Effect of Trade Openness and Financial Openness on Economic Growth in Sub-Saharan African Countries.

Aremo, Adeleke Gabriel[†] and Arambada, Oluwaseun David[‡]

Abstract

The study examines the individual and joint effects of trade openness and financial openness on economic growth in sub-Saharan African (SSA) countries within the period 1980 and 2017. The SSA countries are divided into two broad categories-low income countries and middle-income countries. The dynamic panel analysis using the techniques of Difference Generalised Method of Moments (GMM) and system GMM were employed. Overall, the empirical findings on low income countries show that trade openness has significant positive impact on economic growth. However, financial openness and the joint trade and financial openness do not have significant positive impact on economic growth. In the case of middle-income countries, the effect of trade openness on economic growth is mixed. However, both financial openness and the joint trade and financial openness do not spur economic growth. Overall, there is no evidence of simultaneous openness hypothesis in SSA economies. Thus, while the economy is open to trade, it is expedient to ensure that appropriate and productive Greenfield foreign direct investments are attracted to SSA economy.

Keywords: Trade Openness; Financial Openness; Economic Growth; Sub-Saharan Africa; GMM
JEL Classification Codes: F14, F43, C13

[†] Correspondence Author, Department of Economics, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria. aremoleke@gmail.com
[‡] Meristem Securities , Ikoyi, Lagos State, Nigeria. Email: adaraoluwaseun@gmail.com

1. Introduction

The main macroeconomic policy goal of every economy is how best to achieve rapid economic growth. This macroeconomic policy direction has considerably informed the nature of trade policy; foreign and domestic investments policy initiatives in sub-Saharan Africa countries. With these policy goals achieved, the sub-Saharan African countries could better effectively tackle the problem of poverty which has greatly confronted them over time. A critical factor that could largely impact on economic growth has been identified as trade openness which has the potentials to enhance the level of revenue generation of the economy with the ultimate impact on the growth of the economy. Trade openness also can enhance the growth of an economy through its potentials to aid the transfer of technology by virtue of the technical components inherent in the products imported into an economy. Besides, financial openness is another channel that could facilitate the growth of an economy and which could determine the volume of foreign direct investment and capital inflows into the economy

Extant literature has discussed the probable links between trade openness and economic growth on the one hand and financial openness and economic growth on the other hand without reaching a consensus. Some scholars have argued that trade openness could spur economic growth (Yanikayya, 2003). This position has however been contravened by some other scholars (Gries et al ,2009). The positions of scholars also vary on the relationships between financial openness and economic growth. Scholars have argued in favour of the positive impact of financial openness on economic growth (Stiglitz (2004a); Gui-Diby, 2014; Adams and Opoku, 2015;; King and Levine, 1993; Pradhan, et al, 2018; Asteriou and Spanos, 2018; .Assefa and Mollick, 2017). Some scholars however have argued that financial openness would not stimulate economic growth (Edison at al, 2002). Also, Gregorio and Guidotti (1995) argued that the effect of finance on economic growth is not significant. A major issue creating divergences of findings is the inherent incidence of endogeneity problem not well accounted for in previous studies. Thus, to obviate this problem, we apply a Generalised Methods of Moments (GMM) technique to account for endogeneity problem.

The paper aims to examine both the individual effects and the joint effects of trade openness and financial openness on economic growth in SSA and contribute to economic growth empirics on the following grounds: First, we incorporate both trade openness and financial openness as complementary factors that could impact on economic growth in a linear model for purpose of empirical analysis. The merit of this approach is that omitted variable bias could best be obviated in such a model, thus leading to consistent and efficient estimates of parameters.

Second, vast of the existing literature in sub-Saharan African countries focus on addressing either the effect of trade openness on economic growth, or the effect of financial openness on economic growth. There is however a dearth of empirical evidence on the joint effect of financial openness and trade openness on economic growth in SSA countries. Such empirical evidence will assist the policy makers in arriving at a more accurate optimal policy choices that incorporate the best combination of trade policy and foreign direct investment policy that ultimately leads to rapid economic development of SSA countries. Apart from the complementary effects of trade openness and financial openness, the individual effects of these variables could be ascertained.

Third, the economies of SSA countries are divided broadly into two: low income countries and middle income countries. The merit of this approach is that it facilitates a more rigorous analysis

of the effects of trade openness and financial openness on economic growth of SSA economies. With this approach, the specific underlying unique characteristics of the SSA economies are swiftly revealed for making useful economic decisions.

To address the issues raised, the paper is divided into five sections. Apart from the introduction, section 2 reviews some pertinent literature. Section 3 presents the methodology and section 4 reports the empirical results while section 5 concludes the paper.

2. Literature Review

The theoretical basis of the study is hinged on the neoclassical theory of allocative efficiency. The essence of the theory is that capital account liberalisation motivates high efficiency in international resource allocation that greatly enhances growth and development. The pattern of capital flows informed by capital account liberalisation is from capital abundant economies to capital deficient economies as the capital-deficit economies have the tendencies to pay high returns on capital. Thus, capital flows from emerging economies would lead to a reduction in costs of capital resulting in higher productivity and economic growth with positive effects on living standards (Fischer, 1988, 2003; Obstfeld, 1998; Rogolf, 1999; Summers, 2000). Previous studies have found evidence that capital liberalisation impacts significantly on capital costs, investment and economic growth (Henry,2007). The allocative efficiency theory is relevant to the present study because SSA economies are an emerging economy with potential to draw capital inflows besides SSA economies being largely open to the rest of the world. It is pertinent therefore to ascertain the impact of financial openness and trade openness on the economic growth of SSA countries.

2.1 Financial Openness and Economic Growth

[1]Stiglitz (2004a) argues that capital flows do not necessarily lead to improved economic growth in developing countries, instead capital flows (especially short term capital flows) are accompanied by heightened economic instability, which he attributes largely to the pro-cyclical nature of short term capital flows. This contravenes the findings from the influential works of Quinn and Toyoda (2008) who provided empirical findings on the association between capital account liberalization and economic growth for a sample of developed and emerging nations. The study showed that capital account liberalization had a positive association with growth in both developed and emerging nations. Similarly, [2]Batuo et al (2017) posited that for a panel of 41 African countries financial instability is positively related to financial liberalization and in turn, financial liberalization is growth enhancing.

The work of Yanikkaya buttresses to some extent Stiglitz's idea that effective regulation is necessary in the event of financial openness. Joseph Stiglitz stressed restriction on capital inflow, capital outflow and restriction on the banking system. Amidst the criticisms, he gives a lofty position to the role of foreign direct investment, as an important factor for long run growth. On the FDI-led growth relationship, Adams and Opoku (2015) showed that FDI is growth stimulating only in the presence of regulations.

