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The Effect of Political Instability on Economic Growth in Sub-Saharan African Countries: A Dynamic Simultaneous Equations Modeling Approach

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Abstract

In this study, the relationships between political instability and economic growth in Sub-Saharan African countries are explored. The study used annual panel data from 2000 to 2019 for 48 Sub-Saharan countries. *Six individual political instability indicators from the World Bank's world governance indicators database were used and aggregated into a single and more comprehensive political instability index by employing the techniques of principal component analysis. Then the impact of the composite political instability index on economic growth along with other economic variables is modeled by employing three simultaneous equations and estimated by the dynamic panel GMM estimation approach which accounts for the endogeneity issues. The results from the GMM simulations reveal that political instability significantly hampers economic growth in SSA directly by disrupting the available resources a country has at its disposal. The hypothesized indirect channel through which political instability negatively affects economic growth through FDI is found to be statistically insignificant. The governments and policymakers of Sub-Saharan African countries should target political instability as their policy variable since variations in economic growth other than its own shocks are also explained by the shocks from political instability. Countries in SSA should not ignore factors leading to political instability and policies aimed at decreasing political instability should be pursued by these countries in order to maintain stable economic growth.*

Keywords: Economic growth, political instability, foreign direct investment, SSA countries

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Introduction

Sub-Saharan Africa (SSA) is one of the least developed regions in the world which has been prone to political instabilities and has become the arena for intra- and inter-state armed conflicts which have come to hinder development efforts. Weak government institutions, Corruption, scramble for natural resources, inequality, ethnic and religious tensions, and extremism are often the main causes that inflict conflicts in SSA countries(Swiss Federal Department of Foreign Affairs *(*2021**).** According to African Leadership Change (2021), 90 coup d'états have occurred in Sub-Saharan Africa since most African countries gained independence from European domination in the 1960s. Despite having a plethora of economic resources that could be transformed into beneficial economic outcomes, many Sub-Saharan African countries have experienced mediocre economic growth and poverty continues to be still a major issue in this region (Dalyop, 2019). As Mbaku (1992) points out, political instability is a major contributor to crippling poverty and the accompanying slow economic growth in this part of the world. These political volatilities and uncertainties have played a key role in the economic stagnation of generally the continent, particularly the SSA region.

Gyimah-Brempong (1999) noted that in the face of these predominant political instabilities and volatilities in developing countries, empirical studies conducted on economic growth have generally not included institutional factors such as political instability in their models. Many empirical studies of economic growth conducted in developing countries without the inclusion of these intuitional factors may have generally resulted in biased estimates which may have again resulted in wrong policy formulations. Therefore, as far as SSA is concerned, incorporating political instability as a main variable along with other economic variables into the economic growth models is vital as it may be the missing piece of the puzzle in the ongoing effort to capture the main factors impacting economic growth.

The extent of Sub-Saharan African countries' poor growth performance is widely acknowledged, but the causes are hotly debated. Researchers often explain economic growth as a function of the quantity and quality of production inputs. Institutional factors were considered as given in most of the growth studies and often discarded to the error term. If the institutional factors significantly affect economic growth, the error term will be systematic and the estimations may be inconsistent and/or biased (Fosu, 1992). Recently, there is a growing consensus that

institutional factors such as political instability, are also important factors of economic growth. Authors from this school of thought argue that in addition to economic factors, institutional factors such as political instability are equally at the core of SSA's poor economic performances (Fosu, 2002, Ghura & Hadjimichael,1996).

The impacts of political instability on economic growth are still controversial in the economics literature, both in theory and empirical studies. On a theoretical level, while authors generally agree that political instability has negative effects on economic growth, there are differences in the transmission mechanisms of the effects of political instability on economic growth. Two schools of thought can be identified at this level. The first analyzes uncertainty as a factor influencing economic growth as a result of political instability. Authors in the second group, on the other hand, argue that in times of political instability, productive expenditures (investment expenditures) that may boost economic growth are diverted away from their goals and channeled toward wasteful military expenditures, thereby affecting economic growth negatively (Ayessa & Hakizimana, 2021).

Generally, the empirical findings are divergent in terms of the effects of political instability on economic growth. Some studies found an adverse association between economic growth and political instability while others found that political instability has a beneficial impact on economic growth. The inconsistencies may be due to the different methodologies used, the differences in country-to-country context, and the irrelevance of different political indices to different countries, etc. Therefore, the study tries to narrow the theoretical gap by adding its contribution to the stock of knowledge in the identification of the transmission channels through which political instability affects economic growth. The prevailing empirical divergence in terms of the effect of political instability on economic growth due to the employment of different methodologies and different single indices of political instability is narrowed by using the appropriate methodology and technique of estimation and a more comprehensive aggregated index which accounts for most of the variations of the different individual indices of political instability.

Most of the studies in the past concerning the relationship between political instability and economic growth lack robust empirical evidence. Many previous studies on the relationship between political instability and economic growth have overlooked the issue of endogeneity

among the regressors. They use single line equations and OLS, fixed effects, or random effect estimation techniques which could not address the endogeneity problem that comes with the dynamic nature of the dependent variable and the endogeneity of explanatory variables with the error term (Adam & Dercon, 2009).

Little has been said in the previous studies about whether or not the variables in political economy growth models are exogenous or endogenous. These studies lacked appropriate econometric methods that took simultaneity, causality, and robustness analysis into account. The OLS estimation method was used in the majority of studies, which does not account for the correlation and endogeneity of the independent variables, resulting in inconsistent and biased estimates. Even though the use of simultaneous equations in previous studies may have aided in determining the direction of causality, no statistical test has been established to determine the validity of the appropriate instrumental variables. This study contributes to the literature by employing a dynamic panel estimation technique to account for the problems of endogeneity among the regressors and the past values of the dependent variable with the error term. The direct and indirect impacts of political instability on economic growth through its transmission mechanisms are accounted for by taking care of the endogeneity problem. This helps to avoid the biased effects of political instability on economic growth. Moreover, most of the previous studies on the relationship between political instability and economic growth in developing countries in general and in SSA countries, in particular, used a single indicator as a proxy for political instability and fail to account for different dimensions of political instability that may have too much information loss in explaining economic growth. In this research, this gap is filled by using a more comprehensive measure of political instability.

Literature Reviews

Generally, there are different schools of thought as to why there are differences in economic growth across countries. Assuming that the institutional framework is given, neoclassical economists emphasize factors of production such as labor and capital to be the causes of growth differentials across countries (Willis,1990). The neoclassical Solow model emphasizes the role of capital accumulation in raising the economy's growth rate through induced saving. However, this model also asserts that this raise in economic growth cannot last indefinitely through capital

accumulation due to diminishing marginal productivity. Rather, the long-run growth will resort only to the rate of technological progress which is assumed exogenous or outside the operations of the economic forces (Aghion et al., 2009). The main conclusion derived from the neoclassical model is that in the long run, economic growth is a function of only technological progress without which economic growth can grow temporarily through the accumulated capital but eventually be terminated by the diminishing marginal return of capital.

