



**BANK OF SIERRA LEONE**

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The State of Financial Inclusion in Sierra Leone

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## **SOURCES OF PRE-COVID-19 GROWTH IN SUB-SAHARAN AFRICA: Implications for Sierra Leone**

**By**

**Robert Dauda Korsu\***  
**Director, Research and Statistics Department**  
**Bank of Sierra Leone**

### **Abstract**

*The paper investigates the contributions of factor accumulation and factor productivity to economic growth in Sub-Saharan Africa, including Sierra Leone, in the Pre-COVID-19 pandemic period since the turn of the century. A production function is estimated in the context of the two-way fixed effects model using the instrumental variables estimator with cluster standard errors. The results shows that the shares of capital and labour in production are 0.14 and 0.86, respectively and the growth accounting result shows that for the 36 countries in the sample of Sub-Saharan African countries, total factor productivity contributed only 8.3 % to growth while the accumulation of capital and labour contributed 48.3 % and 43.4 %, respectively. The contribution of total factor productivity was negative in Sierra Leone, at -0.5 %, while capital and labour contributed 68.3 % and 32.2 %, respectively. Thus, building factor productivity is imperative in the post COVID-19 pandemic era for Sierra Leone and Sub-Saharan Africa in general. This requires more leveraging on technology, deepening economic diversification, more effort in building institutions for governance and rule of law, more support for education, and high quality and affordable health care as they build the productivity of capital and labour.*

## 1. Introduction

Sustained economic growth is important to poverty alleviation and economic growth is more likely to be sustainably pro-poverty reducing when it is underpinned more by factor productivity than factor quantity growth. Drawing from exogenous growth theory, technology and effectiveness of labour are important in long run growth (Solow, 1957). According to the endogenous growth theory, as in Romer (1986) and Lucas (1988), long-run growth is determined by (i) technology that builds the productivity of capital and (ii) investment in research and development that builds knowledge for enhanced labour productivity.

In Sub-Sahara Africa (SSA), the 1980s to the 1990s were decades of slow growth after independence. Since the turn of the century, there has been a change in growth outcomes. With an average annual growth of 4.3 %, the growth of Sub-Sahara Africa in the pre-pandemic 2000s (2000 to 2019) was more robust than in the 1980s and 1990s, which were 1.5 % and 2.1 % respectively, though it was a little lower than the growth of 4.5 % in the 1970s. In Sierra Leone, in spite of the impact of the global financial crisis of 2007 to 2009 and the Ebola Virus Disease of 2014 and 2015, the average growth of the economy during 2000-2019 was higher than the 1970s, 1980s and 1990s. Table 1.1 shows the growth rates of real GDP in Sub-Saharan Africa and other regions of the world. The improved growth performance is associated strongly with the end of the war in 2002, which created a more conducive environment for investment and led to increased capital flow for investment. Improvement in reforms and macroeconomic management relative to the 1980s was also a contributing factor.

**Table 1.1: Growth Rates of Real GDP in Sub-Saharan Africa and other Regions**

	1970- 1979	1980- 1989	1990- 1999	2000- 2019	2020	2021	2020- 2021
<b>Sub-Saharan Africa</b>	<b>4.5</b>	<b>1.5</b>	<b>2.1</b>	<b>4.3</b>	<b>-2.1</b>	<b>4.2</b>	<b>1.07</b>
Sierra Leone	2.7	1.1	-2.6	5.9	-2.0	4.1	1.07
<b>Other Regions</b>							
East Asia & Pacific	5.2	5.3	4.3	5.1	-0.2	5.8	2.82
Europe & Central Asia	3.4	2.4	1.5	1.9	-5.6	5.9	0.13
Latin America & Caribbean	6.1	2.2	2.8	2.6	-6.6	6.5	-0.05
Middle East & North Africa	5.6	0.3	4.5	3.7	-3.5	4.5	0.51
North America	3.2	3.1	3.2	2.1	-3.0	5.8	1.44
South Asia	3.0	5.6	5.4	6.1	-5.2	8.0	1.37

*Source:* World Development Indicators

The COVID-19 pandemic struck the world in 2020 while it started gradually at the end of 2019 and led to supply side disruptions, higher import prices, increased business investment uncertainty and shutdown of business and reduced operating hours, which led to negative growth rates in all regions of the world in 2020. In Sierra Leone, it was announced as an emergence in March 2020. Owing to the pandemic, Sub-Saharan Africa (SSA) contracted by 2.1 % in 2020, which was however the least regional contraction after East Asia and Pacific, which contracted by 0.2 %. The largest contraction was from Latin America and the Caribbean, with a contraction of 6.6 %. In 2021 recovery from the pandemic started, though it experienced a slowdown in 2022, driven by the spillover effects of the Russian-Ukraine war that started in February 2022. When recovery started in 2021, all the regions observed positive growth rates, with the highest coming from South Asia with 8.0 %, followed by Latin America and Caribbean with a growth of 6.5 % while North America, Europe & Central Asia, and East Asia & Pacific recorded 5.8%, 5.9 % and 5.8 %, respectively. Sub-Saharan African recorded



the least growth at the start of the recovery period, with growth of 4.2 % and Sierra Leone's growth was a little lower than this regional average, with a growth of 4.1 %.

While there was improved growth performance in Sierra Leone and Sub-Sahara Africa in the pre-COVID pandemic period since the turn of the century, compared with the previous three decades, it remains unclear what drove the growth of the region and Sierra Leone before the COVID-19 pandemic. That is, it is unclear whether it was driven more by accumulation of capital and growth of labour or by the productivity of capital and labour. The investigation is important because as countries try to build their economies after the COVID-19 pandemic, the role of total factor productivity in the process is important, given its implications for long run growth and the poverty reduction potency of factor productivity. This can provide lessons for post-pandemic growth strategy.

The objective of the paper is to estimate and compare growth sources in Sub-Saharan Africa<sup>1</sup> during the pre-pandemic era since the turn of the century and provide lessons for Sierra Leone for the post-COVID-19 Pandemic period. We focus on drawing lessons for Sierra Leone, a country that experienced one of the highest growth rates in Sub-Saharan Africa during 2000 to 2019, with an annual average growth of 5.9 %. In 2013, it recorded a growth higher than 20 %, which was an upper outlier in Sub-Saharan Africa. This growth was driven by the mining boom from iron ore production, but it experienced a contraction more than 20 % in 2015 due to Ebola Virus Disease and collapse of the price of the mineral that took the country to top growth in 2013. at the start of the post pandemic recovery in 2021. At the beginning of the post-pandemic recovery in 2021, it grew by less than the average growth in all regions of the world, including the Sub-Saharan African average.

The rest of the paper is organized as follows: section 2 is a brief review of the literature, Section 3 is the methodology, section 4 is empirical results and section 5 is conclusion.

## 2. Brief Review of the Literature

There has been a longstanding interest in studying the relative roles of factors of production and their productivity in growth. The pioneer work in the literature is Solow (1957), which found factor productivity to explain 88 % of the growth of output per labour of USA during the period 1900 to 1949, with 12 % explained by capital per labour accumulation. The work of Solow (1957) is similar to that of Easterly & Levine (2001), which found factor productivity explaining 60 % of the growth of US and the rest by factor quantity. These studies are however inconsistent with the pioneer studies on East Asia, Young, (1994) and Krugman (1994). These studies found that capital accumulation explained much of the growth of East Asian. This observation from East Asia has been observed also for other developing and emerging countries, as in Elias (1990) for a number of Latin American countries, which found that only 30 % of growth came from total factor productivity.

On Sub-Sahara Africa, while there are a few studies, much of their study periods are not in the period of strong growth in the region, the 2000s. This includes Tahari, et al. (2004), on 43 countries during the period 1960 to 2002, which has only three years falling in the 2000s. The work of (Ndiaye and Korsu, 2014) was on 14 of the 16 West African countries from 1980 to 2012. Though there are more than 10 years in this study that fall in the 2000s, it was limited to the West African countries. The work study (Korsu and Ndiaye, 2021) does not have sample up to 2019 in order to deal with the pre-pandemic era while the focus is on Sub-Saharan Africa. This may be due to the fact that the focus is not on the pre-pandemic period but in general on the era of strong growth in Sub-Saharan Africa. In addition, the focus was on Sub-Saharan Africa but not specifically the Sierra Leone implications,

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<sup>1</sup> Countries in the sample of Sub-Saharan African countries, based on data consideration, are: Central African Countries (Cameroon, Congo DRC, Congo Republic and Gabon); East African Countries (Burundi, Kenya, Madagascar, Tanzania, Uganda, Rwanda and Sudan); Southern Africa Countries (Botswana, Eswatini, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa and Zimbabwe) and West African countries (Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo).

though the war ended in Sierra Leone in 2002 and the country had series of growth strategies implemented.

A number of country specific studies in Sub-Saharan Africa also focused on periods before the 2000s. This includes Kalio (2012) for Kenya for the period 1970-2003, Dike (1995) for Nigeria, Amin (2002) for Cameroon and (Kallon, 2013) for Sierra Leone. The common result in these studies is consistent with Young (1994) and Krugman (1994) in East Asia and Tahari, et al., (2004) for 43 Sub-Saharan African countries. The meet conclusion is that factor quantity outperforms factor productivity contribution to growth.

Our departure from previous studies is threefold: (i) The study focus is the pre-pandemic era since the turn of the century so we can draw lessons for post pandemic recovery (ii) we account for potential endogeneity of capital and output by using the instrumental variable estimation in panel regression with a two-way error component model. (iii) we focus on drawing lessons for Sierra Leone, a country that was on average growth among the top growing countries in the pre pandemic period since the turn of the century, also experienced one of the highest growth rates in 2013, a growth higher than 20 %, driven by mining boom from iron ore production but experienced a contraction that was more than 20 % in 2015 due to Ebola Virus Disease and collapse of iron ore prices and at the start of the post pandemic recovery, it grew less than the average growth of all regions of the world, including the Sub-Saharan African average.

### 3. Methodology

#### 3.1 Model Specification

By leveraging on the Cobb-Douglas production function with output and capital, an output per labour model is specified as a function of capital per labour. The production function is considered to have constant returns to scale and diminishing marginal productivity of capital. Thus, the coefficient of capital per labour is the share of capital in output, while one minus the coefficient is the share of labour in production. The output per labour is given in equation (3.1).

$$y = \Pi(k)^\alpha \quad (3.1)$$

Where,  $y$  is output per labour,  $k$  is capital per labour,  $\Pi$  is total factor productivity and  $\alpha$  is share of capital in output. It can be shown from (3.1) that the growth of output per labour is related to the growth of capital per labour and growth of total factor productivity, representing the quality of the factors, as in equation (3.2)

$$\dot{y} = \dot{\Pi} + \alpha \dot{k} \quad (3.2)$$

Here,  $\dot{k}$  is growth of capital per labour and  $\dot{\Pi}$  is growth of total factor productivity.

#### 3.2 Estimation Technique

In estimating the shares of capital and labour in production the production function is estimated using panel data technique, to account for unobserved factors that are not included in the production function, in order to circumvent the problem of omitted variable bias when countries are pooled with Ordinary Least Squares (OLS) application. As there are 36 countries in the sample with data from 2000 to 2019 (twenty years), the fixed effects model and random effects model are estimated, which is followed by the Hausman test for the appropriate specification between the two. Moreover, for the

fixed effects model, the two-way version estimated and tested against the individual and time fixed effects with the use of the F-test for the significance of the country (individual) and time effects.

To the extent that serial correlation, heteroscedasticity and cross-sectional dependence can bias the standard errors of model estimates, serial correlations, heteroscedasticity and cross-sectional dependence tests are conducted following the model estimation and corrections are made accordingly.

However, as countries with high income are those who may have high financial resources for more capital and high capital can contribute to more income, there may be endogeneity in the model. That is, the error term may be correlated with the left-hand-side variable, capital per labour. This leads to inconsistent estimates of the share of capital. Hence, instrumental variable (IV) technique in the context of the Two-Stage Least Squares (2SLS) is used for the estimation of the error component models. That is, the fixed and random effects models.

Following the determination of the share of capital and labour in output, the link between output growth and its contributing factors is applied. This indicates that output growth (but not output per worker) can be written as in equation (3.3).

$$Y_g = \dot{\Pi} + \alpha K_g + (1 - \alpha)L_g \quad (3.3)$$

Where  $Y_g$  is growth of output,  $K_g$  is capital growth;  $L_g$  is labour growth;  $\dot{\Pi}$  is growth of total factor productivity;  $\alpha$  is the share of capital in output and  $(1 - \alpha)$  is share of labour in output.

Based on equation (3.3), the growth of total factor productivity, which is the contribution of total factor productivity to output growth, is obtained as in equation (3.4).

$$\dot{\Pi} = Y_g - \alpha K_g - (1 - \alpha)L_g \quad (3.4).$$

In equation (3.4),  $\alpha K_g$  and  $(1 - \alpha)L_g$  are the contributions of capital and labour, respectively to growth of output. Thus, equation (3.4) is applied to the data following the estimation of the shares of capital and labour in output, with data on the growth of output, capital and labour.

### 3.3 The Data

Table 3.1 shows the data sources and description. Thirty-six (36) Sub-Sahara African countries are used with data from 2001 to 2019. This is the period before the COVID-19 pandemic since the turn of the century and the countries are chosen on the basis of the availability of data on investment, measured by gross fixed capital formation. This is because the data on gross fixed capital formation is used for the derivation of the country capital stock for the sample of countries.

**Table 3.1: Data Description and Sources**

Variable	Description	Source
<b>Output</b>	Gross Domestic Product at constant prices	World Bank's World Development Indicators (WDI).
<b>Labour</b>	Labour Force	World Bank's World Development Indicators (WDI)
<b>Investment</b>	Gross fixed capital formation at constant prices	World Bank's World Development Indicators (WDI)
<b>Capital</b>	Real stock of capital	Derived using perpetual inventory method with data gross fixed capital formation (investment)

The perpetual inventory method of determining capital stock is used to determine the capital stock. This requires an estimation or assumption about a depreciation rate and a rate of 5 % is used. This is not far from what Kallon (2013) estimated as the depreciation rate for Sierra Leone. It also requires estimation of the growth of investment from 2000 to 2019 based on real investment data and this was done by the application of the Ordinary Least Squares (OLS) to the equation of the log of investment on trend over the period 2000 to 2019 and use the coefficient of the trend term is used as the growth rate of investment during this period.

