

## **LONGTERM FINANCE AND MACROECONOMIC ENVIRONMENT IN SSA: IMPLICATIONS FOR THE RATE OF URBAN HOUSING DEVELOPMENT**

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### **ABSTRACT**

This paper examines some factors that influence long-term funds in Sub-Saharan Africa and its implication for the rate urban housing development. The study employed seemingly unrelated regression estimations with panel data of twenty-two African countries during the period 1980-2013. The increasing rate of urbanization, growing urban housing deficit and low formal private sector investment in the housing sector challenge the successful realization of the sustainable housing for all in Sub-Saharan Africa (SSA) countries. The findings of the study suggest that the high rate of inflation and low real interest rates have serious consequences on long-term finance development. Other factors such as interest rate ceilings have also have an adverse effect on household savings and thus impede supply of long-term credits such as mortgage loans. Therefore, we conclude that the high rate of inflation and excessive government controls distorts the efficient allocation of long-term credits. The findings of the study suggest that for effective long-term financing in such an inflationary economy, temporary indexation is important to account for the sporadic changes in the rate of inflation and to reduce cost of inflation there by accelerate savings and thus housing finance.

Keywords: Africa, housing deficit, long-term finance, savings, urbanization rate

## INTRODUCTION

In recent years, the Sub-Saharan African countries have experienced a relative growth in the rate urbanization, driven by demographic changes including the increase in natural population and rural-urban migration (United Nations Economic Commission for Africa, 2013). The recent urban population data show that the Africa urban population growth rate in 2013 is 5.1 percent, almost twice as much as the total population growth rate (World Development Indicators, 2013). However, the urbanization in Africa, unlike in other developing regions have not accompanied by higher poverty reduction. The influx of rural dwellers into the towns and cities has heightened the urban poverty as the number of number of slum-dwellers continues to rise (UN-Habitat, 2013).

The various governments and the international agencies had put some modest efforts to address the housing problem for the growing urban population but limited resources and low formal sector investment constraint the government to meet the rising demand for housing units in the urban areas (Giddings & Foreign, 2007). The formal sector investment has not been low but also their housing programs mostly targeted the middle and the upper income group for obvious reasons, perceived risk and affordability. Therefore, the governments went on to implement policies that enables individuals to have access to housing finance, establishment of the housing finance institutions like mortgage banks and the housing micro finance institutions. However, in spite of the various measures, the percentage of credits to the housing sector is relatively low; the level of financial intermediation as measured by the ratio of total annual loans advanced to the value of investment in housing real sector is between 5% and 8%, according to the national accounts.

There has been some attempt to investigate the challenges facing the housing sector in Sub-Saharan Africa and other emerging and developing economies. The previous studies on housing sector in SSA are mainly concerned with the difference between the growth in the urban population and the number of housing units produced annually. Their discussion focuses more on the challenges facing the governments and the housing agencies in the provision of affordable housing units for the poor, particularly the difficulties they face in accessing mortgage credits. The role of the macroeconomic environment on effective housing finance system has been a low priority on research and development agenda in SSA. However, the macroeconomic environments particularly the high inflation rates may have adverse effect on the supply long-term mortgage credits. It has been argued that, for effective housing finance system, a stable economy is essential to enable stakeholders to take decisions without panic (Colander, 2004).

McKinnon (1973) and Shaw (1973) were the first to claim that the role of the financial intermediaries of mobilizing adequate savings and creating investment in the developing countries are seriously constraints by high inflation rate and interest rate ceilings. They posit that interest rate ceilings distort efficient financial intermediation and thus restrain financial development. Many recent studies on financial institutions and investment in the developing countries demonstrates that high rate of inflation constitutes a barrier to efficient allocation of resources as it constraints the adequate savings mobilization which has adverse consequences on economic activities due to low capital formation. The cost of inflation might be higher in long-term contracts such as mortgage loan where the risks and uncertainty are higher due to probability of having both future inflation and deflation (See DeGregorio, 1993; Wang and Yip, 1992; Chang and Lai, 2000; Mustapha and Khalid, 2014).

