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Do Fiscal Policy Outcomes Promote Ethno-Religious Stability in African States?

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Abstract

This paper studies the conditions under which the use of expansionary fiscal policy may mitigate the risk of initiation, escalation, and repeated cycles of conflict on the African continent. To date, empirical evidence highlighting the effectiveness of expansionary fiscal policy as a means of mitigating conflict in Africa is still limited. This article is an attempt to fill this gap as it addresses this important empirical question in conflict-plagued Africa. The study further expands on previous studies by examining the efficacy of increased government expenditure on conflict in general, as well as on the ethnic and religious dimensions of conflict in Africa. The most encountered forms of conflict in recent times are those that cannot be neatly classified as war, peace, criminal violence or political violence. Ethnic and religious conflicts often fall into this class. This study finds that overall, non-military government expenditures across African states have played a significant role in minimizing general internal conflict, as well as ethnic and religious conflicts. Using data for 32 African nations for the period 1990–2016, the empirical analyses show that raising overall government expenditure can induce reductions in overall internal, ethnic and religious conflicts. The results suggest that total government expenditure has a stronger impact on the reduction of ethnic conflict on the continent. Empirical outcomes also show that causality varies across countries on the continent, an indication that the relationship between conflict and government expenditure is heterogeneous in nature across the continent. The causal effect of government expenditure is however most widespread for ethnic conflict.

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Introduction

Africa's history is replete with conflict (Aladi, 2002). The continent has been labelled as the home of wars and instability due to its susceptibility to inter- and intra-state conflicts (Aremu, 2010). These conflicts have exacerbated poverty and retarded growth and development on the continent. Sub-Saharan Africa has particularly recorded a higher rate of conflicts than other regions of the world (Amberg et al., 2023). Close to 70% of the countries situated in Sub-Saharan Africa have experienced armed conflict since 1980 (Raleigh et al., 2010). In the year 2021, about 18 of the 49 Sub-Saharan African countries experienced various degrees of conflicts, and approximately half of the armed conflicts across the world occurred in the continent (Stockholm International Peace Research Institute, 2022). The following nations experienced high-intensity armed conflicts in the year 2021: Burkina Faso, Cameroon, Central African Republic, Democratic Republic of the Congo, Ethiopia, Mali, Mozambique, Niger, Nigeria, Somalia, South Sudan and Sudan. Subnational armed conflicts categorized as low-intensity also occurred during the same year in Benin, Burundi, Chad, Kenya, Madagascar and Uganda. Virtually all these conflicts exhibited some degree of internalization for reasons such as the involvement of external actors, international criminal networks and armed groups. The dynamics of conflict and ethno-religious struggles are most times rooted in a mix of election-related tensions, tussles over natural resources, climate change, inadequate basic services, corruption and poor governance (Stockholm International Peace Research Institute, 2022).

It was established as far back as 1944 that economics plays a vital role in both conflict initiation and resolution when 45 independent nations came together at Bretton Woods to deliberate on the economic aspects of the Second World War that was ongoing at the time (World Bank, 2011). The conference led to the establishment of the International Bank for Reconstruction and Development (IBRD), the institution which later metamorphosed into the World Bank Group (WBG). The first task undertaken by the organization was the release of financing for the rebuilding of France in 1947. Overtime, the IBRD has taken on similar responsibilities across various countries, especially African countries experiencing conflict such as Liberia, Rwanda, Sierra Leone and Southern Sudan. The rationale behind this was the belief that financing reconstruction and development through expansionary fiscal policy has the capability to induce economic progress, as well as peace and stability. Countries plagued by conflict were also those who performed most poorly in achieving the Millennium Development Goals (Hill et al., 2010). Socio-economic factors such as poverty, income shocks, low income, unemployment, inequality and urbanization are identified as some of the triggers of conflict (Beyene, 2014; World Bank, 2011). Taking a cue from the IBRD, and considering how widespread conflict is across Africa, the African Development Bank (AFDB) has also identified financing for reconstruction and development through expansionary fiscal policy as a means for attaining peace and stability. The AFDB currently operates The Fragile States

Facility, which channels financial resources to conflict-plagued African nations (African Development Bank, 2013).

Conflict-plagued nations display several common characteristics; these include, amongst others, inadequate infrastructure, firm capabilities, trade and per-capita income, as well as a limited private sector and environmental and social problems (International Financial Corporation, 2019). This suggests that while the role of the private sector cannot be trivialized in the reconstruction and development process required to restore stability, private firms face many constraints that limit their capabilities. The private sector could play an essential role by generating jobs and rendering services required to improve income and solve societal problems. The sector could also promote inclusiveness across groups within the community by promoting efficient and sustainable markets and business relationships (Nussbaum et al., 2012). Unfortunately, private sector involvement in conflict regions tends to be relatively minimal. A major reason for this is that nations plagued by conflict generally tend to rank poorly on investment climate indicators such as infrastructural and institutional quality, as well as market size and security (International Financial Corporation, 2019). Thus, in spite of the potential opportunities for investment, the challenges confronting the private sector in conflict areas are often too overwhelming for it to deal with. In this regard, governments can play a major role by introducing expansionary fiscal policy that can address the institutional and market failures that the private sector finds insurmountable.

