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BANK CREDIT, PRIVATE INVESTMENT AND MACROECONOMIC UNCERTAINTY IN SIERRA LEONE

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Abstract

The paper investigates the effect of bank credit to the private sector on private investment in Sierra Leone and the role of macroeconomic uncertainty in the relationship. An autoregressive distributed lag model of private investment is estimated with annual data from 1980 to 2019, using OLS in the context of Pesaran-Shin-Smith approach. The results show that there is a long run relationship between private investment and the model variables and in the long run, bank credit has a positive and significant effect on private investment in Sierra Leone, while macroeconomic uncertainty vitiates this effect. In the short run however, bank credit is not found to have a significant effect on private investment, though it contributes positively and the impact of macroeconomic uncertainty on this effect is also not significant, though it reduces the impact of bank credit. Hence, during high macroeconomic uncertainty, like the current global environment, strongly leveraging on bank credit to the private sector is useful for boosting private investment in Sierra Leone. However, there is strong need for an end to higher global uncertainty, as it is inimical to the positive impact bank credit has on private investment.

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1. Introduction

Sustained economic growth is important for poverty reduction and economic development and both physical and human capital investment have long been considered as a critical factor for growth. For one thing, according to the endogenous growth theory by Lucas (1990), more investment in human capital and technology raises the efficiency of labour, which is conducive to growth. The channel is that investment in human capital raises productivity through (i) the internal effect, as the workers undergo more training and become more productive and (ii) the external effects through spillover to technology. Thai is, more technology increases the efficiency of workers, with the same labour producing more. Also, according to Romer (1986), more investment in technology increases growth. In this regard, private investment, which is a component of investment, is important for economic growth. In spite of the importance on private investment to growth, poverty reduction and economic development, private investment requires financing. Bank financing is a major domestic source for private investment, especially in a country where the financial sector in largely dominated by banks and there is no active capital market, like Sierra Leone.

Given the dynamics of private sector investment and domestic credit to the private sector in Sierra Leone, the early 1980s to mid-1980s observed higher private investment in Sierra Leone than all the following half decades until 2009, while that of 2010-2014 more than doubled each of the previous six half decades[3]. However, 2010-2014 was a period with huge investment into the mining sector (mining of iron ore). Credit to the private sector also took the same trend, with the 2010-2014 half-decade registering higher bank credit (% of GDP) with mean value of 6.2 %, though lower than the 1980-1984 mean value of 6.9 % (as shown in Table 2.1). In addition, a line plot of credit to the private shows that credit to the private sector tends to move together with private investment (as shown in Figure 2.1)

High macroeconomic uncertainty tends to create the expectation that economic conditions would not be favourable in the near to medium term, this induces adverse consumer and producer expectations that tend to push prices up further, which affects resource allocation. This may hinder

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[3] Table 2.1 provides historical figures for private investment and bank credit to the private sector in Sierra Leone

the efficiency of bank credit in terms of the unit of private investment a unit of bank credit can create. Given the challenging global environment, driven by the COVID-19 pandemic and fueled by geo-political tension- the Russian-Ukraine War, it is important to examine the role of macroeconomic uncertainty play on the link between private investment and bank credit, especially countries whose financial systems are dominated by banks, like Sierra Leone.

The recently observed global uncertainty is a quintessence of a period with high macroeconomic uncertainty coexisting with bank lending. Some central banks intervened to ensure stabilisation through the financial sector, by providing finance to commercial banks for on lending to the private sector. In Sierra Leone, the Bank of Sierra Leone implemented the second phase of the Special Credit Facility (SCF) with the injection of Le 500 billion (US$ 50 million) at an interest rate of 5 percent in September 2021, in order to support the Economic Recovery Programme. The interest rate was less than a third of the then average lending rate of commercial banks. The Bank of Sierra Leone also created Le 100 billion (US$ 100 million) Agricultural Credit Facility (ACF) to support the agricultural sector. Private sector credit grew by 33.9 percent in 2021, up from 4.95 percent in 2020.The economy grew by 4.0 percent, in 2021, from - 2.0 percent in 2020 while macroeconomic uncertainty which had been heightened in 2020 due to the COVID-19 pandemic in 2020, re-merged in 2022 due to geo-political tensions-the Russia-Ukraine war.

