Theoretical Economics Letters, 2017, 7, 1473-1491
http://www.scirp.org/journal/tel
ISSN Online: 2162-2086
ISSN Print: 2162-2078

Foreign Aid and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa

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How to cite this paper: Tang, K.-B. and Bundhoo, D. (2017) Foreign Aid and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa. *Theoretical Economics Letters*, **7**, 1473-1491.
https://doi.org/10.4236/tel.2017.75099

Received: July 19, 2017
Accepted: August 12, 2017
Published: August 15, 2017

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Abstract

This study aims at understanding the impact of foreign aid on the economic growth of the Sub Saharan African region. Despite being the largest foreign aid recipient in the world, the region is the poorest with the lowest Human Development Index (HDI) and Gross National Income (GNI) per capita. This raises serious questions about the effectiveness of foreign aid to the economic growth and development of the region. As such, we examine the relationship between foreign aid, determined by the official development assistance (ODA), and the economic growth rate of the Sub Saharan Africa's ten largest recipients of foreign aid, for a 23-year period from 1990 to 2012. These ten countries include Ethiopia, the Democratic Republic of Congo, Tanzania, Kenya, Côte d'Ivoire, Mozambique, Nigeria, Ghana, Uganda and Malawi. We find that aid by itself does not have significant impact on economic growth. However, the variable aid interacted with the policy index was found to be statistically significant and positive, which means that aid tends to increase growth rate in a good policy environment. Subsequently, when we include the institutional quality index and its interaction term in the model, we find that institutional quality has a positive and significant impact on growth; however, none of the aid variables was significant. We also test the two-gap growth model which states that foreign aid enhances economic growth through investment and imports. The results show that foreign aid is a good ingredient for supplementing investment and imports requirements in these ten countries. We believe that given foreign aid is conditional on the economic, political and institutional environment of the recipient country, this can explain why aid effectiveness is insignificant in the Sub Saharan Africa region where bad governance is a core issue on the region. Therefore, respective governments, donor agencies, and policy makers should take into consideration these multiple aspects when undertaking aid-financing activities.

Keywords

Foreign Aid, Economic Growth, Panel Data

1. Introduction

The role of foreign aid in developing countries has become a subject of heated debate among economists and development specialists over the past decade. This has been generated in large part by international attention towards the Millennium Development Goals (MDGs). The United Nations Millennium Declaration clearly recognises that foreign aid, better termed as Official Development Assistance (ODA), is a necessary and complementary source of finance for better development and achieving the MDGs. The Organisation for Economic Co-operation and Development (OECD) defines ODA as government aid designed to promote the economic development and welfare of developing countries. This source of external finance comes in the form of bilateral grants, loans, food aid, emergency relief, technical assistance, financing for construction projects, as well as multilateral flows. Total aid since 1990 amounts to USD 58 billion in current terms, which work out to approximately USD 96 billion in real terms using 2011 prices. These huge amounts of financial assistance to developing countries amply justify the strong debate among scholars on the real contributions of foreign aid on economic growth—sometimes with claims that it is wasted. One way to try get a handle on this issue is to look at the correlation between ODA and economic growth—the purpose of the proposed paper. A look at the geographical distribution of aid indicates that the Sub-Saharan Africa region is the largest ODA recipient over the past years, accounting for approximately 35% in 2012, which is three times much larger than ODA provided to the South Asia region (World Development Indicators Database). With a large portion of foreign aid injected in the Sub-Saharan Africa, we expect to see much improvement in the aggregate growth and standards of living in the region.

The fundamental contribution that foreign aid can bring to the recipient country is economic growth and development, which in turn can reduce poverty. However, despite being the biggest beneficiary of aid with the highest ODA per capita, it appears that foreign aid has not produced the expected effects in Sub-Saharan Africa. Data from the World Development Indicators Database and the Human Development Report (2013) show that the region's ten largest aid recipients, namely, Ethiopia, The Democratic Republic of Congo, Tanzania, Kenya, Côte d'Ivoire, Mozambique, Nigeria, Ghana, Uganda, and Malawi still face a high level of poverty and low income. In spite of being the ten largest aid recipients in Sub-Saharan Africa, these countries find themselves among the lowest ranked nations based on the HDI. Even with slight improvements in the HDI, there are no significant changes in the standard of livings of these countries. For instance, the Democratic Republic of Congo is the second largest aid consumer in the region but still, 71% of its population lives below the poverty

line, and is penultimate in the HDI ranking. Tanzania, Mozambique, Nigeria, Uganda and Malawi also have more than half of their population living below $1.25 a day. This raises a serious question on the effectiveness of foreign aid on the aggregate growth rate of these countries. By narrowing our study to the Sub-Saharan Africa region's ten largest ODA recipient countries and a closer examination of the relationship between economic growth and foreign aid for these ten countries, we will be able to shed some light on the extent to which aid has been effective in the economic development of the region as a whole.

Empirical studies of aid effectiveness on growth have shown mixed results. While some studies such as Hansen and Tarp [1], Mosley [2], Burnside and Dollar [3], Collier and Dollar [4] find statistically significant links, some do not (Ram, [5]; Boone, [6]). The conclusion has been that there is no robust relationship between aid and aggregate growth. One important growth theory which explains the relationship between foreign aid and economic growth is the two-gap model, pioneered by Chenery and Strout [7] who advocate that foreign aid can help bring a positive contribution to the economic performance of recipient countries by supplementing domestic savings and export earnings through investment and imports respectively, which are both complemented by foreign aid. To the extent that foreign aid is an important source of development finance for these developing countries, it should be noted that external factors such as the economic policies, institutional and political elements have a large role to play in explaining aid effectiveness on economic performance. Based on the work of Burnside and Dollar [3], several empirical studies such as Collier and Dollar [4], Ram [5], Islam [8], Boone [6] have incorporated variables such as institutional quality index and policy indices interacted with the aid variable. Their findings showed that the economic policy, institutional and political environment of the recipient country has a crucial role to play in the aid-growth relationship.

Using a sample of the Sub Saharan Africa's ten largest ODA recipient countries for a 23-year period (1990 to 2012), the objective of this paper is to understand the extent to which aid is effective on the economic performance of the ten largest aid recipients of the Sub Saharan Africa. Specifically, it also aims to analyse the role of the economic, political and institutional factors of the recipient country in the aid-growth relationship. With this objective in mind, we will able to understand the root of our research question which is: despite the fact that the Sub-Saharan Africa region is the largest ODA consumer, the region is the least developed country with a high level of poverty and poor standard of living.

