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# IFRS-9 adoption and income smoothing nexus: A comparison of the post-adoption effects between European and Sub-Saharan African Banks

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This paper compares the post-adoption effects of IFRS 9 on the income smoothing behavior of banks in Europe and Sub-Saharan Africa. The researchers extend their analysis to examine the effect of country-level governance on income smoothing. Using a sample of listed commercial banks in Europe and Sub-Saharan Africa, the authors employ varying econometric tests and panel regressions to investigate the hypotheses. The findings show a decrease in income smoothing across the full sample post-IFRS 9. Partitioned into sub-samples to explore potential economic heterogeneity and differing institutional context between the European and Sub-Saharan African settings, the authors report mixed evidence of higher and decreased income smoothing in Europe and Sub-Saharan Africa, respectively. This is consistent with the theoretical arguments that the implementation effects of IFRS 9 are expected to vary across jurisdictions. Also, governance quality mitigates the incidence of income smoothing. This paper is one of the first to empirically compare the income smoothing behavior of commercial banks in Europe and Sub-Saharan Africa following the adoption of IFRS 9. It, therefore, provides original insight into the theoretical argument that the adoption effects of IFRS 9 are expected to vary across jurisdictions depending on several factors like country, firm size, and institutional factors among others. The findings highlight how bank managers in different jurisdictions exercise the inherent discretion under IFRS 9 over their financial reporting choices.

**Key words:** Income smoothing, IFRS 9 adoption, banks, corporate governance, Europe, Africa.

## INTRODUCTION

Sequel to the 2007 financial crisis, safeguarding the stability and resilience of the financial system remains a topical concern in academic literature and corporate discourse. The crisis highlighted deficiencies in accounting for financial instruments under International Accounting Standard (IAS) 39. Succinctly stated, the incurred loan loss (ILL) model previously used under IAS 39 was extensively criticized for being "too little, too late" in the recognition of credit losses leading to excessive loss overhang in the financial system which partly triggered the financial crisis of 2007 (Financial Stability Forum, 2009; BCBS, 2009). Extant literature argues that the incurred loan loss model under IAS 39 was procyclical in nature and detrimental to financial stability

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(BCBS, 2009; Financial Stability Forum, 2009). Alluding to the inherent flaws of IAS 39, Sir David Tweedie, former Chairman of the International Accounting Standards Board (IASB) in his famous words said "If you understand IAS 39, you haven't read it properly – it's incomprehensible". Therefore, the financial crisis of 2007 elicited the implementation of a more proactive and robust accounting standard on financial instruments that incorporates forward-looking information in the estimation and recognition of credit losses as several parties expressed concerns about IAS 39's inherent flaws (IASB, 2014). The "too little, too late" approach in terms of provisions was extensively criticized, sparking the need for a new standard requiring more forward-looking information in the estimation of credit losses (ECB, 2017).

In response, the International Accounting Standards Board (IASB) developed International Financial Reporting Standard (IFRS) 9 - Financial Instruments which became effective on January 1, 2018 to tackle the adverse effects of untimely recognition of credit losses on the financial positions of banks as revealed by the financial crisis. Argued as being restrictive in nature, the ILL under IAS 39 had the tendency to limit the scope for subjective judgment which may constrain the opportunistic behavior of management. In contrast, a key feature of IFRS 9 is the forward-looking nature of Expected Credit Loss (ECL) model which gives much room for discretion. Jeanjean and Stolowy (2008) argued that much flexibility and subjectivity in accounting standards provide greater scope for discretion which may instigate earnings management in the absence of effective control mechanisms.