#### 4. Empirical Results

##### 4.1 The Model Results for the Share of Factors in Output

In Table 4.1, we present the results of the preferred estimated model. The result of the estimated model shows that the coefficient of capital per labour is 0.144, which is significant at 1 % level of significance. Hence, the share of capital in production is 0.14 and that of labour is 0.86.

The model was estimated by first estimating the two-way fixed effects model, the individual fixed effects model, the time fixed effects model and the random effects model. The appropriate form of the fixed effects model associated with the data was estimated and then tested against the random effects model. These results are shown in Appendix Table 1. Appendix Table 2 shows the result of testing for the existence of various versions of the fixed effects model. It also shows the result of testing the selected fixed effects model against the random effects model. The result shows that the two-way fixed effect is preferred, and this is also superior to the random effects model.

**Table 4.1: The Estimated Production Function (Dependent Variable: Log of output per Labour)**

2-Way IV Fixed Effects with cluster SE	
<b>Log(capital per labour)</b>	0.144*** (0.0465)
<b>Constant</b>	6.641*** (0.384)
<b>Number of Countries</b>	36

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Diagnostic tests are done on the preferred fixed effects model (the estimated two-way fixed effects model) and the results are shown in Appendix Table 3. The results show that there is heteroscedasticity and autocorrelation in the idiosyncratic error term of the model. This leads to unbiased estimates of standard errors of the coefficient and therefore leads to inefficient estimates of coefficients, requiring correcting the preferred fixed effect model for serial correlation and heteroscedasticity. However, in order to correct for potential endogeneity of capital and output and also correct for serial correlation and heteroscedasticity, the instrumental variable (IV) estimation is used in the estimation of the corrected two-way fixed effects model and the cluster standard errors are used for correction, as it corrects for both heteroscedasticity and serial correlation. Both the first and second lags of capital per labour are used as instruments for capital per labour.

##### 4.2 The Contributions of Capital, Labour and Total Factor Productivity to Growth

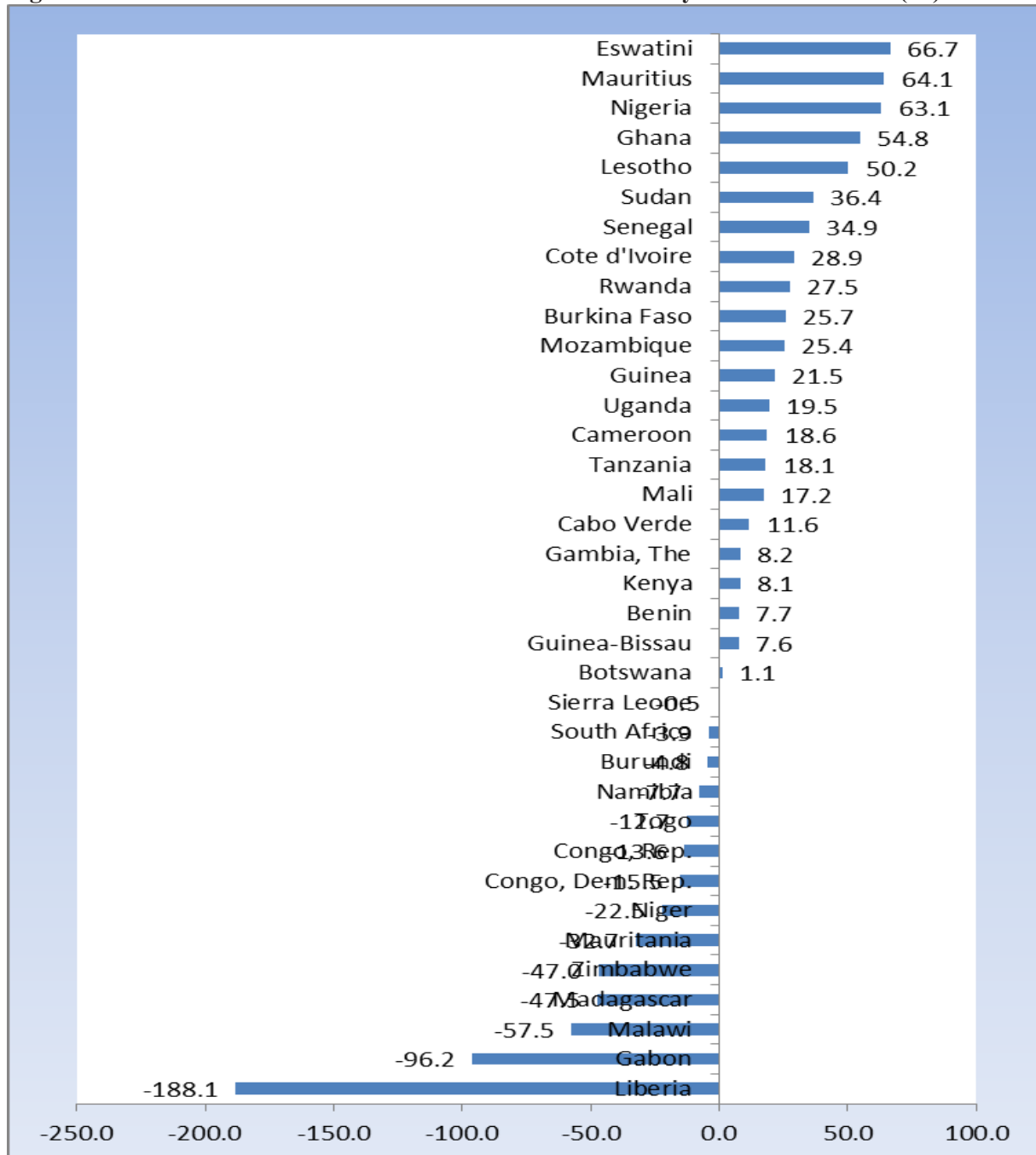
In Table 4.2, we present the growth of real GDP and the contributions of total factor productivity to these growth rates for all the countries in the sample. The growth accounting result shows that for the sample of Sub-Saharan African countries, out of the growth of 4.4 % during the period 2001 to 2019,

total factor productivity contributed 0.4 % while capital and labour contributed 2.1 % and 1.9 %, respectively. This translates in relative terms to 48.3 %, 43.4 % and 8.3% respectively for capital, labour and total factor productivity. Thus, the quantity of factors contributed a total of 90.1 % to the growth of SSA. The low contribution of total factor productivity to growth in SSA comes largely from the negative contribution of -18.5 % in the Central African countries while countries in East Africa are on the top with total factor productivity contribution of 14.2 %, followed by Southern African countries with total factor contribution of 13.8 % while in West Africa, total factor productivity contributed 8.6 %. Figure 4.1 shows the relative contributions of total factor productivity by country.

**Table 4.2: Growth and Contribution of Total Factor Productivity in Sierra Leone and Regions in Sub-Saharan Africa**

Region	Growth	Absolute Contributions (%)			Relative Contributions (%)		
		Capital	Labour	TFP	Capital	Labour	TFP
Central Africa	3.9	2.4	2.3	-0.7	60.8	57.7	-18.5
East Africa	5.2	2.2	2.2	0.7	43.1	42.7	14.2
Southern Africa	3.8	1.9	1.4	0.5	49.4	36.8	13.8
West Africa	4.6	2.2	2.0	0.4	47.7	43.7	8.6
Sub-Saharan Africa	4.4	2.1	1.9	0.4	48.3	43.4	8.3
Sierra Leone	5.9	4.1	1.9	-0.03	68.3	32.2	-0.5

**Countries in the sample are :** Central Africa are: Cameroon, Congo DRC, Congo Republic and Gabon; countries in East Africa are Burundi, Kenya, Madagascar, Tanzania, Uganda, Rwanda and Sudan; countries in; countries in Southern Africa are: Botswana, Eswatini, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa and Zimbabwe while the countries in West Africa are : Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

**Figure 4.1: Relative Contributions of Total factor Productivity to Growth in SSA (%)**

For Sierra Leone, out of the growth of 5.94 % during the period 2001 to 2019, total factor productivity contributed negatively, with -0.03 %, while capital and labour contributed 4.06 % and 1.91 %, respectively. In relative terms, this is equivalent to -0.5 % for the contribution of total factor productivity, 68.3 % for capital contribution and 32.2 % for labour contribution.

The negative contribution of total factor productivity to the pre-COVID-19 pandemic growth in Sierra Leone and the low contribution of total factor productivity to the growth of SSA suggest the need for strengthening the use of technology to build the productivity of capital and building labour productivity through further scaling up of the depth and spread of vocational training and education in general, with the aim of building human skills to enhance labour productivity in Sierra Leone as well as Sub-Saharan Africa in general. This is more important because it promotes poverty reduction on a

more sustainable basis than where the growth is driven largely by the quantity of capital and the quantity of labour, rather than their productivity.

## 5. Conclusion

The role of total factor productivity, a measure of the quality of factors of production, is important in sustaining inclusive growth and reducing poverty. As the COVID-19 pandemic struck the world in 2020, economic growth of all regions (as classified by the World Bank and IMF) was negative in 2020. As countries strive for a prosperous post-pandemic era, the sustainability of growth and poverty reduction impact in the post-pandemic era can be enhanced when the role of productivity of factors of production in growth is enhanced. In light of this, we investigated how factor productivity and factor quantity contributed to the growth of Sub-Saharan Africa, including Sierra Leone, during the pre-COVID-19 pandemic era since the turn of the century. In Sierra Leone, this pre-pandemic period since the turn of the century is only two years more than the post-war pre-pandemic period as the decade old war started in 1991 and was declared over in 2002.

An output per labour model was estimated as a function of capital per labour using the instrumental variable to estimate a two-way fixed effects model for 36 sub-Saharan African countries with available data for all variables for the period 2000 to 2019. While the investment data for determining the capital stock using the perpetual inventory method runs from 2000 to 2019, the data for the estimation period is from 2001 to 2019 since one period is lost in the determination of the capital stock of countries.

The result shows that the shares of capital and labour in production are 0.14 for capital and 0.86 for labour and for the sample of Sub-Saharan African countries, out of the growth of 4.4 % during the period 2001 to 2019, total factor productivity contributed 0.4 % while capital and labour contributed 2.1 % and 1.9 %, respectively. In relative terms, this is equivalent to 8.3 % for the contribution of total factor productivity, 48.3 % for capital and 43.4 % for labour. In Sierra Leone, out of the 5.9 % growth during the period 2001 to 2019, total factor productivity contributed negatively, with -0.03 %, while capital and labour contributed 4.06 % and 1.91 %, respectively, which translates in relative terms to -0.5 % for the contribution of total factor productivity and 68.3 % and 32.2 %, respectively for the contributions of capital and labour.

In light of these results, strengthening the use of technology to build the productivity of capital and building labour productivity through further scaling up of the depth and spread of vocational training and education in general, with the aim of building human skills to enhance labour productivity in Sierra Leone as well as Sub-Saharan Africa is imperative. It is also important to strengthen the quantity and quality of basic health care as it improves the quality of labour. Moreover, improving the economic diversification process and outcome is necessary since it increases the productivity of labour, making more labour to be employed in the more productive sectors, which increases productivity. More Sub-Saharan African efforts in building institutions for governance and rule of law is also useful given its productivity impact on capital.



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## APPENDIX

Appendix Table 1: The Competing Production Function of Output per Labour, in log

VARIABLES	(1) Two-Way Fixed Effects	(2) Individual Fixed Effects	(3) Time Fixed Effects	(4) Random Effects
Log ( capital per worker)	0.140*** (0.0144)	0.266*** (0.0106)	0.746*** (0.00962)	0.306*** (0.0114)
Constant	6.307*** (0.116)	5.339*** (0.0914)	1.781*** (0.0954)	5.342*** (0.110)
R-squared	0.992	0.990	0.902	
RMSE	0.0956	0.105	0.332	0.118
Number of countries	36	36	36	36

Standard errors in parentheses \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Test	Country Fixed Effects	Time Fixed Effects	Country and Time Fixed Effects	Two-Way Fixed Effects but not Random Effects (Hausman Test)
P-value for Rejection of the Null Hypothesis	0.000	0.000	0.000	0.000
Test Conclusion	The country fixed effects are significant	Time fixed effects are significant	Country and Time fixed effects are significant	Fixed effect model is better than the Random effect model

Appendix Table 2: Tests for the nature of the idiosyncratic error component

Appendix Table 3: Model Diagnostics Tests

1. Cross-Sectional Dependence		
Pesaran Abs Test	Pesaran stat=-2.071 P-Value= 0.038	Do not reject the null of no cross-sectional dependence
Frees Test	Frees stat = <b>11.104</b>  <b>Critical Values</b> 10 %: 0.136 5 % : 0.178 1 % : 0.260	
2. Group-wise Heteroscedasticity		
Modified Wald test for group-wise heteroscedasticity in fixed effect regression model	Chi2 (36) = 32828.87 P-Value= 0.000	Reject the null of no heteroscedasticity
3. Autocorrelation		
Bias-corrected Born-Breitung Q(p)-test	Q(2) stat: Chi2=24.34 P-value= 0.000	Reject the null of autocorrelation up to second order

## The State of Financial Inclusion in Sierra Leone

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### Abstract

*This paper highlights the current state of financial inclusion in the country and outlines key interventions that look to further increase financial inclusion in Sierra Leone. In 2017, the World Bank reported that the rate of financial inclusion in Sierra Leone was only 20%. This meant that only 20% of the adult population had an active financial account at a formal financial institution. Since then, the financial landscape in Sierra Leone has evolved. The Bank of Sierra Leone introduced new regulatory policies and guidelines making it easier to access financial institutions, and the sector has seen a dramatic increase in financial access points. In theory, this is expected to make finance more accessible across the country. In 2018, mobile money accounted for about 75% of financial access points, which has grown to 97% in 2021. However, the data still shows the heavy concentration of financial access points in large urban city centers such as Freetown, Kenema and Bo. While these interventions have proved to improve financial inclusion in Sierra Leone 29% in 2021 as per the latest World Bank Findex Report 2022, there is still significant work that needs to be done in the financial sector. With the launch of the country's latest National Strategy for Financial Inclusion 2022 – 2026, there are still several challenges and limitations that affect equal access to client-centric products, particularly for women and micro, small and medium enterprises. As such the new National Strategy for Financial Inclusion focuses on specific interventions along client-centric product diversification, digital financial services and financial literacy and consumer protection efforts to further improve financial inclusion in Sierra Leone.*

\*The views expressed in this paper are those of the author but not necessarily those of the institutions of affiliation

## 1. Introduction

The recent impact of COVID-19, global financial crisis and other macroeconomic challenges have shown that it has become increasingly important that the underserved populations in Sierra Leone and globally are included in the larger financial ecosystem. Narrowing this gap between those who have access to formal financial services and those who have been left on the margins tremendously impacts a country's economic growth and the welfare of the population. There are several reciprocal benefits of financial inclusion, including increased household income, increased security, reduced vulnerability and increased economic growth. Overall, affordable access to and use of financial services can empower people and communities, particularly women and rural communities. As a result, financial inclusion is an enabler and accelerator of economic growth for a country's development.<sup>2,3</sup>

While there are various iterations of what financial inclusion means, it is important to know that financial inclusion is a multi-dimensional concept. The World Bank offers a commonly accepted definition where financial inclusion is seen as “individuals and businesses [having] access to useful and affordable financial products and services that meet their needs and are delivered responsibly and sustainably” (World Bank, 2018).<sup>4</sup>

There are three commonly accepted components in the definition of financial inclusion, which are access, usage and quality. These dimensions are also frequently used to measure financial inclusion in a country. Table 1 shows the dimensions and definitions.

