Banking Services and Inclusive Development in Sub-Saharan Africa

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1 Introduction

Africa's financial system is largely dominated by banks (Beck and 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 Demetriades and James 2011; Ibrahim and Alagidede 2018; Issahaku 2019; Rousseau and D'Onofrio 2013) and much less on growth inclusiveness. Even the global literature focuses on the finance-growth nexus ignoring inclusive development (see King and Levine 1993; Levine and Zervos 1998).

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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 benefit from this growth leading to inequality. Second, economic growth may lead to the production of negative externalities (e.g., 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. Fourth, economic growth is a poor and misleading measure of economic development given how it is calculated. In other words, a country could be earning 90% of its income from the natural resources sector, which is highly mechanized and its income distribution is largely to the government and companies engaged in the extraction. Based on this analysis, this chapter deviates from much of the existing knowledge base by examining the impact of banking services on inclusive development.

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

The chapter contributes in many ways to the bank-economic development literature. First, it is among the very few studies (Fasih 2012; Sarma and Pais 2008) 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 maiden attempt to assess the impact of corruption and banking services on inclusiveness of development in the same study. The chapter's 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 organized as follows. The next section describes stylised regularities on banking sector development, corruption and inclusive development in SSA. This is followed by a catalogue of the literature, and a discussion on the empirical strategy. The last two sections present empirical results and robustness test; and the conclusion, respectively.

2   Stylised Facts: Banking Sector Development, Corruption, and Human Development in Africa

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, the credit to private sector as a percentage of GDP (which measures banking sector depth) was 16 for SSA relative to the global average of 40.

Similarly, bank accounts per 1000 adults (banking sector breadth) averaged 150.3 for SSA relative to the global mean of 511.7. Cost to income ratio (banking efficiency) was an average of 58% for SSA as compared to the global average of 55%, implying that it is more costly to do business with banks in SSA. In terms of stability, on the average, SSA banks have a higher non-performing loans and lower z scores than the global average. This indicates that the banking system in SSA is less stable compared to the global expectation.

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% in 2011 to 58% in 2014. Also, bank accounts per 1000 adults improved from 132 in 2011 to 150 in 2014. In the light of these indicators, this chapter investigates whether banking services in general and some of these improvements affect inclusive development in SSA.

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)

Table 1 Selected indicators of banking sector development in SSA

Banking Sector Development Indicator		Year				Period average
		2011	2012	2013	2014	
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 1000 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 Development Indicators 2016 (World Bank 2016), online

of 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 Transparency International (2019), SSA has stagnated in 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.

Inclusive Development in SSA

Globally, the focus has shifted from using economic growth as a measure of wellbeing, to "inclusive development" as the latter is well suited to measuring human progress. In this chapter, inclusive development is measured by the Human Development Index (HDI)[1] and the Inequality-adjusted-HDI (IHDI). Table 2 presents statistics on the HDI for several regions of the world including SSA over the period 1990–2017. 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, while 0.550–0.699, 0.700–0.799, and higher than 0.800; are classified as medium, high, and very high human development, respectively. Evidence in Table 2 shows that SSA lags behind all other 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.

   Notwithstanding the low HDI scores for SSA, there is some glimmer of hope. On average, there have been improvements in the HDI scores over the years. HDI score for SSA improved from 0.398 in 1990 to 0.537 in 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 a need

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 and 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 and 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

Source UNDP (2018)

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. In this chapter, the HDI and IHDI are used as measures of inclusive development.

3   Theoretical Framework and Literature

Theoretical Review

The finance-led growth theory stems from Schumpeter (1911) who argued that a well-performing financial system boosts growth through innovation. He emphasized that enterprise is promoted through the financial system redirecting credit from less productive sectors of the economy to productive sectors that 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 (1973) and Shaw (1973) theory of financial liberalization, which contends that a repressed financial market dampens savings, interferes with efficient resource allocation, augments financial market segmentation, constrains investments, and eventually depresses growth.

Embedded in the finance-growth nexus is the concept of inclusive development. According to Ali and Son (2007) and Ali and Zhuang (2007) there exist 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 does not discriminate in terms of age, gender, class, clique, and faith; and is sensitive to changes in income, assets and opportunity for development (Huang and Quibria 2013).

