The effects of cross-border banking and institutional quality on accounting information of banks in Africa

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Abstract: This paper seeks to analyse the implications of cross-border banking and institutional quality for accounting information quality. We sample 330 banks across 29 African countries and employ system GMM estimator as a methodological approach to test for two related hypotheses. First, banks financial statements are prepared on the basis of international accounting standards as banks cross-border when national institutions are strengthened. We build on these results and employ various specifications of institutional quality; the second test suggests that the relative quality of accounting information among banks in Africa during the period, 2002–2013, is attributed to cross-border banking, larger market share and the level of transparency.

Keywords: banks; cross-border banking; institutional quality; developing countries; Africa.

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1 Introduction

As the drive for foreign capital increases across the globe, the potential effects of these capital flows, including those from cross-border banking cannot be overlooked. In one vein, a more liberalised financial environment will lead to firms being more cautious when taking risk, when allocating resources and when making expenditures thereby ensuring efficiency and invariably growth (Gardener et al., 2011). In the other vein, increased financial globalisation will spur competition which will in turn lower profits (Wu et al., 2016). This dampening of profits can put firms at the risk of bankruptcy (Baik et al., 2011). Under these conditions, the jobs of managers are threatened and such pressured managers and firms have the incentive to manipulate accounts to make them look attractive to investors. Thus, pressured firms are more likely to manage earnings. According to Healy and Wahlen (1999, p.368), earnings management occurs "when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers." Avelé and Niyomahirwe (2016) have shown that the quality of accounting information of firms directly affects the preparation of accounting information according to the international financial reporting standards (IFRS). Indeed, earnings management has attracted the attention of not only researchers, but of practitioners and regulators as well (Kourdoumpalou, 2017). Earnings management has implications for the cost of debt and risk profile of banks. It has been shown that, firms that apply real earnings management techniques have a lower credit rating and a higher cost of debt at the time of issue (Crabtree et al., 2014).

Yet so far, the link between cross-border banking and the quality of accounting information has been ignored in the global banking literature, and even more so in African banking studies. Some laudable attempts have been made recently to advance our understanding of the implications of cross-border banking but not necessarily the accounting informativeness of it. For instance, Sissy et al. (2017) advance the literature on the impact of cross-border banking on risk and return in the African banking industry; Agbloyor et al. (2012) assess the effects of cross-border mergers and acquisitions (M&As) on banking sector development in Africa; Gulamhussen et al. (2016) examine the drivers of cross-border M&As among commercial banks; Figuet et al. (2015) investigate the effects of Basel III on cross-border banking claims; Léon (2016) studies the link between cross-border banking and competitive behaviour of banks while Kleimeier et al. (2013) assess the transmission of financial crises via cross-border banking.[1]

Another research gap in the banking literature lies in the link between institutional factors and the quality of accounting information especially within the context of cross-border banking. The institutional superstructure is imperative for the compliance of firms to international accounting standards, because institutions define the rules of engagement. Ball et al. (2000) argue that, in an international context, it is inadequate and somewhat misleading to solely study accounting standards because the motivation to adopt such standards depends on the institutional framework which imposes and enforces punishments. Jeanjean and Stolowy (2008) have further stressed that the adoption of accounting standards does not guarantee the quality of observed reporting. Instead, the quality of reporting will depend on what they call 'reporting incentives' comprising firm level factors and the legal institutions of the country. This gap is what the paper is seeking to address.

This paper advances the cross-border banking and quality of accounting information literature by investigating the effects of cross-border banking and institutional structures on the quality of accounting information of banks in Africa. In particular, we analyse two hypotheses. First, the earnings quality of banks improves as banks cross-border and national institutions get stronger. We argue that countries with strong institutions tend to have a free media, a more expressive citizenry, and transparent and accountable institutions. Consequently, countries with strong and stable political and governance structures are therefore, more likely to require foreign banks to be more compliant with and effective in their disclosures. Second, that cross-border banking, larger market share and the degree of transparency are the principal drivers of the relative quality of accounting information among African banks. We are not aware of any study testing these hypotheses either separately or concurrently, especially within the African banking industry.

The contributions of this study to the literature are twofold, first, we shed light on the implications of cross-border banking for the quality of accounting information. Second, the study applies the institutional economics theory to earnings management within the purview of cross boarder banking, an area where the literature is scarce. System generalised method of moment (system GMM) is employed to address the endogeneity inherent in the relationship between institutions, cross-border banking and the quality of accounting information. Cross-border banking is measured as a dichotomous variable, taking the value 1, if the bank is controlled by a foreign shareholder and 0 otherwise, while institutional quality is proxied by a number of indicators including, transparency, law quality, bureaucratic quality and legislative strength. Dechow et al. (2010) consider

accounting information quality (AIQ) as a broad set with various dimensions among which persistence, conservatism and accounting earnings management stand out. On the basis of this, we employ accruals-based earnings management as a measure of AIQ.

We organise the rest of the paper as follows: Section 2 reviews existing literature, Section 3 constructs various specifications of discretional accruals, as proxies for the AIQ, explains the four institutional quality indicators and other control variables and details the estimation methodology. Section 4 contains the empirical results and Section 5 concludes.

2 Related literature

In this section, we review the theoretical literature that underpins the study. We begin with theoretical literature on institutional, agency and stakeholder theories and then discuss empirical literature on cross-border banking, institutional and AIQ.

2.1 Theoretical background

This paper is explained by three main theories: institutional theory, agency theory and stakeholder theory. From the perspective of economists "institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" [North, (1990), p.3]. From the sociological perspective, institutions are the "cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life" [Scott, (2001), p.48]. Institutional theory predicts that because institutions dictate what is legitimate, they influence the actions of managers (Suchman, 1995). Therefore, managers and firms that take actions which deviate from institutionally prescribed norms risk losing legitimacy. These institutional factors may entail rules of law, professional groupings, government and civil society. One of the core principles of institutional theory is isomorphism (Meyer and Rowan, 1977), which is the proclivity for organisations to adopt similar practices, norms and procedures with the view to gaining legitimacy. Based on isomorphism, the adoption of a technology by a firm is influenced by three main factors beyond profit maximisation namely, mimetic, coercive, and normative factors. Mimetic pressures imposed by institutions cause firms in the same industry to deliberately copy and imitate the practices and behaviours of others in response to uncertainty. Coercive factors lead an organisation to adopt certain practices due to pressure brought on it by other organisations and or society. Normative institutional factors are at play when a firm indirectly adopts a norm or practice due to professionalization. So far, we can glean from institutional theory that AIQ will be high for cross-border banks operating in countries with standard institutions.

The concept of institutional quality will apply to the case of cross-border banks. According to Hillman and Wan (2005), subsidiaries of multinational companies face twin institutional pressures, one from the host country and the other from the home country. In this regard, foreign firms owe it a responsibility to conform to host country institutional norms and practices in order to be accepted in the home country and to boost their performance (Suchman, 1995). The challenge however is that, home country institutions are ingrained in the culture, practices and norms of subsidiaries and are deemed critical to

their decision making (Shi et al., 2012). Thus, the concept of institutional duality makes the predictions of the effect of institutions on AIQ quite complicated. According to Kostova (1999), the impact of home country institutions on voluntary disclosure of subsidiary enterprises may be long lasting. On the contrary, Kim et al. (2016) show that, domestic institutions have a greater influence on foreign firm's earnings management than home country institutions.

Agency theory offers an alternative explanation as to why firms will disclose accounting information. Where there is high ownership concentration, controlling shareholders have more information about expected future earnings than minority shareholders leading to information asymmetry (Shi et al., 2012). Under this condition, more disclosure may entail higher monitoring costs for external stakeholders and higher reputational costs for the firm when disclosures are lopsided (Cumming and Walz, 2010). Agency theory predicts that majority shareholders will be unwilling to voluntarily disclose information when the benefits of private expropriation are high (Shleifer and Vishny, 1997). On the other hand, the benefits of disclosure especially those related to costs of financing are more important to controlling shareholders than minority shareholders (Shi et al., 2012). Thus, the alternative explanation from agency theory is that, quality accounting information is an effective means by which firms reduce the cost of financing when saddled with significant agency problems.

Stakeholder theory also provides additional explanation for the reasons why firms may adopt certain international standards and by extension produce quality accounting information. Under this theory, the different shareholders of a business exert pressures on the firm to adopt some practices and procedures. The stakeholder theory holds that the firm has responsibilities to stakeholders in addition to its obligations to shareholders (Mason and Simmons 2014). In this regard, firms will tend to undertake activities that will serve the long-term interests of stakeholders. Prakash and Potoski (2007) and Fikru (2014) have argued respectively that investors and creditors can mount pressure on firms to comply with international best practices. The implication of stakeholder theory for our work is that, stakeholders of cross-border banks such as customers, investors, auditors, suppliers, tax authorities, regulatory authorities, various shareholders, creditors, media, local community, international affiliates among others, will exert an influence on their quality of accounting reporting.

2.2   Empirical literature

The bulk of the empirical evidence on the link between institutional quality and the quality of accounting information is based on industrial firms. In this regard, La Porta et al. (1998) and Dyck and Zingales (2004) find that strong institutions reduce the ability for insiders to consume private control benefits and by so doing improve the authenticity of accounting information. In another study, Haw et al. (2004) report that earnings management is hindered in countries with strong competition laws, free media and high tax enforcement. Similarly, Hung (2000) documents that countries with weak institutions and poor investor protection laws are more likely to have opportunistic mangers who will manage earnings to increase private benefit.

