# What drives Bank Income Smoothing? Evidence from Africa

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# What drives Bank Income Smoothing? Evidence from Africa

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## Abstract

We investigate whether banks use loan loss provisions to smooth income and whether this behaviour is influenced by foreign bank presence, ownership and institutional quality differences across African countries. We examine 370 banks from 21 African countries from 2002 to 2021. We find evidence that African banks use LLPs to smooth their income when they are more profitable during economic boom or recession. Income smoothing is persistent (i) among banks with a widely dispersed ownership, (ii) among banks with strong government ownership and (iii) among banks with weak government ownership. Income smoothing is also persistent in African countries that have greater corruption control, better regulatory quality and political stability. In contrast, moderate concentrated ownership reduces bank income smoothing. Bank income smoothing is reduced in African countries that have strong rule of law, high government effectiveness, strong foreign bank presence and strong voice and accountability institutions. The implication is that effective corporate governance and institutional quality can constrain the extent of income smoothing by African banks.

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# 1. Introduction

We investigate the effect of foreign bank presence, ownership and institutional quality on bank income smoothing using loan loss provisions (LLP) by African banks.

Foreign bank presence is crucial for the financial intermediation function of banks particularly in developing countries (Rajan and Zingales, 2003; Lensink and Hermes, 2004). Ownership and institutional quality have also been identified to influence the financial reporting of firms (Ramalingegowda et al, 2021), but the effect of ownership and institutional quality depend on the financial reporting property examined (Bushman and Piotroski, 2006), and the country, institutional and regional context examined (Fan and Wong, 2002; Leuz et al, 2003; Eng et al, 2019). In this paper, we consider income smoothing to be a property of financial reporting. We investigate whether income smoothing is influenced by foreign bank presence, ownership, and institutional quality differences.

The benefits and consequences of bank income smoothing have attracted a lot of debate in the accounting and finance literature. The literature shows that income smoothing reduces information asymmetry between firm owners and managers (Tucker and Zarowin, 2006; Abad et al, 2018), it improves bank stability by smoothing out abnormal fluctuations in bank earnings (Ozili and Thankom, 2018), it reduces crash risk associated with abrupt decline in stock prices (Andreou et al, 2017) and it improves the risk perception of banks from the perspective of bank regulators and supervisors (El Sood, 2012). On the other hand, income smoothing reduces the informativeness of reported earnings (Leventis et al, 2011), it increases bank opacity (Bhattacharya et al, 2003; Jin et al, 2019) and it lowers the quality of reported earnings (Ahmed et al, 2013). While these debates abound in the literature, the benefits and consequences of income smoothing have not been investigated extensively in the African context. As a result, it is unknown whether income smoothing is beneficial for African firms. It is also unknown whether bank income smoothing is persistent in African countries that have a large number of foreign banks and in weak institutional environments.

In Africa, bank supervisors may permit income smoothing, against accounting rules, if they perceive that bank income smoothing helps to promote bank stability during crises and when the risk of bank failure is high. However, permitting income smoothing prevents institutions from constraining the distortion of financial reporting by bank managers. Foreign banks also

encourage income smoothing in the African banking industry. Foreign banks can introduce modern technologies that improve the depth and quality of financial services and this will increase competition and pressure all banks to operate more efficiently (Lensink and Hermes, 2004). The increase in competition can influence banks to smooth income in order to report competitive earnings. On the other hand, foreign banks can introduce superior accounting disclosure standards in African countries which can pressure local banks to improve their accounting disclosure and increase the transparency of bank financial reporting, thereby reducing income smoothing by African banks. Furthermore, dispersed ownership in African banks can discourage income smoothing because controlling shareholders would not be able to elect managers that will appropriate private benefits to them, and the controlling shareholders would not be able to persuade bank managers to conceal such misappropriation by smoothing their income when there is a widely dispersed bank ownership. Also, the level of institutional quality and enforcement in African countries is not homogenous. The heterogeneous institutional quality across African countries will have dissimilar impact on bank income smoothing. Therefore, African countries offer a unique setting to investigate the effect of ownership, foreign bank presence and institutional quality on bank income smoothing using loan loss provisions.

We examine 370 banks from 21 African countries from 2002 to 2021. The findings reveal that African banks use LLPs to smooth their income when they are more profitable during economic boom or recession. Income smoothing is persistent (i) among banks with a widely dispersed ownership, (ii) among banks with strong government ownership and (iii) among banks with weak government ownership. Income smoothing is also persistent in African countries that have greater corruption control, better regulatory quality and political stability. In contrast, moderate concentrated ownership reduces bank income smoothing. Bank income smoothing is reduced in African countries that have strong rule of law, high government effectiveness, strong foreign bank presence and strong voice and accountability institutions.

This study contributes to the literature in the following ways. First, our study contributes to the bank income smoothing literature (see. Kilic et al, 2012; Bouvatier et al, 2014; Ozili and Thankom, 2018). The existing literature suggest that banks have incentives to smooth income so that reported earnings is never too high or too low. We focus on African banks, and we add to the literature by investigating the determinants of income smoothing in the African

context. Second, this study contributes to the literature that associate strong corporate governance with reduced earnings management (see, Leuz et al, 2003; Cornett et al, 2009; El Diri et al, 2020). A major argument in this literature is that strong monitoring of managers by owners can discourage the manipulation of financial reports by managers thus reducing the extent of earnings management or income smoothing. We add to this literature by showing the effect of ownership concentration on the extent of income smoothing by African banks. Finally, this study contributes to the broad earnings management literature. Several studies consider income smoothing to be the most common type of earnings management in banks (e.g. Leuz et al., 2003; Ozili, 2017a), and our findings show that income smoothing is also common among banks in Africa, which is consistent with previous studies that find similar evidence for income smoothing among banks in European and Asian countries (Parker and Zhu, 2012; Curcio and Hasan, 2015; Ozili and Thankom, 2018).

The rest of the paper is organised as follows. Section 2 presents the literature review and hypothesis development. Section 3 presents the research methodology. Section 4 presents the empirical results. Section 5 concludes.

## 2. Literature review and hypothesis development

### 2.1. Governance, ownership, financial reporting and institutional quality in Africa

Banking in Africa is structurally different from other regions of the world. Its uniqueness makes it important to analyse how African bank managers deal with volatile earnings when income smoothing is an option to them either for bank stability or earnings management purposes. In Africa, banking crises occur more frequently compared to other regions (Beck and Cull, 2013). Bank supervisors want to intervene to reduce the frequency of banking crises. But their ability to intervene to resolve distress in the banking sector is often hindered by lack of institutional independence from the government who may oppose specific regulatory intervention. When bank regulators and supervisors in African countries lack independence in carrying out their regulatory and supervisory functions, they will not be able to intervene quickly to resolve a crisis. One option for bank supervisors is to encourage banks to smooth income in an orderly manner to promote banking stability or avoid instability during bad

economic times and when the risk of bank failure is high. This practice also affects the effectiveness of institutions that are established to constrain the distortion of financial reporting by bank managers in Africa.

Foreign banks are common in African countries. Foreign bank presence will introduce modern technologies that can help to improve the depth and quality of financial services and increase the level of competition which would pressure all banks to operate more efficiently (Demirguc-Kunt et al, 1998; Lensink and Hermes, 2004). Competition among banks can promote income smoothing among all banks in the domestic country which is desirable to bank supervisors but undesirable to accounting standard setters who are concerned about earnings quality. Foreign banks can also introduce a superior accounting disclosure standard into the domestic country which can pressure local banks to improve their accounting disclosure, and the improved disclosure quality can discourage income smoothing thereby increasing the transparency of bank financial reporting (Demirguc-Kunt et al, 1998; Lensink and Hermes, 2004). More so, widely dispersed bank ownership in African countries can discourage income smoothing because controlling shareholders would not be able to elect managers that will appropriate private benefits to them, and the controlling shareholders would not be able to persuade bank managers to conceal such misappropriation by smoothing their income when there is widely dispersed bank ownership.

Furthermore, the level of financial development in African countries is low compared to the rest of the world (IMF, 2006). The low level of financial development in African countries has been attributed to the presence of low foreign bank presence (Beck and Cull, 2013; Beck and Levine, 2005). In the past two decades, most African countries have embarked on several reforms that promote foreign bank participation while other reforms take the form of credit controls, interest rate controls, reduction in state ownership, institutional changes, and stronger regulation and supervision of the banking sector. With regard to institutional changes, Africa still has low institutional quality compared to other regions of the world. What makes the case of Africa particularly compelling is the weak enforcement of corporate governance codes and the multiplicity of codes of corporate governance within the weak institutional environment that is plagued with corruption which affects the ownership structure of banks (Osemeke and Adegbite, 2016; Ozili and Uadiale, 2017). Also, the growing need for African countries to establish institutions that promote effective ownership

structure, higher voice and accountability levels, stronger corruption control, greater protection of the rights of minority shareholder and greater director liability, makes this study relevant; therefore, it is important to understand how the presence of these institutions influence bank income smoothing behaviour particularly in Africa.

## 2.2. Theoretical Framework

A theory that explains the income smoothing behaviour of firms is the positive accounting theory. The positive accounting theory argues that the accounting information generated in financial reports reflect both the accounting and non-accounting decisions taken into consideration by managers of a firm such as bonus plans, debt covenant violation, etc. In the presence of explicit contracts linked to the size of reported earnings, such as bonus plans, managers can influence reported accounting numbers in ways that increase the likelihood of receiving bonuses that depend on the size of reported earnings (Watts and Zimmerman, 1986). Managers may adopt an income-increasing strategy to increase the likelihood of receiving bonuses (Lambert, 1984), or adopt income-increasing accounting choices to avoid violating debt covenant agreements or adopt income-decreasing accounting choices if debt is to be restructured or renegotiated (Jaggi and Lee, 2002). In the presence of excessive regulation, income smoothing is a technique that managers can adopt to avoid unintended regulatory/political scrutiny arising from reporting too high or too low earnings which can attract regulatory/political costs from industry regulators. In this sense, income smoothing may be used as a method which achieves two objectives: to reduce earnings in good years and increase earnings in bad years so that reported earnings never seem to be too high or too low to attract regulatory/political scrutiny (Ozili and Thankom, 2018).

