

What drives bank lending? A closer look at bank lending types in Africa

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Abstract

Purpose – In this study, the authors present unique evidence on bank lending types by paying particular attention to the factors that drive the different types of bank lending in Africa using bank level data.

Design/methodology/approach – In presenting such evidence, the study employs a robust fixed effect panel data with year and technological controls comprising 57 banks from 29 African economies between 2006 and 2015.

Findings – The results show that different factors affect different bank lending types differently in Africa. Specifically, while the authors find that total or aggregate bank lending is positively driven by bank capitalization and spread but negatively driven by bank size, corporate and commercial bank lending is positively driven by bank size, spread, inflation, elections and extent of business disclosure but negatively driven by bank capitalization, loan loss reserves, operational cost and gross domestic product per capita. Moreover, interbank lending is both negatively and positively driven by bank capitalization and size, respectively, while other bank lending type is driven positively by financial crisis but negatively driven by bank size, inflation and extent of business disclosure. Finally, retail and consumer lending is positively driven by bank capitalization, loan loss reserves and spread while negatively driven by bank size and inflation.

Practical implications – These imply that bank managers, regulators, policymakers and researchers must begin to see each bank lending category separately and independently since varying factors influence the different categories of bank lending differently.

Originality/value – The study presents new insights into how different factors determine different lending types in Africa for the first time to the best of the authors' knowledge.

Keywords Banks, Lending, Loans, Africa

Paper type Research paper

Introduction

Financial institutions especially banks perform critical roles in the development and growth of most economies (Raghutla and Chittedi, 2020; Alexiou *et al.*, 2018). Thus, it is an established fact that the financial sector which is dominated by banks is the backbone of most economies (Baloch *et al.*, 2021; Zaidi *et al.*, 2019). The financial sector including banks mobilize funds for surplus spending units and allocate them to deficit spending units as loans and investments for economic agents who have viable and economic value creating ventures (Kusi *et al.*, 2020a;



Berger and Sedunov, 2017). This role tends to facilitate economic activities and value creation in the economic system. Interestingly, banking institutions create liquidity for deficit spending units by lending to them the mobilized funds to engage in value creating economic ventures and activities (Kusi *et al.*, 2021; Berger and Sedunov, 2017). In the practice and administration of bank lending, it is clear that banks lend to different categories of entities and persons and hence classify their loan portfolio into aggregate loans (gross and net loans), corporate loans, commercial loans, interbank loans, consumer loans and other loan types.

Interestingly, while several empirical studies provide evidence on the factors that influence bank lending (Koetter and Popov, 2020; Englmaier and Stowasser, 2017; Temesvary and Banai, 2017; Hofmann, 2004; Farinha and Santos, 2002; Ewert *et al.*, 2000), the banking and finance empirical literature is silent and yet to investigate what drives these different categories of loans banks administer in practice. That is, while several studies have investigated factors that drive aggregate bank lending (gross and net loans), these existent studies have failed to provide detailed evidence on the factors that drive the different categories or types of bank lending administered in the practice banking. Empirically investigating and understanding what factors determine the different loans types granted by banks is critical and important for financial intermediation policies and regulations formulation as well as for bank level management purposes. Again, empirical studies on the drivers of bank loans in Africa are limited to a few studies (Amidu, 2014; Alu *et al.*, 2014; Coetzee and Genukile, 2020) and hence creating a lacuna for this present study. Therefore, in this present study, the study takes advantage of an African dataset of 57 banks across 29 countries to investigate for the first time to the best of our knowledge the determinants of bank lending in Africa while focusing on presenting detailed evidence on the factors that determine the different lending types or categories banks grant in Africa. The major contribution of this study is presenting novel and more detailed evidence on drivers of the different bank lending types or categories in Africa. The importance of this study is highlighted on two fronts. First, the study can enhance the bank managerial insights and knowledge on what drives different types of loans to enhance the lending function of banks in Africa. Second, the study presents new perspectives to bank lending which reveals new insights into bank lending literature in Africa. The rest of the paper is organized into overview, literature review, methodology, empirical results and discussion and conclusions and policy implication and recommendations.