Therefore, a study on the relationship between housing finance and the macroeconomic environment in SSA is highly necessary for sustainable housing development. The financial institutions play an important role in house financing. The financial intermediaries are expected to mobilize household savings and investor funds and channel them into mainstream housing finance (Renaud, 1984; Forrest, 2008). There are two main reasons why a detailed analysis is of paramount importance. Firstly, to meet the sustainable housing development in the face of growing urbanization a well-articulated policy reforms that encourage the growth of financial institutions that will serve the housing sector effectively are essential. Secondly, policy makers needs more detailed information to make essential policy reforms that will significantly promote adequate savings and long term credits in the economy.

There is a symbiotic interdependence between household savings and long-term credit, according to current evidence. The credit money creation is contingent with the level of financial development. The level of financial development determines the growth of household savings and the level of loan-able funds. The growth of both contributes to housing finance and overall growth of the economy. Wolswijk (2006) examined the factors responsible for the growth of mortgage debt in 15 European Union (EU) countries and found that financial deregulation measures contributed to the growth of mortgage debts in those economies. Studies have shown that interest rate ceilings and excessive government intervention in the developing countries as a presage of social equity had adversely affected the housing finance institution (see, Malpezzi, 1990; Buckley, 1996; Mayo, 1999). Martins and Villanueva (2006) examines the effects of

mortgage loans interest rate subsidies on borrowing and reports that “chief finance” in the form of interest rate subsidies distorts housing and financial markets. McKinnon (1973) and Shaw (1973) based on cross-country studies argue that positive real interest rate on savings exert strong influence on savings behavior of households. Renaud (1984) demonstrates that increasing a lower nominal interest rate will have less impact on savings mobilization as long as the real return will remain negative.

Bardhan and Edelstein (2007) examined the factors inhibiting the supply and demand of mortgage finance they find that larger housing market and urbanization rates have positive impact on mortgage finance, while the effects of interest rate spread on mortgage loans are negative. The negative relationship between interest spread and mortgage debt signifies that the housing finance appears to be inefficient. Although, even in an efficient capital market, a large interest rate spread for housing loans is a sign of long-term loan financial risk. Equally, the wide differences in the interest rate spread contributed to lower demand for mortgage loans. This may also signify a quite inefficient housing finance market and that even in an efficient capital market, a large interest rate spread for housing loans may be a sign of long-term loan financial risk. The paper suggests that “availability” of urban banking services, absence of informal finance houses in the urban sector, rural-urban migration and higher volume of transactions may play an important role on the level mortgages.

In conclusion, while a well-developed financial market, sound economic conditions are important component well-functioning housing system in developing countries. However, there appears to be limited studies on household saving and macroeconomic environment across African countries. In fact, to the best of our knowledge, no formal and all-encompassing cross-country study in Africa on housing finance exists. Existing housing and market studies tend to be descriptive and focus on one or few country case studies. Therefore, this study is an attempt to fill the gap in the literature. Another contribution of this paper is that we use data from twenty-two African countries. There have not been many studies in the Sub-Saharan Africa despite the fact that it is one of the continents with high growth rate of urbanization.

The rest of the paper is structured as follows. In Section 2, we provide some statistics on the rate urbanization and the desired need for housing finance. In Section 3 we describe the method and data sources, while. In section 4, we present the results, while section 5 concludes.

## STYLIZED FACT

**Table 1: Regional urban population and growth rate**

Period	SSA		EAS		ECS		LCN		MEA	
	% of total	Growth Rate	% of total	Growth Rate	% of total	Growth Rate	% of total	Growth Rate	% of total	Growth Rate
1980-1985	23.23	1.94	29.06	2.11	65.62	0.47	65.91	0.98	51.07	1.18
1986-1990	25.94	2.04	32.38	1.95	67.16	0.36	69.30	0.86	54.00	0.85
1991-1995	28.25	1.45	35.80	2.07	67.86	0.11	71.99	0.70	55.86	0.68
1996-2000	30.03	1.15	39.62	2.02	68.18	0.09	74.36	0.62	57.83	0.64
2001-2005	31.97	1.33	44.39	2.47	68.78	0.22	76.27	0.43	59.84	0.70
2006-2010	34.20	1.38	49.71	2.14	69.65	0.25	77.82	0.38	61.92	0.65
2011-2013	36.15	1.38	53.80	1.89	70.31	0.23	78.97	0.35	63.39	0.54

