. This chapter extensively analyses the opportunity-cost model and rebels' sabotage and predation strategies. It also explores the role of state capacity in determining the impact of foreign aid on armed conflict duration.

The conclusion draws policy implications based on the findings, offering tangible recommendations for policymakers engaged in conflict management and development in sub-Saharan Africa. Additionally, it suggests avenues for future research on this subject.

CHAPTER ONE

Aims and methodology

Introduction

Comprehending the repercussions of international aid on armed conflicts holds utmost significance to better equip the global community operating in sub-Saharan Africa to thwart the spillover of conflicts into neighbouring countries, facilitate the process of post-conflict reconstruction and recovery, and lower the risk of recurrent waves of violence. The importance of rigorous academic studies in this context cannot be overstated, as they provide the theoretical and empirical foundations necessary to inform effective interventions, enabling policymakers and international actors to formulate evidence-based strategies. A well-defined methodology ensures that the research process adheres to established principles and guidelines, offering a systematic and structured approach to collecting, analysing and interpreting data, thereby reducing the risk of bias and subjectivity.

This Chapter defines the methodological framework this thesis is built upon and is divided as follows: it begins with a brief introduction to the area of study, sharing details about the relevance of the topic and the research question. A second section is dedicated to the theoretical framework and methodology, following both a quantitative and a qualitative approach. A literary review then constitutes the third section of this Chapter, providing an overview of the contributions in literature about the topic and identifying possible gaps in existing research. The literature review is divided into two parts, following the distinction between data-driven research and qualitative studies. Finally, the last two sections introduce two core concepts of this research, armed conflict and foreign aid, defining them with scientific precision and giving an overview of their development through time in sub-Saharan Africa.

1.1 Area of study

Development aid has assumed greater significance over since the end of the Second World War, serving as a crucial tool for addressing global challenges, mitigating inequalities, and advancing the vision of a more stable, prosperous, and interconnected world. The landscape of aid's political economy is still undergoing a great transformation, driven by evolving geopolitical dynamics that present novel challenges to the realm of development cooperation. The ever-increasing demands for international collaboration are arising from the necessity to concurrently tackle complex contemporary issues, such as climate change and pandemic preparedness, while meeting the immediate requirements of the world's most vulnerable communities (OECD, 2023b, p. 18).

Furthermore, development organizations and governments find themselves under mounting pressure to leverage their distinctive influence and economic resources in the establishment of trade relationships and, most importantly, the pursuit of security objectives. The pinnacle of this particular pressure was reached during the US military intervention in Afghanistan (2001-2021). Though there has never been a singular, precise stabilization theory, there was a prevailing belief at the time that areas marred by armed conflicts could be stabilized through the amalgamation of robust military presence and rapid, large-scale investments in local governance and communities. Regrettably, it later became evident that military-led stabilization initiatives in Afghanistan ultimately proved to be a costly failure, as stated by the Special Inspector General for Afghanistan Reconstruction (SIGAR, 2018, p. 136).

While most development programs do not explicitly designate stabilization as their primary objective, it is essential to acknowledge that the distinction between stabilization initiatives and other programs is often a matter of nomenclature – sometimes the stabilization label is even applied after the approval of a certain project. In practice, stabilization programs closely mirror the activities of non-stabilization initiatives, as they often encompass tasks such as developing crucial infrastructure like irrigation systems, roads, bridges, and renovating educational and healthcare facilities, and regularly engage in close collaboration with local communities and regional government bodies

(Zürcher, 2020, p. 9). In essence, the methods and even the results achieved by stabilization programs cannot be discerned from those of other community-level programs. Furthermore, it is important to note that non-stabilization programs frequently share the underlying, albeit unspoken, objective of fostering stability within the countries they operate in.

Development aid is widely recognized as a tool for advancing global stability and security by the majority of international actors engaged in development cooperation. Indeed, a fundamental premise in development programming is the conviction that, by focusing on intermediate goals, more intricate and comprehensive outcomes can ultimately be achieved (Ferguson et al., 2019, p. 99). Both governmental entities and international organizations invest in the well-being and prosperity of vulnerable regions, with the hope and expectation that such endeavours will contribute to alleviating the conditions that often fuel armed conflict, extremism, and mass migration.

It is therefore rather surprising that, at least until recently, development organizations have not dedicated substantial efforts to assessing the effects of their programs on stability. Conducting extensive studies would not only expand the body of evidence but also alleviate legitimate concerns regarding the effectiveness of certain aid programs. Conversely, the ongoing discussion in literature about the impact of foreign aid on armed conflicts is not remarkably recent. For years, development economists have suggested that aid could, in theory, reduce the risk of armed conflicts by promoting economic growth. The underlying logic is that low per capita income and slow economic growth rates tend to increase the risk of civil uprisings; therefore, economic growth triggered by foreign aid should, in turn, lower this risk. However, the actual connection between aid and economic growth remains a contentious issue both in literature and in politics.

Within academic research foreign assistance has, on occasion, garnered attention for its potential role in exacerbating hostilities and prolonging armed conflicts. This phenomenon has been encapsulated in the adage “doing harm by doing good”. The primary argument of the “do no harm” literature posits that aid may inadvertently make armed conflict more attractive by increasing the potential rewards for insurgent activities. This perspective aligns with a substantial body of literature

that cautions against the possible misuse of aid by local violent actors to financially sustain their armed forces, unintentionally bolstering them and thus prolonging the duration of armed conflicts (Findley et al., 2011, p. 1995). Recent research, underpinned by more comprehensive data and innovative theories, has further fortified this thesis, whose subject has gained renewed prominence in recent years because substantial aid investments have been channelled in African countries deeply affected by armed conflicts.

1.1.1 Research question and limitations

This thesis is based on the following research question: *"Does foreign aid in various sectors affect the duration of sub-Saharan armed conflicts, and how?*". This question is extremely complex and relevant for policymakers and international organizations dealing with armed conflicts and foreign aid issues in sub-Saharan Africa. The answers derived from this inquiry carry the potential to yield valuable insights in this domain and offer practical recommendations to address such pressing issues.

The key inquiry of this research is not solely whether aid can procure stability, but rather discerning which environments are more or less conducive to the violence-reducing impact of aid. It is unlikely that various types of aid flows will consistently and similarly affect armed conflict duration in the region. Without attaining a thorough grasp of how various sectors and environments shape the outcomes of aid, there is a risk that a substantial portion of aid resources might continue to be allocated ineffectively, or, in some instances, inadvertently exacerbate pre-existing challenges – a scenario that, according to a substantial body of literature, unfolded during both the Afghan and Iraq wars (Zürcher, 2019).

The aim of this research entails a multitude of inherent limitations. Primarily, sub-Saharan Africa's data environment is notorious for its complexity and opacity, particularly concerning armed conflicts, often underreported. Consequently, it becomes imperative to rely on assumptions to fill data gaps. To enhance precision in the analysis of foreign aid data, this study has also imposed temporal restrictions, narrowing its scope to recent history. Moreover, while the unique attributes of sub-

Saharan Africa render it a captivating subject for investigation, the insights garnered may not readily apply to other regions, marked by their own conflict dynamics, sociopolitical contexts, and different levels of foreign aid dependency. Hence, it is imperative to interpret the findings of this research with the appropriate contextual understanding.

1.2 Theoretical framework

Pragmatism proves to be the most suitable research philosophy for this study since its complex nature requires both quantitative and qualitative approaches. As opposed to the positivist or constructivist perspectives, pragmatism allows for a more comprehensive understanding of the topic, recognising that divergent research philosophies are helpful for this study (Holden & Lynch, 2004, p. 14). Pragmatism underscores the importance of a versatile and adaptive research approach, particularly beneficial for a multifaceted study of this nature. Navigating various data sources requires great adaptability, because of potential biases and dynamic geopolitical situations, allowing adjustments throughout the study to ensure the acquisition of the most reliable and comprehensive results. Through statistical analysis, a quantitative approach uncovers valuable insights into data patterns and trends, allowing for the estimation of significant relationships that may exist between various sectors of foreign aid and the duration of armed conflict. Concurrently, qualitative methods play a crucial role in establishing a causality link between the two variables, as they provide a deeper understanding of context, historical background, and decision-making processes, augmenting the identification of causative factors which may be also assessed through further quantitative analysis.

The Cox proportional hazard model (Cox, 1972) stands out as the most appropriate choice for the quantitative part of this research. Through the analysis of data on foreign aid and armed conflict across a large number of countries, it is possible to investigate the effect of several variables, specifically five different sectors targeted by foreign aid, on the probability that the event of interest (conflict termination) occurs before a specific point in time. This approach allows for reliable statistical inference, enhancing the rigor and consistency of the findings. The proposed empirical investigation in this research proves particularly advantageous when delving into extremely complex phenomena, such as armed conflicts, relying on observed statistical information. Indeed, an experimental research strategy is unfeasible to be implemented since, other than being utterly unethical, manipulating the quantities of foreign aid to a sub-Saharan country in order to examine its

effects on violent conflict would be impossible to isolate, as numerous confounding factors could affect the variables of interest for the analysis.

As it is well-known, the empirical evidence obtained through the empirical framework of survival analysis, though robust and fully reliable, cannot provide results in terms of causality. This occurs because the variables under investigation may be related to other factor(s), often unobserved and not included in the empirical research strategy, which however can determine the values of the response variable in the hazard function.

However, the logic behind possible causal mechanisms can be also evaluated through a qualitative approach. In particular, rationalism provides a powerful theoretical framework for understanding sub-Saharan armed conflicts. At its core, the rational choice theory posits that individuals, including governments, rebel militias, aid donors, and civilians, are all rational actors who make decisions based on a careful consideration of costs and benefits of every potential action. This approach assumes that actors are driven by the objective to maximize their utility, searching for advantages in the pursuit of their goals. During armed conflicts, governments and rebel groups are confronted with numerous strategic choices, such as resource allocation, alliance formation, and the decision to engage in or cease hostilities. Even violence, therefore, is the end product of many individual rational choices, adopted by both political actors and civilians, who work to fulfil their interests within a given territorial space (Kalyvas, 2006).

In accordance with the rationalist theory, armed conflicts unfold when the involved actors perceive them as Pareto-efficient. In simpler terms, such conflicts emerge when there are no mutually advantageous negotiated settlements accessible to both parties, making a military confrontation a more appealing alternative. While this situation may be regrettable, it remains a feasible outcome in interactions between states and insurgent militias, under the assumption that they are guided by rational leaders who meticulously evaluate the costs and risks associated with participating in armed conflicts (Fearon, 1995, p. 383). Governments in regions facing challenges ranging from ethnic tensions to economic disparities may employ military force as a rational response to perceived threats

to their stability. Rebel militias, on the other hand, may see armed conflict as a means to achieve political, economic, or social goals that they perceive as unattainable through peaceful means.

The applicability of the rationalist approach in analysing armed conflicts has been criticized, especially in the aspect that armed conflicts are often driven by factors beyond rational calculations. However, it is possible to integrate these non-rational factors within a rationalist framework, since ideology and social norms influence individual and group behaviour predictably, allowing for the identification of patterns and motivations even within seemingly irrational actions (E. J. Wood, 2003). The cultural and ideological dimensions of conflicts are not overlooked by this approach; instead, they are recognized for their instrumental value in achieving strategic objectives. Indeed, symbolic acts of violence or cultural narratives frequently serve to mobilize support or intimidate adversaries, aligning with the strategic pursuit of goals (Driscoll, 2020).

Furthermore, the limiting assumption of fixed preferences and perfect rationality is addressed by incorporating adaptive decision-making processes in the model. Indeed, these assumptions are unrealistic in the dynamic and uncertain environment of armed conflicts, as preferences may evolve over time in response to changing circumstances, and individuals may suffer cognitive limitations and incomplete information that impede the adoption of perfectly rational decisions (Wendt, 1992). By incorporating feedback mechanisms, the rational choice framework can accommodate the dynamic nature of sub-Saharan armed conflicts, whose actors must adapt to frequently changing circumstances due to the high number of factions fighting for power. Armed conflicts in contemporary sub-Saharan Africa involve a growing number of rebel groups that typically possess hierarchical structures, which, more often than not, further fragment due to internal rivalries (Nyadera et al., 2023). Therefore, governments and insurgent groups frantically adjust their strategies based on the constantly evolving balance of power through rational calculations.

The rationale for choosing sub-Saharan Africa, the region encompassing all 49 countries situated south of the Sahara, as the focal point of this research is underpinned by two compelling considerations. Firstly, it stands as the global region that receives the highest Official Development

Assistance (ODA), both in absolute terms and as a percentage of recipient countries' Gross National Income (GNI). This significant volume of ODA underscores the international community's recognition of the imperative need for assistance and investments across various sectors, in order to enhance economic development. Moreover, high levels of aid dependency highlight the reliance of many sub-Saharan countries on external financial support to sustain their economies, public services, and development projects.

Secondly, sub-Saharan Africa is characterized by a notable proclivity for armed conflicts and political instability, a propensity that has grown increasingly pronounced in recent years. Multiple factors contribute to this conflict-prone environment, including a burgeoning demographic youth bulge, which signifies that a substantial portion of the population comprises young individuals, and the presence of one-third of the world's mineral reserves, including substantial reserves of gold, chromium, platinum, uranium, and diamonds. These highly fungible resources, set within a predominantly underdeveloped context, serve as incentives for various armed groups to exert control over their extraction and trade, thereby financing and perpetuating rebel movements (Ross, 2015, p. 251). The "resource curse" phenomenon, marked by corruption and inequality, eroding social cohesion and nurturing grievances that contribute to conflicts, is projected to endure, rendering sub-Saharan Africa persistently susceptible to armed conflicts in the foreseeable future. Consequently, the association between foreign aid and armed conflict is anticipated to remain a highly pertinent topic in the years to come for this global region.

1.3 Literature review

The existing data-driven literature on the relationship between aid and organized violence is deeply unbalanced. Most scholars limit their research to the case studies of Afghanistan and Iraq, particularly analysing aid that was supplied in the context of US military operations in these countries. This may be in part due to scholars' and practitioners' interest in these two protracted wars, but it could also be explained by the availability, great dimensions and precision of data collected by the US armed forces in Iraq and the International Security Assistance Force (ISAF) in Afghanistan. Research made specifically on sub-Saharan Africa is rather uncommon because of the opposite reasons, which are the lower interest dedicated to the African continent and its internal struggles and the little extensiveness and precision of data sources in both the fields of development aid and especially of armed conflicts.

Although often concentrating its effort in a limited geographical area, the existing literature delves into the repercussions of an extensive array of distinct types of aid programs. These include initiatives as: conditional cash transfer schemes (Crost et al., 2016), which are social welfare programs that offer financial assistance to individuals or families based on conditions, like sending children to school or getting regular healthcare check-ups; community-driven development (Beath et al., 2012; Chou, 2012), which supports projects chosen by community members based on their needs; and the Commander Emergency Response Program (E. Berman, Shapiro, et al., 2011; Sexton, 2016), a rapid military-led response to disasters, providing immediate relief and recovery support during the Iraq and Afghanistan wars. Other aid programs studied in existing literature are food assistance programs (Nunn & Qian, 2014); employment and training initiatives (Dasgupta et al., 2017; Hoelscher et al., 2012; Mercy Corps, 2015), which aim at creating job opportunities and providing skills training to local population; large-scale infrastructure projects (E. Berman et al., 2013) and humanitarian relief efforts (Narang, 2014, 2015; R. M. Wood & Molfino, 2016; R. M. Wood & Sullivan, 2015), which swiftly provide aid, such as food, shelter and medical care, in response to profound crises such as natural disasters and armed conflicts, focusing on saving lives and alleviating

suffering in the short term. Lastly, the overall consequences resulting from the combination of aid programs were also analysed by numerous scholars (J. Böhnke et al., 2013; J. R. Böhnke & Zürcher, 2013; de Ree & Nillesen, 2009; Findley et al., 2023; Gehring et al., 2018; Grossman, 1992; Hoeffler & Collier, 2002), encompassing the broader impacts and outcomes stemming from their collective efforts.

When combined, these studies provide a sufficient understanding of how each of these aid categories influences the target populations and how their combined effects impact communities and regions in regard to armed conflict. While it seems reasonable to assume that different forms of assistance have varied results and that certain forms of aid are more appropriate to use in conflict situations than others, the recent empirical scientific literature appears to lack unambiguous findings on the relationship between any of the above-mentioned aid categories and a violence-reducing effect. On the contrary, the majority of the research find an unintentional violence-increasing effect of foreign aid, although the effects for different categories of aid vary based on specific conditions considered in each study.

The only exception is given by the case of humanitarian aid, whose category appears to be consistently positively correlated with armed conflict across all relevant studies. Nunn and Qian (2014) studied the impact of US food aid on conflict in recipient countries, finding that it increased the duration of civil armed conflicts. Narang (2014) found that higher levels of humanitarian assistance led to shorter periods of peace in post-conflict societies, particularly after wars ending in decisive victories. Wood and Sullivan (2015) concluded that humanitarian aid is associated with increased rebel violence against civilians. Narang (2015) explored the impact of humanitarian aid on civil war duration and found that increased aid levels extended these wars, especially in regions involving rebel groups on the outskirts of a state. Wood and Molfino (2016) found that humanitarian aid could incentivize rebel insurgency to government control in aid-accumulating areas, leading to increased armed conflict.

This line of reasoning aligns with the critique presented by Hoeffler and Collier (2002) to Grossman's model (1992), which initially proposed the notion that foreign aid deployment could elevate the probability of armed conflict. Collier and Hoeffler contend that, in contrast to natural resources, foreign aid is a challenging acquisition for rebel groups during armed conflicts. This is due to the common reduction of foreign aid flows during such periods, with the allocated funds typically directed towards government budgets or specific projects. The sole exception identified by these two scholars to this dynamic pertains to food aid, as they acknowledge that armed groups may exert control over it by threatening distribution channels.

Such operation cannot be accomplished in an employment program such as the National Rural Employment Guarantee Act (NREGA), analysed in a study by Hoelscher et al. (2012). Utilizing a cross-sectional model, the research indicated that a higher rate of household participation in the NREGA project within districts was associated with a decrease in the number of battle-related fatalities, a reduction in violent incidents, and fewer districts reporting such events. Moreover, Dasgupta et al. (2017) conducted a study to investigate whether districts implementing NREGA experienced lower violence levels than non-implementing districts. They found a significant and enduring reduction in violence in NREGA-adopting districts, especially in areas with insufficient rainfall.

The diverse outcomes observed in current data-driven research may, to some extent, be influenced by differences among settings in their local ability to efficiently execute development initiatives. A weakness in the existing empirical literature is the pronounced bias towards what can be termed as "front-line" aid, predominantly encompassing humanitarian assistance, community-driven development and the Commander's Emergency Response Program (CERP), which involved funds allocated to military commanders for carrying out rebuilding and reconstruction activities in war zones (Zürcher, 2017, p. 519). Notably absent from the analysis are crucial aid sectors, including population policies and reproductive health, government and civil society, banking, and agriculture. These sectors often take precedence in relatively stable areas within a country currently experiencing

an armed conflict. Drawing insights from prior literature, it is possible to formulate a hypothesis suggesting that the potential for aid to mitigate armed conflicts depends on the existence of a relatively stable local environment, where the likelihood of predation and sabotage of aid injections is reduced.

The aforementioned research, although statistically well-designed, falls short in evaluating the causal connection between foreign aid and armed conflict. Such assessments are often qualitative in nature and offer compelling explanations for this relationship; therefore, dismissing them would result in the loss of valuable insights. The existing qualitative studies identify multiple mechanisms through which aid might influence armed conflict, with some exerting positive effects and others having negative consequences.

