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Abstract

This study investigates bank income smoothing, focusing on the effect of corruption on the extent of income smoothing by African banks. I find that banks use loan loss provisions to smooth positive (non-negative) earnings particularly in the post-2008 crisis period and this behaviour is reduced by strong investor protection. Also, I find that banks in highly corrupt environments smooth their positive (non-negative) earnings as opposed to smoothing the entire profit distribution. Finally, cross-country variation in bank income smoothing is observed. The findings have implications.

JEL code: G21, M41, O55, N27, K41

Keywords: Loan loss provisions, Earnings Management, Investor Protection, Corruption, Income Smoothing.

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1. Introduction

The question I address is whether African banks use loan loss provisions to smooth earnings and whether this behaviour is influenced by the level of corruption and other institutional factors. Corruption is a major socio-political factor that affect productivity in any economy. Corruption is an important socio-political problem that cannot be ignored, and income smoothing is also an important financial reporting property that auditors, bank managers, and regulators care about. So far, the impact of corruption on bank performance has received little attention in the banking literature, and the impact of corruption on bank income smoothing particularly in Africa is yet to be known.

Income smoothing by banks is important to bank regulators, central banks, auditors and standard setters because it can have positive effects for financial system stability and can also have negative effects for transparency in financial reporting (Acharya and Ryan, 2016; Ozili and Outa, 2017; Ozili and Thankom, 2018). One tool that banks can use to smooth income is loan loss provisions. The bank income smoothing literature identify loan loss provisions as an important tool used by banks to smooth income due to its direct impact on bank net interest margin and its role in mitigating credit risk arising from bank lending[1]; therefore, I focus on loan loss provisions as the income smoothing tool in this study, although loan loss provision is not the only financial number that bank managers can use to smooth income to achieve some desired financial reporting outcome.[2]

Previous African studies have focused on, for example, the determinants of loan loss provisions and how loan loss provisions affect bank lending (see, Ozili, 2018); the implications of bank earnings management for the funding and diversification strategy of banks (see, Amidu and Kuipo, 2015); and the effect of audit quality on bank income smoothing (see, Ozili, 2017a). These studies did not consider the role of socio-political factors, particularly corruption, for the persistence of income smoothing in African banks.

In contrast to previous studies, I focus on the role of corruption for the persistence of income smoothing by African banks because corruption is a major socio-political issue affecting businesses in Africa particularly banks. For instance, bank executives (or managers) in Africa often have political ties to top government officials and business elites, and tend to lend favourably to their 'friends in politics and business' in order to gain favour from the ruling elites. Similarly, bank executives (or managers) can grant special loans to controlling shareholders in the bank who in return will extend the bank executive/manager's tenure in the bank. The loans and advances given to these individuals, or given to their businesses, usually do not undergo the rigorous loan screening processes and collateral assessment requirement in banks. Subsequently, these loans would become non-performing, and is written-off as a loss against bank profit. To hide such losses from regulators and minority shareholders, bank managers have incentives to smooth income to hide their corrupt lending practices. Generally, in the African banking environment, loans tend to be issued to borrowers not only based on credit risk considerations, but also based on favourism and other institutional and socio-political considerations.

Institutional quality is also important and can help to limit manager's discretion in opportunistic financial reporting (Leuz et al, 2003). Yet, the quality of institutions in Africa is low compared to the quality of institutions in Europe due to differences in the level of development, enforcement levels, etc. Also, the growing need for African countries to establish institutions that promote 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.

[1] Cavallo and Majnoni (2002), Kanagaretnam et al. (2004), Laeven and Majnoni (2003), Bikker and Metzemakers (2005), Liu and Ryan (2006), Anandarajan et al. (2007), Fonseca and Gonzalez (2008), Ozili (2017a), Ozili and Outa (2017) and Ozili and Thankom (2018).
[2] Other income smoothing tool include available for sale securities (Barth et al, 2017).

I employ bank data from 19 African countries during the 2004 to 2013 period. The results reveal that there is cross-country variation in the use of loan loss provisions for income smoothing purposes. African banks in corrupt environments tend to smooth their positive earnings more aggressively but this behaviour is mitigated by strong investor protection. The findings have implications for the micro-prudential supervision of banks. Firstly, regulators should not rely solely on loan loss provisions and reported earnings when assessing the risk exposure of African banks due to banks' ability to hide risks by smoothing their income, rather bank regulators should consider a number of other factors including the institutional factors and relevant socio-political factors in the banking environment. Secondly, strong institutions can help to reduce the opacity of bank's financial reporting. Policy makers should develop policies to strengthen existing institutions and ensure that they have the appropriate enforcement powers to function effectively. Finally, the findings could prove to be valuable to investors since they must take into consideration the quality of country legal framework and institutions before making investment decisions. Investors should demand supplementary information and legal protection in order to reach a better investment decision and outcomes.

This study contributes to the literature in the following ways. Firstly, this study contributes to the bank income smoothing literature (for example, Kilic et al, 2012; Bouvatier et al, 2014; Ozili and Outa, 2017; and Ozili and Thankom, 2018). These studies suggest that banks have incentives to reduce high earnings and to increase low earnings so that reported earnings is never too high or too low. Focussing on African banks, the study contributes to this literature by showing that banks may prefer to smooth only positive (non-negative) earnings rather than the entire earnings distribution. Secondly, this study contributes to the literature that associate income smoothing with the opacity of reported earnings (see, Bhattacharya et al, 2003; Riahi-Belkaoui, 2004; Riahi-Belkaoui and AlNajjar, 2006). A major argument in this literature is that smoothed earnings yield reported earnings that do not reflect the true underlying economic reality of firms, therefore, income smoothing produces non-transparent earnings which is a form of corruption, at least from an ethical accounting viewpoint. I add to this literature by showing that the association between bank income smoothing (or opaque earnings) and corruption is only significant for positive earnings, particularly, in Africa. Finally, this study contributes to the broad earnings management literature. Income smoothing is considered to be a type of earnings management (e.g Ozili, 2017a; Leuz et al., 2003; Shen and Chih, 2005), and I observe that earnings management, or income smoothing, is also prevalent among banks in Africa, which is consistent with previous studies that find similar evidence for banks in Europe and Asia (Packer and Zhu, 2012; Curcio and Hasan, 2015; Ozili and Thankom, 2018).

The rest of the paper is organised as follows. Section 2 present the literature review and develops the hypothesis. Section 3 presents the sample selection criteria and methodology. Section 4 report and discuss the empirical results. Section 5 concludes. The term 'income smoothing' and 'earnings smoothing' are used interchangeably throughout this paper.

2. Literature Review and Hypothesis Development

2.1. Literature

Income smoothing is the process of minimizing the fluctuation of reported earnings over time (Wall and Koch, 2000; Ozili and Outa, 2017). The income smoothing hypothesis argue that banks can decrease high earnings in good years and increase low earnings in bad years to generate stable, or smoother, earnings over time (Ozili and Outa, 2017; Skala, 2015). Income or earnings smoothing may be achieved using one or more accounting numbers to minimize the variation of reported earnings over time.

An extensive literature document evidence for income smoothing using loan loss provisions, and these studies conclude that bank managers can use their discretion in provisioning to smooth reported earnings to achieve some desired earnings outcome (e.g. Kanagaretnam et al, 2004; Fonseca and Gonzalez, 2008; Leventis et al, 2011; El Sood, 2012; Ozili and Thankom, 2018). For instance, multi-country studies document evidence that banks use provisions to smooth income after controlling for country-level differences. For example, Fonseca and Gonzalez (2008) examine income smoothing practices in a cross-country context and find that bank income smoothing behaviour decreases in countries with strong investor protection, strict accounting disclosure, restrictions on bank activities, official and private supervision. In addition, they find that income smoothing increases with market-orientation and level of development of the financial system. Similarly, Shen and Chih (2005) show that strong investor protection and stringent accounting disclosure can reduce bank earning management. Kanagaretnam et al (2014) examine the effect of legal, extra-legal and political institutional factors on earnings quality of banks across countries during the 1993 to 2006 period. They find that earnings quality is higher in countries with stronger legal, extra-legal and political institutional structures. they also find that banks in countries with stronger institutions are less likely to report losses, have lower loan loss provisions, and higher balance sheet strength during the 2007–2009 crisis period.

European studies, for example, Leventis et al (2011) examine the provisioning practices of 91 listed European banks and find that European banks engage in income smoothing but this behaviour was significantly reduced after mandatory IFRS adoption. Olszak et al (2017) find that strong investor protection and more restrictive bank capital regulations reduce the procyclicality of LLP in banks while Ozili and Thankom (2018) find that income smoothing is more evident among systemic banks than in non-systemic European banks. Bouvatier et al (2014) examine European banks and find that income smoothing is pronounced among European banks with concentrated ownership while income smoothing is reduced in European countries with strict regulations. Curcio and Hasan (2015) examine Euro area and non-Euro area banks, and find that higher investor protection significantly reduces the incentives to smooth earnings for Euro Area banks; also, during the recent financial crisis, Euro Area bank managers were much more concerned with their credit portfolio quality and did not use loan loss provisions for income smoothing or for other discretionary purposes.

In the Asian region, Wu et al. (2015) find that Chinese banks with foreign investor ownership engaged in income smoothing to a greater extent compared to banks without foreign investor ownership. Curcio et al (2014) find that Chinese banks smooth income during the financial crisis. However, Bryce et al. (2015) find that Vietnamese banks did not engage in income smoothing. The results are mixed among Asian studies, and these studies did not consider the role of socio-political factors in influencing bank income smoothing. Packer and Zhu (2012) also find evidence for income smoothing in a regional analysis of Asian banks. Similar studies include Ozili (2018) and Bonin and Kosak (2013). Vishnani et al (2019) investigate income smoothing using provisions in India and find that Indian banks smooth their profits over time.

