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Banking services and inclusive development in Sub-Saharan Africa

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Banking Services and Inclusive Development in Sub-Saharan Africa

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Abstract

This study seeks to investigate the inclusive development implications of banking services in Sub-Saharan Africa employing panel data for 47 economies over the period 2000 - 2017. Using a suite of panel estimation strategies, the study tests the hypothesis that the banking sector promotes inclusive development especially in countries with low levels of corruption. The evidence reveals that banking services and corruption controls are citadels of inclusive development in Africa. However, the two policy variables do not produce positive synergy effects on inclusive development. These results are robust to the inclusion of important control variables and different measures of inclusive development. These findings imply that the promotion of banking sector development and control of corruption are important strategies for attaining inclusive development in Africa.

Keywords: Banking services, inclusive development, control of corruption, Sub-Saharan Africa, human development index, inequality adjusted human development index.

1. Introduction

Africa's financial system is largely dominated by banks (Beck & Levine, 2004). Thus, one would expect that this dominance of banks in Africa's economy should bring about development to a large segment of the population. However, evidence is lacking in this respect. Much of the literature on the effect of banking on African economies focuses on economic growth (see, Gries, Kraft & Meierrieks, 2009; Demetriades & James, 2011; Rousseau & D'Onofrio, 2013; Adusei, 2013; Ibrahim & Alagidede, 2018; Issahaku, 2019) and much less on growth inclusiveness. Even the global literature focuses on the finance-growth nexus ignoring inclusive development (see King & Levine, 1993; Levine & Zervos, 1998).

It has now become clear that economic growth, though imperative, does not necessarily lead to economic development or more precisely, inclusive development. First, growth can occur but very few individuals might be the beneficiaries of this growth leading to inequality. Second, economic growth may lead to the production of negative externalities (eg. air pollution, noise pollution) the consumption of which can injure social welfare. Third, economic growth might come at the cost of over exploitation of resources which can damage sustainable development. Based on this analysis, this chapter deviates from much of the extant literature by examining the impact of banking services on inclusive development.

In as much as the banking system controls the financial system in Africa, corruption is equally, if not more pervasive on the continent. According to the Corruption Perception Index (CPI) 2017 and 2018, Africa is the worst performing region in the world in terms of corruption perception (Transparency International, 2018, 2019). Indeed, 6 (Somalia, South Sudan, Sudan, Libya, Guinea Bissau and Equatorial Guinea) African countries were among the bottom 10

performers in terms of corruption perception in 2017 and 2018 (Transparency International, 2018, 2019). The problem with pervasive corruption is that it can obstruct economic growth, distort markets and prevent the efficient allocation of resources (Dantani & Muftau, 2017), thereby becoming detrimental to inclusive development. Also, corruption can hinder banks from effectively performing their financial intermediation functions. This means that African countries that are able to control corruption stand to have a better handle on pro-poor development agenda. In this regard, this chapter further assesses the impact of corruption on inclusive development in Africa.

This chapter makes a number of contributions to the bank-economic development literature. First, it is among the very few studies (see Mensah & Benedict, 2010; Fasih, 2012; Sarma & Prais, 2011) that have examined the link between banking sector development and inclusive development in the global and African banking literature. Second, to the best of our knowledge, this is the first study to examine the impact of corruption and banking services on inclusive development in the same study. The chapter contribution is further imperative because it transcends at least five of the Sustainable Development Goals (SDGs) namely Goal 3 (good health and wellbeing), goal 4 (quality education), goal 8 (decent work and economic growth), goal 10 (reduced inequalities), and goal 16 (peace, justice and strong institutions). Thus, the findings of this study could contribute to the discussions on attaining the SDGs.

The rest of the chapter is organised as follows. Section 2 describes stylised regularities on banking sector development, corruption and inclusive development in SSA. Section 3 catalogues the theoretical and empirical literature. Section 4 discusses the empirical strategy, while section 5 presents empirical results and robustness test. Section 6 concludes.

2. Stylised facts: Banking sector development, corruption and human development in Africa

2.1 Banking sector development in Africa

Table 1 reports selected banking sector development indicators (for depth, breadth, efficiency and stability) in SSA from 2011 to 2014. Africa's banking sector consistently lags behind the global average in the period under discussion. For instance, banking sector credit to private sector as a percentage of GDP (a measure of banking sector depth) was 16 for SSA relative to the global average of 40.

Table 1: Selected indicators of banking sector development in SSA

Banking Sector Development Indicator		Year				
		2011	2012	2013	2014	Average
Depth						
Private credit by deposit money banks to GDP (%)	World	37.6	38.4	40.2	43.7	40.0
	SSA	16.4	16.4	16.5	15.7	16.3
Deposit money banks' assets to GDP (%)	World	45.1	48.9	49.8	52.7	49.1
	SSA	21.0	20.8	22.8	23.8	22.1
Breadth						
Bank accounts per 1,000 adults	World	433.1	461.0	499.1	653.5	511.7
	SSA	132.2	157.9	153.4	157.7	150.3
Bank branches per 100,000 adults	World	14.1	13.2	13.9	15.5	14.2
	SSA	3.7	3.8	4.2	4.1	3.9
Efficiency						
Bank net interest margin (%)	World	4.2	4.1	3.8	2.7	3.7
	SSA	6.6	6.1	6.4	3.7	5.7
Cost to income ratio (%)	World	55.8	55.0	56.2	51.5	54.6
	SSA	60.0	60.9	61.2	49.5	57.9
Stability						
Bank Z-score	World	10.0	9.9	9.9	9.9	9.9
	SSA	8.0	8.4	7.7	7.7	8.0
Bank nonperforming loans to gross loans (%)	World	4.1	4.1	4.4	4.4	4.2
	SSA	5.6	4.6	5.1	5.2	5.1

