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CAPITAL ACCOUNT DEREGULATION AND ECONOMIC GROWTH: THE EFFECT OF BUREAUCRATIC QUALITY

ABDULHADI HARUNA ALIYARA
Department of Economics, FSS
Taraba State University Jalingo, Taraba State. Nigeria
E-mail: abdulaliyara@gmail.com

&
MUSTAPHA JAMILU BELLO
Department of Economics, FSS
Taraba State University Jalingo, Taraba State. Nigeria
E-mail: jambell247@gmail.com

&
TITUS AGNESS
Department of Economics, FSS
Taraba State University Jalingo, Taraba State. Nigeria
E-mail: agness.titus@yahoo.com

Abstract
The study examines the impact of capital account liberalization on economic growth in five Sub-Saharan African Countries. The paper also analyzed the combined effect of capital account liberalization and bureaucratic quality on economic growthfrom 1984 to 2019. The study utilizes Driscoll and Kraay's technique, which is robust to cross-sectional dependence, heteroskedasticity and serial correlation.Findings revealed that capital account deregulation, capital stock, labour force participation and foreign direct investment accelerates growth. Furthermore,evidence indicates that the interaction effect of capital account liberalization and bureaucratic quality encourage growth.Therefore, the study recommends that the various governments should implement policies geared toward more capital account openness. Member countries must also implement strategies that are geared toward further improvement in bureaucratic quality. Hence, to benefit from the numerous advantages of financial deregulation, the study suggests that member countries must improve their institutional environments. Finally, the findings indicate the critical role of sound and conducive business environment for a successful capital account liberalization.

Keywords: capital account liberalization; bureaucratic quality; and economic growth.

1. Introduction

In the early 1990s, countries in SSA deregulated their capital account through the elimination of legal imposed limitations on free capital flow, in an attempt to attract foreign capital and integrate into the global financial system(Larrain & Stumpner, 2017; Quinn & Toyoda, 2008).Due to economic disparities across various economies, which leads to resource misallocation, SSA countries embarked oncapital account deregulation which has been identified as a policy that enhance aggregate productivity through enhancing efficient allocation of capital and lessening the cost of capital.It increases the ability of domestic firms to source for capital internationally, and attract investment in economies with higher rate of return and scarce capital(Bau & Matray, 2020).International free flow of capital brings about inflow of capital which accelerates investment and enhances growth (Alessandria and Qian, 2005).The success of capital account deregulation depends on the efficiency of the domestic financial institutions. When capital is channel to productive projects, the economy benefits. Whereas the economy suffers in a situation where capital is

channel to unproductive projects(Dornbusch, 1998; McKinnon, 1991). The economic institution in the society guides an individual on how resources are to be allocated and protects who benefits from it, and also to whom the revenue goes to and who has the right to control them. Countries with institutions that encourage innovations, capital accumulation and efficient resource allocation will experience growth (Acemoglu, Johnson, & Robinson, 2005).

The debate on the rate of economic growth being accelerated by meritocratic bureaucracy dates back to Weber's theory on the rationality of bureaucracy. Recently, the meritocratic bureaucracy is considered as a vital element in stimulating development in developing economies(Y. H. Lee & Ki, 2017). Bureaucratic quality measures the institutional strength and quality of bureaucracy that serves as a shock absorber in reducing the revisions of policy whenever there is a change in government. Bureaucratic quality is considered high when the bureaucracy has the expertise and strength to govern without radical policy changes or interruptions in government services. The bureaucracy tends to be independent of political pressure and has a reputable training and recruitment procedure.Lam and Zhang (2015) stated that there is high bureaucraticquality when policy revisions/reversals are credible, predictable and timely. Non-credible, non-predictable and non-timely policy reversals/revisions reflect the low bureaucratic quality of some institutions.

To achieve economic growth through enhanced financial integration in the mid-1990s, the SSA countries embarked on capital account liberalization, which involves easing or eliminating limitations on the free flow of capital across borders. Capital account openness in SSA economies has improved the inflow of capital into the region. However, the outflow of capital from SSA is higher than the inflow.Today, after two to three decades of financial liberalization in SSA countries, the impact appears very little. The liberalization policies appear to have failed to mobilise domestic savings, improve financial deepening, and attract domestic and foreign investment. The deregulation of the financial sector in SSA economies has led to interest rate spread, banking crises, unstable and shallow exchange rates (Daumont, Le Gall, & Leroux, 2004; Fowowe, 2013; Ikhide, 1990; Misati & Nyamongo, 2012)Institutional bottlenecks in the SSA region might have been the reason for the financial sector's low performance. This bottleneck includes low bureaucratic quality which has continued to affect any meaningful growth in SSA countries. The inflow of portfolio investment into the five SSA countries as observed in Figure 1, indicate a low inflow of portfolio investment. Correspondingly, the FDI (as net inflow % of GDP) experience and total investment (as gross fixed capital formation annual growth) in their economy are not stable with too many fluctuations. The trend of Bureaucratic quality in the SSA countries was also not encouraging due to the degree of openness of most emerging countries. Low bureaucratic quality has continued to affect any meaningful growth in SSA countries. This has led to lack of policy consistency and uncertainty for investors, and it affects the will to invest and growth. Table A in (Appendix A) depicts the performance of countries on bureaucratic quality.