Stemming from the above, this paper studies the conditions under which the use of expansionary fiscal policy may mitigate the risk of initiation, escalation and repeated cycles of conflict on the African continent. The use of expansionary fiscal policy has deep historical roots as far back as the nineteenth century when it was used in the form of social welfare to curb the threat of socio-political conflict in the German empire. The idea of employing fiscal policy as a tool for mitigating conflict is thus not entirely new in the world. Recent extant literature suggests that increased government expenditure, either in general on the military or on specific welfare projects, leads to reduction in the risk of occurrence of conflicts (see Basedau & Lay, 2009; Fjelde & De Soysa, 2009; Taydas & Peksen, 2012). Yet, to date, empirical evidence highlighting the effectiveness of expansionary fiscal policy as a means of mitigating conflict in Africa is still limited.

In an attempt to fill the gap identified above, this study contributes to extant literature in the following ways. Firstly, this study further expands on these previous studies by not only examining the efficacy of increased government expenditure on conflict in general, but also specifically investigating the effect of government spending on the ethnic and religious dimensions of conflict in Africa. This is quite important because the nature of violent conflict has significantly evolved over time. In the past century, interstate and civil wars were the predominant forms of conflict; they have however declined over time (Ashforth, 2009; Harriott, 2008a, b). According to the World Bank (2011), the most encountered forms of conflict in recent times are those that cannot be neatly classified as war, criminal violence or political violence. Ethnic and religious conflicts often fall into this class and are therefore important factors to consider in research. Secondly, on the empirical front, this study employs advanced econometric techniques in the form of the common correlated

effect (CCE) regressions and the Emirmahmutoglu and Kose (2011) panel causality tests. CCE has satisfactory small sample properties, is robust to structural breaks, unit roots, non-cointegrated common factors, certain serial correlation and is also a robust estimator of short-run dynamics. The Emirmahmutoglu and Kose (2011) panel causality test on the other hand is suitable for panels made up of stationary, non-stationary, cointegrated and non-cointegrated series. It is also robust to cross-sectional dependence and permits cross-country comparisons.

The remainder of this article proceeds in the following manner. In the next section, related studies are reviewed. "Theoretical Background and Model" provides the theoretical background and empirical model. "Methodology and Data" describes the methodology and data employed. "Empirical Results" reports and discusses the empirical findings. The final section concludes the discussion and presents policy recommendations.

Literature Review

Linking expansionary fiscal policy with conflict is not exactly new in extant literature. The seminal papers of Grossman (1994, 1995) explain how redistributive fiscal policies in the forms of transfer payments and wage subsidies could lower the probability of occurrence of conflicts. In line with the aforementioned, Azam (1995, 2001) likewise suggests that the use of redistributive expansionary fiscal policies such as health and education financing could strengthen social contracts and mitigate conflict in the society. Other studies conducted specifically on the impact of education expenditure on the risk of armed conflict have also confirmed its conflict-mitigating effect (see Fjelde & De Soysa, 2009; Taydas & Peksen, 2012; Thyne, 2006). A study of selected South American countries conducted by Voth (2011) concludes that reductions in public expenditure trigger conflicts in the forms of social unrests and instabilities. According to De Juan and Bank (2015), sub-districts of Syria with better electricity supply are less prone to violent conflict. Another study carried out by Justino (2015) claims that the Indian government is able to minimize rioting through increased expenditure.

These aforementioned studies however do not specifically explain whether government spending effectively mitigates intergroup conflicts such as ethno-religious conflicts. The importance of this research direction can however not be overemphasized. Intergroup-related conflicts are driven majorly by rivalries and competition between groups (Quadri & Oladejo, 2020; Thakore, 2013). Inequality amongst groups—ethnic, geographical and religious—has been identified as an important causal factor for conflict. The use of redistributive, expansionary fiscal policies such as employment programs that target equity can thus be used to address conflict (World Bank, 2011). Justino and Martorano (2018) identify three channels through which expansionary fiscal policies of government might mitigate conflict. The first is through reduced inequality amongst groups. Nations that are effective in allocating resources to programs that deal with perceived or real grievances are less prone to conflict (Buhaug, 2006). Justino and Martorano (2018) further argue that even if expansionary fiscal policy does not immediately lower inequality, the chances that

conflict might occur could still be lowered if the spending affects the perceptions of the citizens about future levels of inequality. People or groups might thus react to fiscal policy based on their perceptions about future inequality in a manner that lowers discontent.

Justino and Martorano (2018) also identify improved social trust as another channel through which expansionary fiscal policy may drive stability. There are quite a handful of extant empirical literature confirming that government spending drives social trust (see Finan & Schechter, 2012; Knack & Zak, 2003; Kumlin & Rothstein, 2005; Rothstein, 1998). Literature showing that improved social trust promotes stability also exists (see Colletta & Cullen, 2000). The third channel identified by Justino and Martorano (2018) is institutional mechanism. In support of this claim, several papers claim that expansionary fiscal policy, even if not distributive, gives an indication of the government's commitment to the social contract and political inclusion of various groups (Acemoglu & Robinson, 2000, 2006; De Mesquita et al., 2002; North & Weingast, 1989). This raises the level of trust given to the government and consequently leads to more stability.