The objective of the paper is therefore to investigate the effects of domestic bank credit on private investment in Sierra Leone. The macroeconomic uncertainties we consider are inflation, aggregate demand and real exchange rate uncertainties. These are the major domestic macroeconomic uncertainties an economy can face. As in Serven (1993), inflation uncertainty measure aggregate profitability of capital, output uncertainty measures aggregate demand uncertainty while real exchange rate measures volatility of the relative profitability of investing home and investing abroad.

A number of studies have investigated the effects of domestic bank credit on private investment. These include Bonga and Nyoni (2017), Suhenddra and Anwar (2014), Anyiwe and Joshua (2019) and Jalloh (2014). However, the role of macroeconomic uncertainty in the credit–investment effect remains untapped, in spite of the huge supply side disruptions that such uncertainty may create. The untapped role of macroeconomic uncertainty on the impact of bank credit on private investment is important to address. It is important because macroeconomic uncertainty may affect

the attainment of key macroeconomic policy objectives- such as price stability and economic growth, as in recent global uncertainty of 2021.

The rest of the paper is organized as follows. Section 2 is Private Investment Trend and the Stylised Facts, Section 3 is the Methodology, Section 4 is the Empirical results, Section 5 is Conclusion.

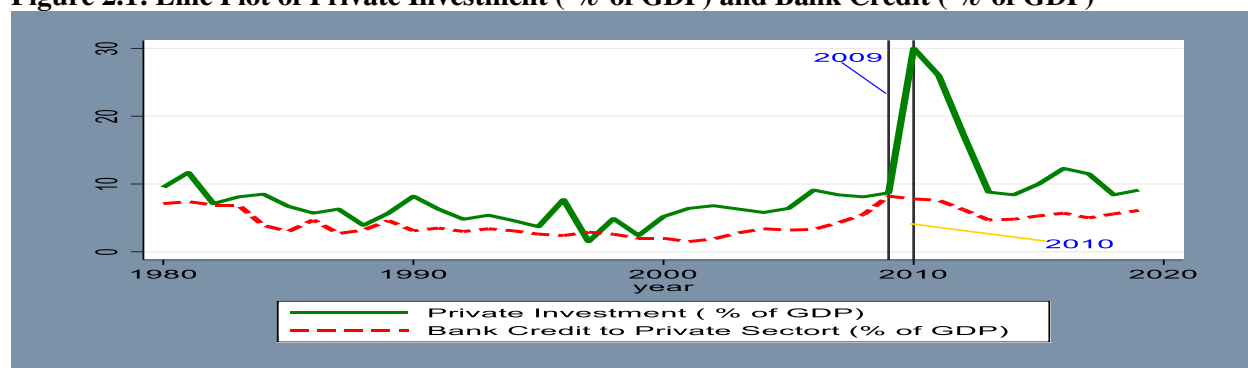## 2. Private Investment Trend and the Stylised Facts

2.1 Trend of Private Investment in Sierra Leone

Table 2.1 shows the mean and median of private investment (% of GDP) and domestic credit to the private sector (% of GDP) by various half-decades since 1980 while Figure 2.1 shows the line plot of the two variables. Table 2.1 shows that while the mean private investment was 9.0 % of GDP in the first half of the 1980s, it declined to less than 6 % in the second half of the 1980s. Also, domestic credit to the private sector by the banking system, which recorded an average of 6.4 % of GDP in the first half of the 1980s, reduced to 3.6% of GDP during the second half of the 1980s and the average of the first and second halves of each decade after the 1980s remained lower than the first half of the 1980s. The same pattern followed for private investment, though during 2010-2014 private investment more than doubled the value during 1980-1984 and mean domestic credit was close to its value during this period. However, the average private investment during 2015-2019, which was 10.3 % of GDP, was higher than the 1980-1984 value, though lower than the 2010-2014 value. Domestic credit to the private during 2015-2019 was also lower than the 2010-2014 value but with the exception of 1980-1984, it was higher than the other half decades. This implies that domestic credit to the private sector and private investment had both been lower in the last five year leading to the pandemic than the first half of the decade before the pandemic struck (2010-2014), though higher than all half decades since 1985. Figure 2.2 shows that the maximum domestic credit and private investments occurred in 2009 (for credit) and 2010 (for private investment) respectively. Also, the figure shows that excluding the years with the maximum values, these two variables exhibit an upward trend after 1999 and a downward trend from 1980 to 1999.