Source: World Bank (2016)

Similarly, bank accounts per 1,000 adults averaged 150.3 for SSA relative to the world average of 511.7. Cost to income ratio was an average of 58 per cent for SSA as compared to the global average of 55 per cent, implying that it is more costly to do business with banks in SSA. Notwithstanding the dismal performance of SSA in terms of banking indicators there are some positive trends. For instance, cost to income ratio declined from 60 per cent in 2011 to 58% in 2014. Also, bank accounts per 1,000 adults improved from 132 in 2011 to 150 in 2014. In the light of these indicators, this chapter seeks to examine whether banking services in general and some of these improvements affect inclusive development in SSA.

2.2 Current state of corruption in SSA

Though corruption is a global canker, it is more pervasive in SSA compared to elsewhere in the world. According to the Corruption Perception Index (CPI) 2018, SSA was the lowest scoring region in the world in terms of the perception of citizens about corruption. SSA scored 32 out of 100 compared to the highest scoring region, Western Europe and European Union, which scored 66 out of 100. The CPI scores are ranked on a 100-point scale, where 0 means highly corrupt and 100 not being corrupt. According to the Transparency International (2019), SSA has stagnated in terms of fighting corruption. Out of 180 countries assessed globally in the 2018 CPI, 6 of the bottom 10 performers were found in SSA. Many countries in the region have struggled to translate anticorruption pledges into action owing to inefficient institutions, lack of political will and weak democratic governance. Globally, only 66% of the countries have a CPI score below 50, with a global average score of 43 which is a dismal performance. Thus, the data indicates that the fight against corruption should not just be an African agenda but a global one.

2.3 Inclusive development in SSA

Globally, the focus has shifted from using economic growth as a measure of well-being, to "inclusive development" as this measures human progress better. Table 2 presents statistics on the Human Development Index (HDI) for several regions of the world including SSA over the period 1990 to 2017. The HDI scores are ranked on a 1-point scale, where 0 is the lowest score and 1 the highest. HDI values of less than 0.550 are classified as low human development, 0.550–0.699 as medium human development, 0.700–0.799 as high human development and 0.800 or greater as very high human development. Evidence in the table shows that SSA lags behind all regions in terms of human development, with a score of 0.537 (2017) relative to 0.728 for the world. This places SSA in the low human development category and the global average within the high human development bracket.

Table 2: Human Development Index: 1990-2017

	1990	2000	2010	2012	2014	2015	2016	2017
Developing Countries	0.515	0.570	0.642	0.657	0.669	0.673	0.678	0.681
Arab States	0.557	0.613	0.675	0.686	0.690	0.694	0.697	0.699
East Asia and the Pacific	0.517	0.597	0.692	0.707	0.720	0.725	0.730	0.733
Europe and Central Asia	0.653	0.668	0.733	0.749	0.761	0.764	0.767	0.771
Latin America & Caribbean	0.626	0.686	0.731	0.740	0.751	0.754	0.757	0.758
South Asia	0.439	0.503	0.584	0.602	0.618	0.625	0.634	0.638
Sub-Saharan Africa	0.398	0.421	0.498	0.514	0.526	0.531	0.534	0.537
Organisation for Economic Cooperation & Development	0.785	0.835	0.874	0.880	0.886	0.890	0.893	0.895
World	0.598	0.642	0.698	0.709	0.718	0.722	0.726	0.728

UNDP (2018)

Notwithstanding the low HDI scores for SSA, there is some glimmer of hope. On the average, there have been improvements in the HDI scores over the years. HDI score for SSA improved from 0.398 in 1990 to 0.537in 2017. Though this still leaves the region in the low human development bracket it shows that progress is being made, albeit rather slowly. There is the need to find innovative ways of improving human development in the continent in an accelerated fashion. One of this chapter's contributions is an attempt to uncover ways through

which banking services and control of corruption could contribute to inclusive development in SSA.

3. Theoretical framework and literature

3.1 Theoretical review

The finance-led growth theory stems from Schumpeter (1911) who argued that a well-functioning financial system boosts economic growth through innovation. He emphasised that enterprise is promoted through the financial system redirecting credit from less productive sectors of the economy to productive sectors which propel economic growth. This is referred to as the supply-leading hypothesis, which holds that economies can facilitate the process of growth by making available finances to innovative enterprises. The second theoretical strand for the finance-growth nexus is the McKinnon and Shaw (1973) theory of financial liberalization, which contends that a repressed financial market discourages savings, retards the efficient allocation of resources, increases the segmentation of financial markets, constrains investments and eventually lowers economic growth rate.

Embedded in the finance-growth nexus is the concept of inclusive development. According to Ali and Son (2007) and Ali Zhuang (2007) there is no agreeable definition of inclusive growth or inclusive development in the international community. However, Rauniyar and Kanbur (2010) defined inclusive development as "when all members of a society participate in and contribute to the growth process equally regardless of their individual circumstances" (p. 457). Inclusive development is non-discriminatory in age, gender, caste, sect, and creed; and is sensitive to changes in income, assets and opportunity for development (Haunge Quibria, 2013).

The implication is that inclusive growth that creates economic opportunities should be available for all including the poor in the society for them to maximize their possible best. According to Gupta and Vegelin (2016) inclusive development places emphasis on social, ecological and political dimensions of development.

