Foreign Aid, External Debt and Economic Growth in Africa: It all Depends on Governance

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Abstract

This study empirically analyses the impact of foreign aid and external debt on economic growth in Africa, considering governance indicators. Panel data was collected for 39 countries in Africa spanning across 20 years from 1996 to 2016. Ordinary Least Square (OLS), Fixed Effects, and System Generalised Method of Moment (GMM) estimation techniques was used for the analysis. The results are robust in a sub-sampling analysis based on income level, years, aid and debt categories. The results first suggest that in general, both foreign aid and external debt have a negative impact on the African economy but some African countries that have strong governance indicators are the ones that benefit from foreign aid and loans in improving their economy. Second, foreign aid from the U.S. has a detrimental, negative impact on the African economy compared to that from EU countries. Finally, foreign aid brings more harm to lower income countries compared to upper and lower-middle-income countries.

Keywords: economic growth, foreign aid, external debt, governance, Africa

Introduction

The role of external debt and foreign aid in improving the economy of the recipient country has been a controversial topic that has led to intense debate. External debt and foreign aid are sources of income that a country can use to finance its budget deficit. External debt is one of the country's debts whereby the money is borrowed outside the country from bilateral or multilateral institutions. Foreign aid is the transfer of money from one country to another voluntarily in the form of gifts or grants.

In Africa, the Official Donor Assistance (ODA) statistics recorded total foreign aid at $49,954million in 2017 and in the same year, the governments across Africa issued a $7.5 billion record in sovereign bonds (OECD, 2018). As of June 2018, $11billion was issued as additional debt (Indermit Gill and Kenan Karakülah, 2018). This piling up of debt was met with concern from the International Monetary Fund (IMF), which stated that there is an increasing risk of debt distress in sub-Saharan African countries due to gaping deficits and heavy borrowing. In under just five

years, this region has doubled the debt proportion such that in 2018, 40% of the countries in Africa have a high risk of debt distress (Reuters, 2018).

Foreign aid has played a major role in cooling the catastrophes facing poor countries, especially humanitarian aid, for example, aid provided to Mozambique and Malawi after being affected by cyclone Idai in March 2019 (Walsh, 2019). But on the other hand, a good country is one where a government needs its people's taxes and votes, therefore, it must comply with some of their demands. The biggest setback with foreign aid is how it changes this relationship. When the leader of a struggling country is suddenly given billions of dollars in aid, his mindset can afford to change and the regular citizens have a lot less control with their government when it no longer needs their taxes.

The more aid is flowing in, the more a leader is free to do what he/she desires. This is also the reason why aid usually flows from democracies to dictatorships and not the other way around; a democratic leader depends on public opinion for re-election, so he needs enough money to overcome the damage to what the public thinks; more money than most will pay. Therefore, both external debt and foreign aid can be a good or bad thing to the economy depending on how the government uses it. This is where the study comes in –it aims to empirically analyse the impact of foreign aid and external debt to the economy in Africa and how governance indicators affect this relationship.

Literature Review

The impact of foreign aid and external debt to a recipient country has been addressed by various studies focusing on different methodologies and countries. Abu Siddique and Selvanathan (2015) found that the reduction of external debt will improve the economy that matches the study from Ejigayehu (2013),who did a case study on poor, indebted countries and found that external debt harms their economies. Kasidi and Said (2013) focused on Tanzania and Yeasmin and Murshed (2014) did a case study on Bangladesh. Both studies which used Autoregressive Lag Model (ARLD) technique, found that foreign debt slows down the economy. Jalles (2011) analysed the quality of governance and how it affects the relationship between foreign debt and economic growth. The panel data analysis of 72 developing countries suggested that countries with a low level of corruption reduce the negative impact of debt on growth. Mahmoud (2015) focused on Mauritania and found that external debt had a positive relationship with GDP under OLS estimation technique, but after computing the Johannes cointegration tests, the results revealed that external debt has a negative relationship with GDP.

Using the panel data of 70 developing countries, Shabbir (2013) found that external debt not only harms an economy but also negatively affects the Private Fixed Capital Formation in a country. This result concurs with another study from Were (2001) who took a case study of Kenya. Both Ndubuisi (2017) and Ijirshar (2016) focused on the Nigerian economy and they found that external debt stock actually improves the economy but it is the debt payment services that harm

the Nigerian economy.

