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Working Paper

Estimating the effect of democracy, governance and militarisation on peace in Africa

AGDI Working Paper, No. WP/20/046

Provided in Cooperation with:

African Governance and Development Institute (AGDI), Yaoundé, Cameroon

Suggested Citation: Iheonu, Chimere Okechukwu; Odo, Kingsley O.; Ekeocha, Davidmac O. (2020) : Estimating the effect of democracy, governance and militarisation on peace in Africa, AGDI Working Paper, No. WP/20/046, African Governance and Development Institute (AGDI), Yaoundé

This Version is available at:

<https://hdl.handle.net/10419/228023>

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A G D I Working Paper

WP/20/046

Estimating the effect of Democracy, Governance and Militarisation on Peace in Africa ¹

Forthcoming: Journal of Public Affairs

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¹ This working paper also appears in the Development Bank of Nigeria Working Paper Series.

Research Department

Estimating the effect of Democracy, Governance and Militarisation on Peace in Africa**Chimere O. Iheonu, Kingsley O. Odo & Davidmac O. Ekeocha**

January 2020

Abstract

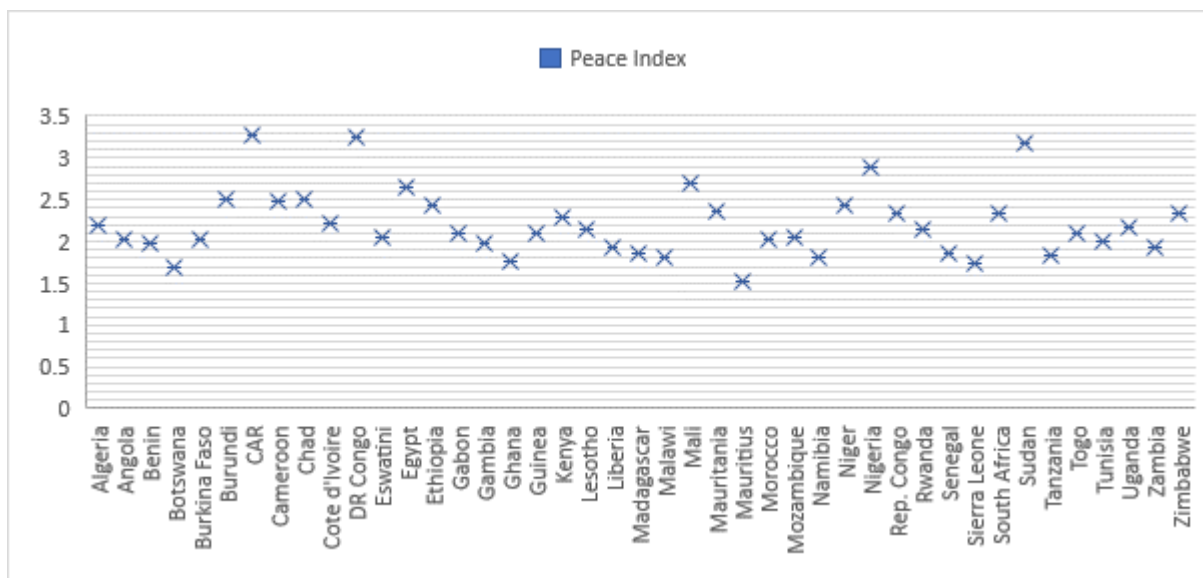
Peace has been deemed paramount to socioeconomic progress and economic development across nations. It is for this reason nations strive to improve the peaceful coexistence of citizens. This study investigates the effect of democracy, governance and militarisation on peace in 43 African countries for the year 2018 in a cross sectional framework. The Ordinary Least Square (OLS), the Tobit regression and the Quantile Regression (QR) were employed as estimation strategies. The empirical results firstly reveal that democracy increases peace in Africa, particularly in countries where the initial level of peace is at its highest level. Secondly, militarisation of Africa reduces peace in the region only in countries where the initial level of peace is at its highest level. Thirdly, the influence of governance on peace in Africa depends majorly on the measure of governance utilised. The control of corruption, government effectiveness and regulatory quality increase peace where the initial level of peace is at its lowest level. Political stability increases peace across the entire quantiles utilised while rule of law increases peace in countries where the initial level of peace is low. In conclusion, governance in general increases peace in the countries where initial level of peace is very low. Policy recommendations based on these findings are discussed.

Keyword: Democracy; Governance; Militarisation; Peace; Africa.