We discuss the three cardinal principles which aim at reducing exposure to risk such as natural disasters and civil conflicts that exact vulnerability (Rauniyar & Kanbur 2010). The first principle is social inclusiveness, which entails providing opportunities for all (in particular, the disadvantaged) to participate in society and benefit from the development process. Social inclusiveness is aimed at empowering the vulnerable in society through investment in human capital and enhancing opportunities for participation. Gupta et al. (2014) suggest that social inclusiveness is based on five fundamental principles. (i) adopting equity principles to share in development opportunities and benefits; (ii) including the knowledge of the marginalized in defining development process and goals; (iii) ensuring a social minimum through a higher level of protection for the most marginalized; (iv) targeted capacity building to help the poor benefit from opportunities; and (v) engaging the marginalized in the politics for development governance. When these principles are at work, individuals are empowered to effectively participate in society and to benefit from same, thereby improving their ability to cope with risk and uncertainties.

Ecological inclusiveness refers to the control of access to and ownership of resources as well as protecting the local ecosystem. Ecological inclusiveness can be addressed both at the national and international levels. At the national front, it requires a prudent management of resources and the sustainability of the ecosystem services. At the global level, it entails countries being at peace with one another and using common but differentiated responsibility

for dealing with global problems. It has three strands. First, the livelihood argument perspective, which suggests that the poor depend on the ecosystem for their survival. Second, the vulnerability argument that focuses on how climate change can affect the vulnerability of the poor; and this calls for enhancing adaptive capacity and resilience for the poor. Third, the anthropocene argument, which states that the great acceleration in the demand for limited land, water, and other resources may lead to ecospace grabbing or the large-scale transfer of these resources from local communities to governments, large corporations and the private sector by changing the rules of access to these resources (see Zoomers 2010; Fairhead et al. 2012; Leach et al. 2012). This may further exacerbate the vulnerability of the poor (Gupta 2014).

Relational inclusiveness recognizes the fact that ecological degradation and poverty are as a result of actions taken by others due to increasing inequality and the substance and the process of politics in the society. This means stakeholders of relational inclusiveness need to understand and address the issues of inequality, exclusion and vulnerability in a multi-level manner.

3.2 Empirical literature review

Owing to the theoretical postulation on the link between finance and economic growth from the Schumpeterian framework and the McKinnon and Shaw perspective; a number of empirical studies have been carried out. In this sub-section, we review literature on the link between finance and growth and the nexus between finance and inclusive development.

3.2.1 Nexus between finance and economic growth

Making banking services inclusive for development requires making them affordable and available to all segments of the population, including poor households and SMEs. Empirical

research on inclusive banking services and growth is lacking. However, research on finance and growth has thoroughly been investigated dating back to Schumpeterian and McKinnon and Shaw theories on the link between finance and growth. In this sub-section we survey some of these literatures.

Earlier empirical studies on the link between finance and growth used cross-sectional studies to establish a positive relationship between economic growth and financial development (see King & Levine, 1993; Levine & Zervos, 1998). The proxies for growth in these studies were average growth rate and productivity. However, a number of researchers raised issues of casual effects and endogeneity problems with these cross-sectional studies leading to panel data analysis in the early 2000s.

Samargandi et al. (2013) used panel data from 1980 to 2008 for 52 middle-income countries to investigate the relationship between financial development and economic growth. They found an inverted U-shaped long run relationship between finance and economic growth. The short run relationship was insignificant.

Adusei (2013) examined the finance-growth nexus for Ghana from 1971 to 2010. Three proxies were used to measure financial development – credit to private sector, domestic credit and broad money as percentages of GDP. He found that while domestic credit and broad money had a significant but negative impact on economic growth, credit to private sector had no significant effects; implying that financial development served as a drag on the Ghanaian economy.

Ibrahim and Alagidede (2018) studied a panel of 29 sub-Saharan African countries over the period 1980-2014. They found that the extent to which finance supports economic growth depends on the simultaneous growth of the real and financial sectors. They also discovered that the pass- through effect via the finance-growth nexus is stronger using an investment channel.

Hseuh, Hu and Tu (2013) investigated the causality between financial development and economic growth for 10 Asian countries during the 1980 – 2007 period. They found that the causal direction between financial development and growth is contingent on the proxy used for financial development. Their findings corroborate the supply-leading hypothesis.

In a more recent study, Issahaku (2019) examined the impact of banking services on economic growth in SSA using SGMM. The author found that banking services promote economic growth only in countries with strong governance structure and well developed financial sector.

3.2.2 Link between finance and inclusive development

The nexus between finance and inclusive development is a recent phenomenon. Some recent studies have surveyed the link between inclusive finance and inclusive development. Abor, Amidu and Issahaku (2018) showed that mobile phone penetration and financial inclusion significantly reduced the probability of a household becoming poor and increased household consumption of food and non-food items. Also, Sarma and Pais (2011) found that the level of human development and financial inclusion are positively correlated. Their study also strengthens the fact that financial exclusion is a reflection of social exclusion.

Asongu and Le Roux (2017) investigated the effect of information communication technology (ICT) on inclusive development for a sample of 49 African countries. They found that policies designed to boost ICT penetration also helped to increase inclusive development in Africa. However, their results varied across different measures of inclusive development (income levels, legal origins, religious dominations, political stability and human resource-wealth). In a related study, Asongu and Nkwachukwu (2016) examined the role of governance and mobile phones for inclusive human development in Sub-Saharan Africa and found that, mobile phones and political, institutional, and economic governance enhanced inclusive development.