Arshad and Zaid (2014) studied both foreign aid and external debt and how they affect the economy of Pakistan. Using the time series data from 1970 to 2010, they found that foreign aid has a positive effect on the economy while external debt has a negative effect on the economy. Durbarry, Gemmell and Greenaway (2008) studied a large sample of panel data involving developing countries and found that foreign aid has a positive impact on economic growth but on the condition that the macroeconomic policy is stable. Ekanayake and Chatrna (2008) studied 85 developing countries but divided them into income subgroups. The study revealed mixed results, which means that the impact of foreign aid on economic growth differs across income levels.

In Tanzania, Albiman (2016) found that foreign aid has a negative impact on the economy using the Dynamic OLS estimation technique, which differs from the Zimbabwean case study was done by Moyo and Mafuso (2017)that found that foreign aid has a positive effect on the Zimbabwean economy. Mallik (2008) gathered data from the six poorest countries in the world and found that foreign aid still has a negative impact on the economy of these countries.

The Laffer curve (U-shaped) relationship between foreign aid and economic growth was found by Yiew, 2018; Wamboye, 2012; Brempong and Racine, 2014) to initially have a negative impact on GDP but after some time, it positively impacted the economy. Tait and Siddique (2015) found that foreign aid improved the economy and this impact did not depend on the level of freedom of25 sub-Saharan African countries.

Data, Model and Methodology

The study used panel data from 39 African countries spanning 20 years from 1996 to 2016 (Table 01).

Table 01: List of Countries in the Sample

1. Angola	14. Gabon	27. Niger
2. Burundi	15. Ghana	28. Nigeria
3. Benin	16. Guinea	29. Rwanda
4. Burkina Faso	17. Gambia	30. Sudan
5. Botswana	18. Guinea-Bissau	31. Senegal
6. CAR	19. Kenya	32. Sierra Leone
7. Cote d'Ivoire	20. Morocco	33. Swaziland
8. Cameroon	21. Madagascar	34. Chad
9. DRC	22. Mali	35. Togo
10. Congo Republic	23. Mozambique	36. Tunisia
11. Comoros	24. Mauritania	37. Tanzania
12. Algeria	25. Mauritius	38. Uganda
13. Egypt	26. Malawi	39. Zimbabwe

The data was collected from secondary sources whereby GDP per capita, foreign aid and external debt data were collected from World Bank Indicators. All other control variables such as fixed capital formation, population and trade openness were also obtained from the World Bank Indicators. The governance indicators (control over corruption, government effectiveness, political stability, accountability, rule of law and regulatory quality) are collected from World Governance Indicators (WGI). All variables are shown in Table 1 below:

Table 1: Variable Name, Definition and Source and Priori Hypothesis

Variable	Definition	Source	Priori Expectations
GDP (Y)[1]	GDP per capital (current US$)	World Bank(WDI)	
Foreign aid (aid)	Net official development assistance (ODA)	World Bank(WDI)	+/-
External Debt (Debt)	External debt stocks (% of GNI)	World Bank(WDI)	+/-
Gross Capital Formation(CAF)	Gross Capital Formation (% of GDP)	World Bank(WDI)	+
Population growth (POP)	Population growth (annual %)	World Bank(WDI)	-
Trade openness (trade)	Sum of export and import	World Bank(WDI)	+
CC	Control over corruption	(WGI)	+
Accountability	Voice and accountability	(WGI)	+
Politics	Political stability and absence of violence	(WGI)	+
Equality	Regulatory quality	(WGI)	+
Rule of law	Rule of law	(WGI)	+
Government effectiveness	Government Effectiveness	(WGI)	+

For regression analysis, the econometric model should be formulated, which includes the coefficients and error term. Therefore, the econometric model can be specified as follows:

$$\gamma_{it}=\alpha_0+\beta\chi_{it}+\gamma D_{it}+\delta Aid_{it}+\sigma G_{it}+\varepsilon_{it}$$

Where γ_{it} represents GDP per capital, X_{it} represents control variables, D_{it} represents external debt, Aid_{it} represents foreign aid, G_{it} represents the governance factors and σit means the error term. Finally, β, γ, δ, and σ represent the unknown parameters to be estimated while i and t represent

1 GDP per worker was used by Solow model instead of GDP per capita. But the latter is important due to the fact that dependency ratios might vary across countries. Other book authors like Islam (1995) used per capital while Mankiw (1992) used per worker. But according to Hoeffler (2002), the results do not depend on either choice.

country and time(year) respectively.