## 2.3. Empirical evidence on income smoothing

Income smoothing is a type of earnings management. Existing studies such as Tran et al (2020) show that US banks use discretionary loan loss provisions to manage earnings or to smooth income. Ozili (2017a) examined income smoothing using loan loss provisions by Western European banks and found that Western European banks use loan loss provisions to smooth income in the post-financial crisis period. Liu and Ryan (2006) find that US banks use provisions to smooth income during the economic boom in the 1990s. El Sood (2012) finds that US banks accelerate LLP to smooth income when they (i) hit the regulatory minimum

target, (ii) during non-recessionary periods, and (iii) when they are more profitable. Ozili (2022) documents that African banks audited by a Big 4 auditor use income smoothing to lower high earnings during the 2008 financial crisis. Balboa et al. (2013) observe that US banks use LLP to smooth positive and substantial earnings. Kilic et al. (2012) find that US banks use LLP to smooth income when SFAS 133 disclosure regulation made it difficult for US banks to use derivatives to smooth income. Ozili (2017b) shows that African listed banks use LLP to smooth earnings, and the presence of Big 4 auditors did not reduce the extent of income smoothing by African listed banks. Leventis et al. (2011) investigate 91 listed commercial banks and find evidence for income smoothing. They observe that income smoothing using provisions is reduced after mandatory IFRS adoption. Curcio and Hasan (2015) investigate income smoothing among credit institutions in the Euro and non-Euro area during the 1996 to 2006 period, and find that non-Euro area credit institutions use provisions to smooth earnings. Bonin and Kosak (2013) examine banks in 11 emerging European countries, and find that banks in the emerging Europe region use provisions to smooth income. Vasilakopoulos et al (2018) find that EU banks use provisions to smooth income but banks managers' decision to smooth income depends on board structure, the level of leverage and the provision of disclosure for remuneration for chief executive officer. Anandarajan et al. (2007) observe that listed Australian banks use provisions to smooth income in the post-Basel period. Parker and Zhu (2012) examine the provisioning practices of 240 banks from 12 Asian countries after controlling for income smoothing incentives. They find that banks in Asia use LLP to smooth income. Andreou et al (2017) show that some banks follow conditional conservatism in loan loss provisioning, and such conservatism in provisioning may decrease the opportunities for income smoothing.

Several studies have examined bank income smoothing using LLP, and evidence for bank income smoothing is mixed in the literature. For instance, Laeven and Majnoni (2003), Kanagaretnam et al. (2004) and El Sood (2012) find evidence for bank income smoothing, while Beatty et al. (1995) and Ahmed et al. (1999) find no evidence for bank income smoothing. Cross-country studies such as Cavallo and Majnoni (2002), Bikker and Metzemakers (2005) and Fonseca and Gonzalez (2008) also document evidence for bank income smoothing. These studies draw conclusion from the significant and positive

relationship between loan loss provisions and 'earnings before tax and provisions' as evidence for income smoothing.

## 2.4. Hypothesis development

### 2.4.1. Foreign Bank Presence

There is some consensus that the impact of foreign banks on bank performance and bank credit depends on the host country and banks' characteristics (Claessens and Horen, 2014). For instance, in Africa, some countries have substantial number of foreign banks providing services that improve financial intermediation, thereby leading to greater financial development (Kablan, 2010), while other African countries impose restrictions on foreign bank entry and foreign bank activities (Clarke et al, 2003). Generally, foreign banks contribute to financial development (Claessens and Horen, 2014), but in Africa, the level of financial system development is largely uneven due to significant restriction on foreign bank entry (Ozili, 2017c). Foreign bank presence can increase competition, reduce profit margin for all banks (both foreign and domestic), and pressure all banks to report competitive earnings which can be achieved by smoothing their income. On the other hand, foreign banks can also introduce superior accounting disclosure standards which can compel all banks to improve their accounting disclosure quality and reduce income smoothing.

Claessens et al. (2001) and Lensink and Hermes (2004) investigate whether foreign bank presence affects the operation (net interest income, noninterest income, overhead costs, and overall profitability) of domestic banks, and show that foreign bank presence is generally associated with lower profitability for domestic banks due to increased competition. Rajan and Zingales (2003) show that a country's openness to entry of foreign financial institutions is crucial for financial development. This suggests that countries that allow foreign banks are more financially developed and have better accounting disclosure standards which promotes transparency in financial reporting and leads to reduced income smoothing. Bhattacharya et al (2003) show that income smoothing is a property of earnings opacity because smoothed earnings do not show the true underlying economic reality of the firm thereby make earnings less transparent. Foreign banks can introduce high accounting disclosure standards which can pressure all banks to improve their disclosure quality and reduce earnings opacity, thus reducing income smoothing. Following this reasoning, we expect that foreign bank presence

will reduce earnings opacity, and lead to lower income smoothing, following the ideas of Rajan and Zingales (2003) and Bhattacharya et al (2003). Therefore, we predict that greater foreign bank presence will discourage income smoothing thereby improving the transparency of bank financial reporting and discouraging income smoothing. The hypothesis is stated as:

H1a: Greater foreign bank presence is associated with reduced income smoothing by African banks.

Conversely, we expect a positive association between foreign bank presence and income smoothing if there is ease of foreign bank entry in African countries. Removing barriers to foreign bank entry can increase competition in the domestic banking market, and greater competition can compel all banks, both domestic and foreign banks, to engage in income smoothing in order to report competitive earnings compared to their rivals. This implies that foreign bank presence can lead to greater income smoothing. When this is the case, we expect a positive association between foreign bank presence and bank income smoothing via LLP. The hypothesis is stated as:

H1b: Greater foreign bank presence is associated with greater income smoothing by African banks.

2.4.2. Institutional Quality

In Africa, most countries have weak institutions with low enforcement quality, which affects the ability of bank supervisors to discipline rule-breaking banks particularly if banks are affiliated to high-ranking government officials. Weak institutions in African countries often make regulators toothless in enforcing rules intended to improve the quality of accounting information in financial reporting. Moreover, if establishing strong institutions that empower regulators to discipline banks increase the risk of exposing corrupt politicians affiliated to such banks, corrupt politicians in power will oppose or delay any policy aimed at increasing the disciplinary powers of bank regulators while they remain in power in African countries. This explains why institutional quality can influence the level of accountability in banks which in turn can encourage banks to distort the financial reporting process (Leuz et al, 2003). Therefore, we expect that African banks in weak institutional environments will have incentives to distort their financial reporting in the form of income smoothing. We predict

that bank income smoothing in Africa is significantly influenced by institutional quality, and the effect would depend on the specific institutional quality variable used in the analyses.

H2: Income smoothing by African banks is significantly influenced by institutional quality.

We use some institutional indices which are available for African countries, and these variables include: "voice and accountability", "corruption control", "political stability and absence of violence/terrorism", "government effectiveness", "regulatory quality" and the "rule of law" indices. For instance, we expect that strong "voice and accountability" and strong "corruption control" should discourage income smoothing if these institutional controls encourage a strong disclosure culture and whistleblowing against corporate misconduct within African firms thereby making it difficult for managers to manipulate financial reports for income smoothing purposes (Ozili, 2017c). Similarly, we expect that higher "government effectiveness", "regulatory quality" and "rule of law" should discourage income smoothing if these institutional controls give bank supervisors the needed powers to regulate and discipline rule-breaking banks. Finally, political instability and the presence of violence/terrorism" can reduce investors' confidence in a country and lead to financial market instability, and since income smoothing is a stability tool used by financial institutions and banks to reduce earnings volatility in bad times (Ozili and Thankom, 2018), we expect greater income smoothing in countries that are more politically unstable.

### 2.4.3. Ownership

Bank ownership in some African countries (e.g. Ethiopia, Congo, Togo, Libya and Mauritania, etc.) is characterised by substantial ownership by controlling shareholders such as wealthy individuals, family owners, politicians, etc., with differing levels of direct equity ownership of banks. From an agency theory perspective, there are two ways through which ownership can affect reported earnings (where income smoothing is a property of reported earnings). On one hand, Shleifer and Vishny, (1986) show that controlling shareholders can use their influence to limit managers' discretion in financial reporting for the benefit of all shareholders including minority shareholders. For example, controlling shareholders can use their influence to appoint managers that would work in the interest of all shareholders (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). On the other hand, controlling shareholders can capture the financial accounting process by influencing managers to appropriate private control benefits

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to themselves, and compel managers to manipulate accounting numbers or smooth income to hide such misappropriation from non-controlling shareholders (Bouvatier et al, 2014).

Empirical studies show mixed evidence for the impact of ownership on firms' financial reporting choices. Fan and Wong (2002) investigate the relationship between earnings informativeness and the ownership structure for listed non-financial firms in East Asia, and find that high ownership concentration and large separation of ownership and control are associated with lower levels of earnings informativeness. Bouvatier et al. (2014) investigate European commercial banks and find that banks with more concentrated ownership use LLP to smooth income while banks with dispersed ownership do not use LLP to smooth income. Gebhardt and Novotny-Farkas (2011) find that income smoothing is more pronounced among listed European banks that are widely held. Consistent with these studies, we predict that ownership should have some influence on the extent of income smoothing by African banks.

 H3: Income smoothing by African banks is significantly influenced by bank ownership.


# 3. Research Methodology

### 3.1. Data

We obtain balance sheet and income statement information of African banks from Bankscope database. Data for cross-country institutional and macroeconomic information for African countries were obtained from three sources: the World Economic Forum (archived in World Bank database), World Governance Indicators, and the Global Financial Development Indicators (see table 1). The sample period spans from 2002 to 2021 which is sufficient to cover at least two full economic cycle consisting of economic downturns and upturns across African countries. The Bankscope database provides data for 54 African countries. Of these, 23 African countries were excluded due to unavailable and insufficient institutional country data. Of the remaining 31 countries, 10 countries had a small number of banks reported in Bankscope and were excluded to ensure that each African country included in the final sample has at least seven banks for each country for the analysis. The resulting sample yields 21 African countries for which institutional, macroeconomic and other cross-country information are available. A summary of the sample selection process is shown in table 2. The

final countries included in the sample are South Africa, Ghana, Egypt, Tunisia, Morocco, Kenya, Uganda, Zambia, Tanzania, Ethiopia, Togo, Angola, Cameroon, Algeria, Mauritius, Namibia, Botswana, Senegal, Nigeria, Malawi and Mozambique.