1. Introduction

Peace is seen as a multifaceted concept and somewhat difficult to measure and define (Feyzabad et al., 2015). However, according to Anderson (2004), the most common definition of peace is the lack of violence and all forms of conflicts. The advantage of peace cuts across various socioeconomic dimension. Peace brings about prosperity and happiness. It also reduces the level of mortality in societies, and it is also a great enabler of economic growth and development. The level of peace in Africa has been low when compared to most developed regions. However, data from the Institute for Economics and Peace reveal that while countries like Botswana and Mauritius have remained peaceful relatively, and have the highest level of peacefulness in Africa, Central African Republic and the Democratic Republic of Congo have had the lowest level of peacefulness based on observed data.

Figure 1: Global Peace Index for African Countries (2018)



Source: Institute for Economics and Peace (2018).

Note: CAR is Central African Republic. Rep. Congo is Republic of Congo. Peace Index is ranked 1 to 5 where 1 denotes the most peaceful and 5 the least peaceful.

The existence or non-existence of peace can be seen as a result of various phenomena. One of such is the political arrangement of countries. In particular, whether a country practices democracy or is authoritarian in nature. Dahl (1989) views democracy as an organised process through which most of the citizens of a country can persuade the government to do what they want it to do and to avoid what they do not want it to do. This implies that democracy incorporates far more than holding an election or having a parliament. Consequently, it embraces civilian control of the military, economic and social freedom, the

right of citizens to speak, assemble and worship freely without state interference, and gender equality. This invariably can transmit to peacefulness of societies. According to Cortright, Seyle and Wall (2017), peace is very possible to produce via democracy when it embodies fully advanced and established institutions that meet the canons of all-inclusiveness, involvement and culpability.

However, democratic structures can be prone to inflammatory appeals of bigotry that aggravate the risk of armed violence, notwithstanding, advanced democracies hardly wage war against each other. Established democracies have fewer civil conflicts and are less probable to use violence against their citizens (Cortright, Seyle and Wall, 2017). The reverse is the case in partial democracies and in countries making the transition to democracy such as the countries in Africa. The sways of democratisation in such countries are often subverting and may intensify the peril of armed conflict which limits the goals of democracy. Oneal and Russett (2001) however reveal that higher level of democracy produces peaceful coexistence of people within a country. Walter (2015) observed that conflicts are much more possible to replicate themselves in nations where there is limited or non-participation of the public in governance structure and where information is not transparent and there is unaccountability by those in government. Norris (2012) reveals that all the dimensions of governance are necessary to foster peace. The lack of good governance strifes conflict which deteriorates peace. Good governance according to the Ibrahim Index of African Governance (2016) is described as the rule of law, respect for human rights, sustainable economic opportunities and human development. Government built on integrity and a healthy judiciary are comprehensive form of investment that crafts the premises for stability, public trust and national reconstruction. According to Iheonu et al. (2019), the quality of governance in a society can influence diverse aspect of a society which ultimately influences the level of peace in that society. Iheonu (2019) and Asongu and Nwachukwu (2016) reveal that good governance in Africa is essential in all spheres of economic development and progress.

Militarisation which entails the extent of the use of military framework and procedures in a nation's decision making process can also affect the level of peace in a given society. According to Bernazzoli and Flint (2009), the concept of militarisation once symbolised the development of a separate, dangerous military tenet to one that emphasises the embeddedness of a military mentality on societies. Peace in Africa has continued to be threatened due to growing cases of conflicts and other security challenges which has resulted in military interventions. Militarisation has been consolidated in Africa with military expenditure in the

region increasing substantially. Saba and Ngepah (2019) observed that Africa's military expenditure has increased by 91 percent since 2015. This is as a result of the various political instabilities in the continent. In order for peace to be sustained, military interventions are of utmost importance. However, military interventions can also result to the further deterioration of peace through the abuse of human rights as well as the abuse of power.

This study is of utmost importance and motivated based on the premise that peace transmits to propelling factors which bring about economic growth and development. No continent is in dire need of economic development as that of the African continent. This study hence brings empirical light to a much theoretical debate on the impact of democracy, governance and militarisation on peace in a cross sectional framework of 43 African countries for the year 2018. The study utilises the Ordinary Least Squares (OLS), the Tobit regression and the Quantile Regression (QR) which has the advantage of estimating the impact of democracy, governance and militarisation on peace in Africa across various quantiles of the initial level of peace which is in line with providing robust policy options. The remainder of the study includes (1) the data and methodology, (2) the presentation and analysis of results, and (3) conclusions with relevant policy recommendations.