In Africa, Ahmed et al (2014) examine Nigerian banks and find evidence for earnings management using provisions for Nigerian banks, using the magnitude of the residual as indicative of income smoothing in their modelling. Ozili (2015) used similar methodology in the literature and find evidence for income smoothing among listed banks in Nigeria. This study extends this growing literature by examining a wider sample of African countries while controlling for institutional quality and socio-political factors.

Jointly, the studies on LLPs draw inference from the statistical relationship between loan loss provisions and earnings before tax and provisions. A positive and significant coefficient for the earnings before tax and provisions variable is indicative of income smoothing, however, it is unknown whether similar or conflicting evidence may be found among African banks. Few African studies have examined income smoothing practices in a single country context (e.g. Ahmed et al, 2014; Ozili, 2015).

2.2. Hypothesis Development

2.2.1. Investor Protection

Investor protection is defined as the power to expropriate minority shareholders and creditors within the constraints imposed by law (La Porta et al., 2002). The argument for investor protection as an important institutional factor is that the presence of institutions or rules that protect investor's rights can reduce the ability of firm insiders to acquire private control benefits and mitigates the incentive to manipulate accounting earnings because there is little or nothing to conceal from outsiders (Leuz et al, 2003). Therefore, managers in countries with strong investor protection are likely to provide more transparent financial reports to avoid the risk of litigation arising from concealing important information to outsiders; hence, strong investor protection should act as an effective deterrent against earnings management for firms in countries with strong investor protection compared to firms with low investor protection (Van Tendeloo and Vanstraelen, 2008). Given that income (or earnings) smoothing is a form of earnings management, it can be argued that strong investor protection should also limit the extent of bank income smoothing. Therefore, I predict a negative association between investor protection and income smoothing for African banks.

H1: Income smoothing is negatively associated with investor protection

2.2.2. Corruption

The consequence of corruption for accounting quality and bank behaviour is often ignored in the income smoothing literature. Bhattacharya et al (2003) stress that one obvious manifestation of low accounting quality is the high level of earnings opacity. They argue that the quality of accounting in a given country can be measured by three dimensions of earnings opacity – loss avoidance, income smoothing and earnings aggressiveness. In summary, they suggest that earnings are opaque either because a) managers have an incentive to manipulate earnings, b) accounting standards are too loose and, c) the enforcement of standards is very lax; and that banks in corrupt countries can exhibit high degree of non-transparency in financial reporting due to low accountability.

The presence of corruption in a country communicates weak accountability systems that bank managers, politicians and government officials can take advantage of, to divert corporate (or public) resources for private benefits. Bank managers may have some incentives to make bank earnings appear stable over time while perpetuating fraud at the same time to disguise the fraud act. Also, the incentive to smooth income to hide fraudulent accounting practices is likely to be higher in countries where corrupt politicians and government officials directly influence the decisions of African bank managers. Therefore, I predict that bank income smoothing is positively associated with perceived corruption levels (measured as the inverse of perceived corruption index).

H2: Income smoothing is positively associated with perceived corruption levels

On the other hand, if bank executives are concerned that the 'voice and accountability (VA)' environment will encourage protests and whistle-blowing against corporate malpractice and corruption, and if bank executives believe that the VA environment will reward individuals or groups that blow-the-whistle against corruption, bank executives will be more cautious in their earnings management or smoothing practices for fear of being exposed by the media. Corruption studies (such as: Chowdhury, 2004; Goel and Nelson, 2005; Asongu, 2013) argue that laws or institutions that strengthen voice and accountability levels in a country can ensure greater economic and political freedom which further improves the fight against corruption. Therefore, I predict that bank income smoothing will be lower in less corrupt environments.

H3: Income smoothing is negatively associated with high institutional quality which mitigates corruption.

3. Data and Methodology

3.1. Data and Sample Selection Criteria

The data employed is a pooled cross-section and time series data of individual banks' balance sheet items from 19 economies in Africa: Algeria, Angola, Botswana, Cameroun, Egypt, Ethiopia, Ghana, Kenya, Mauritius, Morocco Namibia, Nigeria, Senegal, South Africa, Tanzania, Togo Tunisia, Uganda and Zambia. The sample period examined is from 2004 to 2013. Annual bank data is obtained from four sources: bank-level balance sheet and income statement data is obtained from Van Dijk Bankscope database, and all financial statement data have December 31st year-end. Macroeconomic data on gross domestic product in each jurisdiction were collected from the World Economic Forum archived in World Bank Databank database. Investor protection data is obtained from World Bank's Doing Business Project Database while socio-political data is obtained from Worldwide Governance Indicators (WGI) and Transparency International.

The availability of bank-specific data allows for the investigation of individual banks' provisioning characteristic.[3] No distinction is made between commercial banks and other banks so that a very large sample can be obtained. To clean up the data, similar to the practice of Cavallo and Majnoni (2002) and Laeven and Majnoni (2003), I eliminate extreme outliners in the dataset (e.g. loan growth above 99% and tier 1 Capital above 50%). Secondly, banks that did not have annual data for loan loss provisions were excluded from the sample. Thirdly, banks with observations for crucial variables that are available for fewer than three consecutive years were excluded to control for the quality of bank financial reporting. Fourth, I did not eliminate 2008 bank-year observations to control for the impact of the 2008 financial crisis.[4] The resulting final sample yields 302 African bank samples that provide useful data on loan loss provisions and other crucial variables for 10 years. Table 1 summarises the distribution of sample banks.

[3] . In the data file, there are high number of available observations on bank loan loss provisions while there are fewer number of observation for the bank Tier 1 capital. This is obviously because many countries in Africa have not adopted Basel capital regulations.

[4] At the time of the 2008 financial crisis, African banks were not systemically integrated with the global financial system, hence, there is no reason to believe that balance sheet of African banks were adversely affected by the 2008 crisis. An attempt to eliminate the 2008 bank-year observations for all banks to control for the crisis effect will introduce bias into the analysis by systematically eliminating observations for other banks that were not affected by the financial crisis. Because the authors do not have the resources to accurately identify which banks were affected and unaffected by the 2008 financial crisis, the 2008 bank-year observations were retained in the analysis. More so, I acknowledge that the 2008 crisis had some after-shock effect on some, not all, banks in Africa and that the after-shock effect on banks and the economy extended into year 2009 and 2010. Although this impact is worth noting, the author maintain that it is unreasonable to eliminate 2009 and 2010 bank-year observations to adjust for economic after-shocks.

Table 1: Summary of Sample Distribution						
Table 1 reports the sample distribution of banks based on country and region. There are 2 Central African countries, 4 North African countries, 4 West African countries, 4 East African countries and 5 Southern African countries.						
Country	Central Africa	North Africa	West Africa	East Africa	Southern Africa	# Banks
Algeria		16				16
Angola	14					14
Botswana					12	12
Cameroun	11					11
Egypt		16				16
Ethiopia				12		12
Ghana			15			15
Kenya				24		24
Mauritius					15	15
Morocco		18				18
Namibia					10	10
Nigeria			16			16
Senegal			10			10
South Africa					29	29
Tanzania				16		16
Togo			7			7
Tunisia		26				26
Uganda				21		21
Zambia					14	14
Grand Total	25	76	48	73	80	302

3.2. Methodology

The Generalized-Method-of-Moments (GMM) estimators developed for dynamic models of panel data by Arellano and Bond (1991) is used to estimate the relationship between provisions and pre-provision earnings after controlling for non-discretionary provisions, other discretionary use of provisions, macro-economic, institutional and social-political influences. GMM methodology can address three relevant econometric issues. First, it addresses the presence of unobserved bank-specific effects, which is eliminated by taking first-differences of all variables; (ii) the autoregressive process in the data regarding the behaviour of provisions (i.e., the need to use a lagged dependent variables model to capture the dynamic nature of provisions; and (iii) the likely endogeneity of the explanatory variables. The panel GMM estimator controls for potential endogeneity by using instruments based on lagged values of the explanatory variables. Among recent empirical studies, only Laeven and Majnoni (2003) and Fonseca and Gonzalez (2008) use this estimator.[5]

The model is consistent with Kanagaretnam et al (2004), Liu and Ryan (2006), Kilic et al (2012), Curcio and Hasan (2015), Ozili (2017a) and Ozili and Thankom (2018). The baseline equation is:

[5] To further verify that GMM is more appropriate, I first estimate the OLS least squares equation without lagged variables. The Durbin-Watson statistic report that there is positive serial correlation. When I introduced the lagged variable, the serial correlation disappears and DW approach 2.0. However, I am aware that DW statistic can be misleading for models that follow a dynamic process. Rather than use Newey-West's robust standard errors, to be safe, I use GMM to control for the dynamic nature of provisions. Hence, the GMM is more appropriate.

$$LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + \Delta GDPi,j + \varepsilon i,t.$$

The income smoothing variable is the EBTP variable. After introducing institutional variables into the model, the expanded model is given as:

$$LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + \Delta GDPi,j + EDL + EDL * EBTP + INVTPRO + INVTPRO * EBTP + CORRUPT + CORRUPT * EBTP + COC + COC * EBTP + VA + VA * EBTP + \varepsilon i,t.$$

EBTP coefficient is the income smoothing variable. A significant and positive sign for the EBTP coefficient indicates the presence of income smoothing. For robustness purposes, I also focus on the size of earnings by dividing the earnings distribution into two: positive earnings and negative earnings (i.e. losses). The POS variable takes the value of '1' if reported earnings is positive and substantial, and '0' when reported earnings is negative.