The implication is that inclusive growth that creates economic opportunities should be available for all; including the poor in the society, in order 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 of inclusive development which aim at reducing vulnerabilities arising from natural disasters and civil conflicts (Rauniyar and 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 through investment in human capital and increasing openings for participation. Gupta et al. (2014) suggest that social inclusiveness is based on five fundamental principles. (i) Ensuring that all are included in development opportunities; (ii) incorporating the knowledge of all (including the vulnerable) in crafting the development process; (iii) ensuring a social minimum through a higher level of protection for the most marginalized; (iv) customizing capacity building for the poor to help them capitalize upon development opportunities; and (v) involving everybody in the politics of development. When these principles are at work, individuals are empowered to effectively participate in society and to benefit from the same, thereby improving their ability to cope with risk and uncertainties.

Ecological inclusiveness which is the second principle of inclusive development refers to the control of resources and safeguarding the local ecosystem. Ecological inclusiveness can be addressed both from national and international perspectives. At the national front, it requires a prudent management of resources and ecosystem sustainability. At the global level, it entails countries being at peace with one another and using shared but differentiated responsibility for solving universal problems. Ecological inclusiveness has three strands. First, the livelihood argument perspective, which suggests that the poor survives on the ecosystem. Second, the vulnerability strand that dwells on how climate change can affect the vulnerability of the poor; and this requires building resilience of the poor. Third, the anthropocene argument, which states that the increasing demand for scarce land, water, and other resources may result in ecospace grabbing or transfers of these resources from the poor to the rich (see Zoomers 2010; Fairhead et al. 2012; Leach et al. 2012). This may push the poor into more vulnerable positions (Joyeeta Gupta 2014).

The third principle of inclusive development is relational inclusiveness. It projects the fact that ecological degradation and poverty are a result of actions taken by others due to increasing inequality and the substance and the process of politics in the society. Stakeholders of relational inclusiveness advocate the need to understand and address the issues of inequality, exclusion, and vulnerability in a multi-level manner.

The three dimensions of inclusiveness point to the fact that inclusive development is multidimensional, and for that matter, cannot be captured by a single variable such as income or poverty or inequality. Any measure of inclusive development must capture its multifaceted nature.

Empirical Literature Review

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

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 small-scale businesses. Empirical research on inclusive banking services and growth is lacking. However, the link between finance and growth has thoroughly been investigated dating back to Schumpeterian and McKinnon and Shaw theories on the connection between finance and growth (see Demirgüç-Kunt and Detragiache 1998; Levine and Zervos 1998; Rajan and Zingales 1998; King and Levine 1993). In this sub-section we survey some of this literature.

Earlier empirical literature on the finance-growth connection used cross-sectional data to establish a positive link between growth and finance (see King and Levine 1993; Levine and 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.

One of the studies that employed panel data analysis is Samargandi et al. (2015) who used data for 52 middle-income countries for the 1980–2008 periods to investigate the bond between financial development and economic growth. They found an inverted U-shaped long run link between finance and economic growth. The short run relationship was insignificant.

Another panel study conducted by Ibrahim and Alagidede (2018) on 29 SSA economies revealed that the degree to which the financial system supports economic growth hinges on the simultaneous growth of the real sector and the financial sector. They also discovered that the pass-through effect via the finance-growth nexus is stronger using an investment channel. The panel study led by Hsueh et al. (2013) concentrated on the nature of the causal link between finance and growth, and publicized that the causal direction is contingent on the proxy used for financial development. Their findings corroborate the supply-leading hypothesis.

In a more recent study, Issahaku (2019) employed SGMM for a sample of countries in SSA to show that banking services promote economic growth only in countries with a strong governance structure and well developed financial sector.

From a time series perspective, Adusei (2013) examined the finance-growth link for Ghana from 1971 to 2010 using three proxies of financial development. The author established that while domestic credit and broad money had a significant but adverse impact on the economy, credit to private sector had no significant effects; implying that financial development served as a drag on the Ghanaian economy.

Link Between Finance and Inclusive Development

The study of the relationship between finance and inclusive development is a recent phenomenon. Some recent studies have surveyed the link between inclusive finance and inclusive development. For example, Abor et al. (2018) showed that mobile telephony and financial inclusion significantly reduced the likelihood of a household becoming poor and increased household consumption. Also, Sarma and Pais (2011) established a positive correlation between human development and financial inclusion. Their finding also strengthens the fact that financial exclusion derives from 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 and discovered that policies that promoted ICT penetration also helped to increase inclusive development in Africa. However, their results varied across different measures of inclusive development. In a related study, Asongu and Nwachukwu (2016) studied the implications of governance and mobile telephony for inclusive human development in SSA and found that, mobile phones and political, institutional, and economic governance enhanced inclusive development.