Although it's established in the neoclassical Solow model that the long-run economic growth rate is dependent upon the rate of total factor productivity, which, in turn, is a function of the rate of technical change, it assumes that technological progress is exogenously determined outside of the economic system. This assumption fails to account for internal economic factors that determine the rate of technological change which is responsible for long-run economic growth and due to this, the economic growth differences across countries remained unexplained in the model. In endogenous economic growth theory, however, technological advancement which is held responsible for long-run economic growth is endogenously determined by economic forces within the economic system. These economic factors that determine technological progress are forces having to do with expenditures on R&D for innovations and incentives to create technological knowledge, economic policies which create a conducive economic environment for trade, competition, education, and security for intellectual property rights (Díaz-Bautista & González-Andrade, 2014; Jones, 1998).

The Political Economy of Growth

The pure economic theories give so much of the explanation of long-run economic growth and growth differences across countries solely to the economic factors such as quantity and quality of production inputs assuming that the institutional framework is given (Fosu, 1992). This, however, is not the case in developing countries where institutional frameworks are weak and fragile. The basic neoclassical and endogenous economic theories could not capture the slow growth and the back-breaking poverty prevalent today in developing countries despite the abundance of natural resources in these countries. Therefore, the institutional framework should be accounted for along with the purely economic factors when trying to analyze economic growth in developing countries.

Using the existing economic growth theories, the growth literature examines economic factors which are more important in determining growth and growth differences across countries. Political-economic literature, however, asserts that economics alone cannot account for the enormous variation in growth, economic outcomes, and policy choices across countries. Therefore, it's mandatory for researchers and policy advisers that they make sure they understand the role of politics in economic policymaking (Alesina & Perotti, 1994).

One of the themes of the political economy of growth is the relationship between political instability and economic growth (Feng, 1997). In economic research, a more universal consensus has emerged that political instability is linked to low economic growth performance (Jong-a-Pin, 2009; Compos & Nuget, 2002; Giskemo, 2012; Fosu, 1992). Economists generally consider political instability as a disease that has serious consequences on the economic outcomes of a given country. Political instability may force policymakers to engage in sub-optimal and frequent switch of policy-making decisions which creates uncertainty and a volatile economic environment thereby affecting economic outcomes negatively (Aisen & Veiga, 2012).

According to Fosu (1992), the impact of political instability on economic growth often has two transmission mechanisms. Political instability affects economic growth negatively from its direct adverse effect on productivity due to the disruption of market activities and labor relations. It also has an indirect negative effect on growth through the reduction of investment. According to Khafaga & Albagoury(2022), the relationship between political instability and economic growth follows two paths. The first path follows the avenue of the impact of economic growth on political instability where slow economic growth, poverty, income inequality, and other economic problems lead to the political instability of a given country. The other avenue in the relationship between political instability and economic growth is the one that holds political instability responsible for hindering economic growth and development through its direct and indirect impact on economic variables.

Addressing Conceptual and Measurement Issues of Political Instability

In the field of political economy, dealing with conceptual issues of political instability proves to be a difficult job. Despite the fact that different measures of political instability have been employed widely in economic growth analysis, the employment of political instability as a

variable to model growth suffers from conceptual and measurement issues. The conceptualization of political instability is different in the economics and political science fields. While political instability is defined in politics as a deviation from the regularity of political exchange streams, economics is unconcerned with the type of regime (democracy or dictatorship) other than how long one regime remains in power (Araee, 2016).

In previous investigations, researchers found that there is no universal agreement in the literature on how to define, characterize, and quantify political instability in a form that can be used in economic analysis. Because political instability is a composite concept that is difficult to define and quantify (Burger et al, 2016), the measurement of political instability in the economic literature is linked to political problems and changes in political power through violence, as well as changes in legal forms (Alesina et al, 1996; Fosu, 1992; Barro,1991). A change of government is seen by Miljkovic and Rimal (2008) as an indication of political instability. Political instability, according to this definition, is the inability to maintain a system of government, regardless of the style of governance. Political instability is described by Alesina et al. (1992) as "the propensity of government collapse". Fosu, (1992) describe political instability as the volatility of a country's administrations, regimes, and communities which, in an extreme scenario, could go as far as the aggressive overthrow of existing authority, or a substantial chance of involuntary removal. Gupta (1990) tried to categorize political instability in a broad sense as (I) Elite or executive instability, which includes coups, government changes, and crises; (II) mass instability, which includes social movements such as strikes, demonstrations, and riots; and (III) armed instability, which includes civil and guerrilla wars, as well as all violent political actions.

Though political instability is thought to be a key variable in modeling economic growth in a country and explaining growth differences across countries, the framework in which political instability and economic growth are studied has recently come under scrutiny (Jong-A-Pin,2008). According to De Haan (2007), political instability used in empirical analyses of economic growth is measured with the error which, if that is the case, has a significant impact on the reliability of the estimates obtained in the literature.

According to Alesnia (1994), studies between political instability and economic growth should answer two major questions. The first one is the way they define and characterize political

instability. The second is considering the issue of the joint endogeneity between political instability and economic growth. In doing so, researchers have often followed two ways in defining and measuring political instability. While the first way is to take the count of government collapses and executive changes as political instability variables, the second approach is to construct a sociopolitical aggregate index from the multitude of indicators of more or less violent forms of political and social unrest.

Authors who have modeled political instability based on the number of a government collapse and executive turnover have used probit regressions to estimate the probability or propensity of government change. A high estimate of the propensity to a government collapse is considered an indication of political instability (Alesnia, 1994)

Different authors who have tried to alleviate the problem of conceptualization and measurement errors of political instability by constructing a single index from a multitude of multi-dimensional political instability variables employ the method of principal component analysis (PCA). That way, a more comprehensive political instability index which captures the majority of the information from all the dimensions of the political variable is created. The employment of principal component analysis (PCA) helps in avoiding the possible problems of multicollinearity among the different dimensions of the political instability variable (Gakpa, 2020; Gymah-Brempong & Traynor, 1999). This method of constructing a comprehensive political instability index proves to be powerful in the analysis of economic growth especially in developing countries (Alesnia, 1994).

Empirical Literature

Several empirical studies were conducted on the relationship between political instability and economic growth. When we see the empirical findings, it shows that there is a divergence in terms of the effects of political instability on economic growth. While some studies have successfully indicated that there is a drastic negative association between political instability and economic growth, others were unable to do so.