Theoretical Background and Model

Two popular theoretical constructs dominate the conflict literature—the opportunity model and the grievance model (Diallo et al., 2023). The former emphasizes that economic agents often engage in violent activities to earn income in environments where property rights are not secure and contracts are not always adhered to (Collier et al., 2009; Garfinkel, 1990; Hirshleifer, 1989; Skaperdas, 1992). As such, economic agents often engage in violent conflict if the associated net benefits exceed the opportunity cost of the alternative. The grievance model, on the other hand, emphasizes the role of inequalities in conflict and fragility (Gurr & Moore, 1997; Stewart, 2003). This model identifies horizontal inequalities such as inter-group inequalities as the major source of conflict (Diallo et al., 2023). The model theorizes that by creating collective discontent, these horizontal inequalities cause some groups to violently oppose constituted authority in a manner that triggers instability. Both models provide the basis for stating economic factors such as per-capita GDP, education and trade as determinants of conflict alongside government expenditure. Improvements in these identified economic factors raise the opportunity cost of participating in conflict. The effects of these economic variables are therefore taken into account in the empirical analysis conducted.[1]

Stemming from the above theoretical discussions, the following econometric models are specified:

$$LCON_{it} = \beta_0 + \beta_1 \mathrm{LGE}_{it} + \beta_2 LGDPPC_{it} + \beta_3 \mathrm{LEDUC}_{it} + \beta_4 \mathrm{LTRADE}_{it} + \varepsilon_{it} \quad (1)$$

[1] It is worthy of mention that there are other economic variables also regarded as useful determinants of conflict which we have omitted due to unavailability of sufficient historical data.

$$LET_{it} = \beta_0 + \beta_1 \mathrm{LGE}_{it} + \beta_2 LGDPPC_{it} + \beta_3 \mathrm{LEDUC}_{it} + \beta_4 \mathrm{LTRADE}_{it} + \varepsilon_{it} \quad (2)$$

$$LRT_{it} = \beta_0 + \beta_1 \mathrm{LGE}_{it} + \beta_2 LGDPPC_{it} + \beta_3 \mathrm{LEDUC}_{it} + \beta_4 \mathrm{LTRADE}_{it} + \varepsilon_{it} \quad (3)$$

In eqs. (1–3), i and t are the cross-sectional and time dimensions. The $\beta_j s$ are the parameter estimates. ε_{it} is the idiosyncratic error term. LCON is the logarithmic form of conflict. LET is the logarithmic form of ethnic tension. LRT is the logarithmic form of religious tension. LGE is the logarithmic form of government expenditure. LGDPPC is the logarithmic form of per-capita gross domestic product. LEDUC is the logarithmic form of education. LTRADE is the logarithmic form of trade openness. All variables are converted to their logarithmic forms to mitigate the potential effects of non-normality, non-linearity and heteroskedasticity, as well as for easy interpretation.

Methodology and Data

Methodology

The use of panel data models containing cross-sectionally dependent errors (multifactor error structures or unobserved common factors) is a relatively recent development in empirical research. These dependencies, which are often driven by common shocks or common driving forces, cause the violation of the conventional assumption of independent and identically distributed errors (Adebayo et al., 2022; Cao & Zhou, 2022; Chudik et al., 2017; Eberhardt et al., 2013; Gyamfi et al., 2021a, b; Musah et al., 2023; Olasehinde-Williams, 2023; Sarpong et al., 2023). Thus, the use of traditional first-generation panel estimation techniques in the presence of these dependencies is likely to result in unreliable, misleading and inconsistent outcomes. Consequently, in recent times, panel econometrics literature has directed a lot of effort towards creating alternative means of estimating panel models with cross-sectional dependence (see, inter alia, Bai, 2009; Cao & Zhou, 2022; Chudik & Pesaran, 2013, 2015a; Kao et al., 2012; Pesaran, 2006).

One of the more prominent approaches for dealing with the challenges posed by cross-sectional dependence in panel models is the common correlated effect (CCE) technique of Pesaran (2006). This method proxies unobserved common factors with cross-sectional mean values of the observables contained in the regression. Further developments have made the CCE technique applicable to a wide array of panel data models. For instance, Chudik and Pesaran (2015b) show that it is possible to examine dynamic heterogeneous panel models with stationary unobserved common factors through CCE. Kapetanios et al. (2011) study static panel models with non-stationary multifactor error structures using CCE. Westerlund et al. (2019) analyze short panel models with CCE. Zhou and Zhang (2016) employ CCE in studying unbalanced panels, and Cao and Zhou (2022) employ it in studying dynamic heterogeneous panel models containing nonstationary unobserved common factors with time and cross sections tending towards infinity. The CCE approach has satisfactory small sample properties, is robust to structural breaks, unit roots, non-cointegrated

common factors and certain serial correlation. It is also a robust estimator of short-run dynamics (Balcilar et al., 2019; Ibikunle et al., 2022; Kapetanios et al., 2011; Lee et al., 2021; Olanipekun et al., 2019; Olasehinde-Williams et al., 2023). What does export diversification do for energy demand? Evidence from the Global North. *Environmental Science and Pollution Research*, *30*(1), 547–556.). For these reasons, this study likewise employs the CCE technique.