The model is estimated using Ordinary Least Squares (OLS) and Fixed Effect but to consider the bias and endogeneity introduced by the lagged GDP variable in the presence of OLS and fixed effects, this equation is estimated using the Generalised Method of Moments (GMM). Arellano and Bover (1995) and Blundell and Bond (1998) developed assumptions under which the system GMM estimator can be used to alleviate the problem of weak instruments ('SYS-GMM') (Bond, 1991; Bover, 1995).

And, therefore, the model is specified as follows:

$$y_{it}=\alpha_1 y_{(it-1)}+\alpha_2 X_{(it-1)}+\alpha_3 \phi_{(it-1)}+\alpha_4 \delta_{(it-1)}+\alpha_5 \gamma_{(it-1)}+\mu_i+\theta_t+\nu_{it},\ |\alpha_1|<1$$

Where y_{it} represents GDP per capital, X_{it} represents foreign aid,Φ_{it} represents external debt, δ_{it} represents governance variables and γ_{it} represents control variables. The individual effect represented by μ_i allows for the unobserved heterogeneity that captures the time-variant effect of omitted variables. θ_t represents the common time effect and ν_{it} is a disturbance term.

Results and Discussion

The results from Table 2 show that foreign debt has a significant negative impact on economic growth across all six columns such that if the last column is interpreted where all governance and control variables are included, the negative sign suggests that a 1% increase in foreign debt decreases the GDP per capita by 0.24% when all other factors remain constant. Foreign aid has the same results as debt except for the first column (fixed effect model), which has a positive sign but when considering other factors affecting economic growth, then the sign changes to negative, implying that foreign aid is bad for the economy. The negative coefficient in the last column implies that when other factors remain constant, a 1% increase in foreign aid leads to a decrease of the African economy by 0.05%. This result concurs with other studies by Siddique, 2015; MM, 2016; Ijirshar, 2016; and Said, 2013).

Table 2: Log of GDP per Capita against External Debt, Foreign Aid and Other Control Variables

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Fe	Fe	Fe	GMM	GMM	GMM
External debt	-0.48*** (0.0151)	-0.48*** (0.0162)	-0.472*** (0.0159)	-0.234*** (0.00762)	-0.228*** (0.00991)	-0.238*** (0.0170)
Foreign aid	-0.13*** (0.0186)	-0.14*** (0.0189)	-0.124*** (0.0185)	-0.037*** (0.00329)	-0.052*** (0.00333)	-0.0524*** (0.00712)
Capital formation		0.0706** (0.0289)	0.0363 (0.0291)		0.0248*** (0.00666)	0.0279** (0.0129)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Fe	Fe	Fe	GMM	GMM	GMM
Trade		-0.0135 (0.0544)	-0.1000* (0.0540)		0.149*** (0.0261)	0.135*** (0.0249)
Population		0.0143 (0.0224)	0.0152 (0.0226)		0.00741 (0.00978)	0.00942 (0.0151)
Control overcorruption			-0.00426** (0.00176)			-0.000523 (0.000898)
Political instability			-0.0039*** (0.00111)			-0.00082** (0.000324)
Regulatory quality			0.00797*** (0.00185)			0.00196*** (0.000755)
Accountability			0.00470*** (0.00177)			0.00284*** (0.000768)
Government effectiveness			-0.0092*** (0.00187)			-0.00135 (0.000901)
Rule of law			0.00883*** (0.00224)			-0.00104 (0.00103)
Lag of GDP				0.690*** (0.0160)	0.658*** (0.0243)	0.640*** (0.0346)
Intercept	8.684*** (0.0572)	8.460*** (0.236)	8.767*** (0.244)	3.036*** (0.136)	2.527*** (0.196)	2.700*** (0.308)
Observations	817	811	811	778	772	772
R-squared	0.629	0.641	0.668			
Hausman Prob>Chi2			274.57 0.0000			
Hausen Test AR(2)				1.0000 0.8506	1.0000 0.8713	1.0000 0.9438
Countries	39	39	39	39	39	39

*Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at 1%, 5% and 10% respectively.*

Table 3 represents the interaction effect between foreign aid and governance variables, which answers the question of how governance affects the relationship between foreign aid and economic growth. Starting with ordinary least squares (OLS), the result shows that the interaction variables of foreign aid, control over corruption and also of foreign aid and government effectiveness are positive and significant, which concur with the hypothesis that countries that have control over corruption and more government effectiveness positively influence the impact of foreign aid on the economy. In other words, they make a better use of aid to improve their economic growth. Shifting

to the Fixed Effect Model, interaction between foreign aid and control over corruption is positive and significant, implying that African countries that have control over corruption positively impact the relationship between aid and economic growth. The coefficient means that when other factors remain constant, a 1% increase in control over corruption increases the influence of foreign aid to GDP by 0.004%.

Lastly, under the system GMM estimator, it is the political stability and government effectiveness that have a positive and significant interaction impact on the relationship between foreign aid and economic growth of a country; the results do not concur with another study by Tait, 2015. The coefficient means that when all other factors remain constant, a 1% increase in the political stability of a country increases the impact of foreign aid on economic growth by 0.002% while a 1% increase in government effectiveness increases the impact of foreign aid on the economy by 0.005%.

Table 3: Log of GDP per Capita against Interaction Variables between Foreign Aid and Governance

Variables	Model 1	Model 2	Model 3
	OLS	FE	GMM
Lag of GDP			0.870*** (0.0156)
Capital formation	0.327*** (0.0454)	0.296*** (0.0417)	0.119*** (0.0219)
Trade	0.376*** (0.0599)	0.109 (0.0796)	0.122*** (0.0373)
Population	-0.0791*** (0.0245)	0.0774** (0.0336)	0.0359 (0.0317)
Foreign aid	-0.520*** (0.0196)	-0.296*** (0.0282)	-0.0587*** (0.0108)
Control overcorruption	0.000358 (0.00177)	-0.000173 (0.00266)	-0.000195 (0.00120)
Accountability	-0.00136 (0.00147)	0.00452* (0.00264)	-0.00288** (0.00128)
Government effectiveness	-0.000614 (0.00219)	-0.0124*** (0.00278)	-0.000405 (0.00127)
Rule of law	0.00457* (0.00236)	0.0149*** (0.00330)	0.00145 (0.00124)
Political instability	0.00469*** (0.00130)	-0.00308* (0.00170)	-0.000442 (0.000493)
Regulatory quality	-0.00207 (0.00220)	0.000303 (0.00278)	0.00162* (0.000931)

Variables	Model 1	Model 2	Model 3
	OLS	FE	GMM
Aid*control over corruption	0.00320** (0.00153)	0.00407** (0.00192)	-0.00197** (0.000956)
Aid*accountability	0.00104 (0.00144)	-0.00167 (0.00178)	2.21e-05 (0.000691)
Aid*political instability	-0.00116 (0.00107)	0.00190 (0.00122)	0.00203*** (0.000552)
Aid*regulatory quality	-0.00130 (0.00144)	0.00107 (0.00157)	-0.00275*** (0.000797)
Aid*rule of law	-0.00863*** (0.00208)	-0.00105 (0.00236)	-0.000795 (0.000851)
Aid* Government effectiveness	0.00349** (0.00161)	-0.00266 (0.00195)	0.00416*** (0.000656)
Intercept	4.306*** (0.252)	5.129*** (0.324)	-0.0265 (0.178)
Observations	811	811	772
R-squared	0.765	0.296	
Number of countries	39	39	39
VIF	4.59		
Hausman Prob>Chi2			30.63 0.015
Hansen test			1.0000
AR(2)			0.8455

*Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at* 1%, 5% and 10% respectively.

Table 4 represents the interaction impact of governance variables on the relationship between external debt and economic growth. Starting with the OLS estimator, the results suggest that control over corruption and regulatory quality have a positive interaction impact on the relationship between external debt and economic growth. In other words, those African countries that have strong control over corruption and regulatory quality use these bilateral and multilateral foreign loans in a way that they improve the economy, which concurs with the hypothesis of this study and another study by (Jalles, 2011). The coefficient suggests that when other factors remain constant, a 1% increase in the country's control over corruption and regulatory quality positively increases the impact of external debt on the economy by 0.01 and 0.005% respectively.