A number of these studies have shown a negative significant association between political instability including the study conducted by Aisen & Veiga (2010) by using a system GMM (General method of moments) estimator on a panel data of 169 countries for the years 1960 to 2004. The results indicated that higher levels of political risk are linked to lower GDP per capita growth rates. In terms of transmission channels, they found that political unrest has a negative impact on growth by slowing productivity growth and, to a lesser extent, physical and human capital accumulation. Additionally, they argued that while economic freedom and ethnic homogeneity are conducive to growth, democracy may have a minor negative impact on growth. Malik and Mansur (2017) employed an autoregressive lag (ARDL) approach to conduct the impact of the dynamic interactions of political instability and FDI on economic growth in Malaysia for 30 years from 1984 to 2013. The results show that there are both long and short-run relationships between the political and economic variables. It's found from the ARDL bounds test that political instability is co-integrated with economic growth and FDI.

Studies by Fosu, (1992); Gyimah-Brempong (1999); Alesina et al. (1996); Dalyop (2017) and Gakpa (2020) analyzed the relationship between political instability and economic growth and reached the same conclusion that political instability is the main hindrance in the pathway to economic growth.

From different coups d'etat events in Sub-Saharan African countries, Fosu(2001) conducted research on the nature of the association between political instability and economic growth from the years 1960-1986 using the OLS estimation method. By using a principal component index constructed from separate coup events and augmented production function framework, the author concluded that only the indirect effect of political instability on growth is negatively and statistically significant and the direct effect of political instability turned out to have a positive impact. Pasha, (2020) has done research on the nexus between different proxies of political instability and economic growth in Guyana using time-series data covering the period 1961 – 2018 and GARCH (1,1) models. The findings reveal that changes in the Head of State (HOS) have a positive and significant effect on real GDP growth rates, whereas strikes have the reverse effect. Other proxies of political instability, such as political killings, riots, insurgency, and terrorism, are not strongly related to real GDP growth.

Employing the Granger causality test within a multivariate co-integration and error-correction estimation techniques for the 1996-2012 periods on ECOWAS, Abu et al, (2014) found that there is a positive unidirectional Granger causality going from political instability to economic development in the short term. Study by Campos & Nugent (2002) found no significant relationships between political instability and economic growth.

Data and Methodology

Data sources, Definition, and Measurement of Variables

This research used annual panel data from 2000 to 2019 for 48 Sub-Saharan countries. The selection of the countries and the time span is subject to the availability of data. The data were sourced from different data sources. All economic variables used in this study except income inequality were obtained from the open-source of WB's world development indicators. The Gini coefficient which is a proxy for income inequality is extracted from World Income Inequality Database (WIID) data source. The aggregate political instability index which is our variable of interest was constructed from six individual political instability indices obtained from the world governance indicators (WGI) of the World Bank database.

The political instability indices making up of our aggregate political index are Control of corruption (CC), Government effectiveness (GE), Political stability and absence of violence/terrorism (PSAV), Regulatory quality (RQ), Rule of law (RL) and Voice and accountability (VA). The indicators range from -2.5 to 2.5 with higher values corresponding to good governance and low political instability. The need for the construction of a single weighted index arises from the fact that employing these six indices individually in a regression all at once may result in multicollinearity among the indices. We used principal component analysis to construct the aggregate-weighted index which maximizes the correlation between the constructed aggregate-weighted index and the individual political instability indices. The individual political instability indices were first normalized before any aggregation was made so that the constructed principal component stands as a deviation from its mean. For ease of interpretation and to avoid confusion in the interpretations, the aggregate index is then reverse-coded in such a way that higher values of the indicator indicate higher political risk.

Model Specification

Political instability and economic growth are argued to be mutually destructive in the literatures of political science and economics. That is, economists argue that political instability harms economic growth, whereas political scientists believe that slow economic growth is a major cause of political instability. These arguments pave the way for testing the hypothesis by modeling the relationship between political instability and economic growth as a jointly endogenous relationship. As a result, we present models in which both economic growth and political instability are treated as endogenous variables.

The augmented production function of the neoclassical model is used as a basis for modeling the effect of political instability on economic growth. In the neoclassical economic growth model, economic growth is mainly a function of the growth rates of capital stock and labor while technology is given. Political instability is augmented as additional growth-determining variable in this model as it is argued by many economists that political instability causes direct and indirect effects on economic growth.

The general augmented production function is given by:

$Y=F(A, K, L, PI, X)$ …….....…. (1)

Where Y is the output variable, A the given technology, K is the level of capital stock, L is the available labor input, PI is the political instability index and X is all other control variables.

In this study, we adopted the methods by Gyimah-Brempong and Traynor (1999) and Gakpa(2020) who combined the political science and economics strands of literature to model the relationship between political instability and economic growth. In doing so, political instability and economic growth are treated to be jointly endogenous variables.

The growth equation to be estimated is given by:

$$Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2 FDI_{it} + \alpha_3 PI_{it} + \alpha_4 POP_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it} \quad \text{..... (2)}$$

Where the dependent variable Y_{it}, is the log real gross domestic product (GDP) per capita a variable for economic growth. Y_{it-1} is the log-lagged real gross domestic product (GDP) per

capita and is expected to have a positive impact on the dependent variable, FDI_{it} is the inflow of foreign direct investment measured as the percent of GDP and is expected to have a positive coefficient. PI_{it} is an aggregate index of political instability that is constructed from the six WGI political instability indices and is expected to have a negative effect on economic growth. POP_{it} is the growth rate of the population. Since population growth and per capita income growth are negatively related, a negative coefficient of population growth is expected. Xit is a vector of other control variables that affect economic growth (such as trade openness (TO) (%GDP), inflation rate(INFL), gross fixed capital formation(GFCF) (%GDP), government spending(GS) (%GDP), the second lag of log of GDP per capita (L2.lnGDPPC), i and t indicate the individual country and time respectively. α0, α_1, α_2, α_3, and γ are all expressed as elasticities, μt is a time-specific effect, ω_i is an unobserved country-specific fixed effect, εit is the error term.

Political instability has been argued in the literature to have two transmission channels on growth: the direct effect, in which political instability reduces economic output by disrupting the operation of existing resources, and the indirect effect, in which growth is affected by a reduction in the availability of factor inputs such as capital. Political instability affects the level of capital investment as it poses uncertainty for investors to come to the host country. The looming clouds of uncertainty in the host country's political atmosphere, as well as a loss of confidence in the host country's ability to guarantee property rights, will keep investors away from the host country, and as a result, economic growth will be harmed indirectly as a result of the interaction between political instability and foreign direct investment.