Fasih (2012) found that Islamic banking has the potential to foster inclusive growth by uplifting vulnerable groups such as farmers and Small and SMEs. This is because the concept of profit and risk sharing in Islamic banking makes credit affordable to disadvantaged groups. Similarly, Corrado and Corrado (2017) opined that access to banking services has a significant and positive relationship with a nation's economic performance. However, they also argued that there is a possibility of a reverse causation between economic growth and banking sector development.

4. Empirical strategy

4.1 Conceptualising inclusive development

Inclusive development is easier to define than to measure largely because of its multidimensional nature and the paucity of data. Its multidimensional nature makes it inappropriate to use single measures such as poverty, income, inequality among others as measures. In this regard, this study employed the measures of inclusive development developed by the United Nations Development Programme (UNDP) and used in their annual Human Development Reports. Particularly, we used the Human Development Index (HDI) and the Inequality Human Development Index (IHDI). These two measures of inclusive development measure three main dimensions of human progress: long and healthy life; knowledge and descent standard of living. Each dimension consists of sub indicators as shown in Figure 1. The main difference between the HDI and the IHDI is that the IHDI adjusts the HDI for inequalities in the three dimensions of human development. Thus, the IHDI is more inclusive than the HDI. The values of the HDI/IHDI range from 0 to 1, with 0 being the lowest human development and 1 being the best human development. HDI/IHDI values of less than 0.550 are classified as low human development, 0.550–0.699 as medium human development, 0.700–0.799 as high human development and 0.800 or greater as very high human development.

We have chosen the UNDP indices as our measures of inclusive development because the dimensions they cover are very useful for monitoring human progress and sustainability. Unlike the most commonly used measure of welfare, GDP, these measures capture inclusive income, life expectancy, healthy leaving and educational attainments. Also, our measures of inclusiveness are available for a large number of countries worldwide over a fairly long period of time which allows for panel analysis. Lastly, our measures cover at least four of 17 SDGs: Goal 3 (good health and wellbeing), goal 4 (quality education), goal 8 (decent work and economic growth) and goal 10 (reduced inequalities). The main weakness of our measures of inclusive development is that they do not address issues of security, environmental sustainability and women empowerment. Nonetheless, they offer insights which are useful for empirical work on sustainable human development.
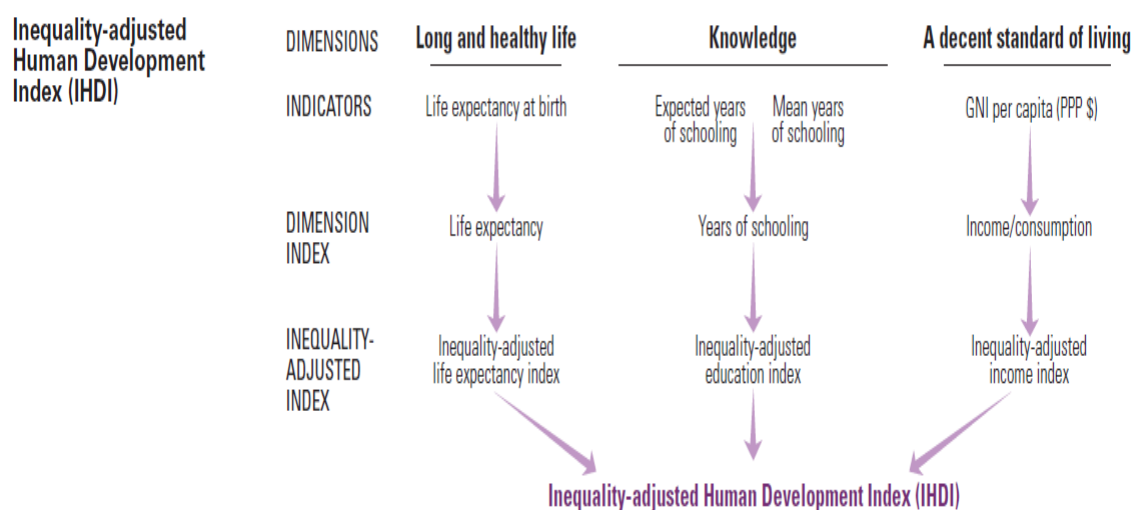

Figure 1 Inequality Adjusted Human Development Index

Source: UNDP (2019)

4.2 The econometric model

The empirical model used for this study is anchored on the Schumpeterian and McKinnon and Shaw theories on the link between finance and growth presented in section 3, the empirical literature (see King & Levine, 1993; Levine & Zervos, 1998; Issahaku et al., 2019) and the conceptualisation of inclusive growth discussed in section 4.1. The theoretical and empirical bases for the inclusion of each variable are discussed after the statement of the model. The model is specified as follows:

$$Inclusive\ dvelopment_{i\tau} = \beta_0 + \beta_1 Banking\ Services_{i\tau} + \beta_2 Corruption\ control_{i\tau} +$$
$$\beta_3 Interaction_{i\tau} + \beta_4 FDI_{i\tau} + \beta_5 Population_{i\tau} + \beta_6 Trade_{i\tau} + \beta_7 Capital_{i\tau} + \beta_8 Remittances_{i\tau} +$$
$$\varepsilon_{i\tau} \qquad (1)$$

Where inclusive development is proxied by HDI and IHDI. *Banking Services* is proxied by credit provided to the private sector by banks as a ratio of GDP. This measure is used as a proxy for banking services because the provision of credit is perhaps the most important function of banks (Issahaku, 2019). *Corruption control* is a measure of the perception of corruption in a particular country as developed by Kaufmann, Kraay, and Mastruzzi (2011) and integrated into the World Governance Indicators (WGI). According to the WGI, the control of corruption variable measures the "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests". Control of corruption is a continuous variable and ranges from 0 to 100; 0 signals worst corruption control while 100 indicates best corruption control. *Population* is the growth rate of the population. The other control variables are foreign direct investment (FDI), trade, capital formation and remittances all as ratios of GDP. These variables are included in the model as controls based on Issahaku (2019). The rationale for the inclusion of each control variable is espoused below.