Ball et al. (2000) note that, perhaps, political influence with respect to setting standards and ensuring compliance is the major factor driving cross-country differences

in accounting. Pagano and Volpin (2005) further find that strong institutions foster transparency and timely disclosures. In a more recent study, Anagnostopoulou (2016) reports that financial reporting becomes more valuable to lenders as legal institutions are strengthened to ensure credible financial reporting. Kanagaretnam et al. (2011) examine the impact of national culture on earnings quality of banks from 39 countries and find that, before the financial crises (1993–2006), banks operating in countries with high individualism, low uncertainty avoidance and high masculinity manage earnings just to meet or beat the earnings in the previous year. They also show that banks in economies with the above characteristics tend to smooth earnings. Within the crises period (2007–2009), they discover that countries with national cultures that promote risk taking had more stressed banks. They used managing earnings to just-meet-or-beat prior year's earnings and LLP as measures of earnings management.

Presenting evidence on the effect of institutional factors on earnings quality of banks in 35 countries, Kanagaretnam et al. (2014) find during the pre-crises period, a higher quality accounting information in countries with strong institutional frameworks which constrained insider expropriation while enhancing the protection of outside investors. They reveal that, in the financial crises period, banks that domiciled in countries with strong institutions had a lower propensity to report losses, recorded low LLP and stronger balance sheets. Abdelsalam et al. (2016) investigate earnings management under different monitoring regimes for banks in the Middle East and North Africa and find that, compared to their conventional counterparts, Islamic banks are less likely to engage in earnings management. This is because of the religious norms and moral accountability imposed by Islamic banking. The monitoring activities of debt holders have been shown not to be effective in reducing tax avoidance related earnings management among Ghanaian firms (Amidu and Yorke, 2017). In examining the role of internal institutions, Maskati and Hamdan (2017) establish a positive relationship between each of largest shareholder, board size, degree of independence of board of directors and voluntary disclosure by firms.

The empirical literature on the effect of cross-border banking on the quality of accounting information is nascent. Léon (2016) in a study on cross-border banking and competition in Africa finds that, the resurgence of cross-border banking elevated competition in the African banking system. We can judge from the ability for foreign banks to induce competition to the effect that, cross-border banks will have the incentive to disclose quality accounting information in order to remain competitive. Hassan (2015) finds from banks sampled from Nigeria that, firm size, leverage, profitability and growth were the main drivers of earnings quality following the adoption of the IFRS. A related study by Ghodbane (2016) finds that foreign owned firms and subsidiaries of foreign firms preparing consolidated financial statements according to IFRS were more likely to voluntarily adopt IFRS. Lang et al. (2006) discover that international firms cross-listed on the US capital market were more likely to smooth earnings and also less likely to discover losses on a timely basis. They further find that cross-listed firms from countries with weak investor protection laws were more likely to engage in earnings management. This paper analyses AIQ of specific cross-border banks across different African countries to ascertain whether institutional quality plays a major role in the financial reporting quality of banks operating in Africa.

3   Data and methodology

3.1   Data sources

Micro-bank level and macro-country level data are used. Bank level data (financial statements) are taken from BankScope database maintained by Fitch/IBCA/Bureau Van Dijk. Series are yearly, and covering a sample of 330 banks across 29 countries in Africa during the 12 year period, 2002–2013. The study focuses on the African banking sector. Given the relationship between finance and the real economy, the benefits of conducting research in these sectors can be wide ranging. Thus, the benefits and the subsequent impact of research on emerging economies like Africa on economic growth cannot be merely measured in absolute dollar terms, but in the number of people that are elevated from a desperate subsistence level to a more adequate standard of living (Bekaert and Harvey, 2002). The sample includes all commercial banks, cooperative banks, development banks, savings banks, real estate and mortgage banks for which annual data is available for some period of the years during the period 2002–2013. To ensure that banks that are important players in the deposit and/or loan markets are not omitted, medium and long-term credit banks and specialised government institutions are included, as they remain important in African countries. Observations with outliers such as zero and/or negative capitalisation are dropped. Also, observations for capitalisation above the 99th percentile were dropped. In addition, loan growth rate observations above the 99th percentile of the distribution were equally dropped. This is to correct for mergers, acquisitions and start-ups during the study period. Macro-country-level data are obtained from the International Financial Statistics database of the International Monetary Fund and the World Development Indicators (2014) database of the World Bank. Regulatory and supervisory variables are obtained from Barth et al. (2013) and governance and institutional quality data are obtained from International Country Risk Guide (ICRG).

3.2   Measurement of variables

In analysing AIQ or earnings quality, different concepts are presented. Dechow et al. (2010) posit that low quality exists when financial reports are manipulated, or when an exaggerated number of non-recurring items or lack of transparency exist in the accounting disclosure process, or even when accounting choices are made in line with current accounting standards. Thus, an AIQ concept becomes complex, depending on its user's objective. Burgstahler et al. (2006) argue that the level of earnings management is an accounting quality measure, as it particularly responds to the incentives of a firm's information disclosure. Others consider that earnings management is a consequence of the manager's discretionary actions to manipulate accounting information on firm performance. For the purpose of this study, banks earnings management is employed as a proxy for AIQ. Previous studies show that earnings management in banks commonly occur using LLP. Similarly, Adams et al. (2009) and Nichols et al. (2009) document the use of loan loss reserves to manage accounting earnings. In addition, Hasan and Wall (2004, p.132) summarise the accounting process employed to determine the level of the balance sheet loan loss allowance (LLA) and the income statement account LLP.

   Given the nature of discretionary choices associated with the banks, the income statement accounts of LLP are examined for evidence of earnings management. In addition to increasing loan loss reserves in the balance sheet, increase in loan loss

provision decreases net earnings, return on assets (ROA) as well as return on equity (ROE). Therefore, to analyse the influence of managerial discretion on quality of accounting information, a two-stage approach is used to identify discretionary LLP/(LLA). In the first stage, the normal or nondiscretionary component of LLP/(LLA) is estimated by regressing LLP on beginning LLA/(loan loss provision), net loan charge-offs, growth in loan, change in total loan outstanding, total loans outstanding, non-performing loans, market share of loans, earnings before tax and LLP, and country specific variables using the following model:

$$LLP_{it} = \beta_0 + \beta_1 LLA_{it} + \beta_2 CHGOFF_{it} + \beta_3 GLOAN_{it} + \beta_4 LOAN_{it} + \beta_5 LOAN_{it}$$

$$+\beta_6 DNPA_{it} + \beta_7 MKTS_{it} + \beta_8 EBTP_{it} + \sum_{j=4}^{k} \alpha_j M_j + \lambda YEARDUMMY_t + \varepsilon_{it} \quad (1)$$

$$LLA_{it} = \varphi_0 + \varphi_1 LLA_{it} + \varphi_2 CHOFF_{it} + \varphi_3 GLOAN_{it} + \varphi_4 \Delta LOAN_{it} + \varphi_5 LOAN_{it}$$

$$+\varphi_6 DNPA_{it} + \varphi_7 MKTS_{it} + \varphi_8 EBTP_{it} + \sum_{j=4}^{k} \psi_j M_j + \gamma YEARDUMMY_t + e_{it}$$

where LLP_{it} / (LLA_{it}) is the expected level of loan loss provision/(LLA) based on coefficient estimates from the sample of African banks from 2002-2013, LLA_{it} / (LLP_{it}) is the beginning LLA/(loan loss provision) of bank i in period t, $CHGOFF_{it}$ is the net loan charge-off of bank i in period t, $GLOAN_{it}$ is the growth in loans of bank i in period t, $\Delta LOANS_{it}$ is the change in total loan outstanding of bank i in period t, $LOANS_{it}$ is the loan portfolio of bank i in period t, $DNPA_{it}$ is an indicator variable that equals to one if the value for non-performing loan is missing and zero, if otherwise[2]. $MKTS_{it}$ is the loan market share of bank i in period t, $EBTP_{it}$ is the earning before tax and profit of bank i in period t, the variables $M_{i,j}$ are a set of $\{k\}$ variables controlling for the respective countries' macroeconomic environments and regulatory variables and ε_{it} and e_{it} are error terms. The estimation of discretionary LLP(DLLP) / LLA(DLLA) is done by subtracting the predicted level or the non-discretional component of LLP / (LLA) from the actual level of LLP / (LLA)[3].