The implementation of IFRS 9 on January 1, 2018 was heralded by much theoretical debate on the expected impacts in both academic and corporate literature. Key expected effects and ramifications commonly highlighted are the expected increase in levels of LLP, earnings management in particular income smoothing and financial stability implications (Krüger et al., 2018; Novotny-Farkas, 2016). Greenawalt and Sinkey (1988) suggested that LLP is the ideal tool for earnings manipulation not only because it is the largest accrual item, but more importantly it offers a significant incentive for discretionary behavior. Krüger et al. (2018) and Ozili (2017) suggested that IFRS 9 could have an impact on accrual-based earnings management by financial institutions as the guidelines for LLP change. The authors argue that while IFRS 9 does not change the fundamental reasons for engaging in earnings management, nevertheless its judgmental nature and the wide latitude of discretion is a fertile ground for income smoothing to meet earnings targets.

Notwithstanding the plethora of theoretical literature on IFRS 9 adoption, however, to date, there is a dearth of literature on the empirical impact of IFRS 9 adoption on the income smoothing behavior of banks and thus there is a gap in the accounting literature.

This research primarily aims to extend the understanding of the income smoothing behavior of banks following IFRS 9 adoption consistent with concerns expressed in the theoretical literature. Two main questions are addressed. First, the researchers investigate whether the use of earnings before tax and loan loss provisions for income smoothing is significantly higher under IFRS 9. Second, they examine the effect of the country-level governance quality on the use of earnings before tax and loan loss provision for income smoothing. Using panel data of listed commercial banks in 24 countries across Europe and Africa, spanning 2016 to 2019, the study adopts a modified version of the models employed extensively by Ahmed et al. (1999); Anandarajan et al. (2003, 2007) and Leventis et al. (2011) to test the hypotheses.

The findings show that the post-adoption phase of IFRS 9 is associated with a decline in income smoothing across the full sample. Also, the authors report evidence to support that country-level governance quality restrains the use of earnings before tax and loan loss provision for income smoothing. This suggests that post-IFRS 9, governance and institutional quality will be crucial in leveraging optimal utility from the standard. Deloitte (2016) argues that the implementation effects of IFRS 9 are expected to vary across jurisdictions depending on several factors like country of incorporation, firm size, and institutional factors among others. Consistent with this view, the sample is partitioned into two clusters; the Europe cluster and the Sub-Saharan Africa cluster to explore potential economic heterogeneity and differing institutional setting between the European and Sub-Saharan Africa contexts. The results of the cluster analysis show mixed evidence of higher-income smoothing in Europe and a decline in income smoothing in Africa respectively.

This finding is consistent with theoretical arguments that the effects of IFRS 9 adoption will differ across jurisdictions (Deloitte, 2016). Given the rise in income smoothing in Europe, it suggests that earnings quality has decreased post-IFRS 9 adoption among the sample banks while the decrease in income smoothing in SSA suggests an improvement in the quality of reported earnings among the SSA banks.

Furthermore, the findings suggest that European banks in the sample continue to maintain their opportunistic behavior while the banks in Sub-Saharan Africa are less involved in the opportunistic use of earnings before tax and loan loss provisions for income smoothing post-IFRS 9 adoptions. The findings underscore the fact that while the European banks are under increasing pressure to meet earnings targets, on the other hand, the banks in SSA are under less pressure to meet earnings targets due to the less developed nature of the stock markets, low level of investor sophistication and smaller firm size (Watts and Zimmerman, 1990).

This paper contributes to the accounting literature in

important ways. First, it makes a novel contribution to the IFRS 9 adoption literature as one of the first to empirically compare the income smoothing behavior of commercial banks in Europe and Sub-Saharan Africa following the adoption of IFRS 9. It, therefore, provides original insight into the theoretical argument that the adoption effects of IFRS 9 are expected to vary across jurisdictions depending on several factors like country, firm size, and institutional factors among others (Deloitte, 2016). Second, the study complements the strand of literature on the use of earnings before taxes and loan loss provision for income smoothing. Third, the paper is also the first to examine the income smoothing behavior of banks in Sub-Saharan Africa following IFRS 9 adoption and thereby contributes to the dearth of empirical literature from the SSA perspective. Furthermore, by extending the analysis to examine the effect of country-level governance quality on income smoothing behavior of banks post-IFRS 9 adoption, the paper underscores the fundamental importance of country-level governance and institutional quality on the quality of reported financial information in the context of IFRS adoption (Ball et al., 2003; Leuz et al., 2003). The results are of utmost importance to international regulators, standard setters and stakeholders with keen interest in evaluating the post-adoption effects of IFRS 9.