Brief overview of bank loan types in Africa

In Table 1, average bank gross, net, commercial and corporate, retail and consumer, interbank and other loan types are reported. The computations and source of these bank loan types are presented below in Table 1. From the table gross and net bank lending measured as gross loans to total assets and net loans to total assets are averagely 52.47 and 49.92%. This means that total gross and net loans constitute 52.47 and 49.92% of bank total assets for the period under review, respectively. A closer look at bank loans show that corporate and commercial, retail and consumer, interbank and other lending types constitutes 23.48%, 12.84%, 14.9% and 41.98% of total assets given the period under investigation, respectively. As observed, bank retail and consumer loan reports the lowest percentage bank loan types while the other loan type reported the highest percentage bank loan type for the period. Observing the trends in bank loans across the various lending types, it is evident that bank loans declined in 2008 across the various bank lending types with the exception of interbank lending and other lending type which declined in 2009 and 2010, respectively. This decline in bank loan types can largely be attributed to the 2007–2009 global financial crises which impeded the global finance system including that of Africa. Hence, this reduction in bank loans for the mention period is not surprising. Remarkably, the differentiated impact of the

Years	GLTA	NLTA	CCLTA	RCLTA	IBLTA	OLTA
2006	48.33	46.09	30.1	7.81	12.52	38.23
2007	50.43	48.38	24.29	14.98	17.39	32.19
2008	48.71	46.35	17.41	11.76	19.12	37.84
2009	48.92	46.43	13.26	10.18	16.65	40.86
2010	49.4	47.39	18.86	16.73	16.07	39.89
2011	53.69	51.18	19.94	15.19	14.93	46.7
2012	51.75	48.37	8.98	10.27	14.36	45.32
2013	54.74	51.16	27.63	13.59	14.38	43.91
2014	59.89	57.27	35.08	13.18	11.6	52.88
2015	60.06	57.98	35.85	11.85	10.52	40.51
<i>Average</i>	<i>52.47</i>	<i>49.92</i>	<i>23.48</i>	<i>12.84</i>	<i>14.9</i>	<i>41.98</i>

Table 1.
Yearly trends in bank
lending between 2006
and 2015 in Africa

Source(s): Computed by author based on data from Bank Scope and World Bank Doing Business databases – GLTA – gross loans to total assets; NLTA – net loans to total assets; CCLTA – corporate and commercial loans to total assets; RCLTA – retail and consumer loans to total assets; IBLTA – interbank loans to total assets; OLTA – other loans to total assets

global financial crises on the different bank loan types show potential for different factors to determine or drive these loan types.

Literature review: theory, empirics and hypothesis

In this section the study presents the theoretical and empirical underpinnings of bank loan or lending. Specifically, the financial intermediation theory is used as the supporting theory for this study while a number of empirical studies that focus on bank determinants or drivers of loans are discussed.

The financial intermediation theory also called the dealership theory explains the “how” banks operate and the objective for their operations (Allen and Santomero, 1997; Ho and Saunders, 1981; Pyle, 1971). The theory suggests that banks are rational economic agents who undertake financial intermediation functions by mobilizing savings and deposits at a lower rate and transforming the deposits and savings into loans at a higher lending rate for deficit spending units (borrowers) with the aim of maximizing their gains from the financial intermediation functions. That is, the difference between the loan rate and deposit rate which is termed as the spread or interest margins becomes the profits or gains realized from the core financial intermediation function of banks. Put differently, by advancing bank loans to deficit spending units, banks create liquidity or ensure deficit spending units have enough liquidity to undertake value creating transactions and ventures. Interestingly, banks categorize and segment their borrowers for several reasons. For instance, banks arguable categorize their loan portfolio as a means of diversifying their loan portfolio (Berger *et al.*, 2010; Acharya *et al.*, 2006) and also to keep clients in smaller and manageable units for easy monitoring.

In terms of empirical results, Vo *et al.* (2021) recently examined bank lending and focused on how managerial abilities influenced bank lending using 8,379 United States banks between 1990 and 2017. Employing a fixed effect panel data, the results showed that better managed banks lend more regardless of the size of banks. Again, the results revealed that higher levels of managerial abilities are associated with greater loan quality. Likewise, Coetzee and Genukile (2020) studied the short and long-run determinants of bank lending using data on the South African economy between 1994 and 2016. Making use of time series data in autoregressive distributed-lagged models, the results prove that while deposits and size of banks are key in explaining bank lending in the short run, gross domestic product is key in explaining bank lending in the long run.