2 Data and methodology

2.1 Data

This study focuses on a cross section of 43 African countries for the year 2018 which is based on the constraint of data availability. The study employs the global peace index sourced from the Institute for Economics and Peace as the dependent variable. The global peace index measures the relative position of a country peacefulness with 172 independent states ranked according to their level of peacefulness. It investigates the extent to which countries are involved in ongoing domestic and international conflicts. Also, it seeks to evaluate the level of harmony or discord within a nation. The global peace index is ranked 1 to 5, with 1 being the most peaceful and 5 the least peaceful. The study captures democracy employing the democracy index sourced from the Economic Intelligence Unit (EIU) and measure the state of democracy in 167 countries. The democracy index classifies each of these countries in one of the four regime category which includes full democracies, flawed democracies, hybrid regimes and authoritarian regimes. The democracy index is ranked 0 to 10 with 0 being the least democratic (authoritarian regimes) and 10 the most democratic. Military expenditure (% of Gross Domestic Product (GDP)) sourced from the World Development Indicators (WDI,

2019) is utilised to capture militarisation. de Souya (2019) has acknowledged this variable to be a direct measure of militarisation. Governance indicators are sourced from the World Governance Indicator, WGI (2019). They include the control of corruption, government effectiveness, political stability, rule of law and regulatory quality. The study also employs the natural logarithm of GDP per capita (constant US\$) and inflation as control variables, both sourced from WDI (2019).

The study constructs a composite index for governance employing the Principal Component Analysis (PCA). This is in line with estimating the overall impact of governance quality on peace in Africa. According to Asongu et al. (2017), the PCA entails reducing a set of highly correlated variables into an uncorrelated set of small values known as principal components. Tchamyou (2017) acknowledges that the new variable remains a picture of the parent information in the data set. In a PCA, within the construction of a new variable, Jolliffe (2002) posits that factors that have an Eigen value higher than one should be retained.

Countries involved in this study includes: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Central African Republic, Cameroon, Chad, Cote d'Ivoire, DR Congo, Eswatini, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rep. Congo, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

2.2 Methodology

2.2.1 Ordinary Least Squares

Due to the cross sectional nature of the dataset, the OLS estimation technique with heteroskedastic consistent standard error is utilised for the study. The adoption of the OLS is in line with extant literature such as Asongu, Uduji and Okolo-Obasi (2019), Kodila-Tedika and Asongu (2015). In line with the objective of the study, the OLS regression is specified such that:

$$p_i = \delta_1 + \delta_2 d_i + \delta_3 m_i + \delta_4 g_i + \delta_5 X_i + \varepsilon_i \quad (1)$$

here, p_i represents peace index, d_i is democracy index, m_i is military expenditure (% of GDP), g_i represents six governance indicators which includes the control of corruption,

government effectiveness, political stability, rule of law, regulatory quality and general governance derived from the principal component analysis. X is a vector of control variables in which the natural logarithm of per capita GDP and price level which inflation proxies are elements off. δ_1 is the constant term, and ε_i is the error term. The study models each indicator of governance separately in order to avoid multicollinearity issues and derive unbiased estimates.

2.2.2 Tobit Regression

In line with the nature of the dependent variable which has a restricted range of 1-5, the study complements the result of the OLS with that of the Tobit regression. According to Coccoresse and Pellecchia (2010), a double censored Tobit model has been documented in literature to be consistent with dependent variables that have a limited range. A standard Tobit model is specified such that:

$$y_{i,t}^* = \alpha_0 + \beta X_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $y_{i,t}^*$ is a latent response variable, $X_{i,t}$ is an observed $1 \times K$ vector of regressors and $\varepsilon_{i,t}$ is a white noise. In this study, as outlined by Asongu, Uduji and Okolo-Obasi (2019), instead of observing $y_{i,t}^*$, we observe $y_{i,t}$:

$$y_{i,t} = \begin{cases} y_{i,t}^*, & \text{if } y_{i,t}^* > \gamma \\ 0, & \text{if } y_{i,t}^* \leq \gamma \end{cases} \quad (3)$$

here, γ is a constant which is non-stochastic. In other words, the value of $y_{i,t}^*$ is missing when it is less than or equal to γ .

2.2.3 Quantile Regression

The study utilises the QR in order to address the static issues of the OLS estimation technique and the Tobit regression which are based on conditional mean of the regressand. According to Koenker and Bassett (1978), the QR estimates parameters throughout the conditional distribution of the dependent variable. Even though mean effects are substantially relevant, QR aids in articulating lower, intermediate and higher levels of peace.

Solving the optimisation problem represented in equation (4), the θ^{th} quantile estimator of peace is obtained.

$$\min_{\beta \in R^k} [\sum_{i \in \{i: y_i \geq x_i \beta\}} \theta |y_i - x_i \beta| + \sum_{i \in \{i: y_i < x_i \beta\}} (1-\theta) |y_i - x_i \beta|] \quad (4)$$

where $\theta \in (0,1)$. The focus of the QR is to minimise the weighted sum of absolute deviation along different quantiles like the 10th quantile where $\theta = 0.10$ or the 75th quantile where $\theta = 0.75$. The conditional quantile of peace or any dependent variable $y_{i,t}$ given $x_{i,t}$ is: $Q_y\left(\frac{\theta}{x_{i,t}}\right) = x_i' \beta \theta$. Here, each unique slope parameters are modelled for each θ^{th} specific quantile (Asongu, Iheonu and Odo, 2019). The choice of QR is due to policy importance of conditional relationships. Mean-oriented estimates provides general inference for policy that may be ineffective unless they are conditional on initial levels of peace and tailored differently across countries with high, intermediate and low levels of peace.