Therefore, we model the interaction of political instability and foreign direct investment as follows.

$$FDI_{it} = \beta_0 + \beta_1 FDI_{it-1} + \beta_2 Y_{it} + \beta_3 PI_{it} + \beta_4 PI_{it-1} + X_{it} + \mu_t + \omega_i + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots 3$$

Where FDI represents the foreign direct investment inflow (%GDP) into the host country. The lagged value of FDI accounts for the lagged effect of explanatory variables and the dynamic aspect of FDI. The log of GDP per capita is also there as one of the explanatory variables. Both current and previous year levels of political instability are included in the equation out of the belief that they have a modulating impact on the inflow of FDI to the host country. X is a vector

of control variables (such as trade openness, gross fixed capital formation, and the second lag of FDI) potentially affecting FDI inflows into the host countries of Sub-Saharan Africa.

In accordance with the political science literature, we specify the following model in order to capture the relationship and reverse causality between political instability and economic growth.

$$PI_{it} = \gamma_0 + \gamma_1 PI_{it-1} + \gamma_2 Y_{it} + \gamma_3 X_{it} + \mu_t + \omega_i + \varepsilon_{it} \quad \text{..... (4)}$$

Where PI denotes the aggregate index of political instability derived from six WGI political instability indicators (i.e, control of corruption, government effectiveness, political stability, absence of violence/terrorism, regulatory quality, rule of law, and voice and accountability). The hypothesis that once a country experiences political instability, it develops an inter-temporal culture of political instability (Gyimah-Brempong & Traynor, 1999) is captured by the lagged value of political instability. As a result, if this assumption holds, we can expect the coefficient of the lagged value of PI to be positive. Y is the log real GDP per capita, which is a proxy for the economic growth variable. In general, faster economic growth is thought to contribute significantly to a country's political stability. As a result, the Y coefficient is expected to be negative on PI. X is a vector of control variables (such as inflation rate, income inequality, population growth, unemployment, and government spending) thought to influence political instability. $\gamma_0, \gamma_1, \gamma_2, \gamma_3$ are the corresponding coefficients, μ_t is a time-specific effect, ω_i is an unobserved country-specific fixed effect, ε_{it} is the error term.

The Model

Therefore, our main model is comprised of three simultaneous dynamic equations.

$$\begin{cases} Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2 PI_{it} + \alpha_3 FDI_{it} + \alpha_4 POP_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it} & (1) \\ FDI_{it} = \beta_0 + \beta_1 FDI_{it-1} + \beta_2 Y_{it} + \beta_3 PI_{it} + \beta_4 PI_{it-1} + X_{it} + \mu_t + \omega_i + \varepsilon_{it} & (2) \\ PI_{it} = \gamma_0 + \gamma_1 PI_{it-1} + \gamma_2 Y_{it} + \gamma_3 X_{it} + \mu_t + \omega_i + \varepsilon_{it} & (3) \end{cases}$$

Where, all the variables are as defined above.

This system of equations can be written in compact matrix format as:

$$\mathbf{\Gamma y + X'\Phi + \varepsilon = 0} \quad \text{..... (5)}$$

Where **y** is the vector of endogenous variables, **X** is the vector of exogenous variables, Φ is the vector of corresponding coefficients, and **ε** is the vector of stochastic terms consisting of country-specific components, a time component, and white noise. Formally written as:

$$\varepsilon_{it} = \alpha_i + \lambda_t + v_{it} \quad \text{..... (6)}$$

The overall effect of the current year's political instability on economic growth $\frac{\partial Y}{\partial PI}$ can be derived from the direct and indirect effects of political instability on growth.

Deriving the Direct and Indirect Effects of Political Instability on Economic Growth:

Since the three equations are simultaneous equations and implicit in nature, and Y_{it}, PI_{it}, *and* FDI_{it} are endogenously determined from the interactions of the three simultaneous equations, we have to do some mathematical rearrangements before making partial differentiations in order to find the direct and indirect effects of the political instability variable on economic growth.

First, we substitute the FDI equation in model 2 into the FDI variable in the growth model as follows.

Then after the substitution, we collect the term Y_{it} on the right side to the term on the left side. Then we solve for Y_{it}.

$$Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2 PI_{it} + \alpha_3(\beta_0 + \beta_1 FDI_{it-1} + \beta_2 Y_{it} + \beta_3 PI_{it} + \beta_4 PI_{it-1} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}) + \alpha_4 POP_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}$$

…….. (7)

Then collecting the term Y_{it} on the right-hand side to the left side, we get:

$$(1 - \alpha_3\beta_2)Y_{it} = \alpha_0 + \alpha_3\beta_0 + \alpha_1 Y_{it-1} + \alpha_2 PI_{it} + \alpha_3\beta_1 FDI_{it-1} + \alpha_3\beta_3 PI_{it} + \alpha_3\beta_4 PI_{it-1} + \alpha_3(X_{it} + \mu_t + \omega_i + \varepsilon_{it}) + \alpha_4 POP_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}$$

…….. (8)

Solving for Y_{it}, we have

$$Y_{it} = \frac{\alpha_0 + \alpha_3\beta_0 + \alpha_1 Y_{it-1} + \alpha_2 PI_{it} + \alpha_3\beta_1 FDI_{it-1} + \alpha_3\beta_3 PI_{it} + \alpha_3\beta_4 PI_{it-1} + \alpha_4 POP_{it} + (1 + \alpha_3)(X_{it} + \mu_t + \omega_i + \varepsilon_{it})}{1 - \alpha_3\beta_2}$$

……. (9)

Differentiating with respect to PI, we get,

$$\frac{\partial Y}{\partial PI} = \frac{\alpha_2}{1 - \alpha_3\beta_2} + \frac{\alpha_3\beta_3}{1 - \alpha_3\beta_2} \quad \text{.....(10)}$$

Where $\frac{\alpha_2}{1 - \alpha_3\beta_2}$ is the direct effect and $\frac{\alpha_3\beta_3}{1 - \alpha_3\beta_2}$ the indirect effect of political instability on growth.

Again to find the overall inter-temporal effect of the previous year's political instability on economic growth, $\frac{\partial Y}{\partial PI_{it-1}}$, and its corresponding direct and indirect effects, we follow the same procedure as we did above.