Similarly, [Fosu \(2014\)](#) examined the effect of credit information sharing on bank lending with a focus on how banking concentration influence the relationship between bank lending and credit information sharing. Employing a dynamic panel of 471 African banks between 2004 and 2009, the results show that credit information sharing improves bank lending in Africa. However, the positive effect of credit information sharing on bank lending declines in concentrated banking industries. Also, [Hu and Gong \(2019\)](#) explored how economic policy uncertainty and prudential regulations influenced bank lending. Using bank level data from 19 major countries the results reveal that economic policy uncertainty impedes bank lending and this result is stronger for large-sized banks and riskier banks while weaker for more liquidity and well diversified banks. However, the impeding effect of economic policy uncertainty on bank lending is alleviated by macro and micro-prudential regulations and policies.

More so, [Vo \(2018\)](#) examined determinants of bank lending in an emerging economy, Vietnam. The study used 37 Vietnamese banks for the period of 2006–2015 and found that bank specific and macroeconomic factors significantly influenced bank lending. Specifically, bank size, capital and operating cost were found to be the bank specific factors the influence bank lending while gross domestic product and inflation were the macroeconomic factors that influenced bank lending. Interestingly, no significant nexus was found between market structures and bank lending. Moreover, [Nguyen and Vo \(2018\)](#) investigated bank lending under financial crisis uncertainties using five European economies which are argued to host a vast majority of financially troubled borrowers in Europe. Employing a comprehensive interbank and international syndicated loan data sample, they show that changes caused by financial uncertainties in the world of financial markets significantly influence lending decisions of banks. Specifically, they reveal that banks tend to limit or restrict their lending during crisis periods while the limiting effect on bank lending is stronger for borrowers in European economies with major troubled borrowers.

Furthermore, [Kim and Sohn \(2017\)](#) examined the effect of bank capital on lending while asserting if liquidity mattered for the relationship between capital and lending. The study employs quarterly data on insured United States commercial banks spanning the period from 1993 quarter 1 to 2010 quarter 4. Their results reported a significant positive nexus between capital and bank lending after controlling large banks with sufficient liquid assets. Also, this relationship was more substantial during the recent financial crisis period. Besides, [Amidu \(2014\)](#) analyzed the effect of board characteristics on bank lending in sub-Saharan Africa. The study employed both bank and macro-level data covering 264 banks across 24 sub-Saharan African economies. Employing random effect panel models, the results firmly illustrated that banking market structure influences bank lending in sub-Saharan economies that have reformed the financial sector and banks are allowed to operate freely. Clearly, repressive regulatory initiatives like entry requirements and high regulatory restricts banking activities and impedes banks' decision to lend. Additionally, [Alu et al. \(2014\)](#) examined the effect of funding strategy on bank lending patterns in Ghana using bank level data from 2005 to 2011. Employing a panel data of 22 banks, they examine how funding strategies of banks influence bank lending patterns to primary, secondary and tertiary sectors of the economy. The result reveals that internally generated funds are used by banks in Ghana to finance their lending activities to the primary and secondary sectors of the economy while bank lending to the tertiary sector is more sensitive to wholesale funding than to deposit and internally generated funds. This finding advances the importance of including funding strategies as a traditional bank specific indicator when assessing bank lending.

From the theoretical and empirical review, it is clear that bank lending has attracted and gained the attention of academics, practitioners and policymakers given its contributive relevance for corporate and national growth and development. While banks in the practice of banking and finance administer different categories of loans to groups and for varying

purposes, the finance empirical literature on bank lending have so far been silent on the drivers of the different categories of bank lending. As observed from the empirical literature reviewed, the existent literature on bank lending has largely lumped all the different categories of bank lending together when investigating bank lending activities. Again the few that attempt to categorize bank lending fails to categorize bank lending into business lending (corporate and commercial lending), consumer and retail lending, interbank lending and other lending types which are the major lending categorization in the practice of banking. Interestingly, bank lending studies that focus on Africa have failed to investigate the core determinants of bank lending in Africa. From the discussion the study hypothesizes that different factors may drive the different bank lending categories especially in Africa where the banking market is less standardized and sophisticated.