2. Methodology

2.1. Specification of Model

This section discusses the model specifications to examine the relationship between foreign aid and economic growth. The model is derived from the basic neoclassical growth model, developed by Solow [9], in which foreign aid is introduced as an input in addition to capital and labour.

The objective of the present paper is to take into account a range of factors

such as economic policies, institutional and political factors that can help explain the growth performance of the ten chosen African countries, while at the same time ensuring that any interference about the relationship between aid and growth are robust. Inclusion of all the different factors mentioned above yield the following growth model:

$$\begin{aligned} GGDP_{it} = {} & \beta_0 + \beta_1 LGGDP_{0it} + \beta_2 INV_{it} + \beta_3 LABOUR_{it} + \beta_4 AID_{it} + \beta_5 \left(AID\right)_{it}^2 \\ & + \beta_6 POLICY_{it} + \beta_7 \left(AID_{it} \times POLICY_{it}\right) + \beta_8 AID_{i(t-n)} \\ & + \beta_9 POLICY_{i(t-n)} + \beta_{10} \left(AID_{i(t-n)} \times POLICY_{i(t-n)}\right) \\ & + \beta_{11} M2GDP_{i,t-1} + \beta_{12} INSTITUTIONAL\ QUALITY_{it} \\ & + \beta_{13} \left(AID_{it} \times INSTITUTIONA\ QUALITY_{it}\right) + u_{it} \end{aligned} \tag{1}$$

where i indexes countries and t indexes time. $GGDP$ is the real GDP per capita growth rate and is the dependent variable. $LGGDP_{0it}$ is the logarithm of initial real GDP per capita and captures the conditional convergence effects of the growth theory (Hansen and Tarp [1]; Collier and Dollar [4]; Ram [5]). INV represents the rate of growth of capital stock, which is a proxy for gross capital formation as a percentage of GDP. $LABOUR$ represents the increase in labour force as a percentage of the total population. AID, is the net official development assistance (ODA) as a percentage of GDP, while $(AID)^2$ measures any diminishing returns to aid. To analyse a longer effect of foreign aid on economic growth, we include a certain lagged terms of AID and $POLICY$ interpreted by the variable $AID_{i(t-n)}$ and $POLICY_{i(t-n)}$ respectively, where n represents the number of lagged periods. $POLICY$ is the policy index capturing the fiscal, monetary, and trade policy of the economy. $INSTITUTIONAL\ QUALITY$ is a measure of the quality of governance. $AID \times POLICY$ is the aid-policy interaction term and measures whether aid effectiveness is conditional on the macroeconomic policies of the recipient country. The $M2GDP_{t-1}$ variable is the lagged M2 (money and quasi money) as a percentage of GDP and measures the financial depth of the economy. $AID \times INSTITUTIONAL\ QUALITY$ is the interaction term between institutional quality and aid; it determines whether aid effectiveness is conditional on the institutional quality of the recipient country. All data are from the World Development Indicators Database of the World Bank.

2.2. Policy Index

Using a similar approach to Burnside and Dollar [3], we construct a policy index which captures the fiscal, monetary and trade policy environment of the recipient country. Using an equation with $GGDP$ as the dependent variable, the weights of the macroeconomic terms are determined by a regression where they are used as independent variables to predict growth, without using any terms for foreign aid.

The policy index for each country in each year is then obtained by replacing the coefficients estimated into (2):

$$POLICY = \delta_0 + \delta_1 INFLATION_{it} + \delta_2 GOVCONS_{it} + \delta_3 TRADE_{it} \tag{2}$$

INFLATION represents the logarithmic inflation rate plus 1 of each country in each year, and is a measure of the monetary policy of the country (Burnside and Dollar [3]; Collier and Dollar [4]). Given that data on the budget surplus was not available, we use government consumption relative to GDP, *GOVCONS*, as a measure of fiscal policy, as used by Collier and Dollar [4]. *TRADE,* trade openness, is measured as exports plus imports relative to GDP, that is trade as a percentage of GDP, used by Frankel and Romer [10], Collier and Dollar [4], and Dollar and Kraay [11]. All data for constructing the policy index are from World Bank—World Development Indicators database.

2.3. Institutional Quality Index

To analyse the effect of institutional factors such as political stability, qualitative aspects of the government, and corruption level, we construct an institutional quality index comprised of six indicators from the Word Bank—World Governance Indicators Database. These six indicators are: "Control of Corruption," "Government Effectiveness," "Political Stability and Absence of Violence/Terrorism," "Regulatory Quality," "Voice and Accountability," and "Rule of Law." The *INSTITUTIONAL QUALITY* index is constructed using Equation (3):

$$\begin{aligned} &INSTITUTIONAL\ QUALITY \\ &= \Theta_0 + \Theta_1 STABILITY + \Theta_2 EFFECTIVENESS + \Theta_3 CORRUPTION \\ &\quad + \Theta_4 LAW + \Theta_5 ACCOUNTABILITY + \Theta_6 REGULATORYQUALITY \end{aligned} \tag{3}$$

where *STABILITY* measures the "Political Stability and Absence of Violence/Terrorism" index, *EFFECTIVENESS* captures the "Government Effectiveness" index, *CORRUPTION* measures the "Control of Corruption" index, *LAW* is the "Rule of Law" index, *ACCOUNTABILITY* captures the "Voice and Accountability" data, and *REGULATORYQUALITY* is the "Regulatory Quality" index. The Θs are the coefficients derived from regressing *GGDP* on these six indicators.

2.4. Estimation Methods

This study makes use of time-series cross-sectional (TSCS) or panel data for 10 Sub-Saharan African countries over a period of 23 years (1990-2012) giving a total of 230 observations. The estimation period is chosen to use 23 years of time-series observations in each country in order to maximise the cross-sectional dimension of the panel to 10 countries. To achieve our objective of determining the relationship between foreign aid and economic growth, we shall make use of models and estimation methods richer than the basic Ordinary Least Squares (OLS) method such as pooled OLS, fixed-effects, random-effects, first-difference estimator, and two-stage least squares methods.

3. Results and Discussion

3.1. Policy Index Construction

We begin with a regression of our base specification, using Equation (4) below, but excluding any of the terms involving aid.

$$GGDP_{it} = \alpha_0 + \alpha_1 LGGDP_{i0} + \alpha_2 INV_{it} + \alpha_3 LABOUR_{it} + \alpha_4 M2GDP_{i,t-1} + \alpha_5 INFLATION_{it} + \alpha_6 GOVCONS_{it} + \alpha_7 TRADE_{it} + u_{it} \quad (4)$$

Given that data for the institutional factors was not available for the whole period, we did not include them in the present regression model. However, they will be considered at a later stage.