Table 2.1: Private Investment (%of GDP) and Bank Credit (% of GDP) in Sierra Leone

		1980- 1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019	1980-2019
Investment	Mean	9.0	5.7	5.9	4.0	6.1	8.1	18.1	10.3	8.4
(% of GDP)	Median	8.5	5.7	5.4	3.7	6.3	8.4	17.2	10.0	7.4
Credit	Mean	6.4	3.6	3.2	2.5	2.3	4.9	6.2	5.5	4.4
(% of GDP)	Median	6.9	3.2	3.1	2.6	2.0	4.3	6.2	5.6	3.7

Figure 2.1: Line Plot of Private Investment (% of GDP) and Bank Credit (% of GDP)

2.2 Stylised Facts: Private Investment, Credit and macroeconomic Uncertainty

Figure 2.1 shows the scatter plot of private-investment-GDP ratio against domestic-credit-GDP ratio for various quartile values of macroeconomic uncertainty during the period 1980 to 2019. The figure shows that that periods with the lowest macroeconomic uncertainty were 1995, 1996, 2002, 2007, 2010, 2011, 2012 , 13, 14 and 2019 while periods with the highest macroeconomic uncertainties were 1983, 1987, 1988, 1989,1990 , 1994, 2000, 2001, 2003 and 2004. This suggests that high macroeconomic instability was common in the early 1980s to early war years of the 1990s. Also, even though the Sierra Leone war ended in 2002, the high macroeconomic instability which had been common in the early war years showed up in the first half of the first decade of the 2000s, with the exception of the year when the war was declared over. It also reveals that in Sierra Leone, election years of 1996, 2002, 2007 and 2012 observed low macroeconomic uncertainty. It also suggests that the immediate post global financial crisis periods of 2010, 2011 and the iron ore boom year of 2013 were characterized by low macroeconomic stability. Moreover, the last year before the COVID-19 pandemic, 2019, was characterized by low macroeconomic uncertainty in Sierra Leone.

Figure 2.1 also shows that for all quartile values of macroeconomic uncertainty, the effect of domestic credit on private investment is positive, though the figure does not show the

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macroeconomic uncertainty quartiles with the strongest or lowest impact of domestic credit on private sector credit.

Table 2.1 shows the simple regression coefficient of private-investment- GDP ratio for the four quartile segments during the period 1980 to 2019. The table shows that the marginal effect of domestic credit on private investment when macroeconomic uncertainty is in the lower quartile is 3.58, when it is more than the lower quartile value but less than the second quartile (median), it is 1.00 and when it is more than the median but lower than the upper quartile it is 1.11 and when it is above the upper quartile, it is 0.78 while for all the observation, it is 1.89. This suggests that the impact of domestic credit on private investment is positive, and the impact is stronger under low macroeconomic uncertainty. This simple regression approach does not however control for other variables, and we consider it only as a stylized fact, requiring detailed investigation.

Figure 2.1: Scatter plot of private-investment-GDP ratio against domestic-credit-GDP ratio for various quartile values of macroeconomic uncertainty during the period 1980 to 2019