Methodology and data

The study employs panel data technique to investigate the drivers of bank lending in Africa. Baltagi and Baltagi (2008) and Baltagi (2015) posits that the panel data technique presents more convincing and conclusive results than the traditional cross-sectional and time series techniques as the panel takes advantage of the strengths and corrects for the weaknesses of both time series and cross-sectional technique. Similarly, the panel data presents that ability to control for omitted variable and allows for both long and short run effect which controls for the weakness of cross-sectional and time series techniques (Imbens and Wooldridge, 2009). Bank level data covering 57 banks from 29 African economies (see Appendix 1) between 2006 and 2015 is obtained from BankScope while macroeconomic data are obtained from World Development Indicators. Control variables are obtained from World Development Indicators, World Bank Doing Business while electioneering variable in Africa is computed following Agbloyor (2019). The selection is purely based on available banks that have at least two years of data. The panel data framework for this study is expressed as (see equation 1):

$$Y_{it} = \phi + \beta X_{it} + \varepsilon_{it} \quad (1)$$

where: subscript i denotes the cross-sectional dimension (bank) $i = 1 \dots N$ and t denotes the time series dimension (time), $t = 1 \dots T$; Y_{it} is the dependent variable; Φ is scalar and constant term for all periods (t) and specific to a bank fixed effect (i); γ_t is the time fixed effect t ; β is a $k \times 1$ vector of parameters to be estimated on the independent variables for the explanatory variables; X_{it} is a $1 \times k$ vector of observations on the independent variables comprising of independent variables in the model which includes controlled variables and ε_{it} which is iid is the error term.

In terms of modeling bank lending a number of prior studies (Vo *et al.*, 2021; Fosu, 2014) are followed to arrive at the model stated below (see equation 2):

$$\begin{aligned} BL_{i,t} = & \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 CAP_{i,t} + \beta_3 CRISK_{i,t} + \beta_4 CI_{i,t} + \beta_5 SPREAD_{i,t} + \beta_6 HHI_{i,t} \\ & + \beta_7 GDPG_{i,t} + \beta_8 INFL_{i,t} + \beta_9 FINCRISES_t + \beta_{10} PBC_{i,t} + \beta_{11} CT_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

In simple terms, the model shows that bank lending (BL) (total or aggregate lending, corporate and commercial lending, retail and consumer lending, interbank lending and other lending) is determined by bank size (SIZE), capital adequacy (CAP), bank credit risk (LLP), cost efficiency (CI), profitability (SPREAD), market structure (HHI), gross domestic product growth (GDPG), inflation (INFL), financial crises (FINCRISES), political business cycle (PBC), corporate transparency (CT) and the error term ($\varepsilon_{i,t}$). Because the study employs different bank lending types as dependent variables, the anticipation is that each determinant of bank lending may affect the different categories of bank lending categorizations. These variable are fully explained below and summarized in Table 2.

Symbols	Names	Measurements	Expected Signs	Sources
BL	Bank lending	Gross loans to total assets; net loans to total assets; corporate and commercial loans to total assets; interbank loans to total assets; retail and consumer loans to total assets; other loans to total assets		Computed by author based on data from BankScope
PBC	Political business cycle	Dummy which assumes a value of 1 if a year is an election year and 0 otherwise	±	Captured by author based on election data from Agbloyor (2019)
CT	Corporate transparency	Disclosure index measures the extent to which investors are protected through disclosure of ownership and financial information. The index ranges from 0 to 10, with higher values indicating more disclosure	±	World Bank, Doing Business project (http://www.doingbusiness.org/)
SPREAD	Profitability	Interest income minus interest expense scaled over total assets	±	Computed by author based on data from BankScope
CAP	Capital adequacy	Natural log of equity	±	Computed by author based on data from BankScope
LLR	Loan loss reserves	Natural log of loan loss reserves	±	Computed by author based on data from BankScope
CI	Bank cost efficiency	Total operating expenses to total operating income	±	Computed by author based on data from BankScope
SIZE	Bank size	Natural log of total assets	±	Computed by author based on data from BankScope
HHI	Market structure	Herfindahl Hirschman index approach	±	Computed by author based on data from BankScope
INFL	Inflation	Consumer price index	±	World Development Indicators
GDPG	Gross domestic product Growth	Changes in GDP	±	World Development Indicators
FINCRISES	Global financial crises	Dummy which assumes a value of 1 for years of global financial crisis (2007–2009) and 0 otherwise	±	

Table 2.
Summary of selected variables

Empirical result and discussion

This section presents the descriptive statistics (see [Table 3](#)), pairwise correlation matrix (see [Table 4](#)) and the main estimation models. [Table 5](#) presents the descriptive statistics of all variables. The table is employed to observe and check for outliers which have the possibility of affecting the accuracy and consistency of the results. However, outliers are not observed within the dataset given the minimum, maximum and standard deviations reported. Similarly, the correlation matrix which is used as a mechanism for checking and controlling multicollinearity is shown in [Table 4](#). Following [Kennedy \(2008\)](#), the study sets the