The signs of the coefficients of the FDI, remittance and population variables are *a priori*, uncertain. By increasing the capital base and transferring technology and management acumen, FDI is expected to foster inclusive development. On the other hand, by widening inequalities, competing out local enterprises, and exploiting local resources, FDI may be toxic to inclusive development. If remittances help households to invest in education, business and reduce vulnerabilities, they will promote inclusiveness. However, if remittances, induce the moral hazard problem by causing recipients to reduce their supply of labour, or cause governments to renege on their responsibilities to citizens (Issahaku, Abor & Amidu, 2017), or produce the Dutch disease effect (Acosta et al., 2009) and subsequently lead to the appreciation of the local currency and lowering international competitiveness, then, remittances may cripple inclusive development. A high population growth rate is indicative of a large market size and in this sense should promote inclusive development. On the other hand, if a large number of citizens are unemployed and/or unproductive, a high population growth may lower inclusive development.

Countries that are open to trade are expected to earn more foreign exchange, embrace new ways of doing things and expand the range of goods and services available for consumption. This may improve wellbeing. The greater the capital stock, the greater the productive capacity of a country and hence the greater the degree of economic inclusiveness.

Interaction defines a multiplicative interaction term between *banking services* and *corruption control*. The interaction term is included in order to gauge the ability of corruption control to mediate the link between banking services and inclusive development. The thinking is that when a country is able to bring corruption under control, it will facilitate access to credit and other banking services by the citizenry, increase the efficiency of investment and lower the cost of transactions and in so doing enhance inclusive development.

4.3 Estimation strategy

Due to the potential existence of endogeneity and reverse causation between the dependent variables and the right hand side variables, estimating equation (1) using OLS will not be appropriate. We therefore employed instrumental variable techniques to resolve this problem. We used a complement of panel instrumental variable techniques which are able to handle econometric problems such as autocorrelation, heteroscedasticity and simultaneity. Four main instrumental variable techniques as espoused in Baum, Schaffer, and Stillman (2007), are employed. The first estimation strategy is the heteroscedasticity and autocorrelation consistent instrumental variable (HAC-IV) estimation which is capable of yielding results which are efficient even when heteroscedasticity and autocorrelation exist (Baum et al., 2007). The second strategy is the efficient GMM estimator which gives unbiased estimates even when the assumption of independently and identically distributed (i.i.d) errors is violated (see Hayashi, 2000). Thirdly, we used the limited information maximum likelihood (LIML) procedure which evaluates the single equation model through the method of maximum likelihood (Baum et al., 2007). LIML is superior to other single equation methods when the sample size is small to moderate and when identifying restrictions are many (Davidson & MacKinnon, 1993). According to Greene (2003), when normality is assumed, LIML is the most efficient among all single equation estimators. The fourth estimation technique used is the continuously updated GMM (CUE-GMM). It is a GMM generalisation of the LIML to account for arbitrary heteroscedasticity and autocorrelation in the errors (see Hansen, Heaton, & Yaron, 1996). We used the ivreg2 command developed by Baum et al. (2007), which is available in STATA, to estimate all models.

We conducted checks to ensure that the models were valid. These diagnostics tests entailed test of under identification and weak identification. The models were exactly identified, hence there

was no need for over identification test. The Anderson canonical correlation LM statistic (Anderson, 1951) was used to test for under-identification of instruments. The test is a LM test used to examine whether the equation is identified, that is the excluded instruments are valid, meaning the excluded instruments are uncorrelated with the endogenous regressors. The null hypothesis tested is that the equation is underidentified. A rejection of the null hypothesis implies that the equation is identified. The Cragg-Donald Wald F statistic (Cragg & Donald, 1993) was used to test for the existence of weak identification. Weak identification comes about when the excluded instruments are correlated with the endogenous regressors but only weakly. Weak instruments affect the performance of estimators. The null hypothesis test indicated the instruments are weakly identified.

4.4 Data

The study employs panel data for 47 SSA economies over the period 2000 - 2017. The data used was obtained from various databases. The HDI and IHDI were sourced from the UNDP. The measure of corruption was derived from the WGI. All other control variables were sourced from the World Development Indicators 2019 (WDI) via an online database. Data for the HDI cover a much longer time period than the IHDI and are available online. Therefore, we used the HDI as our main measure of inclusive development and used the IHDI for robustness checks.

5. Results and discussion

5.1 Descriptive statistics

Table 3 shows that the values of the HDI for our sample range from 0.252 (low human development) to 0.797 (high human development). The average HDI score is 0.4799 which falls within the low human development category. This means, on the average, inclusive

development is low in Africa. In terms of the IHDI, the values range from 0.198 (low human development) to 0.683 (medium human development). The average IHDI score is 0.3395 which falls within the low human development classification. The IHDI values are lower than the HDI values, meaning that when we account for inequality, inclusive development in SSA is even much lower.