**Table1: Dimensions and Definitions of Financial Inclusion**

Dimension	Definition <sup>5</sup>
<b>Access</b>	Ability to use available financial products and services offered by formal financial service providers
<b>Usage</b>	Depth or extent (regularity, frequency and duration) of financial services and products used over time; also measures uptake in the use of financial services (volume and value of transactions)
<b>Quality</b>	Evaluates how financial services fulfil the needs of its users from different angles, including affordability, convenience, fair treatment, choice and other aspects related to consumer protection, financial education, financial literacy and other areas

The purpose of this paper is to discuss the state of financial inclusion in Sierra Leone. These discussions draw heavily from the National Strategy for Financial Inclusion 2022-2026 (NSFI-2), to inform the readers about the status and progress of financial inclusion in Sierra Leone. The remainder of this paper is organised as follows: Section 2 highlights Sierra Leone's financial inclusion journey, Section 3 demonstrates the methodology used to gather the presented data, Section 4 provides an overview of the current Financial Inclusion

<sup>2</sup> <https://www.centerforfinancialinclusion.org/why-financial-inclusion-matters>

<sup>3</sup> <https://www.unsgsa.org/financial-inclusion>

<sup>4</sup> “Financial Inclusion” (World Bank, 2018)

## Landscape in Sierra Leone and, lastly Section 5 provides a conclusion.**2. Sierra Leone’s Financial Inclusion Journey**

Sierra Leone embarked on its financial inclusion journey in August 2009 when the Bank of Sierra Leone (BSL) became a member of the Alliance for Financial Inclusion (AFI). In 2012, the BSL announced its commitment to the Maya Declaration – a global initiative for responsible and sustainable financial inclusion that aims to reduce poverty and ensure financial stability. BSL’s commitment was furthered in 2016 when the country launched its first National Strategy for Financial Inclusion 2017 – 2020 (NSFI-1), with a vision to “*make financial services available, accessible and affordable to all Sierra Leoneans and micro, small and medium enterprises (MSMEs), and support inclusive and resilient private-sector-led growth.*”<sup>6</sup>

There were several noteworthy successes achieved during the implementation of the NSFI-1 which laid a solid foundation for financial inclusion in Sierra Leone and a path forward in the development of a new NSFI. Some of these successes include hosting Fintech Challenges, the establishment of a Regulatory Sandbox and the development of a Financial Literacy Framework and Action Plan. The conduct of a Geospatial Mapping study, development and adoption of Tiered KYC Guidelines, publication of Guidelines on the Use of Agents, and the establishment of the Sierra Leone Collateral Registry were also noteworthy achievements. The BSL also initiated the process to implement a national retail payment switch and the process to establish a deposit insurance scheme. To support these initiatives, a National Payment Systems Act (NPSA) was recently passed by the Parliament, and a Deposit Protection Fund (DPF) Act is before Parliament for legislative review and subsequent enactment.

Following the implementation of the NSFI-1, an evaluation was conducted to assess its merits. This assessment and recommendations served as one of the key building blocks in the development of the new NSFI-2.

In developing the new NSFI-2 for Sierra Leone, it was important to first assess the state of financial inclusion within the country. However, accurate and reliable data on financial inclusion and the financial sector remains a challenge. To date, the few sources that have been often used are the 2017 World Bank Findex Report, and the 2018 Geospatial Data Analysis and Mapping for Financial Inclusion Report conducted by the BSL with support from the World Bank.

Assessing the current state of financial inclusion in Sierra Leone was an important step to developing the NSFI-2. The importance of having a new financial inclusion strategy is also tied to broader government priorities to improve people’s lives through education, inclusive growth and building a resilient economy. The findings from the qualitative and quantitative data helped determine the priority intervention areas and the targeted underserved groups that the BSL and the sector intend to focus on over the next 5 years.

These intervention areas focus on four underserved groups: women, youth, rural populations and micro, small, and medium enterprises (MSMEs). Both primary and secondary data

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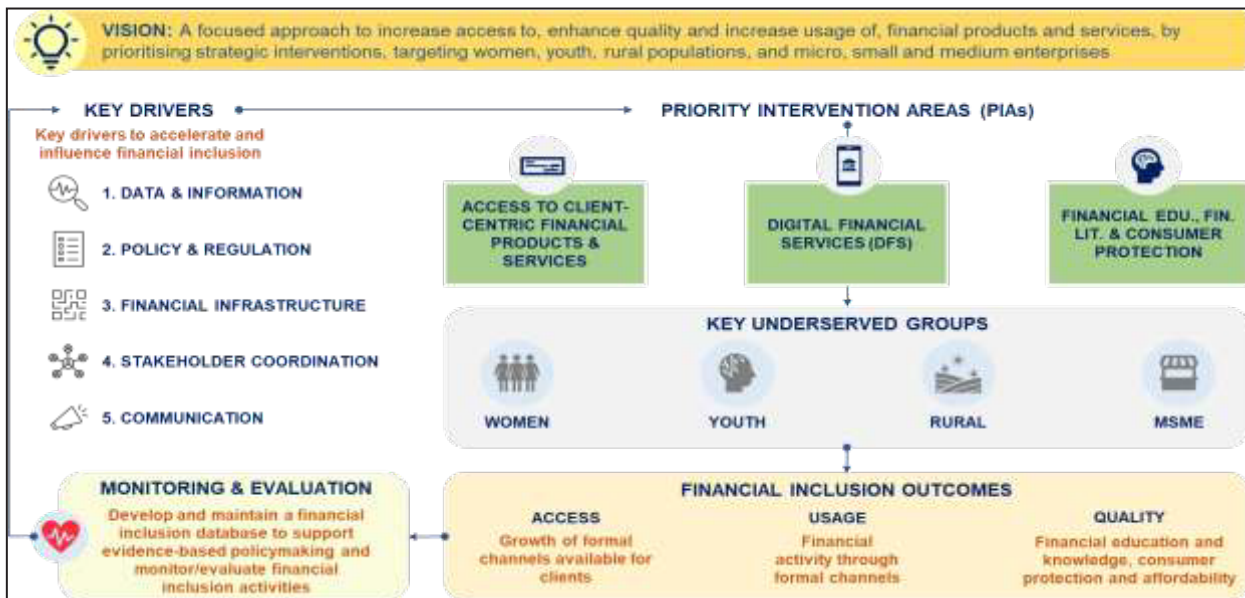
<sup>6</sup> Sierra Leone National Strategy for Financial Inclusion (NSFI) 2017 – 2020

(outlined in the Strategy), indicate that these groups face several challenges such as a lack of adequate products, high transaction costs and stringent documentation requirements to better access finance. As a result, developing interventions that focus on these groups will have a significant impact on financial inclusion in the country.

Under the NSFI-2 there are three priority intervention areas (PIAs). These are discussed as follows:

- Access to Client-Centric Financial Products and Services: to promote the development of, and expand access to client-centric financial products and services geared specifically toward key underserved population groups
- Digital Financial Services (DFS): to promote and leverage innovative technology solutions to exponentially expand access to, and usage of, affordable, safe and appropriate digital financial products and services
- Financial Education, Financial Literacy and Consumer Protection: to ensure all Sierra Leoneans have access to appropriate and consistent financial education opportunities, which improves their ability to understand and manage their finances and confidently access and utilise available financial products and services while ensuring their safety and protection

Figure 1 - NSFI-2 Strategic Framework



### 3. Methodology

The findings are based on an assessment of Sierra Leone’s financial inclusion context using the following dimensions: access, usage and quality. Both quantitative and qualitative data were collected. Quantitative data were taken from previously published reports and quarterly returns from financial institutions, which are submitted to BSL. On the other hand, consultative meetings with a diverse range of stakeholders including financial institutions,

government ministries and agencies, mobile money operators (MMOs), civil society organisations, etc. were held to gather qualitative data. Secondary sources from existing research conducted by the BSL, World Bank, UNCDF and other development agencies and firms, and other government agencies were also used. The combination of qualitative and quantitative data was compiled to determine the current state of financial inclusion in Sierra Leone, including the gaps in the market, geographic areas to focus on, the right population groups to target and develop the key interventions and activities that make up the new NSFI-2.

It is worth noting that there were various limitations to conducting the assessment of Sierra Leone's state of financial inclusion and a complete assessment is therefore beyond the scope of this paper. The following are brief discussions on these limitations.

- i. Reliance on external data is the common approach but does not provide a complete representation of financial inclusion in the country. The limitation of the current assessment is that no formal demand-side financial inclusion survey has been completed. Therefore, there is a gap in identifying local data to best assess the demand-side of financial inclusion. This is an activity planned by the Bank of Sierra Leone in 2022 to help establish a baseline to measure financial inclusion going forward.
- ii. There are additional gaps in the external data used, such as the lack of disaggregation by relevant categories (e.g. age, sex, location). Moving forward, under the NSFI-2, there will be a concentrated effort to ensure robust relevant disaggregated data collection.
- iii. Specific financial inclusion indicators are currently not being tracked or developed by the BSL. This makes it difficult to accurately measure the progress of financial inclusion and the impact that programs have on the sector. A new financial inclusion dashboard is however being developed under the NSFI-2, and the upcoming demand-side survey will help establish a baseline and appropriate financial inclusion indicators, which can be tracked to gauge developments in financial inclusion.

#### **4. Financial Inclusion in Sierra Leone: A Brief Assessment**

This section draws heavily from the National Strategy for Financial Inclusion (2022- 2026). We discuss access, usage and quality perspectives of financial inclusion using the available data.

##### ***(i) Access***

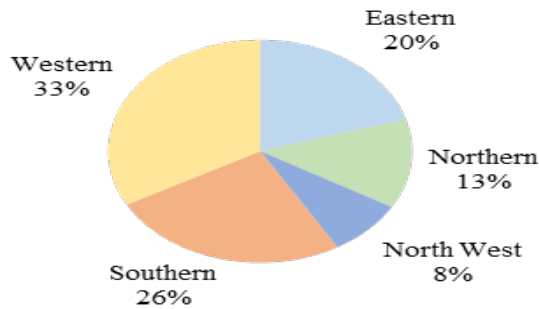
In 2018, the BSL, with support from the World Bank, conducted a Geospatial Survey to map financial inclusion and financial access points in the country. The report revealed that of the 1,811 financial access points that were mapped during the exercise, 75% of them were mobile money agents (BSL,2018).<sup>7</sup> The next largest percentage of access points were microfinance institutions (MFIs) trailing far behind at just 7% of total access points. From a regional perspective, the Western and Southern regions reported 59% of access points cumulatively,

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<sup>7</sup> Geospatial Data Analysis and Mapping for Financial Inclusion Project Report (BSL, 2018)

while the Eastern region recorded 20% of access points (Figure 2). Financial access points were even more concentrated within urbanised districts such as Western Urban, Bo, Kenema and Bombali, totalling over 67% of financial access points (BSL,2018).<sup>8</sup>

Figure 2 - Financial Access Points by Region (%) (2018)

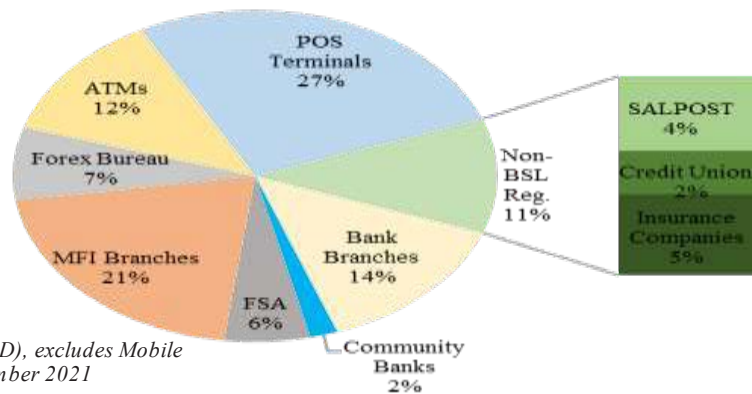


More recent data from December 2021 reveals a similar picture where mobile money agents continue to grow exponentially, compared to other financial access points, with over 35,000 agents making up over 97% of all formal access points.<sup>9</sup>

Other BSL-regulated formal financial access points include 14 commercial banks (with over 140 branches combined, 128 ATMs and 280 POS terminals), 54 MFIs with over 200 branches combined, 59 financial service agents (FSAs) and 17 community banks. Collectively, these institutions account for 89% of all non-mobile money financial access points. The remaining 11% represents non-BSL regulated access points such as credit unions, insurance companies and Sierra Leone Postal Service (SALPOST) as shown in Figure 3.

