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# **Bank earnings management using loan loss provisions: comparing the UK, France, South Africa and Egypt**

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## **Abstract**

This paper investigates bank earnings management using loan loss provision (LLP). The paper examines income smoothing which is a type of earnings management. It compares the income smoothing behaviour of banks in the UK, France, South Africa and Egypt. The findings show that bank income smoothing is present in the UK and Egypt, and absent in France and South Africa during the period examined. Banks in Egypt used LLPs to smooth income before the global financial crisis. Meanwhile, bank income smoothing is pronounced in France during and after the financial crisis but is absent in the pre-crisis period. Also, bank income smoothing is reduced in countries that (i) have strict banking supervision, (ii) adopt common law such as the United Kingdom, and (iii) adopt civil law such as France and Egypt. Bank earnings management is also greater in countries that adopt a mixed legal system such as South Africa, and in countries that adopt IFRS accounting standards.

**Keywords:** banks, earnings management, loan loss provisions, income smoothing

**JEL code:** G21, G28, M41

## 1. Introduction

This paper investigates the use of loan loss provisions (LLP) for earnings management among banks in France, UK, South Africa and Egypt. It focuses on earning management that takes the form of income smoothing. Income smoothing is a form of earnings management. Generally, earnings management arises from managerial discretion in financial reporting. Financial reporting in the banking industry involves a substantial amount of managerial discretion and judgment (Beatty and Liao, 2014). Bank managers use their discretion and judgement in financial reporting to manipulate accounting numbers to achieve certain financial reporting objectives. This discretion and judgement also create opportunities for earnings management such as income smoothing (Beatty and Liao, 2014).

Bank earnings management using LLP has received a lot of attention among academics because managerial discretion in loan loss provisioning has implications for the transparency of reported loan loss provisions estimates, financial reporting quality and for micro-prudential reasons (Saurina, 2009; Andries et al, 2017; Ozili and Outa, 2017). LLP is important in the banking industry for two reasons. One, LLP is the largest component of the total accruals of banks; and two, LLP conveys valuable information about banks' expected loan loss and earnings' prospect, which makes it a potential tool for managing reported earnings (Nicoletti, 2018; Marton and Runesson, 2017).

Prior studies document mixed evidence for the use of LLP to smooth bank income in several country-specific and cross-country contexts (see, for example, El Sood, 2012; Kilic et al, 2013; Bushman and Williams, 2012). The literature does not explain why conflicting evidence for bank income smoothing exist in country-specific studies. These differences may be attributed to differences in country characteristics such as financial crisis, accounting disclosure rules, bank supervisory quality and the prevailing legal system in a country.

The novelty of this paper is that it explicitly analyses specific countries that have the aforementioned characteristics, to determine whether their income smoothing behaviour are similar or dissimilar. As shown in table 1 below, two of the countries analysed are advanced countries that have strict bank supervision, strong legal systems and strict disclosure rules, while the other two countries are emerging countries that have a less strict bank supervisory regime and a weak legal system. These two categories present a natural setting to investigate whether the extent of income smoothing is influenced by institutional quality and the level of country development. More importantly, the structure of the legal system, such as the adoption of common law or civil law as well as the strictness of banking supervision can introduce additional constraints on bank behaviour. Yet, the impact of these factors on bank income smoothing have not been examined in the literature.

	France	UK	Egypt	South Africa
Common Law	No	Yes	No	No
Civil Law	Yes	No	Yes	No
Mix legal system	No	No	No	Yes
Strict banking supervision	Yes	Yes	No	No
IFRS adoption	Yes	Yes	No	Yes

Table 1 shows that France and the UK are advanced countries. The banking sectors of UK and France are among the most strongly regulated and supervised banking sectors in the World. Therefore, it is expected that the strict banking supervision in these two countries may discourage the manipulation of accounting numbers, such as loan loss provisions, for earnings management purposes. South Africa and Egypt were selected to represent emerging countries. Egypt is a conservative and religious country, and the literature document that strong religiosity is negatively related to earnings management because religious laws oppose unethical practices in corporations and may discipline firms that manage earnings opportunistically (Callen et al, 2011; Kanagaretnam et al, 2015); therefore, I predict reduced income smoothing or no income smoothing among banks in Egypt. South Africa is also an emerging country and a more liberal country whose corporations are governed by a combination of common law and civil law. Bank managers in South African banks will have more legal freedom to exercise their discretion in financial reporting, and such discretion may be used for earnings management purposes.