The regression output of Equation (4), as illustrated in Table 1 column (1), shows that the model is statistically significant at the 5% level. The most significant variables in the regression (model (1)) are *INFLATION* and *GOVCONS*, at

Table 1. Growth regressions—individual policy variables.

Dependent variable	Annual growth rate in GDP per capita	
Sample	10 countries (1990-2012)	
	OLS	
Regression	(1)	(2)
LGGDP	−3.762**	−4.448**
	(1.667)	(1.802)
INV	0.127*	0.132**
	(0.065)	(0.066)
LABOUR	−0.932	−0.912
	(0.631)	(0.626)
$M2GDP_{t-1}$	0.016	0.010
	(0.034)	(0.033)
INFLATION	−2.842***	−2.784***
	(0.505)	(0.506)
GOVCONS	−0.304***	−0.303***
	(0.108)	(0.107)
TRADE	0.033	0.036*
	(0.020)	(0.020)
AID	-	−0.030
	-	(0.039)
F-value	10.82	8.93
Prob > F	0.0000	0.0000
Root MSE	4.3214	4.3237
R-squared	0.2465	0.2496

Notes: The dependent variable is the real per capita GDP growth in models (1) and (2). We use Equation (4) to construct model (1). In model (1), the independent variables are the logarithmic of initial GDP per capita (*LGGDP*), investment (*INV*), change in the labour force participation rate (*LABOUR*), one period lagged value of the ratio of M2 to GDP ($M2GDP_{t-1}$), inflation (*INFLATION*), government consumption as a percentage of GDP (*GOVCONS*) and trade as a percentage of GDP (*TRADE*). *INFLATION, GOVCONS* and *TRADE* are the policy variables. In model (2), we add *AID*, ODA as a percentage of GDP, as independent variable in addition to the variables presented in model (1). *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level robust standard errors are in parentheses.

the 1% level, where GDP per capita growth rate would decrease with an increase in both variables. The logarithmic initial GDP per capita and investment are statistically significant at the 5% level and 10% level respectively. All the variables have the intuitive signs, except for *LABOUR*.

Using the regression coefficients from Table 1 model (1), we construct the policy index comprised of the government consumption, inflation, and trade:

$$\begin{aligned} POLICY = 7.038 - 2.842 \times INFLATION \\ - 0.304 \times GOVCONS + 0.033 \times TRADE \end{aligned} \tag{5}$$

As mentioned above, *INFLATION* and *GOVCONS* are both statistically significant. Although the trade openness variable is not significant at the 5% level, we have reason to believe that there is considerable multicollinearity between the variables in the model. As such, we include all three variables in the policy index.

We let the growth regression determine the relative importance of the different policies in the policy index. The constant term, 7.038, is found by predicting the growth rate using the mean value of all the other variables in the regression. In this way, the policy index can be thought of as the predicted growth rates of the country for that time period (assuming mean values of all other variables). Using the basic pooled OLS estimation method, we add the *AID* variable to produce model 2. The result, as illustrated in Table 1 column (2), shows that ODA as a percentage of GDP is not significant. We notice that the coefficients on the policy variables are almost unchanged, indicating that the partial correlation between aid and our policy variables is close to 0. Since the R-squared has remained at approximately 0.25 in both cases, which implies that R-squared does not increase by much when *AID* is added to the model, this indicates that aid has no significant impact on growth. Nevertheless, the model is statistically significant at the 5% level.

3.2. Evaluation of Models

We now present the estimates obtained for five different models: pooled OLS, two-stage least squares (2SLS), first-difference (FD) estimator, fixed-effects (FE), and the random-effects (RE) models (see Table 2). The policy index which is calculated using Equation (5) is included as an explanatory variable in the models. To analyse the impact of lagged values of aid and policies on growth, we did two regressions under each model: one with, and the other without the lagged values. To determine which model is more reliable out of the five, we carry out the Hausman test and the Breusch-Pagan Lagrange Multiplier (BPLM) test. Out of the pooled OLS, random-effects, fixed-effects, and 2SLS models, we find that the pooled OLS is the best model. No comparison test is made with the first-difference model because none of the coefficients are common with the other models. The first-difference estimator makes use of the first-difference of each coefficient. These tests therefore suggest that analysis of the aid-growth relationship should be based on the more consistent models: pooled OLS and first-difference model.

Table 2. Growth regressions—using policy index and aid terms.