The average credit provided by SSA banks to the private sector is 17.970 per cent of GDP which is quite low and typifies the generally low access to banking services by the private sector. Remittances and FDI as percentages of GDP averaged 3.336 and 5.134 respectively which underscore the increasing role of capital flows in Africa's development. Trade as a percentage of GDP is quite high (76.128) and this should engender inclusive development. Gross fixed capital formation as a percentage of GDP (capital) is an average of 22.576, signifying a generally low capital formation in the continent. The population growth rate is an average of 3.661 per cent which is quite high and could put pressure on infrastructure and other services if not properly harnessed. Corruption control ranges from 47.4 to 84.849 with an average of 21.940. Thus, on the average SSA scores low in terms of bringing corruption under control and this could hamper the smooth and efficient delivery of goods and services.

The correlation matrix in Table 4 shows that we do not have much problem with multi colinearity. Most of the significant correlations occur between the dependent variable and the independent variables. The key regressors are significantly correlated with the measures of inclusive development which is an initial indication that these variables could promote inclusive development.

Table 3 Descriptive statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Inequality Adjusted Human Development Index	317	.3395142	.0861362	.198	.683
Human Development Index	811	.4799001	.107444	.252	.797
Banking Services	790	.1797026	.1714127	.0000462	1.062603
Remittance	693	.037757	.0613305	1.83e-06	.5382618
Foreign Direct Investment	822	.0513404	.0889251	-.0605721	1.033374
Trade	771	.7612791	.380134	.2072252	3.113541
Capital	741	.2257594	.0958506	.0109681	.7377735
Population	832	3.66092	10.8029	-2.628656	148.4268
Corruption control	784	.3214282	.2194015	.0047393	.8484849

Table 4 Correlation matrix

	1	2	3	4	5	6	7	8	9
IHDI (1)	1								
HDI (2)	0.9353*	1							
Banking Ser. (3)	0.5668*	0.5537*	1						
Remittance (4)	-0.1208	-0.0452	-0.0647	1					
FDI (5)	-0.1295	0.0164	-0.0636	0.0925	1				
Trade (6)	0.1604	0.3845*	0.1705*	0.1115	0.3434*	1			
Capital (7)	0.0075	0.2632*	0.1106	-0.0464	0.3303*	0.3592*	1		
Population (8)	-0.0831	-0.0519	0.0424	-0.0296	0.0681	0.0233	0.0616	1	
Corruption control (9)	0.4153*	0.5055*	0.5428*	0.0907	0.0361	0.2452*	0.2484*	-0.0264	1

5.2 Effects of banking services on inclusive development (HDI)

The results in Table 5 were estimated using HAC-IV, CUE-GMM, two step GMM and LIML.

The diagnostic tests all suggest that the equations do not suffer from under-identification and

weak identification and that the equations are correctly identified. The main regressor of interest, banking services, is significant at 1 per cent level and with a positive sign in all four models, suggesting that banking services promote inclusive development irrespective of the estimation technique used. The coefficient is also quite large (0.335) and is the same in all models. There are several functions played by banks which could lead to inclusive development. The banking system mobilises savings from surplus spending units and allocates the funds to deficit spending units who have need of them. The banking system facilitates exchange of goods and services, evaluates projects and screens borrowers, mitigates risks, exercises corporate governance responsibilities, and reduces information asymmetry and transaction costs (Levine, 1997). By performing these functions, individuals and households are able to enjoy better education, good health care and earn more income to enable them consume a wide array of goods and services. These findings find support in Sarma and Pais (2011), Abor et al. (2018), Issahaku and Abu (2019).

In addition to banking services, trade and capital positively impact inclusive development at 1 per cent level. These mean that African countries that are open to trade and devote more capital to investment are likely to attain inclusive development. A country that is open to trade is able to earn more foreign exchange, attract new technology, capital and innovations and these could stimulate inclusive development. Furthermore, the injection of more capital into the economy would boost economic activity and this could positively affect inclusive development. Remittances, FDI and population growth are found not to positively promote inclusive growth. As discussed earlier, these variables can either promote or impede development depending on how they are harnessed.

Table 5 Effects of banking services on inclusive development (dependent variable: HDI)

	(1)	(2)	(3)	(4)

VARIABLES	HAC-IV	CUE-GMM	GMM	LIML
Banking services	0.335***	0.335***	0.335***	0.335***
	(0.0203)	(0.0203)	(0.0203)	(0.0203)
Remittance	-0.152**	-0.152**	-0.152**	-0.152**
	(0.0739)	(0.0739)	(0.0739)	(0.0739)
FDI	-0.119***	-0.119***	-0.119***	-0.119***
	(0.0398)	(0.0398)	(0.0398)	(0.0398)
Trade	0.0654***	0.0654***	0.0654***	0.0654***
	(0.00802)	(0.00802)	(0.00802)	(0.00802)
Capital	0.184***	0.184***	0.184***	0.184***
	(0.0433)	(0.0433)	(0.0433)	(0.0433)
Population	-0.000815***	-0.000815***	-0.000815***	-0.000815***
	(0.000287)	(0.000287)	(0.000287)	(0.000287)
Constant	0.418***	0.418***	0.418***	0.418***
	(0.0122)	(0.0122)	(0.0122)	(0.0122)
Diagnostics				
Observations	590	590	590	590
R-squared	0.507	0.507	0.507	0.507
F Statistic	91.83***	91.83***	91.83***	91.83***
Anderson canonical correlation LM statistic	490.052***	490.052***	490.052***	490.052***
Cragg-Donald Wald F statistic	2858.475***	2858.475***	2858.475***	2858.475***