One prominent theory is the "hearts and minds" mechanism, suggesting that aid, in collaboration with the government of the country in need, has the potential to enhance the popularity of the respective government, thereby reducing the likelihood that the local population supports or joins the insurgency (Beath et al., 2012; E. Berman, Shapiro, et al., 2011; Findley, 2018; Narang & Stanton, 2017). Nonetheless, an alternative body of literature indicates that the delivery of public goods does not inherently result in increased legitimacy, as legitimacy is only achieved when public goods are distributed transparently by accountable entities and when the distribution of aid is perceived as fair (Bratton, 2012; Carnegie et al., 2021). Conversely, in situations lacking these conditions, which is often the case for countries affected by armed conflicts, the supply of public goods may diminish support for the government (Evans et al., 2016; Kooy, 2015; Mcloughlin, 2018).

A second model theorized by the literature is the "information sharing model", which serves as a significant expansion of the "hearts and minds" mechanism (E. Berman, Callen, et al., 2011; E. Berman et al., 2013; E. Berman, Shapiro, et al., 2011; Gurr, 1970; Horowitz, 1985; Kalyvas, 2006). According to this model, local communities hold crucial information about insurgent activities and the promise of rewards, in the form of foreign aid, serves as a motivation for these communities to share information with the government and its international partners. Consequently, the government's counterinsurgency measures become more efficacious, leading to an eventual improvement in

security and a decrease in violence. The model has been criticized because it may oversimplify and distort the actual dynamics on the ground, since local communities strategically utilize their informational advantage, manipulating information to influence international actors in favour of local interests. Consequently, donors struggle to identify trustworthy partners, misunderstand the local political economy, and are frequently misled (Bourgoin et al., 2013; Zürcher, 2017).

A third potential mechanism for reducing violence involves addressing grievances, particularly the perceived lack of current and future political and economic opportunities that is often a source for violence. According to this model, increased and precisely targeted aid could facilitate redistributive policies, reducing inequalities, and fostering solidarity among population groups in conflict, thus reducing violence (Azam, 2001; Azam & Mesnard, 2003; Justino, 2007). While this mechanism is plausible, particularly for ethnic minorities, it is effective only under the specific conditions that the causes of violence are rooted in group-level grievances, and these grievances are amenable to resolution through socio-economic development (Zürcher, 2020, p. 34).

The fourth and final causal path is given by the opportunity-cost model, which suggests that development aid can offer better economic opportunities to the local population, especially young men, thereby increasing the cost of recruiting fighters (Collier, 2000; Collier & Hoeffler, 2004a; Fjelde, 2015; Grossman, 1991, 1999). In this scenario, an elevated opportunity-cost implies that opting for involvement in a military organization results in a loss of income compared to engaging in civilian employment created by development aid (N. Berman et al., 2017; Kaila et al., 2020; Strandow et al., 2016; Winne & Peersman, 2021). The opportunity-cost model is primarily linked with employment initiatives, which are commonly employed as a development tool, but its applicability extends beyond employment programs: for instance, in sub-Saharan Africa even food aid was proven to boost labour participation in agriculture, wages, and personal business activities (Abdulai et al., 2004).

Extensions of the previously delineated causal pathways establish a link in the opposite direction between foreign aid and the escalation of armed conflict, as the politicization of assistance

can contribute to local resentment (Barrett & Maxwell, 2005; D. O. Gilligan & Hoddinott, 2007; Hoelscher et al., 2017; Mary & Mishra, 2020; Messer et al., 1998). Insurgent groups react to the distribution of foreign aid through acts of sabotage and predation, deeming its source unacceptable or unethical due to its association with the central government they are in conflict with, and viewing its appropriation as beneficial for their own objectives (Crost et al., 2016; Hirshleifer, 1991; Narang & Stanton, 2017; Skaperdas, 1992; R. M. Wood & Sullivan, 2015; Zürcher, 2017). These tactics, recognized by the extensive do-no-harm literature, are conducted through acts of violence, thereby elevating the probability and duration of armed conflicts in the regions where they are implemented (Anderson, 1999).

In conclusion, the existing literature exhibits a lack of unequivocal agreement regarding the relationship between foreign aid and its impact on armed conflict, including both its onset and duration, with the exception of humanitarian aid. Furthermore, qualitative investigations proposing various causal mechanisms have been put forth, but there is a notable absence of empirical assessments to substantiate their conclusions. It is essential to recognize that both quantitative and, to a greater extent, qualitative research tend to concentrate on case studies, often lacking comprehensive and systematic analyses across larger regions, especially sub-Saharan Africa, although the most influential studies in the field adopt a more comprehensive approach.

1.4 Armed conflict

Before delving into the heart of this study, it is imperative to elucidate the concepts central to this research — armed conflict and foreign aid — by addressing their definitions, complexities, and relevance in sub-Saharan Africa.

1.4.1 Definition

While the terms conflict, armed conflict, and war are commonly used as synonyms by non-specialized authors, it is rather surprising that such a severe conceptual error is made even in the spheres of politics and international relations. Indeed, in scientific literature there is still no consensus on a definition of these terms, probably due to the fact that using the "war" and "armed conflict" labels is often seen as a political statement (Paffenholz, 2006, p. 21). Even when they are clearly involved in armed conflicts, governments usually try to deny it, as it is an indication that the opposition has become strong enough to threaten the state's ruling with force. Moreover, once the "armed conflict" label is officially used, domestic law is put under limitations, international humanitarian law takes effect, and the International Committee of the Red Cross (ICRC) has the authority to demand the right to see detainees and to uphold certain custody standards (O'Connell, 2008, p. 395).

Nevertheless, when states avoid labelling a certain situation as an armed conflict, peacetime law is applied, which arguably implies greater protection for civilians. For instance, in peacetime there are significantly more restrictions on the ability to imprison without charge. For this reason, the absence of a generally agreed-upon definition of armed conflict is not treated as major issue by member States of the United Nations, whose Charter merely concluded that an armed conflict was no longer established only by a declaration of war. Instead, it declared that whether a scenario is to be labelled as an armed conflict or not had to be judged by the reality of the fighting on the ground, although the criteria to discern peace from war have never been clearly defined.

Likewise, in international relations' literature a consensus on these topics has not been found yet. In 1959, Dahrendorf defined conflicts as all relations between groups of individuals that involve

an incompatible difference in goals. The incompatibility would arise from a desire on both sides to obtain a scarce resource (Dahrendorf, 1959, p. 15). According to this definition, a conflict exists even if it is limited to the psychological level and is then termed as “latent”. Being an extremely common phenomenon in social life, if a conflict is dealt with constructively, it can have positive repercussions for both the individual and society as a whole, as finding a compromise between the parties eliminates the conflict itself. However, a conflict can also become manifest if it is expressed at the behavioural level, and it can also unfold in violence, if it is handled in a destructive manner. It is important to recognise that only the combination of a series of causes and escalating factors lead to violent forms of conflict, while in the supermajority of cases conflicts remain latent or non-violent.

This research will consider war and armed conflict as subcategories of conflict, although a distinction will be made between the two, considering the definitions given by the Uppsala Conflict Data Programme (UCDP) of the Uppsala University. The Programme defines as armed conflicts, or state-based conflicts, those situations where the use of armed force between two parties, of which one is the government of a state, results in at least 25 battle-related deaths in one calendar year (UCDP, 2023). Battle-related deaths typically occur in warfare involving the armed forces of the warring parties. Thus, the definition includes traditional battlefield fighting, guerrilla activities, and all kinds of bombardments of military units, but also civilians. In contrast, the UCDP reserves the term war to armed conflicts that reach a threshold of 1.000 battle-related deaths in a specific calendar year (UCDP, 2023). Consequently, in line with the Uppsala Conflict Data Programme, this research will have as main focus the broader notion of armed conflict, while war will only be considered as a subcategory of the former (Figure 1). Indeed, it is more reasonable to analyse the lower threshold variable of armed conflicts in sub-Saharan Africa, as only 22% of armed conflicts included in this study fall within the UCDP definition of war, while the remaining supermajority of violent situations lead to the death of less than 1.000 individuals in a year.

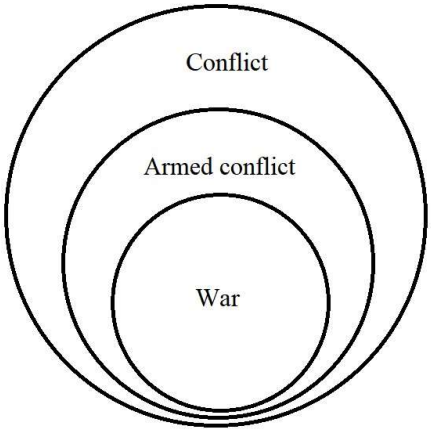


Figure 1 *A Venn diagram stylizing the hierarchy between the definitions of conflict, armed conflict, and war.*

1.4.2 Historical trends of sub-Saharan armed conflicts

More than seventy armed conflicts have taken place in sub-Saharan Africa since 1996, with civil armed conflicts predominating the figure. Considering only 2022, according to the Uppsala Conflict Data Programme, there were at least 19 states out of 49 with active armed conflicts, six of which exceeded the 1.000 battle-related deaths threshold – notably Burkina Faso, the Democratic Republic of the Congo (DRC), Ethiopia, Mali, Nigeria and Somalia. Low-intensity, subnational armed conflicts occurred in 13 other states: Angola, Benin, Burundi, Cameroon, Central African Republic (CAR), Chad, Kenya, Mozambique, Niger, South Sudan, Togo, and Uganda.

In comparison with 2021, sub-Saharan Africa (excluding Ethiopia) suffered from an increase in battle-related deaths of almost 12%, going from 10,407 in 2021 to 11,641 in 2022. On the contrary, if the Tigray war is included in the figures, the total battle-related causalities in sub-Saharan Africa augmented of 479% between 2021 and 2022, since in Ethiopia more than 100.000 people were killed in the battlefield or in crossfire in 2022 (Figure 2).

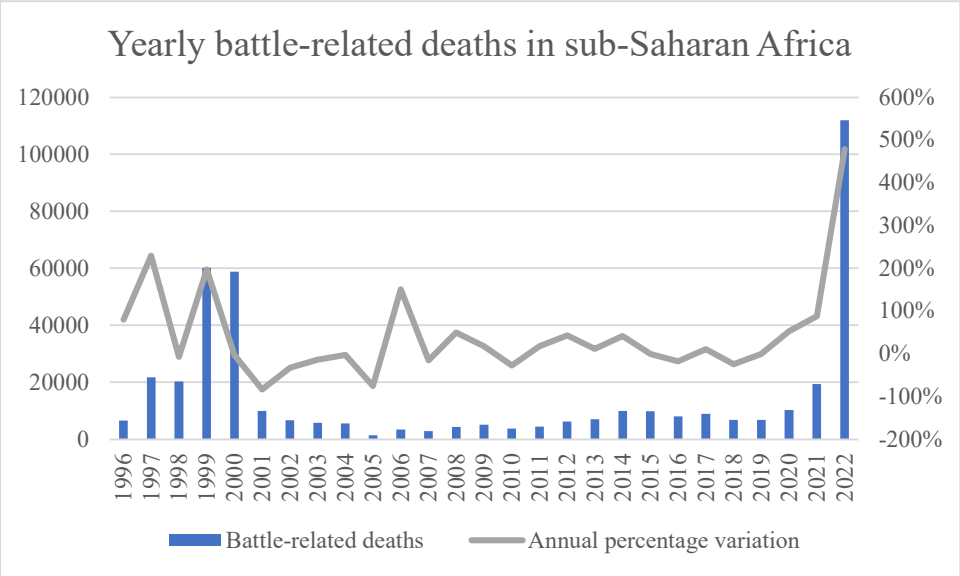


Figure 2 *Yearly battle-related deaths in sub-Saharan Africa (1996-2022), presented in absolute value (scale on the left) and annual percentual change (scale on the right). Data source: UCDP*

Since the end of the second world war, millions of Africans have been killed, disabled and displaced during armed conflicts. Economists, researchers and international institutions such as the World Bank, the Stockholm International Peace Research Institute (SIPRI) and various non-governmental organizations (NGOs) have greatly enriched our knowledge of armed conflicts, looking in particular at their social and economic causes as well as their consequences. These factors are crucial in determining the duration of armed conflicts. The most important consequences include: a sharp increase in mortality and morbidity both during and after conflicts; massive population displacement, both within the country in conflict and abroad, where the number of refugees is positively correlated with the spread of diseases and conflicts; an increase in poverty and a negative economic growth in excess of 30% and sometimes 50%; a massive destruction of physical capital and infrastructure (buildings, structures, plant and equipment), which implies a loss of capacity to produce goods and services and to undertake internal or external trade and investment; a deterioration and destruction of social capital, including the country's laws, institutions, and traditions, which are the foundations of the social structure and enable countries to be governed (Saidi, 2003, pp. 1–4).

The enormous costs of armed conflicts and civil wars are not offset by changes in economic policies and reforms adopted after the military confrontations, nor by the creation or improvement of

domestic institutions or political freedoms. These factors later lead to more state fragility, corruption, inefficient provision of basic services, rivalry over natural resources, inequality, and a feeling of exclusion of peripheral actors, which then often rebel against the central state. Indeed, the first five years after the cessation of hostilities present a high risk (44%) of renewed violence (Collier et al., 2003, p. 83).

Since the 1990s most of sub-Saharan African armed conflicts have not been of interstate nature, but rather of civil nature, deriving from an insurgency, although they have often been internationalised due the engagement of foreign state actors and the transnational activity of armed groups and criminal networks who mostly operate on African borders. In detail, insurgencies are a particular kind of armed conflict, characterized by lightly equipped groups restricted in size and operating in remote locations and engaged in guerrilla warfare. Despite the idea being most commonly associated with communist insurgency, this type of warfare has historically been used to further a wide range of political goals, causes, and grievances by organized groups such as ethnic nationalists, Islamic fundamentalists, and rebels that focus solely on commodities trafficking (Fearon & Laitin, 2003, p. 75). In regard of sub-Saharan Africa, warlords mostly smuggle and trade high-value commodities such as gold and diamonds, but also uranium, coltan, lithium and oil.

Guerrilla groups capitalise on peripheral actors' feelings of frustration, misrepresentation, and injustice (Centre for Humanitarian Dialogue, 2023, p. 6). Insurrectionary movements thrive under the environment of insecurity and economic underdevelopment they create, therefore they perpetrate their behaviours, while local warlords amass greater wealth and resources over time. Insurgencies tend to occur more frequently when governments are unable to sustain their future generations with adequate infrastructure or employment. Indeed, young people who are disillusioned about their futures may be easily recruited by violent extremists in the area, bolstering terrorist organisations that commit a great number of violent crimes every year. While globally the number of people killed by terrorism has significantly decreased in recent years, in 2022 it rose by 8% in sub-Saharan Africa, and especially in the Sahel region (Institute for Economics and Peace, 2023, p. 49).

For instance, although Nigeria presents the most developed economy in western Africa, it is also deeply plagued by the terrorist organisation Boko Haram, who is having success recruiting unemployed young people and persuading them to engage in deadly bloodshed in the northern part of the country, far away from the prosperity of the main cities, which are located in the south. Since 2013, the organisation has notoriously kidnapped thousands of children and adolescents, including 276 girls who were seized from a secondary school in Chibok in 2014, most likely to be forced into sexual slavery. Some were able to flee quickly after being detained, while the International Committee of the Red Cross facilitated discussions that resulted in the release of around 100 more girls in return for Boko Haram terrorists (BBC News, 2015).

Nigeria is not an isolated example of this situation in sub-Saharan Africa. Ongoing armed conflict plagues almost half of the region's countries and presents additional challenges to its already low economic development. Since 1996, there has been intermittent violence conducted by numerous militia groups in the Democratic Republic of the Congo, with the number of displaced persons rising every year and exceeding six million people (UN News, 2023). However, this shift is not only being driven by war: climate change and desertification are also playing a significant role in the migration crises (Figure 3).

Even though in recent years an increasing number of individuals is being compelled to leave their homes, national and international responses to displacement are still insufficient to provide refugees with safety and protection (Freedman, 2019, p. 1). While the so-called refugee crises in Europe and other wealthy nations have gathered significant notice, it is important to keep in mind that most African migrants and refugees wind up in their neighbouring states, many of which lack the resources to fully accommodate everyone. The majority of refugee camps' population is composed by underage children, therefore NGOs fear for lost generations of young people missing out on adequate schooling, having to live most of their lives in camps. Moreover, African governments are usually unable to sustain migrants' future generations with adequate infrastructure or employment. The economically disadvantaged and disillusioned youth who live in camps or struggle to survive in

the periphery of metropolitan areas may be simple targets for violent extremists in the area, aiding in the proliferation of rebel networks beyond borders (Salehyan & Gleditsch, 2006, p. 338). Taking the international movements of a disillusioned youth into consideration, as a significant element contributing to the geographical clustering of violence, would simplify the understanding of the never-ending spread of civil armed conflicts in the Great Lakes region, for instance.

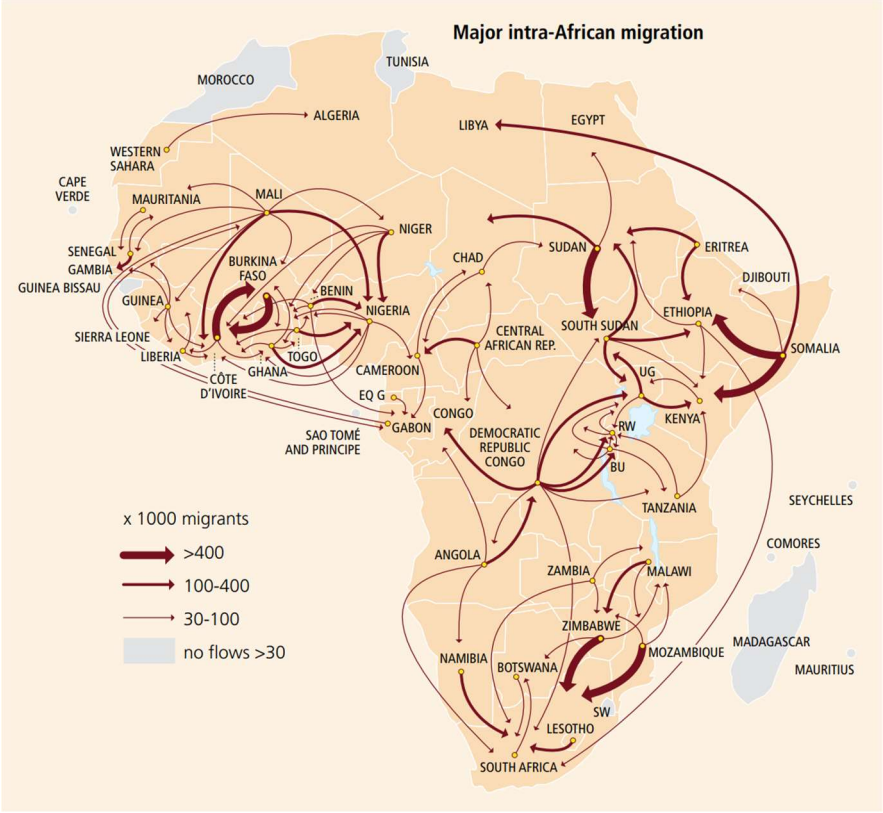


Figure 3 *Intra-African migration in 2015. Number of migrants per 1000 inhabitants (Kaag et al., 2017).*

Journey to extremism in Africa: Pathways to recruitment and disengagement, the 2023 report launched by United Nations Development Programme (UNDP), highlighted the importance of economic factors in driving recruitment to groups enacting violent extremism. Thanks to a survey conducted on 2,196 former members of armed groups on multiple sub-Saharan countries[1], the research concluded that the primary motivator for recruitment is the aspiration for employment, which reflects broader concerns about socioeconomic inequality and social exclusion (UNDP, 2023, p. 17). Economic desperation and the lack of a developmental state were recognized by the interviewees as

[1] *Journey to Extremism* research focuses on eight countries across sub-Saharan Africa: Burkina Faso, Cameroon, Chad, Mali, Niger, Nigeria, Somalia and Sudan.

significantly more important driving factors than religion, for instance. Moreover, former combatants also commented that armed groups occasionally offer forms of alternative security and justice, which, in the absence of an effective central state, become significant causes for communities to fall. Seventy-three percent of voluntary recruits expressed dissatisfaction with the government's provision of employment opportunities. Consequently, the study reveals that violent extremist organisations may readily penetrate and effectively establish roots in a number of African countries due to the states' fragility and the erosion of the social compact between its citizens and its governments. The broken social contract is demonstrated by a widespread mistrust in the governments' institutions and security agents[2], and a generalised negative opinion on the states' service provision, especially with regard to employment, security, and education (UNDP, 2023, p. 18). In this context, it is important to recognize that various issues related to the development of sub-Saharan African countries are the root causes of armed conflicts on the continent. Therefore, foreign aid and effective cooperation for development, if properly implemented, could potentially help mitigate the incidence of armed conflicts.