Dependent variable	Annual growth rate in GDP per capita									
Sample	10 countries (1990-2012)									
Model	Pooled OLS		2SLS		FD		FE		RE	
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
LGGDP	−3.612*	−7.773***	-	-	0.027	−0.006	-	-	−3.612*	−7.773***
	(2.043)	(1.896)	-	-	(0.163)	(0.169)	-	-	(2.043)	(1.896)
INV	0.126*	0.036	0.156*	0.064	−0.035	−0.134	0.062	0.026	0.126*	0.036
	(0.068)	(0.058)	(0.093)	(0.078)	(0.123)	(0.108)	(0.069)	(0.062)	(0.068)	(0.058)
LABOUR	−0.899	−0.639	−0.826	−0.594	−2.398	−2.138	−0.455	−0.393	−0.899	−0.639
	(0.614)	(0.620)	(0.637)	(0.568)	(1.574)	(1.551)	(0.691)	(0.686)	(0.614)	(0.620)
AID	0.024	−0.252**	0.038	−0.565	−0.253	−0.424**	0.185	−0.042	0.024	−0.252**
	(0.117)	(0.117)	(0.160)	(0.573)	(0.182)	(0.212)	(0.114)	(0.112)	(0.117)	(0.117)
AID^2	−0.001	0.001	−0.002	0.005	0.000	0.003	−0.003**	−0.001	−0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.008)	(0.002)	(0.003)	(0.001)	(0.002)	(0.002)	(0.002)
POLICY	0.910***	0.221	-	-	0.251	0.451	1.093***	0.506	0.910***	0.221
	(0.230)	(0.316)	-	-	(0.418)	(0.355)	(0.245)	(0.389)	(0.230)	(0.316)
AID × POLICY	0.009	0.045***	0.048**	0.058***	0.068***	0.043**	0.009	0.039***	0.009	0.045***
	(0.022)	(0.011)	(0.017)	(0.017)	(0.025)	(0.017)	(0.022)	(0.013)	(0.022)	(0.011)
AID_{t-1}	-	0.227***	-	0.277***	-	0.199***	-	0.225***	-	0.227***
	-	(0.068)	-	(0.098)		(0.065)	-	(0.069)	-	(0.068)
$POLICY_{t-1}$	-	1.333***	-	1.444***	-	1.046***	-	1.303***	-	1.333***
	-	(0.443)	-	(0.344)	-	(0.333)	-	(0.445)	-	(0.443)
$AID_{t-1} \times POLICY_{t-1}$	-	−0.083***	-	−0.089***	-	−0.075***	-	−0.081***	-	−0.083***
	-	(0.025)	-	(0.019)	-	(0.018)	-	(0.027)	-	(0.025)
AID_{t-2}	-	−0.033	-	−0.011	-	−0.070	-	−0.034	-	−0.033
	-	(0.042)	-	(0.068)	-	(0.053)	-	(0.044)	-	(0.042)
$POLICY_{t-2}$	-	−0.492	-	−0.448	-	−1.102***	-	−0.664**	-	−0.492
	-	(0.317)	-	(0.414)	-	(0.294)	-	(0.302)	-	(0.317)
$AID_{t-2} \times POLICY_{t-2}$	-	0.020	-	0.020	-	0.041**	-	0.024	-	0.020
	-	(0.015)	-	(0.018)	-	(0.017)	-	(0.015)	-	(0.015)
AID_{t-3}	-	−0.054	-	−0.043	-	−0.115**	-	−0.033	-	−0.054
	-	(0.042)	-	(0.055)	-	(0.045)	-	(0.047)	-	(0.042)
$POLICY_{t-3}$	-	−0.183	-	−0.217	-	−1.106***	-	−0.104	-	−0.183
	-	(0.285)	-	(0.332)	-	(0.333)	-	(0.261)	-	(0.285)
$AID_{t-3} \times POLICY_{t-3}$	-	0.014	-	0.017	-	0.046***	-	0.015	-	0.014
	-	(0.011)	-	(0.016)	-	(0.013)	-	(0.013)	-	(0.011)
$M2GDP_{t-1}$	0.017	0.044	0.015	0.022	0.222*	0.161**	0.126**	0.072*	0.017	0.044
	(0.030)	(0.027)	(0.038)	(0.050)	(0.116)	(0.072)	(0.052)	(0.043)	(0.030)	(0.027)
F/Wald Statistics	8.56	11.78	5.86	4.41	3.74	6.42	9.15	8.05	68.46	200.29
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.2535	0.3335	0.1656	0.3045	0.2095	0.3693	0.2071	0.2296	0.2535	0.3335
Partial R^2 of first-stage regressions	-	-	0.9121	0.6823	-	-	-	-	-	-

Notes: Using Equation (1), the dependent variable is the real per capita GDP growth in model (1) across (10). In model (1), (3), (5), (7), and (9), the independent variables are the logarithmic of initial GDP per capita (LGGDP), investment (INV), increase in the labour force participation rate (LABOUR), ODA as a percentage of GDP (AID), the squared term of AID (AID2), the policy index (POLICY), the aid-policy interaction term (AID × POLICY), and one period lagged value of the ratio of M2 to GDP (M2GDPt-1). Models (2), (4), (6), (8), and (10) include the three periods lagged values of AID, POLICY, and the AID × POLICY interaction term. The 2SLS model: (3) and (4) use LGGDP and POLICY as instrumental variables. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level; Robust standard errors are in parentheses.

Based on the F or Wald statistics, all the ten models are significant at the 5% level. Despite the Hausman test chooses the pooled OLS over the random-effects model, we find that the results output using both methods are exactly the same, with an R-squared of 0.2535, and 0.3335 when we include lagged values of aid and policy terms. The reason for this identical output is the fact that there are no significant differences across these ten countries, and thus the random-effects estimates will be consistent with the pooled OLS estimates. Under the assumption that *AID* may be endogenous, models (3) and (4) in **Table 2** use the two-stage least squares method, where *LGGDP* and *POLICY* are used as instrumental variables for the endogenous variable, *AID*. In other words, we believe that initial GDP per capita and the economic policies of the country affects real GDP per capita growth indirectly through foreign aid. In their respective work, Burnside and Dollar [3] and Hansen and Tarp [1] also used log of initial GDP and the policy index as instruments in the evaluation of aid effectiveness on economic growth. The first-stage regression with *AID* as the dependent variable is reliable and significant at the 5% level, with an R-squared of 0.9121 in model (3), and 0.6823 in model (4). The outcome therefore suggests that the 2SLS estimates are reliable. For each regression model, the standard errors were adjusted to correct for the problem of heteroscedasticity; we therefore used the robust standard errors.

3.3. Key Findings

3.3.1. Foreign Aid and Economic Growth

An analysis of the relationship between current foreign aid and economic growth showed mixed results. We find that in model (1), (3), (5), (7), and (9), where none of the lagged values of aid or policy are incorporated, the coefficient of aid itself is not significantly different from zero at the 5% level. Burnside and Dollar [3], Hansen and Tarp [1] and Boone [6] also came to a similar conclusion where in their respective empirical studies, they found that foreign aid has an insignificant impact on economic growth rate. When we take into consideration the periods lagged values of aid, policy, and their interaction terms, as in model (2), (4), (6), (8), and (10), we find that *AID* is statistically significant at the 5% level using the pooled OLS, first-difference, and random-effects model; and the models exhibit a negative aid-growth relationship. The idea that aid undermines growth has been found in many studies (e.g. Bakare [12], Griffin and Enos [13], and Knack [14]). Knack [14] associates this negative link by stating that aid dependency is disadvantageous to the economy since it tends to undermine the quality of governance, by encouraging corruption and provoking conflicts over control of aid funds.

Considering lagged values of aid (models (2), (4), (6), (8) and (10)), we find that while current foreign aid depicts a negative significant relationship on economic growth, as explained above, the one period lagged value of aid shows a significant positive impact on economic growth, using all five model estimators at the 1% percent level. This implies that this year's foreign aid would positively

impact on next year's economic growth by approximately ±0.2%. A positive aid-growth relationship is always encouraging because more aid implies higher economic growth. Positive association between foreign aid and growth has been found in many empirical studies such as Burnside and Dollar [3], Dalgaard *et al.* [15], Dowling and Hiemenz [16]. The insignificant or negative impact of current aid on economic growth and the positive impacts of one period lagged value of aid can be explained by the argument given by Moreira [17]: One would not expect foreign aid to have its immediate effect on growth. Instead, lags may occur between aid-financed activities and their final impact on economic growth. This is especially the case with foreign assistance given for infrastructure, research and development or education purposes which may not show any immediate impact on growth in the immediate or short term. Figures from the OECD database show that the purpose for which aid are provided for by the DAC are mainly social and administrative, and economic infrastructure which tend to take time for being fully effected on growth.

