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Bank Earnings Management using Commission and Fee Income: the Role of Investor Protection and Economic Fluctuation

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Abstract

We investigate whether banks use commission and fee income to manage reported earnings as an income-increasing or income smoothing strategy. We find that banks use commission and fee income for income smoothing purposes and this behaviour persist during recessionary periods and in environments with stronger investor protection. The implication of the findings is that bank non-interest income which achieves diversification gains to banks is also used to manipulate reported earnings. Our findings show that real earnings management is prevalent among banks in Africa. Further research into earnings management should examine real earnings management among non-financial firms in developing regions. From an accounting standard setting perspective, our evidence suggests the need for national/international standard setters to adopt strict revenue recognition rules that ensure that banks or firms report the actual fees they make, and to discourage banks from delaying (or deferring) the collection of fee income to manage or smooth reported earnings opportunistically.

Keywords: Earnings management, Commission and Fee Income; Non-interest Income; Real Earnings Management; Income smoothing; Economic Condition; Investor Protection; Banks.

JEL classification - G21 ; G28 ; G34 ; M41.

1. Introduction

We examine whether banks use commission and fee income to manage earnings, the incentive to do so, and the influence of institutional and economic factors on this behaviour. We focus on bank commission and fee income because commission and fee income is considered to be a significant component of bank non-interest revenue (Smith et al, 2003; DeYoung and Rice, 2004; Ozili, 2017a). In recent years, the low interest rate environment is claimed to have led to a decline in bank interest income and has encouraged banks to rely more on non-interest source of funds to remain profitable (DeYoung & Rice, 2004). Although there are strong arguments for banks' reliance on non-interest income, non-interest income is also known to be unstable compared to interest income.¹ The unstable nature of banks' non-interest income can motivate managers to exert some discretion or control on the level of reported non-interest income, and in theory, the variability of income is predicted to create opportunities for managers to smooth reported earnings to achieve some desired profit levels (Greenawalt and Sinkey, 1988). However, the extent of this behaviour can be influenced by institutional quality (Leuz et al, 2003), and by differing economic conditions (Ozili and Thankom, 2018). Therefore, it is important to understand how variation in the non-interest income component of earnings can affect bank financial reporting.

Given that commission and fee income is a significant component of non-interest income (Smith et al, 2003; DeYoung and Rice, 2004), we argue that bank managers have incentives to influence the reporting of commission and fee income in an attempt to increase earnings or to smooth out abnormal fluctuations in earnings. Managers can delay the recognition of commission and fee income to a future period or increase commission and fee income in the current period to increase earnings to meet some desired reporting earnings outcomes. We test this prediction using bank data from a region where there is no uniform regulation or uniform reporting for commission and fee income.

Except for banks in Europe where there is some attempt to regulate and standardise some component of commission and fee income, there is yet no uniform regulation or reporting for commission and fee income among banks in Africa. The lack of standardisation in the accounting for bank revenue recognition among African countries can create opportunities for bank managers in the region to influence the reporting of commission and fee income to manage reported earnings. The absence of non-uniform accounting rules for revenue recognition in the region suggests that managerial discretion will be a significant determinant of revenue recognition for banks in the region; this, therefore, provides a natural setting to investigate managerial discretion in revenue recognition for earnings management. In addition to the reasons above, this study is also motivated by the little focus on bank real activities-based earnings management compared to the extensive literature on bank accrual earnings management via loan loss provisions².

Since we are using dataset from Africa, our study also responds, and provides some insight, to other issues or questions such as: Do banks in Africa engage in real activities management? What are the incentives for real activities-based earnings management among banks in the African region? Under what circumstances do real activities-based earnings management occur among banks in Africa? To provide some answers to these questions, our study investigates whether bank revenues (in this case, commission and fee income) are manipulated to influence the level of reported earnings particularly in an under-researched African region. To date, we are not aware of any study that has examined this question/topic in the context of banks in developed countries. In a developed country context, Stubben (2010) show that firms have incentives to manipulate their revenue to manage earnings but his analysis

¹ By 'unstable', we mean that clients/customers can quickly change banks to patronise the service of another bank, which leads to unstable commission and fee during such periods (Smith et al, 2003).

² E.g. Ahmed et al. (1999) and Fonseca & Gonzalez (2008)

did not examine banks. In contrast, we examine revenue-based earnings management among banks, and the banking literature has not considered bank revenue to be a possible earnings management tool.

One common approach used to test for earnings management among banks is to focus on one component of earnings and its relation to earnings before that component while controlling for factors that influence that component of earnings (see, McNichols & Wilson, 1988; Ahmed et al., 1999; McNichols, 2001; Ozili and Thankom, 2018). This is the approach we adopt in this paper. This approach is considered to provide a more precise estimate of managerial discretion in bank financial reporting (McNichols, 2001). Accordingly, we model commission and fee income as a function of earnings before commission and fee income while controlling for economic fluctuation, bank size, investor protection and other factors. Similar to Ahmed et al. (1999) and Stubben (2010), we model bank commission and fee income as a function of its discretionary components (i.e., earnings before commission and fee income) and its proposed non-discretionary components (i.e., the commission and fee income growth rate, bank size and macroeconomic fluctuation).

Overall, the result indicates that African banks use commission and fee income to smooth earnings and this behaviour is more pronounced when they are in recessionary periods and in environments with stronger investor protection. One implication of our findings is that African banks also use real activities-based techniques to influence the level of earnings not just accruals. Our findings show that this behaviour is common across banks in most African countries. Our analysis in this paper is useful to accounting standard setters and bank regulators in the region who want to understand (i) the extent to which bank managers exercise discretion in earnings, (ii) how they do it, and (iii) the impact of this behaviour on earnings quality.

Our study makes three contributions to the literature. Our study contributes to the positive accounting theory (PAT) literature which examines the accounting and non-accounting decisions that influence managers' choice of accounting methods in financial reporting (Watts and Zimmermann, 1986). We show that the need to survive a recession, and the presence of strong investor protection are two non-accounting decisions that influence bank managers' choice to engage in real earning management. Secondly, we provide evidence that banks in Africa use commission and fees to manage (or to smooth) earnings, a finding which has not been clearly explored in prior literature. Thirdly, by examining commission and fee income, the study contributes to the literature on the relation between non-interest income and bank diversification by providing additional insight that non-interest income that achieves diversification gains is also used to manipulate (or smooth) reported earnings.