The rest of the paper is structured as follows. The ensuing sections highlight the literature review and hypothesis development, methodology, results and conclusion.

## Institutional background

### The transition from IAS 39 to IFRS 9

IFRS 9 adoption is associated with significant changes compared to IAS 39. The key differences between these standards stem from the classification and measurement criteria of the financial instruments, measurement and recognition of expected credit losses and hedge accounting. In the context of IFRS 9, changes to financial instruments accounting were introduced in three phases: (1) Classification and measurement, (2) impairment and (3) hedge accounting (EY, 2017). Table 1 highlights the main differences.

The table clearly reveals that the significant changes which IFRS 9 introduces are visible in classification and subsequent measurement criteria, a shift from multiple models of impairment to a single and unified model of impairment via the introduction of expected credit losses. The ECL model under IFRS 9 approach assumes the notion that a loan will default rather than whether a loss has been incurred (IAS 39). Under the ECL approach, the credit loss allowance or provision is calculated by discounting the cash shortfalls an entity would incur in multiple default scenarios for given future periods and multiplying these shortfalls by the probability of default of

each given scenario. Financial instruments such as loans and receivables, bonds, etc. bear some inherent risk of default; therefore every such asset has an expected loss component attached to it, from the time of its origination or acquisition. As the IFRS 9 expected credit loss model requires the continual recognition of credit losses, it addresses the need to improve the information usefulness about expected losses (EL) in banks' financial statements (IASB, 2014).

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

IFRS 9 was the response of the IASB to the accounting and regulatory lapses that fueled the 2007 global financial crisis. IFRS 9 replaced the ILL model of IAS 39 with the ECL model. The crucial aspect of the ECL model is that it increases accounting judgment and discretion. Ozili (2017) argued that IFRS 9 is very stochastic in nature which raises concern about the potential opportunistic behavior and moral hazard repercussions. Krüger et al. (2018) argued that IFRS 9 could impact earnings management. Therefore, it is imperative to examine the extent to which LLP is employed in earnings management or otherwise sequel to the implementation of IFRS 9.

Agency theory has long emphasized the existence of agency conflicts associated with the separation of ownership and management, which serves as a breeding ground for managerial opportunistic behavior when there are divergent interests between the principal and the agent (Jensen and Meckling, 1976). This opportunistic behavior is more pronounced when accounting standards offer much flexibility and discretion. In such a scenario, management is inclined to engage in earnings management which entails using financial reporting judgment or structuring transactions to achieve a specific reported earnings objective and misleads stakeholders regarding the underlying economic performance of the company (Healy and Wahlen, 1999).

Literature on the influence of IFRS adoption on earnings management is characterized by mixed results. Van Tendeloo and Vanstraelen (2005) studied the influence of IFRS adoption on earnings management among German firms and found no significant difference in earnings management between German firms that adopted IFRS and those that prepared financial statements per German GAAP. Studies by Callao and Jarne (2010) and Jeanjean and Stolowy (2008) documented an increase in earnings management post-IFRS adoption. Conversely, Gebhardt and Novotny-Farkas (2011) examined LLP for sample banks in 12 European countries post-IFRS and concluded that the stringent LLP rules under IAS 39 were associated with less earnings management, corroborating the findings of Barth et al. (2008).