[2] In particular, there is a generalized perception of impunity and distrust in the police and the military.

1.5 Foreign aid

With the increased allocation of resources by higher-income nations towards development cooperation and the support of refugees, official foreign aid from donor countries surged to a record-breaking 204 billion USD in 2022 (OECD, 2023d). Hence, the discussion and analysis of both the intentional and unintentional impacts of foreign aid have become more crucial than ever.

1.5.1 Definition

Foreign aid refers to the international transfer of funds, services, or products by governments or other organisations for the benefit of a recipient country or its population (Williams, 2023). Foreign assistance is considered as one of the major sources of foreign exchange, as it involves the voluntarily transfer of assets like money or other resources from one country to another, either as a concession or a loan[3]. The majority of the transactions are directed from developed to developing countries, notably from member states of the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC)[4]. Indeed, the rise to the modern notions of foreign aid was given in 1969 by the DAC, which in 1972 defined more precisely the concept of Official Development Assistance (ODA) as official flows with the main objective of fostering economic growth in aid recipient developing countries. A developing country often lacks a robust industrial sector and is characterised by a lower Human Development Index (HDI) score, which is elaborated by the UNDP (Yildirim, 2022, p. 83).

In order to boost investment, encourage economic growth, and lower absolute poverty in developing nations, foreign assistance flows used to primarily focus on the physical infrastructure in the economic and productive sectors (Chenery & Strout, 1966, p. 680). While loans are more

[3] Loans may be hard, if made in foreign currency, or soft, if made in local currency.
[4] As of 2023, there are 31 DAC members: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, European Union., Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, United Kingdom, United States.

favourable to encouraging incentives for domestic resource mobilisation, grant aid is more conducive for Least Developed Countries (LDCs) to avoid debt load and boost growth. Therefore, as soon as 1978, the OECD DAC resolved that grant aid should make up 90 percent of overall aid directed to this category of emerging economies (Morrissey et al., 2006, p. 8).

This research takes into consideration both bilateral and multilateral aid, as well as disbursements deriving from private donors, which include charities, religious groups, and private multinational companies[5]. Depending on the institutions providing it, foreign assistance presents different peculiarities. Bilateral aid is provided directly by the government of a high-income country, while multilateral aid is administered by various international organizations, such as the European Union, the UNDP, the World Food Programme (WFP), the World Bank (WB), the International Monetary Fund (IMF) and the African Development Bank (ADB). Bilateral foreign aid accounts for the majority of the disbursements (Figure 4), although in recent years multilateral aid has increased its share, if a comparison with the 1960s is made (Akramov, 2012, p. 30).

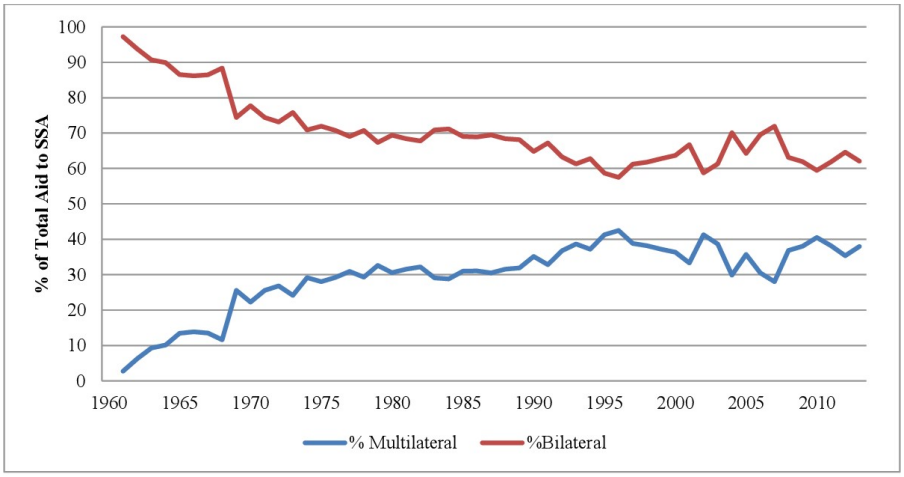


Figure 4 *Percentage breakdown of total ODA directed to sub-Saharan Africa between bilateral and multilateral donors (1960-2012). Source: (Tait et al., 2015)*

Moreover, multilateral organizations tend to make distinct allocation choices compared to bilateral donors. In fact, a significant portion of multilateral aid, approximately 60%, is channelled towards Low Income Countries (LICs), whereas this category of states receives only 40% of the

[5] An exhaustive list of official donors and additional information can be found at https://stats.oecd.org/Index.aspx?DataSetCode=CRS1

annual bilateral aid allocation (OECD, 2023a). These variations in aid allocation are underpinned by the fact that national governments, unlike international organizations, provide development assistance also to bolster their own security interests. Economic aid may serve as a tool to dissuade allied states from succumbing to hostile regimes or to make payments for the establishment or use of military installations in the recipient's territory. Furthermore, foreign assistance can be strategically employed to advance a government's political objectives, for instance by expanding the diplomatic influence on the international stage.

The presence of non-developmental motives in the aid programs of certain bilateral donors acts as a deterrent to the establishment of collective initiatives among all DAC members in a multilateral setting, which could otherwise enhance the effectiveness of aid (Omoruyi, 2017, p. 192). Nevertheless, this challenge has not deterred DAC countries from consistently allocating substantial sums to sub-Saharan aid projects.

1.5.2 Historical trends of foreign aid to sub-Saharan Africa

Since the 1980s, sub-Saharan Africa has been the region that has received the most foreign aid in the world in absolute terms. This significant emphasis placed by donors can be readily comprehended when considering the entrenched political, social, and economic issues that numerous countries in the area have been enduring for approximately the last forty years (Carmignani & Mandeville, 2014, p. 125). Sub-Saharan countries used to receive one fifth of total Official Development Assistance (ODA) in the early 1970s, while they have been receiving roughly one-third in the last decades (Akramov, 2012, p. 32). Total aid flows to the region from all donors have grown from 597 million dollars in 1960 to 62 billion dollars in 2021, for an average 6.7% yearly growth rate. However, aid trends have significantly changed over time, being largely driven by the agendas and necessities of donor countries.

Net ODA received (current US$, billions), 1960-2021

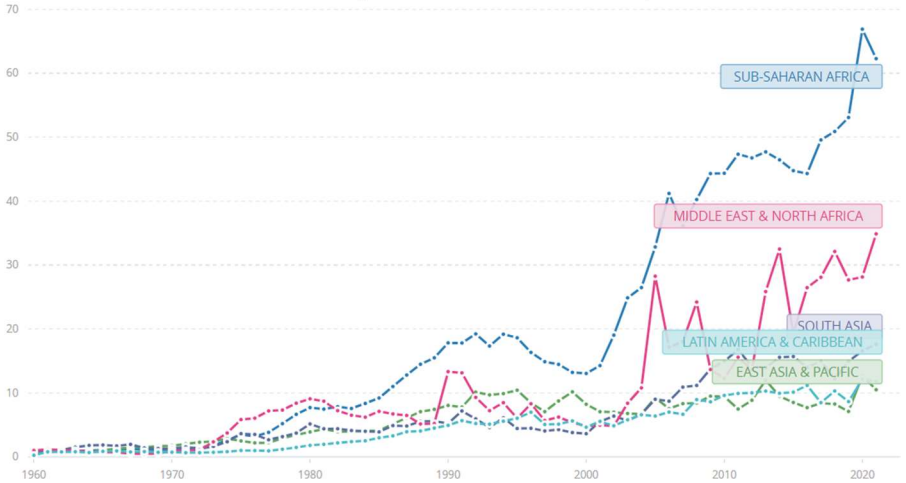


Figure 5 *Source: World Development Indicators, World Bank*

Net ODA received per capita (current US$), 1960-2021

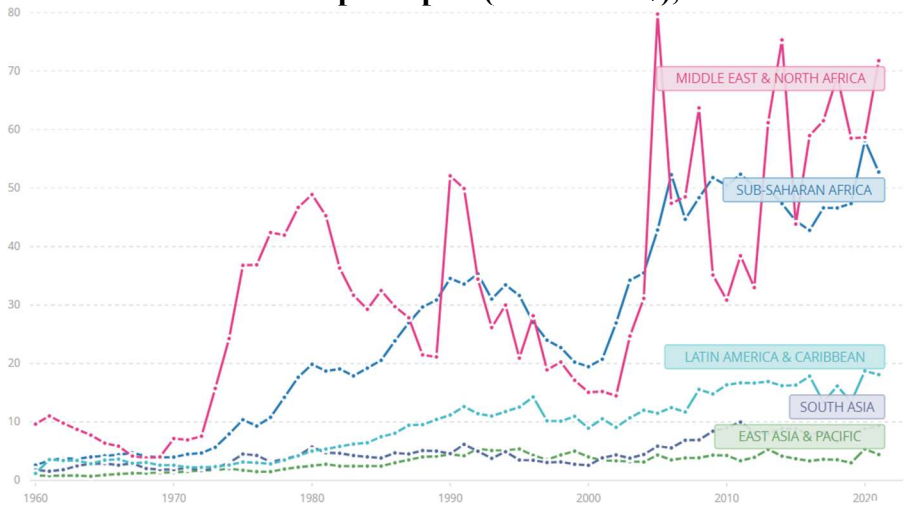


Figure 6 *Source: World Development Indicators, World Bank*

Net ODA received as % of recipients' Gross National Income (GNI), 1960-2021

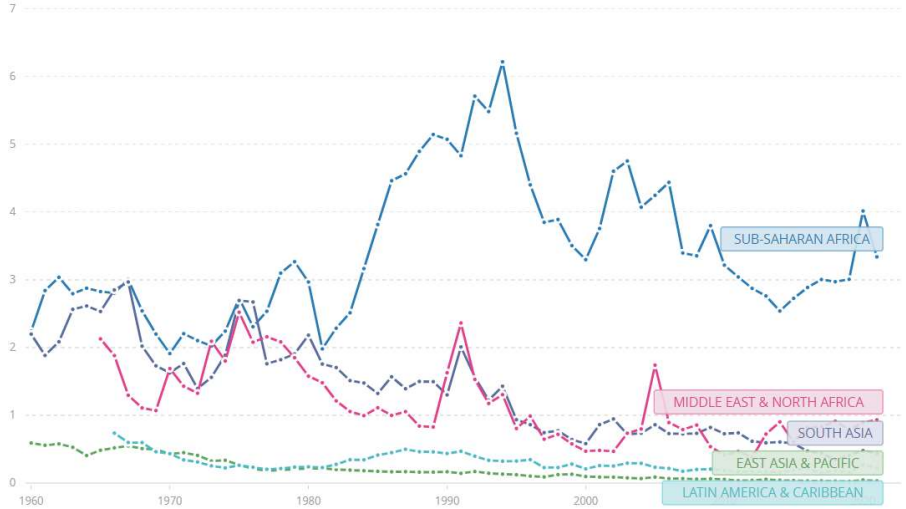


Figure 7 *Source: World Development Indicators, World Bank*

For instance, while until the 1980s annual foreign aid increased in a slow but steady manner, the 1990s were characterized by a dramatic decline, which can be corroborated considering the trends of net ODA received (Figure 5), net ODA received per capita (Figure **6**6) and net ODA received as percentage of the sub-Saharan Africa's Gross National Income (Figure **7**7). Such a severe fluctuation is thought to be the consequence of the end of the Cold War: the United States, who historically had the strongest political motivations and resources for development cooperation, lost their interest in providing aid when the Soviet Union collapsed (White, 2004, p. 237). As a result, the United States' aid effort significantly decreased, shifting from of 0.21% of their GDP dedicated to international aid in 1991 to 0.08% in 1997. Most European countries followed this trend, significantly reducing their aid efforts to sub-Saharan Africa (Akramov, 2012, p. 31) while increasing their involvement in Eastern European and former Soviet countries.

The 2000 watershed dramatically inverted the 1990s tendency. In September 2000, during the United Nations Millennium Summit in New York, world leaders adopted the Millennium Declaration with the aim of prioritizing the global fight against poverty and providing assistance to developing economies. The declaration established eight specific objectives, known as the Millennium Development Goals (MDGs), to be achieved by 2015. Since their adoption, the MDGs have significantly influenced economic policies and resource allocation in developing countries with the collaboration of their development partners (Bakoup, 2014, p. 183).

A particular suggestion from the Declaration regarded the African continent, calling for the international community to boost the flow of development cooperation funds to this region, characterized by the concentration of 34 out of the 48 countries that were classified at the global level by the United Nations as Least Developed Countries in 2000 (United Nations Conference on Trade and Development, 2000, p. 245)[6]. Following the Millenium Summit, the United Nations (UN)

[6] The list of LDCs is reviewed every three years by the Economic and Social Council (ECOSOC). The criteria underlying the 2000 list of LDCs were a low per capita income, weak human resources and a low level of economic diversification. A country qualifies to be added to the list of LDCs if it meets inclusion thresholds on all three criteria (United Nations Conference on Trade and Development, 2000).

Secretary-General Kofi Annan launched the Millennium Project to determine the best strategies for achieving the MDGs. According to the resulting report (Sachs, 2005), significant governmental investments in many different fields, mostly funded through a sharp rise in development aid, would have led to the accomplishment of the MDGs. During this euphoric and ideal-driven era, even the Group of Eight (G8), which typically centres its discussions solely on global trade and financial matters, deviated from its usual agenda in 2001 by prioritizing the fight against poverty in Africa. For instance in 2005, due to pressure from the United Kingdom, the G8 committed to a significant financial plan for Africa, comprising a massive debt relief and an increased fund for official development assistance (Simonson, 2005, p. 44).

Figure 8 depicts the trend of the aggregated data for net aid received in sub-Saharan Africa during three different stages: the Millennium Development Goals era (2000–2006), the global financial crisis and eurozone crisis period (2007–2015) and the Sustainable Development Goals era (2016–2020). Common to all these phases is the fact that since 2000 there has been a significant movement in sectoral aid allocations away from the economic growth-promoting sectors, mostly because of the intense focus on reaching the MDGs (Tefera & Odhiambo, 2020, p. 419).

Indeed, foreign aid flows are distributed to several sectors depending on which precise area of the recipient's socioeconomic structure the transfer is meant to support. One type of donations may be meant to support education, another to support agricultural growth, and a third might simply be meant to provide relief in times of emergency, either man-made or natural. The social infrastructure and service sectors nowadays receive twice the amount of funding they used to secure in the mid-1970s. Concurrently, non-sectoral aid allotments for debt relief and humanitarian assistance receive much more support than the economic infrastructure and production sectors, notably agriculture, whose aid share has suffered a significant reduction. The decline in agricultural aid stems from the reduced commitment by bilateral donors and multilateral agencies like the World Bank, compounded by unsuccessful agricultural development efforts and unfavourable commodity prices (Byerlee, Derek R. et al., 2008, p. 18).

The data showing varying trends in net aid received during these different stages reflect the changing global economic landscape and the shifting priorities in international development assistance. Overall, the period prior to the economic international crises showcased a considerable influx of aid, which has been accompanied by increasingly concessional assistance terms, emphasizing the heightened global commitment to addressing developmental challenges in sub-Saharan Africa. Notwithstanding, aid reserved for government and civil society did not increase as quickly as overall aid disbursements, as debt relief and humanitarian aid accounted for the majority of this rise in aid flows (International Development Association, 2007, p. 2).

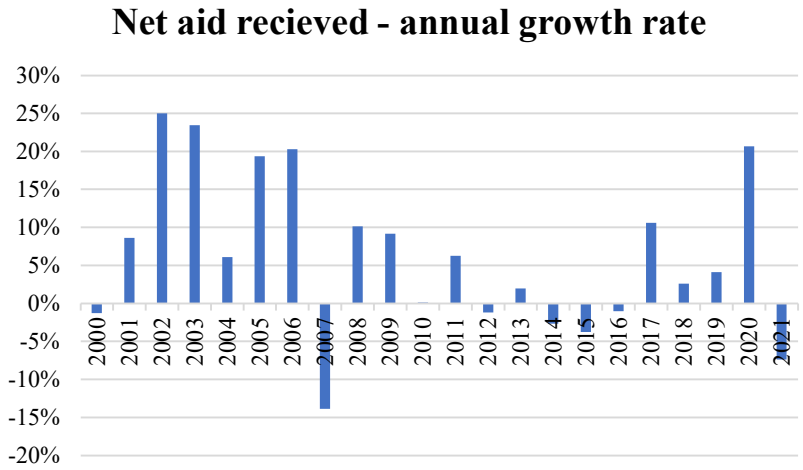


Figure 8 *Source: World Development Indicators, World Bank*

Although the region initially witnessed the promised sharp rise in received development aid, the dynamics shifted during the 2007–2015 period, with net aid received drastically fluctuating in a year-to-year difference (Figure 8), due to the adverse impact of the global financial crisis on aid allocations. Although the subsequent years witnessed some negative growth rates, net aid received continued to grow most of the year, illustrating a continued effort to support sub-Saharan Africa's development goals amidst the prevailing economic uncertainties. Indeed, this period highlighted the need for resilience and adaptation in aid distribution strategies to mitigate the effects of global financial crises on developing regions.

The Sustainable Development Goals era (2016–2020), concurrent with an economic recovery in the most advanced economies, brought about renewed optimism in aid disbursements for sub-

Saharan Africa. The region experienced a positive upswing with growth rates reaching the pinnacle of +20.6% in 2020, although the unprecedented challenges posed by the COVID-19 pandemic undermined this positive trend the following year. While we await the availability of data for 2023, there is a prevailing sense of hope and anticipation for a continued increase in aid to support the region's development and stability, even in the face of potential distractions stemming from ongoing wars in Ukraine and the Middle East.

CHAPTER TWO

Empirical analysis

Introduction

This Chapter embarks on a systematic exploration of the potential impact that foreign aid wields on the duration of sub-Saharan armed conflicts, scrutinizing plausible differences in impact across multiple sectors targeted by foreign aid. By disaggregating aid data into various sectors and enhancing the study's granularity, this approach aims to unveil factors hindering aid effectiveness and to identify potential areas of success where demonstrates efficacy in reducing armed conflicts' duration.

The Chapter is structured as follows. First, the estimation methodology is explained and justified. Second, the data utilized for the analysis is described, focusing on dependent, independent and control variables. Third, the statistical models are described, and the estimation results are finally discussed.