The empirical model is specified in the following manner:

$$y_{it} = \beta_i X_{it} + u_{it} \tag{4}$$

$$u_{it} = \alpha_{1i} + \lambda_i f_t + \varepsilon_{it} \tag{5}$$

$$X_{it} = \alpha_{2i} + \lambda_i f_t + \gamma_i g_t + e_{it} \tag{6}$$

where y_{it} is the observable dependent variable, overall internal conflict (and the sub-components ethnic conflict and religious conflict). X_{it} is a vector of observable regressors (government expenditure, per-capita GDP, education and trade openness). u_{it} contains both the error term (ε_{it}) and the unobservables. The unobservables as shown in Eq. (5) have the α_{1i} component, which captures cross-sectional time-invariant heterogeneity and the f_t component, which is the common factor with heterogeneous factor loadings (λ_i). g_t is likewise a common factor, while ε_{it} and e_{it} are white noise processes.

This study further investigates the causal relationship between expansionary fiscal policy and conflict in Africa through the Emirmahmutoglu and Kose (2011) panel causality test with bootstrapping. This approach is preferred for this study due to its suitability for panels made up of stationary, non-stationary, cointegrated and non-cointegrated series, and with cross-sectional dependence (Olanipekun & Olasehinde-Williams, 2022; Seyoum et al., 2014). It also provides an avenue to study country-specific relationships as well as making cross-country comparisons. Emirmahmutoglu and Kose (2011) show that the Fisher (1932) test statistic may be used to test for non-causality in the following manner:

$$\lambda = -2\sum_{i=1}^{N} \ln_{(pi)} i = 1, 2, \ldots, N \tag{7}$$

pi is the p value for the ith cross-section. The test statistic has a chi-square distribution with 2N degrees of freedom.

Also, a lag-augmented VAR (LA-VAR) model with $L_y + dmax_i$ lags in heterogeneous mixed panels is given thus:

$$X_{it} = a_i^X + \sum_{j=1}^{k_i+dmax_i} A_{11ij} X_{it-j} + \sum_{j=1}^{k_i+dmax_i} A_{12ij} y_{it-j} + \varepsilon_{it}^X \tag{8}$$

$$y_{it} = a_i^y + \sum_{j=1}^{k_i+dmax_i} A_{21ij} X_{it-j} + \sum_{j=1}^{k_i+dmax_i} A_{22ij} y_{it-j} + \varepsilon_{it}^y \tag{9}$$

where k_i is the lag order and $dmax_i$ is the maximal order of integration.

Data

Due to data availability, 32 African countries are selected for this study. A list of the sampled countries is provided in Table 5 of the appendix. The dataset used for the empirical analysis consists of annual observations on these 32 countries over the period 1990–2016. The overall conflict index, as well as the ethnic and religious conflict indexes obtained from the International Country Risk Guide database, serves alternatively as the independent variable. Expansionary fiscal policy is captured through the volume of non-military government expenditure. To arrive at this variable, the share of military expenditure is deducted from the total general government expenditure. Data on total general government expenditure is obtained from the IMF World Economic Outlook database, while data on military expenditure is obtained from the World Bank's World Development Indicators. Other economic determinants of conflict—per-capita GDP, education and trade openness—are simply included as control variables, in line with related extant empirical literature. Data on the control variables are obtained for the World Development Indicators of the World Bank. All the variables are converted into logarithmic forms before conducting the econometric analysis. The basic summary statistics for all variables used for empirical analysis can be found in Table 6 of the appendix.

Empirical Results

A number of preliminary tests are carried out before the panel regression and causality analyses are conducted. First, the panel data series are tested for cross-sectional dependence through the following tests: Breusch and Pagan (1980) LM test, Pesaran (2004) scaled LM test, Pesaran (2004) cross-sectional dependence test and Pesaran et al. (2008) bias-adjusted LM test. As can be inferred from Table 7 of the appendix, there is a consensus amongst all the tests that the null hypothesis of no cross-sectional dependence should be rejected, even at 1% level of significance. This confirms the interconnectedness of African countries. This interconnectedness could be due to shared shocks or underlying structures that simultaneously impact the African countries. It could also be as a result of geographical proximity or spatial links among the countries. Second, slope homogeneity tests are conducted to test for country-specific heterogeneity across the African countries. The Pesaran and Yamagata (2008) test is employed for this purpose. The test results, also reported in Table 7 of the appendix, indicate that the null of slope homogeneity should be rejected, even at 1% level of significance. This suggests that although the selected African countries are linked, they also exhibit some degree of heterogeneity, a reflection of their different dynamics. Overall, both results provide statistical justification for the adoption of techniques that deal with cross-sectional dependence and slope heterogeneity.