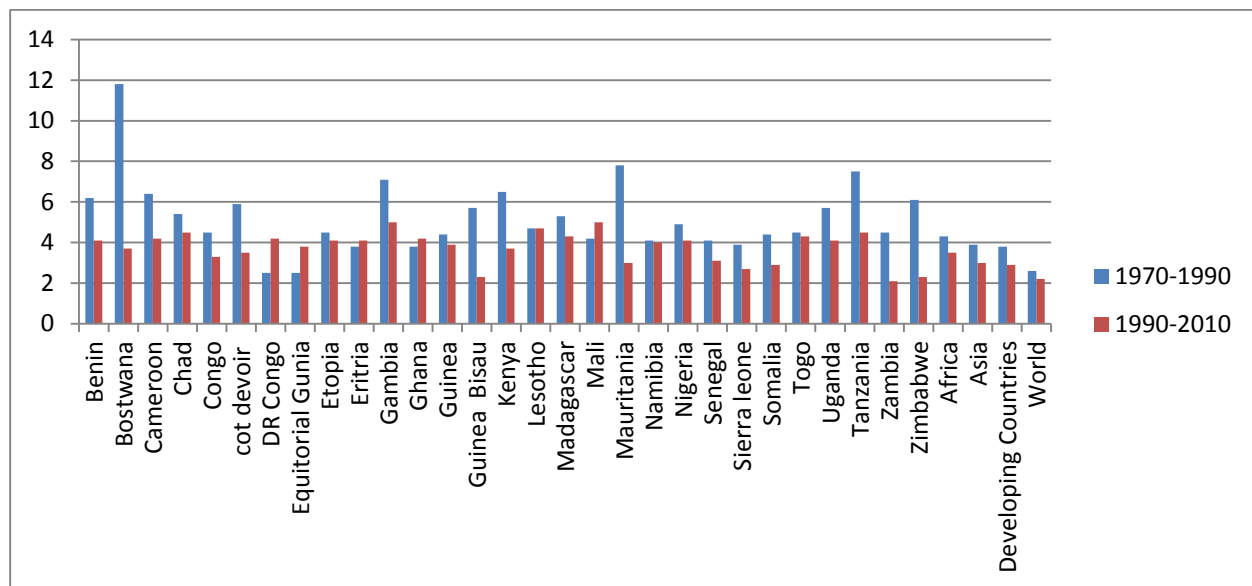
Source: World Development Indicators

Note: SSA=Sub-Saharan Africa; EAS=East Asia & Pacific; ECS=Europe & Central Asia; LCN=Latin America & Caribbean; MEA=Middle East & North Africa

Over the last two decades, the inflow of people into urban cities has become increasingly higher in most developing countries. Evidently, in Africa, rural-urban migration accounts for about half of the total urban population in the 1960s and 1970s, and 25% in the 1980s and 1990s (Brockerhoff, 1999), while in India about 30% of the urban population are rural migrants in the 1990s (Census of India, 2005). In Brazil, between 1950s and 1970s, more than 20 million people to the urban cities. Similarly, in terms of the urbanization, Africa is the least, but when the growth rate urbanization are used Africa continent top the list in the world. The United Nations Economic Commission for Africa (2013) shows that the total urban population increased from 33 million people in 1950, to 414 million in 2011, it has projected to reach 471 million by 2015. While, the share of urban population increased to 39.6 percent in 2011 from 14.4 percent in 1950, and expected to reach 48 per cent in 2030.

The rising level of urban population in Africa is of great concern, as it tends to overstrain the existing urban infrastructures because of overpopulation, poor health and environmental degradation.

**Figure 1: Average annual growth rate of urban population**



Source: United Nations (2012) <http://www.unicef.org/sowc2012/pdfs/Table-6-Demographic>

However, there is evidence of declining activities in the housing market: the ratio of GDP to housing expenditure has significantly declined. Several factors are assumed to cause this poor performance in the housing sector. On the supply side, the dearth of long-term deposits coupled with inadequate capitalization of the housing finance institutions is the major factors militating against the sustainable housing development. Property developers in the formal sectors rely mainly on deposit money banks for their mortgage finance at extremely high cost and with stringent conditions. Low-income households resort to informal financial hubs such as cooperatives, traditional thrifts, and other financial outfits that provide short-term micro-credit to build their homes. Though the latter sources rely on third party guarantees, but are believed to be more accessible and convenient to the low-income group, they are, however, classified as unsecured and hardly mobilize the size of savings necessary for large-scale housing development (Osamwanyi and Megbolugbe, 1987)).