In the second stage, the link between the proxies for cross-border banking and institutional quality and the absolute value of negative DLLP / (DLLA) are tested. Again, we control for bank-specific variables (bank size, the level of leverage, market share and performance); country-level variables (such as inflation, GDP growth and GDP per capita), as presented in the following model.

$$DLLP_{it} / DLLA_{it} = \beta_0 + \beta_1 DLLA_{it-1} / DLLA_{it-1} + \beta_2 CBB_{it} + \beta_3 IQ_{it} + \beta_4 DNPL_{it}$$

$$+\beta_6 MKTS_{it} + \beta_7 LOANS_{it} + \beta_8 LEV_{it}$$

$$+\sum_{j=4}^{k} \tau_j M_j + \omega YEARDUMMY_t + v_{it}$$

$$v_{it} = \eta_i + \mu_{it}$$
$$E(\eta_i) = E(\mu_{it}) = E(\eta_i \mu_{it}) = 0 \quad (2)$$

$DLLP_{it}$ is the estimated loan loss provision of bank i in period t, is the estimated LLA of bank i in period t, $DLLP_{it-1}$ and $DLLA_{it-1}$ is the observation of the same bank in previous

year. CBB_{it} is the Cross-border banking of bank i at period t. IQ_{it} is the institutional and political environment of bank i at period t. $DNPL_{it}$ is an indicator variable that is equal to one if the value for NPL is missing, zero otherwise, the logarithms of total assets is used as a measure of bank $SIZE_{it}$, $MKTS_{it}$ is the loan market share of bank i in period t, $LOANS_{it}$ is the loan portfolio of bank i in period t, LEV_{it} is the leverage of bank i in period t, the variables $M_{i,j}$ are a set of $\{k\}$ variables controlling for the respective countries' macroeconomic environments and regulatory variables and v_{it} is the error term.

The interpretation of DLLP / (DLLA) vis-à-vis AIQ is as follows: a higher value or score of DLLP / (DLLA) means poor/high AIQ/earnings management and vice versa.

Cross-border banking or foreign bank is measured as a dummy variable, taking the value of 1 where the shareholding proportion of a local bank by a foreign bank is 50% or more and 0 otherwise. The measure considers cross-border bank to be foreign-owned if they are controlled by shareholder or group of shareholders from outside the licensing jurisdiction. Control over a bank can be exercised if an individual or entity holds more than 50% of shares in a bank, subsidiary or branch. It should be noted that, in some cases where there is no majority shareholder, the bank is still classified as foreign-owned when a foreign minority shareholder has a controlling stake in a bank.

A number of indices are used to assess institutional and political environments of selected African countries. The strength and quality of a country's institutions reflect the ability of policy authorities to identify various forms of anticompetitive conduct in banking and impose sanctions where appropriate. The study employs four indicators obtained from the ICRG as measures of institutional quality. *Transparency* is an inverse of corruption within the political system. The quality of the judicial system and the general observance of the law is denoted by *law quality*. Corruption especially financial corruption makes financial markets less efficient by generating networking effects that lead to anticompetitive behaviour. It is expected that in countries with high corruption (i.e., low transparency), the adherence to accounting systems and procedures tends to be very low, and this is more pronounced for large banks with greater political power. The corruption variable captures the extent to which public power is exercised for private gain. *Bureaucratic quality* represents the quality of administrative infrastructure. The quality and relevance of laws enacted is denoted as the *legislative quality*. Higher values for these indicators reflect higher institutional quality. Variables measuring transparency and legal quality range in value from zero to six. Bureaucratic quality and legislative strength variables range between zero and four. Banks view institutional quality as predetermined in that they observe the level of institutional strength and quality in the previous period and set their lending rates and overall strategy accordingly. This therefore means that a change in institutions today affects the bank behaviour with respect to accounting information in the next period. Thus all the institutional variables in equation (2) are lagged.

A number of additional control variables which prior studies have shown to affect the level of AIQ (Adams et al., 2009; Dechow et al. (2010) have been included. For bank-level controls, the ratio of loan to total assets (*bank loan*) is used as a measure of the level of risk. The logarithm of total assets is employed as a proxy for bank *size*. *Market share* is measured as the loan market share of bank. *Bank leverage* is measured as total liability divided by total assets. *GDP growth*, and *inflation* are included in the regression to

account for differences in macroeconomic environments, and the general economic development. Accordingly, *inflation* is defined as the rate of annual growth in the consumer price index (CPI). The *banking freedom* index measures the openness of the banking sector and the extent to which banks are free to operate their businesses. Capital index measures overall *capital stringency*. It ranges from zero to nine, with a higher value indicating greater stringency. *Property right* is included as a measure of risk of expropriation. It measures the degree to which the individual country laws protect and enforce private property rights.

3.3 Estimating techniques

The paper used the system generalised method of moment (system GMM) estimator as previous studies identified the need to control for endogeneity of earning management decisions since banks may choose to manage their earnings mainly as a reaction to market events. The problem with applying OLS in estimating Equation (2) is that DLLP and DLLA which are the dependent variables cause a correlation between the previous observations $DLLP_{it-1}$ and $DLLA_{it,\,c-1}$ and the error term, which gives rise to a dynamic panel bias. There is also evidence that OLS produces bias when attempts are made to control for heterogeneity. In addition, if significant events such as M&A are not explicitly modelled, they will remain embedded in the error term and continue to influence subsequent contemporaneous observations. This autocorrelation is a violation of an assumption necessary for the consistency of OLS. Therefore, as proposed by Blundell and Bond (1998) and Arellano and Bover (1995) as an alternative estimator, system GMM estimator addresses the persistence of endogeneity bias. System GMM is more robust to missing data since lagged observations enter the equation as instruments instead of as regressors. System GMM also creates a possible instance to include time-invariant regressors, for instance, specific regulations which would have otherwise disappeared in the first-difference GMM. Furthermore it uses a Windmeijer correction to the standard errors which improves robustness to heteroskedasticity.

4 Empirical results

4.1 Descriptive statistics

Table 1 shows summary statistics for key variables used in the study. All bank specific variables are averaged by bank during the period 2002-2013. For the purpose of descriptive statistics the banks in Africa are grouped as

1 all sample

2 Northern

3 Central

4 Southern Africa countries.

Table 1   Descriptive statistics

		Mean	*SD*	*Min*	*Max*
AIQ					
Discretionary loan loss	Aggregate	0.009	0.023	–0.065	0.769
Provision (DLLP)	North	0.012	0.034	–0.039	0.769
	Central	0.007	0.020	–0.065	0.306
	South	0.008	0.013	–0.064	0.117
Discretionary loan loss	Aggregate	–0.051	0.087	–0.693	0.662
Allowance (DLLA)	North	–0.044	0.093	–0.693	0.351
	Central	–0.044	0.090	–0.281	0.662
	South	–0.067	0.073	–0.284	0.574
Cross-border banking	Aggregate	0.526	0.500	0.000	1.000
	North	0.407	0.492	0.000	1.000
	Central	0.525	0.500	0.000	1.000
	South	0.625	0.484	0.000	1.000
Institutional quality					
Bureaucratic quality	Aggregate	1.581	0.628	0.000	2.500
	North	1.889	0.314	1.000	2.000
	Central	1.389	0.764	0.000	2.500
	South	1.565	0.501	0.667	2.500
Transparency	Aggregate	1.917	0.723	0.000	3.958
	North	1.862	0.542	1.000	3.000
	Central	1.769	0.725	0.500	3.750
	South	2.197	0.798	0.000	3.958
Law quality	Aggregate	3.249	1.112	0.500	6.000
	North	3.889	0.974	2.000	6.000
	Central	2.641	0.850	1.500	5.000
	South	3.534	1.119	0.500	6.000

Notes: Table 1 presents summary statistics on key bank specific, macroeconomic and
other variables used in the study. AIQ is measured by *discretionary loan loss
provision (DLLP)* and *discretionary LLA (DLLA)*. *Cross-border banking* is
measured as a dummy variable taking a value of 1 where the shareholding
proportion of the local banks by foreign banks is 50% or more and 0 otherwise.
Institutional quality is measured by bureaucratic quality, transparency, law quality
and legislative quality. *DNPL* is measured by a value of one if the value for non-
performing loan is missing and zero, if otherwise. The ratio of loan to total assets
(bank loan) is used as a measure of the level of risk. The logarithm of total assets
is employed as a proxy for *bank size* valued in US dollars. *Market share* is
measured by the loan market share of banks and *leverage* measures bank leverage.
Higher values of banking freedom signify higher freedom from governmental
control. Higher scores of *property right* indicate certainty of legal protection of
property right and limited expropriation risk. *Capital stringency* is the regulatory
capital requirement. *GDP growth* accounts for the difference in economic
development across countries. *Inflation* is the rate of inflation based on CPI.

Table 1   Descriptive statistics (continued)

		Mean	*SD*	*Min*	*Max*
Institutional quality					
Legislative quality	Aggregate	3.271	0.723	1.125	4.000
	North	3.594	0.392	2.625	4.000
	Central	2.944	0.755	1.542	4.000
	South	3.444	0.724	1.125	4.000
Bank -specific control variables					
DNPL	Aggregate	0.613	0.487	0.000	1.000
	North	0.856	0.351	0.000	1.000
	Central	0.499	0.500	0.000	1.000
	South	0.576	0.494	0.000	1.000
Bank loan	Aggregate	0.515	0.186	0.015	1.000
	North	0.530	0.219	0.017	1.000
	Central	0.507	0.145	0.041	0.971
	South	0.515	0.209	0.015	0.999
Leverage	Aggregate	0.860	0.113	0.001	1.000
	North	0.878	0.088	0.400	1.000
	Central	0.865	0.070	0.390	0.985
	South	0.836	0.167	0.001	0.979
Market share	Aggregate	0.113	0.135	0.000	0.972
	North	0.073	0.117	0.000	0.905
	Central	0.128	0.138	0.001	0.972
	South	0.125	0.137	0.000	0.844
Bank size (US$ million)	Aggregate	2078.62	7288.96	0.200	123214
	North	3746.33	5918.47	22.100	45164.5
	Central	561.837	1228.35	0.800	12967.2
	South	2971.77	12211.7	0.200	123214

Notes: Table 1 presents summary statistics on key bank specific, macroeconomic and
other variables used in the study. AIQ is measured by *DLLP* and *DLLA*.
Cross-border banking is measured as a dummy variable taking a value of 1 where
the shareholding proportion of the local banks by foreign banks is 50% or more
and 0 otherwise. *Institutional quality* is measured by bureaucratic quality,
transparency, law quality and legislative quality. *DNPL* is measured by a value of
one if the value for non-performing loan is missing and zero, if otherwise. The
ratio of loan to total assets *(bank loan)* is used as a measure of the level of risk.
The logarithm of total assets is employed as a proxy for *bank size* valued in US
dollars. *Market share* is measured by the loan market share of banks and *leverage*
measures bank leverage. Higher values of banking freedom signify higher
freedom from governmental control. Higher scores of *property right* indicate
certainty of legal protection of property right and limited expropriation risk.
Capital stringency is the regulatory capital requirement. *GDP growth* accounts for
the difference in economic development across countries. *Inflation* is the rate of
inflation based on CPI.