Using data from 2004 to 2013, the findings show that bank income smoothing is present in the UK and Egypt, and absent in France and South Africa. Banks in Egypt used LLPs to smooth income before the global financial crisis. Meanwhile, bank income smoothing is pronounced in France during and after the financial crisis but is absent in the pre-crisis period. Also, bank income smoothing is reduced in countries that (i) have strict banking supervision, (ii) adopt common law such as the United Kingdom, and (iii) in countries that adopt civil law such as France and Egypt. Also, bank earnings management is greater in countries that adopt a mixed legal system, such as South Africa, and in countries that adopt IFRS accounting standards.

The study contributes to the literature in the following ways. One, the study extends the literature that investigate bank income smoothing under country-specific and cross-country contexts (see, for example, Adzis et al, 2016; Caporale et al, 2015; Andries et al, 2017; El Sood, 2012; Kilic et al, 2013; Bushman and Williams, 2012). This paper adds to this literature by examining the income smoothing characteristics of banks in each country, separately, to identify distinct characteristics that differ between the countries. Two, the study contributes to the literature that examine the incentives to engage in earnings management. It adds to the literature by showing that the incentive to manage earnings is driven mainly by economic reasons such as the need to cope with a financial crisis.

The rest of the paper is structured as follows. Section 2 presents the literature review. Section 3 presents the methodology. Section 4 reports the results. Section 5 concludes.

## 2. Literature review

An extensive literature examines bank earnings management using loan loss provisions. Some studies argue that ownership structure can reduce income smoothing through increased monitoring of bank managers' behaviour. For instance, Doan et al. (2020) assess the relationship between government ownership and income smoothing of commercial banks. They find that banks with more state-controlled shareholders located in developing countries tend to have more incentives to smooth income. Also, there was no significant difference in earnings management between government-controlled and non-government banks in developed countries. Bouvatier et al (2014) argue that ownership concentration can reduce earnings management by banks. They examine the impact of ownership concentration and the regulatory environment on bank income smoothing among European commercial banks. They analyse European commercial banks from 2004 to 2009. They find that banks with more concentrated ownership use discretionary loan loss provisions to smooth their income, and this behavior is less pronounced in countries with stronger supervisory regimes or higher external audit quality. Skala (2019) analyses the relationship between bank income smoothing and shareholder structure in Central European banks from 2004 to 2014. They find that State banks show varying degrees of income smoothing, with more intense smoothing before the crisis and a diminished link between provisions and income during- and after the crisis. Kwak et al (2009) examines the association between institutional ownership and income smoothing through bank LLP. They analyse Japanese banks from 1991 to 1999. They find that there is a significant positive relationship between the extent of income smoothing and the percentage ownership of banks by domestic financial institutions and affiliated institutions. Pinto et al (2019) investigate the role of corporate governance mechanisms and foreign direct investment (FDI) in restraining or stimulating income smoothing using LLP. They analyse 112 listed and non-listed banks from 20 African countries from 2011 to 2017. They used pooled OLS and GMM regression estimations. They find that African bank managers use LLPs to reduce income volatility, and that ownership concentration increases income smoothing. The implication of their result is that corporate governance mechanisms can be used in African countries to increase the quality of financial reporting.

Other studies assess the impact of institutional factors on the extent of income smoothing by banks. The central argument in this strand of literature is that certain institutional factors can restrain or stimulate bank managers to smooth income, opportunistically. For instance, Ozili (2019a) investigates bank income smoothing using loan loss provisions, focusing on the effect of corruption on the extent of income smoothing by African banks. The study analysed banks from 19 African countries, and used the fixed effect panel regression estimation methodology to estimate the impact of corruption on bank income smoothing. Ozili (2019a) finds that banks use loan loss provisions to smooth positive earnings particularly in the post-2008 crisis period and this behaviour is reduced by strong investor protection. Also, African banks in highly corrupt environments smooth their positive earnings as opposed to smoothing the entire profit distribution. Fonseca and Gonzalez (2008) investigates the cross-country determinants of income smoothing using LLP. They use the GMM regression estimation methodology, and find that income smoothing decreases with higher investor protection, strict accounting disclosure, restrictions on bank activities and official and private supervision, while it increases with market-orientation and development of the financial system. Osma et al (2019) investigate whether greater independence of powerful

supervisors from the government and from the industry is associated with lower income smoothing in European banks. They use the adoption of IFRS in Europe as a shock to the influence of prudential supervisors over national banks' accounting practice. In their empirical analysis, they use panel fixed effect regression estimation. They examined European banks from 2000 to 2013, and find evidence of lower income smoothing after IAS 39 adoption in European countries where the prudential supervisors are independent.

