Soundness of Banks, Ease of Access to Credit and Affordability of Financial Services in Africa

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Abstract: Financial inclusion has become an important policy issue because of its relevance in determining economic growth and development. Financial inclusion has been recognised as a fundamental driver that could aid in achieving seven out of the seventeen outlined sustainable development goals. The paper employs affordability of financial services as a surrogate measure for financial inclusion as the dependent variable of the study and ease of access to loans and soundness of banks as the independent variables. In order to cater for other factors that have been argued to influence financial inclusion in an economy, the study controlled for gross domestic product per capita, foreign direct investment inflows and inflation. Dynamic panel data with GMM estimation techniques was used. In order to test the sensitivity of our results to other estimation techniques, we employed the panel data fixed effect (FE) and the pooled OLS estimators. The results of the FE and the pooled OLS estimations mostly authenticate that of the GMM estimator. That is to say that our results are robust to other estimation techniques.

Keywords: Dynamic panel data**;** Soundness of Banks; Affordability of financial services

JEL Classification: G2; G3

1. Introduction

Financial inclusion has become an important policy issue because of its relevance in determining economic growth and development. Financial inclusion has been recognised as a fundamental driver that could aid in achieving seven out of the seventeen outlined sustainable development goals. This is because recently, the Group of 20 (G20) have integrated financial inclusion into the financial supervisory and regulatory agenda with the particular objective of achieving targeted sustainable development goals. Through the provision of banking, insurance and securities services, financial services expedite domestic and transnational financial transactions, channel inadequate domestic savings to productive sectors and expands the accessibility of credit for firms and households (United Nations Conference on Trade and Development, 2014). The general opinion is that finance services plays an essential role in the economic development process through its role in the allocation of capital from the surplus units to deficit units (Kwakye, 2012). Financial inclusion is a fundamental precondition for economic growth as it enhances capital formation, facilitate financial intermediation and by inference investment (Hariharan & Marktanner, 2012). Financial inclusion as a comprehensive financial system provides affordable financial services tailor-made to the needs of all clients including the poor and low-income earners in the society (Demirgüç-Kunt & Klapper, 2013). This in turn enhances the financial prominence and standard of living of the vulnerable and poor in society as it empowers them to engage in economic activities (Khan, Aslam & Lodhi, 2011).

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The degree of financial inclusion generally differs among economies on basis of income difference and regional blocks. The level of account penetration is linked with the income bracket of an economy, with middle-income economies recording twice the level of a penetration of low-income economies (United Nations Conference on Trade and Development, 2014). In the 2014 access to financial services report by the United Nations Conference on Trade and Development, East Asia region and the Pacific region performed extremely above the global average as far as bank account penetration is concerned. However, sub-Saharan African, Middle East and North African regions recorded average level of bank account penetration below the global average. It is important to state that financial inclusion could only be achieved when adults have easy access to a broad range of formal financial services provided at affordable cost (Yaqub, Bello, Adenuga & Ogundeji, 2013). Providing affordable financial services to small scale enterprises as well as large scale enterprises permits residents of rural areas to earn income to support their households and society. This in turn allows rural dwellers to access decent standard of Living.

Statistics linking to the number of people with a bank account in a recognized financial institution or bank is predominantly useful, as all official financial dealings are tied to accounts. Availability of access to financial services eases day-to-day living, and supports individual accountholders and firms plan for short, medium and long-term financial needs as well as to unforeseen emergencies. Accountholders are more likely to access other financial services, such as insurance services, credit facilities for expansion which translate to the overall growth of the economy. However, most people especially adults do no participate in the financial system (Kwakye, 2012). In a 2017 World Bank report, an approximated 2 billion grownups globally do not have access to a function bank account. Also, over 200 million recognised and informal small and medium-sized enterprises (SMEs) in developing economies lack sufficient funding to survive and grow. This is because most of them do not have access to a simple bank account.