The fact that aid inflows consist of a large component which tend to have very gradual impact on growth may help explains the non-significant aid-growth relationship under the 2SLS and fixed-effects model. When we look at the impact of foreign aid in two and three years' time, we find no significant effect at the 5% level. The coefficients of AID_{t-2} and AID_{t-3} were non-significant across the five models. Rabin [18] explains that sustained and rapid population growth in the African region is one important condition which is making aid effectiveness harder. There is therefore a need to address this demographic challenge.

3.3.2. Economic Policies and the Aid-Growth Relationship

One important aspect of this study is the contribution of the economic policies (fiscal, monetary, and trade) in the aid-growth relationship. By incorporating the policy index, constructed using Equation (5), in the growth models, we find that the policy index in model (1), (7), and (9) (see **Table 2**) is positive and statistically significant at the 1% level. Also, the coefficient is close to 1, which is similar to Burnside and Dollar [3] findings. In models (2), (4), (6), (8), and (10), where lagged values of aid, policy, and aid-policy terms are incorporated, we find that the policy index at current periods is not statistically significant. However, one period lagged value of the policy index appears to have a high positive significant impact on GDP per capita growth rate. The two and three periods lagged values of policy on the other hand are insignificant in most cases except under the first-difference estimator. Nevertheless, the most important variable in the model is the $AID \times POLICY$ interaction term. It is believed that the economic policies of an economy have a crucial role in determining the impact of aid on the growth rate.

Considering the aid-policy interaction term in the growth models, an interesting result emerges. The aid-policy interaction term has a significantly positive coefficient at the 1% level across all models, except in (1), (7) and (9) (see **Table 2**). Burnside and Dollar [3] and Denkabe [19] also found similar results where the

relationship was positive. The positive significant interaction term implies that the higher the policy level, the greater the effect of foreign aid on GDP per capita. The results from our study, which used inflation rate, trade openness, and government consumption as a measure of the policy index, tend to assert that these countries should aim in improving these three economic factors.

When we refer to the lagged aid-policy interaction term, the results show a significant negative coefficient for the variable $AID_{t-1} \times POLICY_{t-1}$ across all models. This is interpreted as: with a high level of economic policies last year, foreign aid provided last year will tend to have a lower impact on the present economic growth level, implying that aid works better in worse policy environments. Two periods and three periods lagged values of the aid and policy interaction terms were however positive and statistically significant at the 5% level using the first-difference estimator. Nonetheless, these results clearly acknowledge that the economic policies of a country do have important implications on the aid-growth relationship, the impacts of which, however, manifest themselves differently at different lagged periods.

3.3.3. Institutional Factors and the Aid-Growth Relationship

Among other factors, one very crucial fact that has arisen in understanding the relationship between aid and economic growth is the political and governance issues facing a country. Such a point is an important contribution to our study in the sense that Africa is considered as lagging behind with respect to good governance and where conflicts are very common. Many recent articles such as Moyo [20] and Abuzeid [21] have claimed that the large infusion of foreign assistance to these African countries may not have served its true purpose due to poor governance and the high political instability prevailing there. The Worldwide Governance Indicators (WGI) database of the World Bank provides six measures of the institutional quality of the economy, which are: "Control of Corruption," "Government Effectiveness," "Political Stability and Absence of Violence/Terrorism," "Regulatory Quality," "Voice and Accountability," and "Rule of Law."

Given that these data are not available for the whole period of 1990-2012, but only for 14 years, we believe that the results might not reflect the real situation in these countries and have therefore excluded it in the growth regression in **Table 2**. To analyse the role of the institutional qualities of an economy on the effectiveness of aid, we construct an institutional quality index comprised of all six governance indicators. By regressing *GGDP* on these six indicators, we obtain the following results.

Using the regression coefficients from **Table 3**, we obtain the following institutional quality index:

$$\begin{aligned} &INSTITUTIONAL\ QUALITY \\ &= 4.258 - 1.594 \times STABILITY + 4.925 \times EFFECTIVENESS \\ &\quad - 0.195 \times CORRUPTION + 0.534 \times LAW \\ &\quad + 2.457 \times ACCOUNTABILITY - 3.881 \times REGULATORYQUALITY \end{aligned} \tag{6}$$

Table 3. Institutional quality index.

Dependent variable	Annual growth rate in GDP per capita
Sample	10 countries (1990-2012)
	OLS
STABILITY	−1.594***
	(0.857)
EFFECTIVENESS	4.925**
	(2.048)
CORRUPTION	−0.195
	(1.842)
LAW	0.534
	(1.560)
ACCOUNTABILITY	2.457*
	(1.345)
REGULATORYQUALITY	−3.881***
	(1.423)
F-statistic	2.81
Prob > F	0.0132
R-squared	0.1125

Note: **Table 3** is used to construct the institutional quality index comprised of a measure of: political stability (*STABILITY*), government effectiveness (*EFFECTIVENESS*), corruption (*CORRUPTION*), quality of law (*LAW*), voice and accountability (*ACCOUNTABILITY*), and quality of the government policies (*REGULATORYQUALTY*). The dependent variable is the annual growth rate in GDP per capita (*GGDP*). *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level; Robust standard errors are in parentheses.

Using *GGDP* as the dependent variable, we let the growth regression determine the relative importance of the different institutional indicators in the index. The model is reliable and significant at the 5% level. *STABILITY* and *REGULATORYQUALITY* are significant at the 1% level. *EFFECTIVENESS* and *ACCOUNTABILITY* are statistically significant at the 5% and 10% level respectively. Despite *LAW* and *CORRUPTION* are not significant at the 5% level, we believe there is considerable multicollinearity between the variables in the model, and thus we include all six indicators in the institutional quality measure. With reference to the work of Knack and Keefer [22], Burnside and Dollar [3] used a measure of institutional quality that captures security of property rights and efficiency of the government bureaucracy. We trust that the institutional quality measure constructed in this study is a better indicator since it covers a wider aspect of the government quality. By replacing these six indicators with the institutional quality index, and using the same approach as in **Table 2**, we get the results as illustrated in **Table 4**.