Continuing with the preliminary analyses, panel unit root tests are conducted to establish the stationarity properties of the underlying data series so as to guard against spurious estimations. Due to the presence of cross-sectional dependence and slope heterogeneity, the cross-sectionally augmented IPS (Im et al., 2003) panel unit root test of Pesaran (2007) is carried out. Being robust to cross-sectional dependence and slope heterogeneity,

Table 1 Common Correlated Effects (CCE) Results (dependent variable: log of overall internal conflict)

Variables	Long-run coefficients
Log of government expenditure	-0.004*
	(0.059)
Log of per-capita GDP	-0.253***
	(0.000)
Log of education	-0.114
	(0.155)
Log of trade openness	-0.130***
	(0.000)
Constant	3.332***
	(0.000)
R-Squared adjusted	0.986

(1) *** P < 0.01, ** P < 0.05, * P < 0.1

(2) Standard p-values are in parentheses

it is the obvious choice for this study. The results are reported in Table 8 of the appendix. The test outcomes show that all the variables attain stationarity only upon first differencing. To test for long-run relationship between conflict and the regressors, the Westerlund (2007) cointegration test is employed. The test outcomes generated are valid even when cross-sectional dependence and slope heterogeneity are present in the data series. As reported in Table 9 of the appendix, 3 out of the 4 test statistics generated by this cointegration test indicate the presence of a long-run relationship between conflict, government expenditure and the other regressors.

The common correlated effects panel regression results for cases where overall internal conflict, ethnic conflict and religious alternatively serve as the dependent variables are reported in Table 1, 2 and 3 respectively. With regards to the regressor

Table 2 Common Correlated Effects (CCE) Results (dependent variable: log of ethnic conflict)

Variables	Long-run coefficients
Log of government expenditure	-0.066***
	(0.000)
Log of per-capita GDP	-0.115***
	(0.000)
Log of education	-0.334***
	(0.000)
Log of trade openness	-0.015***
	(0.000)
Constant	0.662***
	(0.003)
R-Squared adjusted	0.977

(1) *** P < 0.01, ** P < 0.05, * P < 0.1

(2) Standard p-values are in parentheses

Table 3 Common Correlated Effects (CCE) Results (dependent variable: log of religious conflict)

Variables	Long-run coefficients
Log of government expenditure	-0.046***
	(0.000)
Log of per-capita GDP	-0.162***
	(0.000)
Log of education	0.674***
	(0.000)
Log of trade openness	-0.204***
	(0.000)
Constant	-0.839**
	(0.010)
R-Squared adjusted	0.979

(1) *** P < 0.01, ** P < 0.05, * P < 0.1

(2) Standard p-values are in parentheses

of interest—government expenditure—the data analysis reveals that levels of government expenditure in Africa are associated with statistically significant reductions in all three types of conflict considered. The results show that percentage increases in government expenditure is able to induce reductions to the tune of 0.004%, 0.066% and 0.046% in overall internal conflict, ethnic conflict and religious conflict, respectively. Overall, we find that expansionary fiscal policy mitigates internal conflicts, as well as ethno-religious conflicts in Africa.

Results also show that the additional variables included as controls affect the level of conflict in Africa. Across all three results, it is revealed that income level measured through per-capita GDP has a negative and statistically significant impact on conflict in Africa. A percentage rise in per-capita GDP is associated with 0.235%, 0.115% and 0.162% drop in overall internal conflict, ethnic conflict and religious conflict, respectively. Empirical outcomes show that the impact of education on conflict is statistically insignificant when overall internal conflict is the focus. The impact is however negative when ethnic conflict is used as the dependent variable. A percentage increase in education leads to 0.334% decrease in ethnic conflict. As for religious conflict, its response to education is positive. A percentage increase in education causes religious conflict to increase by 0.674%. Across all the three estimations, the impact of trade openness on conflict is negative and statistically significant. A percentage increase in trade openness lowers overall internal conflict by 0.130%, ethnic conflict by 0.015% and religious conflict by 0.204%. Again, the biggest impact is on religious conflict.

Finally, to test causal relations between expansionary fiscal policy and conflict in Africa, the Emirmahmutoglu and Kose (2011) causality test is conducted. As earlier stated, this technique is suitable for panels made up of stationary, non-stationary, cointegrated and non-cointegrated series. It is also suitable for panel data series with cross-sectional dependence and slope heterogeneity. In addition, it generates

Table 4 Summary of panel bootstrap Granger causality results

Granger causality from government expenditure to overall internal conflict	DRC, Côte d'Ivoire, Ethiopia, Gabon, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zimbabwe, Algeria and the entire panel
Granger causality from government expenditure to ethnic conflict	Botswana, Burkina Faso, Cameroun, DRC, Côte d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Madagascar, Mali, Mozambique, Niger, Nigeria, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe, Algeria, Egypt, Libya, Morocco, Tunisia and the entire panel
Granger causality from government expenditure to religious conflict	Congo Rep., Ethiopia, Gabon, Gambia, Ghana, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone and South Africa

both country-specific results along with panel estimates. It is thus useful for making cross-country comparisons.

The summary of the country-specific and panel level bootstrap panel causality test results is provided in Tables 4.[2] Since this study is only interested in establishing the response of conflict on the continent to changes in government expenditure, only one-way causal effects from government expenditure to conflict are reported. As reported in the first row of Table 4, one-way causal impacts from government expenditure to overall internal conflict are visible in 16 out of the 32 countries sampled—DRC, Côte d'Ivoire, Ethiopia, Gabon, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zimbabwe and Algeria. Overall, the panel bootstrap causality test result also confirms a one-way causal effect of government expenditure on overall internal conflict in Africa. The findings confirm that government expenditure is a significant predictor of internal conflict in Africa.