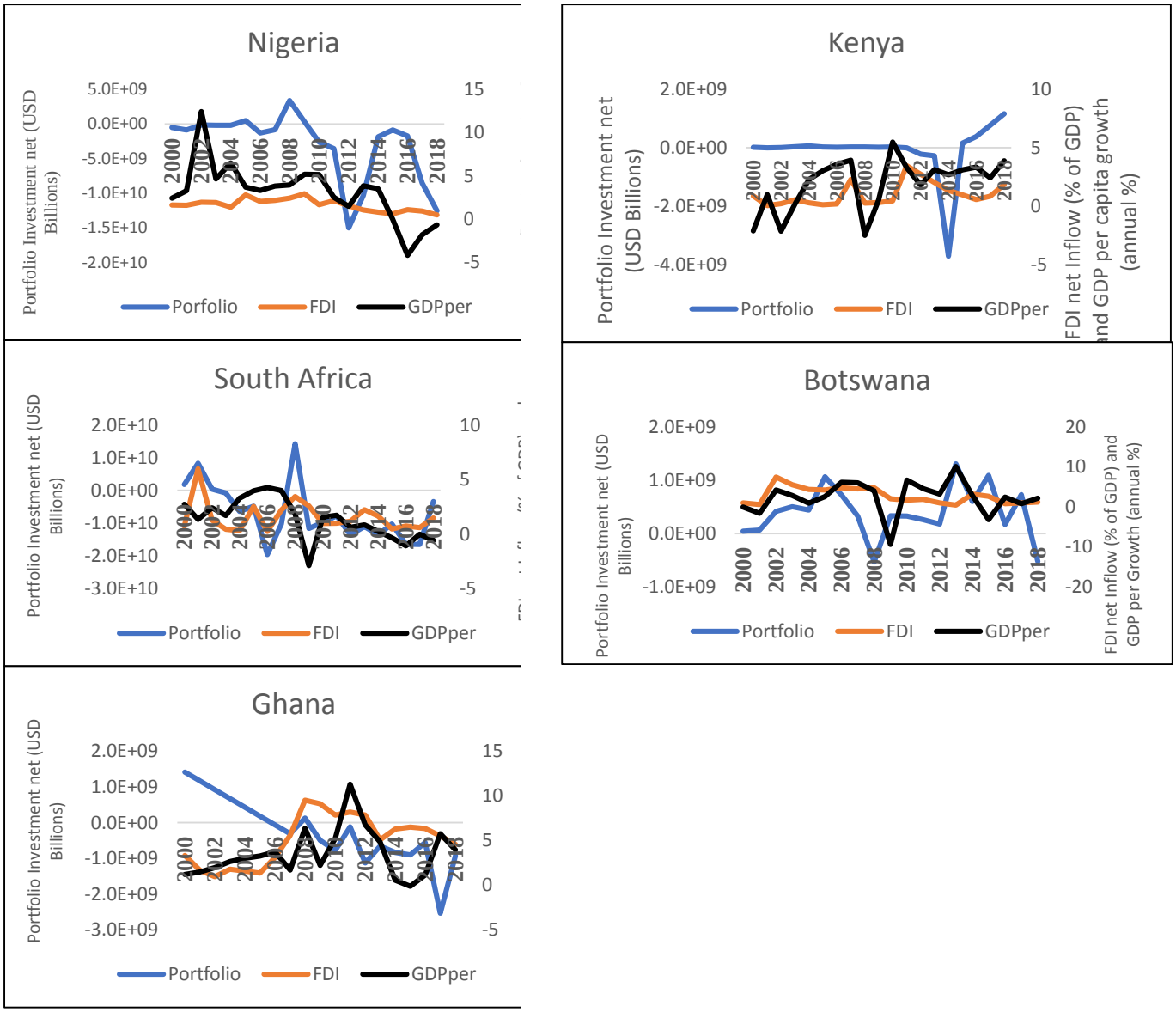

Figure 1
*Portfolio Investment, FDI and GDP Per Capita***Source***: World Bank Development Indicators, (2019).*

2. Literature Review

Lopes andde Jesus(2015) utilized the OLS, fixed-effect and GMM techniques in analyzing the influence of capital account liberalization on growth for 77 economies spanning from 1990 to 2010. Findings revealed that growth is accelerated by capital account deregulation significantly in highly democratic economies, whereas it hampered growth in less democratic countries. Similarly, Taneja and Ansari (2016) explored the macroeconomic influence of capital account openness on growth in India, spanning over 1993 to 2013. Utilizing a time series data and Granger causality, evidence indicate a link between capital openness and growth. It further recommends that capital account liberalization must come first before trade openness and in a financial system that is more developed. Similarly, Saidi et al. (2016) utilized FMOLS and DOLS in exploring the influence of capital account liberalization and financial development on growth for 79 developing and developed nations spanning from 1983 to 2013. Evidence revealed that capital account deregulation promotes economic growth in advanced nations; however, sluggish in emerging and developing economies.Idris et al. (2018)evaluated the influence of capital account liberalization on growth for OECD economies, using the GMM technique and a panel data spanning over 1977 to 2011. Results revealed that openness enhances economic growth in OECD and developing nations. Similarly, Trabelsi and Cherif (2017) explored how financial deepening is influencedby financial integration in 90 countries classified into developing and developed economies spanning over 1975 to 2009. Utilizing the GMM technique and a panel data, results indicate that in developing economies, financial integration does not promote financial development unless in an economy with sound institutional environment.