Shifting to the Fixed Effect Model, the results show that this time it is accountability and political stability that influence positively and significantly the relationship between external debt

and economic growth. The coefficient implies that with other factors remaining constant, a 1% increase in government accountability and political stability positively influence the impact of debt on economic growth by 0.01 and 0.004% respectively. And lastly, moving to the system GMM, the results table shows that political stability and rule of law have a positive interaction influence on the impact of external debt to economic growth such that those countries that have strong political stability and rule of law spend the loans received from abroad wisely so that it improves their economy. The coefficient implies that if a 1% increase in the country's political stability and rule of law occurs, then foreign debt can increase the economy by 0.002 and 0.004% respectively when other factors in the model remain constant.

Table 4: Log of GDP per Capita against Interaction between External Debt and Governance

Variables	Model 1	Model 2	Model 3
	OLS	FE	GMM
Lag of GDP			0.661*** (0.0411)
Capital formation	0.183*** (0.0452)	0.0157 (0.0278)	0.0337*** (0.0116)
Trade	0.776*** (0.0659)	-0.168*** (0.0519)	0.0615 (0.0378)
Population	-0.370*** (0.0476)	-0.0114 (0.0218)	-0.00982 (0.0125)
External debt	-0.508*** (0.0321)	-0.491*** (0.0155)	-0.247*** (0.0230)
Control over corruption	-0.0126*** (0.00259)	-0.00265 (0.00170)	-5.89e-05 (0.00109)
Accountability	-0.0125*** (0.00193)	0.00128 (0.00170)	0.00213** (0.000973)
Government effectiveness	0.0117*** (0.00284)	-0.0136*** (0.00189)	-0.000592 (0.000961)
Rule of law	0.00500 (0.00312)	0.0107*** (0.00218)	-0.00207 (0.00132)
Political instability	0.00821*** (0.00196)	-0.00513*** (0.00107)	-0.00116*** (0.000406)
Regulatory quality	0.00126 (0.00318)	0.00757*** (0.00178)	0.00170* (0.000897)
External debt* control of corruption	0.00836** (0.00336)	0.00164 (0.00164)	-0.00322*** (0.00112)
External debt* accountability	0.000951 (0.00251)	0.00750*** (0.00146)	0.00100 (0.00120)

Variables	Model 1	Model 2	Model 3
	OLS	FE	GMM
External debt* political institutions	0.000623 (0.00226)	0.00380*** (0.00105)	0.00180** (0.000739)
External debt* rule of law	-0.00884** (0.00410)	-0.00448** (0.00212)	0.00369*** (0.00121)
External debt* regulatory quality	0.00478* (0.00275)	-0.00175 (0.00160)	-0.00186* (0.000970)
External debt* Gov. effectiveness	-0.00460 (0.00322)	0.00245 (0.00172)	-0.000894 (0.00118)
Constant	3.816*** (0.293)	7.335*** (0.211)	1.923*** (0.306)
Observations	813	813	774
R-squared	0.634	0.702	
VIF	5.11		
Hausman test Prob>Chi2		68.30 0.0000	
Hansen test			1.0000
AR(2)			0.8963
Number of countries	39	39	39

*Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at 1%, 5% and 10% respectively.*

Table 5 represents different types or categories of foreign aid and external debt and how they affect the economy. With fixed effects in the first and second column, the results show that both foreign aid from the U.S. and European countries have a positive and significant effect on the economy while in the external debt, it is the short- term debt and multilateral debt that have negative and a significant effect in both columns, implying that these types of external debt have a negative impact on the economy of African countries. Shifting to system GMM, the results suggest that this time, the foreign aid from the U.S. has a negative and significant impact on the economy in the third and fourth column, contrary to the Fixed Effect Model. The foreign aid from European countries, however, is still positive and significant, meaning that it has a positive impact on the African economy. And, therefore, considering that system GMM is a superior estimator, the study can conclude that the U.S. aid that flows to African countries is bad for African economies. The short-term and multilateral debt under system GMM have a positive and statistically significant effect on both the third and fourth column.