[1] Stiglitz (2004a) presents reasons why the IMF could be wrong in its clamor for capital market liberalization and how capital market liberalization leads to instability as opposed to growth.

[2]Batuo et al (2017) used the dynamic panel GMM to investigate if financial instability has implications for growth in African countries for the period 1985-2010 and also to assess if the financial development which occurred in Africa has some link with financial Instability.

In line with the thoughts of Quinn and Toyoda (2008), Bussière and Fratzscher (2008) in a study of 45 industralised and emerging markets established the growth enhancing effect of financial liberalization. They stressed that growth after liberalization is driven by an investment boom and a surge in portfolio and debt inflows. The investment channel of financial openness was reinforced by Gus (2009). Gus held that though foreign direct investment (FDI) and foreign private investment (FPI) are found to enhance GDP per worker, FPI is found to stimulate capital accumulation with crowd-in effects. Others like (Claessens et al 2001; Zhang et al 2015; Demirguc-Kunt et al 1998; Levine 2001, Knight et al 1993) in their various studies showed that financial openness is associated with improved efficiency and competition of the financial system. Also, (Gui-Diby 2014; Adams and Opoku 2015) showed financial openness as growth inducing by partly supporting the FDI-led growth hypothesis. It has also been argued that financial openness leads to increased financial depth (Klein and Olivei, 2008). In this regard, Gamra (2009) in a panel analysis of East Asian countries showed that the growth effect of financial liberalization depends on the nature and intensity of the liberalization. The author opined that full liberalization is associated with slow growth results.

On the other side of the argument, evidence from Grabel (1995) who assessed the impact of financial market liberalization on stock market volatility in selected developing countries using both the Neoclassical and Keynesian volatility indices, supported the findings of Stiglitz (2004a). Findings from the study showed that international financial flows were associated with increased volatility of the stock market. Also, Misati and Nyamongo (2012) in a study of Sub-Saharan Africa indicated that the growth stifling effects of financial liberalisation are dominant over the growth leading effects. Edison at al (2002) also showed that international financial integration does not exert significant effect on growth in high income countries only in poor countries. Deviating slightly in this regard, Edwards and Wijnbergen (1986) developed an intertemporal optimization model to analyze the welfare effects of trade and capital market liberalization. The researchers posited that the adverse effect of capital account liberalization is only witnessed when such liberalization is carried out with distortions to extant trade. In other words, Edwards and Wijnbergen (1986) argued that capital account liberalization would have to be accompanied by the removal of barriers to trade if capital account opening would lead to the desired growth. This contravenes the findings of [3]Yanikayya (2003) who found that trade intensity ratio has a positive and significant effect on growth, and that trade barriers are positively related with growth.

Some other studies have put forth the argument of sequencing trade and financial openness. Chinn and Ito (2006) employing the time fixed effect technique found that financial openness results in the development of the stock market when certain regulations are in place. But they also stressed trade opening as a prerequisite for financial opening. Taking its root in the "sequencing argument", [4]Aizenman (2008), posited that trade openness is associated with financial openness. However, he advocated for a "deep fiscal restructuring" if financial opening would be sustainable.. Critiquing the sequencing of trade and financial openness argument, Gries et al (2009) concluded that trade openness does not appear to be an important precondition for growth'.

[3]Yanikayya (2003) attempted to examine the growth effect of different measure of trade openness on growth for a panel of 100 developed and developing countries using cross country regression analysis.
[4]Aizenman (2008) developed a model whereby greater trade openness leads to financial openness.

2.2 Trade Openness and Economic growth

Kong et al (2020) in a study of China examined the long term relationship between trade openness and the quality of economic growth under exchange rate fluctuations using the ARDL technique. The researchers found that there exists a long run relationship between trade openness and the quality of economic growth and that trade openness has a positive effect on the quality of growth in the short and long run. They however held that the positive effect differs across regions and is characterized by thresholds. This runs contrary to the findings of Eris and Ulasan (2013) who using the Bayesian model averaging technique revisited the openness-growth nexus and found no evidence that openness is correlated with economic growth in the long-run. However, similar to Kong et al (2020), Fetahi-Vehapi et al (2015) examined the effect of trade openness on economic growth for South East European countries and found that the positive effect of trade openness on economic growth are conditioned by the initial income per capita. They stressed that trade openness is more beneficial to countries with higher level of initial income per capita, FDI and gross fixed capital formation. Taking a more cursory look, Trejos and Barboza (2014) carried out a dynamic estimation of the relationship between trade openness and output growth using the OLS and ECM techniques. They found that countries with rising degree of openness to trade experience growth through the channel of higher productivity associated with capital accumulation. Giving support to Trejos and Barboza (2014), Musila and Yiheyis (2015) in a study of Kenya using the OLS technique showed that trade openness translates to growth via the channel of aggregate production and investments. On another front, Arora and Vamvakidis (2005) showed that countries benefit from trading with relatively richer countries. Also, this is implied in Reinhardt et al (2013). However, Yanikkaya (2003) found no supporting evidence.

The argument on the effect of both trade and financial openness on economic growth is yet unresolved with the disagreements among scholars ranging from the trade openness as a precondition for financial openness on the one hand to the individual and joint effects of trade and financial openness on economic growth on the other hand. Despite the plethora of empirical evidence on the openness-growth nexus, no study has yet, to the best of our knowledge, provided sufficient empirical evidence of this relationship in low income and middle income Sub-Saharan Africa which the present study aims to achieve.

3. Methodology

3.1 Model Specification.

We follow the neo-classical approach to achieve robust modelling framework and adopt the Cobb-Douglas production functional specification to model the impact of trade openness and financial openness on economic growth of SSA countries. The generic form of Cobb-Douglas is thus specified as follows:

$$Y = AL^{\alpha_1}K^{\alpha_2}G^{\alpha_3}\epsilon^{\mu_{it}} \quad (1)$$

Where Y is the economic growth variable; A is the Solow residual i.e. the component of growth that is not attributed to labour or capital, K is capital and is captured by capital accumulation in SSA economy, L is the human capital development variable of total enrolment comprising enrolments in primary schools, secondary schools and tertiary schools. The exponents of the variables are the contributions of each of the variables to output. G is the index variable nesting all other control covariates like inflation and government expenditures. The exogenous variables of

trade openness and financial openness enter the model through the argument K Thus, K can be divided into two components:

$$K_{it} = to_{it}, fdigdp_{it,} \quad (2)$$

Where $to_{it,}$ is the trade openness variable, $fdigdp_{it}$ is the financial openness variable. Also, i stands for the country specific effects, representing the selected countries in sub-Saharan Africa and t is the time period. The assumption of treating trade openness and financial openness as capital components stems from their potentials to add to SSA countries' level of capital accumulation. Equation (2) is incorporated into equation (1) along with other covariates to form an expanded model of equation (3) where economic growth variable is represented as per capita income (*gdpperk*).