Table 1   Descriptive statistics (continued)

		Mean	*SD*	*Min*	*Max*
Macroeconomic variable					
Inflation	Aggregate	47.829	934.991	–3.100	24411
	North	6.412	5.124	0.922	37.393
	Central	9.148	6.496	–3.100	44.391
	South	134.011	1661.719	1.386	24411
GDP growth	Aggregate	0.053	0.040	–0.177	0.275
	North	0.050	0.020	0.017	0.113
	Central	0.055	0.036	–0.057	0.275
	South	0.054	0.054	–0.177	0.227
Property right	Aggregate	39.074	13.012	5.000	75.000
	North	41.215	9.639	30.000	70.000
	Central	35.999	9.749	10.000	50.000
	South	41.926	17.536	5.000	75.000
Banking freedom	Aggregate	46.750	14.132	10.000	90.000
	North	39.352	13.795	20.000	90.000
	Central	46.643	11.757	20.000	70.000
	South	52.338	14.963	10.000	70.000
Capital stringency	Aggregate	3.552	1.587	0	6.000
	North	3.067	1.563	1.000	5.000
	Central	3.977	1.383	0	5.000
	South	3.36	1.715	1.000	6.000

Notes: Table 1 presents summary statistics on key bank specific, macroeconomic and
other variables used in the study. AIQ is measured by *DLLP* and *DLLA*.
Cross-border banking is measured as a dummy variable taking a value of 1 where
the shareholding proportion of the local banks by foreign banks is 50% or more
and 0 otherwise. *Institutional quality* is measured by bureaucratic quality,
transparency, law quality and legislative quality. *DNPL* is measured by a value of
one if the value for non-performing loan is missing and zero, if otherwise. The
ratio of loan to total assets *(bank loan)* is used as a measure of the level of risk.
The logarithm of total assets is employed as a proxy for *bank size* valued in US
dollars. *Market share* is measured by the loan market share of banks and *leverage*
measures bank leverage. Higher values of banking freedom signify higher
freedom from governmental control. Higher scores of *property right* indicate
certainty of legal protection of property right and limited expropriation risk.
Capital stringency is the regulatory capital requirement. *GDP growth* accounts for
the difference in economic development across countries. *Inflation* is the rate of
inflation based on CPI.

	DLLP	DLLA	Cross border banking	DNPL	Transparency	Law quality	Bureaucratic quality	Legislative growth	Loan	Market share	Property right	Bank freedom	Capital stringent
DLLP	1.000												
DLLA	−0.260*	1..000											
Cross border banking	−0.014	−0.096*	1.000										
DNPL	0.240*	−0.207*	−0.048*	1.000									
Transparency	0.042*	−0.131*	0.146*	0.070*	1.000								
Law quality	0.034	−0.071*	0.078*	0.179*	0.380*	1.000							
Bureaucratic quality	0.014	0.084*	−0.102*	0.018	−0.057*	0.055*	1.000						
Legislative quality	0.059*	−0.012	0.171*	0.171*	0.455*	0.506*	−0.048*	1.000					
Bank loan	0.025	0.045*	−0.081*	−0.050*	0.120*	0.203*	0.123*	0.018	1.000				
Market share	−0.027	−0.059*	0.088*	−0.089*	0.091*	0.007	−0.265*	0.097*	0.135*	1.000			
Property right	0.001	0.083*	−0.024	0.017	0.276*	0.075*	0.421*	0.136*	0.193*	−0.086*	1.000		
Bank freedom	−0.019	−0.108*	0.108*	−0.037	0.339*	−0.018	0.092*	−0.018	0.143*	0.000	0.446*	1.000	
Capital stringency	0.013	−0.078*	0.002	−0.114*	−0.108*	−0.299*	0.148*	−0.261*	0.199*	0.054*	0.200*	0.137*	1.000

Notes: Table 2 presents the pair wise correlation coefficients between selected variables. The data set comprises 320 banks in 29 countries during the period 2002–2013.
*Implies significant at 5% or more. Accounting information quality is measured by *discretionary loan loss provision (DLLP)* and *discretionary loan loss allowance (DLLA)*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured by bureaucratic quality, transparency, law quality and legislative quality. For bank-level controls, *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise, the ratio of loan to total assets *bank loan* is used as a measure of the level of risk. The logarithm of total assets is employed as a proxy for *bank size* valued in US dollars. *Market share* is measured by the loan market share of banks. Higher values of *banking freedom* signify the higher freedom from governmental control. Higher scores of Property risk indicate certainty of legal protection of property right and limited expropriation risk. *Capital stringency* is regulatory capital requirement. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI.

Source: Bank scope and author's estimation. The data comprises 330 banks across 29 countries over the period 2002–2013.

This categorisation of countries is made by the World Bank.[4] This allows the researchers to examine whether there are regional differences in the selected variables over time. The mean values of 0.009 for DLLP and –0.051 for DLLA show a very low AIQ. The minimum and maximum values are –0.065 and 0.769 for DLLP and –0.693 and 0.662 for DLLA respectively. These denote a presence of low AIQ amongst sampled banks. Although there is a presence of discretionary accounting information among sampled banks, not every bank aggressively engages in the practice of managing earnings. This is also evidenced in the record of negative values for the overall mean and minimum values. A high standard deviation of 0.087 for DLLA and 0.023 for DLLP are observed indicating great variations among banks with respect to their discretional behaviours. This may indicate that some firm specific characteristics play important roles when it comes to decisions of management to engage in earnings manipulative behaviour, even though the banks in Northern zones appear to have discretionally managed their accounting information. The banks however appear to diversify geographically as the mean sample of cross-border banking is 0.526. There appears to be a strong bureaucratic structure in banks in Africa with a mean of 1.581. Similar scores are observed for the quality of law and legislative quality with means of 3.25 and 3.27 respectively. There is significant variation in the sizes of the banks in the sample. The mean of total assets is $2.08bn which ranges from $0.2m to $123.2bn. The mean market share is 0.113. The banks however appear to have high property right (39.2) and capital stringency (3.6) implying limited expropriation risk and more legal protection right. The mean banking freedom value of 46.8 suggests that banks are allowed the maximum freedom to operate in Africa with minimal governmental control.

Table 2 presents the pair-wise correlation coefficients as a preliminary analysis of the relationship among AIQ, CBB and institutional quality. CBB, all institutional quality variables (except bureaucratic quality) are associated with low incidence of earnings management. Likewise the banks with higher market share. As expected, banks in Africa engage in earnings management through non-performing loan allowance (DLLA).

4.2   Evaluating AIQ (AIQ): DLLP

We begin with the estimation of non-discretionary component of LLP. The result of the first-stage regression is presented in Table 3. As estimated, the LLA is positively and significantly related to LLP since a lower initial LLA will require a higher LLP in the current period. Net charge-off, growth in loan and loan outstanding have positive association with LLP. These mean that an increase in current LLP is as a result of a corresponding increase in the net charge-off loans, the growth in loans as well as an increase in outstanding bank loans. The managers of banks in Africa thus will manage their earnings by manipulating the net charge-off of loans and extending loans without thorough screening and monitoring of the borrowers. Our finding is consistent with earlier studies (Adams et al., 2009; Kanagaretnan et al., 2010, etc.). A case of interest here is that of the Lehman Brothers' strategy of advancing loans and selling their assets just to meet regulatory capital requirements.

Next, we investigate the link between Cross-border banking, institutional quality and AIQ using LLP of banks in Africa. Table 4 presents the regression results where the dependent variable is *AIQ* measured by DLLP (DLLP). The results are presented in columns depending on the type of institutional quality variable used: column 1, 2, 3, 4

and 5 for bureaucratic quality, transparency, law quality and legislative quality and overall respectively. The results show that all of the institutional quality measures but Transparency are insignificant in explaining AIQ. Transparency on the other hand increases AIQ and hence loan loss provision. This means transparency helps in establishing strong and reliable accounting information. Also, Cross-border banking is insignificant with respect to all the institutional quality measures with the exception of banks with high levels of transparency where it decreases DLLP. This means cross-border banking enhances AIQ of transparent banks in Africa. Barth et al. (2006) argue that cross listing may improve accounting quality as cross listed firms may have some individual specific firm incentives and still be influenced by home country institutions.