Referring to the F-statistics, we find that model (5), (6) and (7) are not reliable. Model (8) also does not have much significance: the model is reliable only

Table 4. Growth regressions—using institutional index and policy index.

Dependent variable	Annual growth rate in GDP per capita									
Sample	10 countries (14 years)									
Model	Pooled OLS		2SLS		FD		FE		RE	
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
LGGDP	−4.897	−6.467***	-	-	−0.025	−0.061	-	-	−4.833*	−6.467***
	(2.996)	(2.121)	-	-	(0.286)	(0.288)	-	-	(2.746)	(2.121)
INV	0.017	0.006	0.003	0.019	0.076	0.052	0.057	0.078	0.006	0.006
	(0.064)	(0.057)	(0.061)	(0.067)	(0.226)	(0.215)	(0.071)	(0.062)	(0.061)	(0.057)
LABOUR	−0.519	−0.288	−0.478	−0.314	−1.324	−2.307	−0.411	−0.316	−0.461	−0.288
	(0.717)	(0.745)	(0.604)	(0.661)	(1.361)	(1.518)	(0.745)	(0.857)	(0.671)	(0.745)
AID	−0.006	−0.133	0.318	0.511	−0.218	−0.015	0.257	0.234	−0.015	−0.133
	(0.249)	(0.214)	(0.212)	(0.395)	(0.467)	(0.532)	(0.370)	(0.308)	(0.237)	(0.214)
AID^2	0.001	0.004	−0.003	−0.003	0.005	0.004	−0.001	0.000	0.001	0.004*
	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.006)	(0.003)	(0.003)	(0.002)	(0.002)
POLICY	0.322	0.252	-	-	0.743	1.745	0.354	0.375	0.317	0.252
	(0.539)	(0.717)	-	-	(1.376)	(1.449)	(0.763)	(0.749)	(0.535)	(0.717)
AID × POLICY	0.018	0.010	0.020	−0.008	0.008	−0.072	−0.010	−0.013	0.018	0.010
	(0.046)	(0.058)	(0.021)	(0.039)	(0.100)	(0.104)	(0.062)	(0.058)	(0.045)	(0.058)
AID_{t-1}	-	−0.076	-	−0.092	-	0.006	-	−0.022	-	0.076*
	-	(0.116)	-	(0.168)	-	(0.213)	-	(0.132)	-	(0.116)
$POLICY_{t-1}$	-	−0.067	-	0.070	-	1.886	-	0.123	-	−0.067
	-	(0.611)	-	(0.623)	-	(1.310)	-	(0.707)	-	(0.611)
$AID_{t-1} \times POLICY_{t-1}$	-	0.042	-	0.042	-	−0.040	-	0.019	-	0.042
	-	(0.041)	-	(0.052)	-	(0.081)	-	(0.043)	-	(0.041)
AID_{t-2}	-	0.097	-	0.053	-	0.023	-	0.076	-	0.097
	-	(0.066)	-	(0.108)	-	(0.124)	-	(0.070)	-	(0.066)
$POLICY_{t-2}$	-	−0.079	-	−0.308	-	−0.227	-	−0.119	-	−0.079
	-	(0.463)	-	(0.657)	-	(0.890)	-	(0.514)	-	(0.463)
$AID_{t-2} \times POLICY_{t-2}$	-	−0.028	-	−0.025	-	−0.030	-	−0.024	-	−0.028
	-	(0.023)	-	(0.036)	-	(0.045)	-	(0.023)	-	(0.023)
AID_{t-3}	-	0.056	-	0.072	-	0.110	-	0.074	-	0.056
	-	(0.043)	-	(0.075)	-	(0.240)	-	(0.048)	-	(0.043)
$POLICY_{t-3}$	-	0.385	-	0.782	-	−1.131	-	0.412	-	0.385
	-	(0.425)	-	(0.503)	-	(1.287)	-	(0.416)	-	(0.425)
$AID_{t-3} \times POLICY_{t-3}$	-	−0.009	-	−0.018	-	−0.033	-	−0.018	-	−0.009
	-	(0.017)	-	(0.025)	-	(0.079)	-	(0.019)	-	(0.017)
INSTITUTIONAL QUALITY	1.724*	1.816**	1.879***	2.399***	2.941	2.575	1.933*	2.024	1.593*	1.816**
	(0.968)	(0.883)	(0.687)	(0.530)	(1.930)	(2.099)	(1.008)	(1.046)	(0.830)	(0.883)

Continued

AID × INSTITUTIONAL QUALITY	−0.058	−0.085	−0.091*	−0.142***	−0.128	−0.095	−0.084	−0.107	−0.061	−0.085
	(0.058)	(0.065)	(0.051)	(0.053)	(0.119)	(0.126)	(0.070)	(0.072)	(0.060)	(0.065)
$M2GDP_{t-1}$	−0.019	−0.011	−0.007	0.006	0.064	0.119	−0.014	−0.032	−0.023	−0.011
	(0.041)	(0.030)	(0.043)	(0.045)	(0.143)	(0.167)\	(0.083)	(0.080)	(0.039)	(0.030)
F/Wald Statistics	3.29	3.5	3.57	2.04	0.97	1.05	1.19	1.6	34.11	66.59
Prob > F	0.0004	0.0000	0.0010	0.0107	0.4732	0.4183	0.3090	0.0751	0.0002	0.0000
R-squared	0.2061	0.2973	0.1609	0.2140	0.1977	0.2898	0.1652	0.2262	0.2015	0.2973
Partial R^2 of first-stage regressions	-	-	0.9696	0.7895	-	-	-	-	-	-

Notes: Using Equation (1), the dependent variable is the real per capita GDP growth in model (1) across (10). In model (1), (3), (5), (7), and (9), the independent variables are the logarithmic of initial GDP per capita (LGGDP), investment (INV), increase in the labour force participation rate (LABOUR), ODA as a percentage of GDP (AID), the squared term of AID (AID2), the policy index (POLICY), the aid-policy interaction term (AID × POLICY), a measure of the institutional quality of the country (INSTITUION), the institution-aid interaction term, (AID × INSTITUTION), and one period lagged value of the ratio of M2 to GDP (M2GDPt-1). Models (2), (4), (6), (8), and (10) include the three periods lagged values of AID, POLICY, and the AID × POLICY interaction term. The 2SLS model (3) and (4) uses LGGDP and POLICY as instrumental variables. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level; Robust standard errors are in parentheses.

at the 10% level. Including the institutional quality index and its interaction with aid in the model have changed the results quite significantly. Compared to **Table 2**, the goodness-of-fit of each model has reduced. Aid was insignificant under all models. The aid-policy interaction terms were also non-significant which implies that the economic conditions of an economy do not affect the extent to which aid impacts GDP growth rate. Using Burnside and Dollar [3] dataset and sample for a time period of 24 years from 1970 to 1993, Easterly [23] also found no significant relationship between the aid-policy interaction term and GDP per capita growth using the OLS and 2SLS model.