In the same fashion, substituting the **PI** equation given by model 3 into the **PI** variable in equation 1, we have,

$$Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2(\gamma_0 + \gamma_1 PI_{it-1} + \gamma_2 Y_{it} + \gamma_3 X_{it} + \mu_t + \omega_i + \varepsilon_{it}) + \alpha_3(\beta_0 + \beta_1 FDI_{it-1} + \beta_2 Y_{it} + \beta_3 PI_{it} + \beta_4 PI_{it-1} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}) + \alpha_4 P_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}$$

……..... (11)

Bringing the Y_{it} term on the right-hand side to the left side, we get the following.

$$(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)Y_{it} = \alpha_0 + \alpha_2\gamma_0 + \alpha_3\beta_0 + \alpha_1 Y_{it-1} + (\alpha_2\gamma_1 + \alpha_3\beta_4)PI_{it-1} + \alpha_3\beta_1 FDI_{it-1} + \alpha_3\beta_3 PI_{it} + \alpha_4 POP_{it} + X_{it} + \mu_t + \omega_i + \varepsilon_{it}$$

…… (12)

And solving for Y_{it}**,** we end up with the following equation.

$$Y_{it} = \frac{\alpha_0 + \alpha_2\gamma_0 + \alpha_3\beta_0 + \alpha_1 Y_{it-1} + (\alpha_2\gamma_1 + \alpha_3\beta_4)PI_{it-1} + \alpha_3\beta_1 FDI_{it-1} + \alpha_3\beta_3 PI_{it} + \alpha_4 POP_{it} + (1 + \alpha_3)(X_{it} + \mu_t + \omega_i + \varepsilon_{it})}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$$

.....(13)

Differentiating with respect to PI_{it-1}, we get

$$\frac{\partial Y}{\partial PI_{it-1}} = \frac{(\alpha_2\gamma_1 + \alpha_3\beta_4)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)} \quad \textbf{…….. (14)}$$

Where the term $\frac{(\alpha_2\gamma_1)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$ implies the direct effect of the inter-temporal effect of the previous year's political instability on economic growth and $\frac{\alpha_3\beta_4)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$ captures the indirect

effect. And the overall inter-temporal effect is the sum of its direct and indirect effects which is given by $\frac{(\alpha_2\gamma_1 + \alpha_3\beta_4)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$

Method of Data Analysis and Estimation Technique

A Dynamic GMM Estimator

The interactions between many economic variables are dynamic in nature. That is, they are distinguished by the presence of the lagged dependent variable among the right-hand side regressors, indicating that the effect of the dependent variable's previous periods tends to persist in the current period dependent variable. Autocorrelation issues arise in dynamic panel variable regressions due to the presence of a lagged dependent variable among the regressors, as well as the problem of individual effects arising from individual heterogeneity (Baltag, 2005).

Since the dependent variable is a function of the error term, it then follows that the lagged dependent is a function of the error term. As a result, the inclusion of the lagged dependent variable causes an endogeneity problem which automatically renders the pooled OLS estimator biased and inconsistent as this estimator assumes orthogonality (or strict erogeneity) between the regressors and the error term (Roadmap, 2009). Baltagi (2005) also points out that the Fixed effects estimator assume that unobservable individual-specific effect is fixed and not correlated with the error term which in regressions of dynamic nature this assumption is violated. Also, for a large N and small T of panel data, the within estimator becomes biased and inconsistent (Nickell, 1981). In general, the standard estimation techniques of panel data models such as pooled OLS, fixed effects, Within estimator, random effects, and generalized least squares, etc. are inefficient in dynamic panel datasets because they fail to account for estimated equation endogeneity and individual-specific effects (Baltagi, 2005), Using these standard estimation techniques on equations with a lagged dependent variable on the right side of the equations will result in biased and inconsistent estimates. Roodman (2009) also points out that because these estimation techniques are primarily designed for static models, using these estimation techniques on dynamic models results in dynamic panel bias.

To address the issue of endogeneity of the lagged dependent variable in a dynamic model, that is, when there is a correlation between the explanatory variable and the error term, Arrelano and

Bond(1991) proposed a dynamic panel estimator called the Generalized Method of Moments (GMM), which additionally control for unobserved panel heterogeneity, autocorrelation, omitted variable bias and measurement errors in general. It uses explanatory variables that are orthogonal to the error term but highly correlated with the regressors to address the issue of endogeneity. GMM is also intended for a large group and a short period of time. It is also intended to manage arbitrary distributed fixed effects.

There are several arguments in favor of using this estimation technique. The first reason is that it avoids endogeneity issues by accounting for causality, which can run from the independent variable to the dependent variable and vice versa and may be correlated with the error term. Second, GMM accounts for the correlation between time-invariant individual-specific fixed effects contained in the error term and the explanatory variables. Another reason is that it accounts for the presence of a lagged dependent variable on the right-hand side of the equation, which may cause autocorrelation. GMM is also useful for panel data with large N and short T. (Mileva, 2007).

The difference GMM approach proposed by Arellano & Bond (1991) corrects endogeneity by transforming all regressors through differencing thereby removing the fixed effects. However, this transformation of regressors through differencing has its own weakness in that it subtracts the previous observation from the contemporaneous one thereby magnifying gaps in an unbalanced panel. This is synonymous to saying if we are having an unbalanced panel, applying difference GMM may weaken our results. The System GMM approach proposed by Arellano & Bover(1995) and Blundell & Bond(1998), on the other hand, corrects endogeneity by introducing more instruments to improve efficiency and transforming the instruments to make them uncorrelated(exogenous) with the fixed effects. System GMM uses a system of equations with the original equation and the transformed one.

Result and Discussion

Estimation and Econometric Results

This section discusses the estimation results of our models specified in chapter three. We came up with the empirical results showing the relationships among economic growth, political

instability, and foreign direct investment by employing a System GMM and Forward Orthogonal Deviations (FOD) GMM estimation approaches.

While estimating these three models, we tried to employ most of the estimation techniques applicable to dynamic panel model estimations in order to arrive at a sound result. Along the way, we have used One-Step/Two Step Difference GMM, One-Step/Two Step System GMM, and Forward Orthogonal Deviation GMM (FOD) estimation approaches to run a number of simulations in STATA. However, One Step GMM and Forward Orthogonal Deviation GMM models are the only estimation techniques that are found to fulfill the relevant tests while the other dynamic estimation techniques failed to pass the tests that are relevant to the simulation. Therefore, the One-Step GMM and Forward Orthogonal Deviation GMM models are found to be the best models that best fit the estimation of the relationships between our variables of interest in our study. In relation to the consistency and efficiency of the results, these two estimation techniques are found to be sound and robust compared to others.

In Tables 4.2(a-c) below, the results of the three models with the relevant tests such as the Arellano and Bond test for second-order autocorrelation (AR (2)) and the Hansen's J statistics, for instrumental validity and efficiency test or for over-identifying restrictions are presented. The Hansen J test is used to determine the validity of instruments. It examines the null hypothesis that the overall instruments are valid (Roodman, 2009). Failure to reject the null hypotheses validates the choice of the instruments. Another diagnostics check is the test for autocorrelation/serial correlation of the error term. It tests the null hypothesis that the differenced error term is first and second-order serially correlated. Failure to reject the null hypothesis of no second-order serial correlation implies that the original error term is serially uncorrelated and the moment conditions (instruments) are correctly specified (Arellano &Bond, 1991).