Regarding the control variables, non-performing loans to gross loan ratio (NPL) and loan growth (LOAN) capture the riskiness of banks' loan portfolio. A positive sign on the NPL coefficient is expected because banks will increase loan loss provision when they expect loan defaults and/or high problem loans (Ozili, 2019; Bikker and Metzemakers, 2005). Loan growth (LOAN) is a proxy for contemporaneous credit risk (Lobo and Yang, 2001; Laeven and Majnoni, 2003). A positive sign for LOAN coefficient indicates that provisions increase as loan supply increases due to credit risk concerns. However, Lobo and Yang (2001) points out that a negative coefficient may indicate improved quality of incremental loans, therefore, I do not have a definite prediction for this variable. The CAR variable captures the use of provisions to manage regulatory capital (e.g. Kilic et al, 2012; Bonin and Kosak, 2013), and I expect a negative sign for CAR coefficient which is consistent with the capital management hypothesis.

The SIZE variable capture the size of a bank, measured as the logarithm of total assets. Large banks are considered to have higher levels of business activities and such large banks may set aside higher provisions to commensurate for their high business levels compared to smaller banks (Anandarajan et al, 2003; Ozili, 2017a), therefore, a positive sign for the SIZE coefficient is expected. The use of natural logarithm of total asset (SIZE) to measure bank size is consistent with Kilic et al (2012), Ozili (2015), Curcio and Hasan (2015) and Ozili and Thankom (2018).

At country level, real gross domestic product growth (ΔGDP) captures bank provisioning that depend on the state of the economic cycle. The literature document that bank provisioning increases significantly during economic downturns and decreases during good years (Leaven and Majnoni, 2003; Bikker and Metzemakers, 2005; Agénor and Zilberman, 2015; Soedarmono et al, 2017). Therefore, a negative sign for the ΔGDP coefficient is expected.

The institutional factors are the investor protection variables. The three investor protection variables are the index of strength of investor protection (INVTPRO), extent of director liability (EDL), and rule of law (LEGAL). INVTPRO measure the extent that the legal system in a country protect the rights of minority shareholders against managers. This variable ranges from 0 to 10. EDL measure the extent that the legal system in a country favour the right of minority shareholders to sue directors and the likelihood that the minority shareholder will win the case. This variable ranges from 0 to 10. The EDL and INVTPRO variables are developed based on the methodology of Djankov, La Porta and others (see. Djankov et al, 2008).[6] LEGAL is the 'rule of law' index developed by Kaufman et al (2001) which

[6] These two indices for investor protection derive explicitly from the nature, terms, conditions and enforcement of business transactions among counterparties in several countries, particularly, those mechanisms in business transactions that protect the right of shareholders against the opportunistic behaviour of managers

measure the quality of the legal environment. LEGAL range from -2.5 to +2.5.[7] I predict a negative coefficient on INVTPRO, EDL and LEGAL.

Three socio-political variables are employed. The first corruption variable is the CPI variable - which is Transparency International's corruption perception index (CPI). Higher values of CPI indicate less corruption. A country's CPI score can range from 0 to 100, with zero indicating high corruption levels and 100 indicating low corruption levels. A negative and significant association between income smoothing and CPI would indicate that income smoothing decreases with less corruption or perceived corruption.

The second corruption variable 'CORRUPT' is derived from the CPI variable. I observe that the distribution of the CPI variable is highly skewed, that is, it has large values for some African countries and low values for other African countries. To reduce the observed skewed pattern in the CPI data distribution, I take the one-inverse of CPI time series data (i.e., one divided by each observation in the series) so that the CPI values for each country will now range from one to zero such that values approaching '1' would indicate higher levels of corruption and values approaching '0' would indicate less corruption. This inverse CPI variable is then denoted as CORRUPT, which becomes the second corruption variable. A positive and significant association between income smoothing and the CORRUPT variable would indicate that income smoothing increases with higher perceived corruption.

Furthermore, I create a third corruption variable by taking the logarithmic transformation of the CPI variable as an additional correction for skewness in the CPI distribution. I take the natural logarithm of the CPI variable - which is now denoted as 'logCPI'.

Next, I introduce two additional institutional measures of corruption: 'control of corruption' and 'voice and accountability' indicators from the World Governance Indicator database. The fourth variable is the control of corruption (COC) Index.[8] COC values range from -2.5 to +2.5. Higher values of COC indicate improved fight against corruption. A negative and significant association between control of corruption (COC) and income smoothing indicate that strong corruption control lowers the extent of income smoothing.

The fifth variable is the Voice and accountability (VA) index developed by Kaufmann et al (2011). [9] VA index ranges from -2.5 to +2.5 and higher VA indicate stronger voice and accountability country attribute. Countries with high VA have greater freedom of expression, freedom of media, and citizens (and employees) in such countries are more likely to engage in protests and whistle-blowing activities against corruption by government officials, business leaders and bank executives. In this study, I expect lower income smoothing among African banks in environments with high VA attribute. These three indices have been employed in the corruption literature to examine corruption, accountability, etc., (e.g. Gupta et al, 1998; Treisman, 2000; Jong-Sung and Khagram, 2005; Bird et al, 2008; Dreher and Schneider, 2010; Mathur and Singh, 2013). Table 2 contains information about the variables.

[7] LEGAL is used as a proxy for the extent of legal enforcement across African countries. I did not use the investor protection variables used in Leuz et al (2003) and Fonseca and Gonzalez (2008) because data for these proxies are either unavailable for all African countries in the sample, and when available are reported for at most 4 years. I use the strength of investor protection and extent of director liability developed based on the methodology of Djanokic, La Porta and others (2008) while LEGAL variable is Kaufman et al's 'rule of law' index. These three variables are available and have sufficient reporting data for at least 8 years for all African countries in the sample

[8] Control of corruption measures the extent to which public power is exercised for private grain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. It also measures the strength and effectiveness of a country's policy and institutional framework to prevent and combat corruption (see. Kaufmann et al, 2011).

[9] The VA index capture perceptions of the extent to which a country's citizens are able to participate in selecting their government, hold leaders accountable as well as freedom of expression, freedom of association, and a freedom of the media. Citizens (and employees) in countries with laws that promote greater freedom of expression, freedom of association and freedom of media, are more likely to engage in protests and whistle-blowing activities against corruption by government officials, business leaders and firm executives.

Table 2: Information About Variables		
Variable	Expected/Predicted Sign	Description
LLP	Dependent Variable	Loan loss provisions divided by total asset ratio
LLPt-1	(-) Lagged Dependent Variable	Beginning of year loan loss provisions
NPL	(+) Provisions in response to actual loan loss	Non-performing loans to gross loans ratio
LOAN	(+) Contemporaneous credit risk (-) Improved Quality of Incremental Loan	Change in gross loan
EBTP	(+) Income Smoothing	ratio of earnings before tax and provisions to total asset
CAR	(-) Capital Management	Ratio of tier 1 capital to risk weighted asset for bank i at time t.
CFEER	(+) Provisions to cover risk from non-depository activities	Ration of net commission and fee income to total asset
SIZE	(+) Scale Effect	Natural logarithm of total assets
ΔGDP	(-) Procyclical Effect	Change in real gross domestic product
INVTPRO	(-) Investor Protection	Minor shareholders right protection
LEGAL	(-) Investor Protection	Rule of law / quality of legal system
EDL	(-) Investor Protection	Extent of director liability
CPI	(+/-) Perceived Corruption	Perceived corruption index
CORRUPT	(+) Perceived Corruption	One-inverse of the Perceived corruption index
logCPI	(+/-) Perceived Corruption	Logarithm of CPI variable
COC	(+) Institutionalised Corruption	Control of corruption index
VA	(-) Institutionalised Corruption	Voice and accountability

Finally, to test the influence of institutional and socio-political factors on income smoothing behaviour among African banks, EBTP is interacted with each institutional and socio-political factor in the model. The coefficient of each interaction term measures the influence of the country variable on bank income smoothing behaviour. The extensive number of country variables and the incorporation of interaction terms is the main rationale for using separate regression model rather than a single regression model with sandwiched variables.

4. Discussion of Results

4.1. Descriptive Statistics and Correlation

Table 3 report the summary of the descriptive statistics of the variables. For each bank-specific variable, the sample has between 1,620 and 2,572 bank-year observations, that is, on average 9 to 10 annual observations for each bank during 2004 to 2013. Loan loss provisions averages 0.9% of total assets. LLPs are higher for banks in Nigeria, Togo, Tunisia and Angola and lower for banks in Botswana, Namibia, Mauritius and Uganda. Non-performing loans (NPL) averages 7.89%, and is a double-digit higher for some North African Countries (e.g. Egypt 14.07% and Tunisia 15.01%). The high NPLs indicate that banks in Egypt have poor credit quality. Comparatively, NPLs are lower for banks in Namibia and Uganda. Loan growth (LOAN) is about 19.2%, but exhibit substantial differences across African countries. For instance, LOAN are much lower in Egypt while other countries experience a double-digit increase in gross loans over the sample period and is relatively higher for banks in Ghana and Angola. On average, CAR is 19.06% and is higher for banks in Angola, Nigeria and Uganda. This indicate that banks in Angola, Nigeria and Uganda have sufficient capital buffers for the risks they take. CAR is much lower for banks in Morocco and Namibia. Regarding bank size, SIZE is on average 13.45 and is higher for banks in Nigeria, South Africa, Egypt, Morocco and Algeria, and lower for banks in Namibia and Uganda. This indicate that there is a significant difference in bank size across banks in the sample. Earnings on average is 3.2% and is lower for banks in Senegal and Mauritius and higher for banks in Botswana, South Africa, Ghana, Ethiopia. Fluctuations in the economic cycle (ΔGDP), on

average, is about 5.7% and much lower for banks in South Africa and Algeria and higher for Ethiopia, Angola and Nigeria This imply that the economy of South Africa and Algeria is relatively more stable over the sample period compared to the Nigerian economy as well as for Ethiopia and Angola. Overall, the result from the descriptive statistics suggest that there is wide variation across banks in several African countries. Appendix A1 reports the mean of the institutional and socio-political variables.