2.1 Analysis of survival data using Cox model

Although several approaches have been proposed in the applied literature, such as the non-parametric estimator of Kaplan & Meier (1958), this research relies on the application of the Cox proportional hazards model (Cox, 1972), as it is particularly suitable for examining time-to-event data. In particular, drawing from the work of Narang (2015), the adopted models in this research aim to assess if and eventually how foreign aid, allocated across different sectors in the recipient countries, significantly affect the instantaneous likelihood of an armed conflict ending in any given year (t), assuming its continuation up to that point. In the empirical analysis a set of control variables is also considered.

Unlike parametric survival models (Allison, 1984; Box-Steffensmeier & Jones, 1997; Singer & Willett, 1993), Cox model represents a semi-parametric estimation method which doesn't impose stringent assumptions about the underlying hazard baseline function's shape, offering greater flexibility and robustness in capturing the dynamics of armed conflict duration. The baseline hazard rate allows for constant, decreasing, increasing, or time-varying patterns as a certain armed conflict progresses. Categorizing aid across sectors enables a granular understanding of how aid in a specific domain may impact on the duration of armed conflicts. Further, this approach aligns with our research objective of comprehensively assessing the diverse effects of foreign aid on conflict dynamics in sub-Saharan Africa. This is especially important given the multifaceted nature of foreign aid, which spans diverse sectors with potentially distinct impacts on the probability of conflict dynamics.

As for the dataset structure, each armed conflict is defined according to the number of battle-related deaths occurred in the curse of a given unit of time. Each armed conflict is observed through time from the year it begins in a certain country to the year it ends; a time span is therefore defined and specific for each armed conflict. In this research, information on armed conflicts is gathered on a yearly basis; thus, year is the time of observation. Indeed, the yearly unit of observation aligns with the common practice in armed conflict studies to represent conflicts as discrete events unfolding over time, as this practice allows to delineate the temporal boundaries of each conflict, offering a clear

structure of the dataset used for the analysis. Moreover, the decision to adopt an annual unit of observation is aligned with the temporal dynamics inherent in foreign aid data, whose amount is usually measured on a yearly basis by state governments, international organizations, and NGOs. Such a detailed temporal dimension enhances the ability of the adopted statistical model to draw meaningful insights into the relationship between aid flows and armed conflict duration, considering potential lag effects and annual variations in aid distribution patterns.

The time span of the empirical application ranges from 1996 to 2022. The 75 armed conflicts that took place in sub-Saharan Africa during this time period are allocated, considering their specific duration, into the corresponding calendar years. Each conflict can be observed for several years, so that the reference unit of observation used in the empirical application is the pair "year-armed conflict", amounting to overall 309 distinct observations.

It's essential to acknowledge certain limitations inherent in Cox models. Like any baseline statistical model, the Cox model assumes the absence of unmeasured confounding factors that might influence both foreign aid allocation and conflict duration. Indeed, the issues of reverse causality and joint determination can be considered to represent the major empirical issue that could prevent a reliable inference of the relationship between foreign aid and the duration of armed conflict in recipient states. In the subsequent section, a motivation and an explanation of the empirical approach are provided to address these issues. Finally, the Cox model assumes that the effect of any predictor variable is constant over time and proportional to the hazard rate. In this study, the proportionality assumption has been assessed trough a specific statistical test (Grambsch & Therneau, 1994)

2.2.1 Statistical model

In this section the Cox proportional hazard regression model and its interpretation are introduced. The Cox model represents one of the most popular regression methods in the field of survival analysis, as it allows to relate several explanatory factors, considered simultaneously, to survival time. In this study, a random variable denoting the time until an event happens is denoted *t* and, specific to this research, the event considered is named "*conflict ending*" (failure event).

Three functions in this variable *t* are introduced. First, the failure function F(*t*) is the probability that the failure event occurs before a certain time *t*. It is defined as $F(t) = \Pr[T \leq t]$. Second, the survival function S(*t*) is the probability of survival up to a certain time *t* and is defined as $S(t) = 1 - F(t) = \Pr[T > t]$. Third, the hazard function h(*t*) provides the expected number of failures happening close to time *t*, i.e. the failure rate at time *t* conditional on the fact that the event is still active at *t*. The overall number of failures expected up to time *t* gives the cumulative hazard function H(*t*), which is related to the survival function through the relation $S(t) = exp^{-H(t)}$.

The Cox proportional hazard model is expressed by the hazard function $h(t)$, which denotes the instantaneous probability of an event occurring at time t. In this study, the event of interest is the end of an armed conflict. The hazard function is generally modelled as a parametric linear combination of a set of predictor variables:

$$h(t) = h_0(t) \cdot \exp(\beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k) \quad (1)$$

where exp() is the exponential function and $\beta_1, \beta_2, \ldots, \beta_k$, measuring the impact of the covariates, are the coefficients associated with predictor variables $X_1, X_2, \ldots, X_k$. Among the predictor variables, our model includes both foreign aid allocated across different sectors and various control variables.

The hazard function in equation (1) consists of two components. The parametric part, $h(t)$, depends linearly on the predictor variables that are expected to affect the survival duration. The second part of the hazard function, $h_0(t)$, is non-parametric as it denotes the baseline hazard function when all predictor variables are zero. The baseline hazard function encapsulates the instantaneous

risk of the termination of an armed conflict at a given time t, under the condition that all predictor variables are zero. Essentially, $h_0(t)$ represents the baseline or inherent risk, untethered to the influence of any specific explanatory variable, such as foreign aid, allowing for the evaluation of how individual predictor variables contribute to modifying this baseline risk over time.

As a result, the predicted hazard rate, $h(t)$, in equation (1) is the product of the baseline hazard $h_0(t)$ and the exponential function of the linear combination of the predictors. Thus, the predictors have a multiplicative or proportional effect on the predicted hazard; as an example, an exogenous increase in one of these variables results in a multiplicative effect on the hazard function, as demonstrated in the simulation at the conclusion of the Chapter. This is one of the assumptions underlying the Cox model.

The other assumptions consist of the independence of survival times between distinct units of the sample and the constancy of hazard ratio over time. By contrast, it is relevant to consider that no assumption is made about the form of $h_0(t)$ and its relationship with time, and this allows greater flexibility to the Cox model compared to other parametric approaches in survival analysis.

The model in equation (1) can also be expressed in terms of hazard ratio,

$$\frac{h(t)}{h_0(t)} = \exp(\beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k) \quad (2)$$

where the ratio of the hazard function at time *t* to the baseline hazard function, $\frac{h(t)}{h_0(t)}$, is called hazard ratio and is the metric used in the estimation output discussed below in this Chapter.

In the function $\exp(\beta_i X_i)$ (i = 1, …, n), β_i represent the change in the expected log of the hazard ratio relative to a one-unit change in *i*-th predictor, holding all other predictors constant at their mean. For a value of β_i lower than zero, or hazard ratio lower than 1, the corresponding predictor is associated with a lower risk of the failure event (i.e., armed conflict termination) and prolonged survival of the armed conflict. If β_i is greater than zero, or the hazard ratio is greater than 1, then the *i*-th predictor is associated with increased failure of armed conflict ending and, therefore, a reduced armed conflict survival. Even though the baseline hazard is unspecified, the regression coefficients

in a Cox proportional hazards regression model can be estimated by the method of partial likelihood (Cox & Oakes, 1984).

2.2 Data

For the purpose of this analysis, a novel state-level panel dataset was compiled by combining various datasets sourced from universities, such as the University of Uppsala, and international governmental organizations, such as the World Bank and the OECD. The dimensions of the dataset were primarily determined by the availability of data from these reputable sources. The temporal scope of the dataset spans from 1996 to 2022, covering a comprehensive range of observations for 33 countries – given the fact that 16 sub-Saharan countries did not undergo armed conflicts within the specified time frame, as shown in Figure 9.

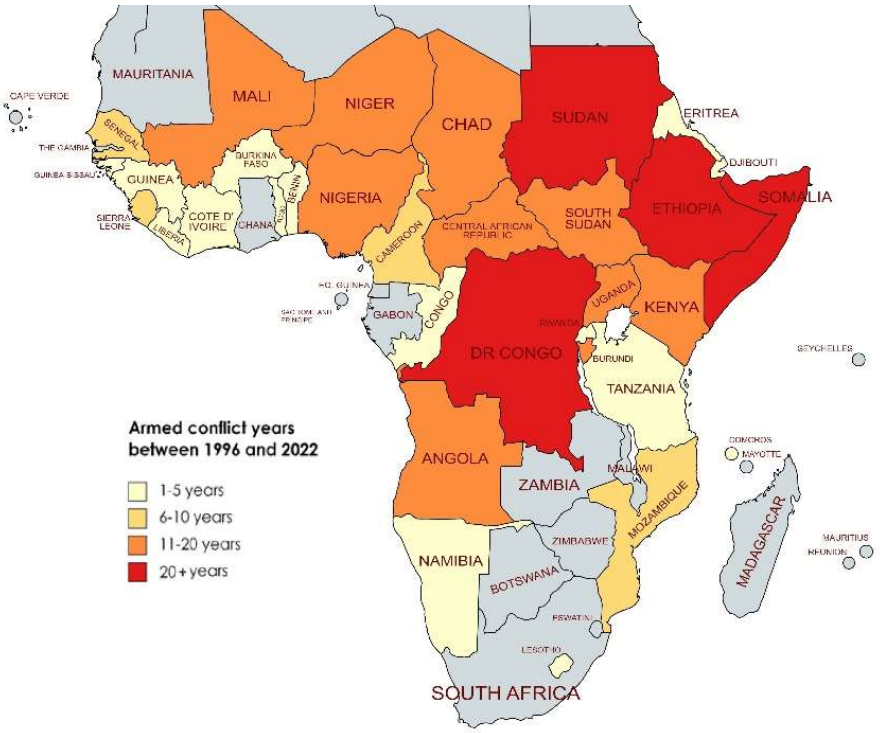


Figure 9 *Sum of armed conflict years between 1996 and 2022 for each sub-Saharan country*

Examining observations across various subjects and multiple time periods confers several advantages in data analysis. This approach provides an augmented sample size compared to relying solely on cross-sectional or time series data. Additionally, it allows the application of robust estimation method, as panel data analysis facilitates the control of unobserved heterogeneity or individual-specific effects. The dataset also permits the use of methodologies like the instrumental variables approach, enhancing the ability to address endogeneity issues more effectively. Lastly, panel

data inherently exhibits lower collinearity among variables, potentially granting a greater flexibility in statistical analysis.

Table 1 *Descriptive statistics of utilized variables in countries not affected by armed conflicts.*

Variables	***Observations***	***Mean***	***Standard deviation***	***Minimum***	***Maximum***
Country id	27	37.56	3.02	30.00	43.00
Armed conflict number	0				
Armed conflict end	27	0.00	0.00	0.00	0.00
Armed conflict	27	0.00	0.00	0.00	0.00
Population policies	27	70.30	42.84	9.70	137.22
Government and civil society	27	56.86	17.36	17.56	90.09
Banking and financial services	27	10.95	7.37	3.46	39.04
Agriculture	27	44.08	17.78	20.38	90.08
Humanitarian aid	27	32.24	16.42	7.21	73.14
Population	27	12.71	1.33	10.37	15.34
HIEF	27	0.64	0.01	0.61	0.66
GDP per capita	27	2354.94	367.84	1735.99	3107.31
Forests	27	33.57	0.93	32.13	35.66
International guarantees	24	0.05	0.03	0.00	0.13
Resources	27	0.28	0.05	0.20	0.35
Fuel exports	27	11.08	2.97	3.38	16.44
Lagged economic growth	27	3.95	1.77	-0.81	6.84

Notes: An observation is a year (1996-2022). Aid commitments are expressed in millions of US dollars at constant 2021 prices and exchange rates, lagged by one year. Population indicates the country's resident population in millions. Historical Index of Ethnic Fractionalization (HIEF) ranges from 0 to 1, indicating the likelihood that two randomly selected individuals from a country belong to distinct ethnic groups. GDP per capita data are in constant 2015 US dollars. Forests represent the percentage of a country's land area covered by forests. International guarantees and resources are binary variables (1 for presence, 0 for absence) indicating UN peacekeeping forces and lootable resources respectively. Fuel exports represent the percentage of fuel exports in each country's merchandise exports. Lagged economic growth aggregates are based on constant 2015 prices in US dollars and lagged by one year.

Table 2 *Descriptive statistics of utilized variables in countries affected by armed conflicts.*

Variables	***Observations***	***Mean***	***Standard deviation***	***Minimum***	***Maximum***
Country id	27	11.44	3.02	6.00	19.00
Armed conflict number	27	41.20	3.33	34.92	48.67
Armed conflict end	27	0.19	0.12	0.00	0.38
Armed conflict	27	1.00	0.00	1.00	1.00
Population policies	27	116.02	85.12	3.55	271.03
Government and civil society	27	152.99	95.43	14.21	416.00
Banking and financial services	27	16.87	18.14	0.38	71.30
Agriculture	27	88.59	57.28	16.25	197.20
Humanitarian aid	27	286.22	158.00	44.85	570.79
Population	27	34.62	12.84	12.05	50.98
HIEF	27	0.70	0.04	0.60	0.74
GDP per capita	27	946.72	177.58	659.52	1310.46
Forests	27	24.42	4.88	13.75	33.07
International guarantees	24	0.29	0.16	0.08	0.50
Resources	27	0.26	0.10	0.09	0.42
Fuel exports	27	24.65	7.19	14.82	42.47
Lagged economic growth	27	0.63	4.31	-8.38	11.79

Notes: An observation is a year (1996-2022). The note in Table 1 can be referenced for further details.

Tables 1 and 2 present descriptive statistics for the variables used in the empirical analysis. Table 1 includes data only for countries not impacted by armed conflicts during the specified years, whereas Table 2 exclusively showcases data for countries affected by armed conflicts. The mean values for each variable were computed annually across all sub-Saharan countries, whether affected by armed conflict or not, before being summarized in the presented tables. The values of the variables pertaining to foreign aid expenditures in specific sectors (Population policies, Government and civil society, Banking and financial services, Agriculture, Humanitarian aid), as well as the population figures for each country (Population), were divided by 1,000,000 to enhance readability and facilitate data interpretation.

Data from Table 1 are excluded from the study, given its focus on armed conflict duration. Nonetheless, comparing the two tables provides a clearer insight into the previously mentioned reverse causality mechanism. If aid allocation were completely random, there would be no disparity in the amounts of foreign aid received by countries in armed conflict compared to those at peace. However, countries affected by armed conflicts receive significantly more funding on average, particularly in the humanitarian aid sector.

2.2.1 Dependent variable

In order to determine the dependent variable of our model, we employ data from the Armed Conflict Dataset version 23.1, created by the Centre for the Study of Civil War at the Peace Research Institute Oslo (PRIO) and the Department of Peace and Conflict Research at University of Uppsala. The World Bank's Development Economics Research Group funded the work on the data collection as part of its research on "The Economics of Civil War, Crime, and Violence". Since its first publication in 2002, the dataset has seen extensive use both by policy makers and researchers (Collier et al., 2003; Miguel et al., 2004; Nunn & Qian, 2014; Wolfson et al., 2004). The PRIO/Uppsala data collection defines armed conflict as "a contested incompatibility which concerns government and/or

territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths" during a calendar year (Lacina & Gleditsch, 2005). Hence, the definition includes both intrastate and interstate armed conflicts.

To represent the dependent variable in this analysis, a binary dummy variable was created. It takes a value of one when there are 25 or more battle-related deaths recorded in a given year within a certain sub-Saharan African country, and zero otherwise. However, interpreting this variable and, consequently, the empirical results of this research requires caution. The transition from one to zero, other than denoting the definitive end of an armed conflict, might also mean that a conflict's intensity has briefly decreased before resuming one or two years later. The PRIO/Uppsala data collection attempted to address this issue by indicating whether a specific dispute underlying a conflict had been resolved. Nevertheless, it is essential to acknowledge that such assessments are inherently subjective[7] and fall beyond the purview of this study's objectives.

In this research, the estimated termination probabilities reflect the likelihood that a country experiences fewer than 25 battle-related deaths in a year (t), given the occurrence of an armed conflict in the previous year (t-1). Consequently, the analysis does not evaluate whether the underlying conflict between factions has been resolved or persists in a latent state. As shown in Table 2, approximately one-fifth (19%) of active armed conflicts ended annually during the specified period, with certain years witnessing no terminations, as indicated by the minimum value of 0.00. Out of the 75 distinct armed conflicts that occurred in sub-Saharan countries from 1996 to 2022, only 56 concluded, leaving 19 unresolved.

The implications of the dataset structure are in terms of so-called *censoring*, which occurs when complete data (actual time to event data) is not available for each conflict in the study. In this

[7] For instance, Galtung (1969) criticised the negative definition of peace as absence of war and introduced the concept of "positive pace", which is achieved in the absence of structural violence, defined as the circumstance in which human beings are influenced in such a way that their actualized physical and mental capabilities fall short of their potential (Galtung, 1969, p. 169). In this definition, the perpetrating actor of violence is missing, which has led to severe critiques on the part of rationalist academics, who have faulted Galtung for the methodological mistake of conceptual stretching (Fossati, 2018, p. 110).

case, *true* survival time (failure time) is unobserved, and times are called censored times. There are several different types of censoring. The most common is known as right censoring and occurs when the last observed time for a conflict is less than its time to event. To handle and appropriately use the *censored* observations, in this study the assumption of *non-informative censoring* is adopted, which assumes that censoring is independent of the likelihood of developing the event of interest or, in other terms, that armed conflicts whose data are censored would have the same distribution of failure times (or times to event) if they were observed.

2.2.2 Independent variables: foreign aid by sector

Following prior research (Collier & Hoeffler, 2007; de Ree & Nillesen, 2009; Narang, 2015; Ssozi et al., 2019), the amount of foreign aid pledged by donors in each year of armed conflict, categorized by sector, is extrapolated from the Creditor Reporting System (CRS) (OECD, 2023f). While CRS data does not encompass foreign aid provided by non-official donors, it does include development cooperation originating from member states of the OECD Development Assistance Committee[8], multilateral organizations[9], selected non-DAC countries[10] and private donors. Notably, contributors such as China are not covered in the dataset, but their development aid disbursements are comparatively less significant than those from the aforementioned donors.

The CRS dataset reports Official Development Assistance flows, which are defined as flows to countries, territories and multilateral development institutions on the DAC List of ODA Recipients, whose transaction is concessional in character[11] and is administered with the purpose of promoting

[8] As of 2023, the DAC is constituted by 31 members: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, the European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Lithuania, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, United Kingdom, the United States.

[9] Notably UN agencies, EU institutions, the International Monetary Fund (IMF) and regional development banks.

[10] Non-DAC official donor countries are Azerbaijan, Bulgaria, Croatia, Cyprus, Israel, Kazakhstan, Kuwait, Latvia, Liechtenstein, Malta, Monaco, Qatar, Romania, Saudi Arabia, Chinese Taipei, Thailand, Timor-Leste, Türkiye, United Arab Emirates.

[11] The definition specifies that, in DAC statistics, being concessional in character implies a grant element of at least: (i) 45 per cent in the case of bilateral loans to the official sector of Least Developed Countries (LDCs) and other Low Income Countries (LIWs); (ii) 15 per cent in the case of bilateral loans to the official sector of Low- and Middle-Income Countries

economic development and welfare of developing countries (OECD, 2023c). Hence, grants and loans allocated for other purposes, such as international peacekeeping missions and military expenditures provided to aid an ally in maintaining sovereignty within its borders, are omitted from the dataset and therefore excluded from the scope of this research. Furthermore, the majority of donors do not disclose the specific amount of military aid they offer, rendering any analysis in this regard unfeasible (Nielsen et al., 2011, p. 4).