While some people and firms without bank accounts reveal no demand for accounts, lack of collateral security and unfavourable credit history, non-registration of business as major reasons for not having bank account, most are financially excluded as a result of economic, physical, administrative and psychological obstacles such as cost of obtaining bank account, travel distance and lack of trust. In a 2014 United Nations Conference on Trade and Development report, more than 60 percent of grownups cited the non-availability of disposable money as the cause for not having bank accounts. Affordability of accounts is a fundamental constraint, as fixed transaction costs associated with minor transaction may excessively signify a heavy financial burden. Lesser bank branch penetration in deprived areas could ominously influence the cost of financial services. In 2017, the World Bank report that 59% of grownups without bank accounts allude to a lack of sufficient money as a crucial reason, which suggests that financial services are not yet affordable. This necessitate the need to examine the factors that influence affordability of financial services. It is argued that the existence of sound banks and improved access to credit facilities may influence affordability of financial services.

Sub-region Trend of Affordability Financial Services in Africa

Affordability of financial services among the various sub-regions of Africa have been characterised by inconsistencies over the period, 2009 to 2015. This is essentially owed to regional specific characteristics that differs as far as affordable financial services is concerned. Figure 1 presents the trend of how the five sub-regions in Africa; Central, Eastern, Northern, Southern and Western have fared regarding affordability of financial services from 2009 to 2015. It is obvious from figure 1 that, central and western African sub-region recorded mean averages below the African regional average from 2009 to 2015. However, the performance of North African sub-region has been characterised by inconsistencies as the sub-region recorded mean values below the African regional average from 2010 to 2014 but performed above the African average in 2009 and 2015. Clearly, the Eastern and Southern

African sub-regions performed consistently above the African regional average from 2009 to 2015. The performance of the Eastern and Southern African sub-regions is attributed to improvement in financial market development structures. However, this assertion is purely hypothetical therefore requires empirical examination for a valid conclusion to be reached.

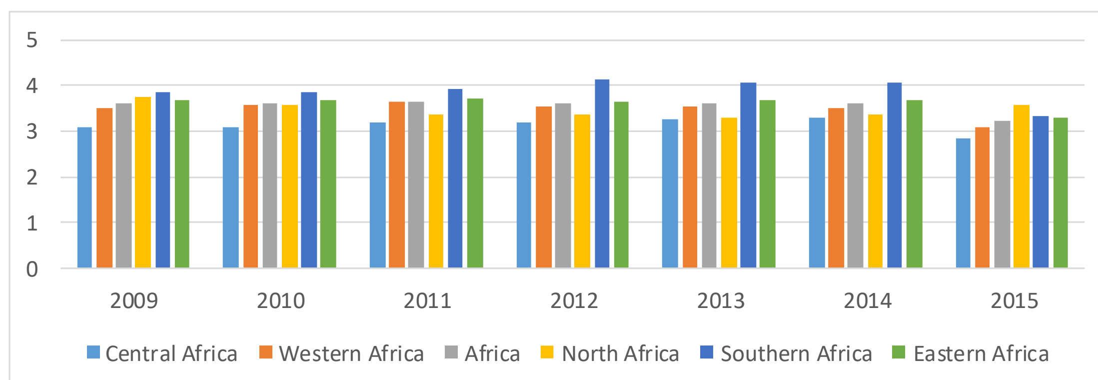

Figure 1. Sub-Regional Trend of Affordability of Financial Services in Africa

Source: World Bank Global Competitiveness Report, 2009 to 2015

2. Literature Review and Hypotheses Development

The modern developmental theory combines theories of how change in societal wellbeing is maximally attained (Burr, 1958). The modern development theory improves on the modernization theory which was used to analyse how transformation processes in a society occurs. This theory focuses on which facet of an economy fosters development and which aspect is detrimental to economic growth. The concept of affordability of financial services is aimed at ensuring that financial services are provided to rural residents in an accessible and affordable manner that positively influence the standard of living of the rural dwellers. This assertion is grounded on the idea of progress which specified that individuals can develop and

change their community themselves. This is an indication providing affordable services to citizens is necessary to develop. Sustainability theory emphasise the need for continuous maintenance of well-being, which in turns result in political, economic and cultural benefits in the long run Ekardt (1986). Sustainability deals with the reconciliation of social equity with environmental and economic demands to attain continuous and improved standard of living. In line with the sustainability theory, the provision of financial services to rural dwellers in an affordable and sustainable manner to engage in economic activities better the standard of living of individuals and society as a whole.