Given that the previous value of economic growth variable is functionally related to its contemporaneous values, dynamic structure is introduced into model 3 through a period lag of the endogenous variable of economic growth ($gdpperk_{it-1}$). Thus, a dynamic model of the form of equation (3) is formulated.

$$gdpperk_{it} = f(A, gdpperk_{it-1}\ to_{it}, fdigdp_{it} inf_{it}, totenrl_{it}, gcfgdp_{it}, govex_{it}, \varepsilon_{it}) \quad (3)$$

Equation 3 is linearized to obtain:

$$gdpperk_{it} = A + \beta_{01} gdpperk_{it-1} + \beta_1 to_{it} + \beta_2 fdigdp_{it} + \beta_3 Inf_{it} + \beta_4 totenrl_{it} + \beta_5 gcfgdp_{it} + \beta_6 govex_{it} + \mu_i + u_{it} \quad (4)$$

Our assumption is that there is one way error component model whereby $\varepsilon_{it} = \mu_i + u_{it}$. The error term ε_{it} is divided into the time invariant country specific effects μ_i and the idiosyncratic error term u_{it}.

In model (4) , per capita income captured by (*gdpperk*) , a proxy for economic growth , is a function of a period lag of per capita income ($gdpperk_{it-1}$) , trade openness (*to*), financial openness ($fdigdp$), inflation rate (*Inf*), total school enrolment ($totenrl$) , gross capital formation ($gcfgdp$), the country fixed effects measuring the unobserved country differences among SSA countries that are time invariant are captured by μ_i , and government expenditure by ($govex$).. The a priori sign expectations of the model parameters are as follows: $A \succ 0$ $\beta_{01} \succ 0$; $\beta_1 \succ 0$; $\beta_2 \succ 0$; $\beta_3 \prec 0$; $\beta_4 \succ 0$ $\beta_5 \succ 0$; $\beta_6 \succ 0$. Implying that all the independent variables bear positive parameters save inflation with parameter $\beta_3 \prec 0$ indicating that all the independent variables are positively related to economic growth except inflation rate which is negatively related to economic growth.

Table 1 Summary Table of Variables, Variable Definitions and Data Sources

Variables	Variable Definitions	Dara Sources
Per capita income is proxy for Economic Growth (GDP/population)	GDP per capita is gross domestic product divided by the total population. According to the World development indicators, GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	World Development Indicators
(ii) Trade Openness ((X+M)/GDP)	Trade Openness is the extent to which a country accommodates international trade. It is calculated by expressing the sum of total exports and imports as a ratio of GDP	World Development Indicators
(iii)Financial Openness (FDI/GDP)	The financial openness variable shows the degree to which countries are receptive to international capital flows and captured as foreign direct investment. Foreign direct investment is the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy	World Development Indicators
(iv) Gross Capital Formation	Gross capital formation consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories	World Development Indicators
(v) Inflation	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly	World Development Indicators
(vi)Government Expenditure	General government final consumption expenditure includes all government current expenditures for purchases of goods and services	World Development Indicators
(vii) Total Enrolment	Total enrolment is the proportion of the population who has attained primary, secondary and tertiary levels of education	World Development Indicators

Note: X- Exports, M- Imports

3.2 Data and Sources

The data for the study was sourced from the World development Indicators (2017) published by the World Bank. We selected a panel of 42 sub-Saharan African countries spanning low income countries and middle income countries. The Low-Income Countries in our sample comprise of :Benin, Central African Republic, Burkina Faso, Tanzania, Congo (Democratic Republic), Madagascar, Malawi, Mali, Mozambique, Togo, Rwanda, Uganda, Zimbabwe ,Burundi, Chad, Comoros, , Sierra Leone, Eritrea, Ethiopia, Guinea-Bissau, Niger, Senegal. While the Middle

Income Countries include: Nigeria , Cameroon, Lesotho, Ghana, Botswana, Mauritius, Namibia, Equatorial Guinea, Mauritania, Swaziland, Congo, Rep, Djibouti, , Kenya, and Zambia. The 22 low income countries according to the World Bank Atlas method of classification comprise countries with less or equal to 1,025 dollars GNI/capita in 2015. For the 14 middle income countries, we combine the lower-middle income and middle income countries. They are countries with GNI/capita ranging between 1,026 dollars and 12,475 dollars.

3.3 Techniques of Analysis

We employ the Arellano and Bond difference GMM (1991) and Arellano and Bover (1995) Blundell and Bond (1998) system GMM in estimating our model. The choice of a dynamic panel framework becomes necessary as the dynamic nature of our model equation (3) renders the ordinary least squares (OLS) estimator biased and inconsistent. The dynamic structure stems from the introduction of the lagged endogenous variable in the model to capture the inertia and persistence of the endogenous variable. In order to fulfill the conventional requirement to implement GMM technique of N cross sections being more than T time period we employed 5-year moving average which collapsed the observed data points to seven; thus satisfying the condition to implement GMM.

The difference GMM estimator developed by Arellano and Bond (1991) addresses the existence of a lagged endogenous variable and allows for some endogeneity in the explanatory variables. It also attempts to eliminate country-specific effects, and then uses all possible lagged levels as instruments. The superiority of Arellano and Bond Difference GMM over previous estimator of Instrumental Variable by Anderson and Hsiao (1991) stems from his strength to address the correlation between the difference exogenous variables and the difference error terms. It is also superior in addressing the simultaneity bias inherent in explanatory variables (.endogeneity problem). Arellano and Bond (1991) applied the lagged levels of the regressors as instruments which is valid under the assumptions of no serial correlation in the errors and under the condition that the lag of the explanatory variables are weakly exogenous.

