CONFLICT MANAGEMENT IN AFRICA:

The post-conflict risk

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Abstract

One of the main challenges of post-conflict reconstruction is the reduction of the risk of recurrence of conflict. The aim of this article is to identify the various parameters that may affect the risk of recurrent conflicts in African post-conflict countries. We thus analyze through survival analyses of the periods of peace in different conflicts during a five-year period between 1960 and 2008. Our results reveal that previous conflicts characteristics, as well as socioeconomic and institutional factors, affect the government ability to avoid repeated conflicts.

***Keywords*:** fragile state, risk, conflict recurrence, post-conflict.

JEL Codes: C41, H56, O11, O55

List of Abbreviations and Acronyms

ACD	:	Armed Conflict Dataset
AfDB	:	African Development Bank
CAR	:	Central African Republic
CPA	:	Certified Public Accountant
CPIA	:	Country Policy and Institutional Assessments
CPPR	:	Country Portfolio Performance Rating
COW	:	Correlates of War
DDR	:	Disarmament, Demobilization and Reintegration
DRC	:	Democratic Republic of Congo
DYMID	:	Dyadic Militarized Interstate Disputes
ECOWAS	:	Economic Community of West African States
FDI	:	Foreign Direct Investment
FSF	:	Fragile State Facility
GDP	:	Gross Domestic Product
HIPC	:	Highly Indebted Poor Country
IMF	:	International Monetary Fund
IMR	:	Infant Mortality Rate
MDG	:	Millennium Development Goal
MID	:	Militarized Interstate Disputes
NEPAD	:	New Partnership for Africa's Development
NGO	:	Non-Governmental Organization
ODA	:	Official Development Assistance
PCCF	:	Post-Conflict Countries Facility
PITF	:	Political Instability Task Force
PRIO	:	Peace Research Institute Oslo
PRSP	:	Poverty Reduction Strategy Program
TRC	:	Truth and Reconciliation Commission
UCDP	:	Uppsala Conflict Data Program
UN	:	United Nations
VAT	:	Value Added Taxes

I. Introduction

The countries emerging from conflict face two main challenges: the post-conflict reconstruction and the post-conflict risk reduction. The post-conflict reconstruction is the rebuilding of economic systems, infrastructure, and institutions destroyed by war; and rehabilitation of basic services like health and education. The second challenge—the post-conflict risk reduction—is linked to the peace building and the deal with issues related to the transition from war to peace. Different terms are used in the literature to express the concept of post-conflict risk: *conflict reversion, conflict recurrence, conflict relapse, conflict renewal…* All these expressions are synonymous and can thus be used in this paper indifferently.

Several African countries have experience violent conflicts during the last fifty years and are just emerging from it, and some others are currently facing the threat of violent conflict. The firsts are called post-conflict countries and the latters are fragile states. Although most developing countries are fragile in some ways, almost half of all failing states in the world are located in sub-Saharan Africa.[2] States can fail in two distinct senses: they can fail to provide economic development opportunities and they can fail to provide security (Hoeffler 2009).[3] Even if the definition of a fragile state does not limit to states affected by conflict, more than half of the African fragile states are post-conflict countries. For our study, we are focusing on fragile-post-conflict countries.

Of the 103 countries that experienced some form of conflicts between 1945 and 2009 in the world, only 44 avoided a subsequent return to civil war; therefore 57 percent of all countries that suffered from one civil war during this time period experienced at least one conflict thereafter.[4] Sub-Saharan African countries accounted for only 13% of all the experiencing renewed civil war in the 1960s. This percentage raised to 21% in the 1990s and to 35% by first decade of the 21st century. In fact, since 2003 *every* civil war that has started has been a continuation of a previous civil war (Walter 2010).

A major obstacle to economic recovery and development in post-conflict countries is conflict recurrence. Many post-conflict countries pass through episodes of renewed violence

[2] List of African fragile states: Angola, Burundi, Cameroon, CAR, Chad, Comoros, DRC, Congo, Ivory Coast, Djibouti, Eritrea, Ethiopia, Gambia, Guinea, Guinea Bissau, Kenya, Liberia, Mali, Niger, Nigeria, São Tomé & Príncipe, Sierra Leone, Somalia, Sudan, Togo, Zimbabwe (Source: DfID 2005).

