THE IMPACT OF REFORM ON THE ECONOMIC GROWTH TRAJECTORY OF SUB-SAHARAN AFRICA

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ABSTRACT

The research examines why sub-Saharan African (SSA) nations have seen unsatisfactory economic development by assessing the reform programmes implemented during the last three decades. Based on an enhanced neoclassical growth model framework generated from a dynamic panel for 12 African nations from 1995 to 2019 using data from the LSDCV dynamic panel. The findings revealed that insufficient changes, particularly in governance and the institutional environment, had been implemented. Stability in the macroeconomic environment, structural reform, and physical infrastructure are all necessary for an efficient reform process and development of the developing world's growth prospects. Reform implies that it is political, social, and economical simultaneously. Political and economic reform should be carried out in tandem.

KEYWORDS

Development, Sub-Saharan Africa, institutions, reform policy, panel data, Economic growth

PAPER INDEX

1. BACKGROUND

Sub-Saharan Africa (SSA) has lagged in growth performance and, consequently, income per capita compared to other world regions or even other developing regions [1]. There are also marked differences in income per capita across space and time in SSA. For instance, over the period 1970-2013, the average income per capita of the wealthiest state in the region, Seychelles, of US$ 7,100 was more than a factor of 54 of the poorest country, Ethiopia, whose average income per capita was only US$160.

Moreover, Africa's share in the global economy has dropped significantly during the past 50 years regarding the gross domestic product (GDP), exports, and foreign direct investment (FDI). For instance, its global GDP share declined from around 3.5% in 1950 to 2.5% in 2000 [2]. The decrease in Africa's share of world export and FDI is even more drastic. Export as a percentage of world export fell from about 7% to 2% (a 70% fall), while FDI declined from 5.5% to 1% in the same period. The deterioration of the continent's importance in the world economy appears in its global GDP share in purchasing power parity (PPP) terms, which dropped by more than 40% between 1950 and 2000 [1].

These poor economic indicators led to a series of socioeconomic and political reform programs in the 1980s. The domestic context for introducing policy reform was the deepening economic crisis. These development procedures have been implemented to improve the economic environment. These reforms included exchange rate liberalization, tariff reduction, and suspension of 'subsidies' [3]. The effects of these reforms were negligible. Paradoxically, the more African states attempted to impose controls, the more their ability to influence and direct the economy shrank as the informal economy expanded. The most important signal of this loss of state capacity was the tax base's weakening [4].

Therefore, despite various reforms implemented in Sub-Saharan Africa, the region has not experienced significant economic growth compared to other regions in the world. The paper seeks to examine the impact of these reforms on economic growth in the region and to determine the factors that contribute to the growth trajectory. This research seeks to understand better the challenges faced by Sub-Saharan Africa in achieving sustainable economic growth and help policymakers design more effective growth-enhancing policies.

The paper is organized as follows; Section 2 presents the literature review; Section 3 describes the empirical model and estimation approach. Section three explains the estimated results of the growth model, including different composite factors, followed by conclusions and policy implications.

2. LITERATURE REVIEW

The post-independence growth experience of the SSA has been episodic. The period from 1960 to the mid-1970s experienced high growth performance. However, after 1975 there was a sharp deterioration in the SSA economies, with a fall in the average annual per capita GDP growth rate of 1% during 1980-85. The decline

continued reaching approximately 0.1%. Thus the 1980s could be considered as "Africa's lost decade" [5]. The falling trend in real per capita incomes coincided with widening domestic and external imbalances, climbing external debt burdens and debt servicing difficulties, worsening the plight of economically and socially vulnerable groups, sharp drops in world commodity prices and substantial losses in terms of trade of SSA countries. Regarding trade, virtually all African countries' export earnings were hugely concentrated on a few commodities, while for some countries, government revenues relied heavily on export taxes.

These poor economic indicators led to a series of socioeconomic and political reform programs in the 1980s. The domestic context for introducing policy reform was the deepening economic crisis [6]. These development procedures have been implemented to improve the economic environment. These reforms included exchange rate liberalization, tariff reduction, and suspension of 'subsidies' [3]. The effects of these reforms were negligible. Paradoxically, the more African states attempted to impose controls, the more their ability to influence and direct the economy shrank as the informal economy expanded. The most important signal of this loss of state capacity was the tax base's weakening [4].