In the  context of Africa, Ajekwe et al. (2017) concluded

**Table 1.** Key differences between IAS 39 and IFRS 9.

| Category | IAS 39 | IFRS 9 |
|---|---|---|
| Subsequent measurement | The fair value. The amortized cost value. Costs (for the share-based instruments, which do not have a reliable fair value measurement). | The amortized cost (AC). Fair value through other comprehensive income (FVOCI). Fair value through profit or loss (FVTPL). |
| Types of classification | Fair value through profit or loss (FVTPL). Held-to-maturity (HTM). Loans and receivables (LAR). Available for sale (ASF). | The amortized cost (AC). Fair value through other comprehensive income (FVOCI). Fair value through profit or loss (FVTPL). |
| Reclassification | Reclassification shall be prohibited through profit or loss after initial recognition. | Change of business model. |
| Equity instruments | All equity instruments available for sale, are classified at fair value through other comprehensive income. | The fair value of the instrument for the purpose of trade. The irrevocable choice for the category through other comprehensive income. |
| Impairment | Several models of impairment. Incurred loss model. | A unified model of impairment, which applies to all financial instruments.The model of Expected Credit Loss (ECL). |

Source: Adapted from Huian (2012).

that the adoption of IFRS in Nigeria decreased earnings management via LLP. Similarly, Rao and Warsane (2014) documented a significant decline in earnings management by IFRS adopters in Africa relative to firms using local GAAPs. Sellami and Slimi (2016) concluded that the adoption of IFRS by South African companies is associated with lower earnings management. Also, Amidu and Issahaku (2019) studied African banks and found that financial statements prepared under IFRS are associated with a reduction in earnings manipulation. In contrast, Uwuigbe et al. (2016) found no evidence to support a reduction in earnings management post-IFRS adoption in Nigeria.

**Hypothesis development**

The ECL model presents management with much discretion. In principle, managers are supposed to utilize this discretion for prudent risk management by providing a supportable forecast of future losses (Leventis et al., 2011). In practice, managers may be inclined to manipulate the LLP. Earlier researchers found that bank managers are culpable of using flexibility and accounting discretion to manipulate earnings (Greenawalt and Sinkey, 1988; Healy and Wahlen, 1999).

The forward-looking and stochastic nature of IFRS 9 offers much discretion which bank managers can unduly utilize for earnings management, precisely income smoothing. Theoretical literature has therefore argued that IFRS 9 is likely to instigate more earnings management (Ozili, 2017; Krüger et al., 2018). However, Bushman (2016) and Bushman and Landsman (2010)

argued that discretion is a double-edged sword. On one hand, it allows managers to incorporate reliable private information about expected future losses leading to prudent risk management. On the other hand, it might be used for opportunistic gains such as earnings management in particular income smoothing and capital gains. Leventis et al. (2011) opined that not only do managers use accounting flexibility and discretion for earnings manipulation; however, prudent managers might also use such discretion for prudent risk management. Given these two opposing ends, a priori, it is difficult to predict whether the inherent flexibility and discretion under IFRS 9 is a subject for earnings manipulation or prudent risk management. Accordingly, it is a matter of empirical investigation.

The banking industry, despite its stringent regulations and supervisory oversight, is more susceptible to earnings manipulation relative to other industries (Greenawalt and Sinkey, 1988). Examining a sample of US commercial banks, Scheiner (1981) established that LLP is one key accrual item for managing earnings. Ma (1988) and Greenawalt and Sinkey (1988) showed that bank managers increase LLP in periods of high earnings to reduce earnings volatility. Healy and Wahlen (1999) found evidence to support these findings. Related studies that focused on non-US banks found evidence to corroborate the above findings (Anandarajan et al., 2003, 2007). If banks in the sample are culpable of engaging in income smoothing to reduce earnings volatility and ultimately meet annual earnings target following the adoption of IFRS 9, then the relationship between loan loss provision and earnings before tax and loan loss provision should be positive (Anandarajan et al., 2003,

2007). Dwelling on this premise, the hypothesis is developed.

H1: The implementation of IFRS 9 in the banking industry is associated with a higher magnitude of income smoothing.

Manifold research on earnings management has proven that not only is opportunistic accounting manipulation influenced by wide latitude and discretion in accounting standards, but also country-level governance and legal framework, as well as institutional factors, can exert significant influence on accounting quality. For instance, Leuz et al. (2003) found evidence to support the impact of country-level governance and legal framework as well institutional factors on the quality of reported earnings, complementing previous studies by (Ball et al., 2003).