The rest of the paper is structured in the following way. Section 2 presents the theory and literature. Section 3 presents the research design, data and method. Section 4 reports the empirical results of the analysis. Finally, section 5 concludes.

2. Theoretical and Empirical Literature

2.1. Theory

Several hypotheses provide alternative explanations for why firms manage reported earnings. For instance, the positive accounting theory (PAT)'s bonus plan hypothesis predict that managers of firms will use accounting techniques or accounting numbers to increase earnings in order to increase the likelihood of receiving bonuses that depend on the earnings number; while the PAT's political cost hypothesis predict that firms will use accounting techniques that lower the size of current earnings if reported earnings are expected to be too high in order to avoid regulatory scrutiny and political scrutiny

of bank earnings by industry regulators (Watts & Zimmerman, 1986). Overall, positive accounting theory argue that the incentive to manage earnings is driven by the presence of explicit contracts (i.e., bonus plans, debt covenant violation and the firm's sensitivity to regulatory/political scrutiny).

On the other hand, the income smoothing hypothesis predicts that firms will use accounting procedures or accounting numbers to lower high earnings or to increase low earnings to smooth out the fluctuations in earnings (Ahmed et al., 1999; Ozili and Thankom, 2018). Also, the information asymmetry hypothesis suggests that geographically-diversified firms with complex structures have greater information asymmetry, and managers in such firms may exploit the additional information asymmetry to manage earnings (Amidu and Kuibo, 2015). Taken together, these hypotheses provide alternative theoretical explanations for earnings management practices among firms.

2.2 Literature Review

2.2.1. Real Earnings Management

Zang (2011) show that earnings management can occur through two channels: accruals earnings management (AEM) and real activities-based earnings management (REM). Many studies focus on earnings management using discretionary accruals (e.g. Dechow & Sloan, 1991; Bens et al., 2002; Kothari, 2001; Ozili and Outa, 2018) while very few studies investigate banks because of the additional regulations, disclosure requirements and the difficulties to determine actual accruals in banks. Regarding earnings management using real techniques, Roychowdhury (2006) define real earnings management as departures from normal operational practices motivated by managers' desire to mislead some stakeholders into believing certain financial reporting goals have been met in the normal course of operations.

Regarding banks, the literature on real activities-based earnings management among banks is rather scant, and Barth et al. (2017) confirm this. For instance, Beatty et al. (2002) find evidence that publicly traded US banks use real techniques e.g. realised securities gains and losses, as well as loan loss provisions, to eliminate small decreases in earnings. Also, Barth et al (2017) find evidence that banks use realised gains and losses on available-for-sale securities to smooth earnings. Among developing country studies, Hamdi and Zarai (2012) show that Islamic banks manage losses to avoid reporting losses and to avoid earning decreases. Ozili (2017b) investigate the use of accruals (loan loss provisions) to smooth income by African banks, and observe that African banks, particularly listed banks, use accruals to smooth income. Additionally, Ozili (2017b) find that accruals are procyclical with economic fluctuations. Amidu and Kuipo (2015) examine 330 African banks from 29 African countries from 2002 to 2009 and find that more than two-thirds of the 29 countries use discretionary accruals to manage earnings. Similarly, Ozili (2015) show that banks in Nigeria use loan loss provisions to smooth earnings over time. These studies do not focus on bank real earnings management via commission and fee income.

Studies that test for the presence of earnings management among firms commonly use the total accrual approach that estimate non-discretionary accruals as a linear function of change in revenues (or cash revenue), change in gross property, plant, and equipment; and the residual is taken as the measure of discretionary accruals or managerial discretion (Jones, 1991; Dechow et al., 1995). This approach has been criticised for two reasons. One, it provides noisy and biased estimates of managed earnings (Bernard and Skinner, 1996; Thomas and Zhang, 2000). Two, the approach do not reveal information about the component of earnings that is used to manage earnings (Beneish, 2001; McNichols, 2001). In contrast, banking studies commonly follow the approach of McNichols and Wilson (1988) and Ahmed et al (1999) that examine one component of earnings and its relation to earnings before the component

while controlling for factors that influence that component of earnings. We follow this approach in this paper to investigate whether a significant component of bank revenue is used to manage earnings. Because revenues are a positive function of firm earnings, Plummer & Mest (2001), Caylor (2010) and Stubben (2010) have associated revenue-based earnings management with income-increasing earnings management, but these studies did not examine banks.

2.2.2. Bank Commission and Fee Income

Commission and fee income is the largest component of bank non-interest income and the second main source of revenue to banks (Smith et al., 2003; DeYoung & Rice, 2004). To date, the banking literature focus on how non-interest income/revenue relate to (i) bank diversification benefits (Smith et al., 2003), and (ii) increase in overall profitability of banks; with little or no attention to whether bank managers have incentives to influence or delay the recognition of income from fee-based activities to influence the level of reported earnings. For instance, DeYoung & Rice (2004) suggest that banks engage in non-interest activities to generate non-interest income to boost shortfalls in overall profitability while Stiroh (2004) and Stiroh & Rumble (2006) argue that banks engage in non-interest activities to generate non-interest income to diversify bank income stream. DeYoung & Roland (2001) show that while income from fee-based activities increased bank earnings, it also increased the volatility of earnings thus signalling little or no diversification gains. Overall, there is yet no consensus on whether bank non-interest income achieves its intended diversification benefits. Taken together, prior literature do not explicitly view bank commission and fee income as a possible earnings management tool for banks, and whether the presence of institutions that constrain managerial behaviour discourages earnings management behaviour, if present. Our study explicitly examines this topic, by isolating commission and fee income component of bank non-interest revenue to examine how bank managers' reporting for commission and fee income relate to bank earnings.