Panel A: Macroeconomic Uncertainty below lower quartile median

Panel B : Macroeconomic Uncertainty between lower quartile and median

Panel C: Macroeconomic Uncertainty above median but below upper quartile

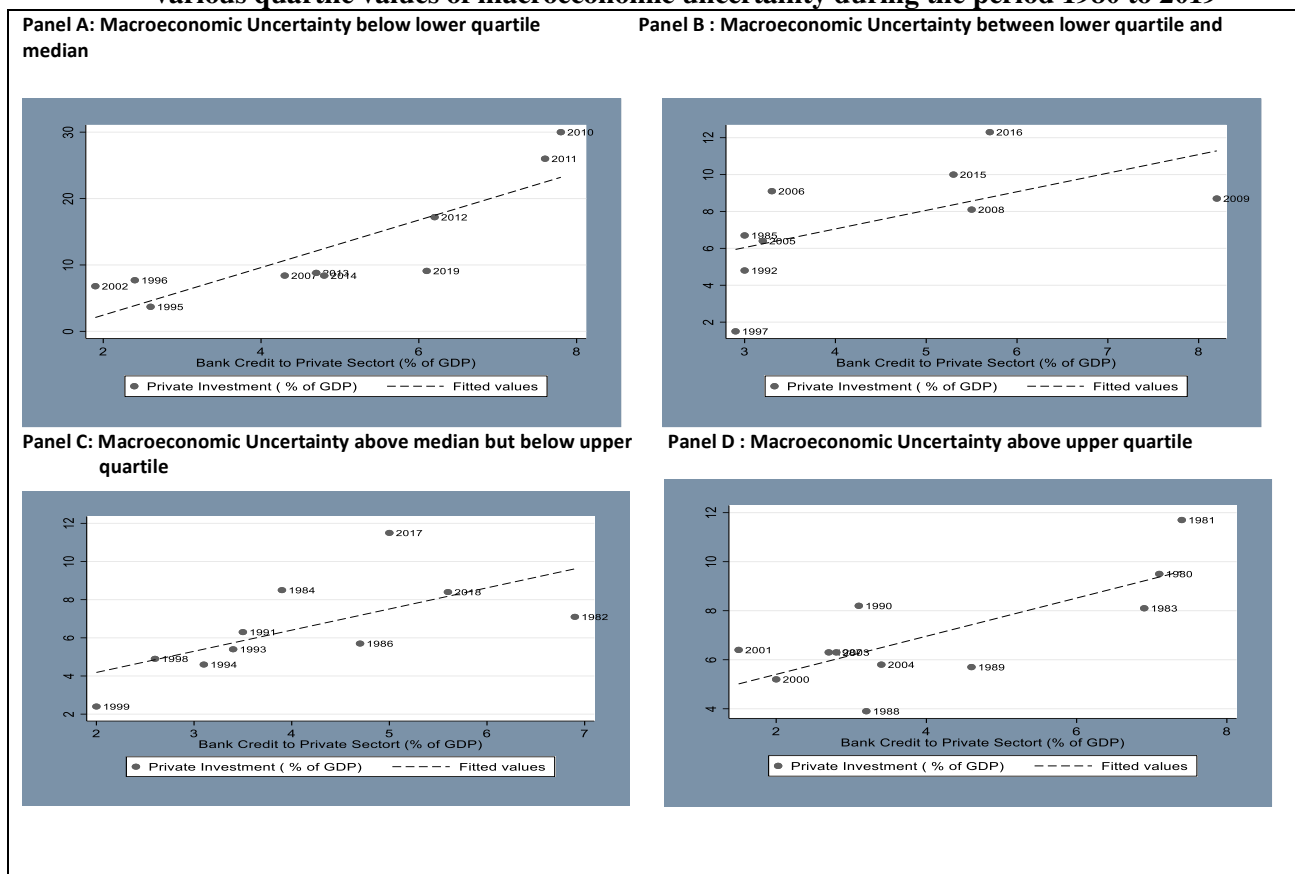Panel D : Macroeconomic Uncertainty above upper quartile

Table 2.1: simple regression coefficient of credit (% of GDP) on private investment (% of GDP) by Macroeconomic Uncertainty Quartiles during the period 1980 to 2019

Variable	Below Lower Quartile	Between Lower Quartile and Median	Between Median and Upper Quartile	Above Upper Quartile	All Observations
Credit-GDP Ratio	3.579***	1.008*	1.108**	0.779***	1.886
	(0.002)	(0.095)	(0.043)	(0.008)	(0.000)
Constant	-4.71	3.02	1.97	3.85	0.192
	(0.281)	(0.266)	(0.349)	(0.005)***	(0.909)
R-Squared	0.72	0.35	0.42	0.57	0.43

Values in parentheses are p-values . ***, ** and * indicates significant at 1 %, 5% and 10 % respectively