The work of Fasih (2012) demonstrated that Islamic banking is capable of fostering inclusive growth by uplifting vulnerable groups such as farmers 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

Conceptualizing 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 disseminated in 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 quantify three main dimensions of human progress: long and healthy life; knowledge; and decent living standard. Each dimension consists of sub-indicators as shown in Fig. 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
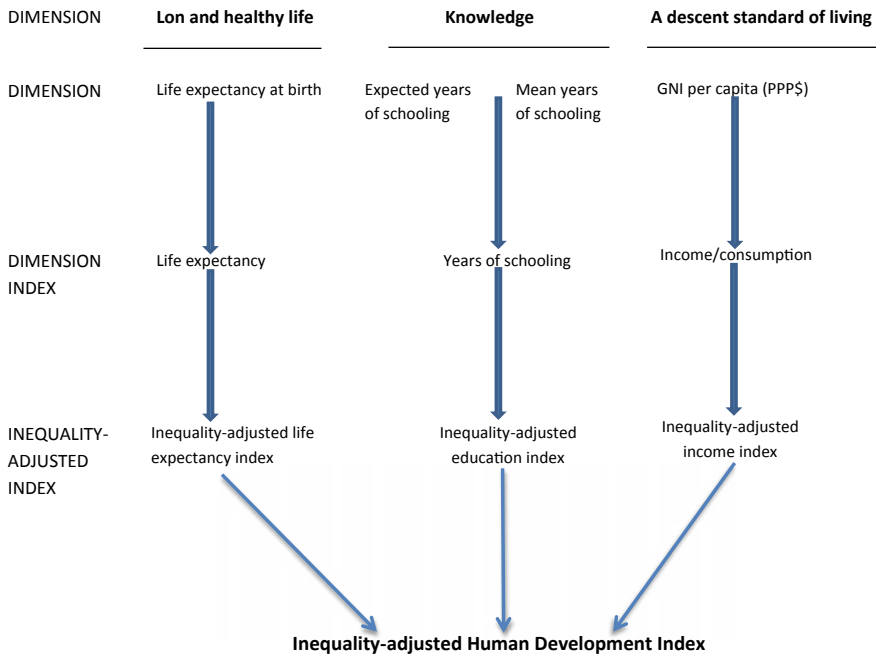

Fig. 1   Inequality-adjusted human development index (*Source* UNDP [http://hdr.undp.org/en/content/inequality-adjusted-human-development-index-ihdi.], online)

from 0 to 1, with 0 being the lowest human development and 1 being the best human development. HDI/IHDI values lower 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 GDP (the most commonly used measure of welfare), these measures capture inclusive income, life expectancy, healthy leaving, and educational attainments. Also, our measures of inclusiveness are available for many economies worldwide over a fairly long-time span which allows for panel analysis. Lastly, the selected measures cover at least four of the 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 these measures of inclusive development is that they do not address issues of security, environmental sustainability and women empowerment. Nonetheless, they offer insights that are useful for empirical work on sustainable human development.

The Econometric Model

The empirical model used for this chapter is anchored on the Schumpeterian and McKinnon and Shaw theories on the finance-growth association presented in Sect. 3, the empirical literature (see King and Levine 1993; Levine and Zervos 1998; Issahaku 2019), and the conceptualization of inclusive growth discussed in section "Conceptualising Inclusive Development". The model is specified as follows:

$$
\begin{aligned}
Inclusive\ development_{i\tau} &= \beta_0 + \beta 1\ Banking\ Services_{i\tau} \\
&+ \beta_2 Corruption\ control_{i\tau} + \beta_3 Interation_{i\tau} \\
&+ \beta_4 Capital_{i\tau} + \beta_5 Population_{i\tau} + \beta_6 Trade_{i\tau} + \varepsilon_{i\tau}
\end{aligned} \quad (1)
$$

Where inclusive development is proxied by HDI and IHDI. *Banking Services* is measured by private sector credit provided by banks as a ratio of GDP because the provision of credit is one of the most important functions of banks (Issahaku 2019). *Corruption control* is a measure of the perception of corruption in a particular country as developed by Kaufmann et al. (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 the best corruption control. *Population* is the growth rate of the population. The other control variables (trade and capital formation) are expressed 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.