The reform record was weak and limped along. Several arguments have been provided to explain this failure. Firstly, all SSA countries faced deep-rooted developmental constraints, rapid population growth, low human capital development, inadequate economic and social infrastructure, and structural rigidities. These factors also impede the private sector's development [7-9].

For instance, Nga Ndjobo and Certo Simões [10] re-examined the relationship between African institutions and the migration phenomena, specifically, the business start-up regulations and the brain drain from (SSA) countries towards those in OECD. They found that regulations controlling enterprise creation in SSA countries positively and significantly contribute to brain drain towards OECD countries. Thus, setting up regulations for effective enterprise creation may retain qualified individuals in Africa, mainly entrepreneurs who have in sight the creation of their own businesses. In addition, regulations, governance and the potential contribution of these entrepreneurs should be taken into account in setting up integrated national innovation systems in African countries. Abdelbary and Benhin [11] consistently examined the factors affecting economic growth, focusing on the role of governance based on a neoclassical growth framework for 97 countries. Results showed a positive impact of human capital and investment on growth but a negative impact on regulatory quality. Governance was found to have a significant positive effect on growth in advanced economies but a negative effect in developing countries. The study emphasized the importance of human capital and governance in improving growth prospects and reducing political and economic instability.

Secondly, this economic reform regime's conditional nature, controlled by leading donor countries, significantly inhibited attempts to remedy critical structural deficiencies in these economies. The reform programs with the World Bank and IMF institutions, especially the structural adjustment programs (SAPs) and poverty

reduction strategy papers (PRSP), seem to have contributed to Africa's poor economic performance [12].

Moreover, factors such as ethnic conflicts, political instability, unfavorable security conditions, and protracted civil wars contributed to the region's dismal economic performance before the mid-1990s. The ineffective national government management of the mandated macroeconomic reforms was at the root of their failure. In nearly every SSA country, these development strategies were associated with a particular authoritarian regime type, referred to as "the development dictatorship". African development dictatorships promised high economic performance and rising living standards. In return, they gave themselves the right to maintain a centralized and authoritarian governance system [13].

Leadership problems plague many SSA countries. Besides being authoritarian, African leaders are noted for their high-level corruption and are in no position to promote development [14]. By changing the state's constitution or rigging elections, most African leaders continue to perpetuate themselves in office. For instance, according to Luiz and Charalambous [14], only 7% of African leaders between 1960 and 1999 had left office via free election compared to 60% overthrown in a coup d'état, war or by assassination with an average time in the office of 7.2 years compared to 3.2 years in Europe. Corrupt elongation of office tenure has negatively affected sufficient power, which is essential to building stable and efficient institutions for good governance.

Bräutigam and Knack [15] argue that institutions in many SSA countries are weak due to colonialism, which failed to develop domestic institutions to meet modern states' demands. Acemoglu, Johnson [16] also suggest that Africa is more inferior compared to the rest of the world due to European powers building "extractive colonies". This means the colonialists launched institutions devoid of rules to enforce accountability and transparency, a trend that has persisted even after political independence. Currently, the state in many SSA countries is significantly influenced by neo-patrimonial tendencies and poor policy choices, severely hindering state capacity [17]. These repressive regimes were associated with a lack of efficient political checks and balances systems. In addition, the absence of real electoral democracies had significantly retarded the region's economic performance and was a primary cause of the ineffective reform [18-20]

Furthermore, out of 26 African conflicts between 1963 to 1998, affecting 61% of the continent's total population, seven were classified as inter-state, while 19 happened within countries [14]. This political violence damages the state's capacity and destroys any efforts for serious reform. Also, it disrupts physical and human capital, reduces savings, diverts FDI from national economies, disrupts economic activities and leads to adverse structural change in government expenditures from the provision of civic services to military spending [21].

However, in recent years, especially starting from the mid-2000s, SSA economies have experienced a persistent increase in economic growth. The notable performance has been attributed to reduced conflict, slightly improved political stability, meaningful

domestic economic reforms and a favourable foreign environment with more integration into the global economy [22-24]. Besides, better commodity prices have also been essential in driving growth.