Similarly, Coeurdacier et al. (2020)analyzed the impacts of financial integration based on a neoclassical two-country growth model. Findings revealed that there are benefits from integration, even for capital scarce and riskier economies. Similarly, Sahoo and Sethi (2020) utilized the FMOLS and DOLS techniques in analyzing the association between trade openness, financial globalization, and growth for 5 Asian economies spanning from 1990 to 2017. Findings revealed trade openness and financial globalization stimulates growth.Similarly, Chen and Quang (2014) examined the influence of global financial integration on growth based on an institutional threshold in 23 industrial, 20 emerging and 37 developing economies spanning over 1984 to 2007. Findings indicate that financial integration can foster growth only when certain threshold conditions are achieved (trade openness, inflation, private credit, and institutional quality).Slesman et al. (2015) explored the influence of foreign capital inflows on growth in 80 economies categories into (developing, emerging and advanced economies) spanning over 1975 to 2005: the role of institutions, utilizing system GMM.Findings indicate that growth is only accelerated by debt inflows and portfolio equity (FDI included) in an economy with high-quality institutions. An economy with institutions below threshold shows negative and insignificant influence on growth. Similarly, Ersoy (2011) utilized the ARDL technique in analyzing the effect of financial openness on financial development and growth in Turkey, spanning over 1980 to 2008. Outcome reveals that financial openness accelerates growth and financial development.

However, Stiglitz (2000) argues that forcing developing countries to relax restrictions on capital mobility in the last decade back was a big mistake. He argues that deregulation of capital account led to currency crises in developing countries like Brazil in 1999, East Asia in 1997, and Mexico in 1994. Also, Edison et al. (2002) examined how growth is influenced by globalfinancial integration in 57 economies spanning from 1976 to 2000. Utilizing the GMM estimation technique, results revealed thatcapital account liberalizationinfluence on growth is inconclusive. Similarly, Ferreiro et al. (2008)evaluated whether capital account liberalization has accelerated growth in Latin American economies. Using a panel data of 24 economies spanning from 1991 to 2001 and utilized the ANOVA F-test. The outcome revealed that capital account liberalization alone cannot stimulate higher and sustained inflows of capital, only in an economy with strong institutions. Similarly, Ollo (2018) explored the effect of capital account deregulation on financial stability 31 SSA economies spanning over 1996 to 2015. Using the FMOLS technique, results indicate that capital account liberalization hampered financial stability and suggest that SSA region improve its institutional and macroeconomic environment.

In addition, Evans and Rauch (1999) examined the role of bureaucratic authority structures in influencing growth for 35 developing nations spanning over 1970 to 1990. Findings suggest the building of better bureaucracies by policymakers. It also finds that "Weberian" features stimulate prospects for growth and indicates that "Weberiannes" be included as a factor in general models of growth.Similarly, Cornell et al. (2020) explored the impact of bureaucracy on economic growth for 35 economies. Finds that past results on cross-country have highly overstated the association. It suggests that if an influence exists, it may be in the

short-run and more substantial in recent decades.Henderson et al. (2003) examined whether economic development is influencedby effective bureaucratic institutions in 29 middle income and developing economies spanning from 1970 to 1990. Results revealed that effective state bureaucratic institutions retards poverty.Rauch and Evans (2000) examined the influence of bureaucratic structure and bureaucratic performance in developed economies in 35 less developed economies spanning from 1970 to 1990. Findings indicate that structure of bureaucracy determined it performance which ultimately enhance growth.

3. Methodology

3.1 Theoretical Methodology

Capital Account Liberalization and Economic Growth: Utilizing the method by Henry (2006), the study explains the theoretical methodology of the influence of capital account deregulation on growth in developing nations based on the neoclassical growth framework. Based on the assumption that output is produced utilizing labour, capital, and a Cobb-Douglas production function with labour-augmenting technological progress:

$$Y = F(K, AL) = K^{\alpha}\,(AL)^{1-\alpha} \tag{1}$$

Let $y = \frac{Y}{AL}$ be the amount of output per unit of effective labour and $k = \frac{K}{AL}$ be the amount of capital per unit of effective labour. Utilizing this notation and the homogeneity of the production function, we have:

$$y = f(k) = k^{\alpha} \tag{2}$$

where s stand for a fraction of national income saved each period. It is assumed that labour force grows at the rate n, total factor productivity grows at the g, and capital depreciates at the rate of δ. Saving each period builds up the national capital stock and helps to make more abundant capital. A growing population, depreciation and rising total factor productivity go in the opposite direction making capital less abundant. We summarize the net impact of all of these forces on the evolution of capital per unit of effective labour in the following equation:

$$k(t) = sf\,[k(t)] - (n + g + \delta)k(t) \tag{3}$$

The economy is in a steady state when $k(t) = 0$, and the ratio of capital to effective labour(t) is constant. On the other hand, the steady-state level of capital (k) is not constant, yet growing at the rate $n + g$. Output per worker $\left(\frac{Y}{L}\right)$ grows at the rate of g. Finally, the steady-state marginal product of capital equals the interest rate plus the depreciation rate:

$$f'(k_{s.state}) = r + \delta. \tag{4}$$

Equation (4) gives the general expression of the equilibrium condition for investment. The equation has a worthy implication for the dynamics of a nation's investment and growth in post capital account deregulation because the effect of deregulation works through the cost of capital. Let r^* stand for exogenously given world interest rate. Because the capital per unit of effective labour in the rest of the world is higher than in developing economies, the standard assumption in the literature is that r^* is less than r. We also assume that the developing nationsare small. This implies that nothing they do influences world prices. Based on these assumptions, in a situation where a developing economy deregulates, capital rises to exploit the variations between the country's rate of return to capital and the world interest rate. The economy's ratio of capital to effective labour jumps immediately to its post-deregulation steady-state level, in a situation where there is no any friction in the model. In the post-deregulation steady-state, the marginal product of capital is equal to the worlds rate of depreciation plus interest rate:

$$f'(k^*_{s.state}) = r^* + \delta \tag{5}$$

The essential fact about the transition dynamics is that there must be a period during which the capital stock grows faster than before or after the transition. The growth rate of capital stock must increase temporarily because in the pre-deregulation steady-state, the ratio of capital to effective labour$(k^*_{s.state})$ is constant when the stock of capital grows at the rate $n + g$. Whereas, in post-deregulation steady-state, the ratio of capital to effective labour$(k^*_{s.state})$ is also constant, when the capital stock once again grows at the rate of$n + g$. Nonetheless, because $k^*_{s.state} > k_{s.state}$, at some point during the transition, it follows that the growth rate of K must exceed $n + g$.

The temporary increase in the growth rate of capital has implications for growth because the growth rate of output per worker is given by $\gamma_{\frac{Y}{L}} = \alpha\frac{\dot{k}}{k} + g$. Since the growth rate of K exceeds $n + g$ at some point during the transition, $\frac{\dot{k}}{k}$ must be greater than 0during the corresponding interval of time. Therefore, the growth rate of output per worker increases temporarily.

3.2 Empirical Methodology

In analyzing the joint (interaction) effects of capital account deregulation and bureaucratic quality on growth, the study adopts the Solow Growth Model and Baron and Kenny's (1986) interaction model. We specified the model to explore the relationship between capital account deregulation and growth.

$$logGDPPER_{it} = \beta_o + \beta_1 logK_{it} + \beta_2 L_{it} + \beta_3 logFDI_{it} + \beta_4 CPSB_{it} + \beta_5 CAL_{it} + \beta_6 BQ_{it} + \mu_{it} \quad (6)$$

$$logGDPPER_{it} = \beta_o + \beta_1 logK_{it} + \beta_2 L_{it} + \beta_3 logFDI_{it} + \beta_4 CPSB_{it} + \beta_5 CAL_{it} + \beta_6 BQ_{it} + \beta_7 CAL\_BQ_{it} + \mu_{it} \quad (7)$$

where logGDPPER denotes economic growth, logK denotes gross capital formation, L is the labour force participation, logFDI represents a foreign direct investment. CPSB is a credit to the private sector by banks; IRL is a dummy for measuring interest rate deregulation. CAL is the capital account liberalization index, CAL_BQ denotes the interaction term of capital account liberalization and bureaucratic quality. The natural log is utilized as a convenient means of transforming a highly skewed variable into a more normalized dataset, variables of K, FDI and GDPPER are in log whereas variables of L, CPSB and CAL cannot be log because they are originally in percentage of GDP.β_i represents the intercept and slope coefficients, μ_{it} denotes the stochastic. It represents a white-noise error term; with covariance andconstant variance, whose mean is zero, the variables, *t* is the time-series (in years), *i* represents the cross-section (countries).