To be included in the 21-country sample, an African bank must meet two criteria: First, the African bank should have annual data for loan loss provisions over several years in the Bankscope database. Second, the bank should have at least four years' consecutive data for other crucial variables to control for quality of bank financial reporting. The resulting sample after this process yields 370 banks. We trim the data by eliminating outliers at the 1% and 99% percentile around the full sample mean for all variables in order to eliminate/reduce measurement bias due to outliers. Also, we did not eliminate the year 2007-2008 observations to control for the financial crisis effect because the balance sheets of African banks were not significantly affected by the 2007-2008 global financial crisis at the time. Finally, we take into account that African banks in our sample have varying levels of ownership concentration ranging from dispersed ownership to concentrated ownership.

| Table 1. Source, Definition and Description of Main Variables | | |
|---|---|---|
| Variable | Description | Source |
| LLP | Ratio of loan loss provisions to beginning total assets. (%) | Bankscope |
| NPL | Ratio of non-performing loans to beginning total assets. (%) | Bankscope |
| CAP | Ratio of total equity to beginning total assets. (%) | Bankscope |
| EBTP | Ratio of earnings before provisions and taxes to beginning total assets. (%) | Bankscope |
| SIZE | Natural logarithm of total assets. (%) | Bankscope |
| LOAN | Loan growth is the percentage change in gross loan outstanding. (%) | Bankscope |
| LOTA | Ratio of total loans to beginning total assets. (%) | Bankscope |
| ΔGDP | Growth in real gross domestic product. (%) | World Economic Forum |
| VA | Voice and accountability index measures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Higher values indicate strong voice and accountability attribute. | Worldwide Governance Indicators |
| COC | Control of Corruption index measures perceptions of the extent to which public power is exercised for private gain, corruption, and capture of the state by elites and private interests'. Higher values indicate strong corruption control. | Worldwide Governance Indicators |
| RQ | Regulatory quality index reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. | Worldwide Governance Indicators |
| GT | Government effectiveness index reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. | Worldwide Governance Indicators |
| PS | Political stability and absence of violence/terrorism index measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. | Worldwide Governance Indicators |
| RS | Rule of Law index measures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. | Worldwide Governance Indicators |
| SG | Stock market capitalization to gross domestic ratio reflects the level of capital market development | Global Financial Development indicator in World bank database |
| FG1 | Ratio of foreign banks to total banks in the African country. We define a foreign bank as the "Percentage of the number of foreign owned banks to the number of the total banks in a country, where a foreign bank is a bank where 50 percent or more of its shares are owned by foreigners outside the country". The foreign bank may be from another African country. | Global Financial Development indicator in World bank database |
| FG2 | Ratio of foreign bank assets to total banking assets. | Global Financial Development indicator in World bank database |

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| Table 2. Sample selection | | |
|---|---|---|
| Definition | Sample | Selection criteria |
| Total Countries | 54 | - |
| Less: African countries with insufficient data | (23) | African countries that have data in bankscope for only one or two years, including countries that did not have any reported data, were excluded. |
| Less: African countries with insufficient number of banks | (10) | African countries that have only one or two banks whose data are reported were excluded |
| Final sample | 21 | |

## 3.2. The Model

Our model follows the model adopted in prior literature which express discretionary LLP as a function of its non-discretionary determinants after controlling for macroeconomic and institutional characteristics (Anandarajan et al, 2007; Leventis et al, 2011; Curcio and Hasan, 2015; Ozili and Thankom, 2018). The baseline model specifications are given as:

$$LLP_{i,t} = \beta 0 + \beta 1 EBTP_{i,t} + \beta 2 NPL_{i,t} + \beta 3 LOAN_{i,t} + \beta 4 LOTA_{i,t} + \beta 5 CAP_{i,t}$$
$$+ \beta 6 SIZE_{i,t} + \beta 7 \Delta GDP_{j,t} + \in i,t \dots\dots\dots\dots\dots\dots \ Equation\ (1)$$

$$LLP_{i,t} = \beta 0 LLP_{i,t-1} + \beta 1 EBTP_{i,t} + \beta 2 NPL_{i,t} + \beta 3 LOAN_{i,t} + \beta 4 LOTA_{i,t}$$
$$+ \beta 5 CAP_{i,t} + \beta 6 SIZE_{i,t} + \beta 7 \Delta GDP_{j,t} + \in i,t \dots\dots\dots\dots\dots\dots \ Equation\ (2)$$

Where 'i','t', 'j' represent bank, year and country, respectively. LLP is discretionary loan loss provisions (measured as loan loss provisions scaled by beginning total assets). EBTP is earnings before profit and tax scaled by beginning total assets. NPL is non-performing loans scaled by beginning total assets. LOAN is change in gross loan outstanding or loan growth. CAP is total equity scaled by beginning total assets. LOTA is total loan scaled by beginning total assets. SIZE is the size of bank's total assets, measured as the natural logarithm of total asset. ΔGDP is real gross domestic product growth rate.

**3.3. Justification of variables**

The EBTP variable is the main income smoothing variable of interest. We predict a positive sign for EBTP coefficient as evidence for income smoothing; this is consistent with Lobo and Yang (2001), Kanagaretnam et al (2004), Leventis et al (2011), Curcio and Hasan (2015), Kilic et al (2012), Bushman and Williams (2012) and Ozili (2018). Additionally, we test whether African banks use LLP to smooth income when they are more profitable. To capture this, we introduce two dummy variables: PT1 and PT2 where PT1 equals one if EBTP is positive (i.e., non-negative) and zero otherwise; PT2 equals one if EBTP is above-the-median EBTP and zero otherwise, reflecting periods when African banks are highly profitable. We introduce the CAP variable into the model to control for the use of LLP to manage bank capital levels. If African banks view LLPs as a form of capital, they will maintain high LLPs to compensate for their low capital levels and retain less LLP when they have sufficient capital; hence, a negative sign for CAP coefficient is expected.

We control for the non-discretionary determinants of bank provisions. Lagged provisions in the dynamic model captures the dynamic behaviour of bank provisioning. Laeven and Majnoni (2003), Bikker and Metzemakers (2005) and Fonseca and Gonzalez (2008) use one-year and two-year lagged provisions (dependent variable) and find that the dynamic adjustment of LLP is concentrated only in the one-year lag (i.e., the first year), therefore, we use the one-year lag of LLP. However, introducing the two-year lagged LLP variable as an explanatory variable substantially reduces the total number of observations for the regression estimation. The ΔGDP variable captures the link between bank provisions and the economic cycle because it measures bank provisioning in response to changing macroeconomic conditions. Bikker and Metzemakers (2005) show that during recessionary periods banks will often maintain higher (fewer) LLPs during economic recessions (booms); hence, we predict a negative ΔGDP coefficient. Additionally, we check whether income smoothing is pronounced during booms and recessions. To do this, we introduce two dummy variables. The first dummy variable is 'REC' representing recessionary periods, and the second dummy variable is BOOM representing economic boom periods. REC equals one if ΔGDP is negative and zero otherwise, reflecting periods of recession or economic downturns. BOOM equals one if ΔGDP is above-the-median ΔGDP and zero otherwise, reflecting periods of economic boom. LOTA variable captures the risk of default on bank loan portfolio, and we expect a positive coefficient for

LOTA variable because banks with higher loan to asset ratio will face greater loan default risk and will proactively set aside higher LLPs to mitigate the default risk in their loan portfolio (Bouvatier et al, 2014). LOAN variable captures increase or decrease in bank lending. Banks can increase (decrease) provisions during periods of high (low) lending depending on its inherent risk profile. Increased bank lending may give rise to credit risk requiring higher provisioning (Kanagaretnam et al, 2005), therefore, we expect a positive sign for LOAN coefficient. NPL captures bank provisioning in response to actual loan loss to bank loan portfolio. We expect banks to maintain more LLP when they expect higher loan losses; hence, we predict a positive sign for NPL coefficient. For the SIZE variable, Anandarajan et al. (2007) suggest that large banks have high levels of business activities and will maintain higher LLP that is commensurate with their increased level of business activities; hence, we predict a positive sign for the SIZE coefficient.

Regarding African bank ownership, our understanding from the situation of bank ownership in Africa is that banks receive much of their equity funding from wealthy businessmen and past government officials (such as former presidents that have amassed much wealth during their time in office) often referred to as "high net worth individuals"; and these individuals provide large amount of funds to banks which allow them to retain control of banks, and veto the strategic decisions of banks particularly the funding decisions of banks. African banks also receive some funds from "low net worth individuals" and receive some funds from general investors too; hence, the need to distinguish between concentrated ownership, moderate ownership, and dispersed ownership" using some cut-offs. Given this understanding, the cut-offs we use are not arbitrary. Our approach to measure ownership of African banks is somewhat similar in classification, but slightly different from Bouvatier et al (2014). We use six dummy variables: DP, BN1, BN2, BN3, GW and GS, to capture six categories of bank ownership among the African banks in our sample. The first ownership variable is 'DP' which takes the value of one if a majority shareholder has less than 40% direct equity holding, representing African banks with a more dispersed ownership structure. 'BN1' takes the value of one if a majority shareholder holds above 50% but below 70% direct equity holding, representing banks with moderately concentrated ownership structure. 'BN2' takes the value of one if there are two majority shareholders that jointly have at least 70% direct equity holdings (such that the direct equity holdings of either of the two shareholders is at least 35%

for each of the two majority shareholders), representing African banks with moderately-weak ownership structure. 'BN3' takes the value of one if the African bank has one majority shareholder with at least 70% direct equity holding (i.e., 70% to 100%), representing African banks with strong concentrated ownership. 'GS' takes the value of one if a government entity holds more than 50% direct equity holdings in an African bank, representing African banks with strong government control. 'GW' takes the value of one if a government entity holds less than 40% direct equity holding in an African bank, representing African banks with weak government control. Finally, we interact the six bank ownership dummy variables with the EBTP variable to capture the influence of bank ownership structure on income smoothing by African banks.

To measure foreign bank presence, we use the ratio of foreign banks to total banks in the host country 'FG1'. Previous studies have also used this variable to measure foreign bank presence (Beck et al, 2000; Lensink and Hermes, 2004, Claessens et al, 2001).