[3] Different expressions are used by researchers to discuss on states which are unable to provide security to their own citizens: 'weak states', 'failing states', 'fragile states' or 'collapsed states'. But globally, all these terms are synonymous (Hoeffler 2009), even if a collapsed state is an extreme version of fragile state.

[4] Source: UCDP/PRIO Armed Conflict Dataset, vol. 4, 2009.

during years following the cessation of the initial conflict (Walter 2004). Angola, Liberia, DRC, CAR, Chad and Somalia have experienced this situation. More recently, Ivory Coast, after starting a political and economic stability subsequent to the signature of the Ouagadougou peace agreements that should have ended political tensions inherent in the country since 1999, seems to slide into a new civil war from the contested results of the last presidential election. All these countries are thus living in a *conflict trap* in the terminology of Collier et al. (2003), which undermine any development process, giving the bad socio-economic conditions that these countries already knew before the beginning of the initial conflict.

The goal of this paper is to investigate the factors of conflict reversion. What are the factors compromising the peace building in countries emerging from conflict? This question comes within the general framework of the conditions of a successful post-conflict recovery to explain why conflicts recur or why they tend to recur in some countries but not others. The study will examine experiences from some post-conflict African countries: Angola, Burundi, Central African Republic, Chad, DRC, Djibouti, Eritrea, Ethiopia, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Liberia, Niger, Nigeria, Mauritania, Mozambique, Somalia, Rwanda, Sierra Leone, Sudan, Uganda and Zambia. Our main hypothesis is that the post-conflict risk is principally due to a combination of conflicts' unresolved grievances.

If the strategies engaged are sometime problematic and not very efficient, it is imperative to consider the post-conflict risk in the management of the development of countries emerging from conflicts. Therefore, reducing this post-conflict risk begins by an analysis of the fundamental causes of the emergence of the conflict, its nature and duration, its resolution's methods, as well as involved actors. Thus, the paper will be organized as follow: first we will analyze factors revealing the underlying conditions that affect the risk of hostilities relapse in the post-conflict context (II); second part is the explanation of methodology and data (III); then we will expose the results obtained and some recommendations (IV); finally we will conclude (V).

II. The post-conflict risk factors

Studies show that most nations that experienced a conflict are likely to experience additional conflicts during the first decade following the end of the last hostilities. Although it is generally agreed that post-conflict countries face a higher risk of experiencing renewed armed conflict than non-conflict countries, the estimated probability of conflict recurrence

significantly varies from an empiric study to another.[5] This variation of results is largely due on difference between datasets and/or methodologies. Whatever is the post-conflict risk, it is nevertheless typically higher than that of conflict onset. In addition, giving the cumulative disastrous consequences of repetitive conflicts for developing countries and the extreme vulnerability and fragility leading to their political and economic institutions; it is necessary to identify the factors that contribute to increasing the risk of conflict recurring. Three groups of factors can be given: previous conflicts' factors, socioeconomic factors and institutional factors.

Previous conflicts factors

Violent conflict exacerbates the very conditions that gave rise to it in the first place, creating a *conflict trap* from which escape is difficult (Collier et al 2003). The end of combats may not necessarily mean the end of conflict if its root causes have not been resolved. In such circumstances, new conflict may be ignited, which explains the recurrence of conflicts in many countries. The post-conflict risk factors are variables correlated with the risk of occurrence of a conflict reversion in a post-conflict context. Those factors are deeply linked to the root causes of a conflict, to its duration, the number of casualties, the way in which it ended and the former combatants to resume armed conflict rather than accept the status quo.

Initial conflict duration

Smith and Stam (2002) argue that the longer the original conflict lasted, the more likely the peace will endure. According to these authors, the post-conflict risk is inversely linked to the initial conflict duration. Mason et al (2005) explain this result by the "war weariness effect" on combatants and the population at large. The duration of the previous conflict also affects the protagonists' choice between resuming war and preserving the peace by affecting their estimate of the length of time required to achieve victory (Quinn et al. 2007). However, Walter (2004) tempere by the finding that the conflict duration is positively correlated with number of casualties and thus increase animosity between opposing parties and their supporters, and consequently raise the risk of hostilities renewal.