The role of financial services in economic growth and development is manifold (Hariharan & Marktanner, 2012). This is done through its role in the creation of essential input like capital, savings mobilisation and efficient level of financial intermediation. Through banking, insurance services and securities, financial services aid in the execution of both domestic and transnational transactions. Thus, they efficiently mobilise and allocate inadequate domestic savings and widen the availability of credit facilities to SMEs and households (Nwanne, 2015). As an economic sub-sector in its own right, financial services contribute to productivity and employment, with several activities having high value added and requiring qualified jobs. Therefore, financial inclusion, through the provision of affordable, convenient, quality, and sustainable financial services can contribute to poverty reduction and economic and social development (UNCTAD, 2015). This is because of the special services they

provide that contributes to the enhancement of the financial standing and standard of living of the vulnerable and poor in society.

The benefits accrued from financial inclusion is immense (Ssonko, 2010; Khan etal, 2011). However, empirical studies on the factors that affect financial inclusion in recent literature is scant with just a few focusing on the meaning of financial inclusion (United Nation Development Programme, 2013; World Bank, 2012). Financial inclusion is viewed as a situation where people who uses financial services have full access to a balance of quality financial services that is provided at an affordable price and in a convenient manner (Aduda & Kalunda, 2012). This means that in economies where individual households and firms have easy access to financial services in an affordable and sustainable manner such economies are said to be financially inclusive. Also, the United Nation Development Programme (2013) describes financial inclusion as an all-inclusive financial system that renders tailored financial services to all manner of clients especially the poor and low-income individuals in rural communities at an affordable cost. This services include a range of quality and available financial services tailored toward the underserved and financially excluded clients that are mostly located in rural areas (World Bank, 2012).

Other studies however focused on various advantages of financial inclusion (Mohan, 2006; Hariharan & Marktanner, 2012; Okafor, 2012). Financial inclusion aid in the efficient mobilization of inadequate domestic savings from the surplus unit and channel same to the deficit units (Mohan, 2006; kwakye, 2012). This implies that financial inclusion enhances the level of financial intermediation of an economy (Ssonko, 2010). Also, Hariharan and Marktanner (2012) argued that financial inclusion is a relevant prerequisite to achieve an enhanced level of economic growth and development. This is because financial inclusion enhances the level of capital creation which translate into investment. Financial inclusion has been argued to improve upon the financial position of rural dwellers thereafter improving their standard of living (Khan et al, 2011). This is because the enhancement in the financial status of the poor and vulnerable in society will enable them to engage in productive economic activities. Financial inclusion does not only benefit the individual households of an economy but also speed up the availability of credit facilities to small and medium enterprises at a much more affordable cost (Okafor, 2012). Clark (2013) stated that financial inclusion supports rural dwellers to expand or increase their income flow, provides liquidity and building assets thus enabling them avoid the sale of useful assets they owned.

Hypothesis Development

Financial intermediation role is mostly performed by financial intermediaries. Theses financial intermediaries ranges from bank, insurance firms, microfinances institutions among others. The level of intermediation by the various varieties of financial intermediaries varies from economy to economy depending on the level of development of the individual economies' financial sector (Kwakye, 2012). In Ghana for instant, the financial intermediation role is greatly performed by banks. Banks actively engage in efficient mobilization of savings from surplus units and channel same to the deficit units at a fee (kwakye, 2012). Soundness of banks centres critically on the ability of bank to perform its intermediation role efficiently and effectively that enable it maintain an efficient and healthy balance sheet (Schwab & Sala-i-Martin, 2015). When banks efficiently perform its role of efficient intermediation, thus by facilitating the mobilisation of savings and lending of funds, the financial intermediaries earns an income, thus the difference between the lending rate and the interest paid to the saver. The cost of credit to borrower generally consist of specific risks elements that relates to the borrower and profitability margin of the intermediary (Campbell & Kracaw, 1980; Fama, 1980). The

components of transaction costs cover not only monetary transaction costs (Towey, 1974; Fischer, 1983) but also monitoring and auditing costs (Scholes, Benston, & Smith, 1976). Hence, the ability of banks to eliminate waste from its daily operations and minimise transaction cost to maintain healthy balance sheet would go a long way to directly influence affordability of financial services. It is therefore hypothesized that;

Hypothesis 1: Soundness of banks is positively related with affordability of financial services in Africa.