3. Methodology

3.1 Theoretical Model

The private investment model is specified based on the user cost of capital theory, which considers use of capital to have cost, (Romer, 1986). Hence, interest rate is expected to have a negative effect on private investment and has been used in a number of empirical private investment models, including Garikai and Nyoni (2017) for sub-Saharan Africa and Oshikoya (1994) for Africa. Domestic credit to the private sector is incorporated into the model as the interest is to determine its effect. Domestic credit is theoretically important in the private investment model as increased domestic credit is expected to make funds available for investment, thereby boosting private investment. As in Oshikoya (1994), Hailu and Debele (2015) and Ouattara (2004), among others, public investment is also included to determine whether it substitutes or complements private investment in Sierra Leone. A measure of economic activities is included to determine the role of income as an accelerator for private investment in Sierra Leone.

The departure of this paper from previous studies is explicitly making provision to determine how macroeconomic uncertainty affects the bank credit effect on private investment, which is important given the observed global environment during the coronavirus pandemic and the Russian-Ukraine War.

We specify private the private investment model in dynamic form to account for delayed effect in the short run, which also reduces the problem of omitted variable (omitted lags) problem occurring due to lack of rich model dynamics, which poses potential for autocorrelation in the residuals. . Thus, with data obtained from 1980 to 2019 we specify the auto-regressive distributed lag (ARDL) model in equation (1).

$$(PRINV)_t = C_0 + \sum_{i=0}^{i=p} \beta_i(PUINV)_{t-i} + \sum_{i=0}^{i=p} \gamma_i(RGDP)_{t-i} + \sum_{i=0}^{i=p} \delta_i(CREDIT)_{t-i} +$$
$$\sum_{i=0}^{i=p} \theta_i LNDR_{t-i} + \sum_{i=0}^{i=p} \mu_i INTERACT\_UNC_{t-i} + \sum_{i=1}^{i=q} \rho_i(PRINV)_{t-i} + U_t \qquad (1)$$

Where PRINV is private investment in current prices (% of GDP), , PUINV is public investment (% of GDP), RGDP is real GDP, CREDIT is domestic credit to the private sector (% of GDP), LENDR is interest rate and INTERACT_UNC is macroeconomic uncertainty interacted with domestic credit, p and q are maximum lags and U is the error term that is assumed to be identically and independently normally distributed for the application of Ordinary Least Squares to yield unbiased estimators with minimum variance.

When the variables of equation (1) are integrated of order zero or one (stationary in level or first difference form), equation (1) can be reparameterised as in equation (2).

$$\Delta\left(\frac{PRI}{GDP}\right)_t = C_0 + \sum_{i=0}^{i=p-1} \beta_i\Delta\left(\frac{PUI}{GDP}\right)_{t-i} + \sum_{i=0}^{i=p-1} \gamma_i\Delta(RGDP)_{t-i} + \sum_{i=0}^{i=p-1} \delta_i\Delta\left(\frac{DOMC}{GDP}\right)_{t-i}$$
$$+ \sum_{i=0}^{i=p-1} \theta_i\Delta INT_{t-i} + \sum_{i=0}^{i=p-1} \mu_i\Delta MACRO_{UNC_{t-i}} + \sum_{i=1}^{i=q-1} \sigma_i\Delta\left(\frac{PRI}{GDP}\right)_{t-i} +$$
$$-\alpha\left(\left(\frac{PRI}{GDP}\right)_{t-1} - \omega_1\left(\frac{PUI}{GDP}\right)_{t-1} - \omega_2 RGDP_{t-1} - \omega_3\left(\frac{DOMC}{GDP}\right)_{t-1} -\right.$$
$$\left.\omega_4\, INT_{t-1} - \omega_5 MACRO\_UNC_{t-1}\right) + U_t \qquad (2)$$

The coefficients of the variables in the bracket are the long run effects of changes in the respective variables while the βi's, $\gamma_i's$, $\delta_i'_s$, $\theta_i'_s$ and $\mu_i's$, are the short run coefficients and the following hold.