Another strand of literature argues that high quality accounting disclosure roles, such as IFRS adoption, can improve earnings quality by limiting the ability of managers to distort accounting numbers in financial reporting, thereby reducing income smoothing. This literature document mixed findings. For example, Ozili and Outa (2019) examine the extent of bank earnings smoothing during mandatory IFRS adoption in Nigeria. They find that the mandatory adoption of International Financial Reporting Standards (IFRS) is associated with lower earnings smoothing among Nigerian banks, which implies that Nigerian banks do not use loan loss provisions to smooth reported earnings during the mandatory IFRS adoption period. Ozili (2019c) examines the impact of the reclassification of IAS 39 on income smoothing using loan loss provisions among European banks, and document no evidence for income smoothing in the pre- and post- IAS 39 reclassification period, which implies that European banks did not use loan loss provisions to smooth income during the period examined, and that the IASB's strict disclosure regulation improved the reliability and informativeness of loan loss provision estimates among European banks.

Other studies assess the impact of economic events on the extent of income smoothing by banks. The central argument in this strand of literature is that certain economic events create incentives for banks to smooth income, however, the literature document mixed evidence for this. Ozili and Arun (2018) examine whether the way global systemic banks (G-SIBs) use loan loss provisions to smooth income differ compared to non-global systemic banks (non-G-SIBs). They find that income smoothing is pronounced among G-SIBs in the post-crisis period and pronounced among non-G-SIBs in the pre-crisis period. Tran et al (2019) argue that earnings management is opportunistic and adds noise to earnings. They compare earnings management between public and private banks by using discretionary loan loss provisions (DLLPs). They find that banks with relatively low (high) earnings tend to decrease (increase) their earnings through manipulation of loan loss provisions. Ozili (2017) find evidence that discretionary provisioning by Western European banks is driven by income smoothing incentives in the post-financial crisis period, particularly, among listed banks. Caporale et al (2015) examine the main determinants of loan loss provision for Italian banks, and find that LLP in Italian banks is driven mainly by non-discretionary components of loan loss provision especially during the recession of 2008-2012. Ozili and Outa (2018) examine the determinants of the use of loan loss provisions to smooth income by banks in South Africa. They find that South African banks use loan loss provisions to smooth income when they profitable and during economic boom years. Ozili and Outa (2017), in a review of the literature, observe that some interaction exists between LLPs and existing prudential, accounting, institutional, cultural, religious, tax and fiscal frameworks which differ across countries. They also observe that managerial discretion in provisioning is strongly linked to income smoothing and other incentives such as, capital management, signalling, tax management and other objectives. Danisman et al (2021) investigate the association between loan loss provisions and economic policy uncertainty. They assess US banks from 2009 to 2019.

They find that US banks use LLPs to smooth income during times of uncertain economic policy. They also observe that privately-held banks exhibit greater income smoothing times of high economic policy uncertainty than publicly-held banks. Kanagaretnam et al (2004) investigate whether bank managers use loan loss provisions to reduce earnings variability. They predict that bank managers can reduce the cost of capital and increase share prices by reducing earnings variability. In their analysis of US banks, they find that banks with high pre-managed earnings have positive discretionary LLP and banks with relatively low pre-managed earnings have negative discretionary LLP, which confirms their prediction.

### 3. Methodology

#### 3.1. Data

The sampling technique used in this study is the convenience sampling technique. This technique is appropriate for assessing or comparing the behaviour of pre-determined objects or subjects. The sample consists of banks from four countries. The countries are: South Africa, Egypt, France and the United Kingdom. Balance sheet and income statement information was collected from Bankscope database. The sample period is from 2004 to 2013. The reason for choosing the selected sample period is due to data availability on Bankscope. The selected sample period covers at least a full economic cycle, which means, the sample period is sufficient to capture downturns and booms in the economic cycle. Macroeconomic information was collected from the World Economic Forum archived in World Bank database.