Most African economies have transitioned from a lower income status to middle income status. This transition has frolicked a major role in the creation and strengthening of state institutions in these economy (Agyemang, Fantini & Ansong, 2016). As a result, there has been an increase in foreign direct investment inflows into these economies since a number of foreign investors believe that the presence of effective state institution to monitor and control business activities their investments will to some extent be protected (Larcker & Tayan, 2011). These occurrences saw proliferation of banks and other financial institutions in most African economies in recent times (Mlachila, Cui, Jidoud, Newiak, Radzewicz-Bak, Takebe, & Zhang, 2016). The springing up of these financial institutions enhances the availability of credit facilities to the private sector since the core business of this banks is credit driven. It is however worth noticing that empirical studies linking ease of access to credit by the private sector to affordability of financial services rendered remain scant with just a few focusing on credit boom and the macro economy (Mendoza & Terrones, 2012), others focus on credit-growth effect (Djankov, McLiesh & Shleifer, 2007), some others focus on credit growth and its effect on the financial system as a whole (Igan & Tan, 2015). Our paper therefor seeks to provide empirical evidence on the role ease of access play in influencing affordability of financial services in African. Is argued that improvement in access influences affordability of financial services. It is thereby hypothesised that;

Hypothesis 2: Ease of access to credit will positively influence affordability of financial services in Africa.

3. Data, Model Specification and Estimation Technique

The study is purely quantitative, thus, it employed quantitative variables both dependent and independent. Annual panel data was extracted for forty (40) Africa countries from 2009 to 2015 from the World Economic Forum Global Competitiveness Report. The paper employs affordability of financial services as a surrogate measure for financial inclusion as the dependent variable of the study and ease of access to loans and soundness of banks as the independent variables. In order to cater for other factors that have been argued to influence financial inclusion in an economy, the study controlled for gross domestic product per capita, foreign direct investment inflows and inflation. Cotarelli et al. (2005) found that gross domestic product per capita significantly influences access to finance. Likewise, the work of Égert, Backé and Zumer (2006) provide empirical evidence that support the argument that gross domestic productivity is vital to improve upon access to funding. Similarly, Calza, Gartner and Sousa (2003) show that there is a long-run relationship between financial inclusion and domestic product per capita. The study therefore controlled for gross domestic product per capita. and inflation. Foreign direct investment is believed to be a crucial determinant of credit booms (Calderon & Kubota, 2012; Mendoza & Terrones, 2012). Foreign direct investment improves the upon the availability of domestic capital which serves as the launch of transition process

of the financial system of receiving economies (Lane & Mcquade, 2013). The development of the financial sector as a result of capital availability through takeovers and greenfield investment is good evidence of the contribution of foreign direct investment to financial inclusion (Elekdag & Wu, 2011). In essence, foreign direct investment is one of the macroeconomic variables that was controlled for in this study. Essentially, price stability is a vital factor that improves affordability of financial services. This is because, inflation plays an integral role in affecting the cost of services rendered by financial services firms (Cohen, Hassett & Hubbart, 1999). This cost element is therefore pass on to the financial services consumers through high cost of loan and credit facilities. The study thus controlled for the inflation (annual percentage change in consumer price index).

Table 1. Description of Variables and Source of Data

Variables	Description	Data source
Affordability of financial services	In your country, do you consider financial services to be affordable? [1 = not at all; 7 = to a great extent]	Global competiveness report 2009 to 2015
Soundness of banks	In your country, how do you assess the soundness of banks? [1 = extremely low banks may require recapitalization; 7 = extremely high—banks are generally healthy with sound balance sheets]	Global competiveness report 2009 to 2015
Ease of access to loans	In your country, how easy is it for businesses to obtain a bank loan? [1 = extremely difficult; 7 = extremely easy]	Global competiveness report 2009 to 2015
GDP per capita	Gross Domestic Product per the total population	Global competiveness report 2009 to 2015
Foreign direct investment inflows	Foreign direct investment inflows to African economies as a percentage of GDP	World Bank World Development Indicators 2009 to 2015
Inflation	Annual percent change in consumer price index	Global competiveness report 2009 to 2015

Source: World Economic Forum Global Competitiveness Report, 2009 to 2015.