For the purpose of this thesis, data on commitments were utilized instead of real gross disbursements. Despite their inherently less precise nature, commitments ensured a more extensive temporal coverage for the analysis, as reliable data have been recorded by the OECD since 1995, whereas disbursement data are available only from 2002 onward – the CRS' annual coverage of disbursements was well below 60% until 2002 (OECD, 2023f). Considering data just from 1995 onward provides an advantage for this research, as recent studies highlight a significant structural shift in the dynamics of civil wars (Fearon, 2004) and international interventions (M. Gilligan & Sergenti, 2008) following the conclusion of the Cold War. Comparing cases before and after 1989 would be misleading due to the qualitative and quantitative disparities in humanitarian aid during these distinct periods.

In addition to providing information on the locations of singular aid projects, the OECD Creditor Reporting System codes each aid project in accordance with its sectoral classification. Aid is classified on the basis of the specific area of the recipient's economic or social structure the transfer is intended to foster, not on the kind of products or services the donor offers. For instance, educational programmes tailored to a particular industry, such agricultural education, are recorded under that productive sector rather than education (OECD, 2023e).

The primary recipient sectors examined in this research, along with their respective CRS codes, include: Population Policies/Programmes & Reproductive Health (130); Government & Civil

(LMICs); (iii) 10 per cent in the case of bilateral loans to the official sector of Upper-Middle Income Countries (UMICs); (iv) 10 per cent in the case of loans to multilateral institutions (OECD, 2023c).

Society (150); Banking and Financial Services (240); Agriculture (311); Humanitarian Aid (700). According to Table 2, over the considered time frame, aid commitments in the five sectors amounted to significant figures, particularly when compared to those directed to countries at peace, reported in Table 1. On average, a country affected by armed conflict received annually $116.02 million for population policies and $152.99 million for the initiatives sustaining the government and civil society. Conversely, the banking and financial services sector received relatively modest aid, averaging $16.87 million yearly. Agriculture, a crucial sector for sub-Saharan states, received aid averaging $88.59 million. However, the sector with the highest average aid commitment was humanitarian aid, receiving an average of $286.22 million annually, with a standard deviation of $158.00 million. The considerable values of standard deviations displayed by all sectors reflect significant differences in funding across countries.

Some final arrangements have been made to reliably use the information on independent variables for the empirical analysis. Firstly, inflation and changes in the exchange rate between the recipient currency and the US dollar are accounted for by documenting payments at constant 2021 prices and exchange rates. Secondly, in order to keep the variances of the predictors rather stable through time, in accordance with previous research, these data are log-transformed. The result of this choice is that the empirical distribution of the above variables is closer to a normal distribution and more in line with the premises of parametric statistical tests. Thirdly, aid commitments are lagged by one year to consider the temporal delay between commitment and distribution, as well as to mitigate the risk of reverse causality. Indeed, deliberate decisions by donors, recipient states, or aid agencies to allocate funds to projects within conflict zones, with the goal of stabilizing regions or alleviating human suffering, contribute to the non-random nature of aid allocation (R. M. Wood & Sullivan, 2015, p. 743).

2.2.3 Control variables

For each model a series of covariates is considered, which exhibit a correlation with the likelihood of the armed conflict persisting beyond a particular year t. Several factors are associated with armed conflict duration.

First, the amount of aid disbursed by donors is expected to increase along with the population of an armed conflict-ridden state. Given the fact that larger-population states are also more prone to meeting the 25-battle deaths threshold for inclusion in the sample, the natural logarithm of a country's population, sourced from the World Development Indicators (World Bank, 2023), for each year is included in the models as a control variable. Table 2 reveals that countries affected by armed conflicts have an average population of 34.62 million individuals, significantly surpassing the average population of peaceful countries (12.71 millions), as indicated in Table 1.

Second, previous literature (Fearon & Laitin, 2003) suggests that geographical conditions play a role in influencing the duration of armed conflicts, since areas characterized by dense forests offer an advantageous environment for the protection, organization, and execution of rebel guerrilla attacks. Since challenging terrain also poses operational limitations for aid disbursements, a variable representing the percentage of a country's land area covered by forests is incorporated in most models, sourced from the World Development Indicators (World Bank, 2023). On average, 24.42% of the land area of sub-Saharan countries affected by armed conflicts is covered by forests (Table 2).

Third, drawing from earlier research (de Ree & Nillesen, 2009; Fearon, 2005; Fearon & Laitin, 2003; Hoeffler & Collier, 2002; Miguel et al., 2004), an ethnic fragmentation index has been included as a control variable, deemed particularly relevant in analysing armed conflicts in sub-Saharan Africa. Given the fact that guerrilla groups operate exploiting ethnic tensions, they often contribute to the escalation and duration of armed conflicts in the region. Furthermore, ethnic diversity and its evolution in time can influence a country's internal stability and conflict management capacity, factors often considered by international cooperation bodies in the distribution of development aid. The data for this variable were retrieved from the Historical Index of Ethnic Fractionalization (HIEF)

dataset (Drazanova, 2020) to consider temporal variations in ethnic composition. The index, ranging from 0 to 1, reflects the likelihood that two randomly selected individuals from a country belong to distinct ethnic groups: it registers a value of 0 if all individuals within a country are part of the same ethnic group, and a value of 1 if each individual in the country constitutes their own distinct group. The HIEF sets itself apart from other fractionalization indexes by acknowledging the dynamic nature of ethnic heterogeneity, particularly its enduring impact in regions like sub-Saharan Africa. The average ethnic fractionalization value for countries included in the sample is 0.70 (Table 2). By comparison, Italy's average index for the same period is significantly lower at 0.10.

Fourth, recent studies (Collier & Hoeffler, 2004a; Dal Bó & Dal Bó, 2011) have identified a robust correlation between per-capita real gross domestic product (GDP) and the onset and persistence of armed conflicts, through two main perspectives: one emphasizing economic opportunity-costs, where poverty makes engagement in violent insurgency economically attractive, and another highlighting political grievances arising from poverty that fuel support for insurgency. Despite differing mechanisms, both perspectives underscore underdevelopment as a root cause of armed conflicts, proposing that effective antipoverty programs should diminish violence and shorten armed conflict duration. Consequently, a measure of real GDP per capita was inserted into the analysis, as well as a measure of GDP growth lagged by one year, both being sourced from the World Development Indicators (World Bank, 2023). A comparison between Tables 1 and 2 reveals significant disparities in the mean values of these variables between countries unaffected by armed conflicts and those affected by armed conflicts. Specifically, the average GDP per capita for peaceful countries stands at $2,354.94, whereas conflict-affected countries had an average of $946.72 for the same time period. Similarly, lagged economic growth for countries in Table 1 averaged 3.95%, while countries included in the study averaged 0.63%.

Fifth, resources are often viewed as a double-edged sword in conflict zones, holding the potential to act as catalysts for both the initiation and resolution of armed conflicts. On the one hand, the abundance of lootable resources can fuel insurgencies, providing rebel groups with the financial

means to sustain their activities (Elbadawi & Sambanis, 2000; Lujala et al., 2005). On the other hand, the termination of armed conflicts may be influenced by the strategic importance of resource-rich territories, prompting stakeholders to seek resolutions that secure access or control over valuable assets. Therefore, the presence of resources can attract international intervention, potentially fostering peacekeeping efforts or diplomatic initiatives, but it can also disincentivise donor's involvement, given the compromised capacity of an unstable country to receive and effectively utilize foreign aid. A binary indicators for the presence of lootable resources (Buhaug & Gates, 2002) was included in some models, along with a measure of fuel exports as a percentage of merchandise exports in each country's economy, sourced from the World Development Indicators (World Bank, 2023). Although the variable representing lootable resources exhibits similar average values in both Table 1 (0.28) and Table 2 (0.26), there are notable disparities in fuel export levels between countries unaffected by armed conflicts and those affected. Specifically, the former average at 11.08%, while the latter stand significantly higher at 24.65%, peaking at 42.47% in 2004.

Finally, previous research (Fortna, 2008; Walter, 2002) has illustrated a robust connection between the duration of armed conflicts and the presence of international guarantees on the ground, as they address commitment issues inherent in civil conflicts, thereby reducing the likelihood of prolonged wars. Moreover, the presence of peacekeeping forces, increasing security in the region, augments donors' willingness to disburse development aid (Doyle & Sambanis, 2006; Fortna, 2004). The information used for this control variable was initially obtained from the geocoded Peacekeeping Operations (Geo-PKO) Dataset (Uppsala University, 2023). However, for the purposes of this analysis, the data was aggregated at the country level through the creation of a dummy variable that indicates the actual presence or absence of UN peacekeeping troops on the ground in a specific year and country. According to Table 2, UN peacekeeping troops were present in an average of 29% of the countries affected by armed conflicts each year included in the sample.

A challenge in estimating the effect of foreign aid on the duration of armed conflict arises from issues of reverse causality, which can introduce bias into statistical analyses. This occurs when

both variables, aid provision and duration of armed conflict, are shaped by common (often unobserved) underlying factors, such as poverty, political instability, or regional tensions. To mitigate the risk of reverse causality, in this research aid commitments are considered lagged by one year in model specifications, to consider the temporal delay between commitment and distribution.

Additionally, it is also relevant to consider that donors tend to distribute resources to areas of greatest need or, alternatively, where they are expected to be more effective (Chauvet, 2003, p. 55). The non-randomized aid assignments could introduce a bias into the estimates (selection bias). This additional source of bias could be properly addressed using robust estimators and the information available in the dataset, concerning the sub-Saharan countries receiving similar sectoral aids but experiencing a reduction in the intensity of armed conflicts below the threshold of 25-battle related deaths in a year. Both the issues of simultaneity and selection bias represent potential areas of future investigations.

For most control variables mentioned above, missing data points were derived through interpolation. This process involved estimating the values for the absent data points based on the existing information and the temporal patterns observed in the available dataset. This approach enables a more robust exploration of the research question, even in instances where specific data points were initially unavailable. The absence of values for the variable representing international guarantees was not remedied through interpolation due to its binary nature. Consequently, Table 2 displays only 24 observations for this control variable, as the Geo-PKO Dataset lacked data for the years 2020-2022.

2.3 Model specification

Five different models are presented in this research, based on the sectors targeted by foreign aid. The utilization of distinct models in this study is underpinned by the assumption of heterogeneity, depending on the nature of aid, regarding its impact on armed conflict dynamics. Different sectors targeted by foreign aid may exert varying influences on armed conflict outcomes, and employing separate models for each sector allows to account for such heterogeneity in the empirical analysis of these effects. For instance, aid directed towards population policies may have different implications than aid allocated to government and civil society or humanitarian assistance.[12]

The empirical analysis is carried out considering the specifications as reported below. Equation (3) is used to investigate the impact of aid targeted to population programmes,

$$h(t) = h_0(t) \cdot \exp(\beta_{PP}PP + \beta_P P + \beta_{HIEF}HIEF + \beta_{GDP}GDP + \beta_F F) \quad (3)$$

where PP represents the aid directed towards population policies/programmes and reproductive health, P signifies the natural logarithm of the country's population, HIEF corresponds to the degree of ethnic fractionalization, GDP denotes the real GDP per capita, and F indicates the proportion of a region's land covered by forests. Based on aforementioned theoretical frameworks and empirical evidence, the variable P is expected to exhibit a negative coefficient β_P, reflecting the assumption that larger-population states are more likely to meet the threshold of 25-battle related deaths in a year, therefore contributing to armed conflict continuation. The coefficient β_{HIEF} is also anticipated to be negative, aligning with research indicating that ethnic tensions contribute to the escalation and duration of armed conflicts, especially in sub-Saharan Africa. Conversely, GDP per capita is anticipated to have a positive coefficient β_{GDP}, reflecting studies that correlate underdevelopment, poverty, and armed conflicts through economic opportunity-costs and political grievances. Finally, the coefficient β_F is expected to be negative, in line with literature suggesting that forested areas provide advantageous environments for rebel activities and may pose challenges for aid distribution.

[12] It is worth noting that almost the majority of covariates that enter model specifications are continuous time-varying predictors. The adopted estimation method properly accounts for this characteristic of the data.

A second specification, which aims to account for the effect of aid directed towards government and civil society, is represented by equation (4),

$$h(t) = h_0(t) \cdot \exp(\beta_{GCS}GCS + \beta_P P + \beta_{HIEF}HIEF + \beta_{IG}IG + \beta_R R + \beta_{FE}FE) \quad (4)$$

In this specified model, additional predictors are included: GCS represents the foreign aid directed towards government and civil society, IG is a binary variable indicating the presence of international guarantees (in particular, UN peacekeeping troops), R is a binary variable indicating the presence of lootable resources, and FE denotes the fuel exports. Compared to model (3), the variable of GDP per capita is no longer considered in this specification. Reflecting the aforementioned assumption that the presence of international guarantees and peacekeeping forces is anticipated to address commitment issues in civil armed conflicts, the IG variable is expected to exhibit a positive coefficient β_{IG}. The coefficients β_R and β_{FE} are also anticipated to be positive, reflecting the theory that stakeholders seek resolutions that secure access or control over resource-rich territories.

The effects of foreign aid for the financial sector are analysed using equation (5),

$$h(t) = h_0(t) \cdot \exp(\beta_{BFS}BFS + \beta_P P + \beta_{HIEF}HIEF + \beta_R R + \beta_{FE}FE + \beta_{LEG}LEG) \quad (5)$$

whose specification is similar to equation (4). In this model, BFS represents aid directed to banking and financial services and LEG signifies the lagged economic growth of year $(t-1)$. Its coefficient, β_{LEG}, is expected to be positive, reflecting the notion that periods of economic growth might have a stabilizing effect, leading to a higher likelihood of armed conflict termination. The positive effects of economic growth on armed conflict resolution are therefore expected to have a delayed impact, influencing conflict dynamics in the subsequent year.

In equation (6),

$$h(t) = h_0(t) \cdot \exp(\beta_A A + \beta_P P + \beta_{HIEF}HIEF + \beta_R R + \beta_{FE}FE + \beta_{IG}IG) \quad (6)$$

the effect of variable A, which corresponds to aid directed towards the agricultural sector, is considered. The control variables considered are already used in previous models and retain their respective meanings.

To estimate the effect of foreign humanitarian aid (HA) on the likelihood that armed conflicts will come to an end, equation (7) is utilized.

$$h(t) = h_0(t) \cdot \exp(\beta_{HA}HA + \beta_P P + \beta_{HIEF}HIEF + \beta_{GDP}GDP + \beta_R R) \quad (7)$$

The inclusion of several control variables specific to each model accommodates the unique contextual factors associated with different aid sectors. This approach aligns with the heterogeneous nature of armed conflicts and the diverse strategies implemented by aid organizations, NGOs and bilateral donors across sectors. Several control variables are consistently included in the models specified in this study, reflecting their substantial influence on armed conflict dynamics, particularly in the context of sub-Saharan Africa. One such pivotal variable is the Historical Index of Ethnic Fractionalization (HIEF), given the region's intricate socio-cultural fabric and historical legacies that commonly fuel insurgencies and impact the duration of armed conflicts. Moreover, variables such as GDP per capita and population size are reiterated across most models due to their overarching significance in conflict studies. By employing varied models, each tailored to a specific aid sector, this research's results capture the sector-specific mechanisms through which foreign aid may influence the duration of armed conflicts in sub-Saharan Africa.

2.4 Estimation results and discussion

The presented results in Table 3 showcase the hazard ratios, standard errors, and p-value levels for the different variables across the five distinct models introduced in the previous section. The results of the test of the proportionality-assumption (PH test) are also reported, as well as the numbers of observations, subjects, and failures. Hazard ratios are evaluated in relation to a baseline hazard function, so that values of the hazard ratio greater than 1 suggest that a specific variable enhances the likelihood of armed conflict ending, whereas values smaller than 1 imply that the variable diminishes the probability of armed conflict cessation. For instance, if a one unit increase of a variable gives a hazard ratio of 0.6, then such variation diminishes the hazard by a factor of 0.4 or the likelihood of armed conflict termination by 40%, indicating that the effect size of the variable is to prolong conflict duration. Conversely, when a one unit increase of a specific variable gives a hazard ratio of 2, then it doubles the chances of armed conflict cessation, signifying its tendency to reduce the survival of the armed conflict.

In model (3), the independent variable depicts a hazard ratio of 1.32, implying that a one-unit increase in the log of aid directed towards population policies and reductive health corresponds to a 32% increase in the hazard of armed conflict termination, holding all other predictors at their mean. This result is statistically significant ($p = 0.013$) and holds even after controlling for multiple, highly significant variables. The hazard ratio of 0.53 associated with the log population control variable stands out in significance with a p-value below the 1% threshold, suggesting that a growing population has a negative impact on the likelihood of armed conflict cessation. This result aligns with the conclusions drawn from models presented in the existing literature (de Ree & Nillesen, 2009; Fearon & Laitin, 2003; R. M. Wood & Molfino, 2016; R. M. Wood & Sullivan, 2015). Moreover, the even greater impact of ethnic fractionalization, given its hazard ratio of 0.16, is consistent with the conclusions drawn by de Ree & Nillesen (2009) and Cederman et al. (2011), implying that increasing ethnic fractionalizations is correlated with a diminished probability of armed conflict termination. The hazard ratios for the GDP per capita and forest control variables, while statistically significant at

the 10% level, approach 1, suggesting that these two variables exert a minimal (positive) influence on the likelihood of conflict termination. These results are consistent with Narang's (2015) and Wood & Sullivan's (2015) researches.

Table 3 further reports the results of model (4), focusing on aid employed in the sector of government and civil society. The hazard ratio of 1.34 indicates that a one-unite increase in aid directed towards such initiatives is associated with a 34% higher hazard of conflict termination. This result attains statistical significance, with a p-value below 5%. Compared to model (3), the log population control variable exhibits an almost identical hazard ratio and high significance level ($p<1\%$). The HIEF variable also consistently decreases the likelihood of armed conflict termination but, in contrast to model (3), this variable fails to attain statistical significance in model (4), along with the international guarantees and resources variables. These results closely mirror the findings of Narang (2015), which similarly do not reach statistical significance. Finally, a one-unite increase of the percentage of fuel exports, given the hazard ratio of 1.01, would not substantially impact the likelihood of armed conflict termination, despite its statistical significance. This result is consistent with de Ree & Nillesen's (2009) research.

The estimation from model (5) concerning aid allocated to banking and financial services is also detailed in Table 3. According to the estimated hazard ratio, a one-unit increase in this specific aid variable, with other predictors held constant at their mean value, increases the risk of conflict cessation by a factor of 1.19 (or 19%), and this increase is statistically significant. Additionally, the log population control variable maintains its significance ($p=0.001$), underscoring its negative impact on the likelihood of conflict cessation. Similarly, as observed in models (3) and (4), the HIEF variable demonstrates a negative effect on armed conflict termination probability in this model, and in this instance, it reaches statistical significance. The absence of statistical significance for lootable resources aligns with model (4), with similar hazard ratios, as does the hazard ratio of 1.01 for fuel exports, which suggests a marginal impact on conflict termination probability, while still statistically

significant at the 10% level. Lastly, the lagged economic growth variable, whose hazard ratio is close to 1, fails to attain statistical significance.