#### 3.2. Methodology

##### 3.2.1. Model specification

The approach used to test the earnings smoothing hypothesis, or to detect the presence of smoothed earnings among banks, is the 'specific accrual' approach (McNichols, 2000). This approach expresses a specific discretionary accrual (in this case, loan loss provisions) as a function of its non-discretionary determinants and other factors that influence decisions regarding the specific accrual (Ozili, 2017). Discretionary loan loss provision is the portion of total loan loss provisions that is subject to manipulation by bank managers.

The model employed in this study is similar to the model used in previous studies (e.g. Curcio and Hasan, 2015; Kilic et al., 2013; Ozili, 2019b). The EBTP variable is the earnings smoothing variable of interest in the model. The model is expressed as:

$$LLP_{i,t} = \beta_0 + \beta_1 EBTP_{i,t} + \beta_2 CAPI_{i,t} + \beta_3 LOTA_{i,t} + \beta_4 NPL_{i,t} + \beta_5 \Delta GDP_t + \varepsilon_{i,t}. \text{ Equation (1)}$$

Where 'i' = bank; 't' = year; LLP = total loan loss provisions scaled by total assets; EBTP = earnings before tax and provisions and tax scaled by total assets; NPL = non-performing/impaired loans scaled by total

assets; CAP = tier 1 capital scaled by total risk weight assets; LOTA = total loan scaled by total assets;  $\Delta$ GDP = real gross domestic product growth rate.

### 3.2.2. Variables and Justification

LLP is loan loss provisions which is the dependent variable (Curcio and Hasan, 2015; Ozili and Arun, 2018). EBTP, the earnings variable, is the ratio of earnings before tax and loan loss provisions divided by total assets. EBTP is mechanically derived by adding-back loan loss provisions to the profit before tax number. In the literature, a positive and significant relationship between LLP and EBTP is commonly taken as evidence to indicate smoothed earnings (see. Curcio and Hasan, 2015; Ozili and Arun, 2018), which suggest that banks lower loan loss provisions to increase low earnings and increase loan loss provisions to decrease high earnings in the current period. The NPL variable is the ratio of impaired loans to total asset (Ozili, 2017). NPL variable captures specific loan loss provisions that banks must set aside for loan losses that are highly probable to occur or that are 90-days past due. Many studies predict a positive relationship between LLP and NPL (Kilic et al, 2013; Ozili and Arun, 2018). Thus, a positive sign for the NPL coefficient is expected. The CAP variable is the ratio of tier 1 capital equity to total risk weight asset. The CAP variable is included to control for capital management incentives to manipulate provisions estimate. Ahmed et al (1999) argue that bank managers tend to understate loan loss provisions to increase regulatory capital levels and to avoid violating the minimum regulatory capital threshold. Thus, a negative relationship between LLP and CAP is expected. The loan to asset ratio (LOTA) variable reflects the default risk of the loan portfolio of banks. Ozili and Arun (2018) suggest that banks with high loan to asset ratio have high default risk and will keep higher loan loss provisions to compensate for the increase in default risk on the loan portfolio, implying a positive relationship between LLP and LOTA. Therefore, a positive relationship between loan loss provisions and bank loan to asset ratio is expected. Growth in real gross domestic product ( $\Delta$ GDP) variable captures macroeconomic fluctuation. Prior studies show that banks keep higher loan loss provisions during economic downturns and keep fewer loan loss provisions during periods of economic prosperity (see, Curcio and Hasan, 2015). Therefore, a negative relationship is expected.

### 3.2.3. Estimation procedure

Panel fixed effect regression was used to analyse the data. A Hausman test diagnostic was conducted. The reported p-value of the chi-square in the random effect estimation is less than 0.01 which implies that the fixed effect estimation is more appropriate. Also, a number of studies such as Leventis et al (2011), Curcio and Hasan (2015), Ozili (2019a) and Osma et al (2019) use the fixed effect panel regression estimation when testing for earnings management using loan loss provisions in their panel data sample.

### 3.2.4. Descriptive statistics

The summary of the descriptive statistics is reported in table 2. The average LLP is lower in France, and relatively higher in Egypt. For the  $\Delta$ GDP variable, Egypt and South Africa report a relatively high average  $\Delta$ GDP for the period compared to France and the UK. The CAP ratio is above 8% as required in Basel 2 standards. Banks in South Africa and Egypt have a higher CAP ratio than banks in UK and France. For the NPL variable, banks in the UK and France report fewer NPLs than banks in Egypt and South Africa. This



supports the argument that banks in advanced countries have a more robust and sophisticated credit risk management system than banks in developing and emerging countries. For the LOTA variable, banks in South Africa have a high LOTA ratio compared to banks in the UK, France and Egypt. For the EBTP variable, banks in South Africa and Egypt have high pre-provisions earnings than banks in the UK and France.