Table 3 Stage-one regression in estimating abnormal LLP

	Coefficient	*Std. err.*
Intercept	–0.00846***	0.00260
LLA	0.05175***	0.00674
CHGOFF	0.01250***	0.00439
GLOAN	0.00850***	0.00276
ΔLOAN	–0.01567**	0.00766
LOAN	0.01397***	0.00302
DNPL	–0.00783***	0.00228
MKTS	–0.00475	0.00406
EBTP	0.07784***	0.01372
GDP per capita	–0.15563**	0.07011
GDP growth	0.14241**	0.06622
INFL	–0.00008**	0.00003
Diagnostics tests		
Obs		614
R2		47.9
Fixed effect within		N
Year dummy		Y
Country dummy		N
Wald (p-value)		161.77**

Notes: The dependent variable is *LLP* which is the non-discretionary component of loan loss provision. This is regressed against *LLA*, the non-discretionary component of loan loss reserves. *CHGOFF* is the ratio of net charge-offs to average loans during the period. *GLOAN* is the growth in loan. Δ*LOAN* is the change in total loan outstanding. *LOAN* is the loan portfolio of bank scaled by total assets. DNPL is an indicator variable that equals to one if non-performing loan is missing and zero if otherwise. MKTS is the market share of the respective bank. EBTP is earnings before tax and provisions, and GDP per capita, GDP growth and INFL are the macroeconomic variables representing GDP per capita, GDP growth and inflation respectively. Parameter estimates are reported with the small sample adjusted standard errors. *** and ** indicates statistical significance at the 1% and 5% level respectively.

Table 4   Evaluating accounting information: DLLP

	DLLP				
	Bureaucratic	*Transparency*	*Law quality*	*Legislative*	*All*
DLLP lag	0.0009	0.0369	0.0044	0.0647	0.1573
	(0.0985)	(0.0868)	(0.0772)	(0.1060)	(0.1189)
Cross-border banking	–0.0013	–0.0144**	0.0024	-0.0032	–0.0007
	(0.0065)	(0.0065)	(0.0062)	(0.0063)	(0.0044)
Bureaucratic quality	–0.0016				–0.0027
	(0.0045)				(0.0023)
Transparency		0.0052***			0.0013
		(0.0016)			(0.0016)
Law quality			–0.0019		–0.0057**
			(0.0030)		(0.0025)
Legislative quality				0.0023	0.0030
				(0.0018)	(0.0019)
Market share	0.0013	0.0204*	–0.0093	-0.0028	0.0004
	(0.0157)	(0.0112)	(0.0112)	(0.0112)	(0.0100)
DNPL	0.0150***	0.0079**	0.0169***	0.0102***	0.0108***
	(0.0033)	(0.0031)	(0.0030)	(0.0028)	(0.0027)
Bank size	–0.0011	–0.0014	0.0003	–0.0004	0.0001
	(0.0012)	(0.0009)	(0.0009)	(0.0009)	(0.0006)
GDP growth	0.0137	–0.0224	0.0155	–0.0098	–0.0276
	(0.0223)	(0.0260)	(0.0201)	(0.0264)	(0.0183)

Notes: Table 4 reports the two stage system GMM regression result with Windmeijer –
corrected standard errors and orthogonal deviation. All regressions are conducted
using dynamic panel data estimation. The dependent variable is AIQ and is
measured here by *DLLP*. *Cross-border banking* is measured as a dummy variable
taking a value of 1 where the shareholding proportion of the local banks by
foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured by
bureaucratic quality, transparency, law quality and legislative quality. *DNPL* is
measured by a value of one if the value for non-performing loan is missing and
zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank
size*. *Market share* is measured by the loan market share of banks. *GDP growth*
accounts for the difference in economic development across countries. *Inflation* is
the rate of inflation based on CPI. Standard errors are reported in parenthesis,
***, ** and *indicates statistical significance at 1%, 5% and 10% respectively.
The following diagnostic tests are reported:
1 the instrument count
2 the number of banks used in the sample
3 the F-test for joint significance of instruments
4 the Hansen test of over identifying restrictions of which the null hypothesis is
that instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the
residuals of which the null hypothesis is that there is no serial correlation.

Table 4   Evaluating accounting information: DLLP (continued)

	DLLP				
	Bureaucratic	*Transparency*	*Law quality*	*Legislative*	*All*
Inflation	−0.0001	0.0001	0.0002	0.0001	−0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0004)	(0.0001)
Diagnostic test					
Number of instruments	1,575	1,643	1,666	1,666	1,552
Number of Groups	265	278	283	283	260
F-test	4.08***	5.91***	6.38***	7.28***	11.66
Hansen test	128.53	108.95	121.97	124.67	181.89
P value	0.432	0.35	0.11	0.12	0.189
AR(2) test	0.19	0.31	0.04	0.41	0.71
P value	0.847	0.758	0.965	0.681	0.476

Notes: Table 4 reports the two stage system GMM regression result with Windmeijer –
   corrected standard errors and orthogonal deviation. All regressions are conducted
   using dynamic panel data estimation. The dependent variable is AIQ and is
   measured here by *DLLP*. *Cross-border banking* is measured as a dummy variable
   taking a value of 1 where the shareholding proportion of the local banks by
   foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured by
   bureaucratic quality, transparency, law quality and legislative quality. *DNPL* is
   measured by a value of one if the value for non-performing loan is missing and
   zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank
   size*. *Market share* is measured by the loan market share of banks. *GDP growth*
   accounts for the difference in economic development across countries. *Inflation* is
   the rate of inflation based on CPI. Standard errors are reported in parenthesis,
   ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively.
   The following diagnostic tests are reported:
   1 the instrument count
   2 the number of banks used in the sample
   3 the F-test for joint significance of instruments
   4 the Hansen test of over identifying restrictions of which the null hypothesis is
   that instruments are exogenous
   5 the Arellano-Bond test for first and second order serial correlation in the
   residuals of which the null hypothesis is that there is no serial correlation.

The results show that non-performing loans (DNPL) is positive and statistically
significant across all the institutional quality variables. This result suggests that banks in
Africa with high non-performing loans tend to produce low AIQ. However with the
inclusion of all the variables, Cross-border banking and the institutional quality measure
do not have an effect on AIQ with the exception of law quality (which was found to
decrease accounting information of banks in Africa). It can be argued that factors
required to ensure the proper adherence to producing quality accounting information
should not give room for management discretion. Such discretions provide room for
managers to opportunistically manage financial figures for their own private benefit.[5]

Table 5　　Evaluating accounting information: DLLA

	DLLA				
	Bureaucratic	*Transparency*	*Law quality*	*Legislative*	*All*
DLLA lag	0.4270***	0.5259***	0.5683***	0.4982***	0.6275***
	(0.0649)	(0.0651)	(0.0610)	(0.0549)	(0.0550)
Cross-border banking	–0.0309*	–0.0399**	–0.0375	–0.0510**	–0.0532***
	(0.0168)	(0.0174)	(0.0244)	(0.0217)	(0.0204)
Bureaucratic quality	0.0169				–0.0162
	(0.0162)				(0.0120)
Transparency		0.0179***			–0.0032
		(0.0065)			(0.0069)
Law quality			0.0218		0.0242*
			(0.0133)		(0.0140)
Legislative quality				0.0238*	0.0153
				(0.0126)	(0.0103)
Market share	0.0444	0.0325	0.0163	–0.0281	0.0176
	(0.0490)	(0.0499)	(0.0642)	(0.0636)	(0.0563)
DNPL	–0.0193	–0.0071	–0.0161	–0.0109	–0.0175
	(0.0159)	(0.0114)	(0.0124)	(0.0091)	(0.0135)
Bank size	–0.0075**	–0.0043	–0.0045	–0.0022	–0.0055**
	(0.0034)	(0.0029)	(0.0033)	(0.0033)	(0.0025)
GDP growth	–0.1498	–0.1879**	–0.1414	–0.1282	–0.0595
	(0.0983)	(0.0784)	(0.0866)	(0.0842)	(0.0683)
Inflation	0.0001	0.0007	–0.0003	–0.0002	–0.0002
	(0.0002)	(0.0004)	(0.0001)	(0.0001)	(0.0003)

Notes: Table 5 reports the two stage system GMM regression results with Windmeijer –
corrected standard errors and orthogonal deviation. All regressions are conducted
using dynamic panel data estimation. The dependent variable is AIQ and is
measured here by *DLLA*. *Cross-border banking* is measured as a dummy variable
taking a value of 1 where the shareholding proportion of the local banks by
foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured by
bureaucratic quality, transparency, law quality and legislative quality. *DNPL* is
measured by a value of one if the value for non-performing loan is missing and
zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank
size*. *Market share* is measured by the loan market share of banks. *GDP growth*
accounts for the difference in economic development across countries. *Inflation* is
the rate of inflation based on CPI. Standard errors are reported in parenthesis,
***, ** and *indicates statistical significance at 1%, 5% and 10% respectively.
The following diagnostic test are reported:
1　the instrument count
2　the number of banks used in the sample
3　the F-test for joint significance of instruments
4　the Hansen test of over identifying restrictions of which the null hypothesis is
that the instruments are exogenous
5　the Arellano-Bond test for first and second order serial correlation in the
residuals which the null hypothesis is that there is no serial correlation.