2.2.3. Economic Conditions

Some studies show that banks have incentive to use financial/accounting numbers to increase or lower earnings during upturns and downturns in the economy (e.g. Ozili and Outa, 2017; El Sood, 2012; Beatty & Liao, 2009; Liu & Ryan, 2006). These studies document that banks use discretionary accruals to increase earnings during a recession to avoid reporting losses during the period. For instance, El Sood (2012) find that US banks use accruals to increase earnings to avoid reporting a loss during a recession (i.e., the 2007-2009 financial crisis period) while Beatty and Liao (2009) find similar evidence for US banks. Liu & Ryan (2006), on the other hand, find that banks smooth income to reduce high profits during economic boom. Ozili and Outa (2017) in their survey of literature, demonstrate that the earnings distribution of banks is directly linked to economic fluctuations - high profits during good times and low profits during bad times. We complement these studies and investigate whether banks use commission and fee income to manage/smooth earnings during upturns and downturns in the economy.

3. Research Design

3.1. Contextual Framework

Banking systems in African countries vary largely in terms of the level of financial development, banking concentration, financial deepening, regulation and supervision, corporate governance, investor protection, banking population, bank transparency, etc. Beck & Cull (2013) points out that banking systems in Africa are relatively more volatile compared to developed countries. They posit that the frequent fluctuations in the income stream of firms and households in the region sometimes make it

difficult for individuals and firms to repay loans as at when due; hence, contributing to income instability which can translate to banking system instability in the region. We argue that this claimed banking instability in the African region can create incentives for banks in the region to use earnings management techniques to stabilise reported earnings over time when they are in fluctuating banking environments.

Regarding institutions, an African context to the study of bank real earnings management practices is important because institutions that constrain bank behaviour across African countries significantly differ from institutions that constrain bank earnings management behaviour in Europe or the US due to differences in the level of development, extent of enforcement and so on. Also, the growing need for African countries to establish institutions that promote increased bank transparency, protection of the rights of minority shareholder and greater director liability, makes this study relevant. Hence, the need to understand how real activities-based earnings management is influenced by institutional quality.

3.2 Data

We base our sample on African banking institutions in Bankscope database which contains accounting information for large number of banks in the region. The sample consists of banks from 18 African countries during the 2004 to 2013 period. The sample period selected, allows us to focus on the events occurring within the specified pre-and post-crisis event window, where no significant regional change in accounting rules had taken place at the time (2004 to 2013)³. The countries in the sample include: Algeria, Angola, Botswana, Cameroun, Egypt, Ethiopia, Mauritius, South Africa, Nigeria, Kenya, Togo, Tanzania, Ghana, Morocco, Uganda, Tunisia, Senegal and Zambia.

We use three country-level variables: real gross domestic product growth rate, banking competition and investor protection. Bankscope database also provides cross-country data for banking competition (Lerner index) archived in World Bank databank database. We obtain our real gross domestic growth rate variable from the World Economic forum (see appendix for overview of data sources used for our empirical analysis). We exclude countries that do not have institutional data relevant to the study. All banks that report data for commission and fee income for at least 3 years and have the relevant country-level data are included in the analysis. Regarding bank type, we did not make a distinction between types of African banks.

To clean up the data, we eliminated outliers above the 99th percentile and below the 1st percentile, to minimise outliers and measurement errors. Secondly, we did not eliminate 2008 bank-year observations to control for the impact of the 2008 financial crisis because we did not have a reason to believe that the balance sheet of African banks was ‘adversely’ affected by the 2008 crisis. The resulting sample comprise of 271 banks. Also, because some banks have missing values, the data is an unbalanced panel.

A first look at the sample descriptive statistics in Table 1a reveal that commission and fee income (CF) for most African countries is around or above the mean CF while CF is much lower for banks in Mauritius, Morocco and Tunisia. Also, the negative values reported for EBCF for some African countries indicate that CF is a significant portion of bank earnings, if excluded, would lead to negative earnings or losses. Finally, the number of observations is large in most columns in Table 1, but the observations in each column are rather unbalanced across all columns due to missing values for some variables which are not reported in Bankscope database.

³ Also, the number of available bank years used for this study is 10 years (i.e., 2004 to 2013). A ten-year period is sufficient for the study because a 10-year is generally considered to reflect a full economic cycle which can capture both upswings and downturns in an economy

Insert Table 1a Here

3.3 Research Design

To test whether African banks use commission and fee income to manage or smooth income, we use a variation of the models use by prior studies (e.g., Ahmed et al., 1999; Barth et al., 2017; Ozili and Thakom, 2018), which examine the relation between some bank accounting number and earnings before the accounting number while controlling for other factors that might influence the magnitude of the accounting number. Our main modified multivariate regression model is given as:

$$CFit = \alpha_0 + \alpha_1 EBCFit + \alpha_2 \Delta CFRit + \alpha_3 SIZEit + \alpha_4 \Delta GDPt + \alpha_5 BANKdummies \\ + \alpha_6 COUNTRYdummies + eit(Equation 1)$$

All variables are defined in table 5. CF is the dependent variable measured as net commission and fee income deflated by bank total asset. The CF variable captures reported commission and fee income decisions of bank managers that are specific to the bank. EBCF is the earnings management variable of interest, measured as earnings before tax and net commission and fee income. Barth et al. (2017) intuitively show that, if firms use a revenue item to increase earnings, a positive relation between the revenue item and reported earnings is expected while a negative sign is expected if banks use a revenue item to smooth earnings which can be achieved by reporting fewer revenue items in order to decrease too high earnings. Accordingly, we predict a positive sign for the EBCF coefficient if African banks use commission and fee income to increase earnings as an income-increasing strategy and we predict a negative sign for the EBCF coefficient if African banks use commission and fee income to smooth reported earnings.