3. Results and discussion

The empirical result of the OLS, the Tobit regression and the QR where the control of corruption is included as an indicator for governance is presented in table 1. The result reveals that democracy has a negative effect on peace index. This effect is observed across the estimated quantiles. However, the effect of democracy on peace index can be seen to be insignificant for the 75th and 90th quantile. Military expenditure on the other hand is revealed to be insignificantly related to the peace index. However, military expenditure is observed to be significant in the 10th quantile in the quantile regression estimate. The control of corruption is revealed to have a negative effect on the peace index across the estimation techniques, however, control of corruption significantly reduces the peace index in the 90th quantile. Further result shows that economic growth has no statistical significant effect on the peace index in Africa. However, the mean estimates of OLS and Tobit reveal that inflation increases the peace index. While this is in line with the 50th quantile, estimates from the 10th quantile reveal that inflation significantly reduces the peace index.

Table 1: OLS, Tobit and Quantile Regression (1)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.6289*	2.6289*	2.3199*	2.4438*	2.9429*	2.6475*	2.6193*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.001)
Democracy	-0.1316*	-0.1316*	-0.0909*	-0.1174*	-0.1185**	-0.0962	-0.0560
	(0.004)	(0.001)	(0.000)	(0.001)	(0.030)	(0.851)	(0.453)
Military Expenditure	0.0090	0.0090	0.0454**	0.0224	0.0341	-0.0210	-0.1172
	(0.873)	(0.855)	(0.017)	(0.599)	(0.624)	(0.851)	(0.236)
Economic Growth	0.0024	0.0024	-0.0081	0.0050	-0.0591	-0.0076	0.0128
	(0.970)	(0.963)	(0.679)	(0.912)	(0.430)	(0.950)	(0.903)
Inflation	0.0075**	0.0075***	-0.0026***	-0.0038	0.0115***	0.0150	0.0042
	(0.048)	(0.078)	(0.098)	(0.290)	(0.057)	(0.121)	(0.612)
Control of Corruption	-0.1109	-0.1109	-0.0425	-0.0164	-0.0828	-0.1802	-0.4028***
	(0.145)	(0.300)	(0.286)	(0.858)	(0.581)	(0.457)	(0.062)
R-Squared	0.5264						
LR Chi-Square		32.15					
Pseudo R ²		0.7438	0.4285	0.3639	0.3170	0.3414	0.4173
Log Likelihood		-5.5343					
VIF	1.56						
Observations	43	43	43	43	43	43	43

Source: Author's computation.

Note: *, ** and *** reveal statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Table 2 reveal the OLS, Tobit and quantile regression results when government effectiveness is modelled as a measure of the quality of governance. Empirical results remain similar to the model with the control of corruption. However, the effect of inflation on peace in the 10th quantile of the quantile regression result proves insignificant. Government effectiveness is seen to reduce the peace index significantly only in the 90th quantile.

Table 2: OLS, Tobit and Quantile Regression (2)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.6877*	2.6877*	2.2690*	2.4758*	2.7388*	3.0589*	2.1176**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.014)
Democracy	-0.1434*	-0.1434*	-0.0854*	-0.1183*	-0.1135**	-0.1054	-0.0877
	(0.002)	(0.000)	(0.000)	(0.001)	(0.036)	(0.208)	(0.207)
Military Expenditure	0.0032	0.0032	0.0485***	0.0205	0.0387	-0.0474	-0.1092
	(0.955)	(0.948)	(0.052)	(0.658)	(0.581)	(0.667)	(0.237)
Economic Growth	0.0063	0.0063	-0.0091	0.0046	-0.0379	-0.0453	0.0839
	(0.918)	(0.911)	(0.742)	(0.929)	(0.633)	(0.718)	(0.421)
Inflation	0.0077***	0.0077***	-0.0011	-0.0040	0.0127**	0.0130	-0.0005
	(0.059)	(0.081)	(0.608)	(0.328)	(0.044)	(0.183)	(0.948)
Government Effectiveness	-0.0600	-0.0600	-0.0600	0.0090	-0.0397	-0.1705	-0.5510**
	(0.630)	(0.631)	(0.331)	(0.938)	(0.822)	(0.541)	(0.021)
R-Squared	0.5168						
LR Chi-Square		31.28					
Pseudo R ²		0.7240	0.4116	0.3635	0.3041	0.3401	0.4410
Log Likelihood		-5.9627					
VIF	1.66						
Observations	43	43	43	43	43	43	43

Source: Author's computation.