Meanwhile, on the demand side, the rise in the housing deficit in Africa is a serious issue that hardly mitigates by the public housing institutions, and it presents an enormous potential for investors. The recently released data by UN-Habitat (2008) for selected African countries revealed that Nigeria has the largest deficit in housing units with 12-14 million housing units. The amount required to meet this housing deficit is estimated at US\$150-200 billion. However, the available financial statistics indicate that financial institutions disbursed about twenty billion US dollars of credits in the country as at December 2008. Furthermore, mortgage loans to GDP ratio in 2005 was 0.5 percent, this value is relatively much lower when compared with the 33 percent in Malaysia, Hong Kong with 50 percent, while USA and UK had 77 percent 80 percent respectively (World Bank Report, 2008).

Table 2 below provides estimated number of borrowers and financial implications necessary to cater for the housing needs for some selected African countries. The estimates indicates that the maximum amount of funds necessary for urban housing in Nigeria and South Africa was about 1 trillion while for Cameroon and Congo DR was 276 billion US dollars.

**Table 2: Estimated demand for housing across some Sub-Saharan Africa**

Country	Population (Million)	Min. number of borrowers	Max. number of borrowers	Min. Urban demand (US\$ mill.)	Max. urban demand (US\$ mill.)
Nigeria	144.7	2.040	4.695	464.973	1.071
South Africa	47.4	1.030	2.365	441.762	1.017
Ghana	23.0	0.320	0.726	135.519	0.312
Kenya	36.6	0.241	0.554	128.341	0.295
Cameroon	18.2	0.280	0.643	120.136	0.276
Congo DR	60.6	0.527	1.213	120.078	0.276
Uganda	29.9	0.112	0.259	105.887	0.243
Cote d'Ivoire	18.9	0.440	1.013	100.334	0.231

Source: Kihato (2009)

## METHODOLOGY AND DATA SOURCES

### *Data Sources*

The key variables in our analysis are a measure of domestic credit to private sectors, gross savings, interest rate and data on real GDP per capita. All the data for the study are obtained from world development indicators for seven African Countries from 1980 – 2013.

### **Methodology**

Econometric models for analyzing the role of inflation, savings, and interest rates on long-term finance are often derived from McKinnon and Shaw (1973) theory. This model considers adverse effect of imposition of interest rate below the prevailing market rates on financial sector development. In McKinnon (1973), high inflation rate could result to negative real interest rates when the nominal interest rates are set too low and there is greater likelihood of having low investments or investments that are less productive. For McKinnon, a liberalized economy with free-floating interest rate is highly beneficial for promoting investment and economic growth in the developing countries.

To reexamine the McKinnon's complementarity hypothesis of interdependency between savings and investment, the previous studies used two simultaneous equations of savings as a function of per capita real money balances and real money balances as a function of savings vice versa (see Fry, 1978; Khan and Hassan, 1998; Odhiambo, 2004; Kargbo, 2010). To investigate the role of macroeconomic indicators on long-term finance we adopted the complementarity model and developed further by incorporating the interest rate and income functions. This enables us to develop four equations that allow us to capture the interdependencies across the individual equations using seemingly unrelated

equation. Inflation, which is the key variable, allowed to enter for each of the equations. To specify the equations we draw upon the existing literature relating to financial household savings and investment.

The seemingly unrelated regression equation is prepared to equation-by-equation OLS estimation when there is a potential correlation between the equations. This method produces parameter estimates that are at least asymptotically more efficient (Zellner, 1962).

$$lcps_{it} = \alpha_0 + \alpha_1 sav_{it} + \alpha_2 (lgdp_{it}) + \alpha_3 (linr_{it}) + \alpha_4 inf_{it} + u_{1,it} \quad (1)$$

$$sav_{it} = \beta_0 + \beta_1 ((lgdp_{it}) + \beta_2 (rir_{it}) + \beta_3 (inf_{it}) + \beta_4 (lmss_{it}) + \beta_5 (lurb_{it}) + \beta_6 (Dep_{it}) + u_{2,it} \quad (2)$$

$$inr_{it} = \gamma_0 + \gamma_1 (rir_{it}) + \gamma_2 (lmss_{it}) + \gamma_3 (iin_{it}) + u_{3,it} \quad (3)$$

$$lgdp_{it} = \delta_0 + \delta_1 (linv_{it}) + \delta_2 (lpop_{it}) + \delta_3 (inf_{it}) + u_{4,it} \quad (4)$$