Finally, we use World Governance Indicators as measures of institutional quality to capture the influence of institutional quality on banks' incentive to use LLP to smooth income, and these variables include: voice and accountability index (VA), corruption control index (COC), political stability and absence of violence/terrorism index (PS), government effectiveness index (GT), regulatory quality index (RQ), and the rule of law index (RS). Higher values of the six institutional quality variables indicate stronger institutional quality.

### 3.4. Estimation procedure

Finally, we employ the fixed effect regression to test the income smoothing hypothesis for the full sample, consistent with Curcio and Hasan (2015), and thereafter use GMM dynamic estimation for the remaining analysis, consistent with Fonseca and Gonzalez (2008). We employ the Arellano and Bond (1991) GMM first difference estimator as our dynamic estimator. Using the GMM estimation allows us to take into account dynamic provisions and to control from other unobservable econometric issues that may potentially affect our result. The GMM first difference estimator based on Arellano and Bond (1991) addresses three potential econometric issues. One, the presence of unobserved bank-specific effects, which is eliminated by taking the first-difference of all variables; two, the autoregressive process in the data regarding the behaviour of loan loss provisions (i.e., the need to use a lagged

dependent variable(s) as an explanatory variable to capture the dynamic nature of bank provisions); and three, the likely endogeneity of the explanatory variables with the error term. Among existing empirical studies, Laeven and Majnoni (2003), Perez et al. (2008), Ozili and Thankom (2018), Fonseca and Gonzalez (2008) and Bonin and Kosak (2013) use this estimator. In the GMM estimation, we only use instrumental variables corresponding to the lagged variable(s) up to a one-year lag. The Sargan test for the exogeneity of GMM instruments is reported. The AR(1) and AR(2) test for the presence of first-order and second-order serial correlation in the first-difference residuals, respectively, are also reported. We expect first-order serial correlation in the differentiated residuals due to the first-difference in the model, but we do not expect second-order correlation in models.

# 4. Empirical Results

## 4.1. Descriptive Statistics and correlation

The full sample descriptive statistics is reported in Table 3. It shows that the LLP ratio on average is 2.3% and is higher for banks in Angola, Ghana, South Africa, Mozambique and Botswana, but is lower for banks in Mauritius, Togo and Ethiopia and Cameroun. SIZE on average is 14.18 and is higher for banks in Ghana, Nigeria and Morocco, and lower for banks in Malawi and Mozambique. This indicates that there are significant differences in bank size across African countries. The NPL ratio on average is 6.6% for the full sample while banks in Tunisia and Ethiopia report double-digit NPL of 13.7% and 11.2%, respectively. The high NPL for Ethiopian and Tunisian banks suggest that banks in North Africa (e.g. Ethiopia and Tunisia) have declining credit quality over the period examined. Comparatively, NPLs are single-digits and are much lower for banks in Nigeria, Namibia and Angola. LOAN is about 26% on average for the full bank sample but exhibit substantial differences across African countries. For instance, LOAN ratio is much lower for banks in Morocco, Tunisia and Egypt while LOAN ratio is relatively higher for banks in Zambia and Angola, respectively. CAP ratio is 19.1% for the full sample, and is higher for banks in Mozambique and Malawi, and lower for banks in Senegal and Egypt. The EBTP ratio is 4.8% and is lower for banks in Senegal, Tunisia, and Mozambique, and is higher for banks in Nigeria and Tanzania. These differences suggest that there are cross-country differences in bank profitability in the African region. The LOTA ratio is 69% for the

full sample, and is lower for banks in Cameroun and Egypt, and higher for banks in Tunisia and Namibia, indicating cross-country variation in bank loan to asset composition in the African region. ΔGDP is on average 7.6% and is much lower for banks in South Africa and Togo, implying that the economy of South Africa and Togo experienced a relatively lower economic growth over the sample period while ΔGDP is higher for Ethiopia, Angola and Nigeria implying that the economy of Angola and Nigeria experienced significant higher economic growth over the sample period. Overall, the result from the descriptive statistics suggests that the bank-level characteristics vary across banks in African countries. Also, the descriptive statistics for the institutional variables reported in table 4 show institutional characteristics that vary across African countries. The full sample Pearson correlation result reported in table 5 shows that the EBTP variable and LLP variable are significant and positively correlated. This indicates that increase in LLP is associated with increase in EBTP and vice versa. Also, the LLP variable is positively correlated with the NPL, LOTA, CAP and ΔGDP variables, and negatively correlated with the SIZE variable. Overall, the full sample Pearson correlation result shows that the correlations are below 0.6, and indicates that multi-collinearity is not an issue the analysis.

| | LLP | EBTP | NPL | LOTA | LOAN | CAP | SIZE | ΔGDP | No of banks |
|---|---|---|---|---|---|---|---|---|---|
| | Means | Means | Means | Means | Means | Means | Means | Means | # |
| South Africa | 0.034 | 0.067 | 0.064 | 0.807 | 0.273 | 0.225 | 15.80 | 0.042 | 30 |
| Ghana | 0.026 | 0.065 | 0.066 | 0.693 | 0.243 | 0.184 | 16.97 | 0.078 | 21 |
| Egypt | 0.020 | 0.038 | 0.064 | 0.237 | 0.217 | 0.137 | 15.94 | 0.051 | 21 |
| Tunisia | 0.024 | 0.036 | 0.137 | 0.954 | 0.219 | 0.188 | 13.96 | 0.046 | 27 |
| Morocco | 0.020 | 0.041 | 0.056 | 0.838 | 0.205 | 0.138 | 16.64 | 0.054 | 15 |
| Kenya | 0.025 | 0.055 | 0.088 | 0.824 | 0.314 | 0.232 | 13.60 | 0.057 | 31 |
| Uganda | 0.024 | 0.058 | 0.043 | 0.719 | 0.338 | 0.189 | 12.99 | 0.077 | 20 |
| Zambia | 0.023 | 0.041 | 0.057 | 0.612 | 0.389 | 0.223 | 12.93 | 0.072 | 17 |
| Tanzania | 0.021 | 0.175 | 0.046 | 0.746 | 0.379 | 0.174 | 12.93 | 0.078 | 28 |
| Ethiopia | 0.018 | 0.059 | 0.112 | 0.699 | 0.354 | 0.153 | 14.18 | 0.072 | 11 |
| Togo | 0.018 | 0.041 | 0.097 | 0.839 | 0.311 | 0.186 | 13.37 | 0.043 | 10 |
| Angola | 0.030 | 0.052 | 0.037 | 0.546 | 0.426 | 0.180 | 14.92 | 0.201 | 17 |
| Cameroun | 0.015 | 0.041 | 0.061 | 0.108 | 0.246 | 0.190 | 13.86 | 0.047 | 11 |
| Algeria | 0.021 | 0.047 | 0.038 | 0.678 | 0.298 | 0.220 | 15.33 | 0.047 | 17 |
| Mauritius | 0.017 | 0.036 | 0.042 | 0.740 | 0.225 | 0.138 | 14.82 | 0.048 | 14 |
| Namibia | 0.019 | 0.051 | 0.030 | 0.945 | 0254 | 0.212 | 14.87 | 0.063 | 10 |
| Botswana | 0.026 | 0.056 | 0.091 | 0.788 | 0.306 | 0.283 | 13.88 | 0.061 | 14 |
| Senegal | 0.020 | 0.036 | 0.065 | 0.837 | 0.263 | 0.125 | 13.80 | 0.048 | 11 |
| Nigeria | 0.019 | 0.172 | 0.031 | 0.562 | 0.317 | 0.171 | 16.30 | 0.093 | 21 |
| Malawi | 0.022 | 0.841 | 0.046 | 0.611 | 0.347 | 0.236 | 12.28 | 0.062 | 10 |
| Mozambique | 0.027 | 0.027 | 0.042 | 0.683 | 0.383 | 0.252 | 12.59 | 0.083 | 14 |
| Total | | | | | | | | | 370 |
| | | | | | | | | | |
| Full sample | | | | | | | | | |
| Mean | 0.023 | 0.048 | 0.066 | 0.69 | 0.260 | 0.191 | 14.18 | 0.076 | |
| Median | 0.018 | 0.043 | 0.040 | 0.718 | 0.223 | 0.148 | 13.05 | 0.063 | |
| Standard deviation | 0.038 | 0.056 | 0.095 | 0.462 | 0.345 | 0.169 | 1.92 | 0.048 | |
| Maximum | 0.476 | 0.420 | 0.885 | 2.659 | 0.960 | 3.698 | 19.12 | 0.348 | |
| Minimum | -0.617 | -0.056 | 0.011 | 0.005 | -0.845 | -0.493 | 2.22 | -0.088 | |
| Observation | 7101 | 7019 | 7055 | 7086 | 7077 | 7089 | 7088 | 7012 | |

Descriptive statistics obtained for 370 sample banks from 21 countries. Data cover the 2002 to 2021 period. LLP = loan loss provision ratio. NPL = non-performing loan ratio. EBTP = earnings before taxes and provisions ratio. LOAN = change in gross loan outstanding. CAP = bank capital ratio. LOTA = loan to asset ratio. ΔGDP = gross domestic product growth rate. SIZE = the natural logarithm of bank total asset.