3. METHODOLOGY

Based on the theoretical background of the Solow-Swan growth model and the empirical approach following "Barro-type regression" [25], the new aggregated reform indicators were generated using principal components analysis (PCA) to allow the computation and categorisation of macroeconomic variables into four separate groups.

These original indicators are: the Macroeconomic Stability (M) [26], the Business Environment (B) [27], Infrastructure (F) [28], and Political Institutions (I) [29]. Besides integrating the annual population growth rate ($POP_{i,t}$), and the percentage of oil rent to GDP ($oil_{i,t}$) to control variations in human and natural resource endowments across countries.

Real GDP per capita growth is empirically stated as follows:

$$(Y_{i,t}) = \alpha_0 + \varphi_1 ln(GDP_{i,t-1}) + \theta_1(M_{i,t}) + \theta_2(B_{i,t}) + \theta_3(F_{i,t}) + \theta_4(I_{i,t}) + \theta_5(oil_{i,t}) + \theta_6(POP_{i,t}) + \varepsilon_{i,t} \qquad (1)$$

where, $Y_{i,t}$ represents the economic growth rate in the country i at time t; ln ($GDP_{i,t-1}$) is an *N x 1* vector of logs of initial GDP; α_0 is the intercept, θ_1 to θ_6, are parameters for convergence and the principal components, and $\varepsilon_{i,t}$ is the error term.

The study covered from 1995 to 2019 a host of economic, institutional and social indicators for 12 Sub-Saharan African countries (SSA) based on the data availability [30]. The sources of data include the World Development Indicators (WDI), the Economist Intelligence Unit (EIU) CountryData, UNCTAD, World Statistical Database, and the Worldwide Governance Indicators (WGI).

The analysis used the bias-corrected Least Square Dummy Variable (LSDVC) technique to undertake 100 repetitions to bootstrap the estimated standard errors to deal with endogeneity bias. This is applied because the generalised method of moments (GMM) estimators is not the most suitable procedure and will be highly unstable as the analysis period is relatively large compared to the number of observations. The Least Square Dummy Variable (LSDV) estimator has a relatively low variance and hence can lead to an estimator with a lower root mean square error after the bias is removed [34, 35].

4. EMPIRICAL RESULTS

Before estimating the research model as in Eq.(1), Levin, Lin, and Chu (LLC) and Im, Pesaran, and Shin (IPS) tests have been employed to determine each panel's integration characteristics. The results as reported in Appendix 1, indicate that none of the series has a panel unit root at the level, except for the Business Environment (B)

series, which is stationary in the first difference, I (1). In addition, the Hausman test was used to determine the significance of unobservable individual effects, indicating that a fixed-effect simulation was appropriate instead of pooled OLS and random effects, as in Appendix 2.

Regarding estimating a conditional convergence equation for economic growth in SSA, Table 1, shows that Macroeconomic stability is highly significant and positively related to economic growth. In particular, the components of inflation and deficit. Empirical work such as Lin and Chu [36], Catao and Terrones [37] notes that fiscal deficits are likely to be inflationary only in lower-income countries where the restrictions on government borrowing are the most sharp. Especially in SSA, where the role of supply-side shocks is very critical because of the massive weight of agriculture in the GDP and the consumption basket, so variations of real GDP are expected to be strongly affected by environmental conditions that determine the quality of the harvest [38]. Inflation also shows a government's inability to balance its budget; therefore, the uncertainty of inflation affects the investment decision of foreign businesses [10, 39].

Concerning the Business Environment (B) indicator components, FDI plays a vital role in SSA to encourage growth, as shown in col. (3) Table 1. In many respects, Africa represents a frontier to global capital, seeking out new, growing and emerging markets. While Africa is considered a tiny player in the international market, it will attract foreign enterprises by addressing FDI-friendly policies.

African countries have seen an actual increase in FDI flows since 2000, which saw FDI flows to the region more than double from an average of US$ 14.9 billion (2001–2005) to US$ 30.3 billion (2006–2010). Also, SSA countries are an untapped market of 850 million people, and the returns on investment are already substantially higher here than anywhere else [40].