Table 3: Summary of Descriptive statistics

Table 3 report the descriptive statistics obtained from 302 sample banks from 19 countries. Data cover the period 2004-2013. LLP = Loan loss provisions divided by total asset. NPL = Non-performing loans to gross loans ratio. EBTP = ratio of earnings before tax and provisions to total asset. LOAN = change in gross loan outstanding (%). CAR = Ratio of tier 1 capital to risk weighted asset for bank i at time t. ΔGDP = gross domestic product growth rate. SIZE = natural logarithm of bank total asset.

Country	Mean LLP	Mean LOAN	Mean SIZE	Mean CAR	Mean EBTP	Mean ΔGDP	Mean NPL	# Banks
Algeria	0.003	19.377	14.171	-	0.028	3.140	5.751	16
Angola	0.008	33.346	13.847	21.800	0.036	10.798	5.734	14
Botswana	0.002	22.539	12.879	13.726	0.057	7.596	9.257	12
Cameroun	0.004	12.240	12.899	-	0.026	3.485	8.152	11
Egypt	0.006	9.446	14.911	18.558	0.024	4.522	14.071	16
Ethiopia	0.004	25.690	13.093	-	0.041	11.014	7.000	12
Ghana	0.003	31.044	13.121	17.145	0.045	7.432	10.202	15
Kenya	0.0003	22.589	12.466	19.037	0.034	5.242	10.183	24
Mauritius	0.002	12.393	13.496	13.205	0.015	3.977	4.183	15
Morocco	0.003	11.267	15.497	11.618	0.028	4.427	5.182	18
Namibia	0.002	14.496	13.743	11.432	0.035	5.284	2.987	10
Nigeria	0.010	20.071	15.557	20.671	0.032	8.782	4.919	16
Senegal	0.006	15.479	12.703	-	0.019	3.828	7.312	10
South Africa	0.004	16.951	14.887	15.849	0.048	3.281	7.749	29
Tanzania	0.007	26.438	12.212	15.566	0.024	6.674	4.060	16
Togo	0.008	23.641	12.413	17.348	0.025	3.529	10.911	7
Tunisia	0.008	12.655	13.263	16.379	0.023	4.049	15.104	26
Uganda	0.002	21.445	11.991	21.155	0.033	7.070	3.711	21
Zambia	0.006	28.968	11.786	16.767	0.021	7.759	9.143	14
Mean	0.009	19.206	13.454	19.059	0.032	5.741	7.899	
Median	0.005	15.750	13.216	15.375	0.027	5.170	4.940	
S.D	0.019	23.739	1.909	11.635	0.034	3.906	9.779	
Observations	2435	2317	2572	1022	2433	3017	1620	

*S.D – Standard Deviation

Table 4 report the Pearson correlation coefficients and the associated p-values. LLPs are positive and significantly correlated with EBTP (0.442***). This indicate that provisions are significantly correlated with banks earnings among African banks. LLPs are positive and weakly correlated with SIZE (0.003) and suggest that provisions increase as the size of banks increase but the correlation coefficient is not significant. LLPs are negative and significantly correlated with ΔGDP (-0.097**), indicating that provisioning among African banks is procyclical with fluctuations in the business cycle. NPLs and LOAN are positive and significantly correlated with LLPs. This indicate that provisions are positively correlated with credit risk concerns among African banks. African banks are more likely to increase provisions when they expect problem loans. CAR is positively correlated with LLPs and indicate that provisions increase as Tier1 capital increase among African banks. POS is negatively correlated and indicate that provisions decreases with positive earnings for African banks. Overall, the correlations are sufficiently low to be concerned about multicollinearity. Table A2 report the Pearson correlation coefficients for the country variables

Table 4: Correlation Matrix of Full Sample

Table 4 report the correlation matrix. ***, ** and * represent significance at the 1%, 5% and 10% level, respectively. P-values are reported in parenthesis. Bank sample consists of 302 banks in 19 countries from the period 2004-2013. Data is on an annual basis. LLP is loan loss provision. EBTP is earnings before taxes and provisions. LOAN is the change in gross loan outstanding. NPL is non-performing loan. CAR is bank capital divided by risk-weighted assets. SIZE is the natural logarithm of total asset. ΔGDP is change in gross domestic product in the bank's country.

Variable	LLP	NPL	LOAN	EBTP	ΔGDP	SIZE	POS	CAR
LLP	1.000							
	(0.000)							
NPL	0.395***	1.000						
	(0.000)							
LOAN	0.062*	-0.125***	1.000					
	(0.074)	(0.000)						
EBTP	0.442***	0.043	0.139***	1.000				
	(0.000)	(0.215)	(0.000)					
ΔGDP	-0.097***	-0.072**	0.252***	0.034	1.000			
	(0.005)	(0.037)	(0.000)	(0.325)				
SIZE	0.003	-0.101***	-0.211***	0.078**	-0.297***	1.000		
	(0.936)	(0.004)	(0.000)	(0.025)	(0.000)			
POS	-0.098***	-0.063*	-0.044	0.432***	-0.088**	0.181***	1.000	
	(0.005)	(0.068)	(0.208)	(0.000)	(0.011)	(0.000)		
CAR	0.136***	0.041	0.089**	0.242***	0.106***	-0.279***	0.006	1.000
	(0.000)	(0.236)	(0.010)	(0.000)	(0.002)	(0.000)	(0.858)	

4.2. Regression Result

4.2.1. Bank Income Smoothing

The result is reported in Column 1 of Table 5. The EBTP coefficient is negative and insignificant for the full sample of African banks, contrary to the prediction. This finding does not support the findings from similar studies in Europe (see, Ozili, 2017b; Leventis et al, 2011, Ozili and Thankom, 2018) and U.S (Kilic et al, 2012). The findings also do not support the income smoothing hypothesis. This implies that income smoothing by banks is not uniform or widespread in most African countries.

Next, I check whether income smoothing via loan loss provisions is present among listed banks and for African banks with a Big 4 auditor. The result is reported in Column 2&3 of Table 5. The EBTP coefficient remain insignificant suggesting that income smoothing is absent among listed African banks and among African banks with a Big 4 auditor.

For the control variables, LLPt-1 coefficient is negatively significant in Column 1-3, indicating that African banks keep fewer provisions in the current period if they had high provisions in the previous period and vice versa. The NPL and LOAN coefficients report the expected sign, for instance, the NPL coefficient is positive and significant in Column 1-3, indicating that African banks significantly increase loan loss provisions when they expect high non-performing loans or problem loans. LOAN coefficient is also negative and significant in Column 1-3, indicating improved quality of incremental loans. The SIZE coefficient is negative and significant in Column 1-3, indicating that smaller African banks keep more loan loss provisions than larger banks. ΔGDP coefficient is positive and significant in Column 1-3, indicating that provisioning is counter-cyclical with fluctuations in the business cycle, and this might be due to banks reporting higher provisions during good economic times possibly due to the strong

regulatory and supervisory requirements requiring banks to keep higher provisions for loans issued to risky sectors during lending booms associated with good economic times in the African region.

Table 5: Income Smoothing (full sample)

Equation: $LLP_{i,t} = c + LLP_{i,t-1} + NPL_{i,t} + LOAN_{i,t} + CAR_{i,t} + SIZE_{i,t} + EBTP_{i,t} + \Delta GDP_{i,j} + \varepsilon_{i,t}$.

Regressions are estimated using the Arellano and Bond (1991) GMM first-difference estimator for panel data with lagged dependent variable. Bank-specific fixed effects, year and country fixed effect are included. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.

Variables	Full Sample	Listed vs Non-Listed	Big4 vs Non-Big4
	(1)	(2)	(3)
LLPt-1	-0.227** (-2.33)	-0.237** (-2.39)	-0.241** (-2.52)
NPL	0.0009*** (3.57)	0.001*** (3.61)	0.001*** (3.79)
LOAN	-0.0004*** (-6.57)	-0.0004*** (-6.76)	-0.0004*** (-7.09)
CAR	-0.0004** (-2.35)	-0.0004** (-2.43)	-0.0004** (-2.27)
SIZE	-0.019** (-2.53)	-0.020** (-2.43)	-0.019** (-2.45)
EBTP	-0.041 (-0.43)	-0.006 (-0.04)	0.033 (0.07)
ΔGDP	0.003*** (3.12)	0.003*** (2.83)	0.002*** (2.73)
LISTED*EBTP		-0.065 (-0.31)	
BIG4*EBTP			-0.096 (-0.19)
Sargan/J-Statistic	26.99	27.39	26.59
P(J-statistic)	0.57	0.49	54.03
No of observation	652	652	652

4.2.2. Institutions: investor protection

In this section, I test the effect of investor protection on bank income smoothing. I focus on three investor protection variables: strong protection of minority shareholders' rights (INVTPRO), extent of director liability (EDL), and quality of the legal system (LEGAL). Table 6 reports the results. The INVTPRO*EBTP, EDL*EBTP and LEGAL*EBTP coefficients are negatively significant, as expected in Column 1, 2 and 3. The INVTPRO*EBTP coefficient is negatively significant at the 5% level, which indicates that strong protection of minority shareholders' rights mitigates or lowers income smoothing by African banks. This result is consistent with Leuz et al (2003), Ozili (2018) and Fonseca and Gonzalez (2008)'s cross-country studies. The EDL*EBTP coefficient is also negative and significant at 1% level, indicating that income smoothing by African banks decreases with greater director liability. The LEGAL*EBTP coefficient is negative but insignificant and imply that the quality of the legal system across African countries is not significantly associated with income smoothing by African banks.

The positive coefficients for the INVTPRO and EDL binary variables indicate that greater minority shareholder protection and greater director liability might have some positive effects in ensuring that African banks keep high provisions, but this effect is not significant. The positive coefficient for 'LEGAL' (in column 5) indicates that legal system quality can have a positive effect on the level of provisions among African banks while the negative coefficient for LEGAL (in column 3,4) indicate that legal system quality can have a negative effect on the level of provisions among African banks, but the LEGAL coefficient is not significant as reported in Columns 3,4 & 5.