Table 5 Evaluating accounting information: DLLA (continued)

	DLLA				
	Bureaucratic	*Transparency*	*Law quality*	*Legislative*	*All*
Diagnostic test					
Number of instruments	1,575	1,643	1,666	1,666	1,552
Number of groups	265	278	283	283	260
F-test	6.76***	11.33***	15.83***	15.84***	19.62***
Hansen test	105.48	103.81	107.49	107.45	181.31
P value	0.261	0.487	0.388	0.389	0.197
AR(2) test	1.56	1.56	1.56	1.62	1.56
P value	0.112	0.12	0.119	0.105	0.119

Notes: Table 5 reports the two stage system GMM regression results with Windmeijer –
corrected standard errors and orthogonal deviation. All regressions are conducted
using dynamic panel data estimation. The dependent variable is AIQ and is
measured here by *DLLA*. *Cross-border banking* is measured as a dummy variable
taking a value of 1 where the shareholding proportion of the local banks by
foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured by
bureaucratic quality, transparency, law quality and legislative quality. *DNPL* is
measured by a value of one if the value for non-performing loan is missing and
zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank
size*. *Market share* is measured by the loan market share of banks. *GDP growth*
accounts for the difference in economic development across countries. *Inflation* is
the rate of inflation based on CPI. Standard errors are reported in parenthesis,
***, ** and *indicates statistical significance at 1%, 5% and 10% respectively.
The following diagnostic test are reported:
1 the instrument count
2 the number of banks used in the sample
3 the F-test for joint significance of instruments
4 the Hansen test of over identifying restrictions of which the null hypothesis is
that the instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the
residuals which the null hypothesis is that there is no serial correlation.

4.2.1 Evaluating AIQ: DLLA

Here we investigate the relationship between Cross-border banking, institutional quality
and AIQ by employing LLAs of banks in Africa. Here the dependent variable is AIQ and
measured by DLLA. Similar to Table 4, the results are presented in columns depending
on the type of institutional quality variable used: column 1, 2, 3, 4 and 5 for Bureaucratic
quality, Transparency, Law quality and Legislative quality and overall respectively. The
results presented on Table 5 show that Cross-border -banking decreases LLA, the
measure of AIQ. This is in line with the findings of Berger et al. (2000) that cross-border
banks that operate inefficiently are the best candidates for takeovers and the most
susceptible are those banks that are cross-listed. Taking this into consideration, it can be
posited that these banks face pressure to perform efficiently thereby increasing their
incentive to manage earnings to mask their true performance and to portray a better
picture than the actual case. The institutional quality measures, transparency and
legislative quality increase LLA while bureaucratic quality and law quality are
insignificant in explaining AIQ. Also bank size was found to decrease LLA hence AIQ of
banks in Africa. GDP growth decreases LLA in terms of transparency. The coefficient on

the GDP growth suggests that increase in the general performance of the economy will lead to the production of high AIQ. Secondly, when there is economic growth the banks are in the position to earn higher income, and secure efficient managers to execute high AIQ.

4.3 Determinants of AIQ: regulatory and supervisory controls

To draw a more accurate conclusion concerning the link among Cross-border banking, institutional quality and AIQ, the regulatory and supervisory framework in Africa is thoroughly considered. This is because banks in Africa may be deriving benefits from institutional reforms in a way that overstates the impact of Cross-border banking and institutional quality on accounting information if these structures are not explicitly included in the estimation.

4.3.1 Banking freedom

The Heritage Foundation index of banking and financial freedom, 'banking freedom', measures the openness of the banking sector and the extent to which banks are free to operate their businesses. The result of the baseline regression with the inclusion of "Banking freedom" is reported in Tables 6a, 6b, 7a and 7b. In relation to banking freedom, in Tables 6a and 6b, it does not on its own affect AIQ (DLLP) but greater banking freedom does influence other variables like non-performing loans and bank size which in turn has an effect on loan loss provision hence AIQ of banks. Non-performing loans increase loan loss provision (decrease AIQ) while bank size decreases loan loss provision (increases AIQ) in banks with levels of transparency. However in terms of LLA, in Tables 7a and 7b, variables like market share, GDP growth, inflation and the institutional quality measures such as transparency, law quality and legislative quality and Cross-border banking were influenced by the inclusion of banking freedom. A bank with larger market share increases AIQ while Cross-border banking increases AIQ in banks with high levels of transparency, law quality and legislative quality. High levels of transparency, law quality and legislative decrease AIQ. While GDP growth increases AIQ in banks with levels of transparency and inflation decreases AIQ in banks with levels of bureaucracy. However, non-performing loans loses its significance with the inclusion of banking freedom.

4.3.2 Property right

Low risk of expropriation is fundamental to the volume and stability of the flow of foreign capital, a key driver of economic growth and development in Africa. Ahmed et al. (2013) find evidence, which confirms that IFRS adoption leads to increase in accounting quality, they however observe that their findings hold true for firms in strong enforcement countries. In this section the independent effect of state level investor protection is controlled for by including (*property right*), an index that measures expropriation risk as shown in Tables 6a, 6b, 7a and 7b. The results on Tables 6a, 6b, 7a and 7b) do not explain the notion that property right index affects AIQ in banks with high levels of institutional quality. Property right decreases AIQ in banks with high levels of transparency (see Table 6a). As Leuz et al. (2003) suggest that, firms in countries with developed equity markets, dispersed ownership structures, strong investor rights, and

legal enforcement engage in less earnings quality. With the inclusion of property rights in Table 6a, legislative quality gains significance. Cross-border banking remains significant only in banks with high level of transparency.

Table 6a Evaluating accounting Information: controlling for regulatory and supervisory environments

	DLLP					
	Bureaucratic quality			*Transparency*		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
DLLP lag	0.0086	–0.024	–0.0079	0.0637	0.0847	0.0726
	(0.0959)	(0.0905)	(0.0908)	(0.0876)	(0.0900)	(0.0918)
Cross-border banking	–0.0048	–0.0034	0.0041	–0.0089	–0.0123**	–0.0096*
	(0.0058)	(0.0060)	(0.0043)	(0.0061)	(0.0061)	(0.0058)
Bureaucratic quality	–0.0034	–0.0059**	–0.0036			
	(0.0035)	(0.0028)	(0.0042)			
Transparency				0.0044***	0.0037***	0.0049***
				(0.0015)	(0.0014)	(0.0016)
Market share	0.0150	0.0081	0.0047	0.0097	0.0123	0.0207*
	(0.0138)	(0.0161)	(0.0154)	(0.0113)	(0.0134)	(0.0123)
DNPL	0.0140***	0.0125***	0.0163***	0.0056**	0.0070**	0.0070*
	(0.0036)	(0.0037)	(0.0032)	(0.0024)	(0.0033)	(0.0039)
Bank size	–0.0011	–0.0013*	–0.0015	–0.0012*	–0.0008	–0.0012*
	(0.0007)	(0.0007)	(0.0010)	(0.0006)	(0.0006)	(0.0007)
Banking freedom	0.0009			–0.0032		
	(0.0024)			(0.0029)		

Notes: Table 6a reports the two stage system GMM regression result with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ and is measured here by *DLLP*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by Bureaucratic quality and Transparency. *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise, the logarithm of total assets is employed as a proxy for *bank size*. *Market share* is measured by the loan market share of banks and *leverage* is leverage of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from governmental control. Higher scores of property rights indicate certainty of legal protection and limited expropriation risk. *Capital stringency* is regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic tests are reported:
1 the instrument count
2 the number of banks used in the sample
3 the F-test for joint significance of independent variables
4 the Hansen test of over identifying restrictions of which the null hypothesis is that the instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the residuals of which the null hypothesis is that there is no serial correlation.

Table 6a   Evaluating accounting Information: controlling regulatory and supervisory environments (continued)

	DLLP					
	Bureaucratic quality			Transparency		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Exploration risk		0.0032			-0.0019	
		(0.0033)			(0.0030)	
Capital stringency			0.0031			0.0020
			(0.0020)			(0.0025)
GDP growth	0.0040	0.0093	0.0201	–0.0307	–0.0295	–0.0071
	(0.0227)	(0.0219)	(0.0224)	(0.0229)	(0.0230)	(0.0255)
Inflation	0.0002	0.0003	–0.0002	0.0001	0.0001	0.0002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Diagnostic test						
Number of instruments	1,535	1,535	1,575	1,603	1,603	1,638
Number of groups	256	256	265	269	269	278
F-test	5.45***	5.35***	4.23***	6.64***	5.88***	5.76***
Hansen test	158.98	149.38	132.65	146.46	141.33	127.44
P value	0.106	0.21	0.115	0.154	0.111	0.261
AR(2) test	0.18	0.48	0.25	0.49	0.59	0.55
P value	0.861	0.628	0.802	0.623	0.555	0.579

Notes: Table 6a reports the two stage system GMM regression result with Windmeijer –
corrected standard errors and orthogonal deviation. All regressions are conducted
using dynamic panel data estimation. The dependent variable is AIQ and is
measured here by *DLLP*. *Cross-border banking* is measured as a dummy variable
taking a value of 1 where the shareholding proportion of the local banks by
foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured
here by Bureaucratic quality and Transparency. *DNPL* is measured by a value of
one if the value for non-performing loan is missing and zero, if otherwise, the
logarithm of total assets is employed as a proxy for *bank size*. *Market share* is
measured by the loan market share of banks and *leverage* is leverage of banks.
GDP growth accounts for the difference in economic development across
countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking
freedom* signify higher freedom from governmental control. Higher scores of
property rights indicate certainty of legal protection and limited expropriation risk.
Capital stringency is regulatory capital requirement. Standard errors are reported
in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10%
respectively. The following diagnostic tests are reported:
1 the instrument count
2 the number of banks used in the sample
3 the F-test for joint significance of independent variables
4 the Hansen test of over identifying restrictions of which the null hypothesis is
that the instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the
residuals of which the null hypothesis is that there is no serial correlation.