Table 3.
Descriptive statistics

Variable	Obs	Mean	Std. Dev	Min	Max
NLTA	968	0.499	0.22	0	0.995
GLTA	968	0.525	0.234	0	1.386
CCLTA	226	0.235	0.188	0	0.908
IBLTA	894	0.149	0.14	0	0.793
RCLTA	277	0.128	0.139	0	0.898
OLTA	910	0.42	0.269	0	1.386
SIZE	972	8.994	3.178	1.163	16.198
CAP	965	6.798	3.103	-2.303	13.827
LLR	833	-0.377	72.628	-1614.667	280.6
CI	939	1.476	8.871	-190.559	129.267
SPREAD	209	5.847	2.238	-1.13	12.367
HERF	968	0.071	0.216	0	1
GDPG	716	0.069	0.141	-0.536	1.36
INFL	840	8.221	5.618	-0.25	47.305
FINCRISES	973	0.307	0.462	0	1
PBC	889	0.219	0.414	0	1

multicollinearity threshold to 0.7; hence, the results presented in [Table 4](#) show no evidence of multicollinearity. The results reported are estimated using fixed effect models while controlling for year effect. To select, the appropriate the Breusch-Pagan LM test is used and shows evidence in support of employing generalized least squares (GLS) estimations (see [Appendix 2](#)). To settle between random and fixed effect models which are the popular GLS estimations, the Hausman test is used and yielded evidence in support of fixed effect. Hence, the results reported and discussed are fixed effect estimates for which robust standard errors have been used to control for autocorrelation and heteroscedasticity while year effects are controlled for using year dummies. The results are reported in [Table 5](#). In all there are six (6) models in [Table 5](#). Models 1, 2, 3, 4, 5 and 6 presents the determinants of net, gross, corporate and commercial, interbank, consumer and retail and other bank lending types in Africa. The results are discussed as follows.

From the results, it is evident that bank size is significant and negatively related to total net and gross bank lending in Models 1 and 2. This finding implies that increase in bank size leads to reduction in bank lending and can be attributed to inefficiencies arising from the bureaucratic and lack of monitoring as firms become larger; hence, diseconomies of scale. Focusing on the different categories of bank lending, the study observes that bank size affects corporate and commercial and interbank lending positively while affecting consumer and retail lending and other lending type negatively. Intuitively, as banks increase in size they tend to increase the amount of loans advanced to corporate, commercial and the banking entities largely because of their ability to pay, ease of tracking and recovering loans from corporate, commercial and banking entities ([Uchida et al., 2008](#); [Kishan and Opiela, 2000](#)). Additionally, corporate, commercial and interbank lending requires huge amounts which only large banks can give ([Uchida et al., 2008](#)). On the other hand, increase in bank size leads to reduction in consumer and retail loans and other loan types and this is in line with [Berger et al. \(2005\)](#) who proved that smaller banks term to lend to smaller businesses and individuals.

Similarly, bank capital reports positive significant effect on aggregate bank lending (net and gross lending) (Models 1 and 2) and consumer and retail lending (Model 5) in Africa. On the contrary, bank capitalization presents a significant negative effect on corporate and commercial lending (Model 3) and interbank lending (Model 4). These findings show that bank capitalization have varying effect on different categories of bank lending. Seeing capital as a buffer fund and an increase in capital as increase in risk and loss absorption capacity (see

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) NLTA	1.000															
(2) GLTA	0.982*	1.000														
(3) CCLTA	0.567*	0.572*	1.000													
(4) IBLTA	-0.546*	-0.527*	-0.314*	1.000												
(5) RCLTA	0.168*	0.143*	0.064	-0.036	1.000											
(6) OLTA	0.678*	0.720*	-0.356*	-0.325*	-0.434*	1.000										
(7) SIZE	0.221*	0.155*	0.146*	-0.182*	0.009	-0.101*	1.000									
(8) CAP	0.228*	0.172*	0.172*	-0.193*	0.010	-0.062*	0.972*	1.000								
(9) LLR	-0.015	0.000	0.073	-0.036	0.072	-0.019	0.011	0.008	1.000							
(10) CI	0.047	0.040	-0.025	-0.082*	0.025	0.034	0.080*	0.084*	-0.007	1.000						
(11) SPREAD	0.016	0.007	0.011	-0.086	0.047	-0.152*	0.305*	0.324*	-0.039	0.200*	1.000					
(12) HERF	0.003	0.005	-0.075	-0.004	-0.061	-0.027	0.115*	0.127*	0.038	0.072*	0.104	1.000				
(13) GDPG	0.025	0.030	-0.115	-0.016	0.099	0.037	0.028	0.030	0.026	0.014	-0.047	0.023	1.000			
(14) INFL	0.146*	0.130*	-0.075	-0.036	-0.011	-0.006	0.121*	0.113*	0.025	0.052	0.076	0.052	-0.023	1.000		
(15) FINCRIS	-0.088*	-0.090*	-0.174*	0.137*	-0.010	-0.121*	0.002	-0.025	-0.024	0.023	0.245*	0.004	0.030	0.159*	1.000	
(16) PBC	0.060*	0.057*	0.386*	0.042	0.062	0.015	0.071*	0.074*	-0.042	-0.014	-0.062	-0.022	0.032	-0.108*	0.007	1.000