However, Blundell and Bond (1998) pointed out that the first-differenced GMM estimators are likely to perform poorly in the face of persistent time series and small N (number of periods). Another disadvantage the difference estimator is that in the process of eliminating the country specific effect, it also removes information on the cross-country variation in levels. Hence, the System GMM estimator proposed by Arellano and Bover (1995) and Blundell and Bond (1998) brings together the standard set of moment conditions in first differences with lagged levels as instruments, with an additional set of moment conditions derived from the equation in levels that make the lagged difference of the dependent variables orthogonal to the error term. Thus the system GMM is a more efficient estimator. We thereby consider the system GMM a superior estimator to the difference GMM. However, both Arellano and Bond difference GMM (1991) and Arellano and Bover (1995) Blundell and Bond (1998) system GMM were applied.

4.0 Empirical Findings

4.1 Descriptive Statistics

The descriptive statistics of the variables designed to show the characteristics of the variables are presented in Table1 while the correlation analysis that shows the strength of the relationship among the variables are presented in Table 2.

Table 2: Descriptive statistics of models' variables [5]

Variable		Mean	Std. Dev.	Min	Max	Observations		
gdpperk	overall	1563.59	2406.13	115.79	20333.94	N	=	1486.00
	between		1980.83	262.69	9052.04	n	=	41.00
	within		1340.90	-5476.67	14370.29	T-bar	=	36.24
to	overall	0.47	0.36	0.00	2.24	N	=	1486.00
	between		0.22	0.00	1.00	n	=	41.00
	within		0.29	-0.52	1.96	T-bar	=	36.24
fdigdpp	overall	3.82	9.77	-82.89	161.82	N	=	1436.00
	between		4.34	-1.25	21.63	n	=	41.00
	within		8.74	-100.70	147.12	T-bar	=	35.02
gcfgdpp	overall	21.19	16.58	-2.42	219.07	N	=	1382.00
	between		11.74	7.00	82.46	n	=	41.00
	within		11.66	-49.22	157.80	T-bar	=	33.71
inf	overall	68.19	973.28	-35.84	24411.03	N	=	1280.00
	between		208.26	2.40	1037.32	n	=	40.00
	within		950.22	-967.49	23701.56	T	=	32.00
govex	overall	20.03	9.49	2.05	52.74	N	=	413.00
	between		7.70	5.78	39.82	n	=	32.00
	within		4.14	6.83	34.51	T-bar	=	12.91
toterl	overall	91.63	58.47	0.00	241.48	N	=	1558.00
	between		35.33	31.94	182.03	n	=	41.00
	within		46.91	-90.41	227.42	T	=	38.00

The gdpperk represents economic growth; to is trade openness; fdigdpp is financial openness; gcfgdpp is gross capital formation; inf is inflation; govex is government expenditure ; and toter1 is total enrolment. The standard deviations of gdpperk, and inflation variables are larger than the rest of the variables which are accounted for by the between and within variances respectively. For the remaining variables, the variances are considerably of reasonable sizes.

[5] A typical example of derivation of the variances of the variables, i.e., for fdigdp, follows this form: the overall variance is 9.76516^2 $=95.35834$, of which $4.337982^2=18.81808$ represents the between variance and $8.735762^2=76.31354$ is the within variance. The same variance calculations are applicable to other variables.

Table 3: Correlation Matrix of the models' variables

	fdigdpp	to	gdpperk	gcfgdpp	inf	govex	toterl
fdigdpp	1.0000						
to	0.3871	1.0000					
gdpperk	0.1079	0.5102	1.0000				
gcfgdpp	0.2087	0.4756	0.4669	1.0000			
inf	-0.0391	-0.0899	-0.0480	-0.0996	1.0000		
govex	0.1397	0.2760	0.2558	0.3697	-0.0945	1.0000	
toterl	0.0040	0.2097	0.2184	0.3197	-0.0221	0.3110	1.0000

The results of correlation matrix in Table 3 shows that the correlation coefficients for all the variables are less than 0.6 implying that correlation coefficients are within the reasonable limit; thus multicollinearity is not an issue . As expected, the inflation variable is negatively correlated with economic growth while other variables are positively correlated with economic growth.

In this section, the findings from our empirical analysis of trade openness, financial openness and economic growth in SSA countries are discussed. The results are divided into full panel, low income countries and middle income countries. This categorisation is to enable us capture the differences inherent in different income groups. Table 4 presents the result for the full panel of selected SSA countries, while table 5 presents the results for low income countries and Table 6 shows the result for middle income countries. For each of the income groups, one-step and two-step estimates of the difference GMM of Arellano and Bond (1991) and System GMM of Arellano and Bover (1995) and Blundell and Bond (1998) are presented. For each of the estimators, we look at the outcomes when the interaction term of trade openness and financial openness are incorporated in the model and when they are excluded.

Table 4: Full Panel of Selected SSA countries.

Dependent Variable:	GDP per capita							
	System GMM				Difference GMM			
	Without interaction term		With Interaction term		Without interaction term		With Interaction term	
	One-Step	Two-step	One-Step	Two-Step	One-Step	Two-Step	One-Step	Two-Step
	4		5		6	7		
gdpperk-1)	0.944***	0.943***	0.945***	0.943***	1.056***	1.055***	1.037***	1.051***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
To	0.091***	0.092***	0.090***	0.091***	0.046*	0.045***	0.048*	0.050***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.072]	[0.000]	[0.064]	[0.000]
Fdigdp	-0.001	-0.001***	0.000	-0.001	-0.001	-0.001***	0.001	0.001
	[0.111]	[0.000]	[0.744]	[0.252]	[0.173]	[0.000]	[0.725]	[0.199]
fdigdp*TO	_	_	0.000	0.000	_	_	-0.001	-0.001***
	_	_	[0.870]	[0.673]	_	_	[0.440]	[0.003]
Inf	-0.002***	-0.002***	-0.002***	-0.002***	-0.002*	-0.002***	-0.002*	-0.001***
	[0.010]	[0.000]	[0.009]	[0.000]	[0.061]	[0.000]	[0.060]	[0.000]
Gcfgdp	0.000	0.000**	0.000	0.000**	0.000	0.000	0.000	0.000
	[0.773]	[0.051]	[0.761]	[0.057]	[0.708]	[0.168]	[0.880]	[0.978]
Govex	0.028	0.027***	0.027	0.028***	-0.014	-0.017***	-0.011	-0.007
	[0.153]	[0.000]	[0.161]	[0.000]	[0.609]	[0.017]	[0.679]	[0.291]
Totenrl	0.008	0.008***	0.007	0.007***	0.001	0.001	0.000	0.000
	[0.212]	[0.000]	[0.229]	[0.000]	[0.857]	[0.314]	[0.994]	[0.599]
Sargan Test	18.34403		27.24943		19.48079		20.90405	
	[0.9869]		[0.7875]		[0.9701]		[0.9618]	
AR(1)	-1.7696		-1.7599		-1.9315		-1.7887	
	[0.0768]		[0.0784]		[0.0534]		[0.0737]	
AR(2)	-1.0211		-1.0409		-1.51		-1.6547	
							[0.0980]	
Number of Countries:	[0.3072]		[0.2979]		[0.1310]		-	
Number of	34		-		-			
Observations	340		-		-		-	