Model Specification

Based on the hypotheses developed above and the structure of the African economy, the unstated model has been adopted to test the role soundness of banks and ease of access to credit play in influencing affordability of financial services in African economies.

$$AFS_{i,t} = \beta_0 + \varphi(AFS_{i,t-1}) + \beta_1(SB_{i,t}) + \beta_2(EAC_{i,t}) + \beta_3(GDPPC_{i,t}) + \beta_3(FDI_{i,t}) + \beta_3(INFL_{i,t}) + (\mu_{i,t}) + (\varepsilon_{i,t})$$

Where i represent specific economies, t denotes time period, and the rest of the terms in the model are defined as

$AFS_{i,t}$ denotes affordability of financial services, $AFS_{i,t-1}$ stands for the lag of affordability of financial services $SB_{i,t}$ represents soundness of banks, $EAC_{i,t}$ means ease of access to credit, $GDPPC_{i,t}$ represents gross domestic product per capita, $FDI_{i,t}$ denotes foreign direct investment inflows, $INFL_{i,t}$ stands for inflation.

Estimation Technique

Considering the nature of the sample employed in the study and the features of African economies, we applied the dynamic panel GMM estimators in the estimation of the model. This estimation technique was developed by Holtz-Eakin and Rosen (1990), and Arellano and Bond (1991). The robustness of the GMM estimator techniques was later improved upon by Arellano and Bover (1995) and Blundell and Bond (1998). We employed the dynamic panel data estimator to deal with country-specific effect and the lag of the independent variables employed to shun simultaneity bias (Arellano & Bond, 1991). To account for the consistency of the results, we employed the Arellano and Bond test of second order serial correlation with the disturbance term (Arellona & Bond, 1991). The efficiency of the instruments employed and the fitness of the model would be based on the failure to reject the null of the Arellano and Bond test of second order serial correlation.

Summary Statistics

Table 2 highlights the descriptive statistics of the 40 sampled African economies from 2009 to 2015. The mean value of affordability of financial services for the sampled African economies is 3.6 with a standard deviation of 0.6 and a range of 2.0 to 5.5. This means that although African economies are striving to make financial services affordable, its performing is relatively low on a scale of 1-7. The average of soundness of bank for the sampled African economies is 4.6 on a scale of 1-7, with standard deviation of 0.8. This mean is characterised by a median of 4.6 and a range of 2.3 to 6.7 on a score of 1-7. This presupposes that banks within the sampled African economies are considered to be relatively sound. With regard to ease of access to credit by the sampled African economies, a mean value of 2.6 with an average level of variability of 0.6 on a scale of 1-7 was recorded. Although a relatively satisfactory maximum value of 5.2 value was recorded, some economies recorded as low as 1.3 minimum figure on a standard scale of 1-7, hence, the low level of mean value recorded.

Table 2. Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observation
Affordability of financial services	3.561	3.600	5.500	2.000	0.625	280
Soundness of banks	4.558	4.600	6.700	2.300	0.844	280
Ease of access to credit	2.581	2.550	5.200	1.300	0.621	280
Foreign direct investment	5.486	3.167	84.946	-5.978	9.036	280
GDP per capita	2763.822	1108.000	15203.000	163.000	3283.532	280
Inflation	6.628	5.700	36.400	-7.700	5.438	280

Source: Author's computation

Correlation Matrix

Table 3 presents the results of the correlation among the variables employed. A positive correlation between the dependent variable of affordability of financial services and the independent variables, thus, soundness of banks, ease of access to credit, foreign direct investment, gross domestic product per capita was observed. Nonetheless, inflation documents a negative correlation with affordability of financial services among the sampled African economies. The level of correlation between the independent variables is relatively low, therefore there exist no challenge of multicollinearity. Although the correlation between soundness of bank and affordability of financial services is 0.7, it falls within the threshold of 0.8 as proposed by Bryman and Cramer (2001).