Note(s): *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4.
Pairwise correlations

Table 5.
Determinants of bank
lending in African
between 2006 and 2015

Variables	Model 1 NLTA	Model 2 GLTA	Model 3 CCLTA	Model 4 IBLTA	Model 5 RCLTA	Model 6 OLTA
SIZE	-0.2275*** (0.0388)	-0.2334*** (0.0393)	0.7508*** (0.1298)	0.1285*** (0.0325)	-0.5695*** (0.1525)	-0.1749* (0.0995)
CAP	0.1470*** (0.0366)	0.1509*** (0.0376)	-1.0149*** (0.1469)	-0.1261*** (0.0326)	0.5035*** (0.1683)	0.1684 (0.1023)
LLR	0.0002 (0.0022)	0.0009 (0.0024)	-0.0221*** (0.0063)	-0.0028 (0.0023)	0.0214** (0.0081)	-0.0004 (0.0087)
CI	0.0151 (0.0107)	0.0115 (0.0105)	-0.2193*** (0.0560)	-0.0014 (0.0120)	-0.1814 (0.1297)	0.0306 (0.0451)
SPREAD	0.0590** (0.0226)	0.0594*** (0.0220)	0.0370*** (0.0098)	-0.0165 (0.0112)	0.0635* (0.0343)	-0.0111 (0.0250)
HERF	-0.0500 (0.0404)	-0.0439 (0.0493)	-0.0814 (0.0694)	0.0695 (0.0717)	-0.7835 (0.6474)	-0.0148 (0.1463)
GDPG	-0.0310 (0.0487)	-0.0169 (0.0516)	-0.2570*** (0.0231)	0.0193 (0.0206)	-0.0654 (0.0509)	0.1041 (0.0973)
INFL	0.0010 (0.0023)	0.0001 (0.0022)	0.0369*** (0.0027)	-0.0020 (0.0015)	-0.0301** (0.0115)	-0.0177*** (0.0063)
FINCRISES	0.0216 (0.0356)	0.0265 (0.0352)	0.0381 (0.0450)	-0.0116 (0.0275)	-0.0897 (0.0995)	0.2015** (0.0847)
PBC	0.0158 (0.0175)	0.0153 (0.0185)	0.1860*** (0.0228)	-0.0103 (0.0109)	0.2663*** (0.0832)	0.0169 (0.0354)
CT	-0.0133 (0.0242)	-0.0233 (0.0249)	0.1671*** (0.0110)	-0.0131 (0.0142)	-0.2184*** (0.0442)	-0.1631** (0.0617)
Constant	-77.306*** (22.5246)	-85.1643*** (22.3236)	105.9530*** (36.3865)	-0.2089 (14.4574)	23.2066 (55.5325)	-160.594*** (43.9608)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	134	134	41	128	52	128
R-squared	0.7017	0.7131	0.9828	0.4185	0.9573	0.3548
Number of banks	57	57	28	55	35	54

Note(s): Robust standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Carlson *et al.*, 2013; Gambacorta and Mistrulli, 2004), it may induce banks to increase their risk appetite and capacity leading to increase the total lending as observed in models 1, 2 and 5. However, because interbank lending (Model 4) and commercial and corporate lending (Model 3) are less risky compared to retail and consumer lending (Model 5), increase in capital may reduce bank advancement of less risky lending such as interbank lending and corporate and commercial lending and rather increase riskier bank lending such as consumer and retail lending.