Note: *, ** and *** denotes statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Table 3 present the results of the OLS, the Tobit and QR when political stability is modelled as a measure of governance quality. Empirical results reveal that democracy reduces peace index in Africa across the estimation techniques. However, different from the first two previous models, the 50th quantile is found to be insignificant. Military expenditure remains positive and significant only in the 10th quantile. Further result shows economic growth to be significant in the 90th quantile only. Contrary to the first two models, inflation is revealed to

positively influence peace index in the 10th quantile. Finally, political stability reduces the peace index significantly across the estimation techniques. It is revealed that the negative effect is an increasing function of peace index. This means that the influence of political stability on peace is higher for countries where the initial level of peace index is high.

Table 3: OLS, Tobit and Quantile Regression (3)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.0503* (0.000)	2.0503* (0.000)	2.1377* (0.000)	1.9601* (0.000)	1.6929* (0.000)	1.7260* (0.001)	1.8196* (0.000)
Democracy	-0.0629** (0.024)	-0.0629** (0.021)	-0.0777* (0.000)	-0.0938** (0.013)	-0.0422 (0.298)	-0.0272 (0.564)	-0.0465 (0.106)
Military Expenditure	0.0203 (0.578)	0.0203 (0.559)	0.0482* (0.008)	0.0122 (0.797)	0.0579 (0.279)	0.0041 (0.946)	-0.0251 (0.500)
Economic Growth	0.0130 (0.764)	0.0130 (0.728)	-0.0145 (0.445)	0.0237 (0.646)	0.0370 (0.521)	0.0509 (0.450)	0.0835** (0.044)
Inflation	0.0072* (0.003)	0.0072** (0.017)	0.0070* (0.000)	0.0099** (0.017)	0.0070 (0.123)	0.0070 (0.185)	0.0007 (0.803)
Political Stability	-0.3344* (0.000)	-0.3344* (0.000)	-0.2029* (0.000)	-0.3121* (0.000)	-0.3880* (0.000)	-0.3621* (0.000)	-0.4670* (0.000)
R-Squared	0.7609						
LR Chi-Square		61.52					
Pseudo R ²		1.4240	0.4809	0.4545	0.4889	0.5444	0.6422
Log Likelihood		9.1585					
VIF	1.50						
Observations	43	43	43	43	43	43	43

Source: Author's computation.

Note: *, ** and *** denotes statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Table 4: OLS, Tobit and Quantile Regression (4)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.7262*	2.7262*	2.4183*	2.4513*	2.8062*	3.4366*	2.6282*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
Democracy	-0.1396*	-0.1396*	-0.0932*	-0.1179*	-0.1089***	-0.1389	0.0295
	(0.002)	(0.001)	(0.000)	(0.003)	(0.053)	(0.148)	(0.721)
Military Expenditure	-0.0001	-0.0001	0.0461***	0.0198	0.0433	-0.0549	-0.1668
	(0.997)	(0.997)	(0.069)	(0.667)	(0.530)	(0.644)	(0.115)
Economic Growth	-0.0008	0.0008	-0.0203	0.0046	-0.0562	-0.0617	-0.0490
	(0.989)	(0.987)	(0.452)	(0.925)	(0.491)	(0.633)	(0.665)
Inflation	0.0074***	0.0074	-0.0017	-0.0035	0.0124***	0.0119	0.0033
	(0.074)	(0.101)	(0.437)	(0.399)	(0.053)	(0.275)	(0.720)
Regulatory Quality	-0.0762	-0.0762	-0.0257	-0.0160	-0.0620	0.0002	-0.6216**
	(0.496)	(0.566)	(0.701)	(0.897)	(0.739)	(0.999)	(0.032)
R-Squared	0.5180						
LR Chi-Square		31.38					
Pseudo R ²		0.7263	0.4122	0.3646	0.3040	0.3366	0.4009
Log Likelihood		-5.9124					
VIF	1.67						
Observations	43	43	43	43	43	43	43

Source: Author's computation.

Note: *, ** and *** represent statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Empirical results from table 4 reveal that the influence of regulatory quality on peace index is significantly only in the 90th quantile. Mean estimates of the OLS and Tobit regression reveals no significant effect. The 75th and 90th quantile of democracy remain insignificant on its influence on peace index. Military expenditure remained significant only in the 10th quantile. Economic growth is revealed to be insignificant across the estimation techniques. While inflation is positive and significant only in the OLS estimation and the 50th quantile.