[5] Collier and Hoeffler (2002) estimated that conflict countries on average had a 50 percent risk of experiencing renewed conflict within five years of the original conflict ending. Using a model of the risk of civil war, Collier et al. (2003) estimate that during the first five years post-conflict there is a 44 percent risk of reversion to conflict. However, in another study, Collier et al (2006) estimated that the risk of conflict recurrence was significantly lower, with conflict countries having a 23 percent risk of returning to war within four years.

Initial conflict settlement

The resolution method of the conflict also affects the risk of recurrence. According to Luttwak (1999), armed conflicts which end with a military victory of one party are generally follow by more stable post-conflict environments than armed conflicts ended by negotiations and peace agreements. Quinn et al. (2007) argue that a civil war that ends in a negotiated settlement is more likely to experience a recurrence of civil war than one that ends in either a government victory or a rebel victory. Indeed, Fortna (2004) shows that the risk of conflict recurrence dropped by 70–90 percent when there was an outright victory of one party; in contrast civil wars ending by negotiations are followed by renewed violence at a later stage. The explanation is that the opposed parties may only have signed a peace agreement in order to rearm and reorganize their forces, enabling them to restart the violent conflict at a later stage.

The former combatants' behavior

According to Collier and (2004), one likely cause of renewed conflict is if the balance of power changes between the government and the rebels, so that what was mutually advantageous at the time of the settlement comes to be excessively favorable to the weakened party. Governments tend to respond to a high risk of civil war with a high level of military spending and post-conflict governments follow this pattern, presumably maintaining spending at high levels in an attempt to deter renewed conflict. Thus, the authors consider military spending during the post-conflict period as a revealing signal of the government's behavior. If post-conflict military spending is a revealing signal then high spending might then be associated with a heightened risk of renewed conflict in three ways. First, high spending will be correlated with an intention to renege on the settlement, and reneging is likely to increase the risk of a return to conflict. This association will hold even if the rebel group does not use the level of military spending as a screening device. In this case, high spending would not directly cause a high risk of conflict renewal. Secondly, however, the rebel group might rationally use military spending for screening purposes. High spending would then indicate a government intention to renege on the settlement and the rebel group might then rationally pre-empt this intention before its military power deteriorated further. Third, recognizing that the rebel group would rationally screen by military spending, a peace-loving government might rationally signal its intentions by deliberately reducing military spending. In the two latter cases, a reduction in military spending directly causes a reduction in the risk of conflict.

Probability of Victory

Another influence on both sides' estimate of their probability of victory is the size of the government's army. Quinn et al. (2007) have found that the size of the government's army affects the outcome of a civil war and the probability of civil war occurring in the first place. The larger the government's army, the more costly renewed rebellion is likely to be and the lower the aspiring rebels' estimate of the probability of victory. This finding on civil war outcomes is confirmed by Mason et al. (2008) who show that rebel victories are less likely to break down into renewed conflict than government victories.

The socioeconomic factors

In developing countries, number of socioeconomic factors raises the risk of conflict renewal. Those factors are common to all post-conflict countries and increase their fragility.

- *Weak economic growth*

Many empirical studies report a strong relationship between low economic growth and a high risk of conflict recurrence (Quinn et al. 2007; Fearon and Laitin 2003; Collier and Hoeffler, 2004a). Several explanations could be advanced. First, if low income is a risk factor for conflict then sustained decline in income further raises the risk of conflict. Second, prolonged decline in income may be symptomatic of deterioration in governance and state capacity, which may in itself constitute a risk factor. Third, the deterioration of income may trigger distributional fights or deepen grievances with the government, which may then raise the risk of conflict.

- *Economic Well-Being*

In the high-risk environment following a civil war, the willingness of citizens to support a resumption of armed conflict will depend to some degree on the level of economic well-being afforded them by the post-conflict environment. Fearon and Laitin (2003), Collier and Hoeffler (1998, 2004b) and others have found a strong negative relationship between the level of economic development and a nation's susceptibility to civil war. Walter (2004) found that a similar effect holds for civil war recurrence. In the post-civil war environment, economic development may be more critical to sustaining the peace than in a nation that has not experienced a civil war. Fearon and Latin (2003) show that nations that experienced civil war were already characterized by relatively low levels of economic development before the war. The war itself destroyed some portion of the nation's human capital and economic infrastructure. It also disrupted normal economic production and commerce, leaving the post

civil war environment even weaker economically and, therefore, more susceptible to the recurrence of civil war than it would be to an initial civil war onset, had it not already experienced a civil war.