The estimated effect of aid directed towards the agricultural sector in model (6) reveals a hazard ratio of 1.32. With a p-value below 5% (p=0.023) this suggests that a one-unit increase in this independent variable, while holding all other predictors constant, is associated with a 32% higher likelihood of armed conflict cessation. All control variables in this model — specifically, log population, HIEF, international guarantees, resources, and fuel exports — show hazard ratios closely resembling those observed in models (3), (4), and (5). However, among these variables, only log population and fuel exports display statistical significance, with p-values below 1% and 10%, respectively. Conversely, HIEF (p=0.269), international guarantees (p=0.263), and resources (p=0.194) do not reach statistical significance.

Finally, in model (7), the estimated hazard ratio for humanitarian aid stands at 0.79. This suggests that with a one-unit increase in the log amount of humanitarian aid, the probability of conflict termination decreases by approximately 21%, holding all other factors constant. This finding is highly statistically significant, with a p-value below the 1% threshold (p=0.004). Model (7)'s results are consistent with previous literature regarding humanitarian aid (Narang, 2014, 2015; R. M. Wood & Molfino, 2016; R. M. Wood & Sullivan, 2015). In terms of the control variables, the estimated effects of the log population variable and the HIEF variable prove to be statistically significant at the 10% and 5% levels respectively, consistent with the expected negative impact and the estimates obtained in previous models and related literature. Similarly, the GDP per capita and resources variables maintain consistency with their effect in previous models but exhibit non-significant hazard ratios.

Overall, in all models considered above, the assumption of the Cox model that the hazard rate is constant over time has been empirically verified using the test proposed by Grambsch and Therneau (1994). This test is approximately distributed as a chi-squared distribution and the null hypothesis is that the proportionality-assumption holds. According to the empirical evidence, in all the models considered there is no evidence that the proportional-hazards assumption has been violated (Table 3).

Table 3 *Aid levels and the risk of armed conflict termination.*

	Model (3) ***Population Policies/ Programmes & Reproductive Health***	*Model (4)* ***Government & Civil Society***	*Model (5)* ***Banking and Financial Services***	*Model (6)* ***Agriculture***	*Model (7)* ***Humanitarian Aid***
Variables	*Hazard ratio*	*Hazard ratio*	*Hazard ratio*	*Hazard ratio*	*Hazard ratio*
Log population policies	1.325 ** (0.150)				
Log government and civil society		1.337 ** (0.194)			
Log banking and financial services			1.188 ** (0.107)		
Log agriculture				1.325 ** (0.164)	
Log humanitarian aid					0.789 *** (0.065)
Log population	0.532 *** (0.099)	0.525 *** (0.113)	0.445 *** (0.108)	0.531 *** (0.109)	0.770 * (0.118)
HIEF	0.164 ** (0.145)	0.549 (0.492)	0.134 * (0.145)	0.346 (0.332)	0.226 * (0.179)
GDP per capita	1.000 * (0.000)				1.000 (0.000)
Forests	1.013 * (0.007)				
International guarantees		0.476 (0.245)		0.563 (0.289)	
Resources		1.637 (0.693)	1.957 (0.976)	1.739 (0.739)	1.103 (0.382)
Fuel exports		1.008 * (0.005)	1.011 * (0.006)	1.008 * (0.005)	
Lagged economic growth			0.956 (0.035)		
PH test	4.35 Prob>chi2: 0.4996	3.42 Prob>chi2: 0.7541	7.77 Prob>chi2: 0.2555	3.04 Prob>chi2: 0.8037	4.52 Prob>chi2: 0.4773
Number of observations	258	195	184	195	267
Number of subjects	60	49	46	49	59
Number of failures	44	41	33	41	45

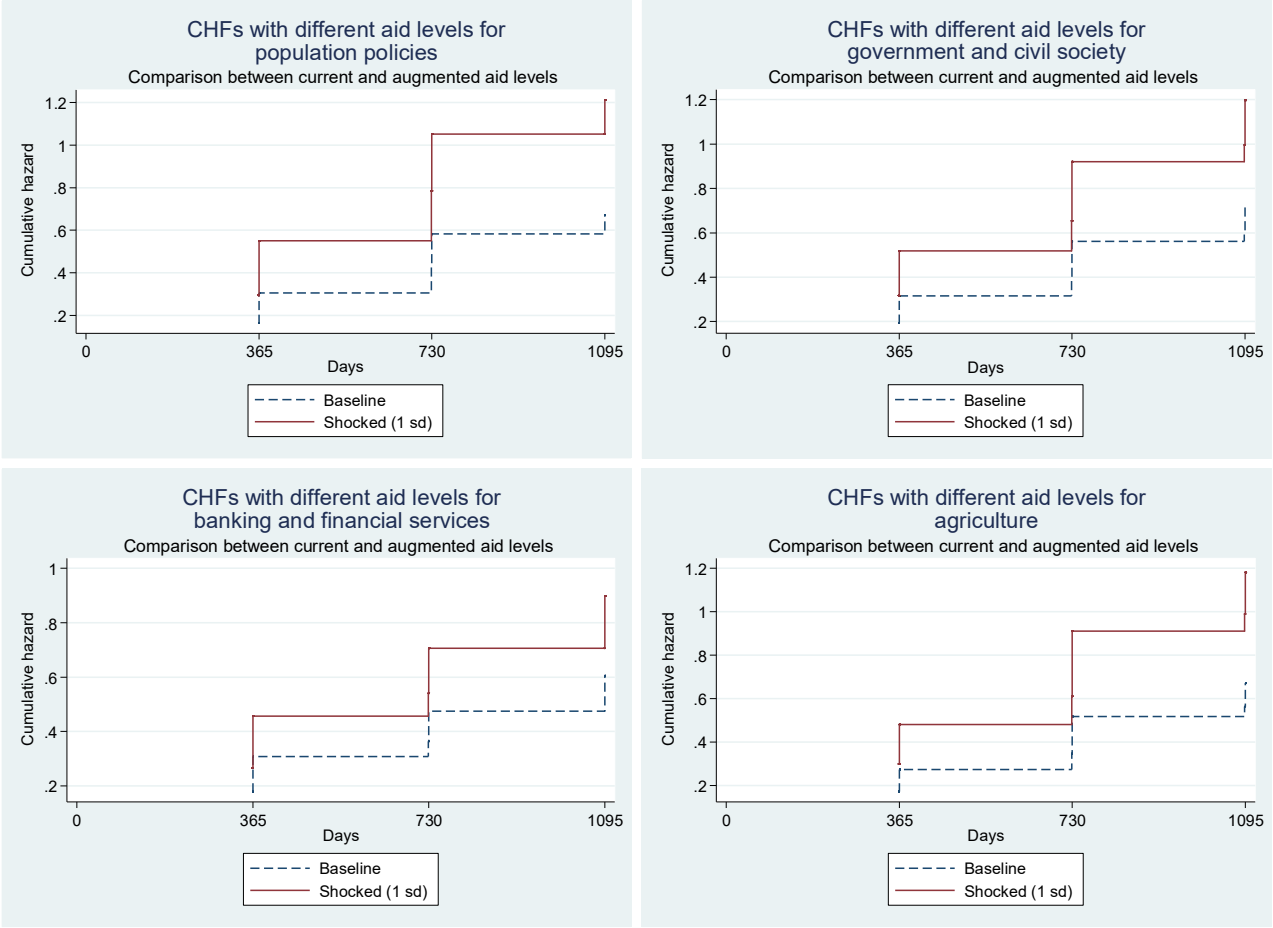
*Notes: Standard errors in parentheses refer to the estimated parameters. ***p < .01, **p < .05, *p < .10.*

Across all models certain control variables, including those related to population, ethnic fractionalization (HIEF), and specific economic indicators, consistently assume pivotal roles. Aligned with prior research, enduring trends reveal some consistent associations: larger populations (Buhaug et al., 2014; Fearon & Laitin, 2003), more ethnically divided societies (Cederman et al., 2010; Kalyvas, 2006; Montalvo & Reynal-Querol, 2005), and more challenging economic conditions (Collier & Hoeffler, 2004b; Hegre et al., 2001; Miguel et al., 2004) consistently link to prolonged armed conflicts. Notwithstanding, the distinctive impact of independent variables across models highlights the sector-specific nature of foreign aid's influence on armed conflict dynamics.

Furthermore, it would be valuable to assess how variations in the independent variables affect the cumulative hazard function (CHF). Drawing from the estimated specifications of the five models examined above, we can estimate the expected shift in the CHF by considering an exogenous variation of one standard deviation, derived from the sample data. In this research context, the cumulative hazard function provides insights into the total accumulated risk of an armed conflict ending by a specific time point in the future. Comparing two cumulative hazard functions – one representing the risk of armed conflict termination with the current aid level and the other with an augmented aid provision – shows how aid increments influence the likelihood of armed conflict termination over time. The cumulative hazard function shifts upwards and becomes steeper as aid increases, indicating a heightened probability of armed conflict cessation. This assessment helps policymakers understand the effectiveness of aid interventions in promoting stability, as it allows to identify when the impact of aid on conflict resolution becomes significant.

Figures 10 to 13 plot the cumulative hazard functions attaining to the sectors of population policies, government and civil society, banking and financial services, and agriculture. Remarkably, the cumulative hazard functions with the exogenous shocks depicted in red in the Figures 10-13 consistently demonstrate higher values, indicating that an increase in aid received within these sectors enhances the likelihood of armed conflict cessation within one (365 days), two (730 days), or three years (1095 days) compared to scenarios without shocks (cumulated hazard functions depicted in blue

and evaluated at the sample averages). Furthermore, as the gap between the curves widens over time, it suggests that the sustained provision of higher levels of aid targeted to these specific sectors is associated with an increased probability of conflict resolution.



Figures 10-13 *Estimated risks of armed conflict termination.*

On the contrary, the cumulative hazard functions depicted in Figure 14, corresponding to aid targeted to the humanitarian sector, reveal the opposite pattern. The cumulative hazard function with exogenous shocks (red scale function) is shifted downward and flatter compared to the one evaluated at the sample average of the estimates, exhibiting lower cumulated hazard values, indicating that an increase in humanitarian aid commitments diminishes the probability of armed conflict cessation within 365, 730, or 1095 days compared to the baseline scenario.

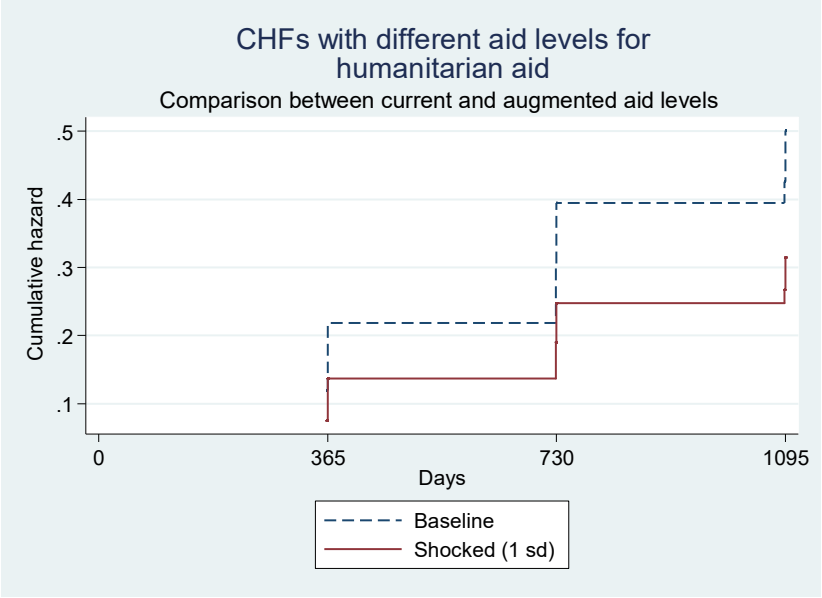


Figure 14 *Estimated risks of armed conflict termination.*

The sector-specific lens provides clarity in understanding how diverse forms of aid have different effects on armed conflict duration. A sector-specific analysis, notably absent from previous literature, offers a rationale for the heterogeneity observed by other researchers presented in Chapter One. Humanitarian aid was the only sector individually studied by existing literature and it consistently exhibited a positive correlation with the survival of armed conflict, a trend corroborated by model (7) in this study. Conversely, all other sectors considered in this analysis (population policies or programmes and reproductive health, government and civil society, banking and financial services, agriculture) were overlooked by previous studies. However, our findings indicate that these sectors contribute to an increased likelihood of armed conflicts conclusion, justifying the contrasting results of non-sector-specific research. The subsequent Chapter will delve into the reasons behind the varied effects of distinct aid sectors on the duration of armed conflicts.

CHAPTER THREE

Linking mechanisms

Introduction

The examination of the estimation results in Chapter Two highlights the complex nature of the relationship between foreign aid and armed conflict. It becomes apparent that while foreign aid has the potential to foster peace and stability, its effectiveness hinges on a critical factor—effective governance, a facet that will be thoroughly analysed in this Chapter. By analysing the causality mechanism linking foreign aid and armed conflict duration, Chapter Three aims at contributing to a better understanding of how foreign aid can be strategically employed to promote stabilization.

The first section of this Chapter focuses on examining the affirmation of foreign aid's role as a counterinsurgency strategy, elucidating the objectives of stabilization programs implemented since the 2000s and scrutinizing the purported mechanisms through which these initiatives aimed to curtail armed conflict durations.

Subsequently, the opportunity-cost model takes centre stage in the second section, providing a conceptual framework to comprehend how civilians' decisions regarding participation in armed conflict are determined by their perceptions of associated costs and benefits. The application of this model to the estimation results is then discussed, shedding light on its relevance in explaining patterns observed in Chapter Two.

The third section delves into the examination of estimation results related to humanitarian aid. Detailed scrutiny is given to the phenomena of sabotage and predation, unveiling instances where aid, instead of mitigating conflict, becomes a deliberate target for interference or exploitation by insurgent groups.

The final section of Chapter Three provides a critical evaluation of the impact of state capacity on the effectiveness of foreign aid interventions. The overarching conclusion suggests that in areas

where local state capacity is deficient, foreign aid is less probable to reach the intended local beneficiaries, while inadvertently creating opportunities for rebel financing. Conversely, in areas boasting robust local state capacity, well-designed foreign aid programs possess the potential to significantly improve livelihoods and diminish popular support for insurgency, reducing the economic incentives for rebellion, in alignment with predictions from rebel opportunity cost theories. These conclusions are grounded in the nature of the examined armed conflicts, which, falling within the 1996-2022 period in sub-Saharan Africa, are not conventional wars between states but rather insurgencies that develop within national borders, in which civilians play a central role.

3.1 Aid as a counterinsurgency strategy

In history, peace has always been promoted by various actors, but it was only in the 20th century that peacebuilding was institutionalized in international law as a means of peacefully resolving conflicts between states. This process began with the establishment of the League of Nations, and continued after World War II with the United Nations (Paffenholz, 2001, p. 17). The field of peace research, as an interdisciplinary normative branch, emerged in the Anglophone academic world in the 1960s. During the Cold War, peace research mainly focused on avoiding nuclear or conventional warfare between the opposing camps, aiming to end wars using various diplomatic instruments. In this period, the involvement of civil society actors, especially in international conflicts, was seen as an impediment to the actions of professional diplomats: non-state actors active in peacebuilding, such as the Quakers, were just exceptions (Curle, 1971, p. 37). In the 1970s, the conflict resolution school of thought entered research by attempting to adapt strategies of individual conflict resolution to armed conflicts, with the goal to restore good relations between parties, not only at the level of political leaders and elites but throughout society. The reconstruction of relationships at all levels of society is targeted by various activities, including conflict resolution workshops, dialogue projects to promote exchanges between groups and communities, and conflict resolution training to develop the capacities of actors capable of instigating change, such as women, youth, journalists, and networks of pacifist organizations (Mitchell, 2005, p. 13)

Only at the end of the Cold War and with the UN's Agenda for Peace of 1992 the concept of peacebuilding gained global importance. In these years the focus shifted from resolving disputes between states to managing armed conflicts within a single state, due to the increasing prevalence of internal armed conflicts, constituting 80% to 90% of all armed conflicts by the early 1990s (Miall et al., 2011, p. 48). The Agenda for Peace, published in 1992 by UN Secretary-General Boutros Boutros-Ghali, introduced the concept of post-conflict peacebuilding, recognising a new role for the United Nations and the international community in reconstructing war-affected societies. The euphoria in the early 1990s, sparked by the resolution of several armed conflicts, was short-lived because of the

tremendous developments in Somalia and the genocide in Rwanda. The number of peacebuilding activities surged from the mid-1990s, paralleling international debates on adapting existing instruments to new challenges posed by internal armed conflicts.

Following the Rwandan civil war, there was a debate on the topic of preventing armed conflicts, leading to considerations of early warning systems (Greene, 1993). However, the hopeful prospect of using quantitative methods to predict political violence and intervene promptly did not materialize, mainly due to the prevalent obstacle of insufficient political will to take timely action. The debate on early warning consequently stalled and merged into the more general discussion on armed conflict prevention and resolution. Concurrently, governmental institutions moved away from viewing traditional diplomatic conflict management, which centred on seeking political consensus between contending actors, as the sole and primary tool for preventing and resolving armed conflicts. Acknowledging the significance of civil society in internal conflicts, government donors initiated a shift in perspective, recognizing the potential of development aid to play a crucial role in stabilizing fragile and conflict-affected states. This recognition led to the establishment of stabilization programs which allocated substantial resources for aid interventions.

3.1.1 Stabilization programmes' objectives

The debate between governments, NGOs and international organization led to the recognition of several key element for armed conflict termination that could be targeted through the employment of development aid, especially in sub-Saharan Africa.

The first objective is to establish security and justice, which is achieved through the disarmament and integration of militias, rebel, and paramilitary forces into the government's military forces. In particular, this strategy reduces the risk that irregular forces, having lost their freedom of action, sources of funding and control of resources, will become a threat to security and turn to criminal activities to survive (Saidi, 2003, p. 8). The underlying logic is that without security it is impossible to rebuild the economy, provide essential services, or promote reconciliation.

The second objective is to build regional cooperation, which can help to prevent armed conflict from spreading, promote economic integration, and create a more stable environment for peacebuilding. Regional organizations such as the African Union and the Economic Community of West African States (ECOWAS) can play a key role in promoting cooperation and coordination between the security forces of neighbouring countries, allowing them to identify and address potential threats more effectively. Moreover, by providing political, financial, and technical support to countries in reconstruction, international organizations can help to rebuild destroyed infrastructure and restore government institutions. For instance, since 2003 the African Union (AU) has deployed peacekeeping forces to several countries in sub-Saharan Africa, including Burundi, South Sudan, Mali, and Central African Republic (CAR) in order to avoid the spread of armed conflict in the region. These missions, however, were marked by funding difficulties and logistical inadequacies, therefore the AU has shifted its strategy towards preventing the onset of armed conflicts through the implementation of initiatives such as "Silencing the Guns", which urges the resolution of the fundamental underlying causes and catalysts of armed conflict (Apuuli, 2020, p. 676).

The third objective is to prevent mass suffering and death, providing both short-term and long-term assistance. Humanitarian aid to those affected by armed conflicts, encompassing food, shelter, and medical care, is essential to lay the foundation for longer-term pacification efforts, which include establishing democratic institutions and promoting economic development. Additionally, stabilization programmes usually aim to promote reconciliation and healing, which means addressing the legacy of conflict, including human rights abuses and the extensive problem of impunity.

The fourth and final objective is to manage natural resources in an equitable manner. Natural resources have the great potential of being a source of social conflict, as they can be used to finance armed groups but also fuel corruption. For most NGOs operating in sub-Saharan countries, effective natural resource management is now one of the main targets for promoting sustainable development and armed-conflict termination. This concretely translates into coordinating aid efforts in order to build the capacity of local institutions and promote accountability.