**Table 2: Summary of descriptive statistics**

Countries	Number of banks	LLP	EBTP	LOTA	NPL	CAP	$\Delta$ GDP	SUP
		Mean %	Mean %	Mean %	Mean %	Mean %	Mean %	Mean %
UK	35	0.4	0.88	51.21	4.63	11.56	1.38	3.1
France	35	0.2	0.9	52.8	3.51	10.58	1.23	4.0
South Africa	29	1.77	4.79	62.16	5.9	15.84	3.3	3
Egypt	7	0.69	2.3	47.32	17.12	18.37	4.56	-1.5

## 4. Results

### 4.1. Income smoothing

The result is reported in table 3. In the full sample result, the EBTP coefficient is negative and significant at the 1% significance level. In the country specific analysis, EBTP coefficient is also negatively significant for France and South Africa. This suggest that banks in France and South Africa do not use LLPs to smooth income. The results do not support the income smoothing hypothesis. In contrast, EBTP coefficient is positively significant for the UK and Egypt. This suggest that banks in the UK and Egypt use LLPs to smooth income, and this result supports the income smoothing hypothesis, and supports the findings of Curcio and Hasan (2015) and Ozili and Arun (2018).

For the control variables, NPL coefficient is positive and significant across the five models as expected, and suggest that banks increase loan loss provisions when they expect higher problem loans. This is consistent with Ozili and Arun (2018). LOTA coefficient is positive. This indicates that there is a positive relationship between the size of loan loss provision and banks' default risk. CAR coefficient is negative in the five models. This indicates that there is a negative relationship between the size of bank capital and loan loss provisions. The  $\Delta$ GDP coefficient report different signs in the five models.  $\Delta$ GDP is positive for South African and Egypt, and negative for France and UK.

<b>Table 3: earnings management using loan loss provision</b>					
	Full sample	France	UK	South Africa	(Egypt
	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)
<b>C</b>	-0.547** (-2.42)	0.037 (0.79)	-0.946*** (-2.71)	0.096 (0.10)	-2.972*** (-2.99)
<b>EBTP</b>	-9.272*** (-3.24)	-18.977*** (-7.23)	30.944*** (3.80)	-10.367* (-1.96)	43.228** (2.73)
<b>CAP</b>	0.0001 (0.69)	-0.0001 (-1.52)	-0.051*** (-3.90)***	-0.040* (-1.73)	-0.047* (-2.08)
<b>LOTA</b>	0.015*** (3.83)	0.006*** (7.11)	0.019 (3.38)	0.029* (1.91)	0.044* (1.94)
<b>NPL</b>	0.120*** (14.69)	0.018* (2.33)	0.171*** (20.09)	0.135*** (4.28)	0.074** (2.52)
<b>ΔGDP</b>	-0.023 (-1.43)	-0.023*** (-4.36)	-0.052*** (-3.09)	0.015 (0.31)	0.005 (0.09)
<b>Bank fixed effect</b>	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effect</b>	Yes	No	No	No	No
<b>Adjusted R<sup>2</sup></b>	85.14	94.01	81.19	88.35	62.14
<b>F-statistic</b>	34.79	89.48	23.39	44.16	5.43
<b>P(F-statistic)</b>	0.000	0.000	0.000	0.000	0.001
<b>Observation</b>	585	170	218	149	28

## 4.2. Effect of the global financial crisis

This section examines the effect of 2007/2008 global financial crisis on bank income smoothing using loan loss provisions. Some binary variables were introduced to capture this effect. The 'BC' binary variable equals one for the pre-crisis period of 2004, 2005 and 2006, and zero otherwise. The 'DC' binary variable equals one for the financial crisis period of 2007 and 2008, and zero otherwise. The 'PC' binary variable equals one for the post-crisis period of 2009, 2010, 2011, 2012 and 2013, and zero otherwise. These binary variables were interacted with the EBTP variable to determine their effect on income smoothing.