- *Socioeconomic horizontal inequalities*

Some authors advocate horizontal inequality — inequality between distinct population groups — as an important conflict risk factor. Socioeconomic horizontal inequalities are defined in terms of economic opportunities, access to land and natural resources, and group-specific differences in standards of living, along with other basic socioeconomic indicators (Steward et al 2007a). Ndikumana (2005) found a significantly higher probability of conflict onset in countries with severe social and economic horizontal inequalities. This relationship is more significant when socioeconomic horizontal inequalities are associated with political horizontal inequalities i.e. inequalities in the ethnic and religious distribution of political opportunities and power, which increases the feeling of marginalization and exclusion and leads to social tensions.

- *Natural resources*

The management of natural resource wealth figures in a number of contemporary civil wars in several African countries, such as Angola, DRC, Liberia, Somalia, Sierra Leone and Sudan. However, if the presence of lucrative natural resources has been founded to play a role in the incidence and the duration of conflicts (Collier and Hoeffler 1998; Humphreys 2005; Ross 2004), little work has been done on how resources affect the post-conflict risk.

- *Youth unemployment*

The existence of severe unemployment and underemployment, especially among young males, seems to increase the risk of conflict. According to Urdal (2006), "in countries where youth make up 35 percent of the total adult population, the risk of conflict, with all other factors being equal, increases by 150 percent compared to countries where youth make up only 17 percent of the adult population". This result is consistent with the fact that violent conflict mainly involves young people. However, the problem is not the sheer numbers of youth; it is the lack of economic opportunities due to the underlying socioeconomic and political barriers — including employment opportunities—that young people face that raises the risk of violence (UNDP 2008).

- *High military spending and large armies*

Some level of military expenditure is necessary to provide security and maintain peace. Thus, high military spending and large armies may be expected to deter internal armed conflicts. However, Collier and Hoeffler (2006) find that military spending increases the risk of civil conflict recurrence in post-conflict countries. For these authors, one circumstance in which large military expenditures or large armies may raise the risk of conflict is when they are used as a means of repression and an alternative to dialogue and inclusiveness.

Even if the evidence on the effects of military spending on the risk of conflict is mixed, on average, a civil war raises government military spending by about 1.8 percentage points (Collier and Hoeffler, 2004c). Far from deterring conflict, high post-conflict military spending actually significantly increases the risk of renewed conflict. Military spending may also affect the risk of conflict indirectly, via its effects on the economy: during peace military spending tends to reduce growth. In turn, we find that growth reduces the risk of conflict both directly and cumulatively, through raising the level of income (Collier and Hoeffler, 2004c).

The institutional factors

Post-Conflict Democracy

The domestic corollary of the democratic peace proposition holds that democracies are less likely to experience civil war because the institutions and processes of democracy defuse revolutionary violence by diverting popular discontent into electoral competition and nonviolent protest. According to Quinn et al. (2007), a democratic post-conflict regime is less likely than a nondemocratic regime to experience renewed civil war. Flawed or incomplete democratization processes, characterized by a weak legislature and a strong elected executive, which operates without much scrutiny between elections, have been blamed for some of the conflicts in Africa. However, the empirical evidence is conflicting. Some studies have associated this regime type with a high risk of conflict while others find no relationship between the level of democracy and risk of conflict onset.

Elections

Elections can provide a mechanism for peaceful change and for holding a government accountable to its citizens. In post-conflict societies, elections may signal a symbolic transition from war to peace and the setting up of a legitimate political order. In post-conflict situations, Collier, Hoeffler and Söderbom (2008) find that elections shift conflict risk from the year before an election to the year after. Since both the incumbent and the opposition

would prefer to come to power through elections, they tend to play a waiting game, delaying any possible recourse to violence until after the elections. The authors also find the increase in risk after the election to be larger than the corresponding reduction before the election, and conclude that the net effect of elections is to increase the risk of civil war recurrence.

Repression and corruption

In the absence of strong institutions to manage conflict and restrain government abuse in Africa, the political survival strategy a government adopts is often critical for a country's long-term peace and security, and development. Unfortunately, governments sometimes use political repression as a survival strategy. Political repression could raise the risk of conflict in the long run. Corruption is also sometimes used to buy off opposition, thus strengthening a government's hold on power. Over time, corruption can weaken the state because it undermines key institutions and fiscal capacity, which could result in state failure and violent conflict.