When disaggregated regionally, the current data shows a similar trend to the 2018 Geospatial Report where financial access points are heavily concentrated in the Western Region (making up almost 50% of access points) as shown in Figure 4. The Eastern, Northern, and North West regions continue to lag, having fewer financial access points.

Figure 3: Figure 3 - Types of (Non-Mobile Money) Access Points (%) (2021)

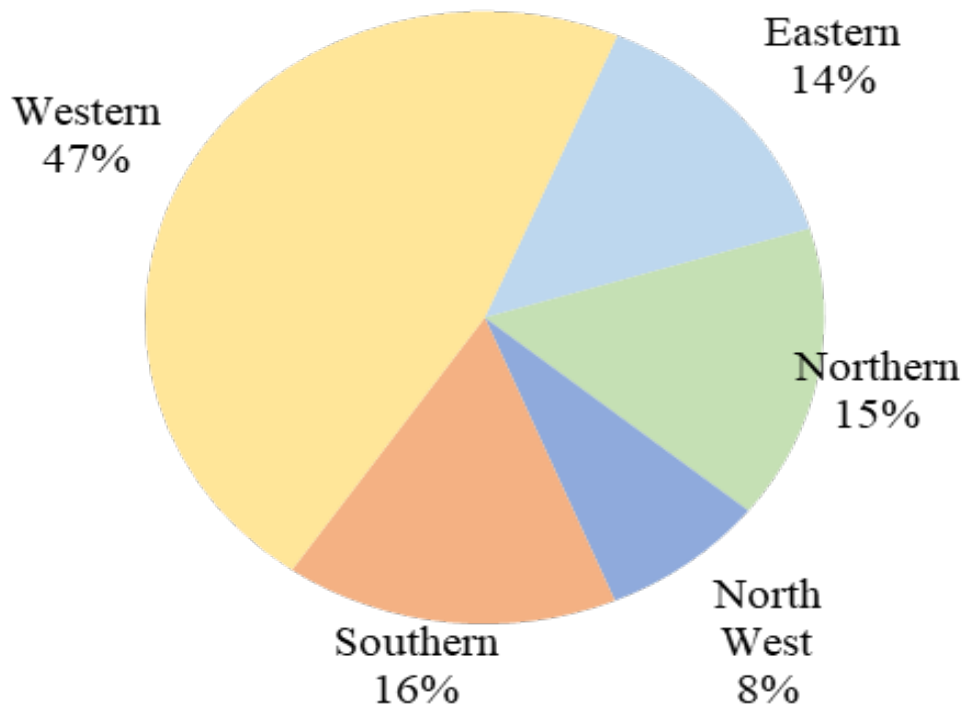


Source: Data BSL (OFISD, BSD), excludes Mobile Money Agents, December 2021

<sup>8</sup> Geospatial Data Analysis and Mapping for Financial Inclusion Project Report (BSL, 2018)

<sup>9</sup> Data retrieved from relevant BSL departments.



**Figure 4 - Financial Access Points by Region (%) (2021)**

Source: Data BSL (OFISD, BSD), December 2021

### (ii) Usage

When trying to assess the usage of financial services, we looked at measuring both the volume and value of transactions at various financial institutions as well as the number of active accounts (Table 2). However, due to the lack of available data, there are gaps in getting a full picture of usage.

Table 2 - Number of Accounts, Volume and Value of Transactions (2021)

Account Type	Number of Accounts	Volume/number of Transactions (2021)	Value (Le '000) of Transactions (2021)
Current Accounts*	520,138	-	8,130,759,369
Saving Accounts*	1,661,508	-	2,614,545,612
Timed Deposits	4,873	-	847,240,230
Mobile Money Accounts	6,517,573	59,167,418	9,556,236,167
Loan Accounts†	399,427	14,499‡	367,918,438
<b>Total</b>	<b>9,103,519</b>	<b>59,181,917</b>	<b>21,516,699,816</b>

Source: BSL 2021



*Note: \*Commercial Banks, all MFIs; † all MFIs; ‡ Number of new loans disbursed by credit-only MFIs*

However, keeping in line with access data, mobile money accounts make up more than 70% of active accounts. Qualitative data from consultations also showed that financial institutions also lack product diversification which often leads to low uptake of ownership.

### **(iii) Quality**

Of the three dimensions of financial inclusion, quality tends to be the most multi-faceted and complex to measure. Quality of financial services incorporates several different elements such as affordability, user-product fit, customer experience, financial education and financial literacy. While assessing affordability can be easy, other elements such as financial literacy and customer experience are difficult to measure.

#### **Affordability**

- Mobile money transfer fees and voice and data fees are also seen as too high, even though they are generally at par with the rest of ECOWAS and the Mano River Union. For example, in 2020 NATCOM imposed a floor price for data and voice, but in December 2021 NATCOM revised the tariffs downward.<sup>10,11</sup>
- These high transaction costs are a barrier to financial inclusion – particularly in Sierra Leone where 43% of the total population lives below the poverty line of \$1.90 USD (World Bank, 2020).<sup>12</sup>

#### **User-product fit**

- Consumers also have limited financial services from commercial banks that benefit or cater to consumer needs due to the limited product offerings.
- There is very limited product diversification. While some accounts in the market cater to farmers, youth and women, the low uptake in ownership of these accounts show that they are not necessarily client centric.
- There is limited readily available data on account ownership by type of account.

#### **Customer experience**

- Aside from affordability and adequate product-user fit, qualitative data shows that consumers are unhappy with the quality of service at financial institutions from fraud to poor customer service, long queues at banks and delays in receiving payments.
- The BSL introduced a process for tracking complaints and redressals and has collected data in this regard from financial service providers over the past few years (Table 3). While data across the MMOs are more thorough in their regular reporting, reporting from commercial banks from 2018 to now shows a need for significant improvement in complaints and redressal systems.

<sup>10</sup> [Sierra Leone implements controversial new floor plan for phone calls](#) (ITweb Africa, 2020)

<sup>11</sup> [NATCOM Announces Reduction of Mobile Network Tariffs](#) (Sierra loaded, 2021)

<sup>12</sup> [Poverty and Equity Brief](#) (World Bank, 2020)

Table 3 - Sample of Complaints Currently Reported and Tracked by BSL

FSP Type	Complaint Category	# Of Complaints
Mobile Money Providers*	PIN Reset	1793
	Account Unlock	498
	Cash Reversals	12993
	Fraud	5748
Commercial Banks**	Various	19

Source: \*BSL (from MMO Returns Data, period ending 2021); \*\*BSL from Consumer Protection Section, 2016-2021)

### Financial education and financial literacy

- Currently, there are no active indicators to measure financial education and financial literacy in the country. Moreover, aside from tertiary institutions, there are no accredited centers that offer *formal* training or instruction to increase financial education and literacy in Sierra Leone.
- According to the 2020 Annual School Census, there are more than 2.6 million students enrolled at the basic and senior secondary education level, where over 50% of these students are girls (MBSSE, 2021).<sup>13</sup> Unfortunately, these groups do not have access to formal instruction on basic financial education concepts.
- While there are some financial institutions and NGOs that undertake activities related to or that are considered “financial literacy” programs, these programs are often uncoordinated, without coordination with the BSL.
- Sierra Leone currently faces low literacy rates. The literacy rate is 43% for those aged 15 and over. Given the large unbanked population. This suggests that the level of financial literacy and the impact of financial literacy programs are low.

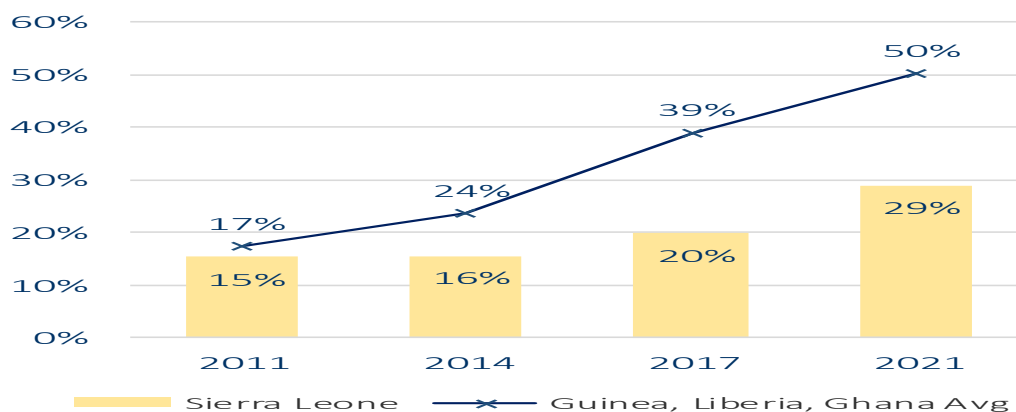
### Trend of Account Ownership

Since 2017 and 2018, there have been several interventions both by the BSL and the industry, which has increased the level of financial inclusion in the country. This is evident with the consistent growth in the country’s financial inclusion rate as per the Global Findex Report shown in Figure 5. A large contribution to this growth is the improvement the country has seen in the use and adoption of mobile money. The BSL has also made progress with regulations that support and foster financial inclusion with the introduction of tiered know-your-customer guidelines, consumer protection guidelines, a collateral registry and other regulatory frameworks. This continues to be promising as Sierra Leone begins implementation of the new NSFI-2 that focuses on embracing technology, educating the population and diversifying financial products and services. However, figure 5 shows that Sierra Leone still lags behind similar countries in the region (Guinea, Liberia and Ghana), and thus there remains work to be done across the industry, particularly in the areas of client-centric products, digital financial services, financial literacy, and data and measurement. These areas are priority items that BSL is dedicated to improving on in its effort to improve financial inclusion.

<sup>13</sup> 2020 Annual School Census (MBSSE, 2021)

The development of the NSFI-2 displays a level of optimism and commitment, despite the challenges over the past few years, to move forward in the country’s financial inclusion journey and spur inclusive economic growth.

**Figure 5 - Account Ownership in Sierra Leone (% , 15+ years)**



#### 4. Conclusion

An inclusive financial system is not only pro-growth but also pro-poor with the potential to boost growth and employment, and in turn, reduce income inequality and poverty, and promote social cohesion and shared economic development. Thus, financial inclusion is not just about getting more Sierra Leoneans with accounts but supporting and enabling broader development goals.

There have been several interventions both by the BSL and the industry that has increased the level of financial inclusion in the country. A large contribution to this growth is the improvement the country has seen in the use and adoption of mobile money. The BSL has also made progress with regulations that support and foster financial inclusion with the introduction of tiered know-your-customer guidelines, consumer protection guidelines, a collateral registry and other regulatory frameworks. This continues to be promising as Sierra Leone begins implementation of the new National Strategy for Financial Inclusion (NSFI-2) that focuses on embracing technology, educating the population and diversifying financial products and services. However, Sierra Leone still lags behind similar countries in the region (Guinea, Liberia and Ghana), and thus there remains work to be done across the industry, particularly in the areas of client-centric products, digital financial services, financial literacy, and data and measurement. These areas are priority items that BSL is dedicated to improving on in its effort to improve financial inclusion.

The development of the NSFI-2 displays a level of optimism and commitment, despite the challenges over the past few years, to move forward in the country’s financial inclusion journey and spur inclusive economic growth.

**PRICE DYNAMICS IN SIERRA LEONE:  
AN AUTO-REGRESSIVE DISTRIBUTED LAG MODEL APPROACH**

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**Abstract**

*The paper investigates the macroeconomic determinants of price dynamics in Sierra Leone using data from 1971 to 2019. Tests for stationarity are applied in order to estimate a dynamic model of the price level. The result shows that in the short run, money supply has a positive one- and two-year lag effects on the price level while exchange rate has a positive contemporaneous effect on the price level while real GDP has a negative effect on the price level after two years but with evidence of one-year positive significant effect. In addition, lending rate has one-to-three-year lag negative effects on the price level, without a contemporaneous effect. However, in the long run, while real GDP has a negative effect on the price level in Sierra Leone, lending rate and exchange rate have positive effects of the price level. Hence, in the long run, structural policies that build productivity and economic diversification are imperative in the drive towards price stability and in the short run, exchange rate stabilisation policies and policies that reduce aggregate demand matter for price stability in Sierra Leone.*

\*The views expressed in this paper are those of the author but not necessarily those of the Bank of Sierra Leone.

## 1. Introduction

Inflation remains a tax to both the private sector and governments in developed, emerging and developing countries because it reduces the value of all assets and government revenue in real terms. It also creates economic uncertainty as inflation uncertainty is inimical to growth. Its effect on an economy can be negative leading to the erosion of purchasing power and increasing the cost of borrowing. Central Banks normally have price stability as a primary mandate; drive from knowledge of the evil inflation comes with. The determinant of inflation is still a very active economic research issue as it forms the objective of monetary policy in central banks around the world, including the Bank of Sierra Leone.

In Sierra Leone, the rate of inflation was high in the 1980's through 1990's. The first decade of the 2000s recorded relatively low inflation, which was lower than the second decade of the 2000s. Specifically, in the 1970's average inflation was 11.32%. In the 1980's and 1990's average inflation was 62.95% and 45.92% respectively. During the period 2000 to 2009 average inflation was 7.63% and average inflation during the years 2010 to 2019 was 12.89%. In 2021, average inflation decreased to 11.85% from 13.49% in 2020. Hence, inflation is a challenge to macroeconomic management in Sierra Leone.

Some innovations and reforms of the Bank of Sierra Leone to control inflation include the introduction of the monetary policy rate in February 2011, the corridor system (that is the standing lending and standing deposit facility windows) and the publication of policy rates that signals the bank monetary policy stance. This rate is expected to impact the short-term money market rates which will in turn impact long term rates and inflation rate. The paper therefore investigates the determinants of price dynamics in Sierra Leone.