As shown in the second row of Table 4, significant one-way causal effect from government expenditure to ethnic conflict are noticeable in 29 of the 32 countries—Botswana, Burkina Faso, Cameroun, DRC, Côte d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Madagascar, Mali, Mozambique, Niger, Nigeria, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe, Algeria, Egypt, Libya, Morocco and Tunisia. The absence of causal effects is only detected in Congo Rep. and Senegal. With regards to the entire panel, the results show that government expenditure significantly predicts ethnic conflict in Africa.

The last row of Table 4 reports the results of the causality tests from government expenditure to religious conflict. Evidence of Granger causality is seen in only 12 of the 32 countries–Congo Rep., Ethiopia, Gabon, Gambia, Ghana, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone and South Africa. The panel

[2] Panel bootstrap causality test statistics and the associated p-values are provided in Tables 8, 9, 10, 11, 12 of the appendix.

test statistics however indicate that no causal effects from government expenditure to religious conflict exist for the entire panel.

Discussion of Findings

Results from the econometric techniques in the form of the common correlated effect (CCE) regressions and the Emirmahmutoglu and Kose (2011) panel bootstrap causality tests reported in the previous section provide several interesting revelations. As such, this study succeeds to a large degree in expanding the focus of extant literature on the link between government spending and conflict in Africa by exploring the ethno-religious dimensions of conflict on the continent. As earlier stated, this holds significant importance due to the notable transformation in the nature of violent conflict over time. In the last century, interstate and civil wars took precedence as the primary forms of conflict; however, their occurrence has diminished over the years (Ashforth, 2009; Harriott, 2008a, b). According to the World Bank (2011), contemporary conflicts often defy easy classification as war, criminal violence, or political violence. Ethnic and religious conflicts frequently fall into this category, making them crucial considerations in research.

From the fitted regressions, it is established that increased government expenditure in Africa is not only capable of mitigating overall internal conflict, but also particularly capable of minimizing both ethnic and religious conflicts. These findings broadly confirm and further extend the conclusions reached by Basedau and Lay (2009), Fjelde and De Soysa (2009), and Taydas and Peksen (2012). The plausible explanation for these outcomes lies in the fact that expansionary fiscal policy can bring about peace and stability if it is geared towards supporting livelihoods, building critical infrastructure and meeting basic needs in an equitable manner. Our study findings therefore reveal that policymakers in Africa can achieve more peace and stability through the strategic use of expansionary fiscal policy. It can also be inferred from this outcome that the biggest effect of government expenditure is on ethnic conflict. The impact on religious conflict is also relatively large. This suggests that it is relatively easier to solve ethnic-based conflicts with expansionary policy schemes than it is with conflicts based on religious values in Africa.

Additionally, the study findings show that income level contributes to mitigating all three types of conflicts explored. The findings align with those of Carment et al. (2008) and Collier and Hoeffler (1998, 2004). The findings also lend some credence to the private motivation hypothesis. Conflict provides considerable opportunities for enrichment that motivate people to participate in it, especially in low-income environments. For instance, it provides the poor and unskilled with employment as soldiers. It also creates opportunities for looting, arms trading and illicit extraction of natural resources for personal gain. Income level plays a bigger role in lowering religious conflict when compared with others. Richer nations with less inequality are thus expected to experience smaller amounts of conflict. It therefore goes without saying that by prioritizing improvements in the financial conditions of the citizens, policymakers can mitigate conflict in Africa.

Surprisingly, however, the empirical outcomes show that the impact of education on conflict varies with the kind of conflict being considered. While its impact is negative when ethnic conflict is used as the dependent variable, its impact is positive when religious conflict is used instead. These findings suggest that education serves as a means of lowering ethnic conflicts, perhaps because of the ethnic diversity encouraged in many government-owned schools. This outcome lends credence to the findings of Fjelde and De Soysa (2009), Taydas and Peksen (2012) and Thyne (2006). On the other hand, education aggravates religious conflict, perhaps because of the huge involvement of religious organizations in the education sectors across Africa, which leaves room for unhealthy indoctrination. Policymakers therefore need to be aware of the fact that it is not just enough to encourage investments in their education sectors, they must also ensure that positive ethno-religious interactions are promoted in the schools.

The study findings also show that trade openness worsens all three types of conflict. These outcomes align with the claims made by Baliamoune-Lutz (2009) and Bertocchi and Guerzoni (2012) that trade openness tends to be harmful, especially in fragile countries with high export concentration such as the sampled African countries. Policymakers on the continent must therefore enforce some level of regulations in their countries' participations in international markets. Finally, the causality results reveal that causal relations between expansionary fiscal policies and conflict vary across countries on the continent. This is an indication that the relationship between conflict and government expenditure is heterogeneous in nature across the continent. The causal effect of government expenditure is however most widespread for ethnic conflict.

Conclusion

Conflicts, especially of the ethno-religious types, have plagued the African continent and taken a huge toll on the polity and economy. It has limited the continent's potential for growth and development. If Africa is to achieve significant success in the twenty-first century, the channels through which conflicts ravaging the continent can be resolved should be urgently established. While the adverse impacts of conflicts are not in doubt, the channels through which they can be resolved are however still evolving. This study contributes to the debate by examining whether conflicts, especially of the ethno-religious kinds, can be minimized via expansionary fiscal policies. With the aid of historical data, this study examines whether changes in government expenditure overtime has succeeded to some degree in minimizing conflict on the continent, and consequently, whether fiscal policy should continue to be deliberately used as a means of mitigating conflict.