3.1.2 Supposed violence-reducing mechanisms

Development aid targeting the abovementioned objectives massively increased in volume following the 2001 terrorist attack in New York, as the United Stated but also most multilateral organizations perceived that vulnerable states posed a global security risk (Patrick, 2007, p. 644). International cooperation was recognized as a major strategic tool for stabilisation, and the military was extensively utilized aid as "monetary ammunition" in counterinsurgencies, with the aim of winning the hearts and minds of the local population, which means fostering trust, support, and collaboration among the community towards peacebuilding efforts and the legitimacy of the government's authority. Stabilization interventions lacked a precise definition of the term "stabilization" and did not adopt a specific strategy to achieve it (Zürcher, 2022, p. 26). Instead, they implemented a broad range of activities that can all be reconducted to the linking mechanisms between development aid and the cessation of armed conflicts that had been theorized by the literature presented in Chapter One.

The first strategy centred on winning the hearts and minds of the local population through the rapid restoration of essential services. By re-establishing critical services such as education, water supply, sanitation, transportation, and healthcare, donors aimed to garner support and cooperation from the community. This approach operates on the principle of a "peace dividend", anticipating that rebuilding these services would cultivate positive sentiments toward the government and its foreign supporters, making local population less likely to support insurgents and ultimately contributing to the establishment of a more legitimate and capable government.

The second strategy aimed at directly strengthening the mediation and conflict resolution capabilities of communities and political actors. Donors supported conflict management and peace-building processes at the local level, offering training in dispute resolution, facilitating peace meetings, and reinforcing local-level justice support. Additionally, initiatives like creating peace clubs provided spaces for communities to learn mediation skills, fostering grassroots stability.

The third mechanism revolved around supporting political institutions and processes deemed crucial for stability, such as backing the transformation of rebel organizations into political parties, supporting the Disarmament, Demobilization, and Reintegration (DDR) process, and endorsing truth and reconciliation commissions. Donors also contributed to legislative bodies and advocate for political and fiscal decentralization in Mali, for instance, to mitigate regional competition (Zürcher, 2022, p. 27).

The fourth mechanism focused on enhancing economic opportunities for communities. By creating legitimate income sources and improving economic prospects, this mechanism aimed at making recruitment and fighting less attractive for insurgents, contributing to overall stability. This strategy is primarily enacted through employment programs, frequently implemented in the form of cash-for-work initiatives, but also training programs and the initiatives to provide access to credit.

The fifth and final strategy focused on supporting civil society actors. Recognizing unresponsive and corrupt governments as sources of instability, donors believed that empowering capable civil society actors could enhance government accountability. This was seen as a vital component in rebuilding the social contract between governments and their communities, contributing to long-term stability.

In summary, the stabilization programs implemented in the aftermath of the 2001 terrorist attack were driven by a multipronged approach, reflecting the complexity of armed conflict resolution. The recognition of the interconnectedness of essential services, community resilience, political processes, economic prospects, and civil society empowerment highlighted the holistic nature of stabilization efforts. However, the lack of a precise definition and a specific strategy for stabilization programs raised challenges in assessing their effectiveness, reducing their potential impact on armed conflict dynamics.

3.2 Opportunity-cost model

Out of the various causal mechanisms examined, the opportunity-cost model stands out as the most well-supported in the context of sub-Saharan armed conflicts, which are predominantly civilian-based and unfold within societies grappling with economic deprivation. The opportunity-cost model is based on Gary Becker's theory of crime, which revolutionized the understanding of criminal behaviour by framing it within an economic perspective. Becker argued that individuals make rational decisions based on the perceived benefits and costs of engaging in criminal activities. According to this theory, individuals engage in criminal activities when their expected benefits outweigh their expected costs (Becker, 1968, p. 170).

This economic framework can be applied to the decision-making processes of individuals considering joining or remaining within a rebellious group. In general, the likelihood of conflict decreases as income per capita increases, particularly when there are advancing and improving economic alternatives available for potential rebels (Collier & Hoeffler, 1998). The prospect of employment was cited as the primary motivation for recruitment by over 2,000 former members of violent extremism groups, which were interviewed by the United Nations Development Programme (UNDP) across eight countries in sub-Saharan Africa[13]. This reflects widespread grievances related to socioeconomic injustice and marginalization. Male volunteers who joined insurgent groups indicated that they earned considerably less before joining, as they were predominantly engaged in precarious or vulnerable employment (UNDP, 2023, p. 15).

In environments characterized by low labour costs and limited economic prospects, the recruitment of insurgents becomes more feasible. Incentives like the promise of financial gain, increased social standing, or a sense of purpose can sway individuals, particularly among the disillusioned youth, towards joining insurgent groups (Collier, 2000, p. 841). Many sub-Saharan African states grapple with profound developmental challenges, marked by high population growth

[13] Countries included in the report are Burkina Faso, Cameroon, Chad, Mali, Niger, Nigeria, Somalia and Sudan.

rates, economies heavily reliant on subsistence agriculture and lacking diversification, while routinely confronting natural hazards such as droughts, erratic rainfall, and floods. The interconnectedness between increased poverty and armed conflict can be exemplified through the case of Mali, where a toxic combination of drought and other economic problems further impoverished the population, contributing to the growth of the Tuareg rebel movement. Indeed, the armed conflict primarily involved agricultural and pastoral communities and was fuelled by intense competition for land and water resources (Zürcher, 2022, p. 20).

In such contexts, aid interventions can reshape the opportunity-cost calculations for potential recruits since, by providing lawful channels for income, aid initiatives can lower the expected benefits associated with choosing insurgency. When individuals perceive legitimate opportunities for economic advancement, the attractiveness of joining a rebellious group diminishes (Zürcher, 2022, p. 26). The implementation of policies aimed at addressing economic disparities, generating job opportunities, and enhancing economic development thereby constitute a vital component of effective counterinsurgency strategies.

The opportunity cost model is closely linked with employment programs, notably in the form of cash-for-work initiatives. Researchers such as Crost et al. (2016), Dasgupta et al. (2017), and Hoelscher et al. (2012) attribute the observed reductions in violence resulting from a substantial employment scheme to the heightened opportunity costs associated with insurgency. Other than employment programs, any labour-intensive and revenue-generating aid program theoretically has the potential to elevate opportunity costs for insurgency. Conditional Cash Transfer programs stimulate the local economy, leading to higher incomes from peaceful activities, thereby making participation in the rebellion less appealing (Crost et al., 2016).

The opportunity-cost violence-reducing mechanism hinges on a crucial precondition: the dampening effect on battle-related deaths will only occur if insurgents are primarily motivated by private economic gains, and it may not be applicable to insurgencies primarily driven by ideology. Notwithstanding, in sub-Saharan Africa, ideologies within rebel movements are frequently mere

façades. Many rebel groups in the region do not necessarily adhere to a particular ideology, and they may even switch ideologies intermittently, reflecting the notion that ideological banners are often a smokescreen for economic motives. This trend is observable in various historical and contemporary cases across the region.

One illustrative example is given by the Lord's Resistance Army (LRA) in Uganda. Despite its predominant classification as a militia linked to Christian values and occasional references to Acholi nationalism, doubts linger among many observers regarding the loyalty to any particular ideology (Chatlani, 2007; Montclos, 2008). The LRA seems to largely operate as a personality cult centred around its leader, Joseph Kony. While initially claiming to be fighting for the establishment of a theocratic state based on the Ten Commandments, the LRA's actions, such as abducting children for use as soldiers and engaging in widespread violence, suggest motivations beyond a genuine ideological commitment (International Crisis Group, 2004, p. 5).

Another example is given by various armed factions fighting in the Democratic Republic of Congo (DRC), who have switched alliances and ideologies opportunistically, adapting to changing circumstances. It is often argued that rebel groups such as M23 (March 23 Movement), FDLR (Democratic Forces for the Liberation of Rwanda), ADF (Allied Democratic Forces), and Mayi-Mayi exploit ideological covers to gain external support, diverting attention from their primary economic motivations, that is the control over the DRC's lucrative natural resources. The rebels' ability to maintain financial sustainability is more significant than ideological motivations (Neethling, 2014, p. 343). The FDLR, for instance, rely heavily on funding derived from illicit mining activities of gold, cassiterite, coltan, and wolframite, who contribute to estimated profits in the millions of dollars. Similarly, since its establishment in 2012, the M23 rebel group has asserted control over a lucrative segment of the gold trade in the eastern DRC.

Certainly, when faced with the inherent challenges posed by their numerical disadvantage, insurgents' ability to engage in warfare is shaped by a myriad of factors. For their sustenance, rebels need access to arms, materials, and the financial means to procure them, or tradeable goods that can

serve as currency for these acquisitions. More importantly, the continuous recruitment of individuals dedicated to the insurgent cause is paramount for the ongoing success of their operations (Fearon & Laitin, 2003, p. 80). This underscores that, especially in the short term, material considerations outweigh ideological factors in determining the trajectory of insurgent activities.

3.2.1 Interpretation of estimation results through the opportunity-cost model

The preceding discussions lead to the conclusion that the opportunity-cost model effectively explains the observed reduction in violence resulting from aid interventions in sub-Saharan Africa's armed conflicts. This is particularly evident in the sectors of Population Policies/Programmes & Reproductive Health, Government & Civil Society, Banking and Financial Services, and Agriculture, as discussed in Chapter Two.

Aid resources allocated to the sector of Population Policies/Programmes & Reproductive Health are primarily focused on reproductive health care, control of sexually transmitted diseases (STDs), family planning, and personnel development for these critical activities. These interventions carry significant importance in the daily lives of many sub-Saharan civilians, who shoulder a disproportionate burden of the global HIV infections, surpassing 70% (Kharsany & Karim, 2016, p. 35). Indeed, it is estimated that over 25 million sub-Saharan people are living with HIV (WHO, 2024). Despite notable progress in expanding cost-effective antiretroviral therapy (ART), the expense of treating AIDS remains a significant obstacle for the region's most impoverished citizens. As economic hardships and limited access to healthcare can enhance the appeal of economic incentives provided by rebel groups, offering free treatment through aid initiatives can influence potential recruits' decision to join armed groups, or compel existing members to disengage from guerrilla activities. An efficient medical system creates an environment where individuals perceive legitimate economic opportunities, making joining a rebel group less appealing. Furthermore, aid efforts that promote professional development and skill-building within the local population can provide an alternative career path, diverting individuals from joining violent extremist groups.

Within the Government & Civil Society sector, aid initiatives strive to cultivate an environment where citizens perceive viable and legal avenues for personal and economic advancement. These efforts encompass a broad spectrum of activities, including support for administrative systems, management of macroeconomic policies, government budget management, taxation, decentralization processes, legislative and judicial progress, democratic participation, anti-corruption measures, and civilian peacebuilding. These initiatives bolster the capabilities of civil society organizations by providing financial support, enabling them to actively contribute to the promotion of good governance and inclusive economic growth. Effective governance and a robust civil society play pivotal roles in fostering socio-economic stability, altering the cost-benefit considerations for potential recruits, and steering them away from extremist organizations. Indeed, the presence of genuine opportunities for economic advancement tends to diminish the appeal of joining rebellious groups.

Aid directed towards Banking and Financial Services, facilitating access to international credit, has the potential to effectively reshape the balance of opportunity costs, as illustrated by the noteworthy achievements of the Organisation d'appui à l'autopromotion (Organization for Support to Self-Promotion, OAP). This local non-governmental organization, supported by the Swiss Institute of Development Studies – IUED, was instrumental in transforming the economic landscape of the Burundian province of Bujumbura. During the 1993-2005 Burundian civil war, the OAP assisted communities in the western part of the country to develop profitable activities, access credit facilities, and spearheading construction and sanitation projects for both infrastructure and housing. Initiatives like the OAP contributed to grassroots socio-economic progress, generating numerous employment opportunities and, in turn, fostering a more peaceful environment by diminishing the perceived benefits associated with insurgency.

Finally, the Agriculture sector holds considerable sway over the daily lives of a majority of sub-Saharan Africans. Rural youth, constituting around 40% of the total African youth population, predominantly engage in agricultural activities, highlighting the sector’s pivotal role in employment

(Sakho-Jimbira and Hathie, 2020, p. 5). Simultaneously, the prevalence of undernourishment, affecting about 24.1% of the sub-Saharan population, underscores the critical challenges faced by these communities (John-Joy Owolade et al., 2022). In 2021, approximately 52% of the employed population in Sub-Saharan Africa was engaged in agriculture, yet the continent exhibits the lowest productivity per worker rates globally (Akiwumi, 2022). In light of these circumstances, aid programs aimed at bolstering rural development play a crucial role in alleviating the vulnerabilities of the poorest populations. These initiatives directly impact the economic considerations of potential insurgents by offering legitimate income opportunities within the agriculture sector. Consequently, such aid efforts contribute to elevating the costs for individuals contemplating involvement in rebellious groups.

Compared to the aforementioned sectors, humanitarian aid holds in theory an equal potential to yield violence-diminishing effects within the framework of the opportunity-cost model. Indeed, such aid can address underlying economic grievances, as humanitarian assistance provides for essential needs such as food, clean water, shelter, and healthcare. Moreover, humanitarian aid programs can include initiatives that create educational support and livelihood opportunities, including vocational training, support for small businesses, or agricultural assistance. Yet, the findings presented in Chapter Two align with the prevailing consensus in the literature (Narang, 2014, 2015; Nunn & Qian, 2014; R. M. Wood & Molfino, 2016; R. M. Wood & Sullivan, 2015), suggesting that stabilization initiatives have not expedite the termination of the armed conflicts they were targeting. Quite the opposite, there is a significant association between humanitarian aid and prolonged armed conflicts. Exploring the roots of the inefficacy of foreign aid is imperative, as they produce the so-called “paradox of humanitarian aid”, which, although driven by benevolent intention to alleviate suffering, tends to extend the duration of armed conflicts (Terry, 2002)

3.3 Aid's violence-increasing effects

The main body of evidence supporting aid's violence-increasing effects conclusions is drawn from Afghanistan, especially from numerous reports from the Special Inspector General for the Reconstruction of Afghanistan and assessments of stabilization programs by the UK (Bennett et al., 2009), the US (Kerry et al., 2011), Denmark (Evaluation Department, 2012), and Canada (Melanson, 2015). According to these evaluations, the most extensive stabilization program in Afghanistan, spearheaded by the US, not only failed to diminish violence but also exacerbated inter-group tensions and provoked further violence. Notably, the Commander's Emergency Response Program did not lead to a reduction in violence or the anticipated improvement in local sentiment towards the government and its international allies. Similar outcomes were observed in evaluations of community-driven development programs and projects designed to enhance youth employment through technical education.

These findings also extend to the sub-Saharan countries of Mali and South Sudan, where stabilization interventions proved ineffective in most internal assessments and independent studies on the subject. In South Sudan, attempts to deliver "peace dividends" and support DDR measures encountered obstacles due to the lack of political will within the South Sudanese government. Donor-backed initiatives for dialogue, conflict management, and peacebuilding at the local level did not result in noticeable reductions in violence, and the long-term impact on stability remains uncertain. In Mali, evaluations of interventions at both national and local levels, including support for truth and reconciliation commissions, media campaigns, and decentralization efforts, failed to demonstrate a significant contribution to stability (Zürcher, 2022, p. 28).

The debate on the causal mechanisms for such unintentional negative effects is still relevant today but several causality links were identified as early as the 1990s and thoroughly discussed after the 1994 Rwandan civil war (Uvin, 1998). One of the most popular theories suggested that the resource transfer through humanitarian aid could inadvertently favour specific groups or regions, exacerbating existing inequalities and resentment, which later would lead to increased violence

(Alterman, 2018). Another theory posited that such cooperation could unintentionally contribute to war efforts by freeing up funds for the central government, subsequently allowing for heightened military expenditures (Collier & Hoeffler, 2007). For instance, in the conflict between Ethiopia and Eritrea, it was argued that international aid organizations, in their efforts to aid the vulnerable, unwittingly contributed to augmenting the Ethiopian government's military resources.

However, a more convincing explanation for the humanitarian aid paradox can be deducted from the analysis of a 2018 joint report by the Department of State, the U.S. Agency for International Development (USAID) and the Department of Defense (DoD). The report highlighted the fact that in Afghanistan most stabilization projects consistently suffered from a lack of strategic clarity and organizational discipline and that they prioritized the most dangerous and insecure zones of the country, where the effectiveness of aid was limited. The review cautioned against future endeavours involving overly ambitious large-scale reconstruction, advocating instead for more context-appropriate, smaller, and localized initiatives aimed at creating pockets of stability (Department of State et al., 2018, p. 7).

The core message conveyed by the aforementioned report is that in regions profoundly impacted by armed conflicts, particularly those under insurgent control, certain intervening factors hinder the ability of foreign aid to produce a stabilizing impact. The complexities of aid deployment within such contexts underscore the essential understanding that aid operations do not unfold in a vacuum, disconnected from the intricate dynamics of ongoing armed conflicts. Rather, when international aid is provided within the framework of an armed conflict, it becomes an integral component of the armed conflict itself (Anderson, 1999, p. 145). In such contexts, the acquisition and control of aid resources represent not only material support for military operations but also a means to consolidate economic and political power. It is both unproductive and naïve to anticipate that warlords would readily embrace the humanitarian principle of advocating an equal entitlement to aid for all victims, including their enemies. Contrary to humanitarian ideals, military factions are driven

by pragmatic considerations to derive tangible benefits from any available resource, including foreign aid, given its inherent link with economic wealth and political influence.

The theoretical frameworks of the predation and sabotage models provide valuable insights into the interfering factors with aid delivery in regions affected by armed conflicts. It is essential to note that the strategies of sabotage and predation are not mutually exclusive; rather, they often coexist as vital goals for insurgents. Through sabotage, insurgents typically aim to prevent their adversaries, often the central government, from gaining a strategic advantage from foreign aid. Conversely, through predation of aid, insurgents seek to gain an economic and political advantage for themselves. This dual strategy obstructs humanitarian initiatives and generates an escalation in violence, determining the observed violence-increasing effects of humanitarian aid.

3.3.1 Sabotage

The sabotage model serves as an extension of both the hearts-and-minds model and the information-sharing model. The concept of winning "hearts and minds" relies on the idea that by providing aid in the form of public goods, communities will cultivate more positive sentiments toward the government and its international allies, decreasing the probability of supporting insurgencies. Then, the information-sharing model posits that local communities possess vital information about insurgent activities and that the commitment of development aid acts as an incentive for these communities to share such information with donors.

The reasoning behind the sabotage mechanism implies that insurgents employ violence against those deemed as "collaborators" with the government. This approach aims to disrupt both the benevolent attitude of civilians and any potential collaborative ties between these civilians and the government. Furthermore, such violent actions act as a deterrent, discouraging any future cooperation or collaboration. Insurgents attack aid workers, government officials, and even communities implementing or planning to implement development projects, thereby intensifying violence in the

short term. This seldom leads to the cessation of aid projects expected to undermine the insurgents' position.

Rebel groups often view foreign aid as disguised counterinsurgency measures, and frequently denounce programs as "revolutionary" and "anti-development" because the successful implementation of government-supported projects would undermine the insurgents' standing among the local population. Rebel groups find it easier to recruit support and carry out clandestine activities due to the state's failure, which may generate discontent and make individuals more susceptible to their cause. The logic behind this mechanism aligns with bargaining models, where a successful aid program can shift the balance of power in favour of the government, reducing insurgents' bargaining power and payoffs in subsequent negotiations (Powell, 2012, p. 621).