Furthermore, critics of the adoption of International Financial Reporting Standards argue that the one size fits all principle of IFRS as a fundamental predicate for accounting quality and transparency in reported earnings might be a necessary action but not a sufficient condition (Ball et al., 2003). Additional mitigating factors such as a country's institutional setting and firm-specific incentives may be crucial in determining the quality of reported earnings (Ball et al., 2003; Leuz et al., 2003). Consistent with this view, theoretical literature argues that the implementation effects of IFRS 9 are expected to vary across jurisdictions depending on factors such as firm size, country of incorporation, and institutional factors among others (Deloitte, 2016). To test this assertion, the analysis is extended by incorporating the strength of country-level governance and institutional quality. Accordingly, the second hypothesis is formulated.

H2: The strength of country-level governance and institutional quality mitigates the use of earnings before tax and loan loss provisions for income smoothing.

## METHODOLOGY

### Data

The research utilizes financial data of listed commercial banks drawn from the Factset database. The country-level governance proxy was sourced from the World Governance Indicators (WGIs) and the authors use the mean of the six indicators of governance quality synonymous with the studies of Kaufmann et al. (1999). The world governance indicators measure the quality of governance at the country level on six key thematic pillars of voice and accountability, political stability, absence of violence, government effectiveness, regulatory quality, and rule of law. Data on GDP growth rate were sourced from the World Bank Database to control for the variations in the economic and operational climate of the banks.

Banks with missing observations for the main variables of interest are excluded from the sample. Lastly, to ensure homogeneity in the reporting period, the sample is restricted to banks whose financial year-end falls on 31st December.

The final sample consists of a balanced panel of end-of-year observations for 104 listed commercial banks in 22 countries across Europe and Africa. The final dataset spans a period of four years, segregated into two distinct periods, the pre-adoption period (2016-2017) and the post-adoption period (2018-2019). Appendix Table 1 reports the sample description.

### Model specification

A modified version of the models employed extensively by Ahmed et al. (1999) and Anandarajan et al. (2003, 2007) is adopted for this study. These authors used this model to examine the association of Basel 1 Accord with earnings and capital management behavior. Similarly, Leventis et al. (2011) used a modified version of the model to test the effects of IFRS implementation on earnings and capital management. A dichotomous variable IFRS9 which measures the impact of the different periods (pre and post-IFRS 9) on LLP and the discretionary use of LLP for earnings management is introduced into the model. Two interaction terms EBT*IFRS9 and EBT*CGI are included to test for the impact of IFRS 9 on the use of earnings before tax and loan loss provision for income smoothing and the effect of country governance strength and institutional quality on income smoothing respectively. Leventis et al. (2011) argued that the research framework of Anandarajan et al. (2003, 2007) is limited as they used only one explanatory variable (change in loan losses) as a surrogate measure of credit risk. The researchers overcome this limitation by utilizing loan loss allowance, non-performing loans, and change in loans as a measure of the non-discretionary component of credit risk. The researchers estimate the equation below to test the hypotheses.

$$LLP_{it} = \alpha_0 + \alpha_1 EBT_{it} + \alpha_2 LLA_{it} + \alpha_3 NPL_{it} + \alpha_4 CLOANS_{it} + \alpha_5 IFRS9_{it} + \alpha_6 SIZE_{it} + \alpha_7 CFEES_{it} + \alpha_8 GDP_{it} + \alpha_9 CGI_{it} + \alpha_{10} EBT*IFRS9_{it} + \alpha_{11} EBT*CGI_{it} + \mu_{it}$$

Where: *LLP* = loan loss provisions to total assets; *EBT* = earnings before taxes and LLPs to total assets; *LLA* = loan loss allowance to total assets; *NPL* = non-performing loans to total assets; *CLOANS* = yearly change in loans; *IFRS 9* = dummy variable (1 for post-IFRS 9 from 2018-2019, and 0 for pre-IFRS 9 from 2016–2017); *SIZE* = natural logarithm of total assets; *CFEES* = commission and fees income to assets; *GDP* = change in gross domestic product; *CGI* = country governance index; *EBT*IFRS9* = interaction of *EBT* with the type of IFRS 9 regime; *EBT*CGI* = interaction of *EBT* with country governance index