Table 1

Model 1: The Growth model estimation results

VARIABLES	(1) SYSTEM-GMM	(2) FOD-GMM
L.lnGDPPC	1.183***	1.373***
	(0.103)	(0.101)
L2.lnGDPPC	-0.230**	-0.419***
	(0.0979)	(0.0982)
POLINST	-0.0114***	-0.00959***
	(0.00370)	(0.00279)
FDI	-0.00382***	-0.00321***
	(0.00115)	(0.000857)
TO	0.00138***	0.00111***
	(0.000422)	(0.000317)
GFCF	0.000399	0.00113
	(0.00138)	(0.000829)
GS	-0.00614***	-0.00466***
	(0.00107)	(0.000853)
INF	0.000563	0.000610
	(0.000558)	(0.000543)
POPG	-0.00256	-0.00497
	(0.00896)	(0.00741)
Constant	0.444***	0.394***
	(0.0569)	(0.0451)
Observations	648	648
Number of Groups	41	41
AR(1)	0.000	0.001
AR(2)	0.065	0.227
Joint P-value	0.000	0.000
Hansen's J statistics	0.241	0.083
Number of Instruments	30	30

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As our simulations result of System GMM and FOD-GMM show in Table 1, the dependent variable, the log of GDP per capita, is affected significantly by its first and second-period lags. In both estimators, it can be seen that the first previous period lag value of the dependent variable is positively associated with the dependent variable Log GDP per capita at 1% significance level. Its second lag, however, has a negative impact on the current period log GDP per capita. All other things remain the same, while the System GMM estimation shows that a 1 percent increment in the previous year's value of GDP per capita may have increased the current period GDP per capita by 1.18%, the FOD-GMM estimates it to be 1.40% increase which shows that there is no exaggerated difference between the two estimations.

Our variable of interest political instability has a highly significant direct negative effect on economic growth as can be seen from the two estimations in the above table. This is in line with our hypothesis that political instability has a direct negative effect on economic growth. The simulation result from System GMM shows that with all other things remaining constant, a one standard deviation increase in political instability decreases economic growth by 0.011 % at 1% level of significance. On the other hand, a unit increase in the standard deviation of political instability decreases economic growth in FOD-GMM estimation by 0.01 % at 1% significance level, cetris paribus which shows that the two GMM estimators have the same results.

On the other hand, FDI is found to have a highly significant negative effect on economic growth in both of the estimation techniques at 1% significance level. This is in line with the dependency economic theory that FDI crowds out domestic firms (Bornschier & Chase-Dunn, 1985). The results from System GMM and FOD GMM respectively show that all other things remain the same, a 1-unit change in FDI(%GDP) is associated with a 0.004% and 0.003% decrease in economic growth in the short run at 1% significance level. While trade openness has a highly significant positive effect on the economic in both of the GMM estimators, government spending is found to have a statistically highly significant negative effect on growth as can be seen in Table 1. The regression results show that cetris paribus, a one-unit increase in trade openness (%GDP) will have a 0.001 % increase in economic growth at 1% significance level, as can be seen from System GMM regression analysis. The FOD-GMM reveals almost the same result with that of System GMM regression at 1% level of significance. All other control variables such as gross fixed capital formation which is a proxy for investment, inflation rate, and population

growth rate, though they have the expected, they are statistically insignificant in affecting economic growth.

Table 2

Model 2: The FDI model estimation results

VARIABLES	(1) SYS-GMM	(2) FOD-GMM
L.FDI	0.314***	0.414***
	(0.110)	(0.0957)
L2.FDI	0.0343	0.106
	(0.0986)	(0.113)
POLINST	-0.146	-0.294
	(0.610)	(0.613)
L.POLINST	-0.348	-0.143
	(0.608)	(0.581)
lnGDPPC	-3.478***	-2.850***
	(1.040)	(0.850)
TO	0.0784***	0.0615***
	(0.0274)	(0.0225)
GFCF	0.190***	0.149***
	(0.0431)	(0.0373)
Constant	20.79***	17.40***
	(7.443)	(5.708)
Observations	727	727
Number of Groups	44	44
AR(1)	0.014	0.011
AR(2)	0.661	0.910
Joint P-value	0.000	0.000
Hansen's J statistics	0.105	0.058
Number of Instruments	16	16

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As can be seen from the System GMM and FOD GMM simulation results in Table 1, the first past realization of the dependent variable FDI has a significant positive effect on its current year value with 1% significance level in both simulations. Whereas, the second lag on FDI is found to be statistically insignificant in both System GMM and FOD GMM simulations. All other things remain the same, a 1 unit increase in the previous year of FDI (%GDP) results in 0.3 units increase in the current period FDI(%GDP) at 1% significance level when estimated using System GMM, whereas, the FOD GMM simulation shows a 0.4 unit increase in the current year FDI(%GDP) at 1% level of significance. The log of GDP per capita is found to be significantly and negatively related to FDI. The coefficients of political instability in the first and second lags are statistically insignificant implying there is no association between FDI and political instability in Sub-Saharan African countries.

The two estimations reveal that the log of GDP per capita and FDI are significantly and negatively associated. Cetris paribus, a 1% increase in the log of GDP per capita is respectively associated with 3.5 and 2.9 units of FDI (%GDP) reduction at 1% significance level in both the System GMM and FOD GMM estimations. The log of domestic investment proxied by gross fixed capital formation is found statistically significant in affecting FDI inflow at 1% significance level in both of the simulations. It implies that a 1 percent increase in the domestic investment growth will result in 0.19 and 0.15 units increase in FDI(%GDP) inflow as simulated by System GMM and FOD GMM estimators respectively. Trade openness in both of the simulations is found to significantly affect the flow of FDI into Sub-Saharan African countries. With other things held constant, a 1 unit increase in openness to trade (%GDP) is associated with respectively a 0.08 and a 0.06 unit increase in the inflow of FDI (%GDP) in System GMM and FOD GMM simulations.