where *lcps* is the natural log of domestic credit to private sector; *sav* denotes gross savings to GDP; (*lgdp*) is the natural log of per capita GDP; (*linr*) is the log of deposit interest rate; *inf* represent the inflation rate. While *rir* is the real interest rate; (*lmss*) is the money supply is represented by money and quasi money to GDP; (*lurb*) is the urbanization rate; *dep* is the dependency ratio; *iin* is the initial inflation. While the *linv* and *lpop* represent log of investment to GDP and population respectively.  $\alpha_0$ ,  $\beta_0$ ,  $\gamma_0$  and  $\delta_0$  are constant parameters and  $u_{it}$  is the white noise error term.

Theory as well as conventional wisdom suggests that positive real interest rate plays a crucial role in effective savings mobilization from depositors of any type. Renaud (1984) argues that raising a lower nominal interest rate would not induce depositors to respond significantly as long as the changes still yield negative real return. McKinnon (1973) and Shaw (1973) based on cross-country studies argue that positive real interest rate on savings would have a positive influence on savings behavior of households and hence savings rate. Therefore, the interest rate on deposits (*inr*) is expected to have positive signs implying that the higher the interest rate the higher will be the savings rate and thus the higher the long-term credits.

Higher and volatile Inflation in is a curse to Housing finance. As mentioned earlier a low and stable inflation is a pre-condition for market driven housing finance systems. Housing loans are of longer maturities, and the volatility in the inflation rates is high in the developing countries, this tends to undermine the rate of savings and supply of capital. In other words, the high inflation rates results in a decline in the real rate of returns. This discourages savings and diminishes consequently diminishes loanable funds in the economy. Therefore, high inflation rate (*Inf*) is expected to be negatively related to domestic credit to private sector.

The relationship between savings and per capita real GDP is well established both in economic and empirical studies. The ability of the financial institutions to mobilize savings for housing finance in any economy is dependent on the level and pattern of per capita income distribution. Where per capita income is higher and evenly distributed the rate of savings would be higher and vice versa. In an event that the level of per capita income is higher and distribution is highly unequal, the size of housing finance in the country depends on the savings mobilization ability of the lending institutions (Oyalowo, 2012). On the other hand, rapid growth rate of income could raise the household savings rate in an economy if the growth were concentrated in the household with high savings rates (Schmidt et al., 1992). The inclusion of per capita income as one of the explanatory variables is necessary due to the low level of income couple with low savings as basic features of developing countries. Therefore, the high (low) level of per capita income is hypothesized to have a positive effect on savings and thus is expected to have a positive impact on the rate of housing finance.

## RESULTS

The descriptive statistics of the variables are shown in table 3.

**Table 3: Summary statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>cps</i>	748	2.53	0.77	0.45	5.12
<i>sav</i>	748	14.23	14.25	-146.16	73.65
<i>inr</i>	748	1.97	0.57	0.88	4.00
<i>gdp</i>	748	6.25	1.03	4.68	10.06
<i>inf</i>	748	10.48	15.17	-17.64	183.31
<i>rir</i>	747	7.90	12.52	-51.62	78.27
<i>mss</i>	748	3.12	0.45	1.75	5.02
<i>urb</i>	748	3.28	0.62	1.47	4.46
<i>dep</i>	748	90.65	9.89	53.69	112.77
<i>iinf</i>	748	11.32	18.18	-17.64	183.31
<i>inv</i>	747	2.93	0.61	-1.23	5.38
<i>bpd</i>	748	9.28	2.69	-1.86	16.97

The summary of the estimated VCE of the residuals from the correlation matrix suggest that there are significant correlations positives and negatives among the dependent variables. The correlation between credit to private sector and interest rate and savings are not substantial while, credit to private sectors and savings have strongest.