Table 6b Evaluating accounting information: controlling for regulatory and supervisory environments

	DLLP					
	Law quality			*Legislative quality*		
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
DLLP lag	0.0028	–0.00345	0.0228	0.0992	0.0751	0.1078
	(0.0860)	(0.0809)	(0.0794)	(0.1109)	(0.0935)	(0.1041)
Cross-border banking	–0.0051	–0.0018	0.0013	–0.0029	–0.0052	0.0021
	(0.0053)	(0.0046)	(0.0053)	(0.0043)	(0.0056)	(0.0045)
Bureaucratic quality						
Transparency						
Law quality	–0.0018	-0.0020	–0.0005			
	(0.0029)	(0.0025)	(0.0029)			
Legislative quality				0.0021	0.0027*	0.0027
				(0.0016)	(0.0015)	(0.0020)
Market share	0.0159	0.0057	–0.0104	0.0113	0.0066	–0.0057
	(0.0120)	(0.0120)	(0.0088)	(0.0087)	(0.0154)	(0.0101)
Discretionary Loans (DNPL)	0.0127***	0.0124***	0.0153***	0.008***	0.0080**	0.0077***
	(0.0028)	(0.0023)	(0.0027)	(0.0024)	(0.0032)	(0.0028)
Bank size in US$ million	–0.0008	–0.0004	0.0001	–0.0008	–0.0003	–0.0001
	(0.0008)	(0.0007)	(0.0007)	(0.0006)	(0.0007)	(0.0007)
Banking freedom	-0.0001			–0.0032		
	(0.0021)			(0.0023)		

Notes: Table 6b reports the two stage system GMM regression results with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ and is measured by *DLLA. Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by law quality and legislative quality. *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for Bank size. Market share is measured by the loan market share of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from governmental control. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk. Capital stringency* is the regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic tests are reported:
1 the instrument count
2 the number of banks used in the sample
3 the F-test for joint significance of independent variables
4 the Hansen test of over identifying restrictions of which the null hypothesis is that instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the residuals of which the null hypothesis is that there is no serial correlation.

Table 6b   Evaluating accounting information: controlling for regulatory and supervisory environments (continued)

| | DLLP | | | | | |
| | Law quality | | | Legislative quality | | |
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
Exploration risk		−0.0010			−0.0018	
		(0.0028)			(0.0025)	
Capital stringency			0.0050*			0.0004
			(0.0029)			(0.0021)
GDP growth	0.0176	0.0139	0.0273	−0.0052	−0.0123	0.0040
	(0.0185)	(0.0206)	(0.0223)	(0.0212)	(0.0229)	(0.0228)
Inflation	0.0001	0.0001	−0.0002	0.0002	0.0001	0.0003
	(0.0001)	(0.0001)	(0.0001)	(0.0003)	(0.0002)	(0.0001)
Diagnostic test						
Number of instruments	1,626	1,626	1,661	1,626	1,626	1,661
Number of groups	274	274	283	274	274	283
F-test	5.25***	6.36***	6.24***	6.36***	5.60***	7.98***
Hansen test	169.98	161.23	133.39	162.58	143.81	126.89
P value	0.142	0.188	0.158	0.118	0.131	0.113
AR(2) test	0.00	0.08	0.18	0.66	0.50	0.70
P value	0.997	0.933	0.857	0.512	0.616	0.486

Notes: Table 6b reports the two stage system GMM regression results with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ and is measured by *DLLA*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by law quality and legislative quality. *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for Bank size. Market share is measured by the loan market share of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from governmental control. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk*. *Capital stringency* is the regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic tests are reported:

1　the instrument count

2　the number of banks used in the sample

3　the F-test for joint significance of independent variables

4　the Hansen test of over identifying restrictions of which the null hypothesis is that instruments are exogenous

5　the Arellano-Bond test for first and second order serial correlation in the residuals of which the null hypothesis is that there is no serial correlation.

Table 7a   Evaluating accounting information: controlling for regulatory and supervisory environments

	DLLA					
	Bureaucratic quality			*Transparency*		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
DLLP lag	0.5552***	0.5290***	0.4867***	0.6021***	0.5629***	0.5797***
	(0.0635)	(0.0672)	(0.0612)	(0.0582)	(0.0628)	(0.0563)
Cross-border banking	–0.0115	–0.0119	–0.0503***	–0.0428**	–0.0391*	–0.0512***
	(0.0154)	(0.0164)	(0.0179)	(0.0185)	(0.0211)	(0.0175)
Bureaucratic quality	0.0134	0.0076	0.0204			
	(0.0133)	(0.0102)	(0.0174)			
Transparency				0.0108**	0.0136**	0.0165**
				(0.0048)	(0.0058)	(0.0067)
Law quality						
Legislative quality						
Market share	–0.0946***	–0.0773	–0.0096	–0.1018**	–0.0700	0.0252
	(0.0361)	(0.0470)	(0.0701)	(0.0479)	(0.0588)	(0.0511)
Discretionary Loans (DNPL)	0.0035	0.0213**	–0.0178	0.0001	0.0010	–0.0082
	(0.0096)	(0.0085)	(0.0149)	(0.0115)	(0.0116)	(0.0146)
Bank size in US$ million	0.0012	0.0009	–0.0022	0.0001	0.0003	–0.0036
	(0.0021)	(0.0020)	(0.0032)	(0.0026)	(0.0022)	(0.0031)
Banking freedom	–0.0059			–0.0066		
	(0.0064)			(0.0093)		

Notes: Table 7a reports the two stage system GMM regression results with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ is measured here by *DLLA*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by bureaucratic quality and transparency, *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank size*. *Market share* is measured by the loan market share of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from governmental control. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk*. *Capital stringency* is the regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic test are reported:

1 the instrument count
2 number of banks used in the sample
3 the F-test for joint significance of instruments
4 the Hansen test of over identifying restrictions of which the null hypothesis is that instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the residuals which the null hypothesis is that there is no serial correlation.

Table 7a   Evaluating accounting information: controlling for regulatory and supervisory environments (continued)

	DLLA					
	Bureaucratic quality			Transparency		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Exploration risk		−0.0082			0.0266**	
		(0.0123)			(0.0116)	
Capital stringency			−0.0182**			−0.0046
			(0.0075)			(0.0095)
GDP growth	0.0053	−0.0675	−0.1732*	−0.1359**	−0.0653	−0.2236***
	(0.0588)	(0.0739)	(0.0978)	(0.0562)	(0.0664)	(0.0687)
Inflation	0.0002*	0.0001	0.0001	0.0004	0.0009**	0.0007***
	(0.0001)	(0.0002)	(0.0003)	(0.0004)	(0.0004)	(0.0004)
Diagnostic test						
Number of instruments	1,536	1,535	1,575	1,603	1,603	1,638
Number of groups	256	256	256	269	269	278
F-test	23.34***	15.77***	13.31***	18.62***	13.65***	17.88***
Hansen test	122.09	122.1	117.21	134.79	129.58	116.27
P value	0.506	0.308	0.325	0.369	0.302	0.528
AR(2) test	1.58	1.53	1.61	1.50	1.55	1.51
P value	0.113	0.126	0.108	0.133	0.121	1.31

Notes: Table 7a reports the two stage system GMM regression results with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ is measured here by *DLLA*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by bureaucratic quality and transparency, *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank size*. *Market share* is measured by the loan market share of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from governmental control. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk*. *Capital stringency* is the regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and *indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic test are reported:
1   the instrument count
2   number of banks used in the sample
3   the F-test for joint significance of instruments
4   the Hansen test of over identifying restrictions of which the null hypothesis is that instruments are exogenous
5   the Arellano-Bond test for first and second order serial correlation in the residuals which the null hypothesis is that there is no serial correlation.