Table 5: Log of GDP per Capita against Different Types of Foreign Aid and External Debt

Variables	Model 1	Model 2	Model 3	Model 4
	FE1	FE2	GMM1	GMM2
US aid	0.133*** (0.0158)	0.118*** (0.0158)	-0.0135*** (0.00345)	-0.0113** (0.00476)
Euroaid	0.112*** (0.0238)	0.117*** (0.0232)	0.0326*** (0.00377)	0.0329*** (0.00463)
Total bilateral aid	0.0695* (0.0357)	0.0793** (0.0346)	0.0409*** (0.00743)	0.0443*** (0.00825)
Short-term debt	-0.0597*** (0.0137)	-0.0446*** (0.0135)	0.0151*** (0.00329)	0.0168*** (0.00304)
Concessions debt	-0.127** (0.0582)	-0.0815 (0.0569)	0.0500** (0.0206)	0.0340 (0.0383)
Multilateral debt	-0.0998*** (0.0293)	-0.115*** (0.0296)	0.0201*** (0.00344)	0.0298*** (0.00661)
Capital formation	0.0705* (0.0386)	0.0781** (0.0392)	0.0732*** (0.0147)	0.0835*** (0.0200)
Trade	-0.0863 (0.0772)	-0.172** (0.0768)	0.117*** (0.0246)	0.129*** (0.0443)
Population	0.0129 (0.0297)	0.0203 (0.0302)	0.000434 (0.0158)	0.00464 (0.0179)
Control over corruption		-0.000540 (0.00253)		0.00116 (0.00125)
Accountability		0.00121 (0.00274)		-0.00287** (0.00133)
Political instability		0.00294* (0.00163)		0.000535 (0.000464)
Rule of law		0.0129*** (0.00323)		-0.00280** (0.00110)
Regulatory quality		0.00355 (0.00265)		0.000933 (0.000852)
Government effectiveness		-0.0164*** (0.00274)		0.00127 (0.00102)
Lag of GDP			0.894*** (0.0172)	0.905*** (0.0230)
Intercept	6.378*** (0.404)	6.381*** (0.404)	-0.581*** (0.139)	-0.689*** (0.264)
Observations	718	718	686	686
R-squared	0.386	0.430		

Hausman test Prob>Chi2	166.65 0.0000	347.92 0.0000		
Hansen test			1.0000	1.0000
AR(2)			0.8506	0.5792
Countries	39	39	39	39

*Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at 1%, 5% and 10% respectively.*

Table 6 represents the impact of foreign aid and external debt on economic growth before and after the 2008 economic recession. The results suggest that on both occasions, foreign debt and aid has a negative impact on the economic growth of African countries –the same results as (Shabbir, 2013; Ndubuisi, 2017; Ijirshar, 2016; Malik, 2008). The negative coefficient before the recession implies that when other factors remain constant, a 1% increase in foreign debt and aid decreases the economic growth by 0.27 and 0.04% respectively. The negative coefficient after the recession implies that a 1% increase in foreign debt and aid decreases the economic growth by 0.23 and 0.06% respectively when other factors remain constant. Therefore, considering the magnitude of the coefficient, external debt has a larger negative impact on the African economy that foreign aid.

Table 6: Log of GDP per Capita Against Foreign Aid and External Debt Before and after the 2008 Economic Recession

Variables	Before	After
	GMM	GMM
Lag of GDP	0.662*** (0.0470)	0.636*** (0.0240)
External debt	-0.268*** (0.0306)	-0.231*** (0.0207)
Foreign aid	-0.0437*** (0.00880)	-0.0622*** (0.0124)
Population	-0.0338*** (0.0120)	0.107*** (0.0226)
Capital formation	0.0582*** (0.0110)	-0.0174 (0.0231)
Trade	0.139*** (0.0195)	0.0992** (0.0390)
Accountability	0.00184** (0.000727)	0.00362*** (0.00103)

Regulatory quality	-0.00223** (0.000885)	0.00343*** (0.00115)
Control over corruption	-0.000645 (0.000794)	-0.00173** (0.000800)
Political instability	5.82005 (0.000659)	-0.00117** (0.000525)
Government effectiveness	0.00217* (0.00124)	-0.00238* (0.00142)
Rule of law	-0.00274** (0.00113)	-0.00130 (0.00152)
Intercept	2.768*** (0.382)	2.756*** (0.239)
Observations	426	346
Hansen test	1.0000	1.0000
AR(2)	0.5051	0.2742
Number of countries	39	39

*Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at 1%, 5% and 10% respectively.*

Table 7 represents the impact of foreign aid and debt on the economic growth of African countries under different income groups. The results suggest that the external debt has a negative impact on economic growth for all categories of income, which implies that total external loans that flow to Africa have merely burdened those countries with debt but do not impact the African economy positively. But the foreign aid differs across income levels, same as another study by (Chatrna, 2009).The result suggests that foreign aid has no impact on upper-middle and lower-middle income countries in Africa and this can be justifiable in the sense that these countries are a bit well-off for the aid to become such an impact to their economy. The low-income countries in Africa seem to be affected negatively in terms of their economy by the aid-flow from foreign countries, same as other studies by (MM, 2016; Malik, 2008). This means that foreign aid, which intended to help these lower income countries to finance their budget, ends up hurting their economy. The negative coefficient implies that when other factors remain constant, a 1% increase in foreign aid to lower-income countries in Africa decreases their GDP by 0.12%.

Table 7: Log of GDP Per Capita against Foreign Aid and External Debt according to Different Income Levels

Variables	Upper-middle	Lower-middle	Low
	GMM	GMM	GMM
Lag of GDP	0.867*** (0.0402)	0.763*** (0.0248)	0.517*** (0.0268)
External debt	-0.0941*** (0.0217)	-0.182*** (0.0179)	-0.197*** (0.0153)
Foreign aid	-0.0362 (0.0226)	0.0188 (0.0131)	-0.119*** (0.0179)
Population	-0.0175 (0.0586)	-0.0234 (0.0301)	0.0115 (0.0150)
Capital formation	-0.137** (0.0558)	-0.0503 (0.0353)	0.102*** (0.0190)
Trade	0.231*** (0.0865)	0.0889*** (0.0334)	0.155*** (0.0369)
Accountability	-0.00814** (0.00408)	0.00210 (0.00130)	-0.00153 (0.00131)
Regulatory quality	0.00616** (0.00265)	0.00160 (0.00161)	0.000144 (0.00160)
Control over corruption	0.00478* (0.00270)	-0.00301** (0.00146)	-0.00220 (0.00148)
Political instability	0.00241 (0.00268)	-0.000575 (0.00112)	0.000226 (0.000918)
Government effectiveness	-0.00544 (0.00399)	-4.61e-05 (0.00182)	0.000612 (0.00171)
Rule of law	-0.000112 (0.00379)	-0.00211 (0.00196)	0.00115 (0.00176)
Intercept	0.824 (0.509)	2.290*** (0.282)	3.096*** (0.231)
Observations	96	238	438
Sargan test	116.3		
Prob>Chi2	0.077		
Number of countries	5	12	22

*Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1 represents the level of significance at 1%, 5% and 10% respectively.*

Conclusion and Recommendations

This study aims to empirically analyse the impact of foreign aid and external debt to the economy in Africa and how governance indicators affect this scenario. The results first suggest that firstly, in general, both foreign aid and external debt have a negative impact on the economies in Africa, with external debt causing more harm to the economies than foreign aid, when taking the coefficient magnitude into the account (as shown in Figure 1). Secondly, the governance indicators (control over corruption, government effectiveness, political stability, accountability, regulatory quality and rule of law) play a major role in how foreign aid and external debt affects the economy. This means that those African countries that have strong governance indicators are the ones that benefit from foreign aid and loans to improve their economy. Thirdly, foreign aid from the U.S. has a detrimental, negative impact on the African economies while foreign aid from EU countries has a positive

impact. Although the external debt impacts negatively in all levels of income, foreign aid has no impact on upper- and middle-income countries in Africa while in the lower income countries, this aid has a negative impact.

The study recommends that African countries should formulate strong policies and spend borrowed loans from abroad prudently and be cautious when receiving foreign aid. There is no doubt that foreign aid and loans are crucial in Africa as they help to finance the budget deficit to meet the planned expenditure. But only with good governance and prudent spending can it help to improve economies because it is easy to borrow money and difficult to spend it wisely for the development of African countries.