**Table 4: Seemingly unrelated regression Base Model**

Dependent variable	Log( <i>cps</i> )(1)	Sav (2)	Long( <i>inr</i> )(3)	Log( <i>gdp</i> )(4)
<i>sav</i>	0.008*** (4.57)			
Log( <i>inr</i> )	0.275*** (5.32)			
Log( <i>gdp</i> )	0.174*** 6.38)	6.490*** (9.43)		
<i>inf</i>	-0.004** (-2.51)	-0.071** (-2.01)		-0.008*** (-3.49)
<i>rir</i>		-0.136*** (-3.21)	-0.001 (-0.84)	
Log( <i>mss</i> )		6.970*** (6.27)	0.231*** (5.46)	
Log( <i>urb</i> )		-4.426*** (-4.02)		
<i>dep</i>		0.193*** (3.04)		
<i>iinf</i>			0.010*** (9.80)	
Log( <i>inv</i> )				0.373*** (6.01)
Log( <i>pop</i> )				-0.053*

		(-1.89)
<i>LM test</i>	20.163 (0.002)	
<i>Number of obs.</i>	747	
<i>Number of eqn.</i>	4	
<i>Number of panels</i>	22	

1. Figures in the parenthesis are t-statistics, except for Breusch-Pagan LM test
2. \*, \*\* and\*\*\* indicate the respective 10%, 5% and 1% significant levels.

In table 4, we report the results from our SUR estimates. As stated before, the first equation set up to compare the effect of savings, interest rate and inflation on credit to private sector. The results from the credit equation (Column 1) show that the coefficient of the gross savings, interest rate and GDP per capita are positive and statistically significant, suggesting that increased in household savings and high interest on deposits and economic growth accelerate credit development. The coefficient of inflation rates has a negative and significant impact on the supply of credit. This collaborates with the McKinnon (1973 and Shaw (1973) hypothesis which find a positive relationship between real interest rate on savings and supply of credit through its influence on saving behavior of households. The coefficient of the GDP per capita suggests that the impact of the economic performance on the domestic credit to private sector is positive. This implies that GDP per capita exerts significant influence on credit supply in Africa. Similarly, the results of the savings equation indicate that GDP per capita have positive and significant influence on domestic savings. This is consistent with the priori expectation that faster economic growth and higher income accelerates higher domestic saving rates. This collaborates with other recent studies, Odhiambo (2004) and Odhiambo (2005) reports positive coefficients for both Kenya and South Africa, the coefficient of the latter carries the expected positive sign but statistically insignificant, many other studies report similar findings for most developing countries.

The results from saving equation in column 2 of model 1 show that the both inflation and real interest rate coefficients carry negative signs. This suggests that inflation have a reducing effect gross saving. However, the negative influence of the real interest rates on domestic savings might be due to negative low variations of the real interest. This result corroborates with many other recent studies in the developing countries. Many studies have found that the influence of the domestic real interest rate on household savings to be negative and insignificant. The review of the empirical literature indicates that there is no much evidence to show that the real interest rate have significant influence on the overall saving in the developing countries. For example, Akyuz (1995), examine the impact of financial liberalization in developing countries in a three-sector model and found that a rise in interest rates favors the low saving households who receive a significant proportion of total income compared to firms. Firm's savings declines due to fall in profit resulting from higher cost of debt. In addition, an increase in the interest would affect public sector savings because of decrease in tax revenue. In a recent study from Africa, Serieux (2008) confirmed that a rise in interest rates exerts strong and significant influence on financial savings but exerts negative influence on the overall savings.

The coefficient of the money balances in the savings equation suggests that there is positive and significant relationship between money supply and domestic savings. Our results corroborates with other studies such as Ajewole (1989) in the case of Nigeria, Adebisi (2003) who examined the McKinnon financial development hypothesis in seven African countries reports that the relationship between money supply and savings and is positive and significant. Kargbo (2010) using cointegration techniques and found a positive and significant relationship between money balances and domestic saving in the short run while the long run coefficient though positive but not a significant.

The regression results of the interest equation in our model suggest that both the money supply and initial inflation have positive and significant coefficients implying that the money and quasi money and the fast inflation rate exert much influence on domestic interest rate. The real interest is found to be negatively related with the interest rate, but statistically not significant. This might be due to interest rate ceilings that hinder the real interest rates to adjust adequately to the excessive high and volatile inflation. The results are consistent with the priori expectation, an increase in interest rate is expected due to increase in money supply and inflation. The results of the GDP equation also indicate that the high rate of inflation have adversely affected income as the coefficient of the GDP per capita carry negative and significant value, but the size of the coefficient is small. The rate of investment to GDP in the growth equation has a positive and significant coefficient. This is consistent with the theory that for an economy to grow there must be an investment.