Moreover, I expect some complementarity. I expect that the strength of protection of minority shareholders' rights (INVTPRO) and the extent of director liability (EDL) will both depend on the quality of the legal system in the country (LEGAL). Therefore, to test this complementary effect, I interact the INVTPRO and EDL variables with the LEGAL variable. The result is reported in Column 4 and 5 of Table 6. The LEGAL*INVTPTO*EBTP and LEGAL*EDL*EBTP coefficients are negative but not significant. This does not confirm the expected complementarity.

Table 6: Bank income smoothing and investor protection variables

Equation: $LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + \Delta GDPi,j + EDL + EDL*EBTP + INVTPRO + INVTPRO*EBTP + LEGAL + LEGAL*EBTP + LEGAL*INVTPRO*EBTP + LEGAL*EDL*EBTP + \varepsilon i,t.$

Regressions are estimated using the Arellano and Bond (1991) GMM difference estimator for panel data with lagged dependent variables. Bank-specific fixed effects, year and country dummies are included. LLP is loan loss provision. EBTP is earnings before taxes and provisions. LLPt-1 is lagged dependent variable. LOAN is change in gross loan outstanding. NPL is non-performing loan. CAR is bank capital divided by risk-weighted assets. SIZE is natural logarithm of total asset. ΔGDP is change in gross domestic product in the bank's country. INVTPRO, EDL, LEGAL measure the strength of investor protection, the extent of director liability, and the quality of the legal system in the country, respectively. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.

Variables	Column 1	Column 2	Column 3	Column 4	Column 5
LLPt-1	-0.258***	-0.279***	-0.175*	-0.618**	-0.618***
	(-2.69)	(-3.08)	(1.94)	(-2.56)	(-2.80)
NPL	0.001***	0.001***	0.001***	0.003**	0.003***
	(3.97)	(3.85)	(3.21)	(2.56)	(2.69)
LOAN	-0.0004***	-0.0004***	-0.0003***	-0.0007**	-0.0007*
	(-7.06)	(-7.31)	(-3.17)	(-2.25)	(-1.95)
CAR	-0.0004**	-0.0003*	-0.00009	-0.0002	-0.0004
	(-2.01)	(-1.67)	(-0.49)	(-0.44)	(-0.68)
SIZE	-0.015**	-0.018**	-0.001	-0.019	-0.018
	(-2.03)	(-2.34)	(-0.20)	(-1.06)	(-0.95)
EBTP	0.998**	0.542**	0.264	-0.312	-0.322
	(1.98)	(2.14)	(1.23)	(-0.92)	(-0.74)
ΔGDP	0.002**	0.002**	0.0006	0.005	0.004
	(2.31)	(2.14)	(0.58)	(1.52)	(0.98)
INVTPRO	0.002			0.023	
	(0.19)			(0.99)	
INVTPRO*EBTP	-0.164**				
	(-2.28)				
EDL		0.002			0.018
		(0.15)			(0.64)
EDL*EBTP		-0.109***			
		(-2.72)			
LEGAL			-0.012	-0.019	0.035
			(-0.24)	(-0.33)	(0.47)
LEGAL*EBTP			-0.391		
			(-0.59)		
LEGAL*INVTPRO*EBTP				-0.036	
				(-0.26)	
LEGAL*EDL*EBTP					-0.163
					(-0.91)
Sargan/J-Statistic	27.11	27.31	8.16	3.84	3.45
P(J-Statistic)	0.46	0.45	0.77	0.97	0.98
No of banks	142	142	124	124	124
Observations	652	652	437	437	437

4.2.3. Corruption: Further Tests

Perceived Corruption:

The GMM regression results are reported in Table 7. The CPI*EBTP coefficient are negative and insignificant in column 1, indicating that the level of perceived corruption is not significantly associated with income smoothing among African banks. Secondly, I adjust for skewness in the CPI data by taking the one-inverse of the CPI distribution i.e. one divided by each CPI observation, and this produces a

new variable 'CORRUPT' which I interact with the EBTP variable. The CORRUPT*EBTP coefficient is positive and insignificant in column 2, indicating that the level of perceived corruption has no significant effect on income smoothing among African banks. Thirdly, I again adjust for skewness in the CPI data by taking the logarithm of the CPI data. The result is reported in Column 3 of Table 7. The LogCPI*EBTP coefficient remain negative and insignificant after adjusting for skewness, indicating that the level of perceived corruption is not significantly associated with income smoothing among African banks. Finally, the insignificance of the CPI*EBTP, LogCPI*EBTP and CORRUPT*EBTP coefficients might be because CPI captures 'perceived corruption' and not 'actual corruption', nonetheless, the CPI indicator is a widely used corruption indicator in the corruption literature.[10]

Institutionalised Corruption:

High levels of voice and accountability in society is a result of less corruption. The VA variable is interacted with the EBTP variable and the result is reported in Column 4. The VA*EBTP coefficient is negative and insignificant indicating that greater voice and accountability does not significantly influence the extent of income smoothing among African banks. Also, the COC*EBTP coefficient is positive and insignificant, and imply that stronger corruption control is not significantly associated with income smoothing among African banks.

Furthermore, I expect that strong corruption control in a country should also improve the voice and accountability level of the country. To test this complementary effect, I interact the VA and COC variables with the EBTP variable 'VA*COC*EBTP', to detect whether strong corruption control and accountability levels can jointly influence the extent of bank income smoothing. The result is reported in Table 7. VA*COC*EBTP coefficient is negative and insignificant. This does not confirm the expected complementarity for the countries examined.

Corruption Cluster:

In this section, I perform a cluster analysis using a cluster variable 'CL'. The cluster variable is derived from the average of the sum of the VA, COC and CPI variables because the three variables move in the same direction, that is, higher VA, COC and CPI indicates less corruption. The rationale for this robustness test is to check whether the joint effect of the corruption variable might have some significant effect on income smoothing by African banks. The result is reported in Column 7 of Table 7. The CL*EBTP coefficient is negative and insignificant.

Table 7: Corruption and income smoothing

Equation: $LLP_{i,t} = c + LLP_{i,t-1} + NPL_{i,t} + LOAN_{i,t} + CAR_{i,t} + SIZE_{i,t} + EBTP_{i,t} + \Delta GDP_{i,j} + CORRUPT + CORRUPT*EBTP + COC + COC*EBTP + VA + VA*EBTP + VA*COC*EBTP + \varepsilon_{i,t}$.

Regressions are estimated using the Arellano and Bond (1991) GMM first-difference estimator for panel data with lagged dependent variables. Bank-specific fixed effects, year and country dummies are included. LLP is loan loss provision. EBTP is earnings before taxes and provisions. LLPt-1 is lagged dependent variable. LOAN is change in gross loan outstanding. NPL is non-performing loan. CAR is bank capital divided by risk-weighted assets. SIZE is natural logarithm of total asset. ΔGDP is change in gross domestic product in the bank's country. CORRUPT is one-inverse of the perceived corruption index. CPI is perceived corruption index. LogCPI is the natural logarithm of the CPI variable. COC is control of corruption. VA is voice and accountability. CL is a cluster variable which is the average of CPI, VA and COC variables. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.

Variables	Perceived Corruption			Institutionalised Corruption		Interaction	Cluster Analysis
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LLPt-1	-0.339*** (3.46)	-0.219** (-2.39)	-0.279*** (-3.00)	-0.266** (-2.44)	-0.438** (-2.25)	-0.333* (-1.79)	-0.287*** (-3.19)
NPL	0.002*** (4.42)	0.001*** (3.04)	0.001*** (3.86)	0.001*** (3.16)	0.001 (1.63)	0.001 (1.62)	0.001*** (2.96)
LOAN	-0.0003*** (-3.60)	-0.0002*** (-2.94)	-0.0002*** (-3.40)	-0.0006*** (-8.24)	-0.0004** (-2.29)	-0.0003* (-1.77)	-0.0004*** (-8.77)
CAR	0.00001	0.00001	0.0003	-0.0003	0.0003	-0.0005	0.0001

[10] There is yet no metric that accurately capture actual (or, real) corruption.

	(0.03)	(0.06)	(-0.16)	(-1.22)	(0.92)	(-1.36)	(0.36)
SIZE	-0.002 (-0.86)	-0.003 (-1.43)	-0.002 (-1.13)	-0.006* (-1.99)	-0.003 (-0.91)	-0.007 (-1.25)	-0.009*** (-3.68)
EBTP	0.369 (1.24)	0.083 (0.47)	0.512 (0.61)	-0.188 (-1.31)	0.063 (0.47)	0.218 (1.21)	-0.086 (-0.84)
ΔGDP	0.001* (1.77)	0.001* (1.83)	0.0006* (1.73)	0.002*** (4.38)	0.001 (1.21)	0.0009 (1.13)	0.001*** (3.05)
CPI	0.0002 (1.29)						
CPI*EBTP	-0.003 (-1.05)						
CORRUPT		-1.235 (-1.15)					
CORRUPT*EBTP		2.963 (0.27)					
LogCPI			0.014 (1.06)				
LogCPI*EBTP			-0.091 (-0.48)				
VA				-0.001 (-0.04)		-0.04 (-1.53)	
VA*EBTP				-0.127 (-0.52)			
COC					0.003 (0.11)	0.003 (0.08)	
COC*EBTP					0.412 (1.25)		
VA*COC*EBTP						-1.098 (-1.24)	
CL							0.0003 (0.15)
CL*EBTP							-0.037 (-0.91)
Sargan/J-Statistic	21.28	19.90	21.02	21.98	13.78	8.53	22.27
P(J-Statistic)	0.01	0.01	0.01	0.02	0.01	0.01	0.01
No of banks	134	134	134	142	124	124	142
Observations	544	544	544	652	437	437	652

Correlation of Corruption and Income smoothing variables:

Here, I address concerns of correlation between income smoothing and corruption. I check whether there is a significant correlation between the EBTP variable and the corruption variables. The correlation matrix is reported below in Table 8. As can be seen from the EBTP column below, the highest correlation coefficient is 13% and lowest correlation coefficient is 6.6%.