Additionally, we test whether African banks use CF to manage/smooth earnings when they expect losses or when they are more profitable. To test for this, two dummy variables are introduced: NEG that take the value 1 if EBCF is negative and zero otherwise; and POS that take the value 1 if EBCF is above-the-median EBCF and zero otherwise. The POS and NEG variables are then interacted with EBCF. POS*EBCF test whether banks have incentive to use CF to manage/smooth earnings when they are more profitable (i.e., above-median EBCF). NEG*EBCF test whether banks have incentive to use CF to manage/smooth earnings when they expect losses. The expanded model is shown below:

$$CFit = \alpha_0 + \alpha_1 EBCFit + \alpha_2 \Delta CFRit + \alpha_3 SIZEit + \alpha_4 \Delta GDPt + \alpha_5 POSit + \alpha_6 POS \\ * EBCFit + \alpha_7 NEGit + \alpha_8 NEG * EBCFit + eit(Equation 2)$$

For the control variables, ΔCFR captures contemporaneous change in the absolute amount of bank net commission and fee income. This variable controls for the impact of contemporaneous fluctuation in commission and fee income that may influence bank managers' decision on the amount of commission and fee income to be reported in the current period. ΔCFR is change in the absolute value of net commission and fee income given as $[(CFR_t - CFR_{t-1})/CFR_{t-1}]$. When banks expect unstable commission and fee income in the next period, they will have incentives to report more fee income in the current period to compensate for subsequent periods that will yield lower commission and fee income. Hence, we predict a positive relation between CF and ΔCFR .

The SIZE variable is included to control for the effect of bank size on commission and fee income. Anandarajan et al (2003) suggest that large banks are considered to have high level of business activities and a large client base for which they charge fees and commission in exchange for the services offered.

Following this reasoning, we expect banks with high level of business activities to generate more commission and fee income; that is, large banks should have more fee income, therefore, we expect a positive sign for the SIZE coefficient. SIZE is measured as the natural logarithm of bank total assets.

Real gross domestic product growth rate, (Δ GDP), controls for the impact of economic cycle fluctuation on bank commission and fee income. Because bank clients will be able to pay for the services offered to them during good economic conditions compared to periods of economic downturns, bank commission and fee income is expected to be relatively substantial during periods of economic prosperity and lower during economic downturns. Hence, we predict a positive sign for Δ GDP coefficient.

As an additional test, we check whether banks use commission and fee income to manage earnings when they are going through periods of economic recession or prosperity. To capture this, we introduce two dummy variables into the analysis: REC that take the value 1 when Δ GDP is negative and zero otherwise, and BOOM that take the value 1 when Δ GDP is above-the-median Δ GDP and zero otherwise. REC and BOOM variables are then interacted with EBCF to test whether the relation between earnings and commission and fee income depend on transient states of the economy.

$$CFit = \alpha_0 + \alpha_1 EBCFit + \alpha_2 \Delta CFRit + \alpha_3 SIZEit + \alpha_4 \Delta GDPt + \alpha_5 RECit + \alpha_6 REC * EBCFit + \alpha_7 BOOMit + \alpha_8 BOOM * EBCFit + eit. (Equation 3)$$

Our country-level variables control for the influence of cross-country investor protection and competition that might influence the reporting of bank commission and fee income. Fonseca & Gonzalez (2008) and Ozili (2018a) argue and show evidence that strong investor protection and legal enforcement discourages bank income smoothing behaviour via discretionary accruals. Similarly, we use 'INVPRO' and 'LEGAL' to control for protection of minority shareholder rights and the quality of legal system across African countries, respectively. Higher values of the two variables indicate stronger protection of minority shareholders rights and higher legal enforcement quality. We also use the Lerner index to control for banking competitiveness across countries. Beck et al (2013) also used the Lerner index to control for cross-country banking competition. Banks in highly competitive banking environments may charge lower fees for services offered to clients in order to attract new clients and/or to retain existing clients. Therefore, we expect a negative relation between CF and the Lerner index variable. Finally, we include the error term. The expanded equation is given as:

$$CFit = \alpha_0 + \alpha_1 EBCFit + \alpha_2 \Delta CFRit + \alpha_3 SIZEit + \alpha_4 \Delta GDPt + \alpha_5 RECit + \alpha_6 REC * EBCFit + \alpha_7 BOOMit + \alpha_8 BOOM * EBCFit + \alpha_9 LEGAL + \alpha_{10} LEGAL * EBCF + \alpha_{11} INVPRO + \alpha_{12} INVPRO * EBCF + \alpha_{13} LERNER + \alpha_{14} LERNER * EBCF + eit. (Equation 4)$$

To test the robustness of the main econometric results, we first run the fixed effects⁴ OLS estimation to account for bank and period unobserved heterogeneity between banks and across periods. Also, by controlling for bank fixed effect, the fixed effect estimation addresses omitted variables bias that may be associated with the main model in Equation 1. Also, since our explanatory variables and institutional variables are time-varying, we also find it more appropriate to use the fixed effect estimation rather than

pooled OLS. The Hausman test also show that fixed effect estimation is a more appropriate estimation technique. However, we later use pooled OLS estimation when we introduce two time-invariant variables.

Finally, we test whether the use of CF to manage/smooth bank earnings exhibit forward-looking properties. Bushman & William (2012) use this approach and find that managers exploit their discretion in forward-looking reporting of discretionary accruals to manage earnings. To test for forward-looking behaviour, we take the lag (or beginning values) of the explanatory variables in Equation 1 except for EBCF and Δ GDP variables. This approach ensure that the CF coefficient only picks up the extent to which banks' reporting of commission and fee income is influenced solely by earnings consideration and macroeconomic considerations without reference to current information about bank non-interest income determinants. This lagged approach also allow us to test for the persistence of commission and fee income over time. The model we adopt for this analysis is similar to Bushman & William (2012), and is given as:

$$CFit = CFit - 1 + \alpha_1 EBCFit + \alpha_2 \Delta CFRit - 1 + \alpha_3 SIZEit - 1 + \alpha_4 \Delta GDPt + eit \quad (\text{Equation 5})$$

We estimate the model in Equation 5 by using Arellano & Bond (1991) Generalised-Method-of-Moments (GMM) first difference estimator. This technique address (i) the presence of unobserved bank-specific effects, which is eliminated by taking first-differences of all variables; (2) the autoregressive process in the data regarding the persistence of bank commission and fee income and the (iii) potential endogeneity of the explanatory variables with the error term.