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| Table 4. Descriptive Statistics for country variables | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | RS | VA | COC | GT | RQ | RS | PS | FG1 |
| South Africa | 0.08 | 0.63 | 0.18 | 0.54 | 0.57 | 0.42 | -0.07 | 21.4 |
| Ghana | -0.07 | 0.33 | -0.10 | -0.05 | -0.09 | -0.38 | 0.01 | 53.3 |
| Egypt | -0.08 | -1.01 | -0.55 | -0.46 | -0.48 | -0.47 | -0.94 | 41.5 |
| Tunisia | 0.08 | -0.87 | -0.02 | 0.38 | -0.02 | -0.34 | -0.14 | 47.3 |
| Morocco | -0.16 | -0.75 | -0.28 | -0.19 | -0.14 | -0.54 | -0.44 | 37.3 |
| Kenya | -0.96 | -0.24 | -0.97 | -0.59 | -0.26 | -0.26 | -1.25 | 28.2 |
| Uganda | -0.49 | -0.51 | -0.83 | -0.42 | -0.17 | -0.19 | -1.11 | 77.4 |
| Zambia | -0.51 | -0.28 | -0.55 | -0.76 | -0.54 | -0.31 | 0.30 | 80.3 |
| Tanzania | -0.41 | -0.25 | -0.67 | -0.57 | -0.42 | -0.34 | -0.31 | 62 |
| Ethiopia | -0.76 | -1.27 | -0.61 | -0.56 | -1.01 | -0.18 | -1.52 | 0 |
| Togo | -0.94 | -1.18 | -0.94 | -1.44 | -0.86 | -1.21 | -0.36 | 20 |
| Angola | -1.39 | -1.14 | -1.37 | -1.18 | -1.18 | -1.04 | -0.63 | 48.1 |
| Cameroun | -1.14 | -1.02 | -1.09 | -0.89 | -0.88 | -0.88 | -0.53 | 66.8 |
| Algeria | -0.69 | -0.91 | -0.56 | -0.53 | -0.89 | -0.81 | -1.28 | 55.8 |
| Mauritius | 0.95 | 0.86 | 0.42 | 0.73 | 0.74 | 0.69 | 0.87 | 66.2 |
| Namibia | 0.18 | 0.37 | 0.27 | 0.14 | 0.12 | 0.54 | 0.76 | 43 |
| Botswana | 0.63 | 0.52 | 0.98 | 0.52 | 0.62 | 0.45 | 0.99 | 59.2 |
| Senegal | -0.22 | -0.05 | -0.26 | -0.31 | -0.25 | -0.39 | -0.21 | 76.3 |
| Nigeria | -1.27 | -0.78 | -1.14 | -1.01 | -0.85 | -0.32 | -1.92 | 16.2 |
| Malawi | -0.21 | -0.32 | -0.62 | -0.63 | -0.53 | -0.44 | 0.01 | 87.3 |
| Mozambique | -0.62 | -0.14 | -0.57 | -0.54 | -0.43 | -0.23 | 0.19 | 30 |

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Table 5. Full Sample Pearson Correlation Matrix

|  | LLP | EBTP | NPL | LOTA | LOAN | CAP | SIZE | ΔGDP |
|---|---|---|---|---|---|---|---|---|
| LLP | 1.000 | | | | | | | |
| EBTP | 0.425*** | 1.000 | | | | | | |
| | (0.000) | | | | | | | |
| NPL | 0.344*** | 0.108 | 1.000 | | | | | |
| | (0.000) | (0.578) | | | | | | |
| LOTA | 0.227*** | 0.149*** | 0.255*** | 1.000 | | | | |
| | (0.000) | (0.000) | (0.000) | | | | | |
| LOAN | 0.146*** | 0.199*** | -0.098*** | 0.590*** | 1.000 | | | |
| | (0.004) | (0.000) | (0.006) | (0.000) | | | | |
| CAP | 0.341*** | 0.323*** | 0.199*** | 0.429*** | 0.526*** | 1.000 | | |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | | |
| SIZE | -0.112*** | 0.011 | -0.209*** | -0.119*** | -0.483*** | -0.320*** | 1.000 | |
| | (0.000) | (0.949) | (0.000) | (0.000) | (0.000) | (0.000) | | |
| ΔGDP | 0.104 | 0.123*** | -0.088 | -0.098*** | 0.404*** | 0.105 | -0.243*** | 1.000 |
| | (0.877) | (0.000) | (0.187) | (0.000) | (0.000) | (0.789) | (0.000) | |

p-values are reported in parenthesis. ***, **, * denotes 1%, 5% and 10% significance levels.

## 4.2. Regression Result

To interpret the result, our identification strategy is that we expect a negative or positive coefficient for the interaction of the income smoothing variable (EBPT) with the ownership, foreign bank presence and institutional quality variables. The negative coefficient indicates reduced income smoothing while a positive coefficient indicates greater income smoothing. Table 6 reports the regression results. We first report the baseline results without the interaction variables to test the income smoothing hypothesis in Column 1 of table 6. Then, we run separate regressions for the role of each of the three factors influencing income smoothing.

**4.2.1. Income Smoothing**

First, we test the income smoothing hypothesis. The EBTP coefficient in Column 1 of Table 6 is positive and significant, implying that African banks, on average, use LLP to smooth income. For robustness, we run the GMM estimation to take into account dynamic provisioning and to check whether the evidence for income smoothing is robust. The GMM result reported in Column 2 shows that the EBTP coefficient remains positive and significant. The result indicates that African banks use LLPs to smooth their income. Taken together, these findings support the income smoothing hypothesis and is consistent with Leventis et al. (2011) and El Sood (2012) who document evidence for income smoothing. Tran et al (2020) also find evidence that US banks use discretionary loan loss provisions to manage earnings or to smooth income. Similarly, in the context of European banks, Ozili (2017a) found that Western European banks use loan loss provisions to smooth income in the post-financial crisis period. The finding of these studies is consistent with our finding and suggests that income smoothing using loan loss provision is widespread across different regions.

The control variables are consistent with our expectation. For instance, the NPL, LOTA, CAP and SIZE coefficients report the expected signs in Column 1 & 2 of Table 6. The LOAN coefficient is negative and implies that credit expansion is associated with few loan loss provisions among African banks. The SIZE coefficient is negative and implies that larger African banks report fewer LLPs. The ΔGDP coefficient is not significant. Finally, the lagged LLP coefficient is negative and significant, and implies that fewer provisioning by African banks in the previous period is followed by higher provisioning in the current period.

**4.2.2. Impact of Institutional Quality, Ownership and Foreign Bank Presence on income smoothing using LLP.**

The institutional quality regression result is reported in Column 3 of Table 6. The VA*EBTP, RS*EBTP and GT*EBTP coefficients are negative and significant, indicating that bank income smoothing is reduced in African countries that have strong rule of law, high government effectiveness and strong voice and accountability institutions. On the other hand, the COC*EBTP, RQ*EBTP and PS*EBTP coefficients are positive and significant, indicating that income smoothing is more persistent in African countries that have greater corruption control, better regulatory quality and political stability. Overall, the findings support our

prediction that better institutional quality, particularly, strong rule of law, government effectiveness and greater accountability in African countries can reduce the extent of income smoothing among African banks. Although these findings are interesting, Ozili (2019) show that bank income smoothing behaviour is persistent in corrupt environments, and such behaviour is reduced by strong investor protection. In contrast, our results show that strong control of corruption does not constrain income smoothing by African banks. Therefore, it may become necessary to instil strong investor protection mechanism to ensure that African banks abstain from opportunistic bank income smoothing.

For the ownership regression in Column 4 of Table 6, DP*EBTP, GS*EBTP and GW*EBTP coefficients are positive and significant. This indicates that income smoothing is pronounced (i) among banks with a widely dispersed ownership, (ii) among banks with strong government ownership and (iii) among banks with weak government ownership. These results are expected if non-controlling shareholders and government owners do not actively monitor bank management, especially when they expect that controlling owners will perform the monitoring role themselves to discourage opportunistic income smoothing using loan loss provisions. The BN2*EBTP coefficient is negative and significant. This indicates that income smoothing is reduced among African banks with moderately concentrated ownership. This suggests that controlling shareholders use their influence for the benefit of all shareholders, including minority shareholders, by strictly monitoring bank managers to limit managerial discretion directed at manipulating reported earnings for income smoothing purposes. This result is consistent with Shleifer and Vishny (1986)'s argument that strict monitoring by controlling shareholders can discourage bank managers from opportunistic behaviour. The implication of the result is that controlling shareholders in African countries use their influence to constrain the income smoothing behaviour of African banks. This suggests that shareholders in African banks strictly monitor bank managers to limit managerial discretion directed at manipulating reported earnings to smooth income. Our result does not support Bouvatier et al (2014) who show that European banks with more concentrated ownership use discretionary loan loss provisions to smooth their income. In contrast, our results show that African banks with disperse ownership engage in income smoothing while African banks with concentrated ownership engage in income smoothing. This is because the corporate governance mechanisms in African banks are effective in constraining earnings management

behaviour. Also, the BN1*EBTP and BN3*EBTP coefficients are also negative but not significant.

The foreign bank presence regression estimation is reported in column 5 of Table 6. The FG1*EBTP coefficient is negative and significant. This indicates that bank income smoothing is reduced in African countries that have greater foreign bank presence. This supports the prediction that greater foreign bank presence would put pressure on all banks in African countries, pressuring them to improve their accounting disclosures which, in turn, would discourage the misrepresentation of accounting disclosures aimed at smoothing income (Rajan and Zingales, 2003). The implication of the result is that the large number of foreign banks in African countries have a positive effect on accounting quality by reducing the extent of income smoothing in African bank financial reporting. Our finding corroborates the findings of Guo et al (2015) who show that ownership by foreign investors increases monitoring of managers and restrains real earnings management. Han et al (2022) also show that owners of foreign firms domiciled in a domestic country display great market discipline and provide monitoring which enhances corporate transparency and decreases earnings manipulation. These studies suggest that foreign firms can deter income smoothing because foreign owners or foreign investors will increase their monitoring of the firm. These findings support our results which show that foreign bank presence hinders income smoothing among African banks. Therefore, there is a need to increase foreign banks presence or foreign bank ownership in African countries.