This study finds that overall government expenditures across African states have played a significant role in minimizing general internal conflict, as well as ethnic and religious conflicts. Using data for 32 African nations over the period 1990–2016, the empirical analyses show that raising overall government expenditure by a percent is able to induce reductions to the tune of 0.004%, 0.046% and 0.066% in overall internal conflict, ethnic conflict and religious conflict, respectively. The results suggest

that total government expenditure has a stronger impact on the reduction of ethnic conflict on the continent. Empirical outcomes also show that causality varies across countries on the continent, an indication that the relationship between conflict and government expenditure is heterogeneous in nature across the continent. The causal effect of government expenditure is however most widespread for ethnic conflict.

Overall, the study findings lend credence to the importance of expansionary fiscal policy as a tool for mitigating conflict, especially ethnic and religious conflicts in Africa. The study findings support the position that financing reconstruction and development through expansionary fiscal policy has the capability to induce economic progress, as well as peace and stability. It provides a means of lowering inequality amongst groups and addressing real and perceived grievances. It is able to improve social trust and inclusion in a manner that improves stability. It also contributes to socioeconomic protection of vulnerable groups, thus lowering social discontent. Moreover, findings from this study show that higher economic growth lowers the probability of falling into conflict. A key implication of this is that conflict-prone African countries can employ counter-cyclical policies in the form of fiscal stimulus to prevent contractionary shocks in the economy. Therefore, the use of sound macroeconomic policies in fragile African countries cannot be overemphasized.

In conclusion, this study finding suggests that the development of efficient fiscal institutions is central to peace and stability in conflict-plagued African nations. While paying attention to country-specific peculiarities, sufficient effort should be placed on employing the existing administrative capacity in collecting taxes efficiently where possible and upgrading core public financial management functions. African countries affected by conflict should also improve coordination efforts with global and regional institutions for financial and technical assistance.

Appendix

Table 5 Selected African countries

Botswana	Burkina Faso	Cameroun	Congo, Rep	DRC	Côte d'Ivoire
Ethiopia	Gabon	Gambia	Ghana	Guinea	Guinea Bissau
Kenya	Madagascar	Mali	Mozambique	Niger	Nigeria
Senegal	Sierra Leone	South Africa	Sudan	Tanzania	Togo
Uganda	Zambia	Zimbabwe	Algeria	Egypt	Libya
Morocco	Tunisia				

Table 6 Statistical properties of variables

Variable	Mean	Max	Min	Std. dev	Skew	Kurt	J-B
CON	7.037375	12.00000	0.250000	2.921157	-0.717593	2.423367	86.121***
ET	3.341001	6.000000	0.000000	1.248766	-0.336242	2.708406	19.341***
RT	4.066262	6.000000	0.000000	1.362516	-0.771567	2.977371	85.743***
GE	1250.724	18,324.78	0.031000	2466.722	3.527608	17.10206	7821.932***
GDPPC	1879.722	14,010.50	204.0242	2205.044	2.579205	10.66892	3043.141***
EDUC	89.81789	149.3075	21.70808	25.18206	-0.443340	2.944250	23.909***
TRADE	59.97214	156.8618	1.377797	23.69613	0.922049	4.066975	157.734***

(1) Skew, Kurt and J-B, denote skewness, kurtosis and the statistics of the Jarque–Bera test for normality
(2) ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively

Table 7 Preliminary tests

	CON	GE	GDPPC	EDUC	TRADE
Cross-sectional dependence tests					
Breusch-Pagan LM	2402.159***	9061.309***	5967.006***	5594.502***	2293.978***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pesaran scaled LM	59.504***	270.932***	172.688***	160.861***	56.069***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Bias-corrected scaled LM	58.889***	270.317***	172.073***	160.246***	55.454***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pesaran CD	19.075***	94.194***	35.250***	31.718***	22.318***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Slope homogeneity tests	Test statistic				
Delta test	-3.696***				
	(0.000)				
Adjusted delta test	-4.308***				
	(0.000)				

(1) ***, ** and * denote statistical significance at 1%, 5% and 10%, respectively

Table 8 Panel CIPS unit root test

Variables	CIPS		
	C	C&T	Decision
CON	-6.166***	-6.381***	I(1)
ET	-6.186***	-6.404***	I(1)
RT	-6.190***	-6.420***	I(1)
GE	-6.112***	-6.318***	I(1)
GDPPC	-6.190***	-6.420***	I(1)
EDUC	-6.190***	-6.235***	I(1)
TRADE	-6.190***	-6.069***	I(1)

Table 9 Panel cointegration test

	G_t	G_a	P_t	P_a
Z-value	-1.878**	2.157	-5.112***	-4.160***
P-value	(0.030)	(0.985)	(0.000)	(0.000)

(1) * denotes statistical significance at 10%

(2) Standard p-values are in parentheses

Table 10 Granger causality from government expenditure to overall internal conflict