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5.3 Effects of banking services and corruption control on inclusive development (HDI)

Using the results presented in Table 6, we analysed how banking services and corruption control affect inclusive development. The diagnostic tests indicate that all the models are properly specified and identified. The coefficients for banking services are still significant at 1 per cent and with positive signs even after controlling for corruption. This suggests that the impact of banking services on inclusive development is quite robust to a number of controls. Also, the coefficients of corruption control are positive and significant at 1 per cent in all models. This means, countries that are able to control corruption stand to enjoy more inclusive development. The control of corruption would promote inclusive development because it would encourage savings and investment, promote entrepreneurship, reduce the cost of doing business, encourage fairness and entrench a merit system and increase the efficiency of capital.

According to Dantani and Muftau (2017) corruption impedes inclusive growth by diverting national resources from productive uses, discouraging savings, increasing debt accumulation, aggravating poverty and inequality, accelerating decay of infrastructure and social services, and lowers the level of living in general. Thus, countries that are able to curtail these repercussions of corruption can hope to enjoy a higher standard of living. According to the International Monetary Fund (IMF) (2019) the absence of endemic corruption boosts macroeconomic stability and ensures inclusive growth and sustainable development. The other control variables do not experience much change after the inclusion of the corruption variable, further buttressing the point that the models are robust.

Table 6 Effects of banking services and corruption on inclusive development (dependent variable: HDI)

VARIABLES	(5) HAC-IV	(6) CUE-GMM	(7) GMM	(8) LIML
Banking services	0.284***	0.284***	0.284***	0.284***
	(0.0247)	(0.0247)	(0.0247)	(0.0247)
Remittance	-0.192***	-0.192***	-0.192***	-0.192***
	(0.0734)	(0.0734)	(0.0734)	(0.0734)
FDI	-0.107***	-0.107***	-0.107***	-0.107***
	(0.0395)	(0.0395)	(0.0395)	(0.0395)
Trade	0.0587***	0.0587***	0.0587***	0.0587***
	(0.00815)	(0.00815)	(0.00815)	(0.00815)
Capital	0.118***	0.118***	0.118***	0.118***
	(0.0446)	(0.0446)	(0.0446)	(0.0446)
Population	-0.000682**	-0.000682**	-0.000682**	-0.000682**
	(0.000283)	(0.000283)	(0.000283)	(0.000283)
Corruption control	0.0801***	0.0801***	0.0801***	0.0801***
	(0.0198)	(0.0198)	(0.0198)	(0.0198)
Constant	0.414***	0.414***	0.414***	0.414***
	(0.0124)	(0.0124)	(0.0124)	(0.0124)
Diagnostic				
Observations	564	564	564	564
R-squared	0.517	0.517	0.517	0.517
F Statistic	80.08***	80.08***	80.08***	80.08***
Anderson canonical correlation LM statistic	436.674***	436.674***	436.674***	436.674***
Cragg-Donald Wald F	1906.852***	1906.852***	1906.852***	1906.852***

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Next, we examined whether corruption and banking services produce synergy effects and this is presented in Table 7. The results show that banking services and corruption control independently foster inclusive development at 1 per cent level consistent with the previous findings. The interaction term is significant with a negative sign in all the models. This means, as far as inclusive development is concerned, banking services play independent and non-complementary roles. That is, banking services and control of corruption are substitutes in inclusive development and therefore, do not produce positive synergy effects. Further research is required to explain this finding. For now, we opine that, the substitutory nature of banking services and corruption in inclusive development might be due to lack of coordination between banking sector policy and public policy on corruption in Africa.

Table 7 Effects of banking services and corruption on inclusive development (dependent variable: HDI) –Interactive effects

VARIABLES	(9) HAC-IV	(10) CUE-GMM	(11) GMM	(12) LIML
Banking services	0.340***	0.340***	0.340***	0.340***
	(0.0362)	(0.0362)	(0.0362)	(0.0362)
Remittance	-0.161**	-0.161**	-0.161**	-0.161**
	(0.0741)	(0.0741)	(0.0741)	(0.0741)
FDI	-0.104***	-0.104***	-0.104***	-0.104***
	(0.0393)	(0.0393)	(0.0393)	(0.0393)
Trade	0.0549***	0.0549***	0.0549***	0.0549***
	(0.00826)	(0.00826)	(0.00826)	(0.00826)
Capital	0.132***	0.132***	0.132***	0.132***
	(0.0446)	(0.0446)	(0.0446)	(0.0446)
Population	-0.000566**	-0.000566**	-0.000566**	-0.000566**
	(0.000284)	(0.000284)	(0.000284)	(0.000284)
Corruption control	0.156***	0.156***	0.156***	0.156***
	(0.0324)	(0.0324)	(0.0324)	(0.0324)
Interaction	-0.0188***	-0.0188***	-0.0188***	-0.0188***
	(0.00713)	(0.00713)	(0.00713)	(0.00713)
Constant	0.310***	0.310***	0.310***	0.310***
	(0.0419)	(0.0419)	(0.0419)	(0.0419)

Diagnostics				
Observations	564	564	564	564
R-squared	0.524	0.524	0.524	0.524
F Statistic	70.99***	70.99***	70.99***	70.99***
Anderson canonical correlation LM statistic	375.909***	375.909***	375.909***	375.909***
Cragg-Donald Wald F statistic	1109.190***	1109.190***	1109.190***	1109.190***