A high population growth rate is indicative of a growth in market size and in this sense should promote inclusive development. However, if many citizens are unemployed and/or unproductive, a high population growth may lower inclusive development. Again, if the population grows faster than the rate of expansion of the economy, this may reduce growth inclusiveness.

Economies with high trade openness 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 enable access to credit and related banking services and products by the citizenry, increase the efficiency of investment and lower the cost of transactions and in so doing enhance inclusive development.

Estimation Strategy

Due to the potential existence of endogeneity and reverse causation between the dependent variables and the right-hand side variables (especially banking services), estimating Eq. (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 that 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 and 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 generalization of the LIML to account for arbitrary heteroscedasticity and autocorrelation in the errors (see Hansen et al. 1996). We used the *ivreg2* command developed by Baum et al. (2007), which is available in STATA, to estimate all models.

We used regulatory quality as an instrument for banking services. A key characteristic of a worthy instrument is that it should be uncorrelated with the error term while being strongly related with the endogenous variable (banking services). The instrument should affect the dependent variable only indirectly (through its impact on the endogenous regressor). In the finance literature, the legal regime is often the preferred instrument. This is because the legal background of a country is usually endogenous and very critical for financial development (Levine 1999; La Porta et al. 1997). We used regulatory quality as a proxy for the legal regime of a country.

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 Kleibergen-Paap rk LM statistic (Kleibergen and Paap 2006) was used to test for under identification of instruments. The test is an LM test used to examine whether the equation is identified, that is the excluded instruments are valid. The null hypothesis tested is that the equation is under identified. If the null hypothesis is rejected, it implies that the equation is identified. The Kleibergen-Paap Wald F statistic (Kleibergen and Paap 2006) was used to test for the existence of weak identification. Weak identification comes about when the excluded instruments are weakly associated with the endogenous variables. Weak instruments affect the performance of estimators. The null hypothesis test indicated the instruments are weakly identified.

Data

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

5   Results and Discussion

Descriptive Statistics

Table 3 shows that HDI values range from 0.252 (low human development) to 0.797 (high human development) for the 47 SSA countries. The average HDI score during the study period (2000–2017) was 0.480, which falls within the low human development category. This means, on the average, inclusive development is low in Africa. Seychelles had the highest HDI score (0.797) while Niger had the lowest score (0.354) in 2017. In terms of the IHDI, the values fall within the range 0.198 (low human development) to 0.683 (medium human development). The mean IHDI score is 0.340. The IHDI values are lower than the HDI values, meaning that when we account for inequality, inclusive development in SSA is even much lower.

Table 3 Descriptive statistics

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Inequality adjusted Human Development Index	317	0.340	0.086	0.198	0.683
Human Development Index	811	0.480	0.107	0.252	0.797
Banking Services	790	0.180	0.171	0.000	1.062
Trade	771	0.761	0.380	0.207	3.114
Capital	741	0.226	0.096	0.011	0.738
Population	832	3.660	10.803	−2.629	148.427
Corruption control	784	0.321	0.219	0.005	0.848

Table 4 Correlation matrix

	1	2	3	4	5	6	7
IHDI (1)	1						
HDI (2)	0.9353*	1					
Banking Ser. (3)	0.5668*	0.5537*	1				
Trade (4)	0.1604	0.3845*	0.1705*	1			
Capital (5)	0.0075	0.2632*	0.1106	0.3592*	1		
Population (6)	−0.0831	−0.0519	0.0424	0.0233	0.0616	1	
Corruption control (7)	0.4153*	0.5055*	0.5428*	0.2452*	0.2484*	−0.0264	1

The average private-sector credit provided by SSA banks is 18.000% of GDP which is quite low and typifies the generally low access to banking services by the private sector. Trade as a fraction of GDP is quite high (76.100) and this should engender inclusive development. Gross fixed capital formation as a proportion of GDP (capital) has a mean value of 22.600, signifying a generally low capital formation in the subregion. The high average population growth rate of 3.660% could put pressure on infrastructure and other services if not properly harnessed. Corruption control ranges from 0.500 to 84.800 with an average of 21.900. 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.