Table 1. Estimated panel data models for sub-Saharan African countries

	(1) FE Basic Model	(2) Model with M	(3) Model – with B	(4) Model – with P	(5) LSDVC Model with G	(6) LSDVC Model – with G
Macroeconomic stability (M)	-0.701*** (0.216)		-0.76*** (0.179)	-0.64*** (0.178)	-0.489** (0.224)	-0.547** (0.221)
Exchange rate		-0.071 0.045				
Deficit		**-0.18**** **(0.076)**				
Public debt		0.155 0.21				
Inflation		**-0.167**** **(0.084)**				
Unemployment		-0.041 0.466				

Business Environment (B)	0.121	0.116		0.101	-0.009	-0.011
	0.183	0.185		0.172	0.226	0.227
FDI			**0.105***			
			(0.063)			
Credit to the private sector			-0.086			
			0.149			
Concentration index			0.014			
			0.219			
Infrastructure (F)	0.247	0.243	0.051		0.161	**0.428****
	0.17	0.204	0.094		0.224	**(0.257)**
Improved water source			2.633***			
			(0.988)			
Electricity for the population			-0.507			
			(0.299)			
Improved sanitation facilities			-1.608			
			(0.913)			
Governance (G)				0.204		
				0.284		
Voice and accountability						**0.799***
						0.470
Political stability						-0.149
						(0.319)
Government effectiveness						**-0.975***
						(0.525)
Regulatory quality						**1.192****
						(0.447)
Rule of law						**1.384****
						(0.661)
Control of corruption						-0.441
						0.566
Initial GDP	-0.733	0.428	0.065	**0.518****	**-2.238****	**-2.072****
	0.971	0.601	0.154	**(0.191)**	**(0.603)**	**(0.625)**
population growth rate	**1.146****	**1.038****	**0.616****	**1.262****	0.464	0.56
	(0.378)	**(0.422)**	**(0.310)**	**(0.328)**	0.514	0.522
Oil rent to GDP	0.04	0.036	0.018	0.065	0.016	0.017
	0.054	0.054	0.046	0.044	0.061	0.064
lag GDP per capita growth real					**0.223****	**0.229****
					(0.04)	**(0.039)**
F statistic	4.31	3.65	4.96	4.94		
Adjusted R2	0.3	0.31	0.3	0.3		
#observations	288	288	288	288	288	288
#Countries	12	12	12	12	12	12

***, **, and * indicate that the coefficient is significantly different from zero at 1%, 5%, and 10%, respectively

For the Political Institutions indicators, it is worth noting that more governance components are significant. The argument is that institutions are vital for the sustained increase in growth in SSF. Col. (6) shows the effect of the rule of law index, capturing a dimension of governance involving citizens' respect and the state for institutions that govern both social and economic interactions. Its coefficient is positive and statistically significant, with a one-standard-deviation change increasing income by 1.384. The result is firmly in line with Dollar and Kraay [41] and Rodrik, Subramanian [42]. They observed that the same index is positively associated with faster growth and higher per capita income. Therefore, it is acknowledged that enforcement of basic fundamental rights, such as human and property rights, can provide a conducive economic environment for factor accumulation in SSA.

The second dimension of Political Institutions involving the government's capacity to manage its resources and implement sound policies effectively is captured using the regulatory quality index. Its coefficient is positively signed and statistically significant, with a 1.192-factor improvement in income following a one standard deviation change. In other words, adopting less distortionary and market-friendly policies in trade and business is a stimulant for healthy competition and innovation, which are crucial for meaningful and sustainable development.

Excellent institutional quality plays an essential role in the process of economic development. A mixture of a firm rule of law, quality regulatory framework, and political stability are essential ingredients that governments should emphasise and prioritise at all stages of the development process, especially in SSA.

The more surprising finding in Table 1 is that neither the Infrastructure indicator nor its components, except the improved water source, are statistically significant. This outcome suggests that current levels and access to infrastructure in SSA countries have no relationship with economic growth. However, after introducing the governance indicators in col. (6), the infrastructure aggregate variable becomes highly significant. The result is in line with previous literature that found that the institutions and their quality boost economic growth determinants (e.g., Acemoglu, Johnson [43]). Consequently, the results of an insignificant effect of infrastructure access on growth might potentially be associated with Africa's relatively low institutional quality, which might have made infrastructure-less effective as a growth catalyst.