$\omega_1 = \frac{\emptyset_1}{\alpha}, \omega_2 = \frac{\emptyset_2}{\alpha}, \omega_3 = \frac{\emptyset_3}{\alpha}, \omega_4 = \frac{\emptyset_4}{\alpha}$ and $\omega_5 = \frac{\emptyset_5}{\alpha}$,

$\emptyset_1 = \sum_{i=0}^{i=p} \beta_i, \emptyset_2 = \sum_{i=0}^{i=p} \gamma_i, \emptyset_{3=} \sum_{i=0}^{i=p} \delta_i, \emptyset_4 = \sum_{i=0}^{i=p} \theta_i$ and $\emptyset_5 = \sum_{i=0}^{i=p} \mu_i$,

$\emptyset_0 = (\sum_{i=1}^{i=q} \rho_i - 1)$, and

$\alpha = -\emptyset_{0=} - (\sum_{i=1}^{i=q} \rho_i - 1) = (1 - \sum_{i=1}^{i=q} \rho_i) > 0$.

3.2 Estimation Technique

According to Pesaran and others (2001), when equation(4) is estimated the null hypothesis that there is no cointegration between private investment and the regressors is rejected when (i) the joint null hypothesis $H_0: (\alpha = 0) \cap (\omega_1 = \omega_2 = \omega_3 = \omega_4 = \omega_5 = 0)$ is rejected using the F-statistic and (ii) the single null hypothesis $H_0: \alpha = 0$ is rejected, using the t-statistic. However, once the joint null hypothesis is not rejected, there is no cointegration (no long-run relationship) among the variables.

Pesaran and others (1998) compute asymptotic critical values from cases where all regressors are purely I(0) to cases where all are purely I(1). That is, they provide lower and upper bounds for the asymptotic critical values, depending on the number of regressors, the order of integration of the variables and the deterministic model components in the ARDL model. Hence, the cointegration test is referred to as the bound testing approach. Narayan (2005) obtains the critical values for small-sample critical values from different sample size. Kripfganz and Schneider (2018) provide critical values with probabilities of rejecting the null hypothesis wrongly (p-values). This approach is used here because it accommodates mixture of I(0) and I(1) variables and can handle only I(1) variables. In addition, the approach is compatible with estimation of equation (1) and transforming it to obtain equation (2).

3.3 Data Issues

Aggregate annual data from 1980 to 2020 is used. The data is obtained from World Bank's World Development Indicators. Private investment is considered as gross capital formation   (private) at current prices (% of GDP, at current prices); public investment is considered as the difference between gross fixed capital formation (% of GDP) and the calculated private investment (% of GDP); real GDP is GDP at constant prices; domestic credit is net claims of the banking sector to the private sector (% of GDP) and interest rate is the average lending rate.

Macroeconomic uncertainty is obtained from principal component determination of inflation uncertainty, real exchange rate uncertainty and aggregate demand uncertainty. The three year moving standard deviation and moving mean of inflation, real exchange rate and real GDP and the

coefficient of variations are subsequently obtained for each of the variables. We then obtained a principal component of the three to obtain an index of macroeconomic uncertainty.

4. Empirical Results

4.1 Times Series Properties of Model Variables

We conducted unit root test to determine the order of integration of the variables, as this is important to determine the direction of the model estimation. The ADF-GLS and the Perron-Vogelsang tests were employed. The results show that all variables are stationary in level, with the exception of Private investment which is stationary after first differencing. As the vector of variables has a combination of I(1) and I(0) variables, we apply the Pesaran-Shin-Smith (2001) method of testing for cintegration to determine whether a linear combination of the variables is stationary. That is, to determine whether there is cointgration among the variables[4]. Table 1 shows the results of the unit root tests.

In the determination of the existence or otherwise of cointegration, using the Pesaran-Shin-Smith (2001) approach, the optimal lag length for the estimation of the auxiliary autoregressive distributed lag (ARDL) model was determined using the SIBC as it is an unbiased estimator of lag length. Various diagnostic tests were done on the parsimonious ARDL model and the relevant corrections[5] were done to estimate the preferred ARDL model used for the cointegration test. Table 2 shows the results of the cointegration tests. The result of the cointegration test shows that there is cointegration. This is revealed by both the F-statistics and the t-statistics at the 1 % level.