There are a number of studies on determinants of inflation. However, in Sierra Leone we are not aware of many published studies on this issue. Some studies on Sierra Leone are Kallon (1994), Korsu (2014) and Mansaray-Pearce (2015). However, given the long time these studies were done, the sample ended at 1987 for Kallon (1994), 2012 for Korsu (2014) and 2013 for Mansaray-Pearce (2015) respectively. All these periods were periods before of just after the introduction of the monetary policy rate and the corridor system. In addition, while they did unit root tests to avoid spurious regression, they did not consider unit root tests taking structural break into consideration, even though the existence of structural break in a variable may make it non-stationary when not accounted for in a test. Moreover, the ADF and Philips –Perron tests were used while the Dickey- Fuller GLS test has better size and power than these tests.

The rest of the paper is organized as follows. Section 2 is brief review of the literature. Section 3 is the methodology and the empirical results and section 4 is the conclusion.

## 1. Brief Review of the Literature

### i. Inflation Theories

There are various theories that explain inflation. These are: The Quantity Theory of Money, Monetary Theory of Inflation, Demand Pull Inflation Theory, Cost Push Theory, Structural Inflation Theory, Rational Expectation Theory and New Political Macroeconomics Theory of Inflation. The quantity theory of money argues that inflation is caused by changes in the money supply. That is, increase in the quantity of money in circulation will lead to an increase in the general price level. This is the position of Milton Friedman.

Keynes posits that inflation is explained by the demand-pull theory. When consumers demand goods at a rate higher than production, demand pull inflation occurs. The theory emphasizes on the aggregate demand as the main source of inflation. The main cause of cost-push inflation is wage increases, which can occur as a result of union activities or due to increase in profit of firms. The structural inflation theory is based on the notion that structural factors in the economy are the causes of inflation. Rational expectation view of inflation is that policy inconsistency by central banks (dynamic inconsistency) causes inflation. The theory emphasizes the need for policy credibility for preannounced policies to be effective. That means central banks should not consistently exploit the inflation unemployment trade-off. However, new political macroeconomic theory of inflation maintains that sustained fiscal deficit leads to inflation due to the political nature of government budgeting- high deficit being financed by central banks, thus increasing money supply and hence inflation. This can also work by deficit being financed by the private sector. Hence, lending rate is increase due to increase in treasury bills rate. Hence, higher price level is observed.

### ii. Empirical Review

On the empirical front, there is a plethora of studies on the determinants of inflation in both developed and developing countries. Some studies use time series data for specific countries while others use panel data. The general observation is that inflation is determined by demand and supply side factors. The demand side factors emanate from monetary factors, leading to increased aggregate demand. Exchange rate depreciation and growth are the structural and supply side factors. Lim and Papi (1997) investigated the determinants of inflation in Turkey using annual data from 1970 to 1995, by the application of a multi-sector macro econometric model. The results show that money supply, exchange rate, public sector deficit and inertia explain inflation in Turkey. This result is similar to the work of Lim and Sek (2015), who investigated the inflation determinants in both low inflation countries and high inflation countries using ARDL error correction model in a dynamic panel context. Lim and Sek (2015) found that in low inflation countries, GDP growth and imports of goods and services have significant impact on inflation in the long run. Whilst money supply, national expenditure and GDP growth are the determinants of inflation in the long run for high inflation countries. In the short run, none of the variables significantly determine inflation in high inflation countries. However, money supply, imports of goods and services and GDP growth have significant impact on inflation in low inflation countries.

Korsu (2014) investigated the inflationary effects of fiscal deficit in Sierra Leone. The finding from the simulation approach using annual data 1971 to 2012 and an autoregressive distributed lag model reveals that the growth of money supply, exchange rate depreciation and real GDP growth are the determinants of inflation in Sierra Leone. It also shows that

Money supply growth and exchange rate depreciation have positive effects on inflation while real GDP growth has a negative effect. This implies that inflation in Sierra Leone is explained by demand pressure, exchange rate pass-through and supply-side factors. While in a similar studies, Mansaray-Pearce (2015) using annual data from 1990 to 2013 and Johansen cointegration approach result shows that the explanatory variables, money supply and GDP significantly and positively contributes to the inflation rate in Sierra Leone while interest rate has a negative and significant effect. This is in contrast to the work of Kallon (1994) investigated an econometrics analysis of inflation in Sierra Leone. Using data for the 1967:1–1987:4, the parameters of a reduced-form inflation equation from an open economy IS-LM model were estimated for the Sierra Leonean economy. The findings reveal that, the results reject the monetarist assertion that velocity is constant and that a percentage change in the money supply leads to a proportionate change in the inflation rate in the short run. In the long run, however, the hypothesis that money-supply growth would lead to a proportionate increase in the price level could not be rejected. Additionally, the evidence suggests that part of Sierra Leone's inflation is imported from the rest of the world. On the other hand, international capital mobility is not a contributing factor to Sierra Leone's inflation problem.

Previous studies did not consider unit root tests using both Dickey-Fuller GLS and structural break test to determine whether the model variables are stationary. This is important because the Dickey-Fuller-GLS has better size and power than the original Dickey-Fuller test. Also, structural break may make a series appear nonstationary when in fact it is stationary. We therefore do unit root tests using Dickey-Fuller-GLS test and a test that takes structural break into consideration. Moreover, we allowed for not only endogenous break but for double break. We also adopt Pesaran-Shin-Smith (2001) approach to cointegration because it accommodates both I(0) and I(1) variables which was the case here.

### 3. Methodology

#### 3.1 Model Specification

In an effort to investigate the determination of price level in Sierra Leone, we specify the following model of price dynamic in a dynamic form to account for delayed effects and inertia. The dynamics form of the price model is:

$$P_t = \beta + \sum_{i=0}^p \theta_i RGDP_{t-i} + \sum_{i=0}^s \lambda_i EXRA_{t-i} + \sum_{i=0}^v \delta_i M_{t-i} + \sum_{i=0}^m \mu_i BLR_{t-i} + \sum_{i=1}^n \eta_i P_{t-i} + U_t \dots \dots \dots (1)$$

Where P is the price level, RGDP is real GDP, EXRA is nominal exchange rate (Le/US\$), M is broad money supply and U is the disturbance term.

However, due to the possible existence of unit root in the variables, estimation of equation (1) can lead to misleading conclusion because of the existence of common trend. Hence equation (2) is estimated when this is the case. This principle is considered here.

$$\Delta P_t = \lambda + \sum_{i=0}^{p_1} \mu_i \Delta RGDP_{t-i} + \sum_{i=0}^{p_2} \gamma_i \Delta EXRA_{t-i} + \sum_{i=0}^{p_3} \rho_i \Delta M_{t-i} + \sum_{i=0}^{p_4} \pi_i \Delta BLR_{t-i} + \sum_{i=1}^q \alpha_i \Delta P_{t-i} + \delta(P_{t-1} - bRGDP_{t-1} - cEXRA_{t-1} - dM_{t-1} - eBLR_{t-1}) + U_t \dots \dots \dots (2)$$



The coefficients  $b$ ,  $c$ ,  $d$  and  $e$  are the long run coefficients while the coefficients associated with the first difference forms of the variables are the short run coefficients. The coefficient of money supply is expected to be positive because increase in money supply increases excess supply of money, this excess is spent in the goods market, thus increasing aggregate demand, which increases the price level. Thus, money supply has a positive effect on the price level. The effect of nominal exchange rate on the price level is positive. This is because as the exchange rate depreciates, the cost of imports increases. This is translated to domestic consumer prices and the price level increases. The effect of lending rate on the price level can be negative or positive. When interest rate increases, the demand for borrowed funds decreases. Thus, aggregate expenditure decreases. This reduces excess demand for goods and the price level falls. On the other hand, when the increase in interest rate is interpreted by borrowers as increase in borrowing costs, they increase the final prices of goods by some proportion or full value of the increase in interest rate, leading to a positive effect on the price level. The effect of real GDP, which captures the supply side of the economy on the price level is negative. When output increases, excess demand reduces. Thus, the price level decreases.

### 3.2 Estimation Technique and Data Issues

The application of Ordinary Least Squares to estimate the specified model of price level equation (3.2) can lead to misleading conclusion when the model variables are not stationary. For one thing, the standard errors are underestimated, leading to large t-values when in fact it is not supposed to be a large t-statistics in reality. Thus, there is tendency to conclude that the variables are significant even when they are so only due to the existence of common trend between the dependent variable and the independent variable. In this regard, we tested each variable for stationarity and adopted a process to account for possible spurious result.

In the test for stationarity, we applied the Dickey Fuller GLS test as it outperforms the original (Augmented) Dickey Fuller test for stationarity. However, because some variables may not be stationary due to the existence of structural break, which is a false representation of the stationarity status, tests for stationarity that takes structural break into consideration are also applied. The Perron-Vogelsang test, which tests for one endogenous break is applied. In addition, the Clemente-Montane-Reyes test, which accounts for two structural breaks was also applied. Test for cointegration was then applied in the context of Pesaran-Shin-Smith (2001) ARDL approach, given the existence of  $I(0)$  and  $I(1)$  variables.

The data for model estimation is from 1971 to 2019. The choice of the period is based on the fact that the period has both high inflationary and low inflationary periods in Sierra Leone. The dependent variable is the consumer price index. The regressors are money supply economic output, exchange rate and bank lending rate. Money supply is broad money. Output is GDP in constant prices (in Leones). The exchange rate variable is nominal exchange rate measured as Leones per US dollar on an annual average basis and interest rate is the annual average bank lending rate. Exchange rate, real GDP and money supply are obtained from World Bank's World Development Indicators while the consumer price index is from IMF'S International Financial Statistics (IFS).



#### 4. Empirical Results

We apply the Dickey-Fuller GLS test and the Perron-Vogelsang test and the Clement-Montanes-Reyes test for unit root in each variable. The lower order of integration as dictated by the two is declared as the order of integration. The result is not reported here to save space. The result shows that cpi is stationary after first differencing while all other variables are stationary in levels. This implies that the Pesaran-Shin-Smith (2001) cointegrating testing approach is appropriate.

Cointegration test is done following estimation of an optimal ARDL model using the Akaike Information Criterion (AIC) and the optimal model satisfies the OLS residual diagnostic tests and parameter stability test. These results are not reported here to save space. Hence, cointegration test was done using the selected ARDL model. The cointegration test is given in the lower part of Table 4.1. The test result shows that the p-value wrongly rejecting the null hypothesis of no cointegration is 0.015 for the upper bound of the test. Hence, there is cointegration at the 5% level of significant. Also, the F-statistics for no level relationship is 6.801, which is more than the I(1) upper bound critical value of 5.360 at the 5% level.

As there is cointegration, the long-run and short-run models of price level are estimated in an error correction framework. Table 4.3 shows the long run model. Column (2) of Table 4.2 shows the Long-run result. The long run price model shows that in the long run, the determinants of price level in Sierra Leone are real GDP, exchange rate and lending rate. Specifically, real GDP, which captures the supply side of the economy, has a negative effect on the price level and is significant at the 1 % level. The nominal exchange rate is significant at 5 % level, and it has a positive effect on the price level. Lending rate is also found to have a positive effect on the price level in the long run and is significant at 1%. This implies that in the long run, lending rate is considered by economic agents as a cost of borrowing. Thus, as it increases, the price level increases, because the cost is transferred to the price of goods and services. Money supply is found to have a negative effect on the price level in the long run. However, it is not found to be significant.

**Table 4.2. Long-run and Short run Models of Price Level**

Variables	Error Correction Coefficient		Long Run		Short Run	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
D.InM <sub>t</sub>					0.0972	0.534
D.InM <sub>(t-1)</sub>					0.318	0.033 **
D.InM <sub>(t-2)</sub>					0.626	0.000 ***
D.InRGDP <sub>t</sub>					-0.006	0.971
D.InRGDP <sub>(t-1)</sub>					0.403	0.025**
D.InRGDP <sub>(t-2)</sub>					-0.317	0.044**
D.InEXRA					0.286	0.009***
D.BLR					-0.009	0.022**
D.BLR <sub>(t-1)</sub>					-0.0127	0.002***
D.BLR <sub>(t-2)</sub>					-0.0100	0.002***
D.BLR <sub>(t-3)</sub>					-0.0102	0.003***
rend					0.061	0.009***
Constant					2.343	0.306
InM			-0.061	0.870		
InRGDP			-0.792	0.003***		
InEXRA			0.404	0.031**		
BLR			0.046	0.000***		
ECM <sub>(t-1)</sub>	-0.344	0.005***				
Observations						45
R-squared						0.941

Note: Values in Parentheses are P-values

Column (3) of Table 4.2 shows the short-run result. The short run price model shows that in the short run, the contemporaneous money supply has no impact on the price level. However, after one year lag and two-year lag, money supply is significant in determining the price level in Sierra Leone and these effects are positive and significant at the 5 % and 1 % levels respectively.

In the case of real GDP, while the contemporaneous form has a negative effect, it is not significant. In addition, the first lag has a positive and significant effect while the second lag has a negative and significant effect. Hence, the negative supply side effect on inflationary pressure is significant only with a delayed effect of two years. In the first year, inflation tends to increase when GDP increases. It is not clear why this is the case. However, it suggests that policies meant to raise GDP have trade off with price level.

The short run effect of exchange rate on the price level in Sierra Leone is found to be contemporaneous and this effect is positive and significant with an elasticity of 0.286. This is significant at the 1 % level. This coefficient suggests that the pass-through effect of exchange rate is not complete, but it is significant in the short run, with same- period effect.

In the short run, the effect of interest rate on the price level is found to be negative. This effect is significant in the contemporaneous sense as well as lagged forms. Contemporaneous effect is significant at 5 % while, first lag, second lag and third lag effects are all significant at 1% level. This suggests that Central Bank policies that can hit the lending rate upward have the tendency to drive inflation down in the short run though in the long run it drives the price level up implying central bank effort on inflation is a short run phenomenon. That is, a

policy by the Bank of Sierra Leone that is meant to reduce inflation can be successful if the Bank pursue policies that can drive up the lending rate upward as this reduces the price level in the short run with contemporaneous and delayed effects.