Finally, infrastructure and institution coefficients explain why the SSA region's growth performance has been unsatisfying. Mo [44] accentuates this relationship by associating low growth with corruption. He demonstrated that corruption raises investment costs and creates uncertainty about applying regulations for private investors. Corruption increases public enterprises' capital and operation expenditures of public enterprises, thus limiting private investment through insufficient and low-quality infrastructure [45]. The same outcomes have been drawn about the role of bureaucracy in businesses [46]. Furthermore, the above finding is consistent with

Oyelere (2010) study, as he explained that Sub-Saharan Africa did not experience significant development because of a combination of inferior technology, bad governments, extractive institutions, ineffective policy choices, health crises and poor education.

5. CONCLUSIONS

The current study has confirmed that sub-Saharan African economic performance is improving, and it has highlighted numerous explanatory variables that have notably and favourably affected the post-2000 growth level. However, these rates are still insufficient to allow sub-Saharan African countries to catch up with other emerging economies. This paper seeks to address the possible explanation of why the region's growth performance has been unsatisfactory.

The findings of this study provide important insights into the drivers of economic growth in Sub-Saharan Africa (SSA). The results suggest that several key macroeconomic, business environment, infrastructure, and political institution indicators are significant determinants of economic growth in the region.

The analysis showed that Sub-Saharan African economies must significantly raise their real GDP per capita growth rate on a sustainable basis to be at least par with other developing countries. The regression results indicate that macroeconomic stability should play a vital role in the economic recovery of several Sub-Saharan African economies. It will also be essential to attract an increased inflow of FDI to sustain and broaden sub-Saharan economic growth performance. This can be accomplished by creating a favourable environment for private investment using appropriate macroeconomic policies, ensuring the availability of infrastructure needed and skilled workers and establishing and maintaining an efficient regulatory and justice system that adequately protects property rights.

Macroeconomic stability is one of the critical ingredients of economic growth. The theoretical framework discussed earlier has shown that the macroeconomic environment significantly accelerates economic growth and development. Therefore, sub-Saharan African governments must implement sound monetary and fiscal policies to sustain the growth acceleration episode, which started in the mid-1990s. Reducing the inflation rate and overall deficit may have influenced the recent economic growth acceleration favourably. Therefore, policies and measures that reduce inflation and overall deficit must be sustained to maintain the current economic growth acceleration. Government borrowing from the domestic economy must be limited to provide greater scope for the private sector's bank financing.

The results reveal that the Political Institutions indicators play a crucial role in economic growth in SSA. The rule of law index, which captures citizens' respect for institutions that govern both social and economic interactions, is positively and significantly associated with income. The regulatory quality index, which measures the government's capacity to manage its resources and implement sound policies effectively, is also positively and significantly associated with income. These findings

align with previous literature and highlight the importance of governance quality in promoting economic growth.

The results also show that the infrastructure aggregate variable is insignificant until the governance indicators are introduced. This suggests that current infrastructure access levels in SSA countries have no relationship with economic growth, but the quality of governance may influence the relationship between infrastructure and growth. The finding that infrastructure is less effective as a growth catalyst in the presence of low institutional quality is consistent with previous literature on the relationship between corruption and economic growth.

Political conflicts in many sub-Saharan African countries have been reduced or eliminated. However, it is regrettable that several sub-Saharan African countries are still engulfed in political conflicts. Gains will be distributed widely throughout the continent and attempts to maintain effective macroeconomic policies and structural reforms will become more prosperous if regional and global steps are adopted to prevent future conflicts and settle the existing disputes that continue to erupt in Africa.

6. POLICY IMPLICATIONS

The findings of the study have important implications for policymakers in Sub-Saharan Africa. Firstly, governments should prioritize strengthening their governance structures to create a more conducive economic environment. This includes establishing a strong rule of law, improving the quality of regulation, implementing measures to increase transparency in government processes, reducing corruption, increasing public officials' accountability, and promoting political stability. These institutions are essential for creating a more stable and trustworthy political environment, thus, sustainable economic growth and development.