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[4] The existence of cointegration implies that there is a long run relationship among the variables.
[5] Dummy variables for 1996, 2006,2013 and 2018 were introduced based on observation of the relevant standardized residuals from the preliminary ARDL models estimated.

4.2. The Estimated Long- and Short- run Private Investment Models

As there is cointegration, both the short run and long run models of private investment are estimated. Panel A in Table 2 shows the long run model and Panel B in Table 2 shows the short run model.

The estimated long run model of private investment model shows that domestic credit to the private sector has a positive effect on private investment in Sierra Leone. The suggests a significant bank lending channel in Sierra Leone, which may be triggered by monetary and financial policies in the direction of increasing domestic credit, in an effort to increase private investment and economic activities.

The coefficient of the interaction term is negative and significant. Hence, in the long run, the effect of domestic credit on private investment in Sierra Leone becomes weak with higher macroeconomic uncertainty. This suggests that macroeconomic uncertainties, for example, supply chain disruptions triggered by COVID-19 pandemic; increased import prices, which leads to terms-of-trade shocks and the effects of geopolitical tensions are not conducive to private investment in Sierra Leone.

Lending rate has a negative effect on private sector in the long run but the effect is not significant. The negative effect of lending rate on private investment is consistent with the rental price of capital principle, where increased cost of capital reduces the demand for capital, which reduces capital expenditure of the private sector and hence private investment. However, as we do not find a significant lending rate effect on private investment and credit to the private sector has a positive and significant effect, there is no independent effect of lending rate on private investment. This suggests that the role of lending rate in the private investment dynamics may be captured in the volume effect of domestic credit on the private sector, where increased lending rate reduces demand and the volume of credit, which in turn reduces private investment.

Other results of the long-run model are that public investment and real GDP are significant in explaining private investment in Sierra Leone in the long run, with public investment complementing private investment and real GDP acting as an accelerator for private investment, as in the Accelerator Principle of Investment.

Table 1: Results of the Unit Root Test Results

ADF-GLS Test				Perron- Vogelsang Test						Conclusion
				Additive Outlier (Sudden Break)			Innovative Outlier (Gradual Break)			
Variable	Deterministic Component	Optimal Lag	Test Statistic	Break Date		Test Statistic Date	Break Date		Test Statistic	
				Date	P-Value		Date	P-value		
(PRI/GDP)	Constant	0	-2.77	2008**	0.001	-0.590	2009	0.052	-5.578*	I(1)
Δ(PRI/GDP)	Constant	1	-4.45**							
(PUI/GDP)	Constant	8	-0.73	2008*	0.010	-2.88	2009**	0.006	-5.089*	I(0)
LnRGDP	Constant	0	0.097	2008**	0.000	-2.645	2000**	0.000	-6.759*	I(0)
(DOMC/GDP)	Constant	0	-1.58	2007**	0.000	-4.406*	2005*	0.016	-3.146	I(0)
LENDR	Constant	0	-1.69	1988*	0.025	-5.698*	1989	0.829	-2.572	I(0)
MACRO-UNC	Constant	0	-8.20**							I(0)
Critical Values				Critical Values						

Constant	Constant and Trend	Additive Outlier	Innovative Outlier
1%: -2.63	**1% :** -3.77	**5% : -3.560**	**5%: -4.270**
5%: -1.95	**5%:** -3.19		

Table 2: The Estimated Private Investment Model

Panel A: The Long Run Private Investment Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Public Investment GDP Ratio	0.331	0.144	2.294	0.036
Ln(Real GDP)	3.387	1.117	3.034	0.008
Domestic Credit GDP Ratio	0.990	0.132	7.525	0.000
Lending Rate	-0.017	0.022	-0.748	0.465
Interaction , Credit and Macro Uncertainty	-0.005	0.002	-2.889	0.011
C	-96.343	32.895	-2.929	0.010