## RESULTS

### Descriptive statistics

Table 2 reports the descriptive statistics. LLP in the full sample represents 0.9885% of total assets on average. EBT shows a mean value of 3.31% indicating that on average, the banks in the full sample earn 3.31% on total assets. NPL represents 5.8% of total assets on average. On a subsample basis, the mean EBT is 1.6 and 5.1% in Europe and Africa respectively, suggesting that on average banks in Africa are more profitable than banks in Europe reflecting the growth potential in Africa. The mean GDP of -3.5% in Africa compared with the mean GDP of -27.18% in Europe further corroborates the growth potential in Africa. SIZE shows a mean of 11.34 and 7.52 in Europe and Africa providing conventional evidence that European banks are larger than African banks.

**Table 2.** Descriptive statistics.

| Variable | Panel A: Full sample | | | | | Panel B: Europe sub-sample | | | | | Panel C: Africa sub-sample | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Obs | Mean | Std. Dev | Min | Max | Obs | Mean | Std. Dev | Min | Max | Obs | Mean | Std. Dev | Min | Max |
| LLP | 416 | 0.0099 | 0.0187 | -0.0098 | 0.1921 | 208 | 0.0069 | 0.0189 | -0.0029 | 0.1528 | 208 | 0.0128 | 0.0180 | -0.0098 | 0.1921 |
| EBT | 416 | 0.0331 | 0.0360 | -0.0349 | 0.2482 | 208 | 0.0156 | 0.0268 | -0.0129 | 0.2483 | 208 | 0.0507 | 0.0356 | -0.0349 | 0.1905 |
| LLA | 416 | 0.0344 | 0.0565 | 0.0000 | 0.6578 | 208 | 0.0418 | 0.0752 | 0.0000 | 0.6578 | 208 | 0.0270 | 0.0252 | 0.0001 | 0.1872 |
| NPL | 416 | 0.0583 | 0.0990 | 0.0000 | 0.7492 | 208 | 0.0696 | 0.1170 | 0.0000 | 0.6732 | 208 | 0.0469 | 0.0755 | 0.0000 | 0.7492 |
| CLOANS | 416 | 1.0472 | 9.2790 | -0.9423 | 118.4257 | 208 | 0.1120 | 0.6110 | -0.4161 | 8.3944 | 208 | 1.9823 | 13.0566 | -0.9423 | 118.4257 |
| IFRS 9 | 416 | 0.5000 | 0.5006 | 0.0000 | 1.0000 | 208 | 0.5000 | 0.5012 | 0.0000 | 1.0000 | 208 | 0.5000 | 0.5012 | 0.0000 | 1.0000 |
| SIZE | 416 | 9.4365 | 2.6451 | 4.0735 | 14.8143 | 208 | 11.3437 | 2.0371 | 5.7803 | 14.8143 | 208 | 7.5294 | 1.6024 | 4.0735 | 12.0064 |
| CFEES | 416 | 0.0211 | 0.0307 | 0.0017 | 0.2541 | 208 | 0.0111 | 0.0122 | 0.0017 | 0.0795 | 208 | 0.0312 | 0.0392 | 0.0030 | 0.2541 |
| CGI | 416 | 0.3411 | 0.9845 | -1.2176 | 2.7913 | 208 | 1.1666 | 0.5423 | 0.1562 | 2.7913 | 208 | -0.4845 | 0.5286 | -1.2176 | 0.6522 |
| GDP | 416 | -0.1533 | 1.3692 | -8.8821 | 5.2233 | 208 | -0.2718 | 1.4020 | -8.8821 | 1.2147 | 208 | -0.0349 | 1.3285 | -3.7251 | 5.2233 |

LLP: Loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; LLA: loan loss allowance to total assets; NPL: non-performing loans to total assets; CLOANS: yearly change in loans; IFRS9: dummy variable (1: post-adoption era; 0 pre-adoption era); SIZE: natural logarithm of total assets; CFEES: commission and fees income to total assets; CGI: the mean of the six quality of governance indicators from the world development indicators; GDP: yearly change in the growth rate of gross domestic product.