In contrast to alternative theories that fall short in elucidating this phenomenon, the sabotage model proves to be robust in clarifying why instances of violence may escalate before the commencement of foreign aid deployment, a phenomenon observed by Crost et al. (2014). Their research revealed that a substantial number of municipalities, experiencing an increase in battle-related fatalities during the preparatory phase of the analysed project, were more inclined to opt out of participation in subsequent stages (Crost et al., 2014, p. 1852).

Furthermore, Weintraub's (2014) research primarily delves into the information-sharing model. The proposed theory offers insights into the characteristics of insurgent violence, positing that rebels, struggling to identify collaborating civilians, will turn to indiscriminate violence against local communities. Economically disadvantaged people are likely to face heightened violence as they provide information to secure the continuation of development assistance, thereby prompting insurgents to resort to indiscriminate violence with greater speed and severity (Weintraub, 2016, p. 990).

3.3.2 Predation

The theoretical underpinnings of the predation model can be traced back to the 1990s (Grossman, 1991; Hirshleifer, 1991; Skaperdas, 1991). This model, fundamental to the "do-no-harm" literature (Anderson, 1999; Uvin, 1998), posits that, in regions where the ruling government's control is limited outside the capital, armed factions exploit the transportation of foreign aid across vast geographic territories. This exploitation is conducted by looting or imposing taxes on aid, subsequently channelling the proceeds into sustaining their capacity for violence. Certain aid items, such as food, health supplies, fuel, construction materials, vehicles, and communication systems, are readily susceptible to looting and may be utilized directly by armed forces or sold to procure essential materials. By contrast, other forms of aid may be subjected to taxation: insurgent groups, for instance, often require substantial payments for granting permission to operate within their territory or ensuring the safety of organizations and their local collaborators.

Predatory activities necessitate specific prerequisites on the part of the perpetrators, such as acquiring information regarding the nature, location, and timing of available goods. Moreover, the thieves usually must have the means to establish strategic location, such as a checkpoint, a narrow road, or a warehouse, where they can gain control of the goods. Additionally, they must possess sufficient knowledge that goods of substantial value will be obtainable, rendering the theft economically viable. Finally, the perpetrators must ensure their ability to evade detection, relying on some form of impunity for their actions (Anderson, 1999, p. 39). Insurgent groups engaging in theft are thus well-informed and powerful, at least in the territory under their control.

The rationale behind the predation model has garnered substantial support, particularly evident in qualitative single case studies (Bradbury & Kleinman, 2010; De Waal, 1997; Goodhand, 2002; Luttwak, 1999; Polman, 2011). For instance, during the early 1990s in Somalia, reports indicate that between 20 and 80 percent of food aid shipments were either looted, stolen, or confiscated, as different factions established roadblocks and demanded taxes from aid agencies for safe passage (Barnett, 2011, p. 173). Afterwards, the looted assistance was exchanged for weaponry on the border

with Ethiopia (Perlez, 1992). More recently, prominent instances of aid manipulation by local warlords have surfaced in Somalia, particularly involving reports of food aid diversion to al-Shabab, which even imposed a security fee of $20,000 every six months on World Food Program's agents (MacFarquhar, 2010).

In some cases, the scale of theft surpasses the mere value of foreign aid, extending to include convoy vehicles and their equipment. An international aid organization active in Chad and Darfur, MSF Holland, underscored the strategic importance of these assets, asserting that vehicles and communications equipment significantly increase insurgent's capacity to wage war, beyond their monetary value given the strategic value of such resources (Polman, 2011, p. 105).

A pertinent example of humanitarian aid supporting rebel groups transpired during the Nigeria-Biafra civil war in the late 1960s. During this conflict, the insurgent leader Odumegwu Ojukwu mandated that aid shipments could only access the Biafra region, which was under rebel control, if transported on his aircrafts (Barnett, 2011, p. 135). Ojukwu imposed charges on aid agencies for utilizing his transportation services, and he strategically utilized the additional space on the planes to convey arms and military equipment. This resourceful manoeuvre not only allowed Ojukwu to navigate past the siege imposed by the Nigerian government on Biafra but also played a pivotal role in sustaining his armed forces, extending the duration of the Biafran civil war beyond the initially projected timeframe (Polman, 2011, p. 119).

It's noteworthy that aid misappropriation extends beyond rebel militias, as ruling governments, their military, and government supporters also engage in this practice. In the early 1990s, the Rwandan government itself was involved in stealing food aid, leading to the cancellation of aid shipments on multiple occasions (Uvin, 1998, p. 90). Moreover, governments receiving aid often selectively distribute it to specific populations, excluding opposition groups or potentially rebellious regions, exacerbating hostilities, and contributing to conflict dynamics. The manipulation of aid has become a permanent feature of military strategy, where belligerents ensure the enemy receives minimal aid while maximizing their own access (Polman, 2011, p. 10).

Humanitarian aid workers acknowledge the risk of aid theft, prompting the development of various strategies to minimize theft during transportation. However, even if aid successfully reaches its intended recipients, it can still contribute to conflict. Recipient populations may include members of rebel or militia groups, or the aid recipients are asked for money after receiving assistance (Nunn & Qian, 2014, p. 1635). A poignant example occurred in the Hutu refugee camps near Goma following the Rwandan genocide in 1994, where Hutu extremist leaders imposed taxes on civilians. The aid facilitated regrouping and rearmament of the Hutu extremists, enabling subsequent raids into Rwanda, contributing to both the First and Second Congo Wars (Lischer, 2005, p. 77).

Altogether, predation and sabotage operations orchestrated by insurgent groups significantly compromise humanitarian aid, disrupting the virtuous mechanism inherent in the opportunity-cost model which takes place with other types of foreign aid. Instead of contributing to the reduction of armed conflict duration, humanitarian aid, while intended to address the needs of civilian populations affected by armed conflict, ends up exacerbating the situation. As discussed earlier, any form of aid can fall victim to taxation or sabotage in highly insecure regions under insurgent control, therefore the negative impact of humanitarian aid on the duration of armed conflicts is not contingent on its material nature, as in the case of food or medical supplies. Instead, the detrimental effects of humanitarian aid can be linked to the geographical locations where this type of foreign aid is predominantly deployed: in countries affected by armed conflict, development cooperation tend to persist in areas where feasible, while humanitarian aid focuses on regions affected by crises. Regions deemed relatively “peaceful”, such as southern Uganda or northern Sudan, may allow for traditional development cooperation. Given that humanitarian aid is most urgently required in areas characterized by high levels of insecurity, the inherent risk associated with such regions makes the deployment of such aids challenging and prone to disruption, as will be discussed in the following section.

3.4 The role of state capacity

The findings of this research, coupled with insights from existing literature (Felbab-Brown, 2010; Staniland, 2014; Stearns, 2013; Terry, 2002; Weiss, 2011; Whitaker, 2008; Zürcher, 2019), strongly suggest that introducing aid in areas under insurgent control tends to escalate armed conflicts. Using aid as a means to foster stability in highly insecure regions appears to be an ineffective approach, as evidenced by the costly and challenging cases of stabilization operations conducted in Afghanistan, Mali, and South Sudan. Therefore, the pivotal role of state capacity emerges as a critical factor if aid is to play a role in curtailing the duration of armed conflicts or, at the very least, to avoid contributing to their prolonged continuation.

Indeed, there is a widespread consensus that, in countries affected by armed conflict, the primary responsibility for peacebuilding should rest with national actors, while the role of external actors should be confined to supporting national initiatives (Paffenholz, 2006, p. 41). In general, the capabilities of the government's police and military, as well as the extent of government institutional presence in rural areas significantly influence the prospects of an emerging insurgency. Insurgents stand a better chance of survival and growth when confronted with a weak government, marked by organizational inefficiency, political disunity, and a lack of awareness about local affairs, because military counterinsurgency demands that government forces can distinguish between active rebels and noncombatants without causing harm to the latter. This poses an extremely challenging political, military, and organizational problem, even for well-equipped and well-compensated modern military forces. The challenge becomes even more formidable for poorly funded and bureaucratically inefficient states (Fearon & Laitin, 2003, p. 80). In such cases, these states struggle to prevent the abuse of local authority by field commanders or may even tacitly permit such abuses as a form of military taxation. This involves compensating soldiers with the freedom to engage in looting and pillaging, a practice that tends to perpetuate rather than resolve insurgencies (Keen, 1998).

If the effectiveness of foreign aid is contingent on beneficiaries having reliable policies and competent institutions, the question that emerges is how development cooperation should be

implemented in what are commonly referred to as fragile states, which are frequently impacted by armed conflict (Paffenholz, 2006, p. 30). A state is considered fragile when its central government fails to maintain effective control over its territory, experiences weakened legitimacy, and lacks the capacity or willingness to deliver essential services to its population (Naudé et al., 2011, p. 17). These services encompass protection from violence and access to fundamental necessities such as food, shelter, healthcare, education, and economic opportunities. Fragility is often associated with factors such as limited economic growth and opportunities, pervasive poverty, diminished life expectancy, elevated population growth, particularly in rural regions, insufficient educational attainment, and internal and external migration. Additionally, fragility is often compounded by widespread violence, intensifying the challenges associated with development (Zürcher, 2022, p. 15).

The definition of fragile state comprehends failing, failed, and recovering states; nevertheless, the practical distinction among these categories is often unclear, as the trajectory of fragile states is seldom a predictable journey of failure and recovery. Moreover, these labels might obscure substate and regional conditions, such as insurgencies that can significantly contribute to fragility. The emphasis should therefore be on comprehending the extent and speed at which a country is transitioning towards or away from stability, rather than rigidly categorizing it as failed or not (USAID, 2005, p. 1).

In highly fragile states, actual political influence is not concentrated within formal political institutions but extends throughout patronage networks that operate beyond these structures — a characteristic scenario frequently observed in sub-Saharan African societies. In such contexts, elites, rather than bolstering official state institutions, are inclined to nurture their patronage networks, which form the foundation of their authority and contribute to their political, and often material, survival. This system gives rise to rent-seeking, institutionalized corruption, and intense competition among rival networks, creating significant hurdles for the economic development of fragile states and fomenting grievances among the civilian populace. An important consequence of this political economy is the resistance of elites to political reforms that might endanger their favoured mode of

governance, which provides them and their inner circle with substantial advantages (Zürcher, 2022, p. 15). Consequently, donors often grapple with leaders who lack the political will to enact policies fostering greater accountability, robust formal institutions, democratic processes, and overall development that could lead to economic redistribution.

For initiatives to effectively shorten armed conflict duration, they must bring about tangible improvements in local population's livelihoods on a scale significant enough to discourage participation in insurgency, and enhance the state's legitimacy in relation to insurgent groups. However, the implementation stage often proves to be a stumbling block, even for well-conceived programs (Dasgupta et al., 2017, p. 609). Similarly, domestic development programs often falter during implementation due to weak enforcement or elite capture (Robinson & Acemoglu, 2012, p. 494). Weak state capacity, or the government's inability to administer its territory effectively, emerges as a crucial factor contributing to the failure of policy implementation. In highly insecure regions, powerful societal elites may exploit corruption to divert funds, and bureaucracies may lack the necessary administrative capacity to absorb funds and provide services (Fukuyama, 2004, p. 19).

Consequently, aid's stabilizing effects are rare and contingent on specific conditions, such as reasonably secure, government-controlled regions with limited insurgent capacity. Transparent, participatory implementation through accepted local authorities is crucial, while the absence of these conditions may exacerbate corruption and inter-group conflicts. In areas where local state capacity is weak, program funds are unlikely to reach local populations, while providing opportunities for rebel financing, and corruption may exacerbate grievances with the state. Conversely, in areas with strong local state capacity, well-designed foreign aid programs have the potential to significantly enhance livelihoods, undermining popular support for insurgency and reducing the economic incentives for rebellion, as predicted by rebel opportunity cost theories. Thus, variations in state capacity, which exists across as well as within countries, explain important but previously unobserved heterogeneity in the effects of development aid on armed conflicts.

In summary, while aid alone cannot extinguish insurgencies, it may have a stabilizing impact in regions with moderate security and governance, suggesting that stabilizing efforts should prioritize building upon existing pockets of stability rather than focusing on high-risk areas where insurgents have the capacity to sabotage, steal and tax foreign aid. Moreover, the implementation of aid should follow a participatory approach, preferably through recognized local authorities, ensuring transparency and avoiding favouritism or corruption benefiting local power players. In the absence of these rare conditions, aid is unlikely to enhance stability; rather, it may intensify corruption and inter-group conflicts (Zürcher, 2022, p. 30).

The Paris Declaration on Aid Effectiveness (OECD, 2005a) marked an early recognition that aid deployed in fragile states could potentially yield adverse effects on the duration of armed conflicts. Despite this understanding, donor states made a collective decision to persist in their commitment and sustain aid flows, primarily motivated by the desire to avoid holding civilian populations accountable for the shortcomings of their government services (OECD, 2005b, p. 5). While these ethical considerations fall beyond the scope of this research, it is crucial to dispel the belief that aid deployed in highly insecure regions inherently exerts stabilizing effects, as empirical evidence indicates otherwise. Stabilization programs in Afghanistan, Mali and Sudan misjudged the capabilities and effectiveness of governments and gave priority to the riskiest and most unstable areas of the countries, where assistance was seldom successful and excessive funds were disbursed quickly without enough control or outcome monitoring. On the contrary, stabilization programs ought to redirect their focus towards alternative forms of aid in sectors like population policies, government and civil society, banking and financial services, and agriculture. Indeed, these forms of aid are typically implemented in regions of countries affected by armed conflicts that are relatively stable and not under insurgent control, enabling them to exert their inherent effects in reducing violence and armed conflict duration.

CONCLUSIONS

Implications for international cooperation

In his work on "Violent Conflict, Poverty, and Chronic Poverty" (2001), Goodhand identifies three distinct approaches for operating at the project level in countries affected by armed conflict. The first approach involves “working around conflict”, where armed conflict is perceived merely as a risk to be avoided. The second approach, “working in conflict”, acknowledges the influence of development cooperation on conflict dynamics and strives to minimize adverse effects. The third and most proactive approach is “working on conflict”, which recognizes the potential for development cooperation to actively contribute to peacebuilding efforts.

By embracing the “work on conflict” approach, development practitioners and humanitarian actors could implement projects that are both sensitive to peacebuilding and aware of conflict dynamics, either within traditional frameworks or by directly funding and implementing peace-focused initiatives (Goodhand, 2001). While development organizations and bilateral donors have recently made efforts to implement this last approach, particularly since the 1990s with stabilization programs, it appears that they have not fully embraced and applied the “work in conflict” approach. Indeed, they often fail to recognize that, when international assistance is provided within the context of an armed conflict, it becomes an integral part of such conflict, influencing its dynamics.

Despite aid organizations typically aiming for a neutral or nonpartisan stance in conflicts, the impact of their assistance is not impartial. The primary partner for donors and aid organizations operating in countries affected by armed conflicts is usually the government of the country itself, which, however, is often a party to the conflict, complicating traditional cooperation. This challenge intensifies if aid organizations must engage with non-state actors opposing the government, who may disrupt government-backed projects or jeopardize the safety of aid workers in areas under their

control, which are the regions that often harbour the most vulnerable populations in need of assistance.

Foreign aid provided amid an armed conflict cannot exist independently of the conflict itself. As evidenced by this research, international assistance provided in armed conflict settings can have dual effects: it can either strengthen, worsen, and prolong the conflict, or alternatively, it can help reduce hostilities by diminishing the appeal of joining or perpetuating an insurgency. Therefore, understanding the context in which development assistance operates is crucial if aid is to stabilize deeply unstable societies. Donors working in fragile states with the aim of achieving lasting peace must prioritize conflict sensitivity and comprehend the specific mechanisms underlying local insurgencies since, without such contextual awareness, stabilization programs risk exacerbating armed-conflict dynamics rather than mitigating them (Anderson, 2004).

In contrast to the prevailing notion linking the post-1990s rise in internal armed conflicts in sub-Saharan Africa with the post-Cold War international scenario, the foundation of the armed conflicts examined in this research can be traced back to longstanding internal conflicts of African societies, dating back to the 1950s. The process of decolonization resulted in the emergence of numerous financially, bureaucratically, and militarily weak states, which have remained susceptible to civil violence, predominantly in the form of insurgency or rural guerrilla warfare (Fearon & Laitin, 2003, p. 88). The critical factors contributing to the typically prolonged duration of civil armed conflicts between 1996 and 2022 revolve around the insurgent groups' ability to elude government forces and the presence of underdeveloped economic conditions that incentivize young men to rebel. These ideal conditions often present themselves in the peripheral rural areas of fragile sub-Saharan states, where strong precolonial identities persist and are exploited by warlords seeking political and economic advantages.

When evaluating and planning interventions, international donors frequently operate under the assumption that their methodologies are equally efficacious in highly unstable regions as in stable

ones, thereby necessitating no adaptation (Paffenholz, 2006, p. 32). However, operations in territories controlled by rebels often entail additional challenges, such as security risks to personnel and infrastructure, and the inability to reach beneficiaries or program partners. In order to ensure effective aid provision, organizations must acknowledge that international cooperation projects aimed at unstable regions can unintentionally worsen conflict dynamics despite their noble intentions.

Nevertheless, such acknowledgment is often absent. Both qualitative and quantitative research, such as this thesis, often provide valuable insights that regrettably go unnoticed by donors, resulting in a gap between analysis and implementation. While concerns about security risks in rebel-controlled territories, with the potential to escalate violence, have been voiced since the 1990s, they were seldom integrated into international aid projects. Consequently, analyses tend to remain isolated efforts rather than being seamlessly incorporated into routine planning and implementation procedures.

For example, despite clear evidence highlighting the drawbacks and risks of relying on state-driven security measures to address violent extremism, militaristic approaches have persisted as the predominant strategy in sub-Saharan Africa over the past five years (UNDP, 2023, p. 23). During this period, there has been a notable increase in resources allocated to various multinational military coalitions established to conduct counter-terrorism operations, often supported by the same bilateral donors investing in stabilization projects through international aid. Notwithstanding, over the last decade violent extremist groups have notably expanded their influence and impact, particularly in the Sahel region.

Enhancing evidence-based policymaking and implementation is particularly crucial for interventions in fragile settings, where achieving Sustainable Development Goals (SDGs) poses significant challenges. The findings from data-driven research should serve as the foundation for fostering constructive discussions among policymakers, politicians, and international organizations. Furthermore, it is imperative for researchers and scholars to continue expanding the evidence base presented in this study, in order to deepen our understanding of the complex dynamics at play in

countries affected by armed conflicts, ultimately leading to more informed and impactful policy decisions and interventions.

Addressing this vulnerability is essential for unlocking the full potential of development cooperation in promoting peace and stability in countries affected by armed conflicts. As highlighted in this research, nearly all international aid interventions have the potential to contribute to peacebuilding, provided they are directed to stable regions. Adopting an approach that systematically evaluates potential issues enables actors to assess whether they can contribute to peace promotion while pursuing development cooperation objectives. Until these analyses are effectively implemented, the substantial peacebuilding benefits of many development projects risk being overshadowed by the negative repercussions of aid directed to unstable regions. This leaves development cooperation susceptible to criticism as ineffective or even harmful, potentially prompting calls for its suspension, despite the crucial positive outcomes it most often delivers.

Critics of international aid frequently point out instances where foreign assistance has led to harm rather than benefiting its intended recipients. While these concerns are acknowledged, issuing a blanket condemnation of aid due to occasional failures is both morally and logically flawed. Claiming that providing aid, despite potential negative consequences, is inherently worse than ceasing assistance altogether is fallacious. This research emphasizes the positive influence of international aid as a beneficial force. Nonetheless, the main challenge moving forward is delivering aid without unintentionally enabling its exploitation for armed conflict purposes.

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