Political institutions

Walter (2010) argues that political institutions are the key to explaining why some countries can escape the conflict trap while others do not: Civil wars tend to recur in countries where the government can neither defeat a rebel movement nor credibly commit to a peace plan. If a government was strong enough to defeat the rebels, or trustworthy enough to negotiate a peace settlement, it would eventually do so and war would end. As long as the government can neither defeat the rebels, nor negotiate a settlement, the only remaining option is continued conflict. In particular, the credibility of government commitments to share power is critical in shaping the post-conflict peace. Governments that are beholden to a formal constitution, that follow the rule of law, and that do not torture and repress their citizens are much less likely to face renewed violence in any form.

Ethnic antagonisms

Another risk factor for conflict is ethnicity. While some studies dismiss the idea that ethnic (and religious) differences raise the risk of conflict (Fearon and Laitin, 2003), others find that countries with two sizeable but distinct groups have higher risks of conflict. Some authors argue that ethnic antagonism is a result, rather than a cause, of violent conflict; and that narrowbased regimes often use ethnicity for scapegoating and selfish interests (Bates, 2008; Ndikumana, 2000). Fearon and Laitin's (2003) results largely dismiss the idea that ethnic and religious differences, however measured, raise the risk of conflict.

Quinn et al. (2007) argue that if the government and rebels are divided along ethnic lines, dismantling the condition of dual sovereignty will be more difficult in the aftermath of the initial war because ethnicity endures as a source of identity and social cleavage. Ethnicity also lowers the costs of remobilizing for renewed conflict because ethnic markers make it easier for aspiring rebels to identify potential supporters. Similarly, the post-conflict environment of ethnically based civil wars is likely to produce renewed security dilemmas for groups targeted for repression on the basis of ethnic markers. Much of what is often taken as ethnic conflict stems from the fact that ethnic groups are geographically arrayed and so fights over the distribution of wealth between regions often take the form of ethnic conflict (Bates, 2008).

Neighborhood effects and external instigation

Violent conflict often spills over into neighboring countries. The civil conflict in Liberia spilled over to Sierra Leone. Subsequently, combatants from Sierra Leone and Liberia aided a short-lived rebellion in Guinea (Conakry). Some combatants from Sierra Leone and Liberia later became involved in the conflict in Côte d'Ivoire. Recent empirical studies report that conflicts in adjacent countries roughly double the risks in another country (Gleditsch, 2007, and Buhaug and Gleditsch 2008). Other aspects of neighborhood can also have an effect on the risk of conflict. Gleditsch (2007) finds that conflict onsets are less frequent in countries located in neighborhoods with high average democracy levels.

Given the porosity of national borders, conflicts in one country can spill over neighboring countries notably through refugee flows. The risk is particularly high in cases of ethnic conflicts where similar ethnic groups span across borders of neighboring countries.

Violent conflicts in Africa often spill over to neighboring countries. Indeed, some African countries have supported rebellion in neighboring countries. Regional integration would promote peace and security by eliminating or minimizing these sources of conflict. It would also reduce mutual suspicions among countries, thereby reducing the tendency for regional arms races. Membership incentives could also help prevent or end conflict.

To summarize, African post-conflict experiences demonstrate the role of different factors in the conflict recurrence. Some of those factors are often omitted in empirical studies because of the high difficulty of their measurement and anticipation.

III. Methodology and Data

Several studies that have explored the conflict recurrence have used the civil war as the unit of analysis: a civil war ends, and the peace spell is counted as continuing until the same war resumes, with the same set of protagonists (Fortna 2004; Walter 2004; Quinn *et al.* 2007). If a new conflict breaks out involving different protagonists, it is treated as a different war that does not mark the end of the original war's peace spell. Mason et al. (2008) make the inverse analysis, using the peace duration in years—after a civil war has ended—as dependent variable. The authors define a peace spell as beginning once all civil wars in a nation have ended; the peace spell is counted as persisting until a new civil war onset occurs; thus the years that a country is at war are thus excluded from their dataset. Their concern is therefore with the duration of the peace in a nation, *not* the recurrence or non-recurrence of a particular conflict between a specific government-rebel dyad.