Unit Root Technique: In an attempt to remedy the existence of CSD, the study employed two different unit root approach namely the Breitung and Das (2005) and Pesaran (2007) test techniques. Pesaran(2007)proposed a technique robust to CSD by augmenting the usual ADF regression with the lagged cross-section mean and the CSD which arises as a result of single factor model is captured by it first difference. The CADF is written as:

$$CIPS\ (N,T) = N^{-1} \sum_{i=1}^{N} t_1\ (N,T) \quad (8)$$

where $t_i(N,T)$is the cross-sectionally augmented Dickey-Fuller statistic for the i_{th} cross-section unit given by the *t-ratio* of the coefficient of$y_{i,t-1}$in the CADF regression indicates the i_{th} cross-section unit of CADF statistics.The Breitung and Das (2005) utilized a different technique, modifying the data before fitting a regression model. The data are generated by an $AR(1)$ process so that we can express $y_{it}\ as$:

$$y_{it} = z'_{it}\gamma_i + \mathcal{X}_{it} \quad (9)$$

where

$$\mathcal{X}_{it} = \alpha_1 \mathcal{X}_{i,t-1} + \alpha_2 \mathcal{X}_{i,t-2} + \varepsilon_{it} \quad (10)$$

This makes bias adjustments unnecessary.

Westerlund Cointegration: The paper used the Westerlund (2007) approach to address the presence of CSD as observed in Table 6. The technique takes into consideration serially correlated error term and individual specific short-run dynamics, individual-specific slope, trend terms, and individual specific intercept parameters. In case of CSD, a bootstrap test is included. The Westerlund calculation criteria are written as:

$$\Delta y_{it} = \delta'_{it} d_i + \alpha_i (y_{i(t-i)} - \beta'_i \mathcal{X}_{i(t-1)}) + \sum_{j=1}^{\rho i} \alpha_{ij}\, \Delta y_{i(t-j)} + \sum_{j=0}^{\rho i} \theta_{ij}\, \Delta \mathcal{X}_{i(t-j)} + \varepsilon_{it} \quad (11)$$

where the deterministic composition, vector parameter and error are shown by $d_{t,}\delta', \alpha_i$ respectively. The error correction model could be estimated by:

$$(y_{i,t-1} - \beta'_i X_{i,t-1}) \quad (12)$$

Driscoll and Kraay: The existence of CSD and autocorrelation in a panel series makes OLS and other first-generation approach outcomes biased and inefficient(Greene, 2003).In an attempt to make sure the estimation results are valid in a panel series containing serial-correlation and CSD, the paper utilized a robust approach following Hoechle (2007), using the Driscoll and Kraay (1998) based on the Pool OLS Approach.The model is suited for both unbalanced and balanced panels and when the T is large, it utilized the non-parametric technique in estimating standard error. Consider the linear regression model:

$$Y_{it} = X'_{it}\theta + \mathcal{E}_{it}, i = 1, \dots, N, t = 1, \dots, T \quad (13)$$

where Y_{it} stands for the dependent variable, X_{it} denotes (K + 1) × equation (3.35) independent variable vector where first elements are 1, and θ is a (K + 1) × equation (3.35) unknown coefficient vector and time is represented by t. Cross-sectional unit is denoted by i. Stacking all the observations as follows:

$$Y = \left[\mathcal{Y}_{1t11} \ \ldots \ \mathcal{Y}_1 T, \mathcal{Y}_{2_{t21}} \ldots \ \mathcal{Y}_N T_N\right] and\ X = \left[X_{1t11} \ldots \ X_1 T_{2_{t21}} \ldots \ X_N T_N\right]' \quad (14)$$

The formulation allows for unbalanced panel since for individual i only a subset of $t_{i1}, \ldots, T, with\ 1 \leq t_{i1} \leq T_i \leq T$ of all T observations may be available.

Descriptive Statistics

This sub-section provides a descriptive analysis to describe the main characteristics of the data utilized for the study. The summary statistics includes the median, mean, minimum, maximum, standard deviation, and observations in the analysis. The summary statistics for all the variables utilized in the five selected SSA countries spanning from 1984 to 2018 are shown in Table 4.1. As observed in the summary statistics, GDPPER as the dependent variable has a high dispersion from the mean value. This means that the standard deviation for logGDPPER is not closer to its mean value. The remaining variables such as FDI, CAL, CPSB, and K have a standard deviation value closer to their individual mean values. This means that the series's distribution is not diapered. However, it is closer to the mean. The standard deviation for L indicates an average dispersion from the mean value. All the variables, except CAL, revealed a positive mean value. GDPPER has the highest mean value, whereas the CAL has the lowest mean value in the models. The standard deviation provides the comprehensive and accurate estimate of dispersion of variables from the mean. The institutional quality variable bureaucratic quality shows a positive mean value.BQ all have low dispersion from the mean value. With most of the value having a low standard deviation, the implication is that the variables are not widely dispersed from the mean value.