Table 5: OLS, Tobit and Quantile Regression (5)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.3908*	2.3908*	2.3299*	2.4314*	2.9286*	2.6118*	1.6916*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)
Democracy	-0.1138**	-0.1138*	-0.0908*	-0.1143*	-0.1070***	-0.0463	-0.0448
	(0.011)	(0.004)	(0.000)	(0.002)	(0.056)	(0.541)	(0.383)
Military Expenditure	0.0090	0.0090	0.0437**	0.0239	0.0355	-0.0383	-0.0321
	(0.869)	(0.849)	(0.039)	(0.593)	(0.608)	(0.688)	(0.619)
Economic Growth	0.0159	0.0159	-0.0082	0.0032	-0.0687	-0.0351	0.1030
	(0.802)	(0.761)	(0.717)	(0.947)	(0.368)	(0.738)	(0.152)
Inflation	0.0081**	0.0081**	-0.0045**	-0.0030	0.0124**	0.0093	0.0033
	(0.027)	(0.049)	(0.013)	(0.416)	(0.037)	(0.252)	(0.538)
Rule of Law	-0.1999***	-0.1999***	-0.0441	-0.0208	-0.1063	-0.3763***	-0.6401*
	(0.069)	(0.080)	(0.363)	(0.842)	(0.512)	(0.098)	(0.000)
R-Squared	0.5482						
LR Chi-Square		34.17					
Pseudo R ²		0.7908	0.4193	0.3668	0.3221	0.3750	0.5119
Log Likelihood		-4.5179					
VIF	1.62						
Observations	43	43	43	43	43	43	43

Source: Authors computation.

Note: *, ** and *** denotes statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Empirical results from table 5 show that rule of law have a negative effect on the peace index across the estimation techniques. However, the 25th and 50th quantile are insignificant. The effect of rule of law on peace index is also seen to be largest in the 90th quantile. Democracy as is rule of law is negative in its influence on peace index. Military expenditure remained positive and significant only in the 10th quantile while economic growth remained insignificant across estimation techniques. Inflation is revealed to be positively and

statistically significant in the mean estimates as well as the 50th quantile while inflation is negative and significant in the 10th quantile.

In other to model general governance, the study employed the principal component analysis to derive a single governance quality index. Computational result reveals that only the first Principal Component (PC) have an Eigenvalue greater than 1. While the first PC have a eigenvalue of 4.1745, the second, third, fourth and fifth PC have values which are less than 1.

Table 6: Principal Component Analysis.

Principal Component	Eigenvalue	Proportion	Cumulative	Scoring Coefficients	
				Variable	First PC
First PC	4.1745	0.8349	0.8349	CC	0.2235
Second PC	0.3934	0.3934	0.9136	GE	0.2247
Third PC	0.2067	0.2067	0.9549	PS	0.1977
Fourth PC	0.1208	0.1208	0.9791	RQ	0.2182
Fifth PC	0.1044	0.1044	1.0000	RL	0.2287

Source: Author's computation.

Note: PC denotes Principal Component.

This denotes that the study retains the first PC in the computational exercise. Table 7 reveal that general governance has a significant mean effect on peace index in Africa. This is seen in the OLS and Tobit regression estimate. Further result also reveal that the effect of total governance on peace index is more pronounced in the 90th quantile as reflected in its significant probability value.

Table 7: OLS, Tobit and Quantile Regression Results (6)

Variables	OLS	Tobit	Q.10	Q.25	Q.50	Q.75	Q.90
Constant	2.4859*	2.4859*	2.3558*	2.4561*	3.0054*	2.9447*	2.1305*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Democracy	-0.1041**	-0.1041*	-0.0886*	-0.1159*	-0.1131**	-0.0568	-0.1234**
	(0.022)	(0.009)	(0.000)	(0.003)	(0.049)	(0.470)	(0.043)
Military Expenditure	0.0110	0.0110	0.0453**	0.0228	0.0340	-0.0266	-0.0154
	(0.837)	(0.815)	(0.035)	(0.616)	(0.622)	(0.783)	(0.832)
Economic Growth	0.0158	0.0158	-0.0107	0.0036	-0.0641	-0.0486	0.1413***
	(0.802)	(0.759)	(0.639)	(0.942)	(0.397)	(0.645)	(0.084)
Inflation	0.0064***	0.0064	-0.0024	-0.0037	0.0115***	0.0125	-0.0029
	(0.096)	(0.117)	(0.174)	(0.348)	(0.059)	(0.138)	(0.644)
General Governance	-0.1290***	-0.1290**	-0.0234	-0.0094	-0.0525	-0.1394	-0.2816*
	(0.055)	(0.042)	(0.392)	(0.874)	(0.560)	(0.272)	(0.005)
R-Squared	0.5597						
LR Chi-Square		35.27					
Pseudo R ²		0.8164	0.4237	0.3662	0.3251	0.3743	0.4933
Log Likelihood		-3.9657					
VIF	1.66						
Observations	43	43	43	43	43	43	43

Source: Author's computation.