4. Result

4.1. Main Result

The main result is reported in Column 1 of Table 2. The EBCF coefficient is negative and significant at 1% level and indicates that banks in the African region use commission and fee income to smooth earnings. This is consistent with the income smoothing hypothesis and is consistent with Barth et al (2017) who find that banks use real techniques to smooth income. The result implies that African banks report fewer commission and fee income to lower high earnings and report higher commission and fee income to increase low earnings so that reported earnings are never too high or too low, to achieve income smoothing. Ozili (2015) also find evidence for income smoothing among Nigerian banks, and Ozili and Thankom (2018) find evidence for income smoothing among European systemic banks.

The control variables report the predicted signs except for SIZE. Δ CFR report the expected positive sign but is insignificant while SIZE coefficient is negatively significant, indicating that large banks report fewer commission and fee income. Δ GDP coefficient reports the predicted positive sign but is insignificant, implying that reported commission and fee income by African banks do not exhibit significant cyclical behaviour in response to changing economic conditions in the African region.

4.2. Additional Analysis: Transient Effect

Column 2 and 3 of Table 2 show that the POS*EBCF and NEG*EBCF coefficients are insignificant. Column 4 report a negative sign for REC*EBCF coefficient and is significant at 5% level, indicating that the use of commission and fee income to smooth income by African banks is more pronounced during economic downturns/recessions. Beatty & Liao (2009) and El Sood (2012) document similar

evidence for accruals. $BOOM * EBCF$, on the other hand, report a negative but insignificant sign and is inconsistent with Liu & Ryan (2006).

Regarding investor protection and banking competition, $INVPRO * EBCF$ coefficient report a negative sign and is significant at 1% level. This indicates that bank income smoothing via commission and fee income is more pronounced in environments that have stronger protection of minority shareholders rights. $LEGAL * EBCF$ is negatively significant at the 5% level, indicating that bank income smoothing via commission and fee income is also pronounced in environments with higher legal enforcement quality. Taken together, these findings indicate that African bank managers are more likely to use real techniques to smooth bank earnings when they are in strong legal and investor protection environments. Also, $LERNER * EBCF$ coefficient report a positive but insignificant sign. Overall, the results indicate that African banks use commission and fee income to smooth earnings and this behaviour is more pronounced when they are in recessionary periods and in environments with stronger investor protection.

Insert Table 2 Here

4.3. Cross-Country Analysis

Next, we undertake country-specific analysis to control for the bias that international analysis ignores national aspects that differ by country. We re-run the model for each country and include real GDP growth rate but exclude the institutional variables from the model. $EBCF$ and ΔGDP are the variables of interest here. Table 3 report the results. As can be observed, $EBCF$ coefficient reports a negative sign for 14 countries (Algeria, Angola, Botswana, Cameroun, Egypt, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South Africa, Tanzania, Tunisia, and Zambia). Of these, $EBCF$ coefficient is negatively significant for banks in 8 African countries (Algeria, Cameroun, Ethiopia, Ghana, Nigeria, Senegal, South Africa and Tanzania), indicating evidence for earnings smoothing via commission and fee income. Also, $EBCF$ coefficient is positively significant for banks in Mauritius, indicating evidence for income-increasing earnings management. ΔGDP coefficient is negatively significant in Zambia, Togo and Morocco, indicating a counter-cyclical relation between CF and economic cycle fluctuations. Also, procyclical commission and fee income behaviour is observed in Cameroun and Ethiopia as indicated by the positively significant ΔGDP coefficient. Overall, the result suggests that earnings smoothing is common among countries in our sample. Also, the link between commission and fee income and the economic cycle across countries in the sample is mostly weak (insignificant). This weak link provides some justification for banks' involvement in non-interest activities as income generated from such activities are not significantly correlated with business cycle fluctuations.

Insert Table 3 Here

4.4. Pre- and Post-Financial Crisis

Next, we test whether earnings management is pronounced in the post-financial crisis period relative to the pre-financial crisis period. To do this, we create a financial crisis dummy variable ($CRISIS$) and assign a value '1' for the post-crisis period (2009-2013) and assign a value of '0' for the pre-financial crisis period (2004-2007)⁵; thereafter, we interact the financial crisis variable with the earnings

⁵ The year-2008 data is excluded from the analysis. This is because most banks had significant write-offs in the crisis-years and including such crisis-data into the models often constitute outliers which can bias the empirical results due to the extreme or large values for some variables. Furthermore, African banks experienced significant write-offs during the crisis-years due to their heavy exposure to fluctuating oil prices in 2008. The financial crisis made oil prices volatile and transmitted huge losses on the balance sheet of African banks that

management variable (EBCF). The result is reported in Column 3 of Table 4. The EBCF coefficient is significant but the interaction of EBCF with CRISIS is insignificant, indicating that there is no evidence for bank earnings management via commission and fee income in the post-crisis period. More so, the CRISIS variable is not statistically significant, indicating that the post-crisis period did not have a significant effect on bank earning management using commission and fee income in Africa, after the financial crisis.

Insert Column 3 of Table 4 Here

4.5. Robustness

First, the correlation matrix in the appendix show that the correlation among the variables is sufficiently low and suggests that multicollinearity is not an issue in the analysis. Second, we re-estimate the models using the natural logarithm of real GDP growth rate as an alternative measure to capture non-negative fluctuations in the economic cycle instead of real GDP growth rate. Taking the natural log drops out the negative values. We then interact the new measure with EBCF and re-run the model and the results remain insignificant. We also modify the BOOM variable to take the value 1 for all positive values of real GDP growth rate while negative values take zero. The result is not significantly affected by this change. Hence, we did not report these analyses due to lack of space in the manuscript. Further, regarding the high earnings dummy variable 'POS', we use an alternative measure where the POS dummy variable take the value 1 when EBCF is positive and zero otherwise. The result was not significantly affected by this change.