Panel B: The Short Run Private Investment Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Public Investment GDP Ratio	0.483	0.028	17.192	0.000
Ln(Real GDP)	4.186	1.142	3.667	0.002
Ln(Real GDP), First Lag	-4.049	1.127	-3.592	0.002
Domestic Credit GDP Ratio	0.158	0.091	1.741	0.101
Domestic Credit GDP Ratio, First Lag	0.125	0.106	1.181	0.255
Lending Rate	0.026	0.014	1.789	0.093
Interaction , Credit and Macro Uncertainty	-0.001	0.001	-1.787	0.093
Dummy_1996	2.568	0.532	4.825	0.000
Dummy_2000	3.732	0.527	7.084	0.000
Dummy_2006	4.074	0.525	7.759	0.000
Dummy_2010	19.474	0.596	32.693	0.000
Dummy_2013	-4.368	0.606	-7.210	0.000
Dummy_2018	-1.883	0.526	-3.579	0.003
Error Correction Term	-0.588	0.028	-20.880	0.000

R-squared	0.992	Mean dependent var	0.036
Adjusted R-squared	0.988	S.D. dependent var	4.646
S.E. of regression	0.513	Akaike info criterion	1.787
Sum squared resid	5.782	Schwarz criterion	2.403
Log likelihood	-18.164	Hannan-Quinn criter.	2.002
Durbin-Watson stat	2.077		

The short-run private investment model shows that in the short run, though domestic credit to the private sector has a positive effect on private investment, the effect is not significant. In addition, the interaction terms testing the strength of the effect of domestic credit on private is insignificant, though its negative coefficient indicates the effect of domestic credit on private investment is lower under higher macroeconomic uncertainty.

Other short run results of the model are (i) lending rate is has a positive effect on private investment in the short run in Sierra Leone though it is not significant (ii) public investment has a positive and significant effect on private investment (iii) real GDP has a positive contemporaneous effect but a negative one-year delayed effect on private investment. However, the sum of the two coefficients is positive. Hence, the cumulative effect of real GDP on private investment is positive.

The error correction term is -0.588, implying that 58.8 % of the disequilibrium between the actual and long term (equilibrium) private investment in Sierra Leone is covered up in a year.

5. Conclusion

Banks are the major players in the private sector financing landscape of a large number of developing countries, including Sierra Leone. The paper therefore sought to investigate the effect of bank credit to the private sector on private investment in Sierra Leone and the role of macroeconomic uncertainty in the relationship.

By using aggregate annual data from 1980 to 2019, an autoregressive distributed lag model, which captures the delayed impact of variables and ensures serial correlation is not swept under the carpet, is estimated. The model is estimated by first testing for the stationarity of model variables, using the Dickey-Fuller Generalised Least squares (DF-GLS), which has better size and power than the original (Augumented) Dickey-Fuller (ADF) test, and the Perron-Vogelsang test, which accounts for a structural break in an immediate or gradual form. The results show that only private investment is stationary after first differencing, while all other model variables (public investment, lending rate, real GDP, bank credit and macroeconomic uncertainty) are stationary in level. The application of the Pesaran-Shin-Smith bound testing procedure for cointegration technique, which

is justified on the basis of the mixture of level stationarity (I(0) and one-difference stationarity (I(1), reveals that there is cointegration (long run relationship) among private investment and the model regressors.

The model estimates show that in the long run, bank credit to the private sector has a positive and significant effect on private investment in Sierra Leone and macroeconomic uncertainty vitiates this effect. Moreover, while public investment and increased economic activities are found to have significant positive long-run effects on private investment in Sierra Leone, the evidence does not show a significant effect from lending rate, though negative. In the short run however, bank credit is not found to have a significant effect on private investment though it enters the model with a positive coefficient and the impact of macroeconomic uncertainty on this effect is also not significant though negative in sign.

The result implies that in the current global macroeconomic environment of high uncertainty, strongly leveraging on bank credit is a reliable means for boosting private investment. However, the expected positive effect on private sector investment may not be immediate and the uncertainty vitiates the effect of the bank credit on private investment, which effect is stronger in the long term. It also implies that in the mist of the existing macroeconomic uncertainty, higher than normal bank credit is needed to grow private investment in Sierra Leone as the uncertainty takes its share of the effect of the credit on private investment. This requires bigger financial institution support in through banks to alleviate poverty through increase private investment to support growth and employment.

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