Figure 1: Regression Plot showing the Relationship between GDP and External Debt

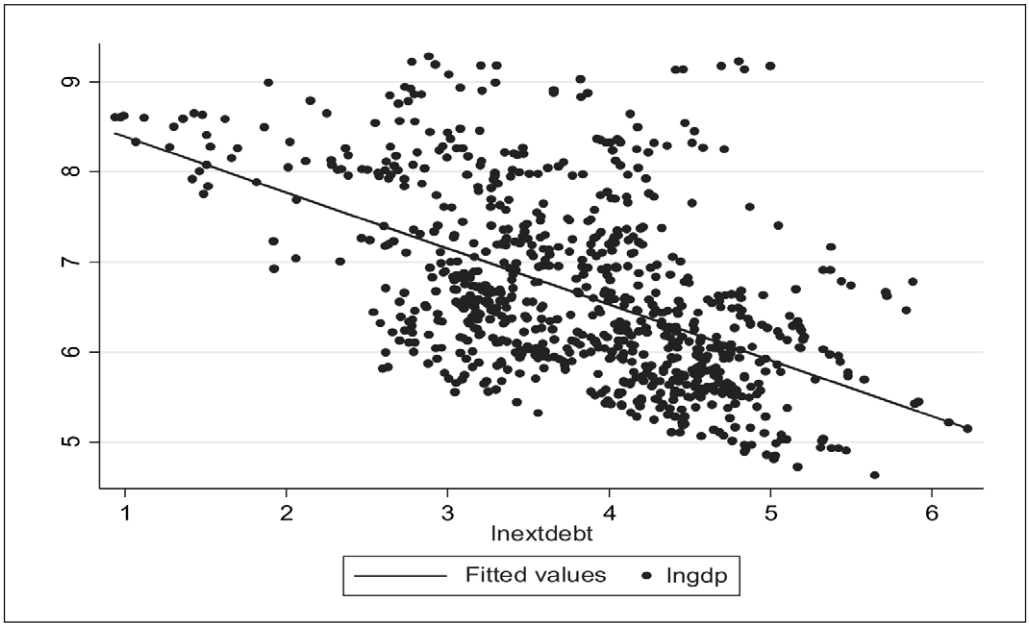
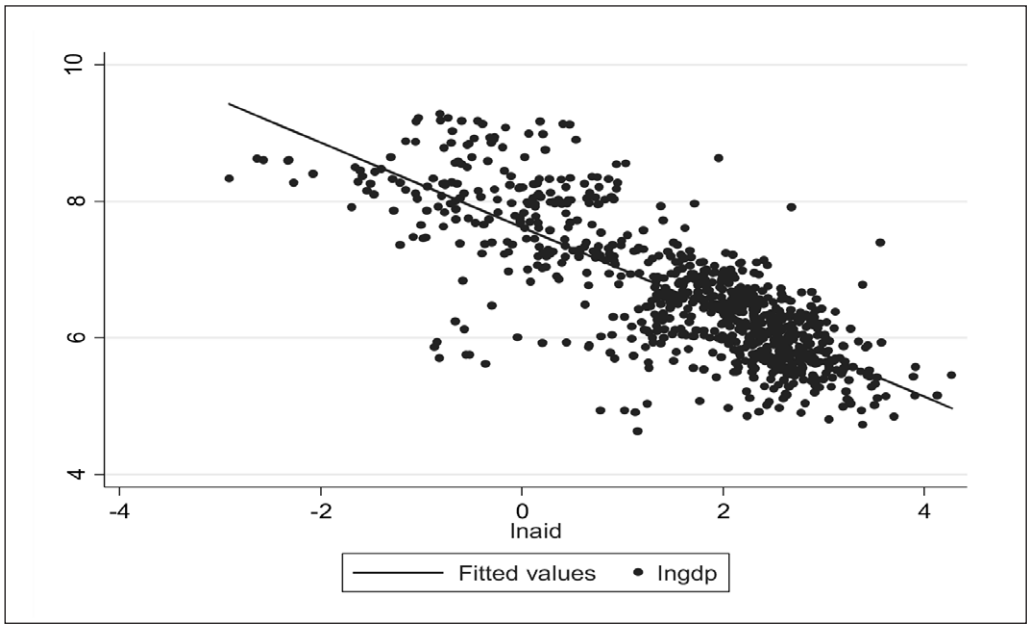


Figure 2: Regression Plot showing the Relationship between GDP and Foreign Aid



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