Third, with respect to the sample size, we used (i) active banks in the region, and (ii) use all banks that have data for three consecutive years in any order in the time series. The latter allows us to include active banks that do not have full reporting data on commission and fee income, therefore, we are confident that survivorship bias is not an issue in the analysis. Fourth, we test whether the use of CF to smooth earnings is achieved when banks do not consider current information about the structure of commission and fee income. The result is derived from the model in Equation 5. Column 1 and 2 of Table 4 show that the CF coefficient is negative but not significant indicating that bank managers do not use CF to smooth earnings when they do not take into account current information about non-interest income or commission and fee income (or non-interest income structure). The observed negative sign further confirms the main result that bank managers use CF to smooth earnings. Also, CFt-1 is positively significant in Column 1 and 2, indicating that previous information about commission and fee income is a major determinant of reported commission and fee income in the current period. Also, we check whether listed and unlisted African banks use CF to smooth or manage earnings and the results are not significant.

Finally, we address concerns that the large number of sample banks for South Africa may affect our inference. We excluded South African banks from the sample and the results do not change significantly as can be observed in Column 7 of Table 4.

Insert Table 4 Here

5. Conclusion

had significant exposure in the oil sector. Much of the losses were written-off in their year-2008 financial statement, hence the need to exclude 2008 year-observations.

Earnings management among banks in emerging and developing countries is an emerging area in the literature and has received considerable attention among researchers, regulators and analysts in the banking sector. This study re-examines the question on earnings management focusing on the African banking sector. We focus on how banks use commission and fee income to influence reported earnings. Using African bank data, over a 10-year period 2004 to 2013, the result and conclusions indicate that African banks use commission and fee income to smooth reported earnings and this behaviour is more pronounced when they are in recessionary periods and in environments with stronger investor protection.

From a prudential perspective, research on bank commission and fee income is important to banking supervisors who have concerns that banks in the region charge high fees to clients but disguise this behaviour by understating earnings to avoid reporting too high earnings possibly to evade scrutiny of bank profits. Hence, our evidence shed some light into this issue and underline the need for sound prudential guidelines to supervise and monitor the reporting of commission and fee income and other revenue items by African banks. From an accounting standard setting perspective, our findings stress the need for national/international standard setters to adopt strict revenue recognition rules that ensure that banks/firms report the actual fees they make, and to discourage banks from delaying (or deferring) the collection of fee income to manage or smooth reported earnings opportunistically.

One limitation of the study is that recent developments in African countries could alter the results, particularly in the post 2014 era. Another limitation is that the years after 2008 could also be affected by the crisis. Therefore, future research should explore the potential for revenue management as an earnings management strategy in the post-crisis period.

A natural direction for future research is the need for future studies to undertake an in-depth analysis of specific factors, including accounting and regulatory practices in individual countries, that influence this behaviour in the region. Future research can replicate this study to developed country contexts where the reporting of revenue is not regulated or standardised. Finally, future research could also investigate whether Basel capital regulation have any influence on banks reported commission and fee income. For instance, banks with more regulatory capital can have incentives to engage in risky activities for which they can charge higher fees and commission.

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Tables

Table 1: Descriptive Statistics (Number of Observations per country)									
The final number of observations for each country are reported in parenthesis (below the mean values)									
Country	Mean CF	Mean Δ CFR	Mean EBCF	Mean SIZE	Mean Δ GDP	Mean LERNER	Mean INVPRO	Mean LEGAL	# Banks
Algeria	0.017 (132)	1.39 (115)	0.004 (132)	14.32 (142)	3.1 (150)	0.57 (120)	5 (135)	-0.71 (120)	15
Angola	0.015 (99)	2.49 (86)	0.008 (99)	13.88 (102)	10.8 (130)	0.43 (104)	5.3 (117)	-1.34 (104)	13
Botswana	0.015 (99)	0.31 (84)	0.034 (99)	12.90 (102)	7.6 (120)	0.206 (84)	5.4 (108)	0.63 (96)	12
Cameroun	0.025 (36)	-0.04 (33)	-0.006 (39)	13.09 (54)	3.5 (60)	0.388 (48)	4.3 (54)	-1.12 (54)	6
Egypt	0.013 (345)	0.087 (304)	0.001 (345)	14.83 (345)	4.6 (360)	0.135 (240)	3.6 (324)	-0.12 (288)	16
Ethiopia	0.014 (82)	1.33 (72)	0.018 (82)	13.28 (82)	11.0 (100)	0.537 (80)	3.3 (90)	-0.72 (80)	10
Ghana	0.027 (109)	0.20 (94)	0.009 (109)	13.11 (109)	7.5 (150)	0.348 (120)	6.3 (135)	-0.07 (120)	15
Kenya	0.018 (234)	0.189 (209)	0.007 (234)	12.47 (237)	5.3 (240)	0.318 (192)	5 (216)	-0.96 (192)	24
Mauritius	0.006 (121)	0.153 (106)	0.009 (121)	13.68 (124)	3.9 (140)	0.475 (112)	7.7 (126)	0.91 (112)	14
Morocco	0.007 (99)	0.116 (86)	0.015 (99)	16.01 (104)	4.4 (130)	0.293 (104)	3.4 (117)	-0.18 (104)	13
Nigeria	0.023 (59)	0.153 (43)	0.185 (59)	15.73 (63)	8.8 (160)	0.185 (128)	5.7 (144)	-1.22 (128)	16
Senegal	0.015 (80)	1.37 (68)	-0.003 (80)	12.70 (92)	3.8 (100)	0.313 (80)	3 (90)	-0.25 (80)	10
South Africa	0.032 (269)	0.309 (239)	-0.002 (269)	14.90 (272)	3.3 (290)	0.264 (232)	8 (261)	0.10 (232)	29
Tanzania	0.020 (147)	0.223 (131)	-0.004 (147)	12.21 (147)	6.7 (160)	0.312 (128)	4.9 (144)	-0.41 (128)	16
Togo	0.017 (55)	0.17 (48)	0.001 (55)	12.41 (59)	3.5 (70)	0.244 (56)	3.7 (63)	-0.94 (56)	7
Tunisia	0.008 (191)	0.12 (166)	0.002 (191)	13.74 (191)	3.9 (200)	0.250 (160)	4.8 (180)	0.13 (180)	20
Uganda	0.025 (138)	0.338 (117)	-0.006 (136)	11.98 (180)	7.1 (136)	0.332 (105)	4.7 (189)	-0.45 (168)	21
Zambia	0.034 (108)	0.246 (94)	-0.027 (108)	11.77 (114)	7.8 (140)	0.279 (112)	5.3 (126)	-0.51 (112)	14
TOTAL									271
Mean	0.019	0.265	0.003	13.51	5.74	0.322	5.23	-0.36	
Median	0.014	0.11	0.005	13.24	5.17	0.302	5.00	-0.39	
S.D.	0.02	1.97	0.26	1.94	3.91	0.650	1.48	0.58	
Observation	2215	1914	2213	2328	2710	2045	2439	2168	