Secondly, the results suggest that investment in infrastructure is less effective as a growth catalyst in the absence of good governance. Therefore, policymakers should focus on improving governance quality in parallel with infrastructure investment. This would help to ensure that infrastructure projects are executed efficiently and effectively and that the benefits of such projects are more likely to be captured by the broader population. Policies aimed at improving infrastructure could include measures to improve transportation networks, energy supply, and telecommunication systems. For example, investing in roads, bridges, ports, and expanding energy production and distribution could help create a more favourable environment for businesses to operate.

Thirdly, the study highlights the importance of addressing corruption in promoting economic growth in SSA. Governments should prioritize efforts to reduce corruption and improve the overall business environment. This will help to create a more attractive investment climate and lower the costs of doing business, thereby promoting economic growth and development.

Finally, policy makers should prioritize measures that promote macroeconomic stability, such as monetary and fiscal policies that control inflation and manage public

debt levels. Similarly, improvements in the business environment can be seen as key to attracting investment, promoting entrepreneurship, and boosting productivity. Thus, policies should be prioritised to enhance the business environment, such as reducing bureaucratic red tape, improving access to finance, and enhancing property rights protection.

In conclusion, this study's findings highlight the need to implement economic and political reforms concurrently. This is because genuine transformation is more than economic aspects. It is also a profit incentive, governance tool, property rights, allocation of resources, and income equality. Economic strategy formulations addressing these challenges are inextricably linked to their sociopolitical settings and repercussions. Political and economic reform should go together, especially if SSA attains significantly higher and sustained economic growth, which benefits the entire population.

7. STUDY LIMITATION

One of the limitations of this paper is that it primarily focuses on the macroeconomic, institutional, and infrastructure aspects of reform while giving less weightage to the social aspects. The lack of consideration for social indicators, such as social capital, human rights, and ethnic conflict, may lead to an incomplete representation of the whole picture of a country's reform efforts. However, it is possible to consider social aspects such as ethnic conflict and civil wars as part of the Political Institutions (I) indicator. The effect of these conflicts on FDI and infrastructure may also have been considered through the Macroeconomic Stability (M) and Business Environment (B) indicators. These limitations suggest that future studies should consider a more comprehensive approach that considers the social aspect of reforms to provide a more nuanced and accurate understanding of the relationship between reforms and economic growth.

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(26) **Including: exchange rate, budget deficit, public debt, unemployment, and inflation**.

(27) **Including: foreign direct investment, credit to the private sector by banks, and the concentration exports index.**

(28) **Including: improved water source, improved sanitation facilities, and access to electricity for a population.**

(29) **Including: voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption.**

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APPENDICES

Appendix 1. Panel unit root tests for variables in level (intercept is included)

Tests Variables	Levin, Lin & Chu (LLC)	Im, Pesaran and Shin (IPS)
Initial GDP	-11.6460 (0.000)	-15.7851 (0.000)
Macroeconomic Stability (M)	3.73479 (0.001)	2.66146 (0.0039)
Business Environment (B)	-7.33402 (0.0000)	0.32819 (0.6286)
Infrastructure (F)	-8.28406 (0.0000)	1.10117 (0. 8646)
Political Institutions (I)	-8.5056 (0.0000)	-3.526 (0. 0002)

Source: Authors' calculations.

Appendix 2. Estimated panel data models for the sub-Saharan African

Dependent variable: Growth rate of GDP per capita	Pooled OLS	Fixed Effects	Random Effects
Initial GDP	-0.003 0.163		0.262 0.186
population growth	**0.817*** (0.282)**	**1.486*** (0.386)**	**1.183*** (0.287)**
oil rent	0.062 0.046	0.045 0.052	**0.076** (0.038)**
Macroeconomic Stability (M)	**0.802*** (0.182)**	**0.573*** (0.200)**	**0.712*** (0.185)**
Business Environment (B)	0.181 0.176	0.095 0.211	0.183 0.196
Infrastructure (F)	0.038 0.089	0.107 0.176	-0.007 0.09
Political Institutions (I)	0.045		
F statistic	**5.1*** **	**5.23*** **	
Adjusted R2	0.22	0.22	0.18
chi2			**66.17*** **
Hausman, chi2		**34.81*** **	
LM test, chi2			**8.67*** **
#observations	190	167	167
#Countries	10	10	10

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10%, respectively.

Source: Authors' calculations