In terms of loan loss reserves, the study observes a significant negative effect on corporate and commercial lending while a significant positive effect is observed on consumer and retail lending in Africa implying that loan loss reserves have varying effects on different categories of bank lending. Following prior studies, loan loss reserve is a laid down fund used to curb risk and losses arising from bank lending function (Kim and Santomero, 1993). Hence, increase loan reserve reduces the funds available to grant corporate and commercial loans which are less risky and huge in value compared to consumer and retail loans. Therefore, following Ng and Roychowdhury (2014) who view loan loss reserves as risk absorption tool, it encourages the advancement of risky loans such as consumer and retail loans and hence its positive effect on consumer and retail loans.

From the results, operation cost is reported to significantly weaken the value of corporate and commercial loans in Africa. Interestingly, operational cost has no significant effect on the other loan types. The results suggest that increase in operation cost which is an indication that operation cost inefficiencies reduce the corporate and commercial loans. This finding is consistent with Chatterjee and Sinha (2006) who showed that operational cost efficiency promotes lending among commercial and corporate banks. Interestingly, bank spread which is an indication of gains reaped by banks from the lending business is significant and positively related to total bank lending (Model 1 and 2), corporate and commercial lending (Model 3) and consumer and retail lending. Following the financial intermediation theory which posits that banks are motivated to undertake financial intermediation activities because of intermediation gains or profits (see Kusi *et al.*, 2020a; Ho and Saunders, 1981), the finding that intermediation spread improves aggregate, corporate and commercial, consumer and retail bank lending is not surprising.

The results on gross domestic product shows a significant negative effect on corporate and commercial lending. Interestingly, given that increase in gross domestic product is seen as a favorable economic conditions, there is less pressure on bank corporate and commercial clients to demand for loans under favorable economic condition like gross domestic product and hence the observed negative nexus between gross domestic product and corporate and commercial lending. This finding supports the loan growth theory advanced by Keeley (1990). Again, the results shows that as inflation worsens, it increases corporate and commercial lending while reducing consumer and retail lending and other lending types. Thus, viewing inflation as unfavorable economic condition and ability for client to pay loans, banks are less likely to advance loans to consumer, retail and other small loan types largely because the ability of such clients to their loans reduces when inflation increases compared to their corporate and commercial client counterparts.

Financial crisis is observed to increase other small loan type. The argument is that financial crisis exerts more financial pressure on other small bank client groups whose loans are categorized as other loans compared to bank corporate, commercial, consumer and retail clients. This finding is consistent with prior studies (De Haas and Van Horen, 2013; Ivashina and Scharfstein, 2010). The results on elections captures as political business cycle has a significant positive effect on corporate and commercial loans and consumer and retail loans in Africa. Following the literature on political business cycle, the results confirms the argument that banks tend to advance more loans during electioneering periods due to political power and influence (Kumar, 2020; Englmaier and Stowasser, 2017). Finally,

business extent of disclosure which measures the degree of transparency in the corporate world shows a positive significant effect on corporate and commercial loans while having a negative significant effect on consumer and retail loans and other loan types. Following the literature on banking market transparency (Kusi *et al.*, 2020a, b; Asongu, 2017; Hyytinen and Takalo, 2002), banks advance more credit in transparency markets or sectors of an economy while reducing credit to opaque markets and sectors. Hence, intuitive reasoning suggests that improvement in business disclosure improves transparency in the corporate and commercial sector and hence attracts more corporate and commercial loans.

Conclusions, recommendations and policy implications

Bank lending remains an integral mechanism for facilitating economic growth and development in most economies. In the practice of banking, while banks classify their loans into different categories including corporate and commercial lending, consumer and retail lending, interbank lending and other lending types, existent empirical literature is silent and yet to provide evidence on which factors determine these types of bank lending particularly in Africa. Hence, in this study, we attempt to present first time evidence on factors that drive these different categories of bank lending with focus on banks in Africa. In an attempt to provide such evidence, this study employs a fixed effect panel data of 57 banks from 29 African economies between 2006 and 2015. The fixed effect models used control for year and technological effects.

The results show that different factors affect different bank lending types differently in Africa. Specifically, while we find that total or aggregate bank lending is positively driven by bank capitalization and spread but negatively driven by bank size, corporate and commercial bank lending is positively driven by bank size, spread, inflation, elections and extent of business disclosure but negatively driven by bank capitalization, loan loss reserves, operational cost and gross domestic product per capita. Moreover, interbank lending is negatively and positively driven by bank capitalization and size while other bank lending type is driven positively by financial crisis but negatively driven by bank size, inflation and extent of business disclosure. Finally, retail and consumer lending is positively driven by bank capitalization, loan loss reserves and spread while negatively driven by bank size and inflation.