The main objective of **Table 4** is to see whether the institutional quality has any role to play in the aid-growth relationship. The result showed that *INSTITUTIONAL QUALITY* is statistically significant and positive in nearly all models, which implies that institutional factors such as government effectiveness, political stability, qualitative factors, etc. have a significant impact on GDP per capita growth rate. However, the institutional quality index interacted with foreign aid is not significant, except under the 2SLS model. The results reported in **Table 4** appear to be less reliable with a larger number of coefficients being not significant compared to the model presented in **Table 2**. This can be partly explained by the smaller sampler size since data for these indicators were only available for a smaller time frame.

Given that institutional qualities of an economy has a significant impact on GDP per capita growth rate in the Sub Saharan Africa region, we acknowledge the fact that political stability, government effectiveness, corruption, quality of the law have a very big role to explain the aid-growth situations in the Sub Saharan Africa region today. In an online article titled: "Why foreign aid is hurting Africa," in *Wall Street Journal*, economist Moyo [20] clearly explains that foreign aid is making Africa becoming poorer. The most important reason put forward

in her article is the high level of corruption and government inefficiency. Given that the region faces high level of debts, with the infusion of large amount of aid, debts are being repaid at the expense of improving the economic activity of the country. Also, foreign aid given to boost up the economy usually end up in satisfying the personal gains of bureaucracies. In spite of the knowledge that recipient countries will misuse the foreign aid, donors fail to speak out against them because of the strategic or political importance of these regions as an ally [24]. The corruption watchdog agency Transparency International found evidence for several cases where foreign aid money is being massively misused at the expense of the development of the economy. A report in 2002 by the African Union estimated that corruption was costing the continent $150 billion a year. These are crucial evidence to illustrate the fact that the high level of corruption and political instability has been a hindrance to aid effectiveness on economic development in the Sub Saharan Africa region, reflected in the area's high level of poverty and very low HDI.

3.4. Testing the Two-Gap Model

As explained by Harrod-Domar's model, further developed by Chenery and Strout [7] as the two-gap model, foreign development assistance is an important ingredient for boosting economic activity in a country. The two-gap model states that foreign assistance can play a critical role in supplementing domestic resources in order to relieve savings or foreign-exchange bottlenecks (Todaro and Smith [25]). The basic argument here is that most developing countries face either a shortage of domestic savings to match their investment opportunities, or a shortage of foreign exchange to finance needed imports of capital and intermediate goods. With a need to increase investment and imports, these two gaps are mostly filled with foreign aid. By applying a similar approach to Easterly [26], we analyse the impact foreign aid in the two-gap model.

Using the same approach as him, we find that overall, foreign aid has a positive significant impact on the level of investment at the 1% level. A 1% increase in ODA per GDP would raise the investment level by approximately 0.46%. However, this is far from a one-to-one relationship. A country-by-country analysis shows that out of the ten countries, only the Democratic Republic of Congo, Ethiopia, Malawi, Mozambique, and Tanzania financing gap would be improved by aid.

The two-gap model also presents a trade gap where exports earnings may not be sufficient to offset the imports requirements. If the trade gap is larger than the investment-savings gap, then foreign aid will automatically fill the investment-savings gap as well. Assuming aid requirements are calculated as the excess of imports over exports, we expect aid to go one for one in imports. An overall analysis shows that a 1% increase in aid would significantly increase imports by 0.48%. A country-by-country regression shows that imports are improved by foreign aid in eight of the ten countries, except in Côte d'Ivoire and Uganda.

The results of testing the two-gap model, shows that foreign aid will have a

more favourable effect on imports than on the investment levels of the countries. Côte d'Ivoire's investment level and imports however does not appear to be improved through foreign aid. But overall, foreign aid can help improve economic growth through investment and imports in the Sub Saharan region of Africa (Table 5).

4. Conclusions

To understand the impact of foreign aid on economic growth in the Sub-Saharan African region, this study makes use of a sample of ten countries over a period of 23 years from 1990 to 2012. These countries were chosen on the basis that they are the ten largest recipients of aid in Sub-Saharan Africa, and are namely: Ethiopia, the Democratic Republic of Congo, Tanzania, Kenya, Côte d'Ivoire, Mozambique, Nigeria, Ghana, Uganda, and Malawi. Based on the important work of Burnside and Dollar [3], we have explored the impact of policy and institutional variables in our aid-growth analysis. Our results showed that aid by itself is not effective on the economic performance of the recipient country. The conclusion we could derive was that the policy and institutional environment of the country has important implications for aid effectiveness: aid tends to be more effective in countries with sound economic and institutional policies. An important contribution we made in this study is the analysis of lagged variables of aid, policy and the aid-policy interaction term. We could deduce that foreign

Table 5. Testing the two-gap model.

Dependent variable	Investment	Imports
Independent variable	Aid[a]	Aid[b]
Country-by-country	Coefficient	Coefficient
Ethiopia	0.828***	1.456***
Congo, Dem. Rep.	0.607***	1.552***
Tanzania	0.410***	0.971***
Kenya	0.791	0.620***
Côte d'Ivoire	−0.272	−0.371
Mozambique	0.514**	0.557**
Nigeria	0.107	0.514***
Ghana	0.187	1.383***
Uganda	0.322	1.071**
Malawi	0.462***	0.983***
Overall[c]	0.456***	0.481***

Note: Table 5 shows the results of testing the gap model, as conducted by Easterly [26]. Column (1) is the result of regressing aid requirements, which is the investment-savings gap, on the level of investment. Column (2) is the outcome of regressing aid requirements, which is the import-export gap, on the level of imports. A country-by-country analysis is conducted then an overall analysis is carried out. Data on savings, investments, exports and imports are obtained from the World Bank. *Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level; [a]Aid is calculated as the investment-savings gap; [b]Aid is calculated as the export-import gap; [c]is the analysis conducted on all ten countries together.

aid may not show any immediate impact on economic growth since ODA intended for investment projects (social and administrative/economic infrastructures) will only show an effect on economic growth in the medium or longer term. A test of the two-gap model pioneered by Chenery and Strout [7] shows that foreign aid can help promote economic growth through supplementing imports and investment.