Note: Probability Values in Parentheses []

Table 4 presents the results of the effect of trade openness and financial openness on economic growth in full panel of selected SSA countries. The Sargan tests for over-identifying restrictions and validity of instruments are consistent in all models as they range between 0.7875 and 0.9869 thereby confirming the null hypothesis of instrument validity. The test of serial correlation in line with GMM approach presupposes that AR (1) estimates be statistically significant while AR (2) estimate be not statistically significant. The AR (1) estimates in all the model results are statistically significant at 10 per cent level. Also, the test for second-order serial correlation AR(2) also confirms the absence of second order serial correlation . The diagnostics therefore suggests that our estimates are reliable and could be used for policy prescription.

The results in Table 4 show that the lagged dependent variable (gdpperk-1) is statistically significant at one per cent level in all model results, thereby indicating the persistent nature of economic growth and also the appropriateness of the GMM estimation technique in estimating this relationship. The trade openness variable (without interaction) however enters with positive and statistically significant coefficients in all models suggesting that trade openness in isolation of financial openness could generate a substantial level of growth.

The financial openness variable (without interaction) on the other hand, is negatively signed with relatively smaller coefficients in most models. The results imply that in Sub-Saharan Africa, financial openness does not enhance growth. This finding confirms the evidence presented by Stiglitz (2004) that financial openness is not associated with growth but rather economic instability. The result also corroborates the finding of Yanikkaya (2003). In models with the interaction term, trade openness maintains positive and significant coefficients while financial openness is positive albeit insignificant in the case of system GMM (one step) and difference GMM (one step and two step).

The interaction term does not provide substantial evidence for simultaneous financial and trade openness as growth leading. The mixed evidence from the difference and system GMM suggests that the simultaneous openness hypothesis is not confirmed for Sub-Saharan African countries.
The control variables of inflation, gross capital formation, government expenditure and total enrolment all have appropriate signs that conform to a priori expectations.

Table 5: Low-Income SSA Countries

	GDP/Capita							
	System GMM				Difference GMM			
	Without interaction term		With Interaction term		Without interaction term		With Interaction term	
	One-Step	Two-step	One-Step	Two-Step	One-Step	Two-Step	One-Step	Two-Step
	1	2	3	4	5	6	7	8
gdpperk(-1)	1.041***	1.097***	1.038***	1.082***	0.956***	1.007***	0.957***	1.006***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
To	0.185***	0.155***	0.203***	0.161***	0.114***	0.111***	0.118***	0.139***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Fdigdp	0.000	0.000	0.002	0.002***	0.000	-0.001*	0.000	0.000
	[0.844]	[0.788]	[0.138]	[0.011]	[0.413]	[0.083]	[0.937]	[0.891]
fdigdp*to	_	_	-0.023	-0.002***	_	_	0.000	-0.001
	_	_	[0.127]	[0.005]	_	_	[0.735]	[0.656]
Inf	0.001	0.000	0.001	0.000	-0.001	-0.001***	-0.001*	-0.001***
	[0.180]	[0.924]	[0.337]	[0.760]	[0.110]	[0.000]	[0.097]	[0.009]
Gcfgdp	-0.002***	-0.001***	-0.002***	-0.001**	-0.002***	-0.002***	-0.002**	-0.002**
	[0.002]	[0.000]	[0.010]	[0.044]	[0.015]	[0.000]	[0.022]	[0.020]
Govex	0.018	-0.006	0.019	-0.003	0.023	0.020	0.019	-0.007
	[0.365]	[0.731]	[0.345]	[0.833]	[0.266]	[0.470]	[0.356]	[0.719]
Totenrl	-0.009*	-0.003	-0.007	-0.002	0.004	-0.004	0.004	-0.004
	[0.060]	[0.691]	[0.149]	[0.783]	[0.573]	[0.628]	[0.555]	[0.588]
Sargan Test	6.755		5.449		6.061		5.424	
	[1.0000]		[1.0000]		[1.0000]		[1.0000]	
AR(1)	1.013		0.892		0.603		0.882	
	[0.3113]		[0.3723]		[0.5464]		[0.3777]	
AR(2)	-0.957		-1.050		-1.363		-1.261	
	[0.3443]		[0.2939]		[0.1730]		[0.2072]	
Number of Countries	22		-		-		-	
Number of Observations	220		-		-		-	

Note: Probability Values in Parentheses (…)

Table 5 shows the result obtained from the estimation of the effect of trade openness and financial openness on economic growth in low-income SSA countries. The Sargan statistic of over identifying restrictions confirms the null hypothesis of valid instruments. Also, the lagged endogenous regressor is seen to be significant in all models.

The results show that trade openness (without interaction term) is positive and significant in all the models with coefficients ranging from 0.111 to 0.185 suggesting that if trade openness increases by one unit, GDP per capita increases by about 0.111 to 0.185 units. However, the effects on growth are insignificant at the 5% level for all the model. With the introduction of the interaction term, the direction of relationship is maintained but the size of the coefficient becomes relatively larger, ranging from 0.139 to 0.203. The results imply that opening up to trade in low income countries could be beneficial to economic growth but being a net exporter of primary products, international trade arrangements are often unfavourable and as such the expected gains from trade do not materialize. Nonetheless, the evidence suggests that more gains could be recorded when such trade are accompanied by inward long term capital flows and also flows of capital in the form of foreign direct investments. This finding is line with Kong et al (2020), Trejos and Barboza (2014), and Musila and Yiheyis (2015).