## Robustness

To test the robustness of our model, we add bank branch proliferation as it is one of the important factors for mobilizing deposits and see whether the results are affected. This can also serve as a relative measure of financial deepening is measured by broad money (M2) divided by the total population. The ability of the financial institutions to mobilize large savings depends on how accessible their financial services and products to the households are.

**Table 5: Seemingly unrelated regression with average population density per bank branch**

Dependent variable	Log (cps)	sav	Log(inr)	Log (gdp)
<i>sav</i>	0.008*** (4.46)			
<i>Log(inr)</i>	0.274*** 5.30			
<i>Log(gdp)</i>	0.175*** (6.41)	6.605*** (9.46)		
<i>inf</i>	-0.004** (-2.50)	-0.079** (-2.16)		-0.008*** (-3.48)
<i>rir</i>		-0.126*** (-2.94)	-0.001 (-0.85)	
<i>Log(mss)</i>		6.502*** (5.54)	0.231*** (5.46)	
<i>Log(urb)</i>		-4.247*** (-3.83)		
<i>dep</i>		0.182*** (2.83)		
<i>iinf</i>			0.010*** (9.77)	
<i>Log(bpd)</i>		-0.232 (-1.02)		
<i>Log(inv)</i>				0.373*** (6.01)
<i>Log (pop)</i>				-0.053* (-1.89)
<i>LM test</i>	19.668 (0.003)			
<i>Number of obs.</i>	747			
<i>Number of eqn.</i>	4			
<i>Number of panels</i>	22			

We have stated earlier that due to symbiotic correlation between savings, domestic credit to private sector, investment and economic growth on one hand and interest rate and inflation on the other hand, the use of seemingly unrelated regression with a system of equations allows for the contemporaneous correlation across equations, hence produces efficient results relative to least-squares equation-by-equation. The estimated results of the OLS equation-by-equation are shown in table 6. This is to test whether the application of the SUR had made any difference. We can see that the results in table 5 are different from seeming unrelated regression in terms of the magnitude of the coefficients and standard errors of the independent variables. Hence we can conclude that the results of the SUR are robust the tests reveal that precision in estimation has improved, as is reflected in the smaller standard errors.

**Table 6: OLS Regression treating all equations separately**

Dependent variable	Log(cps)	Sav	Log(inr)	Log(gdp)
<i>sav</i>	0.004* (1.88)			
<i>Log(inr)</i>	0.166*** (3.16)			

<i>Log(gdp)</i>	0.194*** (7.03)	6.230*** (9.01)		
<i>inf</i>	-0.004** (-2.16)	-0.074** (-2.09)		-0.009*** (-4.08)
<i>rir</i>		-0.140*** (-3.28)	-0.001 (-0.82)	
<i>Log(mss)</i>		5.209*** (4.64)	0.159*** (3.72)	
<i>Log(urb)</i>		-4.178*** (-3.76)		
<i>dep</i>		0.209*** (3.27)		
<i>iinf</i>			0.011*** (9.96)	
<i>Log(inv)</i>				(0.396)*** (6.34)
<i>Log(pop)</i>				-0.0437 (-1.55)

Note: Figures in the parenthesis are t-statistics. \*, \*\* and \*\*\* indicate significance at the 10%, 5% and 1% respectively.

## CONCLUSION

This paper examines the effect of some macroeconomic variables on long-term finance and its implication for the rate of urban housing development in SSA. The urban population rate explosion, growing urban slums and its consequences on sustainable development have raised renewed interest in urban development issues in recent years. The increasing urban population rates and growing urban housing deficit in in SSA coupled with the large amount required for urban housing development and weak housing finance system inspired this study. The results from this study suggest that the high and volatile inflation rate have adversely affected saving mobilization and the supply of long-term finance through its effect on real interest rate. This tends to lock up resources in the form of excessive holdings of inventory rather than investment. This study shows that in the overall the high and sporadic changes in the rate of inflation have worsened the ability of the financial institutions to mobilize adequate savings and thus undermines efficient allocation of long-term credits. Based on the findings of the study, we suggest that for effective house financing there is a need to introduce policies that minimize the market frictions in the financial market. First, the financial liberalization measures need to be enhanced to remove all money illusioned rules, such as usury laws and interest rate ceilings. Secondly, indexing long-term financial contracts is important as it may help in addressing the inflation costs associated with front-end loading problem. Future research should investigate factors responsible for low penetration of mortgage lending in Africa.

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