Table 1
Description of variables

Variables		Mean	Maximum	Minimum	Std. Dev.	Observations
GDPPER	Economic growth is the surge in the capacity of a country economy in terms of producing goods and services, based on a comparison of one period of time to another. This study utilized the GDP per capita as the dependent variable and is measured in millions of dollars. GDP per capita as the GDP divided by the mid-year population.	3146.758	8031.014	730.8341	2490.422	175
K	This is the gross fixed capital formation as a measure for capital stock. These indicates how much of the new value-added is invested rather than consumed in a particular economy. It only measures the net additions to fixed assets and excludes all types of financial assets.	1.83E+10	8.25E+10	2.55E+08	2.26E+10	175
CAL	KAOPEN index measures the extent and intensity of capital restriction, which serves as one of its merits. The intensity is linked with the existence of other limitation son global transactions.	-0.55551	2.333585	-1.92028	1.307200	175
CPSB	CPSB refers to credit and loans offered to private business by commercial banks. These are funds provided to investors as credit for a particular period (short or long term), which attracts interest to be paid by the debtor as a measure of the degree to how developed the financial sector is in an economy and is measured in percentage.	25.10728	78.29414	2.209409	20.55264	175
L	As a measure for employed workers in a particular economy, which includes self-employed and actively seeking employment, the labour force total consists of people from the ages of 15 and above who participate in the production of goods and services for a particular period.	62.19169	75.07100	42.37000	7.718406	175
BQ	Bureaucratic quality is the measure of the strength and quality of institutions in a particular economy. Bureaucratic quality measures how government changes or interruption that does not lead to drastic or radical changes in a country's policy direction (International Country Risk Guide). It also shows the strength of institutions to govern without much interference.	2.134540	4.000000	0.000000	0.817995	174
FDI	FDI is an investment by a firm or investor in one economy into business interests located in another economy. It is when an investor acquires foreign business assets or creates foreign business operations, including controlling interest or establishing ownership in a foreign company.	1.37E+09	9.89E+09	-4.53E+08	2.17E+09	175

Note: GDPPER is GDP per capita. K is gross fixed capital formation. L is labour force participation. FDI is Foreign Direct Investment. CPSB is a credit to the private sector by banks. BQ Bureaucratic quality.CAL is capital account Liberalization index.

Panel Unit Root Test

The presence of cross-sectional dependence has validated Pesaran's (2007) and Breitung and Das (2005) unit root technique for the given models. As presented in Table 4.2, the unit root test results were offered using the Pesaran (2007), and Breitung and Das (2005) unit root test. The study utilized Bangake and Eggoh (2012) who proposed the utilization of two different unit root techniques. Based on the Pesaran (2007) approach, a variable such as log K, L, FDI, CAL, and BQ are at the significant level logGDPPER is significant at first difference. Based on the Breitung and Das (2005) unit root technique, logFDI is significant. logGDPPER, logK, L, CPSB, CAL, and BQ are significant at first difference. Given this outcome, the next step is to examine the existence of stable and long-run relationship among the variables by using second-generation cointegration based on the presence of CSD in the data.

Table 2
Panel Unit Root Test

	Pesaran (2007)			**Breitung and Das (2005)**		
	Level	First Difference	Order of Integration	Level	First Difference	Order of Integration
Variable	Zt-bar	Zt-bar	0 or I	Zt-bar	Zt-bar	0 or I
logGDPPER	-0.433	-2.389***	I(1)	4.4902	-5.9267***	I(1)
logK	-3.513***	-4.713***	I(0)	2.7429	-3.6827***	I(1)
L	-1.688**	-3.351***	I(0)	0.3134	-2.5988**	I(1)
logFDI	-1.343*	-7.472***	I(0)	-1.4465*	-8.7221***	I(0)
CPSB	-1.265	-6.640***	I(1)	-0.5843	-6.9973***	I(1)
CAL	-1.605*	-3.666***	I(0)	-0.6475	-6.4282***	I(1)
BQ	-1.691**	-6.318***	I(0)	0.1506		

***, **, * denotes the level of significance at 1%, 5% & 10% respectively.
Source: Author's computation.

Correlation Analysis
The study employed a correlation analysis to ascertain the association's intensity and direction between the independent variables. The correlation coefficient between BQ and other independent variables are within the acceptable range of below 10. The correlation coefficient between BQ and the variables of CAL, logFDI and logK are negative. This implies an inverse association. The correlation coefficient between BQ and the variables of L and CPSB is positive. The correlation coefficient between the interaction term CAL_BQ and other independent variables are low within the acceptable range of below 10. The correlation coefficient between CAL_BQ and the variables of logFDI, logK, CPSB and CAL are positive. The correlation coefficient between CAL_BQ and the variables of L and BQ are negative. This implies an inverse relationship. Based on the correlation analysis coefficients results, the independent variables can fit into a single model.

Table 3
Correlation Analysis

	logK	L	logFDI	CPSB	CAL	BQ	CAL_BQ
logK	1						
L	-0.6018	1					
logFDI	0.7838	-0.3657	1				
CPSB	0.4991	-0.3539	0.3202	1			
CAL	-0.1408	0.2625	-0.0659	0.0183	1		
BQ	-0.2445	0.2874	-0.2691	0.3048	-0.1433	1	
CAL_BQ	0.2322	-0.0516	0.248	0.1934	0.6214	-0.4948	1

Source: *Author's computation*.

Panel Cointegration
It is essential to test for the long-run association between the variable. The study utilized the Westerlund (2007) technique which is robust to CSD, heteroskedasticity and unknown structural break.