Methodology

Since our dependent variable is the duration of port-conflict peace, we estimate a series of survival models inspired by Collier et al. (2008). These models assess the risk or hazard function of peace failing (i.e. conflict resuming) in a nation that has already experienced at least one conflict.[6] Thus we assume the hazard is exponential and proportional:

$$h(x_\tau, \beta; t) = exp(x_\tau, \beta) h^\beta(t) \qquad (1)$$

Where t denotes the duration of a post-conflict peace period; x_τ is a vector of exogenous variables observed at calendar time τ; β is a vector of unknown parameters and h^β is the baseline hazard.

$\beta_j>0$ implies that factors that prolong the peace decrease the hazard rate compared to the baseline hazard[7] (and vice versa if $\beta_j<0$). For the baseline hazard h^β (t), we adopt a piecewise exponential model, which is quite flexible. Our starting point is a specification where we divide the time axis into W intervals by the points $c1$, $c2$,..., cW and assume constant baseline hazard rates within each interval:

$$h^\beta(t) = \exp\left(\alpha + \sum_{w=2}^{W} \lambda_w \, d_w(t)\right) \qquad (2)$$

[6] According to Collier et al. (2008), the advantage of the hazard approach is that enables to be much more precise in the investigation of what determines the initial risk of conflict reversion, of how that risk evolves naturally simply by the passage of time, and of how its evolution is affected by interventions during the post-conflict period.

[7] In other words, an increase in the associated explanatory variable $x_{\tau j}$ leads to an increase in the hazard of war, and a reduction in the expected duration of peace.

where dw (t) is a duration dummy variable equal to one if $cw-1 < t \leq cw$ for $c0 = 0$ and $cW = \infty$, and zero otherwise; α is an intercept; and $\lambda 2$,...,λW are baseline hazard parameters. Thus the baseline hazard is allowed to vary freely between intervals, which imposes few restrictions on duration dependence. We include an intercept in the model and exclude the first duration dummy (i.e. $d1$), which implies that negative (positive) coefficients on $\lambda 2$,...,λW imply that the hazard is lower (higher) than in the first interval.

Collier et al (2008) considered the first decade after the end of the previous conflict in their estimation of the post-conflict risk. According to them, the first decade of peace is given by the following survival function evaluated at t = 10 years:

$$S(10) = \exp\left(-\int_{u=0}^{10} h\left(.;u\right)du \right. \qquad (3)$$

And so the risk of a collapse is given by **F(10) = 1 – S(10)**.

Data Sources

To understand the factors that lead to conflict recurrence, we consider the relationship between some of the variables highlighted in the literature in the previous section.

Dependent variable

Conflict recurrence: a dummy variable indicating if the country experiences a conflict during a given year. The data are derived from the UCDP/PRIO Armed Conflict Dataset v.4-2010, 1946 – 2009 by Harbom and Wallensteen (2010).[8] We code the dependent variable as 1 if one conflict starts in the considered at year, 0 otherwise.

Explanatory Variables

Previous conflict intensity: In line with Walter (2010) and Quinn et al. (2007), we distinguish different conflicts episodes by their intensity, i.e. by the number of related battle deaths in a given year, which is Major, Medium, Small and Minor.[9] We divided into two groups of intensity and construct our own dummy variable which takes 1 if the previous conflict was reported as had leaded to 1 to 999 battle deaths (*Minor*), and 0 if it was at least 1000 battle deaths (*War*). Data source: Harbom and Wallensteen (2010).

[8] The UCDP/PRIO Armed Conflict Database v. 4 (ACD) is the most comprehensive and accurate available data set on civil war conflict. The ACD codes for each country and year since 1945 whether a violent conflict occurred between a named, non-state armed group and government forces that directly killed at least 25 people.

[9] *Major Onset* marks the first year of a conflict that ultimately results in over 1000 battle deaths a year. *Medium Onset is* the initiation of a conflict that results in 500-999 annual battle deaths. *Small Onset* is followed by wars with 250-499 annual battle deaths and M*inor Onset* is a war that ultimately ends with between 25 and 249 battle deaths.

Previous conflict settlement: a dummy variable that indicates if the previous conflict ends by a victory (either government or rebels) or by a negotiation or a peace agreement. The data come from the UCDP Conflict Termination dataset v.2010-1, 1946–2009 by Kreutz (2010).