Note: *, ** and *** denotes statistical significance at 1, 5 and 10% respectively. VIF is Variance Inflation Factor.

Democracy remained negative on its effect on peace index while military expenditure remained positive. Economic growth is revealed to be significant only in the 90th quantile while inflation is significant in the OLS estimate and the 50th quantile.

4. Conclusion

This study brings empirical light to a much theoretical discourse by examining the effect of democracy, militarisation and governance on peace in Africa for 43 countries in the region for the year 2018 employing the OLS, the Tobit regression and the QR. The results from the OLS and Tobit regressions revealed that democracy significantly reduces the peace index in African countries thus denoting that democracy increases peace in Africa. Also, military expenditure, the proxy for militarisation is revealed to increase the global peace index which denotes that militarisation of the African continent reduces peace in Africa. Furthermore, the results reveal that the control of corruption, government effectiveness and regulatory quality reduces the peace index but not at any level of statistical significance. On the other hand, political stability and rule of law have negative and statistically significant effect on the peace index in Africa. This means that political stability and rule of law increases peace in Africa. The composite index of governance is also revealed to reduce the peace index at conventional statistically significant levels which invariably mean that improving the quality of governance in Africa will transmit to an improvement in peace in Africa.

Additional results from the QR regression reveal that across quantiles, democracy negatively affects the peace index and this negative effect is significant in the 10th, 25th and 50th quantiles when the control of corruption, government effectiveness, regulatory quality and rule of law acts as a proxy for governance. The effect of democracy on the peace index is however significant in the 10th and 25th quantile when political stability acts as a proxy for governance, and when the composite index of governance is modelled, the effect of democracy on peace index is insignificant only in the 75th quantile. The effect of militarisation on peace index is revealed to be positive across quantile and across the models with the various measures of governance. However, the effect of militarisation on peace index is only significant in the 10th quantile. This means that militarisation reduces peace in countries where the initial levels of peace is high. Further results revealed that the control of corruption is only significant in the 90th quantile which means that controlling corruption is effective in improving peace where the initial level of peace is low. Also, government effectiveness is only significant in reducing the peace index in the 90th quantile where the initial level of peace is low. The impact of political stability on the peace index is however

negative and statistically significant across all quantiles. It however reveals that political stability has greater effect in the 50th and 90th quantile. Regulatory quality is also observed to reduce the peace index in countries where the initial level of peace is low i.e. in the 90th quantile. However, the negative effect of rule of law on peace index is only significant in the 75th and 90th quantiles i.e. countries where the initial levels of peace is low. The composite index of governance also reveals that the impact of governance on peace index is only significant in the 90th quantile where initial levels of peace are low.

Further results have shown that the effect of economic growth on peace index is significant in the 90th quantile when political stability and the composite index for governance are measures of the quality of governance. This suggests that economic growth reduces peace where the initial level of peace is at its lowest level. This portrays a situation of immiserizing growth where the growth of an economy leads to higher conflict level. Inflation however reduces peace index significantly in the 10th quantile but increases the peace index significantly in the 50th quantile thus suggesting that inflation increases peace in countries where their initial level of peace is high and reduces peace in countries where their initial level of peace is intermediate. This is revealed when the control of corruption and rule of law acts as proxy for governance. However, when government effectiveness, regulatory quality and general governance are measures of the quality of governance, inflation significantly increases the peace index only at the 50th quantile. Inflation is significant at the 10th and 25th quantile when political stability acts as a proxy for governance.

Based on these findings, we recommend firstly that the practice of democracy should be given utmost priority in African countries for peace to be achieved. It is also necessary that as Africa practice democracy, the need for inclusive and representative politics is paramount as well as a well-functioning legal system and rule of law that is as well inclusive to everyone in the society. Secondly, for countries with considerable peace in Africa, militarisation should be discouraged. Instead, governments should channel their efforts to development policies and programs that improve social welfare, with particular reference to providing quality education, health services and economic infrastructures. Thirdly, the fight against corruption in Africa should be strict and fierce in all facets. Particularly in countries where peace is at its lowest level. Also, the quality of policy designs and execution should be improved upon in Africa as well as providing the enabling environment for the private sector to develop in order to provide jobs for the youthful population. This transmits to better peace in the region. Likewise, African governments should ensure a better political environment devoid of

violence which can be achieved through inclusive human and political development. The rule of law should also be respected by the government particularly in countries where the initial level of peace is low. Generally, it is necessary that the African region target good governance so as to ensure peace. This is essentially desirable in those countries where the initial level of peace is at its lowest point.