### 4.2.1. Before the global financial crisis

The result is reported in table 4. In the full sample result, the BC\*EBTP coefficient is positive and significant for Egypt. This suggest that banks in Egypt use LLPs to smooth income prior to the global financial crisis. In contrast, the BC\*EBTP coefficient is negative and significant for banks in France. This suggest that banks in France do not use LLPs to smooth income prior to the global financial crisis.

<b>Table 4: Pre-crisis – earnings management using loan loss provision</b>					
	Full sample	France	UK	South Africa	Egypt
	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)
<b>C</b>	-0.536** (-2.35)	0.041 (0.93)	-0.859** (-2.41)	0.197 (0.21)	-3.888** (-2.51)
<b>EBTP</b>	-11.332*** (-3.39)	-15.584*** (-6.26)	35.372*** (3.39)	-11.593* (-1.61)	39.499** (2.47)
<b>BC*EBTP</b>	3.171 (1.24)	-11.373*** (-4.66)	-3.247 (-0.22)	1.740 (0.36)	127.39* (1.84)
<b>BC</b>	-0.097 (-1.24)	0.037 (1.59)	-0.093 (-0.62)	-0.263 (-0.83)	-2.186 (-1.71)
<b>CAP</b>	0.0001 (0.75)	-0.0001 (-1.52)	-0.051*** (-3.86)	-0.040* (-1.54)	-0.039* (-1.76)
<b>LOTA</b>	0.017*** (4.03)	0.006*** (7.72)	0.017*** (3.24)	0.029* (1.84)	0.062* (1.91)
<b>NPL</b>	0.119*** (14.65)	0.016** (2.20)	0.170*** (19.81)	0.131*** (4.03)	0.086** (2.81)
<b>ΔGDP</b>	-0.022 (-1.37)	-0.023*** (-4.76)	-0.049*** (-2.88)	0.036 (0.64)	-0.032 (-0.49)
<b>Bank fixed effect</b>	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effect</b>	No	No	No	No	No
<b>Adjusted R<sup>2</sup></b>	85.06	94.99	80.71	88.22	65.05
<b>F-statistic</b>	37.14	101.33	26.95	40.59	5.19
<b>P(F-statistic)</b>	0.000	0.000	0.000	0.000	0.001
<b>Observation</b>	585	170	218	149	28

#### 4.2.2. During the global financial crisis

The result is reported in table 5. In the full sample result, the DC\*EBTP coefficient is positive and significant for banks in France. This suggest that banks in France use LLPs to smooth income during the global financial crisis. This result supports the income smoothing hypothesis, and supports the findings of El Sood (2012) and Ozili and Arun (2018). Meanwhile, the DC\*EBTP coefficient is insignificant for banks in the UK, South Africa and Egypt.

<b>Table 5: During-crisis – earnings management using loan loss provision</b>					
	Full sample	France	UK	South Africa	Egypt
	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)
<b>C</b>	-0.567** (-2.51)	0.049 (1.07)	-0.962*** (-2.72)	0.208 (0.22)	-3.760*** (-3.27)
<b>EBTP</b>	-9.741*** (-3.21)	-20.380*** (-7.36)	30.867*** (3.68)	-11.409** (-2.09)	50.084*** (2.98)
<b>DC*EBTP</b>	0.173 (0.17)	7.411** (2.26)	-0.694 (-0.04)	2.583 (0.64)	-41.576 (-1.66)
<b>DC</b>	0.071 (0.83)	0.005 (0.18)	-0.063 (-0.39)	0.019 (0.07)	1.257 (1.69)
<b>CAP</b>	0.0001 (0.75)	-0.0001 (-0.73)	-0.051*** (-3.92)	-0.045* (-1.85)	-0.021 (-0.74)
<b>LOTA</b>	0.016*** (3.91)	0.006*** (6.85)	0.019*** (3.66)	0.029* (1.85)	0.049** (2.16)
<b>NPL</b>	0.119*** (14.65)	0.017** (2.32)	0.170*** (19.81)	0.134*** (4.16)	0.081** (2.82)
<b>ΔGDP</b>	-0.024 (-1.57)	-0.021*** (-4.09)	-0.053*** (-3.11)	0.007 (0.14)	-0.039 (-0.61)
<b>Bank fixed effect</b>	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effect</b>	No	No	No	No	No
<b>Adjusted R<sup>2</sup></b>	85.03	94.45	80.57	88.23	64.22
<b>F-statistic</b>	37.05	90.91	26.71	40.62	5.04
<b>P(F-statistic)</b>	0.000	0.000	0.000	0.000	0.002
<b>Observation</b>	585	170	218	149	28

#### 4.2.3. The post-financial crisis period

The result is reported in table 6. In the full sample result, the PC\*EBTP coefficient is positive and significant for banks in France. This suggest that banks in France use LLPs to smooth income in the period after the global financial crisis. This result supports the income smoothing hypothesis, and supports the findings of El Sood (2012) and Ozili and Arun (2018). Meanwhile, the PC\*EBTP coefficient is insignificant for UK, South Africa and Egypt.