Table 8: Correlation for Income smoothing and the corruption variables

Variable	EBTP	COC	CPI	CORRUPT	VA
EBTP	1.000				
COC	0.102*** (0.000)	1.000			
CPI	-0.066*** (0.003)	-0.924*** (0.000)	1.000		
CORRUPT	0.108*** (0.000)	0.933*** (0.000)	-0.920*** (0.000)	1.000	
VA	0.130***	0.666***	-0.515***	0.571***	1.000

	(0.000)	(0.000)	(0.000)	(0.000)

***, ** and * represent significance at the 1%, 5% and 10% level, respectively.

4.3. Additional Tests

4.3.1. Positive Earnings and Corruption:

Earlier, I did not find evidence for income smoothing using provisions, in the full sample. In this section, I divide the entire earnings distribution into two: positive earnings and negative earnings. I use a binary variable (POS) that takes the value '1' when EBTP is positive, and '0' when EBTP is negative. POS dummy is then interacted with EBTP. The result is reported in Table 9. POS*EBTP coefficient is positive and significant at the 5% level, indicating that African banks use provisions to smooth positive earnings. Furthermore, I interact POS*EBTP with the 'perceived' and 'institutional' corruption variables. Of all the interaction terms, POS*EBTP and CORRUPT*POS*EBTP are positively significant, indicating that income smoothing increases with higher corruption levels.

Table 9: Positive Earnings and Corruption							
Equation: LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + ΔGDPi,j + POS + CORRUPT + VA + COC + CPI*POS*EBTP + LogCPI*EBTP + CORRUPT*POS*EBTP + VA*POS*EBTP + COC*POS*EBTP + εi,t.							
Regressions are estimated using the Arellano and Bond (1991) GMM difference estimator for panel data with lagged dependent variables. Bank-specific fixed effects, year and country dummies are included. Bank-level and country variables remain as previously defined. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LLPt-1	-0.331*** (-3.19)	0.479*** (15.47)	-0.086 (-0.78)	-0.461** (-2.46)	-0.033 (-0.33)	0.513 (17.23)	-0.292*** (-3.17)
NPL	0.0001*** (3.13)	0.0003*** (7.92)	0.0009** (2.47)	0.002** (2.38)	0.0004 (0.85)	0.0003*** (7.47)	0.001*** (3.04)
LOAN	-0.0005*** (-8.53)	-0.0004*** (3.19)	-0.0005*** (-5.44)	-0.0006** (-2.51)	-0.0002*** (-3.20)	0.00004*** (2.67)	-0.0004*** (-8.42)
CAR	-0.0001 (-0.49)	0.0001** (2.15)	-0.0008*** (-3.51)	-0.0002 (-0.44)	-0.0001 (-0.34)	0.00004 (1.08)	0.0001 (0.29)
SIZE	-0.009*** (-3.57)	0.0004*** (4.23)	-0.008 (-0.89)	-0.024 (-1.55)	-0.005** (-2.01)	0.0004*** (3.43)	-0.008*** (-3.53)
EBTP	-2.287** (-2.29)	0.042 (1.39)	-0.311* (-1.89)	-0.226 (-0.92)	-0.336 (-1.27)	-0.133** (-2.32)	-0.155 (-1.50)
ΔGDP	0.001*** (3.05)	-0.0002* (-1.94)	0.002** (2.58)	0.005** (2.21)	-0.0001 (-0.15)	-0.0003*** (-2.99)	0.001*** (3.03)
POS	0.018 (0.94)	-0.008*** (-4.36)	0.025 (1.09)	0.003 (0.10)	-0.008 (-0.56)	-0.006*** (-2.77)	-0.0002 (-0.002)
POS*EBTP	1.336** (1.96)						
CORRUPT		-0.147* (-1.76)					
CPI					-0.0002* (-1.86)		
LogCPI						-0.001 (-1.42)	
VA			-0.094*** (2.78)				
COC				0.025 (0.75)			
CL							-0.0002 (-0.11)
POS*CORRUPT*EBTP		6.493*** (3.56)					
VA*POS*EBTP			0.046 (0.19)				
COC*POS*EBTP				-0.141 (-0.28)			
POS*LogCPI*EBTP						0.068*** (5.03)	
POS*CPI*EBTP					0.008*** (2.62)		
POS*CL*EBTP							-0.021 (-0.51)
Sargan/J-Statistic	19.23	20.88	19.27	8.32	22.17	19.37	21.35
P(J-Statistic)	0.02	39.26	0.82	0.68	0.01	0.01	0.02
No of banks	142	134	142	124	134	134	142
Observations	652	544	652	437	544	544	652

4.3.2. Positive Earnings and Investor Protection:

The 'POS' binary variable is then interacted with EBTP and the investor protection variables. The result is reported in Table 10. The EDL*POS*EBTP coefficient is negatively significant, indicating that strong investor protection reduces the smoothing of positive earnings by African banks.

Table 10: Positive Earnings and Investor Protection

Equation: $LLP_{i,t} = c + LLP_{i,t-1} + NPL_{i,t} + LOAN_{i,t} + CAR_{i,t} + SIZE_{i,t} + EBTP_{i,t} + \Delta GDP_{i,j} + POS + INVTPRO + LEGAL + EDL + INVTPRO*POS*EBTP + EDL*POS*EBTP + LEGAL*POS*EBTP + \varepsilon_{i,t}$.

Regressions are estimated using the Arellano and Bond (1991) GMM difference estimator for panel data with lagged dependent variables. Bank-specific fixed effects, year and country dummies are included. Bank-level and country variables remain as previously defined. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.

Variables	(1)	(2)	(3)
LLPt-1	-0.284***	-0.299***	-0.441***
	(-2.87)	(-3.09)	(-3.06)
NPL	0.001***	0.001***	0.002***
	(3.63)	(3.38)	(2.63)
LOAN	-0.0004***	-0.0004***	-0.0004*
	(-6.69)	(-7.17)	(-1.96)
CAR	-0.0004**	-0.0003*	-0.0003
	(-2.09)	(-1.66)	(-0.97)
SIZE	-0.016**	-0.015**	-0.011
	(-2.15)	(-2.08)	(-0.98)
EBTP	0.565	0.509**	-0.083
	(1.23)	(2.11)	(-0.33)
ΔGDP	0.002***	0.002**	0.002
	(2.59)	(2.23)	(0.87)
POS	-0.013	-0.011	-0.001
	(-0.75)	(-0.77)	(-0.05)
INVTPRO	0.003		
	(0.33)		
EDL		0.0009	
		(0.08)	
LEGAL			-0.006
			(-0.11)
INVTPRO*POS*EBTP	-0.091		
	(-1.44)		
EDL*POS*EBTP		-0.094**	
		(-2.49)	
LEGAL*POS*EBTP			-0.799
			(-1.12)
Sargan/J-Statistic	26.43	27.94	6.95
P(J-Statistic)	0.44	0.36	0.80
No of banks	142	142	124
Observations	652	652	437

4.3.3. Bank Size and Earnings Smoothing: Size Hypothesis.

In this section, I test the effect of bank size on the income smoothing behaviour of African banks. The size hypothesis, based on the political cost hypothesis of Watt and Zimmerman (1986), argue that managers of large firms will use accounting procedures that decrease the size of current earnings if earnings is too high in order to avoid scrutiny of bank profit by firm regulators. They argue that, because the behaviour or actions of large firms are more politically sensitive compared to smaller firms, managers of large banks will prefer to use accounting procedures that decrease current earnings for fear of regulatory action. Hence, the larger the firm, the more likely the manager will select accounting procedures that decrease the size of current earnings. Earnings smoothing via provisions is one possible technique that large African banks could use to decrease the size of current earnings.

To test the size hypothesis, I use positive earnings as a proxy for high and substantial bank earnings in the current period and I interact POS with SIZE and EBTP. The SIZE*POS*EBTP interaction variable allows us to detect whether larger banks smooth positive and substantial earnings, in line with the size

hypothesis. Column 4 of Table 11 report the results. I did not find evidence to support the size hypothesis, although I observe that income smoothing is inversely and significantly associated with bank size as indicated by the SIZE*EBTP coefficient in Column 3 which suggests that larger banks do not use provisions to smooth income.

4.3.4. Pre and Post-Crisis Analysis

Next, I investigate whether African banks engage in aggressive income smoothing during the post-financial crisis period compared to the pre-crisis period.[11] The POST binary variable takes the value '0' for the pre-crisis period from 2004 to 2007 and take the value '1' for the post-crisis period from 2009 to 2013. The result is reported in Table 11 Column 1 and 2. The POST*EBTP coefficient is positive and insignificant and imply that income smoothing is not pronounced in the post-crisis period compared to the pre-crisis period. However, the POST*POS*EBTP coefficient is positively significant at the 10% level and imply that African banks use loan loss provisions to smooth positive earnings in the post-crisis era.

Table 11: Size, Pre-Crisis and Post-Crisis Regression

Equation: $LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + \Delta GDPi,j + POST + POST*EBTP + POS + POST*POS*EBTP + SIZE*EBTP + SIZE*POS*EBTP + \varepsilon i,t.$

Regressions are estimated using the Arellano and Bond (1991) GMM difference estimator for panel data with lagged dependent variables. Bank-specific fixed effects, year and country dummies are included. T-statistics are reported in parentheses with ***, **, and * indicating 1%, 5%, and 10% significance level, respectively.