| | Income Smoothing Hypothesis | | Institutional Quality | Ownership | Foreign bank presence |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Variables | FOLS | GMM | FOLS | FOLS | FOLS |
| | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| C | 0.053*** (2.87) | | 0.018 (0.96) | 0.003 (0.68) | 0.056** (2.55) |
| LLPt-1 | | -0.221*** (-5.17) | | | |
| EBTP | 0.183*** (10.71) | 0.554*** (8.95) | 0.173*** (8.86) | 0.159* (1.89) | 0.417*** (8.67) |
| NPL | 0.116*** (14.88) | 0.326*** (9.89) | 0.122*** (15.43) | 0.094*** (15.58) | 0.110*** (12.68) |
| LOAN | -0.004** (-2.27) | -0.017*** (-2.75) | -0.003* (-1.91) | 0.0004 (0.22) | -0.005** (-2.39) |
| LOTA | 0.011*** (3.38) | -0.033*** (-3.19) | 0.011*** (3.58) | -0.001 (-0.80) | 0.009*** (2.66) |
| CAP | -0.056*** (-8.82) | -0.159*** (-5.05) | -0.051*** (-8.28) | -0.008* (-1.82) | -0.069*** (-9.43) |
| SIZE | -0.004*** (-2.88) | 0.004 (1.25) | -0.002 (-1.35) | -0.0002 (-0.95) | -0.004** (-2.44) |
| ΔGDP | 0.014 (0.96) | -0.054 (-1.61) | -0.005 (-0.03) | -0.001 (-0.09) | 0.003 (0.16) |
| VA | | | 0.016*** (6.21) | | |
| VA*EBTP | | | -0.381*** (-9.24) | | |
| COC | | | -0.019*** (-5.24) | | |
| COC*EBTP | | | 0.587*** (10.51) | | |
| RS | | | 0.005*** (4.36) | | |
| RS*EBTP | | | -0.109*** (-4.58) | | |
| RQ | | | -0.001* (-1.65) | | |
| RQ*EBTP | | | 0.039*** (5.23) | | |
| PS | | | -0.001 (-0.71) | | |
| PS*EBTP | | | 0.045*** (3.19) | | |
| GT | | | 0.006* (1.73) | | |
| GT*EBTP | | | -0.267*** (-4.32) | | |
| DP | | | | -0.008** (-2.32) | |
| DP*EBTP | | | | 0.206** (2.45) | |
| BN1 | | | | 0.0001 (0.02) | |

Table 6. Effect of Ownership, Institutional Quality and Foreign Bank Presence on Income Smoothing

| | | | | |
|---|---|---|---|---|
| BN1*EBTP | | | -0.021 | |
| | | | (-0.25) | |
| BN2 | | | 0.016*** | |
| | | | (6.29) | |
| BN2*EBTP | | | -0.405*** | |
| | | | (-9.61) | |
| BN3 | | | 0.003 | |
| | | | (1.01) | |
| BN3*EBTP | | | -0.043 | |
| | | | (-0.49) | |
| GS | | | -0.015** | |
| | | | (-2.22) | |
| GS*EBTP | | | 0.383** | |
| | | | (2.19) | |
| GW | | | -0.007* | |
| | | | (-1.93) | |
| GW*EBTP | | | 0.159** | |
| | | | (2.18) | |
| FG1 | | | | -0.004 |
| | | | | (-0.40) |
| FG1*EBTP | | | | -0.004*** |
| | | | | (-4.58) |
| Adjusted $R^2$ | 67.00 | | 66.33 | 35.89 | 61.25 |
| F-statistic | 10.02 | | 11.72 | 34.61 | 9.28 |
| Durbin-Watson | 1.88 | | 2.10 | 0.802 | 1.92 |
| Sarjan (J-statistic) | | 43.79 | | | |
| P-value | | 0.606 | | | |
| AR(1) | | 0.012 | | | |
| AR(2) | | 0.092 | | | |
| Observations | 7040 | 6932 | 7021 | 7014 | 6995 |

T-Statistics are reported in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 level, respectively. All regressions include bank and year fixed effect, and standard errors are clustered. FOLS = Fixed effect panel regression estimation. GMM = GMM regression is based on Arellano and Bond (1991) first-difference GMM estimator and includes first-difference and period fixed effect. The GMM panel estimator controls for potential endogeneity by using the lagged values of the explanatory variables as instruments in the GMM model. GMM standard errors are clustered.

## 4.3. Further Analyses

### 4.3.1. Interaction: Institutional Quality and Foreign bank presence

We expect some complementarity between institutional quality and foreign bank presence because African countries with greater institutional quality can pass laws and regulations that increase competition among banks. They can do this by encouraging foreign bank entry whose presence can improve the efficiency of financial intermediation in the country (Lensink and Hermes, 2004). Foreign banks can introduce new financial services and stimulate domestic banks to develop new services to improve the efficiency of financial intermediation of the domestic financial system which, in turn, would lead to reduced cost, improved disclosure quality, increased efficiency, greater availability, and diversity of financial services through competition (Lensink and Hermes, 2004). Accordingly, we interact EBTP with the foreign bank presence variable (FG1) and the institutional quality variables (COC, RS, RQ, PS, VA and GT). The results are reported in Table 7. The FG1*EBTP is negative and significant; however, when we interact foreign bank presence with the institutional quality variables, the FG1*COC*EBTP, FG1*PS*EBTP, FG1*GT*EBTP and FG1*VA*EBTP coefficients are all positive and significant. The results imply that bank income smoothing using LLP is pronounced in African countries that simultaneously have greater foreign bank presence and quality institutions such as greater corruption control, government effectiveness, political stability and accountability; but income smoothing is reduced in African countries that simultaneously have greater foreign bank presence and strong regulatory quality.

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Table 7. Moderating role of institutional quality and foreign bank presence on bank income smoothing using loan loss provisions

| Variables | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | GMM | GMM | GMM | GMM | GMM | GMM |
| | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| LLPt-1 | -0.138*** | -0.304** | -0.279*** | -0.325** | -0.287*** | -0.255*** |
| | (-3.38) | (-6.72) | (-5.77) | (-6.52) | (-5.18) | (-4.65) |
| EBTP | 1.304*** | 0.626*** | 0.899*** | 0.965*** | 1.054*** | 0.505** |
| | (6.39) | (3.21) | (3.12) | (3.53) | (4.22) | (2.19) |
| NPL | 0.199*** | 0.216*** | 0.321*** | 0.333*** | 0.316*** | 0.227*** |
| | (5.76) | (7.46) | (8.99) | (7.14) | (8.68) | (7.41) |
| LOAN | -0.005 | 0.008** | -0.012 | -0.0003 | 0.003 | 0.002 |
| | (-0.86) | (2.41) | (-1.53) | (-0.05) | (0.35) | (0.22) |
| LOTA | -0.029*** | -0.015 | -0.037*** | -0.041*** | -0.038*** | -0.021** |
| | (-2.59) | (-1.56) | (-2.66) | (-2.76) | (-3.16) | (-2.43) |
| CAP | -0.043 | -0.093*** | -0.165*** | -0.102*** | -0.155*** | -0.083*** |
| | (-1.37) | (-2.81) | (-4.45) | (-2.57) | (-4.13) | (-3.48) |
| SIZE | -0.008* | -0.014*** | 0.003 | -0.011*** | -0.005 | -0.013*** |
| | (-1.95) | (-3.42) | (0.58) | (-2.60) | (-0.96) | (-3.37) |
| ΔGDP | 0.045 | -0.028 | -0.149*** | -0.146*** | -0.187*** | -0.079** |
| | (0.82) | (-0.64) | (-2.96) | (-2.92) | (-3.48) | (-2.25) |
| FG1 | 0.002*** | 0.001*** | 0.001*** | 0.001*** | 0.002*** | 0.002*** |
| | (5.17) | (3.20) | (2.69) | (3.04) | (5.32) | (5.75) |
| VA | -0.071*** | | | | | |
| | (-3.33) | | | | | |
| VA*EBTP | -3.085*** | | | | | |
| | (-11.42) | | | | | |
| FG1*EBTP | -0.011*** | -0.001 | -0.007 | -0.009** | -0.012*** | 0.003 |
| | (-3.29) | (-0.19) | (-1.59) | (-1.97) | (-2.73) | (0.62) |
| FG1*VA*EBTP | 0.058*** | | | | | |
| | (8.79) | | | | | |
| COC | | -0.041*** | | | | |
| | | (-3.39) | | | | |
| COC*EBTP | | -1.865*** | | | | |
| | | (-5.31) | | | | |
| FG1*COC*EBTP | | 0.034*** | | | | |
| | | (5.52) | | | | |
| RS | | | -0.001 | | | |
| | | | (-0.44) | | | |
| RS*EBTP | | | 0.054 | | | |
| | | | (0.98) | | | |
| FG1*RS*EBTP | | | -0.001 | | | |
| | | | (-0.56) | | | |
| RQ | | | | -0.001 | | |
| | | | | (-1.57) | | |
| RQ*EBTP | | | | 0.192*** | | |
| | | | | (3.97) | | |
| FG1*RQ*EBTP | | | | -0.005*** | | |
| | | | | (-3.73) | | |
| PS | | | | | -0.016*** | |
| | | | | | (-3.34) | |
| PS*EBTP | | | | | -0.178** | |
| | | | | | (-2.11) | |
| FG1*PS*EBTP | | | | | 0.006** | |

|  | | | | | | (2.22) |
|---|---|---|---|---|---|---|
| GT | | | | | | -0.038* |
| | | | | | | (-1.67) |
| GT*EBTP | | | | | | -1.815*** |
| | | | | | | (-7.74) |
| FG1*GT*EBTP | | | | | | 0.035*** |
| | | | | | | (7.75) |
| Sarjan (J-statistic) | 39.65 | 39.10 | 40.61 | 37.52 | 41.37 | 38.79 |
| P-value | 0.574 | 0.598 | 0.532 | 0.636 | 0.498 | 0.61 |
| AR(1) | 0.017 | 0.021 | 0.004 | 0.003 | 0.005 | 0.002 |
| AR(2) | 0.064 | 0.026 | 0.074 | 0.081 | 0.041 | 0.013 |
| Observations | 7005 | 7005 | 7005 | 7005 | 7005 | 7005 |

T-Statistics are reported in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 level, respectively. GMM regression is based on Arellano and Bond (1991) first-difference GMM estimator and includes first-difference and period fixed effect. The GMM panel estimator controls for potential endogeneity by using the explanatory variables as instruments in the GMM model. GMM standard errors are clustered. VA = voice and accountability index. COC = control of corruption index. PS = political stability and absence of violence/terrorism index. GT = government effectiveness index, RQ = regulatory quality index. RS = Rule of law index. FG1 = number of foreign banks domiciled in the country.