Table 3. Correlation Matrix Results

Variables	AFS	SB	EAC	FDI	GDPPC	INFL
Affordability of financial services	1.000					
Soundness of banks	0.748	1.000				
Ease of access to credit	0.529	0.448	1.000			
Foreign direct investment	0.001	0.002	0.045	1.000		
GDP per capita	0.185	0.214	0.298	-0.058	1.000	
Inflation	-0.078	0.006	-0.132	0.073	-0.220	1.000

Source: Author's computation

4. Empirical Results

This section presents and discuss the findings of our studies as it presents the empirical result of our estimation. Table 4 highlights the empirical results of a system Generalized Method of Moment regression as stipulated above. The results presented in model 1 relates to the results of the estimation on the relationship between soundness of banks and affordability of financial services while the results shown in model 2 relates to the results of the estimation on the relation between ease of access to credit and affordability of financial services for the sampled African economies. An insignificant J-statistics value of 14.29 as it relates to model 1 and 16.37 observed in relation to model 2 suggest that the instruments employed are valid and efficient. Likewise, an insignificant Arellano and Bond second order serial correlation figure of 0.13 as it relates to the model 1 and 0.47 as it relates to model 2 presupposes that serial correlation is not an issue.

From the regression results displayed in model 1 of Table 4, we document a significant positive relationship between soundness of banks and the level of affordability of financial services in the sampled African economies. In effect, the results validate our first hypothesis that the presence of highly sound banks makes financial services highly affordable to the business community. Thus, African economies that are characterised by highly sound banks, cost of financial services such as insurance, trade finance and loans do not impede business activities. It is believed that banks with relatively healthy and sound balance sheets will charge relatively low level price for financial services rendered.

In addition, our studies document a significant negative relationship between ease of access to credit and affordability of financial services in the sampled African economies. Although the relationship between access to credit and affordability of financial services is significant, it is negative, indicating that credit boom deters affordability of financial services. This finding contradict our second hypothesis that credit boom positively influences affordability of financial services. It is however worth noticing from the summary statistics that the mean value of ease of access to credit of 2.6 on a scale of 7 is relatively low to trigger a fall in the level of affordability of financials services. Furthermore, it could be reasoned that ease of access to credit could directly influence availability of financial services rather than affordability.

Table 4. Soundness of banks, Ease of Access to credit and Affordability of financial services Baseline Results

Variables	Model 1	Model 2
Lag of affordability of fin. Services	0.463073 (0.0067)	0.266484 (0.0003)
Soundness of banks	0.725699 (0.0037)	
Ease of access to credit		-0.470071 (0.0000)
Foreign direct investment	0.022975 (0.0028)	0.016177 (0.0093)
GDP per capita	0.000388 (0.0067)	2.45E-05 (0.7056)
Inflation	-0.012336 (0.2711)	-0.007721 (0.3701)
J-statistics value	14.28632	16.37399
P-value of J-statistics	0.428605	0.291073
AR(1)	0.1975	0.0798
AR(2)	0.1298	0.4724
Degree of freedom.	200	200

Source: Authors' computation

Robustness Checks

There are many panel data estimation techniques. However, we employ the dynamic panel data with GMM estimation techniques in our estimation. In order to test the sensitivity of our results to other estimation techniques, we employed the panel data fixed effect (FE) and the pooled OLS estimators. The results of the FE and the pooled OLS estimations mostly authenticates that of the GMM estimator. That is to say that our results are robust to other

Table 5. Robustness checks

Variables	Period Fixed effect model	Pooled Panel least square
AFS(-1)	0.578755 (0.0000)	0.743399 (0.0000)
EAC	-0.143437 (0.0060)	-0.075271 (0.0496)
SB	0.259065 (0.0000)	0.196560 (0.0000)
FDI	0.000619 (0.8634)	0.000561 (0.7644)
GDPPC	3.62E-05 (0.1775)	6.10E-06 (0.2891)
INFL	5.79E-05 (0.9916)	-0.001917 (0.6018)
C	0.557071 (0.1812)	0.164548 (0.1530)
R-Square	0.847894	0.810083
Adj. R-Square	0.812612	0.805193
F-statistics	24.03173	165.6422
Prob (F-statistics)	0.0000	0.0000
Durbin-Watson Stat.	1.684240	1.508825

Source: Authors' computation

5. Recommendation

We recommend that African countries should ensure sound financial sector as it will lead to robust access to financial services at affordable rates to give meaning to proper financial intermediation

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