Variables	Pre-and Post-Crisis		Size Hypothesis	
	Column 1	Column 2	Column 3	Column 4
LLPt-1	-0.235*** (-2.70)	-0.226** (-2.50)	-0.328*** (-3.36)	-0.250** (-2.51)
NPL	0.001*** (3.29)	0.001*** (2.97)	0.001*** (3.50)	0.001*** (3.74)
LOAN	-0.0002** (-2.31)	-0.0002** (-2.12)	-0.0005*** (-7.87)	-0.0004*** (-5.94)
CAR	-0.0007*** (-2.74)	-0.0006** (-2.27)	-0.0004** (-2.04)	-0.0004** (-2.21)
SIZE	-0.037*** (-2.62)	-0.039*** (-2.59)	0.005 (0.57)	-0.016** (-1.91)
EBTP	-0.083 (-0.70)	-0.097 (-0.80)	2.157*** (3.74)	0.137 (0.31)
ΔGDP	0.0008 (0.85)	0.0006 (0.67)	0.003*** (3.24)	0.003*** (2.65)
POST	-0.011 (-0.30)	-0.015 (-0.45)		
POST*EBTP	0.153 (1.35)			
POS		-0.0006 (-0.03)		-0.0002 (-0.01)
POST*POS*EBTP		0.208* (1.73)		
SIZE*EBTP			-0.179*** (-4.03)	
SIZE*POS*EBTP				-0.018 (-0.50)
Sargan/J-Statistic	19.20	17.77	27.63	27.27
P(J-Statistic)	0.69	0.72	0.48	0.45
No of banks	139	139	142	142
Observations	652	652	652	652

[11] The 2007-2008 global financial crisis

4.3.5. Country-Specific Regression

Next, I estimate country-specific regressions for income smoothing. The results are reported in Table 12 & 13. The EBTP coefficient is positive, significant and insignificant for some African countries; and negative, significant and insignificant for banks in other African countries. This indicate evidence of cross-country differences in income smoothing among African banks.

Table 12: County-Specific OLS Regression (with lagged LLP)

Equation: $LLP_{i,t} = c + LLP_{i,t-1} + NPL_{i,t} + LOAN_{i,t} + CAR_{i,t} + SIZE_{i,t} + EBTP_{i,t} + \Delta GDP_{i,j} + \varepsilon_{i,t}$.

Table 10 report country-specific regressions for 19 countries. Regression is estimated using panel OLS regression. Regressions include lagged dependent variable and White's robust standard error correction. ***, ** and * represent significance at the 1%, 5% and 10% level, respectively

Country	C	LLPt-1	NPL	LOAN	SIZE	CAR	EBTP	ΔGDP	Adj R^2	F-stat
Algeria	0.029 (1.38)	0.131 (0.75)	0.001*** (3.17)	-0.00001 (-0.32)	-0.003** (-2.16)		-0.024 (-0.96)	0.003*** (3.09)	81.5	14.25
Angola	0.012* (1.77)	3.612*** (9.07)	-0.0003 (-1.63)	-0.00003 (-0.91)	-0.0005 (-1.13)	-0.00009 (-1.11)	0.015 (0.21)	-0.0001 (-0.71)	81.3	8.43
Botswana	0.029** (2.34)	0.418*** (5.37)	0.0009*** (3.88)	-0.0001** (-2.06)	-0.002*** (-2.16)	-0.003*** (-3.92)	-0.049 (-1.25)	-0.00001 (-0.07)	86.6	24.98
Cameroun	0.054*** (5.91)	0.552*** (5.43)	0.0001 (0.52)	-0.0001 (-1.36)	-0.005*** (-4.53)		0.366*** (5.36)	0.0002 (0.12)	79.9	21.50
Egypt	-0.018 (-1.39)	0.413*** (3.89)	0.0001 (1.18)	0.0002 (1.52)	0.0009 (1.27)	-0.0002 (-0.94)	0.017 (0.25)	0.0008 (1.36)	49.8	4.54
Ethiopia	0.032** (2.35)	-0.192 (0.50)	0.0006*** (4.21)	0.0001** (2.45)	-0.003*** (-3.73)		0.353** (1.99)	-0.0009 (-1.08)	54.2	5.54
Ghana	0.018 (1.05)	0.307 (1.43)	-0.0001* (-1.98)	0.00001 (1.08)	-0.001 (-1.20)	-0.00004 (-0.75)	0.020 (1.25)	-0.0001 (-0.71)	-13.7	0.57
Kenya	0.00001 (0.02)	0.003 (0.16)	-0.000004 (-0.86)	0.00005 (1.43)	-0.000001 (-0.03)	0.00001 (0.76)	0.004 (0.69)	-0.00006 (-0.89)	-1.02	0.81
Mauritius	0.002 (0.43)	0.092 (0.75)	0.0002* (1.76)	0.00002 (1.37)	-0.0003 (-1.19)	0.00005 (1.51)	-0.003 (-0.11)	0.0004 (0.84)	9.1	1.73
Morocco	0.018* (1.94)	0.665** (2.28)	0.001 (1.44)	-0.0001 (-1.12)	-0.001* (-1.82)	-0.0004 (-1.10)	-0.218* (-1.82)	-0.0004** (-2.08)	77.9	14.11
Namibia	0.004 (0.71)	0.228 (1.55)	-0.00002 (-0.33)	0.00002 (0.54)	-0.0005 (-1.20)	0.00009 (1.36)	0.057** (2.64)	0.0002 (1.27)	31.3	4.12
Nigeria	0.072 (1.59)	-0.035 (-0.26)	-0.0003** (-2.07)	-0.00004 (-0.71)	-0.005* (-1.84)	0.0003 (1.48)	0.033 (0.40)	0.002 (1.55)	10.5	1.47
Senegal	-0.022* (-1.68)	0.589*** (5.95)	0.00007 (0.89)	0.00003 (0.40)	0.0002 (1.33)	-	0.003 (0.02)	0.0003 (0.59)	32.8	4.58
South Africa	0.013 (1.40)	0.415*** (9.39)	-0.00003 (-0.63)	0.00009* (1.81)	-0.0004 (-1.23)	-0.0004 (-1.17)	-0.0006 (-0.01)	-0.0006** (-1.98)	54.4	24.48
Tanzania	0.032** (2.27)	-0.140 (-0.92)	0.001*** (4.05)	-0.0001* (-2.37)	-0.003** (-2.24)	-0.00008 (-0.37)	0.115 (1.36)	0.0005 (0.68)	35.4	8.58
Togo	-0.271 (-0.71)	0.551 (0.39)	0.0001 (0.29)	-0.000002 (-0.01)	0.015 (0.74)	-0.0007 (-0.15)	1.289 (1.00)	-0.001 (-0.22)	-18.93	0.82
Tunisia	0.021 (1.19)	0.415*** (3.49)	-0.0002 (-1.67)	-0.00001 (-0.39)	-0.001 (-1.01)	0.00003 (0.36)	-0.059 (-0.89)	0.0003 (1.38)	52.18	6.92
Uganda	0.011** (2.28)	0.106 (0.79)	0.0003*** (2.85)	0.00004* (1.90)	-0.001*** (-2.93)	-0.00003 (-0.42)	0.044** (2.48)	0.0001 (0.83)	2.11	1.30
Zambia	0.014 (0.84)	0.024 (0.20)	-0.0002 (-1.15)	0.000003 (0.08)	-0.002 (-1.56)	0.0002 (1.24)	0.052 (0.83)	0.002*** (3.13)	26.10	2.36

*I did not use GMM for this regression because the GMM estimation breaks down for some country-estimations due to missing data or insufficient number of observations for some countries. To address this issue, I run the country regressions using the pooled-cross-section OLS estimator to provide consistent results for all countries in the sample

Note: Some regressions do not have CAR variable because tier1 capital ratio is not reported for sample banks in Algeria, Cameroun, Ethiopia, Senegal, since these countries do not use Basel capital standards

Table 13: County-Specific OLS Regression (without Lagged LLP)

Equation: $LLPi,t = c + LLPi,t-1 + NPLi,t + LOANi,t + CARi,t + SIZEi,t + EBTPi,t + \Delta GDPi,j + CORRUPT + CORRUPT*EBTP + COC + COC*EBTP + VA + VA*EBTP + VA*COC*EBTP + \varepsilon i,t.$

Table 11 report country-specific regressions for 19 countries. Regression is pooled panel regression with White's robust standard error correction. ***, ** and * represent significance at the 1%, 5% and 10% level, respectively