<b>Table 6: Post-crisis era – earnings management using loan loss provision</b>					
	Full sample	France	UK	South Africa	Egypt
	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)
<b>C</b>	-0.567** (-2.52)	0.075 (1.52)	-0.995*** (-2.82)	-0.045 (-0.05)	-0.535 (-0.21)
<b>EBTP</b>	-10.161*** (-3.51)	-23.143*** (-8.16)	32.689*** (3.16)	-11.991** (-2.13)	14.578 (0.49)
<b>PC*EBTP</b>	-4.226 (-1.63)	10.082*** (3.31)	3.681 (0.27)	-6.212 (-1.29)	23.579 (0.98)
<b>PC</b>	0.042 (0.57)	-0.055** (-2.26)	0.118 (0.87)	0.223 (0.704)	-1.014 (-1.16)
<b>CAP</b>	0.0001 (0.67)	-0.0001* (-1.95)	-0.052*** (-3.94)	-0.037 (-1.57)	-0.031 (-1.06)
<b>LOTA</b>	0.017*** (4.21)	0.006*** (7.04)	0.019*** (3.53)	0.033** (2.11)	0.012 (0.31)
<b>NPL</b>	0.118*** (14.45)	0.017** (2.27)	0.168*** (19.63)	0.127*** (3.78)	0.065* (2.12)
<b>ΔGDP</b>	-0.027* (-1.67)	-0.025*** (-4.84)	-0.049*** (-2.92)	0.021 (0.35)	-0.008 (-0.14)
<b>Bank fixed effect</b>	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effect</b>	No	No	No	No	No
<b>Adjusted R<sup>2</sup></b>	85.07	94.38	80.89	88.32	60.68
<b>F-statistic</b>	37.19	89.69	27.26	40.97	4.47
<b>P(F-statistic)</b>	0.000	0.000	0.000	0.000	0.003
<b>Observation</b>	585	170	218	149	28

#### 4.3. Additional analysis

Next, I examine the effect of bank supervisory strictness, different legal systems and IFRS adoption on income smoothing. Some binary variables were introduced to capture these effects. The 'IFRS' binary variable equals one for countries that adopt IFRS accounting standards, and zero otherwise. The 'COMMON' binary variable equals one for countries that adopt common law in its legal system. The UK is the only common law country in the sample. The 'CIVIL' binary variable equals one for countries that adopt civil law in its legal system. France and Egypt are the only civil law countries in the sample. The 'MIXED' binary variable equals one for countries that adopt a mixed legal system. South Africa is the only country in the sample that adopt a mixed legal system. These binary variables were interacted with the EBTP variable to determine their effect on bank income smoothing. Finally, the 'SUP' variable was introduced into the model. The 'SUP' variable is an index of banking supervisory strictness, derived from the database of Barth et al (2013).

The result is reported in table 7. The SUP\*EBTP coefficient is negative and significant. This suggest that income smoothing using loan loss provisions is reduced in countries that have strict banking supervision. This result supports the findings of Bouvatier et al (2014) who finds that income smoothing is reduced in countries with strong supervisory regimes. The COMMON\*EBTP coefficient is negative and significant. This suggest that income smoothing using loan loss provisions is reduced in countries that adopt common law such as the United Kingdom. The CIVIL\*EBTP coefficient is negative and significant. This suggest that income smoothing using loan loss provisions is reduced in countries that adopt civil law such as France and Egypt. The MD\*EBTP coefficient is positive and significant. This suggest that income smoothing using loan loss provisions is greater in countries that adopt a mixed legal system, particularly South Africa. The IFRS\*EBTP coefficient is positive and significant. This suggest that income smoothing using loan loss provisions is greater in countries that adopt a IFRS accounting standards. This result supports the findings of Leventis et al (2011) who finds that IFRS adoption reduces income smoothing.