Evidence backed by the empirical results, which show that economic policies and institutional factors have important significance on aid effectiveness and economic growth on the largest ten recipients of aid in the Sub-Saharan African region, implies that governments and aid agencies should take into consideration these factors when it comes to improve aid efficiency. In this study, the economic policy index was constructed using the inflation rate, trade as a percentage of GDP, and government consumption. We can therefore fairly assert that recipient countries should aim to improve these three variables for a better economic policy environment. Effective and efficient use of foreign aid is however possible only in countries with good governance and less corruption, which does not seem to be the case for the countries studied in this paper. This could partly explain why a high percentage of people living in these countries are still living in extreme poverty. Measures, as explained by Collier [27], to better improve aid effectiveness may include provision of aid on the basis of attained level of policies rather than on promises of improvement; foreign aid in the form of technical assistance and skills rather than money, which in return may help promote productivity. Moyo [20] lays emphasis on being aid-independent and to exploit the natural resources such as oil, copper, gas reserves, which are in abundance in the African continent.

The findings would have been more precise if there were no limitations to the study, in particular due to data gaps. For instance, data for the institutional quality variables were available for only 14 years. We also believe a larger sample size to represent the whole of Sub-Saharan Africa is advisable for future research. Additionally, aid effectiveness could be conducted using different parameters such as income levels, donors' characteristics, etc. Incorporating a larger set of variables to capture the economic policy and institutional environment of the recipient country can provide better results. To analyse the impact of foreign aid on economic growth for more than one year, we included lagged variables of aid for three periods. We believe that developing a dataset with sufficient quantity of data which allow for analysing aid effectiveness on a longer time period is highly recommended for better policy making. The above suggestions, if considered, can improve the findings of the present paper and hence better inform policymakers and aid agencies.

References

[1] Hansen, H. and Tarp, F. (2001) Aid and Growth Regressions. *Journal of Development Economics*, **64**, 547-570.

[2] Mosley, P. (1980) Aid, Savings, and Growth Revisited. *Oxford Bulletin of Economics and Statistics*, **42**, 79-95. https://doi.org/10.1111/j.1468-0084.1980.mp42002002.x

[3] Burnside, C. and Dollar, D. (2000) Aid, Policies, and Growth. *American Economic Review*, **90**, 847-868. https://doi.org/10.1257/aer.90.4.847

[4] Collier, P. and Dollar, D. (2002) Aid Allocation and Poverty Reduction. *European Economic Review*, **48**, 1475-1500.

[5] Ram, R. (2004) Recipient Country's "Policies" and the Effect of Foreign Aid on Economic Growth in Developing Countries: Additional Evidence. *Journal of International Development*, **16**, 201-211. https://doi.org/10.1002/jid.1071

[6] Boone, P. (1996) Politics and the Effectiveness of Aid. *European Economic Review*, **40**, 289-329.

[7] Chenery, H.B. and Strout, A.M. (1966) Foreign Assistance and Economic Development. *The American Economic Review*, **56**, 679-733.

[8] Islam, M.N. (2005) Regime Changes, Economic Policies and the Effect of Aid on Growth. *The Journal of Development Studies*, **41**, 1467-1492. https://doi.org/10.1080/00220380500187828

[9] Solow, R.M. (1956) A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, **70**, 65-94. https://doi.org/10.2307/1884513

[10] Frankel, J.A. and Romer, D. (1999) Does Trade Cause Growth? *American Economic Review*, **89**, 379-399. https://doi.org/10.1257/aer.89.3.379

[11] Dollar, D. and Kraay, A. (2001) Trade, Growth and Poverty. World Bank, Development Research Group, Macroeconomics and Growth.

[12] Bakare, A.S. (2011) The Macroeconomic Impact of Foreign Aid in Sub Sahara Africa: The Case of Nigeria. *Business and Management Review*, **1**, 24-32.

[13] Griffin, K. and Enos, J. (1970) Foreign Assistance: Objectives and Consequences. *Economic Development and Cultural Change*, **18**, 313-327. https://doi.org/10.1086/450435

[14] Knack, S. (1999) Aid Dependence and the Quality of Governance: A Cross-Country Empirical Analysis. World Bank Policy Research Working Paper 2396. https://doi.org/10.1596/1813-9450-2396

[15] Dalgaard, C.J., Hansen, H. and Tarp, F. (2004) On the Empirics of Foreign Aid and Growth. *The Economic Journal*, **114**, F191-F216. https://doi.org/10.1111/j.1468-0297.2004.00219.x

[16] Dowling, J.M. and Hiemenz, U. (1983) Aid, Savings and Growth in the Asian Region. *The Developing Economies*, **21**, 3-13. https://doi.org/10.1111/j.1746-1049.1983.tb00641.x

[17] Moreira, S.B. (2005) Evaluating the Impact of Foreign Aid on Economic Growth: A Cross-Country Study. *Journal of Economic Development*, **30**, 25-48.

[18] Rabin, A. (2011) Population Growth and Food Security in the Horn of Africa. Think Africa Press.

[19] Denkabe, P. (2004) Policy, Aid, and Growth: A Threshold Hypothesis. *Journal of African Finance and Economic Development*, **6**, 1-21.

[20] Moyo, D. (2009) Why Foreign Aid Is Hurting Africa. The Wall Street Journal, 21st March.

[21] Abuzeid, F. (2009) Foreign Aid and the "Big Push" Theory: Lessons from Sub-Saharan Africa. *Stanford Journal of International Relations*, **11**, 16-23.

[22] Knack, S. and Keefer, P. (1995) Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures. *Economics and Politics*, **7**, 207-227. https://doi.org/10.1111/j.1468-0343.1995.tb00111.x

[23] Easterly, W. (2003) Can Foreign aid Buy Growth? *American Economic Association*, **17**, 23-48. https://doi.org/10.1257/089533003769204344

[24] Meyer, C. (2012) Foreign Aid: Means to Development or Political Strategy? Think Africa Press.

[25] Todaro, M.P. and Smith, S.C. (2005) Economic Development. 8th Edition, Pearson Education.

[26] Easterly, W. (1999) The Ghost of Financing Gap: Testing the Growth Model Used in the International Financial Institutions. *Journal of Development Economics*, **60**, 423-438.

[27] Collier, P. (2007) The Bottom Billion—Why the Poorest Countries Are Failing and What Can Be Done about It. Oxford University Press, New York.

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