The time trend variable is found to have a positive and significant coefficient, which implies that price level in Sierra Leone has a general tendency to increase upward. The error correction term is given in Column (1) of Table 4.3, and it shows that the error correction term is found to be -0.344. It is significant at the 1 % level and lies in the relevant range (as it is less than one and negative). The coefficient implies that 34.4 percent of disequilibrium between actual price level and the long run is covered up within a year. The significance, sign and magnitude of the error correction term confirms that there is cointegration among the model variables, as observed in the bound test result.

## 5. Conclusion

Control of inflation is a core mandate of central banks in both developed and developing countries, including Sierra Leone. As inflation remains high in Sierra Leone, the study sought to investigate price dynamics in Sierra Leone. A model of price determination is specified and estimated using an autoregressive distributed lag (ARDL) model to account for delayed effects of variables on the price level. Annual data from 1971 to 2019 was used. The estimation process involves testing for stationarity of variables in order to determine order of integration of all variables and ascertaining the appropriate estimation strategy. The model variables are the price level, broad money, real GDP, nominal exchange rate and lending rate. All model variables are stationary with the exception of lending rate and the consumer price index, which is stationary after first differencing. The cointegration test shows that there is a long run relationship between the consumer price index and the model explanatory variables.

The result of the model estimation shows that lending rate has a significant positive long run effect on the price level and in the short run, it has a significant negative effect. Real GDP, which captures the supply side of the economy, has a significant negative effect on the price level of Sierra Leone in the long run. However, its short run negative effect is significant after two years, with no initial significant effect while there is evidence of positive effect after one year. The nominal exchange rate has a significant positive long-run effect on the price level and in the short run, the effect is also positive and significant in a contemporaneous sense. Money supply does not have a significant effect on the price level in the long run but in the short run, it has a positive effect which is significant between one and two years.

As lending rate has a positive long run effect on the price level, factors that can drive down the lending rates are needed in an effort to drive down long run inflation. The authorities need efforts to investigate the factors that can drive lending rate down during high inflationary periods in order to drive down inflation in the long run. But in the short run, lending interest rate effect is negative, thus these factors should be adjusted to exert increase in lending rate. In addition, monetary authorities need to continue tightening liquidity through increased monetary policy rates in an effort to drive down the price level temporarily. As the exchange rate depreciation increases the price level, it is important that domestic efforts to increase the production of import computing goods be built and also diversification of exports be enhanced while policies to increase foreign earnings from current exports are considered by policymakers in sectors connected to domestic export capacity. Further efforts at building domestic production capacity are imperative given the negative effect of real GDP on the price level.

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## POST-COVID MACRO-FISCAL REALITIES FOR G7+ COUNTRIES: LESSONS FOR SIERRA LEONE

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### *Abstract*

*This paper emphasises the need for the g7+ countries like Sierra Leone to prioritise investment in sustainable development financing in light of the ravages of the Corona virus and rising geopolitical tensions compounded by the Ukraine-Russia war. It is only with optimal investment in fiscal capability that the economies of these countries and LDCs in general can become optimally resilient and robustly resist emergencies without troubling lags.*

\*The views expressed in this paper are those of the author but not necessarily those of his institutions of affiliation

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## 1. Introduction

The g7+, which was established in 2010, is an “intergovernmental voluntary organisation” of countries for which Sierra Leone has been the chair since 2014. These nations are either currently trapped in outright conflicts or have recently experienced conflict and fragile contexts.<sup>14</sup> The group coordinates international efforts aimed at leveraging support and cooperation towards the effective transformation of their economies from crisis and fragile situation into resilience and sustainable development. They have worked over the years to promote *inclusive politics, security, justice, strong economic foundations* and *domestic revenue generation capability* within their membership of currently 20 states and a population of 260 million drawn from Asia, the Pacific, Africa and the Caribbean.<sup>15</sup>

Indeed, the need for strengthening g7+ cooperation has never been more compelling than it is expressed by the realities of the COVID-19 pandemic today and the fallouts of the Ukraine-Russia war. As of mid-2020, at a peak of the pandemic, the world economy was projected to decline by US\$ 8.5 trillion over the following two years.<sup>16</sup> Many developed economies became seriously challenged, as much as states that were already fragile<sup>17</sup> before the pandemic. Those that were already fragile, with high dependency on international development assistance have been further made vulnerable, exposed to more debt distress and worsened poverty situation. The fallout of the war in Ukraine has only compounded global and regional uncertainties.

Sierra Leone, a g7+ member, had earlier experienced socioeconomic devastation from the Ebola Virus Disease (EVD) in 2014 and 2015, which was prevalent in the Mano River Union basin, with lingering effects in the subsequent years. Just five years after that epidemic, the COVID-19 pandemic emerged, with the Ukraine-Russia war posing further shocks, leading to more vulnerabilities.

The *objective* of this paper is therefore to highlight key fiscal strategies that Sierra Leone could consider pursuing in the post-COVID era towards building a resilient economy for sustainable development.

The rest of the paper is organised as follows. Section 2 presents realities of selected global crises preceding the COVID-19, as well as those that unfolded during the pandemic. Section 3 discusses the structure of the economy of Sierra Leone, while 4 highlights the challenges facing Sierra Leone and other g7+ economies in the context of both the pandemic and the Ukraine-Russia war. Section 5 offers possible response areas that Sierra Leone could follow going forward, while 6 concludes the paper.

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<sup>14</sup> [https://en.wikipedia.org/wiki/Group\\_of\\_Seven\\_Plus\\_\(g7%2B\)](https://en.wikipedia.org/wiki/Group_of_Seven_Plus_(g7%2B))

<sup>15</sup> The g7+ includes: Afghanistan, Burundi, Central African Republic, Chad, Comoros, Côte d'Ivoire, Democratic Republic of the Congo, Guinea, Guinea-Bissau, Haiti, Liberia, Papua New Guinea, São Tomé and Príncipe, Sierra Leone, Somalia, Solomon Islands, South Sudan, Timor-Leste, Togo and Yemen.

<sup>16</sup> <https://www.un.org/en/desa/covid-19-slash-global-economic-output-85-trillion-over-next-two-years>

<sup>17</sup> Fragility in this context is defined as being in serious conflict, recently emerged from conflict, highly dependent on imports, having low-export base and undiversified economy, and being external aid dependent even when resource-rich.

## **2. Realities of selected global crises preceding the COVID-19 and unfolding realities during the pandemic**

This section will present a snapshot of historical global crises that produced socioeconomic effects of comparable proportion in relation to the COVID-19 pandemic and the ongoing fallouts of the Ukraine-Russia war.

### **Realities of selected global crises preceding the COVID-19**

There is no silver bullet for major global meltdowns in modern history. Generally, major crises with protracted spiral effects have been informed by stubborn structural rigidities, including weak governance architectures in socioeconomic and financial systems. No fiscal, financial and monetary policy response could immediately effectively stave off fallouts, sometimes not even in the medium-term, depending on the strength of an economy. This implies, nations, especially LDCs, should increase investment in building socioeconomic resilience to stocks. These have been realities even for the present day developed nations, covering a range of modern global catastrophes, from the 1930s Great Depression to the 1979 energy crisis triggered by the Iranian Revolution, the Asian 1997 financial crisis that resulted from currency crash in major Asian economies, and the 2007-08 subprime mortgage-related global financial crisis triggered by collapse in housing bubble and precipitous decline of home prices in the United States.

Because of the high depth of uncertainties caused by widespread crises, especially for the financial system, attempts by authorities, say, to increase monetary base to increase money supply to stimulate the economy had not been anywhere near the desired effect. Attempts often lead to situations where: supply will remain sticky upwards, and bank runs and failures become commonplace. In addition, increases in interest rates have not been able to easily control double-digit inflation sparked-off by previous crises.<sup>18</sup> The effects of the 1997 Asian financial crisis that crashed the currencies of major economies in that region were resisted largely because of their strong export-base; a determinant of the built-in resilience required to resist shocks.<sup>19</sup> Unfettered openness of the capital account and broadly under-regulated financial sector in these economies were heavily blamed for the crisis, having capacity challenges within the domestic financial institutions at the time “to manage risks from unprecedented inflows of foreign capital” that was excessively denominated in foreign currency.<sup>20</sup>

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<sup>18</sup> See Mankiw (2016, pp. 97-100)

<sup>19</sup> See Dowling and Valenzuela (2010, p. 52) on this crisis and its far-reaching regional effects; triggered in Thailand, Philippines, Malaysia and Indonesia, spreading to Hong Kong, Korea, Singapore, Taiwan, and industrial countries such as Japan, Australia and New Zealand; and how these economies laudably moved out of the crisis

<sup>20</sup> Bangura (2012); Dowling and Valenzuela (2010)

**Figure 1b: Correlating infection cases with real GDP for 169 infected countries, excluding USA**



The pandemic has revealed that every country or territory in the world is fragile. Some have not been classified fragile only because their resilience systems far outweigh their degree of vulnerability to emergencies.<sup>21</sup> Essentially, states that have been classified as fragile, such as Sierra Leone should heavily scale-up their domestic fiscal positions in view of growing global challenges. Official development assistance (ODA) had assumed a sharp descent even before the onset of the novel virus; although it reached some record highs in 2020 in response to the pandemic.<sup>22</sup> Today, as depicted in Figure 1 (illustrating positive relationship between global COVID infection cases and incomes), the vast majority of the countries that have suffered the highest incidence of the pandemic are the leading industrial nations and economic powers, such as the G7 and G20 groups of nations.<sup>23</sup>

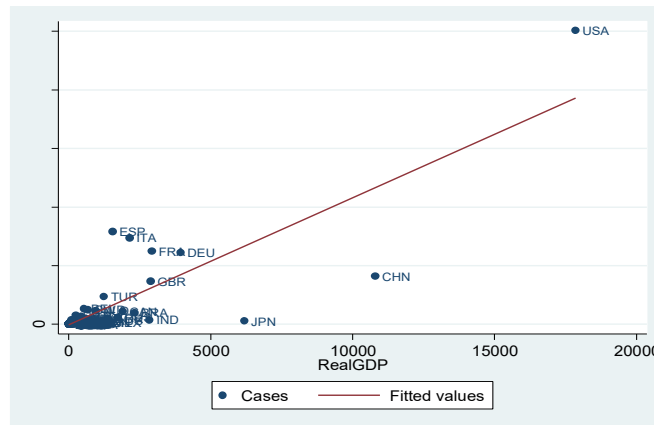
<sup>21</sup> For extensive discussions on resilience and vulnerability issues, you may see the Sierra Leone 4<sup>th</sup> National Human Development Report: Building Resilience for Sustainable Development (2019, Chapter, pp. 4-8), published by UNDP.

<sup>22</sup> See the United Nations 2022 Report of the Inter-Agency Task Force on Financing for Development

<sup>23</sup> *List of G7 countries:* Canada, France, Germany, Italy, Japan, the United Kingdom and United States. *List of G20 countries:* Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, and the European Union. *Among non-G7/G20 economic powers seriously affected by the disease:* Spain, Belgium, Switzerland, Israel, Sweden, Ireland, Norway, Denmark, Malaysia and Singapore



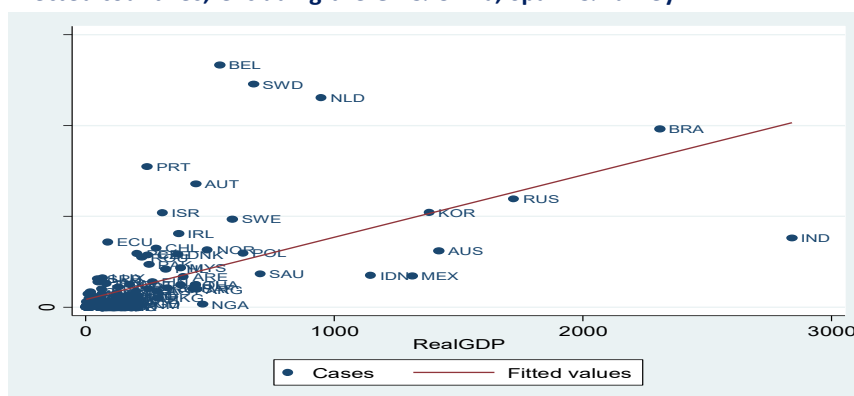
**Figure 1a: Correlating Covid-19 infection cases with real GDP for 171 infected countries**



These groups are high income economies that are more globally interconnected, among whom a disease like the current virus which began in one of them could easily spread given the strong air transportation connection among them. Major donor countries come from this group of countries. For example, they were expected to provide 0.7 percent of their GNI in ODA; and 0.15 to 0.20 percent of this to LDCs within the framework of implementation of the UN 2030 Agenda for Sustainable Development.

To the extent that before the pandemic the vast majority of these countries could not meet these ratios (ODA-GNI ratio), we should expect more external support attrition in the post-pandemic era. It is thus expected that there would be more and extended lags in the provision of external assistance, as inward-looking postures may take precedence in many of them, at least in the medium-term. The pandemic has opened up deep and wide global macro-fiscal challenges for everyone, creating an outlook akin to the Great Depression of the 1930s and subsequent crises. The Ukraine war has added to the uncertainties and tilting of support from the already weak states.

**Figure 1c: Correlating infection cases with real GDP for 161 infected countries, excluding the G7 & China, Spain & Turkey**



With the growing global crises, it can be difficult not to expect serious inertia in ODA flows. Hopes had started swelling for a return to global economic normalcy from the COVID-19 in 2021. Gross global output increased by about 5.5 percent in 2021, from more than 4 percent contraction in 2020. But the projected growth by 4.0 percent in 2022 and 3.2 percent in 2023 is expected to be lost with the war in Ukraine and rising geopolitical tensions. The situation will be a lot worse for LDCs, a good proportion of which were even projected to remain below their 2019 GDP per capita levels by the end of 2023, owing to the pandemic. This

situation has been compounded by the fallout of the Ukraine war. The rising global uncertainties have caused sharp rises in commodity prices, sustained supply disruptions, “...and increased financial market volatility.” A series of countries are in debt distress with extremely squeezed economic and fiscal spaces, noting that, “60 percent of least developed and other low-income countries are already at high risk of, or in debt distress.”<sup>24</sup> With this compounded landscape, the financing gap for the SDGs is estimated to have widened to US\$ 4.3 trillion for the developing world, from their pre-COVID levels of about US\$2.5 trillion.