## Correlation matrix

Table 3 highlights the correlation matrix. Consistent with Leventis et al. (2011) and Kanagaretnam et al. (2004) also document a significant positive association between LLP and EBT both across the full sample and two sub-samples. LLA shows a negative relationship with LLP though not statistically significant, corroborating Kanagaretnam et al. (2004) as a higher loan loss balance will require a lower LLP in the current year and vice versa. Akin to Kanagaretnam et al. (2004), NPL depicts a significant positive association with LLP both across the full sample and the sub-samples. The relationship between IFRS9 and LLP is negative and statistically significant. Synonymous with Leventis et al. (2011), SIZE is negative and significantly correlated with LLP. In the full sample, CGI is significant and negatively correlated with LLP. Consistent with Hair et al. (1995), the mean variance inflation factor of 2.12 for the model falls within acceptable levels and hence the model is devoid of multicollinearity.

Table 4 reports the estimation results. The model is estimated with fixed effect with robust standard errors and clustering and is heteroscedastic and autocorrelation consistent (Hoechle, 2007). The F-statistic is significant at 1%, indicating the overall significance of the model. Although EBT is positively correlated with LLP but not significant, corroborating Beatty et al. (1995) and Ahmed et al. (1999). Consistent with Kanagaretnam et al. (2004), the coefficient of NPL is positive and significant at the 5% level depicting that high levels of the deteriorating loan portfolio are associated with high levels of LLP and vice versa. Regarding the main variables of interest (EBT*IFRS9 and EBT*CGI), the researchers observe a negative coefficient of EBT*IFRS9 which is statistically significant at 5%. This signifies a significant decline in the use of earnings before taxes and loan loss provisions for income smoothing post-IFRS 9 adoption across the full sample. Leventis et al. (2011) examined LLP, earnings management, and capital management under IFRS among EU commercial banks and found a significant decline in earnings management post-IFRS regime. They argued that prudent risk management could be an alternative possibility for the reduction in earnings management post-IFRS.

Consistent with prudent risk management, the researchers argue that prudent bank managers are more likely to use managerial discretion under IFRS 9 for prudent risk management. Accordingly, the researchers posit that the decrease in income smoothing across the full sample post-IFRS9 adoption may partly be explained by the prudent risk management on the part of bank managers.