Country	C	NPL	LOAN	SIZE	CAR	EBTP	ΔGDP	Adj R^2	F-stat
Algeria	0.025	0.0009***	-0.00002	-0.002		-0.065**	0.002**	52.94	5.50
	(1.17)	(4.96)	(-0.74)	(-1.63)		(-5.29)	(2.35)		
Angola	-0.013	0.0006***	-0.00002	0.0009	-0.0002	0.057	0.0002	48.82	2.91
	(-0.44)	(26.85)	(-1.09)	(0.36)	(-1.01)	(0.69)	(0.75)		
Botswana	0.039**	0.0009***	-0.00008**	-0.002***	-0.0004***	-0.045	-0.00001	82.27	21.89
	(2.27)	(4.65)	(-2.15)	(-2.14)	(-3.57)	(-1.63)	(-0.07)		
Cameroun	0.095***	0.0007***	-0.000004	-0.009***		0.433***	0.002*	60.81	11.24
	(4.48)	(2.42)	(-0.09)	(-5.59)		(4.29)	(1.80)		
Egypt	-0.013	0.0002**	0.0001***	0.0005	-0.0002	0.013	0.002***	28.68	2.81
	(-0.75)	(2.36)	(3.49)	(0.58)	(-1.56)	(0.17)	(3.15)		
Ethiopia	0.016*	0.0005***	0.00008**	-0.002***		0.302**	-0.0001	50.33	6.88
	(1.68)	(2.89)	(2.26)	(-5.54)		(2.77)	(-0.25)		
Ghana	0.022**	-0.0001**	0.00001*	-0.001*	-0.00005	0.004	-0.00004	-16.24	0.42
	(2.03)	(-2.24)	(1.76)	(-1.93)	(-1.28)	(0.19)	(-1.28)		
Kenya	-0.005	0.000008	0.000005	0.0003	0.00004	0.005	0.00005	4.34	2.07
	(-1.04)	(0.64)	(1.18)	(1.03)	(1.22)	(0.92)	(0.41)		
Mauritius	0.002	0.0002*	0.00002	-0.0002	0.00005	-0.003	0.0004	9.32	1.89
	(0.37)	(1.85)	(1.51)	(-0.98)	(1.24)	(-0.10)	(0.86)		
Morocco	0.037**	0.001*	-0.0001**	-0.001*	-0.0006	-0.189	-0.001***	62.10	8.37
	(2.28)	(1.75)	(-2.60)	(-1.89)	(-1.33)	(-1.48)	(-2.91)		
Namibia	0.008	-0.00004	-0.000004	-0.0008	0.00005	0.087***	0.0003	22.81	3.36
	(1.13)	(-0.59)	(-0.11)	(-1.49)	(0.64)	(2.92)	(1.65)		
Nigeria	0.053	0.002	-0.00002	-0.003	0.00002	0.066[12]	-0.0009	4.47	1.25
	(1.37)	(0.89)	(-0.22)	(-1.22)	(0.04)	(0.69)	(-0.36)		
Senegal	-0.014	-0.0002	-0.00001	0.0009	-	0.271*	0.0005	15.09	2.78
	(-0.57)	(-0.69)	(-0.23)	(0.47)		(1.87)	(1.30)		
South Africa	0.018	-0.00003	0.0001**	-0.0007	-0.0006	0.088	-0.0005	17.81	6.06
	(1.28)	(-0.21)	(2.61)	(-1.27)	(-1.24)	(1.42)	(-0.87)		
Tanzania	0.029***	0.0009***	-0.0001**	-0.002**	-0.00002	0.104	0.0002	35.20	9.78
	(2.06)	(5.99)	(-2.58)	(-2.20)	(-0.08)	(1.31)	(0.33)		
Togo	-0.153*	0.002**	-0.00001	0.008*	-0.001	0.823*	0.0003	45.76	2.27
	(-1.85)	(2.21)	(-0.09)	(1.94)	(-1.63)	(1.68)	(0.22)		
Tunisia	0.023	0.0002	-0.00001	-0.002	0.0004	-0.015	0.0005*	21.96	2.92
	(0.69)	(0.53)	(-0.22)	(-0.86)	(1.60)	(-0.06)	(1.69)		
Uganda	0.008*	0.0002***	0.00003*	-0.0008**	-0.000004	0.027***	0.0002	1.08	1.19
	(1.66)	(3.28)	(1.73)	(-2.35)	(-0.08)	(3.25)	(0.91)		
Zambia	0.015	-0.0002	0.000003	-0.002	0.0002	0.055	0.002***	29.51	2.88
	(0.90)	(1.26)	(0.11)	(-1.64)	(1.26)	(0.89)	(3.14)		

I did not use GMM for this regression because the GMM estimation breaks down for some country-estimations due to missing data or insufficient number of observations for some countries. To address this issue, I run the country regressions using the pooled-cross-section OLS estimator to provide consistent results for all countries in the sample

Note: Some regressions do not have CAR variable because tier1 capital ratio is not reported for sample banks in Algeria, Cameroun, Ethiopia, Senegal, since these countries do not use Basel capital standards

4.4. Regional Comparison

In this section, I compare the result for African banks with that of studies from Europe and Asia.

[12] For example, the result for Nigeria show that Nigerian banks do not use loan loss provisions to smooth income during the period analysed, and this result is consistent with Ozili and Outa (2018).

European studies such as Olszak et al (2017) find that strong investor protection and more restrictive bank capital regulations reduce the procyclicality of LLP in banks while Ozili and Thankom (2018) find that income smoothing is more evident in systemic banks than in non-systemic European banks. Bouvatier et al (2014) examine European banks and find that income smoothing is pronounced among European banks with concentrated ownership while income smoothing is reduced in European countries with strict regulations. Curcio and Hasan (2015) examine Euro area and non-Euro area banks, and finds that higher investor protection significantly reduces the incentives to smooth earnings for Euro Area banks. Also, during the recent financial crisis, Euro Area bank managers were much more concerned with their credit portfolio quality and did not use loan loss provisions for income smoothing and other discretionary purposes. Taken together, the evidence for the effect of investor protection in previous European studies is consistent with the results for Africa banks in this study, and suggests that investor protection can discourage managerial opportunistic behaviour in banks across most regions particularly the African and European regions. In the Asian region, Wu et al. (2015) find that Chinese banks with foreign investor ownership engage in income smoothing compared to banks without foreign investor ownership. Also, Curcio et al (2014) find that Chinese banks smooth income during the financial crisis. However, Bryce et al. (2015) find that Vietnamese banks did not engage in income smoothing. The results are mixed among Asian studies, and these studies did not consider the role of socio-political factors in influencing bank income smoothing. Studies like Wu et al (2015) show support for income smoothing, in contrast, this study document evidence for income smoothing targeted only at positive earnings. This also suggest that the Asian banking environment is different from the African banking environment.

5. Summary and Conclusions

I examine bank income smoothing in Africa - focusing on the role of corruption in influencing income smoothing. I examine 302 African banks from 2004 to 2013 and find evidence of cross-country variation in income smoothing practices in Africa. I also find that income smoothing is reduced among African banks in strong investor protection environments while the smoothing of positive earnings is greater among banks in more corrupt environments.

The main message of this paper is that corruption is significant and positively associated with income smoothing among African banks, and that strong investor protection reduces the extent of income smoothing particularly the smoothing of positive (and substantial) earnings.

One implication of the findings is that loan loss provisions is probably not the target tool used by bank managers to smooth the entire earnings distribution as bank managers may prefer to use specific financial/accounting numbers to smooth the entire profit distribution or to smooth specific profit size. Secondly, regulators should not rely solely on loan loss provisions and reported earnings when assessing the credit risk exposure of African banks due to banks' ability to hide risks by smoothing income, rather bank regulators should consider a number of other factors including institutional factors and other relevant issues in the socio-political environment. Thirdly, strong institutions can help reduce the opacity of bank's financial reporting - policy makers should develop policies that strengthen existing institutions with the appropriate enforcement powers to monitor the financial reporting quality of African banks. Finally, the findings could prove to be valuable to investors in African banks since they must take into consideration the quality of country legal framework and institutions before making investment decisions. Investors should demand supplementary information and legal protection in order to reach a better investment decision and outcomes.

One direction for future research is to investigate alternative accounting number(s) that African banks might use to smooth the entire earnings distribution. Future research could also investigate whether European, U.S or Asian banks preferably use provisions to smooth positive earnings.

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Appendix

A1: Means of Country Variables

A1 report the means for the country variables for 19 countries. Data cover the period 2004 to 2013.

Country	Mean ΔGDP	Mean CORRUPT	Mean VA	Mean COC	Mean INVTPRO	Mean EDL	Mean LEGAL	# Banks
Algeria	3.1	100.22	-0.94	-0.52	5	6	-0.71	16
Angola	10.8	154	-1.16	-1.32	5.3	6	-1.34	14
Botswana	7.6	34	0.49	0.96	5.4	6	0.63	12
Cameroun	3.5	137	-1.04	-0.99	4.3	1	-1.12	11
Egypt	4.6	97.33	-1.05	-0.59	3.6	3	-0.12	16
Ethiopia	11.0	121.56	-1.25	-0.69	3.3	4	-0.72	12
Ghana	7.5	66.56	0.39	-0.04	6.3	5	-0.07	15
Kenya	5.3	145	-0.24	-0.94	5	2	-0.96	24
Mauritius	3.9	45.22	0.84	0.52	7.7	8	0.91	15
Morocco	4.4	80.89	-0.71	-0.27	3.4	2	-0.18	18
Namibia	5.3	55.67	0.39	0.25	5.3	5	0.15	10
Nigeria	8.8	139.11	-0.77	-1.06	5.7	7	-1.22	16
Senegal	3.8	88.78	-0.13	-0.43	3	1	-0.25	10
South Africa	3.3	53	0.60	0.26	8	8	0.10	29
Tanzania	6.7	101.22	-0.22	-0.46	4.9	3.9	-0.41	16
Togo	3.5	130	-1.09	-0.96	3.7	1	-0.94	7
Tunisia	3.9	59	-0.91	-0.08	4.8	5.8	0.13	26
Uganda	7.1	119.33	-0.51	-0.83	4.7	5	-0.45	21
Zambia	7.8	103.56	-0.25	-0.61	5.3	6	-0.51	14

Note: CORRUPT = one divided by the mean of the perceived corruption index.

A2: Correlation of Country Variables

Table 4 report the correlation matrix. ***, ** and * represent significance at the 1%, 5% and 10% level, respectively. P-values are reported in parenthesis

Variables	ΔGDP	EDL	INVTPRO	CORRUPT	COC	VA	LEGAL
ΔGDP	1000						
EDL	-0.002 (0.908)	1.000					
INVTPRO	-0.140*** (0.000)	0.798*** (0.000)	1.000				
CORRUPT	-0.145*** (0.000)	0.429*** (0.000)	0.427*** (0.000)	1.000			
COC	-0.169*** (0.000)	0.406*** (0.000)	0.440*** (0.000)	0.937*** (0.000)	1.000		
VA	-0.126*** (0.000)	0.396*** (0.000)	0.705*** (0.000)	0.609*** (0.000)	0.683*** (0.000)	1.000	
LEGAL	-0.196*** (0.000)	0.347*** (0.000)	0.327*** (0.000)	0.876*** (0.000)	0.913*** (0.000)	0.587*** (0.000)	1.000 -----