### 3. Structure of the Economy of Sierra Leone

Sierra Leone’s economy remains largely agrarian. Agriculture contributes about 50 percent to GDP, employing about 70 percent of the population.<sup>25</sup> While this sector contributes the largest to GDP generation, its share in total exports is far lower than the export share from the mining sector at about 80 percent, with only 24 percent of GDP contribution.<sup>26</sup> Online data suggest that, “all five leading export commodities of Sierra Leone in 2014 at the inception of Ebola in the country were mineral products, iron ore topping the list at 65 percent of total export value of US\$2.14 billion; followed by tin ore 11 percent; diamonds 8.2 percent; titanium ore 3.6 percent; and aluminum ore 2.3 percent.”<sup>27</sup> The second largest sector after agriculture is services at 36 percent of GDP, but as with agriculture, it is significantly informal sector driven; while manufacturing remains very small in share at about 2 percent of GDP.<sup>28</sup> The undiversified nature of the country’s exports (disproportionately drawn from mining, yet this sector accounts for low revenue, estimated at 16 percent during 2013-2017)<sup>29</sup> significantly explains the high fragility of the economy in times of crises.

Following the end of the EVD’s immediate devastation, the economy grew by 3.5 percent in 2018 and 5.3 percent in 2019, before COVID-19 hit the global economy that left the Sierra Leone’s GDP contracting to -2.0 percent in 2020. It was estimated to have recovered by 2.9 percent in 2021 following COVID-related mitigation strategies implemented within the Government’s Quick Action Economic Response Programme and the implementation of a National Health Preparedness and Response Plan. Compounded effects emerging from the Ukraine-Russia war has brought a revision of growth in 2022 to estimated 2.8 percent from an earlier projection of 5.9 percent.<sup>30</sup> The country’s high dependency on imports for its consumption and production activities was further punctuated during these crises. While exports had increased from US\$ 884 million in 2018 to US\$ 985 million in 2019, they were outweighed by an increase in imports from US\$ 1,210 million in 2018 to US\$ 1,388 million in 2019, leaving trade balance deteriorating from 8.0 percent of GDP to 9.9 percent in the same period; trade balance deteriorating further to 14.0 percent in 2020 as exports slipped to US\$ 648 million, while imports increased to US\$1,221 million during the year due to COVID-19.<sup>31</sup> Projections for 2021 and 2022 presented continued worrisome picture for trade, drawing from the Ukraine-Russia fallouts.<sup>32</sup> Inflation had risen from 8.9 percent in March 2021 to 29.1 percent in September 2022. Gross international reserves did increase from 3.2

<sup>24</sup> United Nations 2022 Report of the Inter-Agency Task Force on Financing for Development

<sup>25</sup> See Sierra Leone’s Medium -Term National Development Plan (2019-2023, p.67)

<sup>26</sup> Ibid, p.85

<sup>27</sup> Bangura (2020, pp. 155-156)

<sup>28</sup> Sierra Leone’s Medium -Term National Development Plan (2019-2023, p.80)

<sup>29</sup> Ibid, p.85

<sup>30</sup> Government of Sierra Leone’s Budget and Statement of Economic and Financial Policies for 2023 Financial Year (2022, p.4)

<sup>31</sup> See Sierra Leone’s Mid-Term Review of the country’s Medium-Term National Development Plan (2022, p.27)

<sup>32</sup> Ibid, p.27

months of imports in 2018 to 4.6 months in 2020 (due to an increase in development partners' support), but this is expected to average around 3.3 months in the medium-term (2023-2025).<sup>33</sup>

#### **4. COVID-19 and the Ukraine war: Challenges facing Sierra Leone and other g7+ economies**

***Growing uncertainties:*** Like any other widespread, contagious and deadly disease, until the last survivor is recorded and the entire environment—the globe in this case—is declared disease free for a considerable period, uncertainties in socioeconomic activities will continue to grip. The elevated potential for the Ukraine-Russia war to protract will worsen the situation, given that those two countries account for a considerable share of the world food and energy supplies. Indeed, the more uncertainty remains about the end of these crises, including disruptions to supply chains, the more economies already classified fragile will become more weakened.

***Worsening domestic aggregate demand and supply from heightened vulnerability and poverty:*** The numbers of the poor will be multiplying during and after these crises, especially for LDCs like Sierra Leone, which already had high pre-COVID income and multidimensional poverty. Many households may well have consumed their financial savings during the crises, thus increasing their vulnerability to falling into poverty; those hitherto in poverty becoming more impoverished. The situation has been compounded by business contractions, especially for SMEs, given policy restriction on movement of agents, and self-restraints at peaks of the COVID, currently exacerbated by disruptions from the war in Ukraine. The cumulative impact of these fallouts on the macro-economy through worsened aggregate demand and supply can be colossal, indeed.

***Decline in revenues:*** We could expect slow domestic output response to the effects of the pandemic and ongoing geopolitical tensions for the LDCs, given that the private sector and domestic productivity has been generally weak there. Even for developed nations, it will be uneasy for a number of them to immediately effectively respond to these effects because of decentralised supply chains across the world. Thus, growth in output and revenues can be expected to continuously decline, especially for LDCs like Sierra Leone. Stimulus packages cannot be substantial in weak states because of low central bank reserves for many, while high competition for external assistance can only pull through minimal fiscal support from this source. Many traditional donor publics are also facing the brunt of the current global meltdowns, besides the toll climate change and other natural disasters are having on economies around the world.

***Decline in diaspora support and remittances:*** Sustaining contributions from citizens in the Diaspora and their remittances in support of local businesses and household upkeep leaves much to be worried about, given rising crisis-induced unemployment in the developed countries.

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<sup>33</sup> Ibid, p.27; Government of Sierra Leone's Budget and Statement of Economic and Financial Policies for 2023 Financial Year (2022, p.6)

## 5. Optimal response necessary for Sierra Leone, a g7+ country

### *In the immediate to short-term*

**Manage whatever you have better:** Strengthen public financial management through increased implementation of the national Public Financial Management Act and strategies; prioritise audit service, fight against corruption, curbing illicit financial flows, and deployment of digital solution in public sector resource management to increase transparency and accountability.

**Strengthen development cooperation:** Development cooperation was critical in keeping the economy of Sierra Leone afloat at the peak of the pandemic within the country's Quick Action Economic Response Programme and its Health Sector Preparedness and Response Plan, as domestic resource generation capacity was badly hit by the ravages of the global virus; and being highly import dependent for almost all essential commodities, including staple food and energy supplies. Accordingly, Sierra Leone should join other countries to push for further debt service suspension, common framework for debt treatment and debt cancellation.

**Strengthen support for the most vulnerable:** This should include persons with disabilities, the extremely poor households, under-five children, and pregnant women and lactating mothers.

### *Medium to long-term*

**A tipping point for digitalisation:** The pandemic has compelled all nations to go fully digital. The internet has become exceedingly central in keeping governments, businesses and distant transactions running. Meetings have taken place virtually in these trying times, despite travel restrictions and lockdowns, thereby enormously saving travel costs and energy use, with attendant positive effect on the environment through climate change mitigation.<sup>34</sup> Sierra Leone should therefore increase its investment in digital infrastructure, given its centrality in advancing many sectors, including general public financial management and accountability.

**Financial inclusion:** There have been concerns about financial exclusion measuring at 71 percent and the burgeoning informal economy at about 60 percent in Sierra Leone. Thanks to the recent efforts at launching a National Financial Inclusion Strategy targeting marginalised economic agents (including those in rural areas) forming the majority in the business field. The government should strengthen the implementation of this strategy, not forgetting to consider deposit insurance.

**Integrated long-term fiscal analyses:** Building sustainable fiscal positions and resilience requires undertaking continuous and critical analyses of revenue contexts and scenarios; more so as investment in strategic trade-offs are inevitable in achieving the desired resilience for sustainable socioeconomic development. That is, while trading short-termism (benefit now) for long-term, sustainable output growth and development cannot be avoided, this should be informed by constant research and analysis.

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<sup>34</sup> See general argument on the power of digitalisation as saving grace during this pandemic (United Nations Conference on Trade and Development 2020)

***Economic diversification:*** Strengthen the diversification programme of the government, away from mining; with a special focus on increasing productive investment, supporting small and medium enterprise development, and entrepreneurship in non-mining productive sectors.<sup>35</sup>

## 6. Conclusion

This paper provides a road to the pursuits of strategies for installing domestic fiscal capability and economic resilience to achieve sustainable development in Sierra Leone and the g7+ and LDCs in general. The paper points out that it is only with the achievement of sustainable development that weak economies can emerge optimally to respond to future emergencies. It provides options for achieving sustainable development taking the structure of Sierra Leone into consideration. It is hoped that the perspectives provided in this piece will be found useful in the macro-fiscal and other policy fronts that are central in building national resilience against current and future crises.

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<sup>35</sup> <https://projects.worldbank.org/en/projects-operations/project-detail/P164212>.

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## THE DETERMINANTS OF CURRENT ACCOUNT BALANCE IN SIERRA LEONE

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### Abstract

The paper investigates the determinants of current account balance in Sierra Leone. A model of current account is specified and estimated in dynamic form with annual data from 1980 to 2019. Tests for stationarity with more power and size and accounting for structural break in series are applied. The estimated model in the context of the Ordinary Least Squares shows that inflation has a contemporaneous negative effect on the current account balance of Sierra Leone but after one year, the effect is positive and real effective exchange rate depreciation improves the current account balance while the gain is reversed after a year. Openness to trade has a negative contemporaneous effect while terms-of-trade has a negative contemporaneous effect but after two years, it has a positive effect. Also, the current account balance has a negative persistent effect, as the lagged current account balance has a negative significant effect on the current account balance. These results point out that policy makers in Sierra Leone should strengthen economic diversification to ensure consistent real exchange rate favourable effects on the current account balance and there is need to strengthen domestic production of import-competing goods in order to adjust domestic imports downwards while further efforts to contain inflation across sectors are advanced.

\*The views expressed in this paper are those of the author but not those of the institution of affiliation.

## 1. Introduction

The current account balance, which comprises international balances of transactions in trade of goods and services, factor income and current transfers, IMF (2009) is a relevant economic indicator of a country's external performance. The net balance of the current account constitutes an essential measure of national saving. Hence, it is a meaningful indicator of an economy's saving and spending behavior. In the developing countries, fluctuations of the world market prices of primary commodities, including changes in international oil price, slowdown of economic activities in some industrial countries and the rise in real interest rates are theoretically some of the major contributors to deterioration of the current account positions of most developing countries. In light of this, there has been a growing interest in the determinants of current account balance.

In Sierra Leone, the current account balance has been unfavorable such that deficit is the norm while surplus is exceptional. During the period 1980 to 2019, the economy of Sierra Leone ensued persistence current account deficit. However, there were few years when current account was in surplus. These years were 1986 (28.7 per cent of GDP) and 1991 (2.0 per cent of GDP) while it was -22.5 percent of GDP in 2019, -7.9 percent of GDP in 2020 and -8.4 percent of GDP in 2021. Figure 1.1 shows the current account balance of Sierra Leone.

Persistent current account deficit of Sierra Leone has a number of economic consequences, including heavy reliance on external debt and grant to build reserves and weak ability to intervene in the foreign exchange market to reduce excess volatility in the market. Thus, the paper investigates the determinants of current account balance in Sierra Leone.

Despite the fact that there are a number of studies on the determinants of current account balance, there is little on Sierra Leone. Some studies on Sierra Leone are Tarawallie (2014), Korsu (2015) and Jackson and Jabbie (2019). However, they were limited to the impact of fiscal deficit on current account balance in Sierra Leone. Furthermore, in the bid to avoid spurious regression, these studies did unit root tests, but they did not consider unit root tests taking into consideration structural break. Despite the fact that the existence of structural break in a variable may make the series appear non-stationary when not accounted for in a test, tests adopted did not include structural break test. Additionally, while Korsu (2015) also adopted the Dickey- Fuller GLS as it has better size and power than the traditional Augmented Dickey-Fuller (ADF) and Phillips –Perron tests, the others did not take this into consideration. This study takes these issues into consideration while investigating the determinants of current account balance in Sierra Leone.

**Figure 1.1: Current Account Balance of Sierra Leone (% of GDP)**



Source: World Development Indicators



The rest of the paper is organized as follows. Section 2 is a brief review of the literature. Section 3 is the methodology, and the empirical results and section 4 is the conclusion.

## **2. Brief Review of the Literature**

### **1.1 Theoretical Review**

There are a number of theories that explain the dynamics of current account balances. These are the Keynesian Absorption Theory, The Mundell-Fleming Model, The Twin Deficit Hypothesis Theory, The Marshall-Lerner (ML) Condition, The Traditional Theory, and The Intertemporal Approach. The Keynesian absorption theory maintains that when there is an increase in budget deficit, say through tax cut or increase in expenditure or both, absorption (the sum of consumption and investment) increases. An increase in imports, which is part of absorption, over exports leads to an unfavourable trade balance and hence the current account deteriorates.

The Mundell-Fleming model predicts that increase in fiscal deficit increases domestic interest rates, at least when financed from domestic borrowing. The increase in interest rate thus increases capital inflow. Thus, the nominal exchange rate appreciates, which reduces exports and increases imports as exports become more expensive and imports become cheaper in domestic currency terms, leading to increase in current account deficit through deterioration in the trade balance.

The concept of twin deficit hypothesis hypothesis as proposed by the Keynesians indicates that the incidence of fiscal deficit resulting from increases in government spending over its revenue generated normally results in a current account deficit. This can occur via three channels: (i) the increase in interest rate, which crowds out private sector investment; (ii) changes in the exchange rate; and (iii) the extent of capital inflows, resulting from the increase in domestic interest rates.

The Marshall-Lerner (ML) condition asserts that, haughty initial equilibrium condition, the sum of price elasticities (in absolute value) of exports and imports must be greater than unity in order for currency devaluation or depreciation to improve the current account balance. The Traditional Theory placed a lot of emphasis on exchange rates, price and income changes as the key determinants of current account balance performance. Current account balance is therefore heavily dependent on price and income elasticities - a method commonly known as the elasticities approach.