<b>Table 7: Additional analysis - earnings management using loan loss provision</b>					
	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)	Coefficient (T-statistic)
<b>C</b>	-2.811*** (-7.34)	-0.864*** (-4.54)	-1.034*** (-6.41)	-0.799*** (-5.94)	-1.426*** (-7.37)
<b>EBTP</b>	63.546*** (5.69)	35.512*** (19.87)	34.626*** (22.05)	-1.306 (-0.21)	34.819*** (19.46)
<b>SUP*EBTP</b>	-9.514*** (-2.61)				
<b>COMMON*EBTP</b>		-23.367** (-2.53)			
<b>CIVIL*EBTP</b>			-44.112*** (-5.03)		
<b>MD*EBTP</b>				38.427*** (6.04)	
<b>IFRS*EBTP</b>					17.345*** (3.94)
<b>SUP</b>	0.491*** (5.15)				
<b>COMMON</b>		0.313** (1.98)			
<b>CIVIL</b>			0.229* (1.64)		
<b>MD</b>				-0.474*** (-3.19)	
<b>IFRS</b>					0.404*** (2.85)
<b>CAP</b>	-0.0001 (-0.23)	0.0001 (0.53)	-0.0001 (-0.06)	-0.0001 (-0.21)	0.0001 (0.24)
<b>LOTA</b>	0.016*** (7.32)	0.013*** (5.80)	0.017*** (7.12)	0.017*** (7.86)	0.015*** (6.72)

<b>NPL</b>	0.104*** (15.22)	0.084*** (13.29)	0.089*** (14.33)	0.086*** (13.89)	0.089*** (14.26)
<b>ΔGDP</b>	-0.051** (-2.20)	-0.105*** (-4.51)	-0.086*** (-3.85)	-0.079*** (-3.46)	-0.061** (-2.58)
<b>Bank fixed effect</b>	Yes	Yes	Yes	Yes	Yes
<b>Year fixed effect</b>	No	No	No	No	No
<b>Adjusted R<sup>2</sup></b>	64.90	63.04	64.23	64.49	64.77
<b>F-statistic</b>	68.50	59.58	66.56	67.28	68.11
<b>P(F-statistic)</b>	0.000	0.000	0.000	0.000	0.000
<b>Observation</b>	585	585	585	585	585

## 5. Conclusion

This paper examined bank earnings management using loan loss provisions. Income smoothing is a type of earnings management. This study compared the earnings smoothing behaviour of banks in the UK, France, South Africa and Egypt.

The findings show that bank income smoothing is present in the UK and Egypt, and absent in France and South Africa. Banks in Egypt used LLPs to smooth income before the global financial crisis. Meanwhile, bank income smoothing is pronounced in France during and after the financial crisis but was absent in the pre-crisis period. Also, bank income smoothing is reduced in countries that (i) have strict banking supervision, (ii) adopt common law such as the United Kingdom, and (iii) adopt civil law such as France and Egypt. Bank earnings management is also greater in countries that adopt a mixed legal system, such as South Africa, and in countries that adopt IFRS accounting standards.

The implication of the findings is that bank supervisors should monitor loan loss provisions estimates more closely to discourage the use of loan loss provisions for opportunistic income smoothing by banks especially banks in the UK and Egypt. Policy makers and supervisors should ensure strict supervision of the provisions estimates of banks to discourage the use of loan loss provisions for opportunistic earnings management. However, despite the presence of strict banking supervision, banks may have economic incentives to smooth income during bad times, as was the case of banks in France in this study. Policy makers can complement bank supervisory rules with high-quality accounting disclosure standards that improves the quality of reported earnings in the UK and Egypt. The lesson for developing countries, such as Egypt, is that there is need to adopt a better accounting disclosure standard with the necessary controls that can discourage managers from engaging in earnings management

One limitation of the study is that the analyses is limited to only four countries, which may be considered to suffer from self-selection bias. Such perceived self-selection bias does not exist when the selection criteria that influenced the choice of the four countries are taken into account.

Future studies can extend the analyses in this paper by exploring a larger country sample. Future studies can also extend the present study by investigating the earnings management behaviour of banks using

country clusters such as the BRICS countries, ASEAN countries, ECOWAS countries and other cluster-country groups. Future studies can also examine other tools used by banks for earnings management other than loan loss provisions. Also, future studies can explore how institutional quality affects the relationship between loan loss provisions and earnings management in banks, and how the effect differ in developed countries and developing countries.

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