Table 4
Westerlund ECM Panel Cointegration Tests

Statistic	value	P-value
Variance ratio	3.4839	0.0002***

***, **, * denotes the level of significance at 1%, 5% & 10% respectively.
Source: *Authors' computation*.

The diagnostic test on the model has identified no heteroskedasticity. However, cross-sectional dependence exists in the model. These results necessitated the utilization of Westerlund cointegration as they reveal the existence of a long-run relationship in the model with the result exhibiting a significant coefficient at one percent, as observed in Table 4.21 below:

Table 5
Driscoll and Kraay's Regression Results

Variables DV = logGDPPER	Coefficient	Drisc/Kraay Std. Err.	t-Statistics	Prob-Value
logK	-0.1597	0.0757	-2.11	0.042**
L	-0.0605	0.0119	-5.06	0.000***
logFDI	0.1525	0.0375	4.07	0.000***
CPSB	0.0162	0.0020	8.02	0.000***
CAL	0.2323	0.0287	8.07	0.000***
BQ	0.3029	0.0772	3.92	0.000***
Breusch-Pagan CSD LM Test				34.645***
Wooldridge test for autocorrelation				0.0000
Breusch-Pagan test for heteroskedasticity				0.6109
F-Statistics	237.23			
R-squared	0.6405			

***, **, * denotes the level of significance at 1%, 5% & 10% respectively.
Source: *Author's computation*.

As depicted in Table 4.28,the estimated coefficient of capital indicatesa significant and negative outcome. This means that capital stock negategrowth. These imply that a one percent rise in capital reducesgrowth by a 0.15 percent. The negative coefficient of capital signifies the paucity of capital needed to drive growth in the sampled countries. The result is supported by Owusu and Odhiambo (2015). It is contrary to Ghosh (2019), and Naveed and Mahmood (2017). The outcome of labour is negative and significant. This means that the labour reduces growth in the five sample SSA countries. These imply that a one percentage pointrise in labour reduces growth by a6.05 percent. The finding is supported by Naveed and Mahmood (2017) and Law and Azman-Saini (2013). Our estimation results for FDI reveal positive and significant outcome; it means that FDI enhances growth. These imply that a unit rise in FDI results in a 0.15 percent rise in growth.The finding is similar to Ghosh (2019), Opoku et al. (2019), Owusu-Nantwi and Erickson(2019),Panagiotis (2015), and Yucel (2014). It runs in disagreement with studies by Adams and Opoku (2015), Sokhanvar(2019) and Agbloyor et al. (2014).The outcome of credit to private sector by banks (CPSB)revealsa positive and significant coefficient. This means that a one percentage point rise in credit to private sector by banks results to a 1.6 percent increase in growth. These imply that CPSB enhance growth in the SSA region. Thisfinding is supported by Haruna and Bakar (2021), and Kose et al. (2008). The outcome indicates that liberalizing capital account is positive and significant, and it means that liberalizing

capital account accelerate growth. These imply that a one percentage point increase in CAL results in 23.2 percent increase in growth. This indicate that capital account liberalization led to more inflow of capital in the five SSA countries. The finding is supported by Kose et al. (2008), Bekaert et al. (2005) and Lee (2016). It runs contrary to Law and Azman-Saini (2013).

Table 6
Driscoll and Kraay's Regression Results

Variables DV = logGDPPER	Coefficient	Drisc/Kraay Std. Err.	t-Statistics	Prob-Value
logK	0.7860	0.0719	-10.92	0.000***
L	0.0289	0.0075	3.82	0.001***
logFDI	0.1223	0.0549	2.23	0.033**
CPSB	0.0079	0.0051	1.55	0.131
CAL	-0.2074	0.0750	-2.77	0.009***
BQ	0.0470	0.0841	0.56	0.580
CAL_BQ	0.1297	0.0398	3.26	0.003***
Mean value	2.81			
Breusch-Pagan CSD LM Test				34.645***
Wooldridge test for autocorrelation				0.0000
Breusch-Pagan test for heteroskedasticity				0.6109
F-Statistics	414.94			
R-squared	0.9028			