Also, financial openness when examined in isolation of trade openness is positive but insignificant coefficients in the system (one step and two step) and difference (one step) GMM estimators. In models with the interaction term, financial openness is found to be positive and insignificant. However, the only evidence of significance is found in the system GMM two-step model which supports the findings of Gui-Diby (2014) and Adams and Opoku (2015)

Table 6: Middle-Income SSA Countries

	GDP/Capita							
	System GMM				Difference GMM			
	Without interaction term		With Interaction term		Without interaction term		With Interaction term	
	One-Step	Two-step	One-Step	Two-Step	One-Step	Two-Step	One-Step	Two-Step
	1	2	3	4	5	6	7	8
gdpperk(-1)	0.948***	0.804***	0.957***	0.687***	0.656***	0.804***	0.654***	0.845***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
To	0.051	0.051	0.101**	0.000	0.016	-0.009	0.066*	0.006
	[0.155]	[0.294]	[0.028]	[0.998]	[0.607]	[0.837]	[0.086]	[0.935]
Fdigdp	-0.002	-0.009***	0.012	-0.021	-0.003**	-0.007***	0.012	-0.005
	[0.362]	[0.003]	[0.174]	[0.201]	[0.043]	[0.004]	[0.102]	[0.610]
fdigdp*to	_	_	-0.011	0.011	_	_	-0.012**	-0.001
	_	_	[0.107]	[0.457]	_	_	[0.032]	[0.906]
Inf	-0.004	0.003	-0.004	0.000	-0.002	0.004	-0.003	0.003
	[0.268]	[0.570]	[0.196]	[0.975]	[0.441]	[0.337]	[0.353]	[0.441]
Gcfgdp	0.000	-0.003***	0.000	-0.003	-0.003**	-0.002***	-0.003**	-0.002***
	[0.992]	[0.011]	[0.804]	[0.111]	[0.041]	[0.000]	[0.044]	[0.011]
Govex	-0.007	-0.018	-0.007	0.011	-0.047	-0.042	-0.063*	-0.048
	[0.760]	[0.766]	[0.765]	[0.875]	[0.152]	[0.396]	[0.064]	[0.404]
Totenrl	-0.009	-0.001	-0.009	0.006	-0.011	-0.010	-0.010	-0.008
	[0.434]	[0.968]	[0.450]	[0.780]	[0.312]	[0.577]	[0.351]	[0.732]
Sargan Test	0.554		0.004		1.916		1.847	
	[1.0000]		[1.0000]		[1.0000]		[1.0000]	
AR(1)	-2.292		_		-2.160		-2.777	
	[0.0219]		_		[0.0308]		[0.005]	
AR(2)	-0.491		-0.521		-0.435		-0.523	
	[0.6237]		[0.6022]		[0.6633]		[0.6007]	
Number of Countries	14		-		-		-	
Number of Observations	140		-		-		-	

Note: Probability Values in Parentheses []

This result contradicts the conclusion of Edison at al (2002) that only in poor countries does international financial integration exert a significant effect on economic growth. The triviality of financial openness in explaining economic growth in low-income SSA countries could be attributed to the inflow of short term capital as opposed the long-term capital needed to spur growth. Short term financial capital is largely volatile and could vastly impact negatively on economic growth.

The coefficients of interaction variable are all negatively signed and ranging between 0.02 and 0.001 except for the difference GMM one step estimator which presents positive coefficient. We however consider the two step estimator as more efficient. The results indicates that a unit change in trade openness and financial openness simultaneously would lead to a 0.02 to 0.001 unit change in economic growth in the opposite direction, thus suggesting that the simultaneous openness hypothesis is not confirmed in low-income Sub-Saharan Africa. This could be attributed to capital flight to higher interest rate environments associated with financial openness and also the low absorptive capacity of low income countries. Also, the relatively weaker position of low-income countries in international trade arrangements hinders gains from international trade.

The control variable inflation conforms to the a priori expectation of negative coefficients in the difference GMM (one step and two step), and are largely significant. Thus, suggesting the negative effect of inflation in low-income countries. However, gross capital formation, government expenditure (two step system and difference GMM estimates) and total enrolment do not conform to their a priori expectations.

Table 6 contains the results of the effect of trade openness and financial openness on economic growth in middle income countries. In models without the interaction term, trade openness is largely positive but insignificant while financial openness is mainly negative and significant at the 5% level. Likewise, in models with the interaction term in both difference GMM and System GMM, trade openness coefficients are positive and significant only in one step estimates. Thus, it appears that the effect of trade openness on economic growth in middle income countries appear to be mixed suggesting that the relatedly large size of these economies could be an advantage and disadvantage at the same time to when their economies are open.

Financial openness variable coefficients bear mainly negative signs in all the models implying that an increase in a unit of financial openness leads to a decrease of between 0.002 and 0.009. Although the coefficient of financial openness is positive in the case of models with interaction variables, the coefficients are insignificant. This finding appears to suggest in the main that financial openness does not significantly impact on the economic growth in middle income countries of sub-Saharan African countries. This finding contradicts the results of Quinn and Toyoda (2008), Summers (2000) and Batuo et al (2017) but confirms the findings of Stiglitz (2004a) and Yanikkaya (2003). The same pattern of results recorded in low income countries is also recorded in the case of middle income countries. The unfavourable investment environment prevalent in SSA countries must have accounted for this pattern; thus limiting the inflows of capital and investments into SSA economies The interaction variable coefficients are mainly negative and significant. Thus suggesting that an increase in the interaction of trade openness and financial openness would depress economic growth. This finding tends to suggest that the simultaneous openness hypothesis is not confirmed in middle income Sub-Saharan Africa.

Evidence from the two step estimates show that the control variables do not conform to their a priori expectations. The Sargan statistic for validity of instruments confirms the null hypothesis of instrument validity. Also, the AR(2) statistic confirms the absence of second order autocorrelation.

5. Conclusion.

In this paper, we examine the individual and joint effects of trade openness and financial openness on economic growth in sub-Saharan African countries. We examine the effects based on samples of full panel of selected SSA countries, low income SSA countries and middle income SSA countries. Overall, the empirical findings on the full panel show that trade openness has positive impact on economic growth. However, financial openness and the joint trade openness and financial openness do not have significant growth enhancing impact. In low income countries, trade openness has significant and positive effect on economic growth, but financial openness and the joint trade openness and financial openness do not have significant positive impact on economic growth. In the case of middle income countries, the effects of trade openness on economic growth are mixed; that is, the effects are either negative or positive. Meanwhile, both financial openness and the joint trade openness and financial openness do not enhance economic growth. Thus, overall, there is no evidence of simultaneous openness hypothesis in SSA economies.

Based on these findings, we recommend that policy makers should initiate more effective policy that will further open up the economy of sub-Saharan countries to enable them to enjoy the full advantage of economic openness. An economy that is open can benefit from importation of critical technologies from other advanced economies by way of quality imported capital products embodied in the latest technologies. A caveat to this submission is that for SSA countries to derive maximum benefits from trade openness, they should concentrate on producing goods on which they have full comparative cost advantage. Besides, they should endeavor to add values to the primary products in the production chains. This approach is pertinent because until the primary products produced by SSA countries are transformed to a more usable form, the revenues derivable from their export are bound to be low. Of course, only the buyers of such products will tremendously benefit from such a trade arrangement.