References

- Anderson, R. (2004). A Definition of Peace. *Peace and Conflict Journal of Peace Psychology*, 10(2), 101-116.
- Asongu, S., & Nwachukwu, J. (2016). The role of Governance in mobile phones for Inclusive Human Development in Sub-Saharan Africa. *Technovation*, 1-13.
- Asongu, S., Iheonu, C., & Odo, K. (2019). The Conditional Relationship between Renewable Energy and Environmental Quality in Sub-Saharan Africa. *Environmental Science and Pollution Research*, 26, 36993-37000.
- Asongu, S., Tchamyou, V., Asongu, N., & Tchamyou, N. (2017). Fighting Terrorism in Africa: Evidence from Bundling and Unbundling Institutions. *Empirical Economics*, 1-51.
- Asongu, S., Uduji, J., & Okolo-Obasi, E. (2019). Homicide and Social Media: Global Empirical Evidence. *Technology in Society*, 59, 101188.
- Bernazzoli, R., & Flint, C. (2009). From Militarisation to Securitization: Finding a Concept that Works. *Political Geography*.
- Coccorese, P., & Pellicchia, A. (2010). Testing the 'Quiet Life' Hypothesis in the Italian Banking Industry. *Economic Notes by Banca dei Paschi di Siena SPA*, 39(3), 173-202.
- Cortright, D., Seyle, C., & Wall, K. (2017). Democracy. In *Governance for Peace: How Inclusive, Participatory and Accountable Institutions Promote Peace and Prosperity* (pp. 155-178). Cambridge: Cambridge University Press.
- Dahl, R. (1989). *Democracy and its Critics*. Yale University Press.

- de Souya, I. (2019). Does Foreign Direct Investment Encourage State Militarisation and Reduce Peace Sociatal Security? An Empirical Test, 1980-2017. *Peace Economics, Peace Science and Public Policy*. doi:10.1515/peps-2019-0011
- Feyzabadi, V., Haghdooost, A., Mehrolhassani, M., & Aminian, Z. (2015). The Association between Peace and Life Expectancy: An Empirical Study of the World Countries. *Iranian Journal of Public Health*, 44(3), 341-351.
- Ibrahim Index of African Governance. (2016). *A Decade of African Governance, 2006-2015*. Mo Ibrahim Foundation.
- Iheonu, C. (2019). Governance and Domestic Investment in Africa. *European Journal of Government and Economics*, 8(1), 63-80.
- Iheonu, C., Agbutun, S., Omenihu, C., Ihedimma, G., & Osuagwu, V. (2019). The impact of Governance Quality on Mortality Rates in Sub Saharan Africa. *African Population Studies*, 33(1), 4655-4668.
- Jolliffe, I. (2002). *Principal Component Analysis* (2nd ed.). New York: Springer.
- Kodila-Tedika, O., & Asongu, S. (2015). Intelligence, Human Capital and HIV/AIDS: Fresh Exploration. *Intelligence*, 53, 154-159.
- Koenker, R., & Basset, J. (1978). Regression Quantiles. *Econometrica*, 46(1), 33-50.
- Norris, P. (2012). *Making Democratic Governance Work: How Regimes Shape Prosperity, Welfare and Peace*. Cambridge: Cambridge University Press.
- Oneal, J., & Russett, B. (2001). Clear and Clean: The Fixed Effects of the Liberal Peace. *International Organization*, 55(2), 469-485.
- Saba, C., & Ngepah, N. (2019). Military Expenditure and Security Outcome Convergence in African Regional Communities: Evidence from the Convergence Club Algorithm. *Peace Economics, Peace Science and Public Policy*. doi:10.1515/peps-2019-0014
- Tchamyoun, S. (2017). The role of Knowledge Economy in African Business. *Journal of the Knowledge Economy*, 8(4), 1189-1228. doi:10.1007/s13132-016-0417-1
- Walter, B. (2015). Why Bad Governance Leads to Repeat Civil War. *Journal of Conflict Resolution*, 59(7), 1242-1272.

Appendix

Table A1: Definitions of Governance Indicators Variables

Variables	Definitions
Control of Corruption	The control of corruption is the perception of the extent to which public power is employed for private gain, comprising both minor and grand forms of corruption, as well as the capture of the state by elites and private interests.
Government Effectiveness	Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the extent of its independence from political forces, the quality of policy design and execution, and the reliability of the government's commitment to such policies.
Political Stability	Political stability captures perception of the likelihood of political instability and/or politically motivated violence, including terrorism.
Rule of Law	Rule of law shows the perceptions of the extent to which individuals/agents have confidence in and stand by the guidelines of society, and also the quality of contract enforcement, property rights, courts and the police, as well as the chances of crime and violence.
Regulatory Quality	Regulatory quality reveals perceptions of the ability of the government to design and execute sound policies and rules that allow and promote private sector development.

Note: Definitions are from the World Governance Indicators (2019).