***, **, * denotes the level of significance at 1%, 5% & 10% respectively.
Source: *Author's computation*.

The coefficient of capital indicates a positive significance at 1 percent. This means that a one percent rise in capital leads to a 0.78 percent rise in growth. This implies that capital stimulates growth. The outcome is in line with Ghosh (2019) who finds a positive influence on growth. It is in disagreement with Owusu and Odhiambo (2015; 2014) who reported negative influence of capital on growth. The estimation outcome of labour force participation indicates a significant percent and positive. This means that a one percentage pointrise in labour force participation leads to a 2 percent decrease in growth. In other words, labour retards growth in the five selected SSA countries. The finding is in line with the studies by Yavari and Mohseni(2012), Owusu and Odhiambo (2014) who found a positive influence of labour on growth. It runs contrary to that of Naveed and Mahmood (2017), Owusu and Odhiambo (2015) who reported that there is a negative influence of labour on growth.Similarly, the result of FDI reveals a significant and positive coefficient. This means that a one percent rise in FDI results in a 0.12 increase in economic growth. Simply put, FDI accelerates growth in the five selected SSA countries. The result lends support to the studies done by Kottaridi and Stengos(2010), Musibau *et al*. (2019) and Buera and Shin (2017) who reported positive influence of FDI on growth. The result is contrary to the views of Sokhanvar (2019) and Agbloyor *et al*. (2014) who emphasized the negative influence of FDI on growth. Moreover, the results of credit to the private sector by banks ispositive and significant at 5 percent. This means that a one percentage point rise in credit to the private sector by banks results in a 0.7 percent increase in growth. In other words,credit to the private sector by banks promotes growth in the five selected SSA nations.
The estimation results support the studies done by Bekaert *et al*. (2011) and Owusu and Odhiambo (2013) who found a positive influence of credit to banks by the private sector. The estimation coefficient of CAL indicates a significant and negative coefficient. This means a one percentage point rise in CAL resulted to a 20 percent decrease in growth. This implies that liberalizing capital account retards growth. This result is consistent with that of Law and Azman-Saini (2013) who found a negative effect of capital account openness on growth. It runs contrary to that of Bekaert *et al*. (2005) and Lee (2016) who found a positive influence of

capital account openness on growth. The coefficient of bureaucratic quality is insignificant at all the critical levels (1%, 5% and 10%).Furthermore, the interaction terms of capital account deregulation and bureaucratic quality indicates a significant and positive coefficient. The interaction term's positive coefficient illustrates that an increase in bureaucratic quality will further decrease the negative effect of CAL on growth. The total effect of an increase in CAL on growth is (-0.2074 + 0.1297BQ). This illustrates that a one percentage pointrise in bureaucratic quality will reduce CAL's negative effect on growth. The total effect of an increase in bureaucratic quality on growth will be (0.0470 + 0.1297CAL). This implies that a one percentage pointrise in CAL accelerates the positive effect of bureaucratic quality on growth to 0.18 percent.

5. Conclusion

Capital account openness is essential in achieving economic growth, through the eradication of bottlenecks in the ability of domestic firms to source for foreign financing. The attraction of foreign capital inflow largely depend on the business environment's conduciveness. The study examines the impact of capital account openness on economic growth and the effects of Bureaucratic Quality. In an attempt to arrive at a robust result, the study used the modified form of Driscoll and Kraay, which is robust to CSD, heteroskedasticity and serial correlation. The study drew three inference. Firstly, capital account openness in Sub-Saharan African Countries has stimulated economic growth. Secondly, the estimate indicates that bureaucratic quality positively influences economic growth. Also, the interaction effect indicates a positive influence of bureaucratic quality on economic growth. Thirdly, the interaction term's positive coefficient indicates that bureaucratic quality enhances the benefits of financial openness by encouraging foreign investment.

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Appendix A

Table A

Performance of Selected Countries on Corruption

Year/Countries	Nigeria	South Africa	Ghana	Kenya	Botswana
1984	0.00	4.00	0.00	1.67	
1985	1.00	4.00	0.75	2.75	3.00
1986	1.00	4.00	1.00	3.00	3.00
1987	1.00	4.00	1.00	3.00	3.00
1988	1.17	4.00	1.08	3.00	3.00
1989	2.00	4.00	2.00	3.00	3.00
1990	2.00	4.00	2.75	3.00	3.00
1991	2.00	4.00	3.00	3.00	3.00
1992	2.00	4.00	3.00	3.00	2.25
1993	2.00	4.00	3.00	3.00	2.00
1994	2.00	4.00	3.00	3.00	2.00
1995	2.00	3.33	3.00	3.00	2.00
1996	2.00	3.00	3.00	3.00	2.00
1997	1.17	3.00	2.58	2.58	2.00
1998	0.00	2.42	2.00	2.00	2.00
1999	0.50	2.00	2.00	2.00	2.00
2000	1.00	2.00	2.00	2.00	2.00
2001	1.00	2.00	2.00	2.00	2.00
2002	1.00	2.00	2.00	2.00	2.00
2003	1.00	2.00	2.00	2.00	2.00
2004	1.00	2.00	2.00	2.00	2.00
2005	1.00	2.00	2.00	2.00	2.00
2006	1.00	2.00	2.33	2.00	2.00
2007	1.00	2.00	2.50	2.00	2.00
2008	1.00	2.00	2.50	2.00	2.00
2009	1.00	2.00	2.50	2.00	2.00
2010	1.00	2.00	2.50	2.00	2.00
2011	1.00	2.00	2.50	2.00	2.00
2012	1.00	2.00	2.50	2.00	2.00
2013	1.00	2.00	2.50	2.00	2.00
2014	1.00	2.00	2.50	2.00	2.00
2015	1.00	2.00	2.50	2.00	2.00
2016	1.00	2.00	2.50	2.00	2.00
2017	1.00	2.00	2.50	2.00	2.00
2018	1.08	2.00	2.50	2.00	2.00

Source: Authors' computation based on the International Country Risk Guide (ICRG)