Financial openness is found not to contribute significantly to economic growth. Although there is some modicum of evidence that in middle income countries, financial openness contribute positively to economic growth. To encourage the inflows of capital, such as foreign direct investments, portfolio investments, SSA countries should create an enabling environment that would motivate the foreign investors to invest in SSA economies. A way to encourage both brownfield and greenfield foreign direct investments is to improve on the present deplorable state of infrastructure like transportation and electricity.

In addition, that the interaction of trade openness and financial openness does not positively impact on economic growth in SSA countries provides sufficient evidence that the present state of trade openness and financial openness is not properly coordinated in SSA countries. Thus, while the economy is open to trade, there is the need to ensure that appropriate and productive foreign investments are attracted to the economy. Such investments will aid in solving unemployment problems, enhancing aggregate demand and revenue generation that will eventually spur economic growth.

References

Adams, S., Opoku, E.E., (2015). Foreign direct investment, regulations and growth in sub-Saharan Africa. *Economic Analysis and Policy*, retrieved from, http://dx.doi.org/10.1016/j.eap.2015.07.001.

Agbloyor, E.K., Abor, J.Y., Adjasi, C.K.D., Yawson, A. (2014). Private capital flows and economic growth in Africa: The role of domestic financial markets. *International Financial Markets, Institutions and Money*, 30, 137–152.

Aizenman, J. (2008). On the hidden links between financial and trade opening. *Journal of International Money and Finance27*, 372-386

Akinlo, A.E., (2004). Foreign direct investment and growth in Nigeria: An empirical investigation. *Journal of Policy Modeling*, (26), 627–639.

Almfraji, M.A., Almsafir, M.K., (2014). Foreign Direct Investment and Economic Growth Literature Review from 1994 to 2012. *Procedia - Social and Behavioral Sciences* 129, 206 – 213.

Alvarado, R., Iniguez, M., Ponce, P., (2017). Foreign direct investment and economic growth in Latin America. *Economic Analysis and Policy*, retrieved from http://doi.org/10.1016/j.eap.2017.09.006 .

Anwar, S., Sun, S., (2011). Financial development, foreign investment and economic growth in Malaysia. *Journal of Asian Economics*, (22), 335–342.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies58*, 277-297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variables estimation of error components models. *Journal of Econometrics68*, 29-51.

Arora, V.,& Vamvakidis, A. (2005). How much do trading partners matter for economic growth? *IMF Staff Papers 52*(1), 24-40.

Assefa, T.A.,& Mollick, A.V. (2017). Financial development and economic growth in Africa. *Journal of African Business*, DOI: 10.1080/15228916.2017.1301162.

Asteriou, D., & Spanos, K. (2018). The relationship between financial development and economic growth during the recent crisis: Evidence from the EU. *Finance Research Letters*. doi: 10.1016/j.frl.2018.05.011.

Batuo, E., Mlambo, K., Asongu, S.A. (2017). Linkages between financial development, financial instability, financial liberalization and economic growth in Africa. *Research in internatonal business and finance*, 45, 168-179

Blundell, R.,& Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87, 115-143.

Borensztein, E., Gregorio, J.D., Lee, J.W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics* (45) 115–135.

Bussiere, M.,& Fratzscher, M. (2008). Financial openness and growth: Short-run gain, long-run pain?. *Review of international economics*, 16(1), 69-95.

Chang, C.,& Lee, C. (2010). Globalization and economic growth: A political economy analysis for OECD countries. *Global Economic Review: Perspectives on East Asian Economies and Industries*, *39*(2), 151-173, DOI: 10.1080/1226508X.2010.483835.

Chinn, M.D.,& Ito, H. (2006). What matters for financial development? Capital controls, institutions, and interactions. *Journal of Development Economics81*, 163- 192.

Chinn, M.D., & Ito, H. (2008). A new measure of financial openness. *Journal of Comparative Policy Analysis: Research and Practice*, *10*(3), 309-322

Claessens, S., Demirguc-Kunt, A., Huizinga, H. (2001). How does foreign entry affect domestic banking markets? *Journal of Banking and Finance, 25* 891- 911.

De Mello, L.R, Jr. (1999). Foreign direct investment-led growth: evidence from time series and panel data. *Oxford Economic Papers*, (51), 133-151.

Demirguc-Kunt, A., Levine, A., & Min, H. (1998). Opening to foreign banks: Issues of stability, efficiency, and growth. *Bank of Korea*. 83-105.

Edison, H.J., Levine, R., Ricci, L., &Sløk, T. (2002). International financial integration and economic growth. *Journal of International Money and Finance 21* . 749–776

Edwards, S. (1993). Openness, trade liberalization, and growth in developing countries. *Journal of Economic Literature*, 31(3). 1358-1393.

Edwards, S., &Wijnbergen, S. (1986). The welfare effects of trade and capital market liberalization.*International Economic Review,* 27(1).141-148

Enowbi, M.B.,Mlambo, K., Asongu, S. (2017). Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa. *Research in International Business and Finance*, retrieved from http://dx.doi.org/10.1016/j.ribaf.2017.07.148.

Eris, M.N.,& Ulasan, B. (2013). Trade openness and economic growth: Bayesian model averaging estimate of cross-country growth regressions. *Economic Modelling*, 33, 867- 883.

Fetahi-Vehapi, M., Sadiku, L., & Petkovsi, M. (2015). Empirical analysis of the effects of trade openness on economic growth: An evidence for south east European countries. *Procedia economics and finance*, 19, 17-26.

Fischer, S. (1998).Capital account liberalisation and the role of the IMF. In should the IMF pursue capital-account convertibility. Essays in International Finance, no 207. Princeton: International Finance Section, Department of Economics, Princeton University, 1-10.

Fischer, S. (2003). Globalisation and its challenges. American Economic Review, 93, 1-30.

Gamra, S.B. (2009). Does financial liberalization matter for emerging east asian economies growth? Some new evidence. *International review of economics and finance*, 18, 392-403.

Grabel, L., (1995). Assessing the impact of financial liberalization on stock market volatility in selected developing countries. *The Journal of Development Studies*, 31(6), 903-917, DOI: 10.1080/00220389508422396.

Gregorio, J.,&Guidotti. P.E. (1995). Financial development and economic growth. *World Development*, 23(3).. 433-448.