Countries	Test statistics
Ho: government expenditure is not a predictor of overall internal conflict	
Botswana	1.478
	(0.224)
Burkina Faso	2.147
	(0.143)
Cameroun	1.627
	(0.202)
Congo, Rep	2.189
	(0.139)
DRC	3.490*
	(0.062)
Côte d'Ivoire	4.687**
	(0.030)
Ethiopia	3.904**
	(0.048)
Gabon	3.131*
	(0.077)
Gambia	1.880
	(0.170)
Ghana	1.968
	(0.161)
Guinea	2.272
	(0.132)
Guinea Bissau	1.899
	(0.168)
Kenya	2.659
	(0.103)
Madagascar	2.009
	(0.156)
Mali	12.686***
	(0.000)
Mozambique	8.480***
	(0.004)

Countries	Test statistics
Niger	7.487***
	(0.006)
Nigeria	6.500**
	(0.011)
Senegal	4.532**
	(0.033)
Sierra Leone	4.166**
	(0.041)
South Africa	3.123*
	(0.077)
Sudan	1.831
	(0.176)
Tanzania	3.155*
	(0.076)
Togo	4.620**
	(0.032)
Uganda	3.643*
	(0.056)
Zambia	2.402
	(0.121)
Zimbabwe	4.013**
	(0.045)
Algeria	2.770*
	(0.096)
Egypt	2.385
	(0.122)
Libya	1.268
	(0.260)
Morocco	0.601
	(0.438)
Tunisia	3.327
	(0.757)
Panel Fisher	170.399***
Bootstrap P-value	(0.000)

(1) *** $P<0.01$, ** $P<0.05$, * $P<0.1$. (2) p-values are in parentheses

Table 11 Granger causality from government expenditure to ethnic conflict

Countries	Test statistics
Ho: government expenditure is not a predictor of ethnic conflict	
Botswana	5.586**
	(0.018)

Countries	Test statistics
Burkina Faso	6.122**
	(0.013)
Cameroun	2.778*
	(0.096)
Congo, Rep	0.568
	(0.451)
DRC	7.300***
	(0.007)
Côte d'Ivoire	5.800**
	(0.016)
Ethiopia	4.294**
	(0.038)
Gabon	3.526*
	(0.060)
Gambia	4.200**
	(0.040)
Ghana	4.325**
	(0.038)
Guinea	5.493**
	(0.019)
Guinea Bissau	7.054**
	(0.008)
Kenya	8.720***
	(0.003)
Madagascar	6.727***
	(0.009)
Mali	5.878**
	(0.015)
Mozambique	7.782***
	(0.005)
Niger	6.372**
	(0.012)
Nigeria	6.911***
	(0.009)
Senegal	2.507
	(0.113)
Sierra Leone	1.834
	(0.176)
South Africa	6.471**
	(0.011)
Sudan	15.283***
	(0.000)

Countries	Test statistics
Tanzania	11.180***
	(0.001)
Togo	8.560***
	(0.003)
Uganda	9.399***
	(0.002)
Zambia	10.675***
	(0.001)
Zimbabwe	7.439***
	(0.006)
Algeria	5.233**
	(0.022)
Egypt	4.624**
	(0.032)
Libya	4.694**
	(0.030)
Morocco	3.433*
	(0.064)
Tunisia	4.583*
	(0.075)
Panel Fisher	266.030***
Bootstrap P-value	(0.000)

(1) *** P < 0.01, ** P < 0.05, * P < 0.1. (2) p-values are in parentheses

Table 12 Granger causality from government expenditure to religious conflict

Countries	Test statistics
Ho: government expenditure is not a predictor of religious conflict	
Botswana	1.506
	(0.220)
Burkina Faso	1.770
	(0.183)
Cameroun	2.558
	(0.110)
Congo, Rep	3.123*
	(0.077)
DRC	1.608
	(0.205)
Côte d'Ivoire	2.515
	(0.113)
Ethiopia	3.318*
	(0.069)

Countries	Test statistics
Gabon	3.493*
	(0.062)
Gambia	3.160*
	(0.075)
Ghana	2.747*
	(0.097)
Guinea	2.176
	(0.140)
Guinea Bissau	1.856
	(0.173)
Kenya	2.250
	(0.134)
Madagascar	1.869
	(0.172)
Mali	8.990***
	(0.003)
Mozambique	12.180***
	(0.000)
Niger	7.790***
	(0.005)
Nigeria	3.950**
	(0.047)
Senegal	3.156*
	(0.076)
Sierra Leone	3.218*
	(0.073)
South Africa	3.379*
	(0.066)
Sudan	2.704
	(0.100)
Tanzania	2.368
	(0.124)
Togo	1.395
	(0.238)
Uganda	2.059
	(0.151)
Zambia	0.638
	(0.424)
Zimbabwe	0.827
	(0.363)
Algeria	0.469
	(0.493)

Countries	Test statistics
Egypt	0.554
	(0.457)
Libya	0.096
	(0.757)
Morocco	0.674
	(0.412)
Tunisia	0.823
	(0.791)
Panel Fisher	143.276
Bootstrap P-value	(0.100)

(1) *** $P<0.01$, ** $P<0.05$, * $P<0.1$. (2) p-values are in parentheses

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Declarations

Ethical Approval Authors mentioned in the manuscript have agreed for authorship read and approved the manuscript, and given consent for submission and subsequent publication of the manuscript.

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