Table 3

Model 3: The political instability model estimation results

VARIABLES	(1) SYS-GMM	(2) FOD-GMM
L.POLINST	0.962*** (0.0126)	0.956*** (0.0136)
lnGDPPC	-0.0570*** (0.0204)	-0.0595*** (0.0219)
UNEMP	0.00853*** (0.00262)	0.00786*** (0.00271)
INC_INEQ	-0.00207 (0.00186)	-0.00141 (0.00196)
INF	-0.00235*** (0.000831)	-0.00162* (0.000914)
GS	-0.00555** (0.00233)	-0.00492** (0.00232)
POPG	0.0492** (0.0249)	0.0546** (0.0267)
Year	0.00386* (0.00215)	0.00432** (0.00217)
Constant	-7.092* (4.216)	-8.018* (4.239)
Observations	678	678
Number of Groups	40	40
AR(1)	0.000	0.000
AR(2)	0.596	0.653
Joint P-value	0.000	0.000
Hansen's J statistics	0.119	0.112
Number of Instruments	35	35

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 presents the estimation results of the political instability model in both System GMM and FOD GMM estimation techniques. As displayed in the table, the dependent variable political instability is significantly affected by its previous year's value. While, the log of GDP per capita, government spending, and inflation have significant negative effects, population growth and the level of unemployment aggravate the level of political instability with its positive effect as can be expected.

Cetris paribus, a one standard deviation increases in the past realization of the political instability variable, fuels political instability by a 0.96 standard deviation at 1% significance level in both the System GMM and FOD GMM simulations. As evidenced from the two simulations in the above Table 3, a 1 percent increase in economic growth will ease the political instability by 0.06 standard deviations at 1% significance level, with other things remaining constant. Whereas a unit change in the unemployment rate will fuel the political instability by 0.009 and 0.008 standard deviations respectively in System GMM and FOD GMM estimations. A unit increase in the inflation rate is associated with a 0.001 standard deviation decrease in the level of political instability in the two GMM simulations assuming all other factors are constant. On average, a unit increase in government spending is associated with 0.006 and 0.005 respective standard deviations decrease in the two GMM estimations, citrus paribus. A unit change in population growth on the other hand, aggravates the level of political instability by standard deviations of 0.049 and 0.055 as can be evidenced from the respective System GMM and FOD GMM simulations.

The three simulations above used collapsing and restricting the number of lags for the selection of internal instruments in order to be abide by the condition Roodman(2009) suggested for Hansen-J statistics to be within the range 0.1-0.25. A series of attempts have been made to arrive at the outputs in the three tables in an effort to make Hansen-J statistic within the range recommended by Roodman(2009) and to bring to the acceptable range the p-values of AR (1) and AR (2) tests for second order autocorrelation. Therefore, with these assumptions valid, the estimation results obtained from the system GMM and FOD GMM estimators are valid.

Generally speaking, the simulation results given in Tables indicate that political instability and economic growth in Sub-Saharan African countries are negatively related through direct and indirect transmission mechanisms. That is political instability affects economic growth through

two transmission channels. First political instability has a direct negative effect in economic growth by disrupting market operations and employment of the existing resources as argued in many of the literatures in chapter two of this paper. The other way political instability exerts a negative impact on the level of economic growth is by the indirect path through affecting foreign direct investment as can be seen in Table 2. While the direct and indirect effect of political instability is given by $\frac{\alpha_2}{1 - \alpha_3\beta_2}$ and $\frac{\alpha_3\beta_3}{1 - \alpha_3\beta_2}$ respectively, the overall effect of political instability on economic growth is equal to $\frac{\partial Y}{\partial PI} = \frac{\alpha_2}{1 - \alpha_3\beta_2} + \frac{\alpha_3\beta_3}{1 - \alpha_3\beta_2}$ as derived in section 3.

Computing the results, we get the direct effect to be -0.23. Since the political instability on FDI through which it's supposed to affect economic growth is insignificant, the indirect effect is zero. The overall effect is also -0.23. This implies that political instability only affects economic growth directly through disruptions of the available resources and not through FDI.

Furthermore, the overall inter-temporal direct and indirect effect of political instability is derived and given by equation (3.14) in chapter three of this study.

$$\frac{\partial Y}{\partial PI_{it-1}} = \frac{(\alpha_2\gamma_1 + \alpha_3\beta_4)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$$

Where the term $\frac{(\alpha_2\gamma_1)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$ implies the direct effect of the inter-temporal effect of the previous year's political instability on economic growth and $\frac{\alpha_3\beta_4)}{(1 - \alpha_2\gamma_2 - \alpha_3\beta_2)}$ captures the indirect effect.

Computing the direct and indirect effects from the coefficients of the variables in the regression models, we get the inter-temporal direct effect of political instability to be -0.22. Whereas, the indirect effect is 0, since the effect of the past value of the political instability variable is found statistically insignificant in the regression. The direct effect is also the overall effect in this case too. The implication is that political instability affects economic growth only through its direct path in both its past realization and contemporaneous values. The indirect path hypothesized earlier in this paper through which political instability would affect economic growth in Sub-Saharan countries via the FDI transmission channel is rejected based on the findings of this study. The justification for this is that, even though the general understanding is that the flow of

FDI will be disrupted by political instability, the level of political risk has not reached the point where foreign investors are discouraged to invest in SSA countries for the fact that investors often compare the probability of losses to that of the gains as also noted by Appiah-Kubi et al (2020). Kevin Williams (2010) also noted that even though the Sub-Saharan Africa region is less attractive for FDI inflows due to its unstable political economy, the returns on resource-seeking FDI in SSA dwarf the cost of political instability and this partly explains why FDI still flows to the region despite the unstable political economy.

Discussions

The empirical findings from Tables show that other than the direct negative effect political instability has on economic growth, political instability, and foreign direct investment do not make interactions that affect the level of growth in Sub-Saharan countries. This section, therefore, tries to compare the results of our simulations to those of the existing theoretical and empirical literatures and make sense of the findings in our study.

To understand the interactions of political instability and economic growth let us look at the general theory and empirical evidences in the literature world. The impacts of political instability on economic growth are still controversial in the economics literature, both in theory and empirical studies. On a theoretical level, authors generally agree that political instability has an adverse and deleterious effect on the economic growth of a country. Political instability directly affects economic growth by disrupting the efficient employment of existing resources. For example, in times of political instability, productive expenditures (investment expenditures) that may boost economic growth are also diverted away from their goals and channeled toward wasteful military expenditures, thereby affecting economic growth negatively (Bakaboukila Ayessa & Hakizimana, 2021). In addition to the direct negative effect political instability has on a country's economic growth, it also affects economic growth negatively through its negative effect on foreign direct investment.

Looking at our findings in Table 1, we can see that political instability has a negative impact on economic growth which is in line with many authors such as Fossu (1992), Aisen & Veiga (2010), Malik & Mansur (2017) and many others who found a negative relationship between

political instability and economic growth. But it doesn't follow an indirect transmission mechanism through FDI.