From the results, it is evident that the different categories of bank lending are driven by varying factors differently. This implies that bank managers, regulators, policymakers and researchers must begin to see each bank lending category separately and independently since varying factors influence the different categories of bank lending differently. From a managerial perspective, managers may have to develop and design different strategies and mechanisms that promote and monitor the different types of loans since they are driven by different factors. Again, researchers are encouraged to provide more empirical evidence in this direction to help banks understand which factors are critical for category of bank lending type.

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Types of bank
lending in
Africa

Appendix 1

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Bank code	Bank Name	Country
3	Access Bank Plc	Nigeria
6	Fidelity Bank Plc	Nigeria
7	Union Bank of Nigeria Plc	Nigeria
8	Stanbic IBTC Bank Plc	Nigeria
10	Stanbic Bank Ghana Limited (2)	Ghana
12	ECOBANK Malawi Limited	Malawi
13	Attijari Leasing	Tunisia
14	Standard Bank (Mauritius) Limit	Mauritius
15	Compagnie Internationale de Lea	Tunisia
16	Banque Internationale Arabe de	Tunisia
19	FirstRand Bank Ltd	South Africa
21	First National Bank of Namibia	Namibia
25	Nedbank Group Limited	South Africa
27	First Bank of Nigeria Ltd (2)	Nigeria
30	Commercial Bank of Africa Limit	Kenya
33	South African Bank of Athens Li	South Africa
36	FirstRand Bank Ltd (2)	South 'Africa
40	CFC Stanbic Bank Limited	Kenya
43	Stanbic Bank Botswana Limited	Botswana
45	Unifactor-Union de Factoring	Tunisia
47	Stanbic Bank Botswana Limi (2)	Botswana
48	Bramer Banking Corporation Ltd	Mauritius
50	SBM Bank Mauritius Ltd	Mauritius
51	Standard Bank Limited	Malawi
53	Investments and Mortgages Bank	Kenya
54	STUSID Bank	Tunisia
55	CFC Stanbic Holdings Limited	Kenya
56	Cavmont Bank Limited	Zambia
59	Stanbic IBTC Bank Plc	Nigeria
60	AfrAsia Kingdom (Zimbabwe) Ltd	Zimbabwe
61	Guaranty Trust Bank Plc	Nigeria
63	Access Bank (Ghana) Limited	Ghana
68	Barclays Bank of Botswana Limit	Botswana
75	Banco Comercial Angolano SARL-BCA	Angola
80	Ecobank Uganda Limited	Uganda
85	Family Bank Limited	Kenya
90	Finca Zambia Limited	Zambia
94	Pulse Financial Services Limited	Zambia
95	AfrAsia Bank Ltd	Mauritius
97	ABC Banking Corporation Ltd	Mauritius
98	Stanbic Bank Ghana Limited	Ghana
99	Bank of Africa Kenya Limited	Kenya
100	Equity Bank Uganda Ltd	Uganda
102	UT Bank Limited	Ghana
105	Bank of India (Kenya Branches)	Kenya

Table A1.
(continued) List banks per country

Table A1.

Bank code	Bank Name	Country
108	First Gulf Libyan Bank	Libya
109	STUSID Bank	Tunisia
118	United Bank For Africa (Ghana) Limited	Ghana
121	Gulf African Bank Limited	Kenya
122	CRDB Bank Plc	United Republic of Tanzania
124	Banque de Tunisie	Tunisia
125	Tetrad Holdings Limited	Zimbabwe
135	Stanbic Bank Tanzania	United Republic of Tanzania
237	Sasfin Holdings Ltd	South Africa
238	FBN Holdings Plc	Nigeria
239	Ecobank Nigeria Ltd	Nigeria
240	FCMB Group Plc	Nigeria
241	Stanbic IBTC Holdings PLC	Nigeria

Appendix 2

Breusch and Pagan Lagrangian multiplier test for random effects

$$\text{banklend}[\text{bankcode},t] = Xb + u[\text{bankcode}] + e[\text{bankcode},t]$$

Estimated results:

$$| \quad \text{Var} \quad \text{sd} = \text{sqrt}(\text{Var})$$

-----+-----

$$\text{banklend} | \quad 0.0450514 \quad 0.2122531$$

$$e | \quad 0.0275473 \quad 0.1659738$$

$$u | \quad 0.0138887 \quad 0.1178504$$

Test: $\text{Var}(u) = 0$

$$\text{chibar2}(01) = 34.08$$

$$\text{Prob} > \text{chibar2} = 0.0000$$

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