The Intertemporal approach shifts from the trade view of current account to the difference between domestic savings and investment. The current account balance is regarded as an intertemporal phenomenon because the savings and investments are based on intertemporal decisions. The decisions are made according to the future expectations of the economy, which affects the macroeconomy, thus eventually influencing the current account balance.

### **1.2 Empirical Review**

There is a plethora of studies on the empirical front, on the determinants of current account balance in both developed and developing countries. Some studies use panel data while others use time series data for specific countries. A number of empirical studies have identified the fiscal balance as one of the key determinants of the current account balance, thus confirming the presence of the “twin deficit

hypothesis". Bollano and Ibrahimaj (2015) empirically investigated the determinants of current account for a sample of 11 Central and East European countries outside the Euro area using panel data from 2005 to 2014, through the variance decomposition exercise and the study showed that between 40 percent and 42 percent of the current account balances were explained by fiscal deficit. The results were largely consistent with Kueh (2015) who used panel data regressions and the General Method of Moments (GMM) approaches for 28 European countries and established the existence of a positive long run relationship between the fiscal deficit and the current account deficit with a coefficient of 0.4, which implied that a 1.0 percent increase in the fiscal balance worsened the current account by 0.40 percent.

Chinn and Prasad (2003) using annual data from 1971 to 1995 investigated the medium-term determinants of current account for a sample of industrial and developing countries including Sierra Leone. The Ordinary Least Squares and fixed effects estimation techniques revealed that current account balance is positively correlated with fiscal balance, net foreign assets, relative per capita income, financial deepening, terms of trade volatility and capital controls. On the other hand, it is negatively correlated with dependency ratio and trade openness.

Tarawallie (2014) investigated the determinants of current account for the period 1980 to 2012 applied the Bound testing approach and the Toda Yamamoto causality technique. He found that budget deficit has a positive impact on the current account of Sierra Leone in both the short and long run. Furthermore, causality was found to run from budget deficit to the current account, which supports the twin-deficit phenomenon observed in Korsu (2015) through the use of annual data from 1971 to 2013. Korsu (2015) empirically investigated the effects of budget deficit on the current account deficit of Sierra Leone using the Bounds Testing approach to cointegration, which shows that budget deficit has a positive effect on the current account deficit of Sierra Leone, with a one percentage point of GDP increase in budget deficit leading to 0.3 percentage point of GDP increase in current account deficit. The result is similar to Jackson and Jabbie (2019), who investigated the Twin-Deficit hypothesis in Sierra Leone. The empirical outcome of their study using the Fully Modified Ordinary Least Square (FMOLS) for the period 1980 to 2018 shows that fiscal deficits is partly responsible for the negative current account position of Sierra Leone.

Previous studies on the determinants of current account balance in Sierra Leone did not consider tests for stationarity using both Dickey-Fuller GLS and structural break test to determine whether the model variables are stationary. In this paper, our tests for stationarity, applies the Dickey Fuller GLS test, which is preferred to the original Augmented Dickey Fuller test as it has better size and power and tests that accommodate structural break. The latter ensures that variables that exhibit structural break do not appear to be non-stationary because of the existence of the break. The Perron-Vogelsang test is applied in this respect. It tests for structural break endogenously. This choice is because it tests for structural break that is immediate as well as gradual.

## **2. Methodology**

### **3.1 Model Specification**

The model of current account balance is specified based on the role of real exchange rate in balance of payments adjustment in the elasticity approach to the balance of payments According to the balance of payment, the current account is given as follows:

$$CA = TB + TBS + NPI + TRF \quad (3.1)$$

Where; CA is Current Account, TB is Trade Balance in Goods, TBS is Trade Balance in Non-Factor Services, NPI is Net Property Income from abroad (net primary and secondary incomes), and TRF is Transfers (Net).

The elasticity approach to the balance of payments assumes that price is fixed, which in reality is not the case. We therefore modify the elasticity approach and hence the theoretical framework by introducing inflation rate into the model. Moreover, given that increased productivity can support export if it is export bias and can reduce imports if it is import-competing biased, we introduce real GDP into the model. We also introduce openness to trade in the model to determine how current account of Sierra Leone responds to openness of the economy to trade. Terms of trade, which is the price of exports relative to imports, is also used in the model to determine how current account of Sierra Leone responds to shock in the prices of its exports and imports.

The model of current account is therefore given as follows.

$$CAB = f(\text{REER}, \text{RGDP}, \text{INF}, \text{OPN}, \text{TOT}) \quad (3.2)$$

Where CAB is Current Account Balance, REER is Real Effective Exchange Rate, RGDP is Real GDP, INF is Inflation, OPN is Openness, and TOT is Terms of Trade.

In a dynamic form, equation (3.2) can be expressed as in equation (3.3).

$$CAB_t = \alpha + \beta_i \sum_{i=0}^{p_1} REER_{t-i} + \vartheta_i \sum_{i=0}^{p_2} RGDP_{t-i} + \lambda_i \sum_{i=0}^{p_3} INF_{t-i} + \varkappa_i \sum_{i=0}^{p_4} OPN_{t-i} + \eta_i \sum_{i=0}^{p_5} TOT_{t-i} + \delta \sum_{i=1}^q CAB_{t-i} + U_t \quad (3.3)$$

The coefficient of real effective exchange rate (REER) in equation (3.3) is expected to be positive as a depreciation of the real exchange rate increases exports and reduces imports by making exports less expensive and import more expensive. The coefficient of real GDP is expected to be indeterminate, where it favours export promotion, current account improves and where it increases income to enhance import, current account deteriorates. The effect of inflation is expected to be positive for the reason that increase in the rate of inflation creates macroeconomic uncertainty, which reduces investment in export promotion and hence leads to current account deterioration. The effect of trade openness is expected to be ambiguous. A more liberalized economy is expected to increase its exports as a result of larger market availability, thus improving the current account balance. Conversely, in cases of developing countries like Sierra Leone which rely heavily on imports of capital and intermediate inputs, the more the economy is open, the more it attracts capital and other imports. Additionally, restrictive and unfavourable global trading systems adversely affect exports from developing countries, hence reducing income and saving, resulting to worsening current account balance. The effect of terms of trade is expected to be positive. An increase in export price index or a decrease in import price index leads to improved terms of trade. This is expected to increase exports earnings; hence national income and saving increase, resulting into improved current account balance.

### 3.2 Estimation Technique and Data Issues

The application of Ordinary Least Squares to the specified model of current account given in equation (3.3) can lead to misleading conclusion when the model variables are not stationary as the standard errors will be underestimated, leading to large t-values. Consequently, there is a tendency to conclude that the variables are significant even when they are not, which may be due to the existence of common trend between the dependent variable and the independent variable. Thus, we tested each variable for stationarity. In the test for stationarity, we applied the Dickey Fuller GLS test, which is preferred to the original Augmented Dickey Fuller test as it has better size and power. However, because some variables may not be stationary due to the existence of structural break, which is a false representation of the stationarity status, a test for stationarity that take structural break into consideration is also applied. The Perron-Vogelsang test, which takes into consideration the existence of endogenous structural breaks from an immediate and gradual perspective is applied.

The study uses annual data from 1980 – 2019. The choice of the period is based on the fact that Sierra Leone has been experiencing unfavourable current account balance for a long time, including the 1980s and the study period is limited to the pre-COVID 19 period as the COVID-19 period is an exceptional year international trade transaction.

Real effective exchange rate, real GDP, inflation, openness to trade, and terms of trade. Real effective exchange rate is the nominal effective exchange rate; Real GDP reflects the value of all services and goods which are produced in Sierra Leone. Inflation rate is percentage change in end period consumer price index of Sierra Leone. Trade openness is the sum of exports and imports measured as a share of gross domestic product. Terms of trade is the relative prices of exports and imports. The model variables are obtained from World Bank's World Development Indicators (WDI) while the inflation rate and real effective exchange rate are also obtained from the International Financial Statistics (IFS) of the IMF.

## 3. Empirical Results

### 4.1 Test for Stationarity

The results of the test for stationarity are done in order to determine the appropriate modeling strategy. More importantly, regression with nonstationarity variables using OLS leads to misleading conclusion because the high R-squared and significant test statistics that come with it may be due to the existence of common trend in the dependent variable and the nonstationary regressors. Thus, tests for stationarity were conducted. According to the Dickey Fuller GLS, all model variables are stationary with the exception of real GDP and terms of trade, which are stationary after first differencing. Thus, real GDP and term of trade are integrated of order one (I(1)) while all the other variables are integrated at order zero (I(0)). According to the Perron Vogelsang tests, there are breaks in all model variables either in immediate or gradual form. Moreover, all variables are I(0) with the exception of openness, which is I(1). The combination of the test results shows that all model variables are stationary. Hence, the application of OLS to model current account balance is appropriate. However, because a dynamic model is superior to a static model, we adopted a dynamic model of current account balance.

### 4.2 Estimated Model of Current Account Balance

All model variables are found to be stationary. Thus, we estimated the current account model in the levels of the model variables without testing for cointegration. However, in order to account for delayed effect of the model variables and the possible existence of persistence in current account balance, we estimated a dynamic model. In the dynamic model, current account is estimated as function of both current and lagged values of all variables. The overparametised model was estimated and insignificant variables were consequently dropped to obtain a model with only significant variables at the 5% level of significant. Table 4.1 shows the parsimonious model.

The parsimonious model was tested for residual normality, serial correlation, heteroscedasticity, and parameter stability. The model passed all these tests. The current account balance model shows that inflation has a contemporaneous negative effect on current account balance but after one year, the effect is positive. Hence, inflation initially acts as macroeconomic uncertainty; when it increases, it reduces domestic competitiveness, which reduces exports. Overtime, it reduces purchasing power. Hence, import demand reduces in real terms and the trade balance improves. This may come with unfavorable effects on domestic income, but it improves the trade balance after a year.

**Table 4.1. The Parsimonious Current Account Model**

VARIABLES	Coefficient (P-value)
CAB <sub>t-2</sub>	-0.295** (0.050)
INF <sub>t</sub>	-0.148** (0.036)
INF <sub>t-1</sub>	0.193*** (0.003)
REER <sub>t</sub>	-0.139*** (0.001)
REER <sub>t-1</sub>	0.167*** (0.000)
OPN <sub>t</sub>	-0.687*** (0.000)
TOT <sub>t</sub>	-0.359*** (0.007)
TTOT <sub>t-2</sub>	0.266** (0.024)
Constant	9.997 (9.085)
F(8, 29)	8.26
Prob. > F	(0.000)***
Observations	38
R-squared	0.695
Adj. R-squared	0.6107

**Note:** 1. P-Values are in parentheses 2. \*\*\* means p-value<0.01, \*\* means p<0.05 and \* means p-value<0.1

The model also shows that real effective exchange rate has a contemporaneous negative effect on current account balance. That is, when real effective exchange rate decrease (depreciates), current account balance improves. However, after a year, it deteriorates. This suggests that the effect of exchange rate depreciation on the current account balance of Sierra Leone is incipient but does not last for a year. In addition, openness of Sierra Leone to trade is found to have a negative contemporaneous effect on the current account balance. This implies that when the economy becomes more open, the net effect is on increased imports instead of more exports.

Terms of trade is found to have a negative contemporaneous effect on the current account balance of Sierra Leone. After two years, it has a positive effect. This means that terms-of-trade improvement of Sierra Leone tends to come from reduced import price. This increases imports and the current account balance deteriorates. However, after two years, it improves the current account balance, suggesting that the increase in imports is not sustainable given that its financing from increase exports is weak. The parsimonious current account balance model shows no persistence, as the lagged current account balance is found to have a negative significant effect, requiring consistent and systematic effort to improve the current account balance. Real GDP is not found to be significant in explaining current account balance in Sierra Leone, since it does not appear in the parsimonious model of current account balance. This may be due to the fact that real GDP growth is not driven more by trade in Sierra Leone.

## 5. Conclusion

The current account balance is an important indicator of macroeconomic imbalances of an economy and is the mirror image of the resource gap of an economy. A deficit in the current account balance indicates shortage of the output supply relative to aggregate demand, necessitating reliance on resources in the rest of the world to fill in supply shortage and finance excess spending. In Sierra Leone the current account balance has been unfavorable such that deficit is the norm while surplus is exceptional, which was the case in 1986 and 1991. During the period 1980 to 2021, the economy of Sierra Leone ensued persistence current account deficit. We estimated a current account model using an auto-regressive distributed lag model (ARDL model with annual data from 1980 to 2019 in the context of the Pesaran-Shin-Smith (2001) strategy, which involves initially determining the order of integration of all variables.

The result of the model estimation shows that all model variables are stationary, and inflation has a contemporaneous negative effect on current account balance though after one year, the effect is positive. Real effective exchange rate has a contemporaneous negative effect on current account balance. That is, when real effective exchange rate decrease (depreciates), current account balance improves but after a year, it deteriorates. Openness of Sierra Leone has a negative contemporaneous effect on the current account balance. Terms of trade is found to have a negative contemporaneous effect on the current account balance of Sierra Leone and after two years, it has a positive effect and current account balance shows no persistence, as the lagged current account balance is found to have a negative significant effect while Real GDP is not found to be significant in explaining current account balance in Sierra Leone.

As inflation has a negative contemporaneous effect on the current account balance, monetary authorities need to continue having inflation as the objective of monetary policy, and policy makers should strengthen supply side policies that support low inflation from increased output. Real effective exchange rate has a contemporaneous negative effect on current account balance. In that regard, policy makers should foster a competitive real exchange rate that supports domestic industries to expand output to meet domestic and foreign demand, which can save the much-needed foreign exchange. As the openness of Sierra Leone to trade is found to have a negative effect on the current account balance, there is need for export promotion strategies so that openness increases through export expansion relative to overall economic activities, which improves current account balance. The negative effect of terms of trade on the current account balance suggests that terms-of-trade improvement to which current account responds tends to come from reduced import prices, which increases imports and deteriorates the current account. Thus, further efforts to strengthen fiscal consolidation is imperative.

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