CF = net commission and fee income to total asset ratio. EBCF = earnings before tax and commission and fee income to total assets. SIZE = natural logarithm of total asset. Δ CFR is change in commission and fee income outstanding. Δ GDP is real gross domestic product growth rate. INVPRO = minority shareholder rights protection. LERNER = banking competition. LEGAL = Quality of legal enforcement. Number of observations are reported in parenthesis

Table 2: Main Regression (Fixed Effect)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C	0.105*** (4.24)	0.103*** (4.35)	0.103*** (4.38)	0.105*** (4.17)	0.108*** (4.14)	0.101*** (4.22)	0.129*** (4.01)	0.133*** (3.95)
ΔCFR	0.0002 (1.27)	0.0002 (1.25)	0.0002 (1.25)	0.0002 (1.24)	0.0002 (1.28)	0.0002 (1.21)	0.0002 (1.26)	0.0002 (1.20)
EBCF	-0.136*** (-3.72)	- 0.152*** (-3.07)	-0.103* (-1.94)	- 0.133*** (-3.58)	- 0.130*** (-2.92)	0.266** (2.12)	- 0.230*** (-3.58)	-0.322** (-2.49)
SIZE	-0.006*** (-3.43)	- 0.006*** (-3.52)	- 0.006*** (-3.58)	- 0.006*** (-3.43)	- 0.007*** (-3.42)	- 0.006*** (-3.74)	- 0.008*** (-3.50)	-0.008*** (-3.37)
ΔGDP	0.00003 (0.41)	0.00002 (0.30)	0.00002 (0.22)	0.0001 (0.88)	-0.0001 (-1.51)	0.00007 (0.88)	0.00006 (0.81)	0.00003 (0.42)
POS		-0.0004 (-0.51)						
NEG			0.001* (1.67)					
REC				0.001 (1.04)				
BOOM					0.002** (2.15)			
INVPRO						0.001*** (3.22)		
LEGAL							-0.006 (-1.61)	
LERNER								-0.005 (-1.01)
POS*EBCF		0.043 (0.65)						
NEG*EBCF			-0.038 (-0.57)					
REC*EBCF				-0.175** (-1.99)				
BOOM*EBCF					-0.011 (-0.25)			
INVPRO*EBCF						- 0.070*** (-2.60)		
LEGAL*EBCF							-0.169** (-2.43)	
LERNER*EBCF								0.494 (1.39)
Adjusted R ²	76.35	76.36	76.40	76.50	76.43	77.86	81.63	81.19
F-statistic	22.81	22.66	22.71	22.83	22.74	24.65	24.39	23.05
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observation	1912	1912	1912	1912	1912	1910	1406	1365

All estimations include robust standard errors clustered by bank and year. Bank and year fixed effects are included. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively. CF = net commission and fee income to total asset ratio. POS = dummy variable that take the value 1 when EBCF ratio is above-the-median EBCF ratio and zero otherwise; NEG = dummy variable that take the value 1 when EBCF is negative and zero otherwise. REC = dummy variable that take the value of 1 during periods of economic downturns, that is, periods with negative ΔGDP growth rate, and zero otherwise; BOOM = dummy variable that take the value of 1 for periods of economic prosperity, that is, periods with above-the-median ΔGDP growth rate, and zero otherwise. LEGAL = quality of legal systems across countries. INVPRO = protection of minority shareholders rights. LERNER = banking competitiveness.

Table 3: County-Specific (Pooled OLS) Regression							
Model: $C_{Fit} = \alpha_0 + \alpha_1 EBCF_{Fit} + \alpha_2 \Delta CFR_{Fit} + \alpha_3 SIZE_{Fit} + \alpha_4 \Delta GDP_{Fit} + e_{it}$							
Country	β_0	EBCF	ΔCFR	SIZE	ΔGDP	Adj R ²	F-Stat
Algeria	-0.060** (-2.44)	-0.293*** (-2.77)	-0.0004*** (-3.54)	0.006*** (3.29)	0.0003 (0.54)	78.14	23.63
Angola	0.042** (2.51)	-0.009 (-0.38)	0.0001*** (4.51)	-0.002* (-1.71)	0.00006 (0.55)	78.66	20.59
Botswana	0.135*** (2.87)	-0.016 (-0.63)	0.0005 (1.24)	-0.009** (-2.54)	-0.0002 (-1.14)	79.98	23.11
Cameroun	0.159*** (4.44)	-0.547** (-2.36)	-0.0009 (-1.41)	-0.012*** (-4.14)	0.005*** (3.97)	88.34	26.25
Egypt	0.331*** (4.02)	-0.042 (-0.23)	0.005 (0.57)	-0.022*** (-3.91)	-0.0004 (-0.91)	59.71	11.69
Ethiopia	-0.085*** (-3.17)	-0.343*** (-5.17)	-0.0001** (-2.54)	0.007*** (3.98)	0.0009** (1.96)	66.70	11.94
Ghana	0.028 (0.99)	-0.045* (-1.84)	0.004 (1.17)	-0.0001 (-0.06)	0.00002 (0.08)	22.29	2.48
Kenya	0.047*** (4.91)	-0.038 (-1.13)	0.003** (2.38)	-0.002*** (-2.98)	-0.00008 (-0.64)	84.56	43.21
Mauritius	0.016 (1.38)	0.068* (1.74)	0.0009*** (2.85)	-0.0008 (-0.93)	-0.0001 (-0.64)	68.57	14.48
Morocco	0.028 (1.59)	0.031 (0.31)	0.005** (2.40)	-0.001 (-1.17)	-0.0003* (-1.84)	86.65	35.47
Nigeria	0.128*** (3.52)	-0.043** (-1.97)	0.002 (1.27)	-0.007*** (-3.01)	-0.0005 (-1.02)	98.56	137.4
Senegal	-0.021 (-0.92)	-0.146** (-2.47)	-0.0001 (-0.87)	0.003* (1.71)	-0.0002 (-0.33)	71.61	14.00
South Africa	0.382*** (5.42)	-0.423*** (-3.75)	0.0009 (0.66)	-0.025*** (-5.09)	0.0004 (0.91)	85.34	44.40
Tanzania	0.034** (1.90)	-0.119*** (-2.76)	-0.00001* (-1.88)	-0.001 (-0.97)	0.0005 (1.19)	81.17	30.49
Togo	0.036*** (3.87)	0.002 (1.60)	0.006 (0.43)	-0.001* (-1.67)	-0.0001*** (-2.77)	84.52	26.66
Tunisia	-0.001 (-0.12)	-0.011 (-0.88)	0.0009** (2.37)	0.0007 (0.91)	0.00002 (0.29)	80.33	30.29
Uganda	0.066 (1.07)	0.015 (0.33)	-0.0008 (-0.68)	-0.004 (-0.72)	0.0001 (0.37)	71.51	12.92
Zambia	0.239*** (3.64)	-0.061 (-0.40)	-0.0003* (-1.92)	-0.016*** (-2.98)	-0.002** (-2.32)	59.25	8.95