### 4.3.2. Transient Incentives

Another non-accounting factor that African bank managers may consider is the state of the economy which could affect the level of reported profit. Economic recessions and booms in African countries can create incentives for bank managers to smooth income. Laeven and Majnoni (2003) demonstrate that banks can overstate LLP during bad economic periods because loan defaults are higher during recessions and understate LLP during good economic times because loan defaults are lower during good economic times. Overstating LLP during bad times will further reduce bank profit and deplete bank capital (Bikker and Metzmakers, 2005). One way African banks might deal with this problem is to smooth income upward during recessions and smooth income downward during booms. Our curiosity leads us to test whether African banks survive recessions or economic downturns by smoothing income upwards during recessions. We test for transient earnings and economic incentives that may influence African banks to smooth income. We introduce the PT1 binary variable to capture periods when African banks have positive (non-negative) earnings. The PT1 binary variable takes the value '1' if EBTP is positive and zero otherwise. We also introduce the PT2 binary variable to capture periods when African banks have high earnings. The PT2 binary variable takes the value '1' if EBTP is above-the-median EBTP and zero otherwise. The results are reported in Table 8. The PT1*EBTP and PT2*EBTP coefficients are negative and significant in columns 1, 2, 3 & 4. This implies that the use of loan loss provisions to smooth income is reduced when African banks are more profitable or when they have positive (or non-negative) earnings.

Furthermore, we take into account the general notion that African banks are generally more profitable during economic boom periods. Accordingly, we test whether the propensity to use LLP to smooth income simultaneously depends on the state of the economy and on the size of bank earnings. The BOOM*PT1*EBTP and BOOM*PT2*EBTP coefficient is positive and significant, implying that African banks use LLP to smooth income when they are more profitable during economic boom periods. Liu and Ryan (2006) find similar result for US banks. Also, the REC*PT1*EBTP and REC*PT2*EBTP coefficient is positive and significant, implying that African banks use LLP to smooth income when they are more profitable during recessionary periods.

| Table 8. Transient economic and earnings incentives | | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| | GMM | GMM | GMM | GMM |
| | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| LLPt-1 | -0.062 (-1.25) | -0.232*** (-4.44) | -0.204*** (-3.84) | -0.301*** (-6.44) |
| EBTP | 3.884*** (8.22) | 1.825*** (5.07) | 1.941*** (7.09) | 1.151*** (8.24) |
| NPL | 0.128*** (4.05) | 0.242*** (6.07) | 0.261*** (6.49) | 0.308*** (10.49) |
| LOAN | -0.021*** (-3.35) | -0.018** (-2.56) | -0.022*** (-3.09) | -0.026** (-3.77) |
| LOTA | 0.018* (1.86) | 0.004 (0.26) | 0.019 (1.51) | 0.010 (0.91) |
| CAP | -0.079*** (-2.75) | -0.199*** (-6.38) | -0.161*** (-5.67) | -0.189*** (-6.41) |
| SIZE | 0.001 (0.19) | -0.006* (-1.89) | -0.002*** (-0.79) | -0.003 (-1.08) |
| ΔGDP | -0.094** (-2.32) | -0.026 (-0.41) | -0.033 (-0..67) | -0.044 (-0.79) |
| PT1 | -0.029** (-2.49) | | -0.028** (-2.06) | |
| PT1*EBTP | -3.672*** (-7.67) | | -1.827*** (-6.53) | |
| PT2 | | 0.042*** (5.07) | | 0.029*** (4.13) |
| PT2*EBTP | | -1.824*** (-5.11) | | -1.049*** (-6.17) |
| BOOM | -0.007 (-1.08) | -0.005 (-0.58) | | |
| BOOM*EBTP | -2.630*** (-4.51) | -0.811* (-1.97) | | |
| REC | | | -0.037*** (-2.67) | -0.014 (-1.29) |
| REC*EBTP | | | -3.491** (-2.15) | -0.042 (-0.42) |
| PT1*BOOM*EBTP | 2.731*** (4.69) | | | |
| PT2*BOOM*EBTP | | 0.955*** (2.65) | | |
| PT1*REC*EBTP | | | 3.879** (2.32) | |
| PT2*REC*EBTP | | | | 0.338** (2.18) |
| J-statistic | 41.20 | 32.01 | 32.65 | 37.12 |
| P(J-Stat) | 0.51 | 0.867 | 0.849 | 0.684 |
| AR(1) | 0.003 | 0.001 | 0.002 | 0.002 |
| AR(2) | 0.089 | 0.006 | 0.456 | 0.488 |
| Observations | 7025 | 7025 | 7025 | 7025 |

T-Statistics are reported in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 level, respectively. GMM regression is based on the Arellano and Bond (1991) first-difference GMM estimator and includes first-difference and period fixed

effect. The GMM panel estimator controls for potential endogeneity by using instruments based on lagged values of the explanatory variables in the model. GMM standard errors are clustered. PT1 = dummy variable that take the value 1 if EBTP is positive and zero otherwise. PT2 = dummy variable that take the value 1 if EBTP is above-the-median, reflecting high earnings, and zero otherwise. REC = dummy variable that takes the value 1 if ΔGDP is negative and zero otherwise, reflecting recessionary periods or economic downturns. BOOM = dummy variable that takes the value 1 if ΔGDP is above-the-median ΔGDP and zero otherwise, reflecting economic booms or periods of economic prosperity. Other bank level variables remain as previously defined.

## 4.4. Robustness Checks

We run a number of additional tests to check the robustness of our findings. First, we make sure that the evidence for income smoothing is robust. We use the GMM estimation to re-test the income smoothing hypothesis. The EBTP coefficient in Column 2 of Table 6 confirms that the earlier result in Column 1 of Table 6 is robust. Second, we check whether the results are robust to alternative proxies for foreign bank presence. Following Claessens et al (2001) and Lensink and Hermes (2004), we introduce a new variable 'FG2' to measure foreign bank presence. FG2 is the ratio of foreign bank assets to total banking assets in the country. We re-estimate the regression in Column 1 & 2 of Table 9, and found that the FG2 is insignificant. This implies that the FG1 variable in Table 7 has a significant effect on income smoothing than FG2 in Table 9. Third, considering that stock market capitalisation to GDP ratio is also an indicator of financial development, we introduce the 'SG' variable that measure the level of stock market development as a proxy for financial development. We estimate the regression and found that the SG coefficient is negative but not significant in Table 9. Four, in a non-tabulated analysis, we change the CAP variable from equity to total asset, and we use the total regulatory capital ratio (CAR) as in Curcio and Hasan (2015), and the results remain the same [the result is available on request]. However, the resulting number of observations for the CAR variable are extremely low and reduces the degrees of freedom for the econometric estimation. The low number of observations is due to the fact that many African banks did not adopt Basel capital rules during the early years of our sample period. This further justifies the choice of using the equity to total asset ratio which is considered to be more appropriate for the analyses since equity to asset ratio is a common capital denominator across all African banks. Fifth, we divide the full sample into several sub-sample categories according to ownership to check whether income smoothing is present when African banks are profitable

during booms, in the sub-samples. The BOOM*PT2*EBTP coefficient is positive and significant in all subsamples in Table 10. This is consistent with the earlier result reported in Table 8. Finally, we estimate the regression by country in Table 11 and find that the EBTP coefficient is significant in some of the African countries, implying that income smoothing using LLP is present in some African countries and not present in other African countries.

| Table 9. Alternative foreign bank presence proxy and stock market development | | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| | FOLS | GMM | FOLS | GMM |
| Variables | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| C | -0.001 (-0.04) | | 0.034 (0.79) | |
| $LLP_{t-1}$ | | 0.117 (0.28) | | -0.080*** (-2.82) |
| EBTP | 0.021 (0.71) | 0.476 (1.38) | 0.133*** (2.71) | 0.264*** (12.09) |
| NPL | 0.304** (2.34) | 0.139*** (3.66) | 0.078*** (4.84) | 0.072*** (4.77) |
| LOAN | -0.008*** (-3.39) | -0.019*** (-3.40) | -0.006* (-1.74) | -0.022*** (-7.22) |
| LOTA | 0.012** (2.56) | -0.011 (-1.28) | 0.009* (1.78) | 0.017*** (3.11) |
| CAP | -0.042*** (-3.76) | -0.062*** (-2.99) | -0.039*** (-3.13) | -0.097*** (-8.59) |
| SIZE | -0.002 (-0.75) | 0.005 (1.56) | -0.002 (-0.67) | -0.007*** (-5.67) |
| ΔGDP | -0.012 (-0.86) | -0.052 (1.51) | -0.037** (-2.09) | -0.066*** (-5.68) |
| FG2 | 0.001 (0.23) | 0.024*** (3.59) | | |
| FG2*EBTP | -0.0037 (-0.89) | -0.034 (-0.42) | | |
| SG | | | 0.0001* (1.81) | 0.0001*** (3.17) |
| SG*EBTP | | | -0.0001 (-1.55) | -0.0001** (-2.16) |
| Adjusted $R^2$ | 79.33 | | 63.50 | |
| F-statistic | 14.77 | | 8.48 | |
| Durbin-Watson | 1.76 | | 1.79 | |
| Sarjan (J-statistic) | | 33.25 | | 48.46 |
| AR(1) | | 0.005 | | 0.002 |
| AR(2) | | 0.234 | | 0.567 |
| P-value | | 0.256 | | 0.335 |
| Observations | 7129 | 7028 | 7128 | 7129 |

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| | Table 10. Subsample analysis: Income smoothing when African banks are profitable during economic booms | | |
|---|---|---|---|
| | Banks with dispersed ownership subsample | Banks with moderate concentration subsample | Banks with strong concentration |
| | (1) | (2) | (3) |
| | GMM | GMM | GMM |
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| LLPt-1 | 0.234*** | 0.083*** | 0.314*** |
| | (5.66) | (6.17) | (5.75) |
| EBTP | 0.432*** | -0.123 | 0.278*** |
| | (9.19) | (-0.69) | (6.39) |
| NPL | 0.102** | 0.566*** | -0.002 |
| | (15.45) | (8.29) | (-0.15) |
| LOAN | -0.004*** | -0.103 | -0.067*** |
| | (-3.13) | (-0.74) | (-8.23) |
| LOTA | 0.001 | -0.019*** | 0.081*** |
| | (0.62) | (-5.67) | (13.27) |
| CAP | -0.094*** | -0.125*** | -0.357*** |
| | (-6.78) | (-7.37) | (-4.32) |
| SIZE | -0.002 | 0.009*** | -0.234*** |
| | (-1.34) | (2.84) | (-8.50) |
| ΔGDP | -0.018*** | -0.079*** | -1.058 |
| | (-4.11) | (-5.24) | (-1.34) |
| BOOM | 0.004** | -0.002 | -0.113*** |
| | (2.20) | (-1.93) | (-7.79) |
| PT2 | 0.001 | -0.008** | -0.003 |
| | (0.56) | (-2.57) | (-1.99) |
| BOOM*PT2*EBTP | 0.068*** | 0.181*** | 0.079*** |
| | (2.66) | (3.67) | (4.64) |
| | | | |
| J-Statistic | 34.12 | 35.01 | 45.79 |
| P-value | 0.551 | 0.331 | 0.445 |
| AR(1) | 0.067 | 0.109 | 0.019 |
| AR(2) | 0.323 | 0.424 | 0.392 |
| Observation | 4501 | 4309 | 4544 |

GMM regression is based on the Arellano and Bond (1991) first-difference GMM estimator and includes first-difference and period fixed effect. GMM standard errors are clustered by year.