Table 7b Evaluating accounting information: controlling for regulatory and supervisory environments

	DLLA					
	Law quality			*Legislative quality*		
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
DLLP lag	0.6249***	0.5955***	0.5728***	0.5243***	0.5290***	0.5181***
	(0.0601)	(0.0624)	(0.0568)	(0.0585)	(0.0546)	(0.0520)
Cross-border banking	–0.0320*	–0.0468*	–0.0492**	–0.0561***	–0.0639**	–0.0588***
	(0.0178)	(0.0250)	(0.0223)	(0.0177)	(0.0257)	(0.0211)
Law quality	0.0216**	0.0187*	0.0131			
	(0.0104)	(0.0107)	(0.0137)			
Legislative quality				0.0212*	0.0288**	0.0172
				(0.0113)	(0.0112)	(0.0112)
Market share	–0.108***	–0.0969	0.0160	–0.0886**	–0.0701	–0.0221
	(0.0406)	(0.0627)	(0.0675)	(0.0366)	(0.0677)	(0.0662)
DNPL	–0.0047	–0.0008	–0.0120	0.0004	0.0031	–0.0066
	(0.0098)	(0.0096)	(0.0113)	(0.0094)	(0.0088)	(0.0098)
Bank size	–0.0021	–0.0012	–0.0033	0.0016	–0.0012	–0.0016
	(0.0024)	(0.0028)	(0.0028)	(0.0025)	(0.0030)	(0.0034)
Banking freedom	–0.0084			–0.0005		
	(0.0075)			(0.0074)		
Exploration risk		0.0098			0.0044	
		(0.0108)			(0.0111)	

Notes: Table 7b reports the two stage system GMM regression result with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ and is measured here as *DLLA*. *Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by law quality and legislative quality. *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank size*. *Market share* is measured by the loan market share of banks and leverage is leverage of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from government controls. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk. Capital stringency* is regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and * indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic tests are reported:
1 the instrument count
2 number of banks used in the sample
3 the F-test for joint significance of explanatory variables
4 the Hansen test of over identifying restrictions of which the null hypothesis is that the instruments are exogenous
5 the Arellano-Bond test for first and second order serial correlation in the residuals of which the null hypothesis is that there is no serial correlation.

Table 7b   Evaluating accounting information: controlling for regulatory and supervisory environments (continued)

		DLLA				
		Law quality			*Legislative quality*	
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
Capital stringency			–0.0166			–0.0042
			(0.0101)			(0.0075)
GDP growth	–0.0984	–0.0904	–0.1580*	–0.1253	–0.1308*	–0.1781**
	(0.0694)	(0.0833)	(0.0948)	(0.0776)	(0.0791)	(0.0806)
Inflation	0.0001	0.0001	0.0001	–0.0001	–0.0001	–0.0002
	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0001)
Diagnostic test						
Number of instruments	1,626	1,626	1,661	1,626	1,626	1,661
Number of groups	274	274	283	274	274	283
F-test	22.97***	19.37***	17.12***	18.51***	15.47***	23.07***
Hansen test	124.87	117.97	117.41	115.64	122.43	115.07
P value	0.611	0.586	0.576	0.812	0.472	0.555
AR(2) test	1.53	1.55	1.56	1.52	1.56	1.59
P value	0.126	0.122	0.118	0.119	0.12	0.111

Notes: Table 7b reports the two stage system GMM regression result with Windmeijer – corrected standard errors and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is AIQ and is measured here as *DLLA. Cross-border banking* is measured as a dummy variable taking a value of 1 where the shareholding proportion of the local banks by foreign banks is 50% or more and 0 otherwise. *Institutional quality* is measured here by law quality and legislative quality. *DNPL* is measured by a value of one if the value for non-performing loan is missing and zero, if otherwise. The logarithm of total assets is employed as a proxy for *bank size. Market share* is measured by the loan market share of banks and leverage is leverage of banks. *GDP growth* accounts for the difference in economic development across countries. *Inflation* is the rate of inflation based on CPI. Higher values of *banking freedom* signify higher freedom from government controls. Higher scores of property rights indicate certainty of legal protection and limited *expropriation risk. Capital stringency* is regulatory capital requirement. Standard errors are reported in parenthesis, ***, ** and * indicates statistical significance at 1%, 5% and 10% respectively. The following diagnostic tests are reported:
1   the instrument count
2   number of banks used in the sample
3   the F-test for joint significance of explanatory variables
4   the Hansen test of over identifying restrictions of which the null hypothesis is that the instruments are exogenous
5   the Arellano-Bond test for first and second order serial correlation in the residuals of which the null hypothesis is that there is no serial correlation.

In relation to the other measure of AIQ, LLA in Tables 6b and 7a, property right increases discretional LLA hence poor AIQ in banks with high levels of transparency. These results do not support the argument that firms in countries with strong investor protections and high quality judicial systems reflect bad news in reported earnings numbers in a more timely fashion than in countries characterised by weak investor protections and low quality judicial systems. Again, firms in countries with strong public enforcement slow the recognition of good news in reported earnings numbers relative to firms in countries with weak public enforcement (Bushman and Piotroski, 2006). Also, with the inclusion of the property right variable, all but bureaucratic quality is significant and positive. Meaning, the legal protection on private property as well as the judicial efficiency in enforcing these laws brings about institutional quality and by so doing increasing AIQ. Cross-border banking was found to increase AIQ in terms of all the institutional quality measures except bureaucratic quality, as it was negative and significant. The coefficient on GDP growth remains unchanged [that is, significant and negative in banks with high-level of transparency (in Table 7a) and with banks operating in high levels of legislative quality (Table 6b)]. This means that GDP growth increases AIQ in countries with high legislative quality.

4.3.3 Capital stringency

The influence of regulatory capital stringency on AIQ is considered by including the capital regulatory index. In this regression, the baseline model is re-estimated by including the index 'capital stringent' as an additional explanatory variable. The results are shown in Tables 6a, 6b, 7a and 7b. Regulatory capital stringency is not significantly linked to AIQ, that is, loan loss provision in terms of bureaucratic quality, transparency (Table 6a), and legislative quality (Table 6b). However, in terms of law quality, capital stringency increases DLLP. On the second measure of AIQ, LLA in Tables 7a and 7b, with the inclusion of capital stringency, legislative quality lost its significance in explaining DLLA. Cross-border banking maintained its negative significance to LLA in terms of all four institutional quality variables. Capital stringency does not significantly influence DLLA in terms of all the institutional quality measures but bureaucratic quality which has a negative and significant effect. High regulatory capital requirements enable cross-border banks to less discretionally manage LLA and thereby providing high quality accounting information. The intension to engage in more or less earnings management is argued to be driven primarily by some underlying motives such as window dressing of financial reports prior to public offerings, to meet bonus targets in order to increase management compensation, to avoid violating debt contracts, to reduce regulatory cost or increase regulatory benefits (Healy and Wahlen, 1999).

5 Conclusions

This paper contributes to literature by analysing how cross-border banking and institutional quality perform in terms of producing reliable and quality accounting information of banks in African countries. We employ system GMM estimator to determine the financial reporting quality of cross-border banks and how the institutional

quality of the countries in which they are domiciled impacts on their reporting quality. This provides insights to standard setters on how certain firm specific characteristics and institutional quality variables impact on the reporting quality of cross-border banks. Specifically, banks with high levels of transparency increase AIQ as measured by DLLP and LLA. The results also show that banks in regimes with high legislative quality have better AIQ. Transparency and legislative quality help in establishing strong and reliable accounting information. There is no evidence to suggest that AIQ is less in banks that Cross-border into other countries. Thus, cross listing may improve accounting quality as cross listed firms may have some individual specific firm incentives and may still also be influenced by home country institutions. Moreover, cross-border banks that operate efficiently may not be the best candidates for takeovers and for that reason do not have enough motivation to manage earnings to mask their true performance and to portray a better picture than the actual case.

The results are robust to necessary controls for bank specific characteristics such as size and the macroeconomic conditions in Africa. Furthermore, the results are proven when various regulatory initiatives that can obscure the impact of Cross-border banking and institutional quality on AIQ are controlled. There is evidence that property right increases AIQ measured by DLLP when banks have high levels of transparency. From the results banks in countries with developed equity markets, dispersed ownership structures, strong investor rights, and legal enforcement engage in less earnings management. However, in transparent regimes, property right decreases AIQ when measured by DLLA. Banking freedom does not have an effect on AIQ of banks in Africa. However, capital stringency increases AIQ in banks with high level of bureaucratic quality. This is because; the stringent regulatory requirements reduce the tendency for banks to want to manage earnings.

The fact that Cross-border banking combined high institutional quality lead to high AIQ is a vital insight to standard setters on the role of strong institutions in informativeness of bank financial statements. Thus, regulators should consider providing the needed environments that will enable both domestic and cross-border banks to operate efficiently and effectively.

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Notes

1 A Cross-border bank is a bank with a commercial presence outside its home country, by way of at least one branch or subsidiary. Cross-border banks are considered to be foreign owned if they are controlled by a shareholder or group of shareholders from outside the licensing jurisdiction. Control over a bank can be exercised if an individual or entity holds more than 50% of shares in a bank, subsidiary or branch. In case where there is no majority shareholder, the bank is still classified a foreign bank when a foreign minority shareholder has a controlling stake in the bank (Beck et al., 2014). For the purpose of this study cross-border bank is bank with commercial presence outside its home country.

2 Since a large number of NPL observations are missing, we use the modified zero-order regression method suggested by Maddala (1977) for the estimation. This method substitutes a zero for missing value and adds an indicator variable coded one if the corresponding variable is missing.

3 This is based on the coefficients from the first-stage regression.

4   Countries included in the analysis for Northern Region of Africa are Algeria, Egypt, Morocco, Sudan, and Tunisia; the Central African countries included are Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Mali, Mauritania, Nigeria, Rwanda, Senegal, Sierra Leone and Uganda; while Angola, Botswana, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, and Zimbabwe are included for Southern African countries.

5   There is no evidence of autoregressive properties in the dataset as one-year lag of *loan loss provision* is not strongly related to concurrent levels. This suggests that the previous year's value is not a factor in estimating the current year dependent variable values of loan loss provision. The *Hansen test* is insignificant as shown by the p-values, suggesting the models do not suffer from over identification, while the F-test confirms the joint significance of the independent variables. The insignificant *AR*(2) means the null of no second order serial correlation cannot be rejected.