Note: robust standard error correction is applied.

Table 4: Sensitivity Test					
	Forward-looking Discretion (Arellano-Bond GMM)		Pre-and Post Financial Crisis	Listed vs Unlisted	without South Africa
	(1)	(2)	(3)	(4)	(5)
C			0.037*** (11.81)	0.043*** (12.07)	0.069*** (4.21)
CFt-1	0.754** (2.43)	0.759** (15.59)			
CFt-2		0.033 (0.99)			
ΔCFR			0.00002 (0.53)	0.0002 (0.61)	0.0001 (1.06)
ΔCFRt-1	0.001 (0.47)	0.002** (2.55)			
EBCF	-0.040 (-0.16)	-0.056 (-1.16)	-0.266*** (-3.14)	-0.213*** (-6.47)	-0.053*** (-3.24)
SIZE			-0.001*** (-7.16)	-0.002*** (-8.04)	-0.004*** (-3.20)
SIZEt-1	0.001 (0.06)	0.006 (0.80)			
ΔGDP	0.0007 (0.49)	0.0007*** (2.80)	0.0001 (1.25)	0.0001 (1.26)	0.00009 (1.29)
LISTED				0.008*** (4.25)	
LISTED*EBCF				-0.006 (-0.06)	
CRISIS			0.0009 (0.67)		
CRISIS*EBCF			0.077 (0.84)		
Sarjan (J) test	27.81	25.24			
Hansen p-value	0.63	0.66			
No of instrument	44	44			
AR(1)	0.000	0.000			
AR(2)	0.378	0.448			
Adjusted R ²			13.39	15.78	74.34
F-statistic			54.26	63.13	20.08
Observation	1638	1365	1990	1990	1673

Column 1-4 is estimated with Arellano-Bond GMM estimation and includes robust standard errors clustered by bank and year (Petersen, 2009). The Hansen J statistic test the adequacy of GMM instruments. AR(1) and AR(2) test for the presence of first order and second order serial correlation. Column 5 and 6 is estimated using pooled OLS because of the presence of time invariant variables. Column 7 is estimated with fixed effect OLS and excludes bank samples from South Africa. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively. CFt-1 = one-year lagged commission and fee income to total asset ratio for bank i at year t-1. CFt-2 = two-year lagged commission and fee income to total asset ratio for bank i at year t-2. SIZEt-1 = one-year lagged natural logarithm of total asset. ΔCFRt-1 = lagged change in the absolute value of net commission and fee income for bank i at year t-1. SIZEt-1 = natural logarithm of total asset for firm i at year t-1. LISTED = dummy variable that take the value 1 if the African bank is listed and zero otherwise. CRISIS = dummy variable that take the value 1 during the period 2009, 2010, 2011, 2012 and 2013; and zero otherwise.

Table 5: Definition of Variables

Variable	Description	Source
CF	Net commission and fee income divided by total asset	Bankscope
SIZE	Natural logarithm of total asset	Bankscope
Δ CFR	Change in net commission and fee income outstanding	
EBCF	Earnings before net commission and fee income (Profit before tax minus net commission and fee income) divided by total asset	Bankscope
Δ GDP	Real gross domestic product growth rate	World Economic forum archived in Worldbank database
LEGAL	Rule of law index measures the quality of the legal system across countries.	Kaufmann, World Governance indicator
INVPRO	Investor protection variable that measure the extent of protection of minority shareholder rights.	La Porta from Doing Busienss Project archived in Worldbank Database
LERNER	Cross-county banking competitiveness	Bankscope archived in Worldbank Database

Appendix

Panel A: Full Sample Correlation Matrix (with P-values in Parentheses)

Variables	CF	Δ CFR	EBCF	SIZE	Δ GDP	INVPRO	LEGAL	LERNER
CF	1.000							
Δ CFR	0.039 0.144	1.000						
EBCF	-0.376*** 0.000	-0.018 0.484	1.000 -----					
SIZE	-0.173*** 0.000	-0.037 0.164	0.135*** 0.000	1.000				
Δ GDP	-0.004 0.886	0.058** 0.030	0.085*** 0.002	-0.179*** 0.000	1.000			
INVPRO	0.207*** 0.000	-0.012 0.656	-0.044 0.105	0.123*** 0.000	-0.192*** 0.000	1.000 -----		
LEGAL	-0.062** 0.023	-0.029 0.282	0.035 0.191	0.154*** 0.000	-0.164*** 0.000	0.425*** 0.000	1.000 -----	
LERNER	-0.074*** 0.006	0.064** 0.019	0.071*** 0.008	-0.026 0.333	0.034 0.207	0.072*** 0.008	-0.143*** 0.000	1.000