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

5.4 Effects banking services and corruption control on inclusive development: Robustness checks

In this sub-section, we assessed the impact of banking services and corruption on inclusive development using the IHDI as a measure of inclusive growth. The results in section 5.3 showed that our estimation techniques yielded the same results. For this reason, in this section, we would present results based on only two of the estimation techniques. Table 8 shows the effects of banking services on the IHDI, Table 9 depicts the effects of banking services and corruption on the IHDI while Table 10 shows interactive effects of banking services and corruption control on the IHDI. The results are fairly consistent with the previous results where the HDI was used as the measure of inclusive development. Banking services significantly impacts inclusive development positively in all the results presented (Table 8-10), with the coefficients being fairly large (ranging from 0.281 to 0.369). Similarly, control of corruption is significant in all the models and shows a positive sign throughout, with coefficient values ranging from 0.046 to 0.216. Likewise, the interaction term is significant and bears a negative sign throughout, implying that banking services and control of corruption are substitutes in inclusive development. Thus, the robustness checks using IHDI as a measure of inclusive development confirms our earlier findings that banking services and control of corruption are on their own bastions of inclusive development.

Table 8 Effects of banking services on inclusive development (dependent variable: IHDI)

| | (13) | (14) |
VARIABLES	HAC-IV	CUE-GMM
Banking services	0.281***	0.281***
	(0.0245)	(0.0245)
Remittance	-0.172**	-0.172**
	(0.0871)	(0.0871)
FDI	-0.0914***	-0.0914***
	(0.0355)	(0.0355)
Trade	0.0212*	0.0212*
	(0.0112)	(0.0112)
Capital	-0.0249	-0.0249
	(0.0479)	(0.0479)
Population	-0.000567**	-0.000567**
	(0.000228)	(0.000228)
Constant	0.308***	0.308***
	(0.0162)	(0.0162)
Diagnostics		
Observations	254	254
R-squared	0.481	0.481
F Statistic	31.01***	31.01***
Anderson canonical correlation LM statistic	207.085**	207.085**
Cragg-Donald Wald F statistic	1090.264***	1090.264***

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 9 Effects of banking services and corruption on inclusive development (dependent variable: IHDI)

| | (15) | (16) |
VARIABLES	HAC-IV	CUE-GMM
Banking services	0.251***	0.251***
	(0.0298)	(0.0298)
Remittance	-0.216**	-0.216**
	(0.0898)	(0.0898)
FDI	-0.0836**	-0.0836**
	(0.0354)	(0.0354)
Trade	0.0193*	0.0193*
	(0.0111)	(0.0111)
Capital	-0.0461	-0.0461
	(0.0489)	(0.0489)
Population	-0.000528**	-0.000528**
	(0.000228)	(0.000228)
Corruption control	0.0469*	0.0469*
	(0.0240)	(0.0240)
Constant	0.305***	0.305***

	(0.0161)	(0.0161)
Diagnostics		
Observations	254	254
R-squared	0.486	0.486
F Statistic	28.08***	28.08***
Anderson canonical correlation LM statistic	191.777***	191.777***
Cragg-Donald Wald F statistic	758.192***	758.192***

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 10 Effects of banking services and corruption on inclusive development (dependent variable: IHDI) –Interactive Effects

VARIABLES	(17) HAC-IV	(18) CUE-GMM
Banking services	0.369***	0.369***
	(0.0414)	(0.0414)
Remittance	-0.179**	-0.179**
	(0.0847)	(0.0847)
FDI	-0.0738**	-0.0738**
	(0.0332)	(0.0332)
Trade	0.00937	0.00937
	(0.0107)	(0.0107)
Capital	-0.0122	-0.0122
	(0.0465)	(0.0465)
Population	-0.000303	-0.000303
	(0.000218)	(0.000218)
Corruption control	0.216***	0.216***
	(0.0393)	(0.0393)
Interaction	-0.0423***	-0.0423***
	(0.00890)	(0.00890)
Constant	0.0772	0.0772
	(0.0513)	(0.0513)
Diagnostics		
Observations	254	254

R-squared	0.551	0.551
F Statistic	28.88***	28.88***
Anderson canonical correlation LM statistic	160.397***	160.397***
Cragg-Donald Wald F statistic	419.831***	419.831***

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

6. Conclusion

This chapter analysed the impact of banking services and control of corruption on inclusive development using a panel of 47 SSA countries over the period 2000-2017. Four main panel instrumental variable methods were used to ensure robust results. These are HAC-IV, CUE-GMM, two step efficient GMM, and LIML. Three main findings emerged from the analysis. First, banking services promote inclusive development in SSA. Second, SSA countries that are able to reign in corruption are able to attain higher inclusive development. Lastly, though banking services and control of corruption promote inclusive development on their own, they do not produce positive synergy effects. Thus, the main conclusion of this chapter is that banking services and control of corruption are bulwarks of inclusive development in Africa.

Our results give rise to three policy implications: First, measures, reforms and interventions by the government and the private sector that seek to make banking services accessible, affordable, stable and efficient should be promoted as these would lead to higher inclusive development. Second, a vote against corruption is a vote for inclusive development. Thus, African countries should mount robust and relentless attack on corruption as the control of corruption would lead to greater inclusive development. Lastly, African countries should consider improving banking services and controlling corruption as important policy options for achieving the SDGs.

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