Evidence from the correlation matrix in Table 4 suggests the absence of multicollinearity. Most of the significant correlations occur between the

right-hand side variables (HDI and IHDI) and the explanatory variables. The key regressors (banking services and corruption control) are significantly correlated with the measures of inclusive development which is an initial indication that these variables could promote inclusive development.

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, shows significance at 1% level and with a positive coefficient in all four models. This suggests that banking services promote inclusive development

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

Variables	(1) HAC-IV	(2) CUE-GMM	(3) GMM	(4) LIML
Banking services	0.0919***	0.0919***	0.0919***	0.0919***
	(0.00644)	(0.00644)	(0.00644)	(0.00644)
Trade	0.0655***	0.0655***	0.0655***	0.0655***
	(0.00852)	(0.00852)	(0.00852)	(0.00852)
Capital	0.103**	0.103**	0.103**	0.103**
	(0.0480)	(0.0480)	(0.0480)	(0.0480)
Population	−0.00103***	−0.00103***	−0.00103***	−0.00103***
	(8.49e-05)	(8.49e-05)	(8.49e-05)	(8.49e-05)
Constant	0.673***	0.673***	0.673***	0.673***
	(0.0175)	(0.0175)	(0.0175)	(0.0175)
Observations	663	663	663	663
F-statistic	90.78***	90.78***	90.78***	90.78***
Kleibergen-Paap rk LM statistic	128.715***	128.715***	128.715***	128.715***
Kleibergen-Paap rk Wald F statistic	374.987***	374.987***	374.987***	374.987***

Note All variables with the exception of HDI and Population are measured in natural logs. Values in the parenthesis are robust standard errors. A single asterisk (*) denotes significance at the 10% level, two asterisks (**) at the 5% level, and three asterisks (***) at the 1% level. HAC-IV is heteroscedasticity and autocorrelation consistent instrumental variable estimation; GMM is efficient general method of moments estimator; LIML is limited information maximum likelihood (LIML) procedure; CUE-GMM is continuously updated GMM. Regulatory quality is used as an instrument for Banking services in all models

irrespective of the estimation technique used. The coefficient is 0.0919 and is the same in all models. There are several functions discharged by banks which could lead to inclusive development. The banking system mobilizes savings from surplus spending units and allocates the funds to units that require them. Also, it 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 are corroborated by Sarma and Pais (2011) and Abor et al. (2018).

In addition to banking services, trade, and capital positively impact inclusive development at 1 percent level and 10 percent level, respectively. These mean that African countries that are open to trade and devote more capital to investment are likely to attain inclusive development. A country with high degree of trade openness 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. Population growth does not positively promote inclusive growth. As discussed earlier, population growth can either promote or impede development, depending on how it is harnessed. Particularly, if population growth outpaces economic growth, this may lead to increased pressure on limited resources and infrastructure, and unemployment and underemployment.

Effects of Banking Services and Corruption Control on Inclusive Development (HDI)

Using the results presented in Table 6, we analyzed how banking services and corruption control affect inclusive development. The diagnostic tests show that all the equations are properly specified and identified. The coefficients for banking services are still significant at 1% and with positive signs even after controlling for corruption. This suggests that the effect of banking services on development inclusiveness is quite robust to a number of controls. Also, the coefficients of corruption control are positive and bear significance at 1% 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, stimulate entrepreneurship, reduce the cost of doing business, inspire fairness, entrench a merit system and increase the efficiency of capital.

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	0.402***	0.402***	0.402***	0.402***
	(0.0924)	(0.0924)	(0.0924)	(0.0924)
Trade	0.0123	0.0123	0.0123	0.0123
	(0.0165)	(0.0165)	(0.0165)	(0.0165)
Capital	0.0415	0.0415	0.0415	0.0415
	(0.0738)	(0.0738)	(0.0738)	(0.0738)
Population	−0.000351**	−0.000351**	−0.000351**	−0.000351**
	(0.000143)	(0.000143)	(0.000143)	(0.000143)
Corruption control	0.944***	0.944***	0.944***	0.944***
	(0.209)	(0.209)	(0.209)	(0.209)
Interaction	−0.269***	−0.269***	−0.269***	−0.269***
	(0.0692)	(0.0692)	(0.0692)	(0.0692)
Constant	0.0494	0.0494	0.0494	0.0494
	(0.130)	(0.130)	(0.130)	(0.130)
Observations	658	658	658	658
F Statistic	47.61***	47.61***	47.61***	47.61***
Kleibergen-Paap rk LM statistic	17.594***	17.594***	17.594***	17.594***
Kleibergen-Paap rk Wald F statistic	17.768***	17.768***	17.768***	17.768***