External threat: a dummy variable indicating whether there is a neighbor country that experienced a conflict during the previous year. This aims to test the contagious effect of conflicts. Data source: Harbom and Wallensteen (2010).

Political instability: a dummy variable indicating whether the country has experienced a coup in the previous year. Source: Marshall and Marshall (2010) for the *Center for Systemic Peace* (CSP).

Democracy: The Polity IV, which is our proxy for democracy, measures the general openness of the political institutions. It ranges from -10 (strongly autocratic) to +10 (strongly democratic). We construct a dummy variable of Democracy which takes a value of one if the Polity score takes a value of greater than -5 in the previous period and zero otherwise. The data source is discussed by Marshall, Jaggers and Gurr (2010) for the *Center for Systemic Peace* (CSP).[10]

Military expenditure: is measured as a proportion of GDP, also commonly referred to as the defense burden. It measure also the ability to credibly commit to a peace deal during the post-conflict period. If a government is unable to credibly commit to honoring political concessions in a negotiated settlement, rebels are likely to prefer continued fighting (or at the very least intermittent fighting) to any sort of deal (Walter 2010). Source: World Bank's Africa Database Indicators (ADI 2010)

GDP per capita (lagged): We consider the annual growth rate of the GDP per capita, using World Bank's Africa Database Indicators (ADI 2010).

Inflation (lagged): we use the data of PIB Deflator (%) in the World Bank's Africa Database Indicators (ADI 2010)

Ethnic fractionalization: a measure of the ethnic fractionalization of the country based on estimates of ethnic group populations from the updated dataset of Fearon and Laitin (2003).

Religious fractionalization: We use a measure of the religious diversity of the country from the updated dataset of Fearon and Laitin (2003).

[10] http://www.cidcm.umd.edu/inscr/polity/ , Also available in the Africa Database Indicators *(*ADI 2010)

IV. Results and interpretations

To determine the factors that are related to civil war recurrence, we use a cross-section times series data set with conflict occurrence as the unit of analysis. In the first stage the endogenous variable will be regressed on the instruments as well as the exogenous variables, and we will calculate the marginal effects of each variable to estimate the magnitude of their effect on the probability of conflict reversion.

The logit estimation of our models gives us the following results in Table 1.

Table 1: The Determinants of Conflict recurrence

	Model 1	***Model 2***	***Model 3***	***Model 4***
PREVIOUS CONFLICT				
Intensity	2.22 (0.17)***	1.49 (.26)***	1.49 (.26)***	1.58 (.27)***
Settlement	-1.78 (0.67)***			
External threats	0.19 (0.14)	.10 (.26)	.12 (.26)	.24 (.26)
SOCIOECONOMIC ENVIRONMENT				
GDP per capita		-.01 (.01)	-.009 (.01)	-.01 (.01)
Inflation		.0001 (.0003)	.0001 (.0003)	.0001 (.0003)
Military expenditure		.05 (.02)*	.05 (.03)*	.03 (.03)
Ethnic Fractionalization		-1.24 (.69)*	-1.23 (.69)*	-1.1 (.70)
Religious Fractionalization		3.34 (.93)***	3.44 (.96)***	3.86 (.99)***
INSTITUTIONS				
Political instability			.29 (.39)	
Polity Score				-.79 (.29)***
N	**1103**	**340**	**340**	**340**
Wald chi2	174.61	54.59	54.22	58.76
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.1476	0.1339	0.1352	0.1511
Log pseudo-likelihood	-617.185	-202.460	-202.155	-198.440

Notes: Robust standard errors in parenthesis.
*significant at 10%; ** significant at 5%; *** significant at 1%

The results in the first column of Table 1 confirm the critical role that previous conflicts can play in inciting conflict recurrence. In particular, the intensity of the previous conflict and its resolution method are highly affecting the conflict recurrence, positive and

negative respectively. Adversely, the fact that the neighboring countries have faced conflicts in the previous year increases the probability of a new conflict erupting in the current year but not significantly.

The second column emphasizes the effect of the country socioeconomic environment in the conflict renewal. The fractionalization factors—ethnic and religious—are significantly more likely to have an influence on subsequent conflict, all else equal. The signs of these relationships are very interesting. The ethnic fractionalization is inversely related to conflict renewal, so the greater fractionalized the country is, the better it will be preserved from the post-conflict risk. In contradiction, religious fractionalization highly influences the risk of recurrent conflicts.