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| | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | |
|---|---|---|---|---|---|---|---|---|---|
| Countries | c | EBTP | NPL | LOTA | LOAN | CAP | SIZE | ΔGDP | Adj R$^2$ |
| South Africa | -0.004 (-0.48) | 0.402*** (4.73) | 0.301*** (4.74) | 0.004 (1.38) | 0.005 (0.43) | -0.156*** (-2.93) | -0.987 (-0.19) | -0.433*** (-2.91) | 76.67 |
| Ghana | 0.051 (1.46) | 0.034 (0.55) | 0.276*** (4.55) | 0.015** (2.37) | -0.004* (-1.89) | -0.026 (-0.78) | -0.003 (-1.82) | -0.429 (-0.91) | 37.82 |
| Egypt | -0.007 (-0.56) | 0.443* (1.68) | 0.034*** (3.88) | 0.015*** (3.29) | -0.003 (-0.78) | -0.047*** (-2.78) | -0.498 (-0.91) | 0.626 (0.68) | 45.96 |
| Tunisia | 0.001 (0.06) | -0.997 (-1.04) | 0.123** (2.07) | -0.007 (-0.26) | -0.032* (-1.67) | 0.232 (1.45) | 0.045 (0.56) | -0.456 (-0.38) | 31.02 |
| Morocco | 0.077*** (3.91) | 0.456*** (8.89) | 0.007 (0.18) | -0.018 (-0.12) | -0.043*** (-3.68) | -0.801** (-2.13) | -0.045*** (-3.51) | -0.027 (-1.45) | 54.28 |
| Kenya | 0.036* (1.78) | 0.345 (1.02) | 0.033*** (7.07) | 0.006** (1.87) | -0.041 (-1.50) | -0.207* (-1.72) | -0.002** (-2.05) | -0.324 (-1.04) | 39.58 |
| Uganda | 0.144 (1.41) | -0.078** (-2.52) | 0.144** (2.44) | 0.011* (1.68) | -0.035 (-1.26) | -0.014 (-1.23) | -0.005 (-0.98) | -0.132** (-2.47) | 27.13 |
| Zambia | -0.006 (-0.25) | -0.008 (-0.23) | 0.013 (0.57) | 0.033*** (3.48) | -0.103 (-0.54) | -0.129 (-1.38) | 0.003 (-0.76) | 0.479*** (4.24) | 16.93 |
| Tanzania | 0.002 (0.38) | -0.014 (-0.32) | 0.234*** (8.37) | -0.001 (-0.81) | -0.106 (-1.50) | 1.025 (1.34) | -0.003 (-0.28) | -0.021 (-0.78) | 48.28 |
| Ethiopia | -0.036** (-2.69) | 0.134** (2.58) | 0.008 (1.45) | 0.043*** (9.55) | -0.112*** (-4.54) | -0.012 (-0.34) | 0.002* (1.85) | -0.048 (-1.23) | 67.17 |
| Togo | -0.171* (-1.89) | 1.402 (1.58) | -0.067 (-0.33) | 0.257 (1.42) | -0.125 (-0.45) | -0.249 (-1.08) | 0.006 (1.47) | 0.492 (1.24) | 57.48 |
| Angola | -0.012 (-0.24) | 0.143*** (4.44) | 0.067** (2.34) | 0.433** (2.19) | -0.108 (-1.06) | -0.016 (-1.52) | 0.003 (0.45) | -0.067** (-2.28) | 67.28 |
| Cameroun | 0.029 (0.11) | 0.908 (1.08) | 0.198 (1.45) | -0.132 (-0.85) | -0.206 (-0.56) | 0.175* (1.95) | -0.001 (-0.89) | 0.198 (1.51) | 63.77 |
| Algeria | -0.002 (-0.11) | 0.145*** (4.94) | 0.219*** (3.92) | -0.203 (-0.56) | 0.208 (1.40) | -0.019 (-1.52) | -0.009 (-0.03) | 0.345*** (2.78) | 68.66 |
| Mauritius | 0.008 (0.26) | 0.566 (0.89) | 0.340*** (3.65) | 0.001 (0.25) | 0.502 (0.43) | 0.102 (0.32) | -0.555 (-0.67) | 0.051 (1.41) | 23.87 |
| Namibia | 0.028* (1.94) | 0.045 (1.45) | 0.108 (0.87) | 0.003 (1.47) | -0.046* (-1.75) | 0.056*** (6.07) | -0.008** (-2.23) | 0.026*** (3.05) | 54.43 |
| Botswana | -0.018 (-0.93) | 0.299*** (3.76) | -0.014*** (-4.99) | 0.110 (1.21) | 0.008 (0.89) | 0.039*** (6.90) | 0.056 (0.17) | -0.008 (-0.42) | 56.67 |
| Senegal | -0.028 (-0.72) | -0.004 (-0.04) | 0.046 (0.99) | 0.215 (0.37) | -0.108 (-0.49) | -1.151*** (-4.18) | 0.006 (1.45) | 0.304 (1.56) | 34.43 |
| Nigeria | 0.045 (0.23) | 0.038 (0.35) | 0.254 (1.58) | 0.128*** (2.88) | -0.045 (-3.28) | -0.348 (-0.76) | -0.026 (-0.45) | -0.056 (-0.67) | 23.76 |
| Malawi | 0.015 (0.78) | -0.289 (-1.23) | 0.238** (2.15) | -0.109 (-1.36) | -0.122* (-2.76) | 0.133 (1.55) | 0.087 (0.67) | -0.068 (-0.43) | 45.78 |
| Mozambique | 0.035*** (2.68) | -0.024 (-0.78) | 0.177*** (4.87) | 0.106 (1.44) | -0.104 (-0.50) | -0.001 (-0.14) | -0.056*** (-3.56) | -0.145 (-0.87) | 78.76 |

Panel least square regression with standard errors clustered by year. ***, ** and * represent statistical significance at the 1%, 5% and 10% levels. We run regression for the 21 African countries and the regression include White's robust standard error correction. As can be observed, EBTP coefficient is positive for banks in 14 African countries (i.e., South Africa, Ghana, Egypt, Morocco, Kenya, Ethiopia, Togo, Angola, Cameroun, Algeria, Mauritius, Namibia, Botswana and Nigeria), and is significant for banks in seven African countries (i.e., South Africa, Egypt, Morocco, Ethiopia, Angola, Algeria and Botswana). In contrast, EBTP coefficient is negative for banks in 7 African countries (i.e., Tunisia, Uganda, Zambia, Tanzania, Senegal, Malawi and Mozambique), and is significant for banks in Uganda.

## 5. Conclusion

We investigated the influence of foreign bank presence, ownership and institutional quality differences on the use of loan loss provisions to smooth reported earnings by African banks. The study revealed that African banks use LLPs to smooth their income, especially when they are more profitable during economic boom or recession. Income smoothing is persistent (i) among banks with a widely dispersed ownership, (ii) among banks with strong government ownership and (iii) among banks with weak government ownership. Income smoothing is also persistent in African countries that have greater corruption control, better regulatory quality, and political stability. In contrast, moderate concentrated ownership reduces bank income smoothing. Bank income smoothing is also reduced in African countries that have strong rule of law, high government effectiveness, strong foreign bank presence and strong voice and accountability institutions. To sum up, apart from the relevance of institutional factors, the country-specific results highlight the relevance of unique national characteristics that explain income smoothing differences in the business environment across African countries.

The findings have a number of implications. The result that ownership significantly influences the extent of bank income smoothing using LLP can provide some feedback to bank regulators across African countries who are already in the process of enforcing bank ownership structures that would increase shareholders' monitoring of bank managers' financial reporting behaviour. Enforcing such rules can discourage the opportunistic manipulation of reported accounting numbers in bank financial reporting. Our findings are also useful to international accounting standards-setters because it can provide some feedback to help standards-setters evaluate the effectiveness of foreign bank presence in improving accounting disclosure quality in developing countries that are considered to have weaker enforcement of accounting standards (or rules) compared to developed countries. Finally, the finding that LLPs are significantly influenced by the level of earnings rather than by credit risk considerations, underlines the need for bank supervisors to increase their monitoring and scrutiny of the loan loss provisioning practices of banks across African countries.

This study has some limitations. First, our focus on bank income smoothing using accruals, in this case loan loss provisions, ignores income smoothing that is achieved using real techniques such as sale of fixed assets. Banks in African countries can use real techniques to smooth

income when strict prudential regulation and strict accounting standards discourage or prohibit the use of accruals to smooth income. In this study, we did not consider bank income smoothing using real techniques. Second, we did not explicitly control for cross-country differences in the strictness of banking supervision. This limitation is due to the difficulty in quantifying and measuring the extent of supervisory strictness. Bank supervision may influence the size of loan loss provisions in African banks, and oftentimes, strict bank supervisors may require banks to keep high provisions, or may require banks to be forward-looking in their loan loss provisioning decisions. These limitations create some opportunities for future research.

Future studies can investigate other cross-country factors that influence the quality of financial reporting in African countries. Future studies can investigate whether the need to smooth bank income is influenced by the forced removal of bank executives by the bank regulator. Most regulators in African countries tend to remove the senior management of failing or weak banks, and the regulator will take over the management of the bank until the bank is revived and becomes strong again after which the revived bank will be handed over to its new owners or to a new senior management. Finally, future studies can investigate the impact of the expect credit loss (ECL) model on the ability of African banks to smooth income using loan loss provisions.

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