From the theoretical aspect, economists from the dependency school of thought argue that foreign direct investment will lead to dependency and thereby affects economic growth negatively in developing countries. Bornschier & Chase-Dunn (1985) stated that FDI dominates and monopolizes the industrial structure of a country thereby leading to the underutilization of productive forces. Foreign direct investment also negatively affects the economic growth of the host country due to the fact that it decreases the balance of payments due to repatriated profits, has no healthy linkage with local businesses, and crowding out domestic firms out of business

So far, empirical researches conducted in Sub-Saharan Africa on the relationships between FDI and economic growth is not conclusive. Some have found positive relationships while others have negative or insignificant associations between the two variables. While studies conducted by Ndikumana and Verick (2008) and Asiedu and Gyimah-Brempong (2008) have found positive relationships; Hermes and Lensink (2003) and Kamara (2013) have found negative relationships between FDI and economic growth. In our regression, we found that FDI has a negative impact on economic growth in Sub-Saharan countries which is in line with the results of these authors.

According to Gakpa (2020), features that are specific to Sub-Saharan African countries are the main factors that impede the paths of the positive effects of FDI on growth. Considering the domestic characteristics helps in having a better understanding of the relationships between the two variables. Though generally it's accepted that FDI helps boost economic growth in host countries, it's argued that this contribution of FDI to economic growth strongly depends on circumstances inside the host country. These circumstances are the availability of human capital and the export-orientedness of the FDI recipient countries. These factors are found to be important preconditions for FDI to have a significant positive effect on growth. The level of the financial system is also another precondition that needs to be in place in host countries in order for FDI to affect economic growth positively (Hermes and Lensink, 2003).

The empirical findings of the relationships between political instability and FDI are also inconclusive. While researchers such as Busse and Hefeker (2007) and Daude and Stein (2007)

found that there is a negative relationship between political instability and FDI; studies conducted by Wheeler and Mody (1992) and Blonigen and Piger, (2014) found no statistically significant relationship between political instability and FDI. Others such as (Campos and Nugent, 2003) have also found positive associations between the two variables.

Though our empirical finding on the relationship between political instability and FDI coincides with many economic authors, to our dismay, the relationship between political instability and foreign direct investment is insignificant, thereby eliminating the indirect path. The statistically insignificant relationship between political instability and foreign direct investment stands obstacle to the hypothesis that political instability hinders economic growth through the indirect path of FDI. The justification for this is that, even though the general understanding is that the flow of FDI will be disrupted by political instability, the level of political risk has not reached the point where foreign investors are discouraged to invest in SSA countries for the fact that investors often compare the probability of losses to that of the gains as also noted by Appiah-Kubi et al (2020). Kevin Williams (2017) also noted that even though the Sub-Saharan Africa region is less attractive for FDI inflows due to its unstable political economy, the returns on resource-seeking FDI in SSA dwarf the cost of political instability and this partly explains why FDI still flows to the region despite the unstable political economy. Gossel (2017) further reasons that FDI is significantly affected by the long-run accumulation of political instabilities compared to the short-run dynamics in political variables.

Though the relationship between trade openness and economic growth is still a debatable issue and no consensus has been reached as to whether or not trade openness stimulates economic growth, there are different theories in support of the positive relationship between the two variables. The theorists of comparative advantage claim that countries that trade with each other will engage in producing goods on which they have a comparative advantage. They will specialize in the production of goods for which they have better factor endowments, thereby increasing their productivity and exports of goods they produce. This in turn, will increase the economic growth of that country. Endogenous growth theories also assert that trade openness enhances growth as there will be a diffusion of advanced technologies between the trading countries (Keho, Y., 2017). Our empirical finding ensures that there exists a positive relationship between trade openness and economic growth in SSA countries.

Furthermore, in our estimation results from government spending shows as having a negative effect on the economic growth of Sub-Saharan African countries which is supported in many theoretical and empirical works. On a theoretical basis, the neoclassical school of thought asserts that government spending negatively affects growth as it crowds out the private sector through increasing domestic interest rates and tax rates thereby resulting in distortions in the allocation of resources (Alqadi M, et al.,2019; Mitchell,2005). The next chapter discusses the findings from our empirical work and the corresponding policy implications drawn from our results.

Conclusions and Policy Implications

The study of political economy is a recent phenomenon, and despite many researches have been made trying to uncover the relationship between political instability and economic growth, the issue is still controversial and remains inconclusive to date. Over the last three decades, economists have paid close attention to the relationship between political instability, FDI, and economic growth. Even though many empirical researches have been made on the issue, it still remains inconclusive. In this study, the relationship between political instability, foreign direct investment, and economic growth proxied by the log of real GDP per capita is investigated. The empirical results from this study show that political instability has a direct significant negative effect on economic growth in Sub-Saharan African countries. On the other hand, since the effect of political instability on FDI is found to be statistically insignificant, political instability has no effect on economic growth through the FDI channel. That is, political instability affects economic growth only through its direct channel but not through the indirect one. While other economic factors such as lagged real GDP per capita and trade openness have a significant and positive effect on economic growth, government spending has a significant negative effect on growth in SSA.

From the results of the FDI model in Table 2 of our system GMM estimation, it's seen that FDI is positively and significantly affected by both its first and second lags. Political instability along with its first lag is also found to have no significant effect on FDI in Sub-Saharan African countries. The third model which is the political instability model presented in Table 3 of our study is incorporated to test the reverse causality between political instability and economic growth. As can be seen from the results, the level of economic growth, inflation rate, and government spending have significant negative effects on political instability while the lagged

value of political instability worsens the contemporaneous state of political instability. Additionally, the unemployment rate and population growth fuel the level of political instability as the two variables have highly significant positive effects on political instability.

Various policy implications based on our findings in Sub-Saharan African countries could be provided. The results show that the governments and policymakers of these countries should target political instability as their policy variable since variations in economic growth other than its own shocks are also explained by the shocks from political instability. Countries in SSA should not ignore factors leading to political instability and policies aimed at decreasing political instability should be pursued by these countries in order to maintain stable economic growth. It should be the primary goal of Sub-Saharan African countries to account for political instability variables in their policy alternatives when they are planning and setting a certain goal to achieve economic growth.

Factors leading to political instability in SSA such as corruption, internal violence, external conflicts, divisions along ethnic and religious lines, etc. should be mitigated and resolved in advance. The governments must work on the factors that build citizens' confidence in the government system where they are served irrespective of their cultural, religious, political, economic, etc. differences and backgrounds. The countries in SSA must have strong institutions that entertain citizens' freedom of speech, guarantee rights to properties, build democratic frameworks within which democratic rights are exercised thereby decreasing the aggressions of citizens and their tendency to outburst their desperations on the system which leads to political instability, and eventually hampers economic growth. Generally, implementing various macroeconomic policy reforms in an effort to boost economic growth would not succeed if the factors leading to political instability in a country are not properly accounted for and given a central place. The governments of Sub-Saharan countries should also open up to trade and minimize their excess government expenditures among other macroeconomic policy measures they pursue.

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