Unfortunately, and in contradiction with the existing literature, economic issues seem to not influence significantly the risk of renewed conflict in a country. GDP per capita and Inflation are not quite significantly related to conflict recurrence in all our different models, as well as the population size. Nevertheless, it is important to note that the expected signs of these different relationships are present in the results: there is a negative relationship between lagged GDP per capita and conflict recurrence as well as a positive relationship between lagged inflation. Finally, the military expenditure has a real positive effect on conflict recurrence, what comforts our expectations: military spending, as an indicator of government military strength, are associated with a heightened the likelihood of conflict renewal.

The third and fourth models of Table 1 introduce the institutional factors in the explanation of conflict recurrence in post-conflict African countries. If the political instability, measured as the occurrence or not of a coup in the country, has no significant effect on resuming conflict, the democracy level has a significant and negative relationship with conflict recurrence.

To estimate the magnitude of the effect of each variable on the probability of conflict recurrence, we calculated their marginal effects. The results are given in Table 2. When two groups are under study or observation, you can use two measures to describe the comparative likelihood of an event happening. These two measures are the odds ratio and relative risk. Both the odds ratio and the relative risk compare the relative likelihood of an event occurring (*Conflict recurrence* versus *No conflict recurrence*) between two distinct groups. The relative risk (sometimes called the risk ratio) is a ratio of probabilities. It compares the incidence or risk of an event among those with a specific exposure with those who were not exposed. Generally, the relative risk measures events in a way that is interpretable and consistent with

the way people really think. However, the relative risk can sometimes produce ambiguous and confusing situations. This is particularly the case when a small relative change in the probability of a common event's occurrence can be associated with a large relative change in the opposite probability (the probability of the event not occurring). The odds ratios of success are defined as the ratio of the probability of success over the probability of failure. Thus the odds ratio compares the relative odds of conflict in each group. One advantage of the odds ratio is that it is not dependent on whether we focus on the event's occurrence or its failure to occur. If the odds ratio for an event deviates substantially from 1.0, the odds ratio for the event's failure to occur will also deviate substantially from 1.0, though in the opposite direction.

***Table 2*: Probability of conflict recurrence**

	Risk ratio (I)	Odds ratio (II)
Model 1		
Intensity	0.50	9.28
Settlement	-0.27	0.16
Model 2		
Intensity	0.35	4.45
Military expenditure	0.01	1.05
Ethnic Fractionalization	-0.30	0.28
Religious Fractionalization	0.82	28.39
Model 3		
Intensity	1.51	0.35
Military expenditure	.04	0.01
Ethnic Fractionalization	-1.19	-0.30
Religious Fractionalization	3.61	0.84
Model 4		
Intensity	0.37	4.89
Religious Fractionalization	0.95	47.56
Polity Score	-0.19	0.45

Notes: The probability of recurrence is for discrete change of dummy variable from 0 to 1

The marginal effects of the continuous and dichotomous significant variables were calculated as the difference in predicted probabilities when each of these variables was set to

its minimum and maximum values while the dichotomous variables were set equal to "0" and the other continuous variables were set to their means. These results indicate that each of these factors has a substantial impact on the likelihood of civil war recurrence. There is quite a difference, but both measurements show that religious fractionalization is more likely to lead to a new conflict than all the other variables.

V. Conclusion

All the African conflicts registered during this 21st century are exclusively civil conflicts. This is an important development issue because this particular form of conflict is known to be difficult to end and frequently tend to recur. In this study, we focus exclusively on countries that have already experienced a conflict. Our results reveal that previous conflicts characteristics, as well as socioeconomic and institutional factors, affect the government ability to avoid repeated conflicts. This suggests that a heavier focus on reconciliation and political institution building may be the most effective way to maintain a sustainable peace after a conflict. This does not mean that post-conflict economic recovery is less important after the end of hostilities, but any development process is deeply compromised by peace failure. The objective of risk reduction does not always conflict with that of economic recovery. On the contrary, economic recovery could help bring risks down in the long term. Security and development are deeply correlated: there is no possibility of sustainable development in an insecure environment context and a weak development leads to a conflict release. The premium on risk reduction does change appropriate economic priorities in two key respects. Thus, the government would rightly be concerned, not only with economic recovery as an end in itself, but with adopting economic policies to reduce the risk of conflict.

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