Gries, T., Kraft, M., &Meierrieks, D., (2009). Linkages between financial deepening, Trade openness, and economic development: Causality evidence from Sub-Saharan Africa. *World Development* 7(12),. 1849–1860.

Grossman, G.M., Helpman, E. (1994). Endogenous Innovation in the Theory of Growth. *Journal of Economic Perspectives*, 8(1), 23–44.

Gui-Diby, S.L. (2014). Impact of foreign direct Investments on economic growth in Africa: Evidence from three Decades of panel data Analyses. *Research in Economics*, retrieved from http://dx.doi.org/10.1016/j.rie.2014.04.003.

Gus, G. (2009). How does financial openness affect economic growth and its components? *Munich personal RePEc Archive*, https://mpra.ub.uni-muenchen.de/20099/.

Henry, P.B. (2007). Capital account liberalization: Theory, evidence, and speculation. *Journal of Economic Literature* , pp. 887–935.

Iamsiraroj, S. (2016). The foreign direct investment-economic growth nexus. *International Review of Economics and Finance*, doi: 10.1016/j.iref.2015.10.044.

Kar, M., Peker, O., & Kaplan, M. (2008). Trade liberalization, financial development and economic growth in the long term: The case of Turkey

King, R.G., Levine, R. (1993). Finance, entrepreneurship, and growth. *Journal of Monetary Economics* (32) 513-542.

Klein, M.W., Olivei, G.P. (2008). Capital account liberalization, financial depth, and economic growth. *Journal of International Money and Finance 27*, 861–875

Knight, M., Loayza, N., & Villanueva, D. (1993). Testing the neoclassical theory of economic growth. *IMF Staff Papers* 40(3).

Kong, Q., Peng, D., Ni, Y., Jiang, X., & Wang, Z. (2020). Trade openness and economic growth quality of China: Empirical analysis using ARDL model. *Finance research letters.* doi: https://doi.org/10.1016/j.frl.2020.01488.

Levine, R. (2001). International financial liberalisation and economic growth. *Review of International Economics*, *9*(4), 688–702.

Makiela, K., & Ouattara, B. (2017). Foreign direct investment and economic growth: Exploring the transmission channels. *Economic Modelling* (xxx) 1–10.

Menyah, K., Nazlioglu, S., & Wolde-Rufael, Y. (2014). Financial development, trade openness and economic growth in African countries: New insight from a panel causality approach. *Economic Modelling*, *37*, 386-394.

Misati, R.N., Nyamongo, E.M. (2012). Financial liberalization, financial fragility and economic growth in Sub-Saharan Africa. *Journal of financial stability*, 8, 150-160.

Murthy, D.S., Patra, S.K., &Samantaraya, A. (2014). Trade openness, financial, development index and economic growth: Evidence from India (1971-2012). *Journal of Financial Economic Policy,6*(4), 362-375. http://dx.doi.org/10.1108/JFEP-10-2013-0056

Musila, J.W., & Yiheyis, Z. (2015). The impact of trade openness on growth: The case of Kenya. *Journal of policy modeling*. http://dx.doi.org/10.1016/j.jpolmod.2014.12.001.

Obstfeld, M. (1998). The global capital market: Benefactor or menace? *Journal of Economic Perspectives,* 12(4), 9-30.

Papaioannou, E. (2009). What drives international financial flows? Politics, institutions and other determinants. *Journal of Development Economics 88,* 269–281.

Phutkaradze, Z., Tsintsadze, A., & Phutkaradze, B. (2019). Financial integration and economic growth: empirical evidence from the republic of Georgia. *European journal of sustainable development*, 8(2), 232-248.

Pradhan, R.P., Arvin, M.B., & Bahmani, S. (2018).Are innovation and financial development causative factors in economic growth? Evidence from a panel granger causality test. *Technological Forecasting & Social Change*, retrieved from , https://doi.org/10.1016/j.techfore.2018.01.024.

Quinn, P.D., Toyoda, A.M. (2008). Does capital account liberalization lead to growth?. *The Review of Financial Studies*, 21(3), https://dx.doi.org/doi:10.1093/rfs/hhn034.

Reinhardt, D., Ricci, L.A., &Tressel, T. (2013). International capital flows and development: Financial openness matters. *Journal of International Economics91,* 235-251

Rogolf, K.S.(1999). International institutions for reducing global financial instability. Journal of Economic Perspectives, 13(4), 21-42.

Roodman, D. (2006). How to do xtabond2: An introduction to difference and system GMM in Stata. *Centre for Global Development (CGD) Working Paper103*

Saibu, M.O.,&Akinbobola,T.O. (2014). Globalisation, foreign direct investment and economic growth in Sub Saharan Africa. *Journal of Economics and International Finance.6*(3), 62-68, DOI: 10.5897/JEIF2013.0531.

Sargan, J. (1958). The estimation of economic relationship using instrumental variables, *Econometrica 26*, 393-415.

Shahbaz, M (2012). Does trade openness affect long run growth? Cointegration, causality and forecast error variance decomposition tests for Pakistan. *Economic modelling,29*, 2325-2339.

Stiglitz, J.E., (2000). Capital market liberalization, economic growth, and instability. *World Development* 28(6),1075-1086

Stiglitz, J.E., (2004). Capital market liberalization, globalization and the IMF. *Oxford Review of Economic Policy*. 20(1).

Stiglitz, J.E., (2004). Globalization and growth in emerging markets. *Journal of Policy Modeling 26,* 465–484.

Summers, L.H. (2000). International financial crises: Causes, prevention, and cures. *American Economic Review*, 90(2), 1-16.

Sunde .T. 2017. Foreign direct investment and economic growth: ADRL and causality analysis for South Africa. *Research in International Business and Finance*, retrieved from http://dx.doi.org/doi:10.1016/j.ribaf.2017.04.035.

Trejos, S., & Barboza, G. (2014). Dynamic estimation of the relationship between trade openness and output growth in asia. *Journal of asian economics,* http://dx.doi.org/10.1016/j.asieco.2014.10.001.

Woolridge, J. (2001). Applications of generalized method of moments estimation. *Journal of Economic Perspectives*, *15*(4), 87-100.

Yanikkaya, H., (2003). Trade openness and economic growth: A cross-country empirical investigation. *Journal of Development Economics 72*, 57–89.

Zhang, C., Zhu, Y., & Lu, Z. (2015). Trade openness, financial openness, and financial development in China. *Journal of International Money and Finance*. http://dx.doi.org/doi:10.1016/j.jimonfin.2015.07.010