Note All variables with the exception of HDI, Corruption control, Interaction, and Population are measured in natural logs. Values in the parenthesis are robust standard errors. A single asterisk (*) denotes significance at the 10% level, two asterisks (**) at the 5% level, and three asterisks (***) at the 1% level. HAC-IV is heteroscedasticity and autocorrelation consistent instrumental variable estimation; GMM is an efficient general method of moments estimator; LIML is limited information maximum likelihood (LIML) procedure; CUE-GMM is continuously updated GMM. Regulatory quality is used as an instrument for Banking services in all models

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) the absence of endemic corruption boosts macroeconomic stability and ensures inclusive growth and sustainable development (IMF 2019).

Next, we examined whether corruption and banking services produce synergy effects, and this result is presented in Table 6. Synergy effects are

depicted by the interaction term, which is significant at 1% level 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.

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 "Effects of Banking Services and Corruption Control on Inclusive Development (HDI)" showed that our estimation techniques yielded the same results. For this reason, in this section, we will present results based on only two of the estimation techniques. Table 7 shows the effects of banking services on the IHDI while Table 8 depicts the effects of banking services and corruption 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 impact inclusive development positively in all the results presented (Tables 7 and 8), with the coefficients being fairly large (ranging from 0.108 to 0.569). Similarly, control of corruption is significant in all the models and shows a positive sign throughout, with coefficient of 1.295. 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.

6   Conclusion

This chapter analysed the impact of banking services and control of corruption on inclusive development employing a panel of 47 SSA economies over the period 2000–2017. Four main panel instrumental variable methods were

Table 7 Effects of banking services on inclusive development (dependent variable: IHDI)

VARIABLES	(1) HAC-IV	(2) CUE-GMM
Banking services	0.108***	0.108***
	(0.0123)	(0.0123)
Trade	0.0231**	0.0231**
	(0.0106)	(0.0106)
Capital	0.0960	0.0960
	(0.0677)	(0.0677)
Population	−0.000962***	−0.000962***
	(0.000106)	(0.000106)
Constant	0.522***	0.522***
	(0.0269)	(0.0269)
Observations	283	283
F statistic	25.76***	25.76***
Kleibergen-Paap rk LM statistic	55.198***	55.198***
Kleibergen-Paap rk Wald *F* statistic	238.426***	238.426***

Note All variables with the exception of IHDI and Population are measured in natural logs. Values in the parenthesis are robust standard errors. A single asterisk (*) denotes significance at the 10% level, two asterisks (**) at the 5% level, and three asterisks (***) at the 1% level. HAC-IV is heteroscedasticity and autocorrelation consistent instrumental variable estimation; CUE-GMM is continuously updated GMM. Regulatory quality is used as an instrument for Banking services in all models

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.

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

Variables	(1) HAC-IV	(2) CUE-GMM
Banking services	0.569***	0.569***
	(0.129)	(0.129)
Trade	−0.000864	−0.000864
	(0.0204)	(0.0204)
Capital	0.383**	0.383**
	(0.156)	(0.156)
Population	−0.000407**	−0.000407**
	(0.000174)	(0.000174)
Corruption control	1.295***	1.295***
	(0.319)	(0.319)
Interaction	−0.399***	−0.399***
	(0.104)	(0.104)
Constant	−0.426*	−0.426*
	(0.234)	(0.234)
Observations	283	283
F statistic	12.24***	12.24***
Kleibergen-Paap rk LM statistic	11.637***	11.637***
Kleibergen-Paap rk Wald *F* statistic	14.085***	14.085***

Note All variables with the exception of IHDI and Population are measured in natural logs. Values in the parenthesis are robust standard errors. A single asterisk (*) denotes significance at the 10% level, two asterisks (**) at the 5% level, and three asterisks (***) at the 1% level. HAC-IV is heteroscedasticity and autocorrelation consistent instrumental variable estimation; CUE-GMM is continuously updated GMM. Regulatory quality is used as an instrument for Banking services in all models

Note

1. The HDI has three main components: long and healthy life (longevity), knowledge (education) and standard of living (income per capita).

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