**Table 3**. Correlation matrix.

| Variable | LLP | EBT | LLA | NPL | CLOANS | IFRS 9 | SIZE | CFEES | CGI | GDP |
|---|---|---|---|---|---|---|---|---|---|---|
| **Panel A: Full sample** | | | | | | | | | | |
| LLP | 1.000 | | | | | | | | | |
| EBT | 0.555*** | 1.000 | | | | | | | | |
| LLA | -0.076 | -0.273** | 1.000 | | | | | | | |
| NPL | 0.305*** | 0.004 | 0.202*** | 1.000 | | | | | | |
| CLOANS | 0.035 | 0.052 | -0.049 | -0.061 | 1.000 | | | | | |
| IFRS 9 | -0.143*** | -0.074 | -0.117** | -0.122** | 0.104** | 1.000 | | | | |
| SIZE | -0.291*** | -0.588*** | 0.554*** | -0.018 | -0.143*** | 0.025 | 1.000 | | | |
| CFEES | 0.185*** | 0.596*** | -0.184*** | -0.086* | 0.135*** | -0.053 | -0.451*** | 1.000 | | |
| CGI | -0.179** | -0.423*** | 0.232*** | -0.081* | -0.160*** | -0.005 | 0.593*** | -0.411*** | 1.000 | |
| GDP | -0.066 | 0.117** | -0.092* | -0.255*** | -0.188*** | 0.071 | -0.072 | 0.206 *** | 0.002 | 1.000 |
| **Panel B: Europe sub-sample** | | | | | | | | | | |
| LLP | 1.000 | | | | | | | | | |
| EBT | 0.842*** | 1.000 | | | | | | | | |
| LLA | -0.012 | -0.136** | 1.000 | | | | | | | |
| NPL | 0.355*** | 0.134* | 0.204*** | 1.000 | | | | | | |
| CLOANS | 0.504*** | 0.288*** | -0.105 | -0.033 | 1.000 | | | | | |
| IFRS 9 | -0.049 | -0.013 | -0.185*** | -0.109 | -0.087 | 1.000 | | | | |
| SIZE | -0.316*** | -0.474*** | 0.488*** | -0.177* | -0.172** | 0.021 | 1.000 | | | |
| CFEES | 0.389*** | 0.484*** | -0.164** | -0.056 | 0.300*** | -0.005 | -0.319*** | 1.000 | | |
| CGI | -0.061 | 0.135* | -0.331*** | -0.563*** | 0.036 | -0.008 | -0.114 | -0.086 | 1.000 | |
| GDP | -0.070 | -0.003 | -0.085 | -0.382 *** | 0.035 | 0.116* | 0.048 | 0.086 | 0.309 | 1.000 |
| **Panel C: Africa sub-sample** | | | | | | | | | | |
| LLP | 1.000 | | | | | | | | | |
| EBT | 0.339*** | 1.000 | | | | | | | | |
| LLA | -0.094 | -0.211*** | 1.000 | | | | | | | |
| NPL | 0.305*** | 0.003 | -0.027 | 1.000 | | | | | | |
| CLOANS | 0.003 | -0.006 | -0.061 | -0.091 | 1.000 | | | | | |
| IFRS 9 | -0.246*** | -0.139** | 0.045 | -0.152** | 0.152** | 1.000 | | | | |
| SIZE | -0.183*** | -0.337*** | 0.726*** | -0.087 | -0.154** | 0.057 | 1.000 | | | |
| CFEES | 0.089 | 0.578*** | -0.136** | -0.072 | 0.109 | -0.082 | -0.427*** | 1.000 | | |
| CGI | -0.111 | -0.157** | 0.168** | 0.026 | -0.200*** | -0.012 | 0.071 | -0.366*** | 1.000 | |
| GDP | -0.094 | 0.159** | -0.019 | -0.038 | -0.291*** | 0.024 | -0.098 | 0.258 | -0.047 | 1.000 |

LLP: Loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; LLA: loan loss allowance to total assets; NPL: non-performing loans to total assets; CLOANS: yearly change in loans; IFRS9: dummy variable (1: post-adoption era; 0 pre-adoption era); SIZE: natural logarithm of total assets; CFEES: commission and fees income to total assets; CGI: the mean of the six quality of governance indicators from the world development indicators; GDP: yearly change in the growth rate of gross domestic product. ***, **, *significance at 1, 5 and 10% respectively.

**Table 4.** Regression results

| Variable | |
| --- | --- |
| Intercept | 0.17269 (1.81)* |
| EBT | 0.12053 (0.89) |
| LLA | 6.89E-08 (1.22) |
| NPL | 0.02842** (2.01) |
| CLOANS | 0.00010 (0.41) |
| IFRS9 | 0.00139 (0.81) |
| SIZE | -0.01749 (-1.66)* |
| CFEES | -0.21808 (-1.87)* |
| CGI | 0.00148 (0.43) |
| GDP | -0.00083 (-1.71)* |
| EBT*IFRS9 | -0.09101 (-2.34)** |
| EBT*CGI | -0.27126 (-1.93)* |
| $R^2$-adjusted | 6.98% |
| F-static | 4.34*** |
| Observations | 416 |

LLP: loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; LLA: loan loss allowance to total assets; NPL: non-performing loans to total assets; CLOANS: yearly change in loans; IFRS9: dummy variable (1: post-adoption era; 0 pre-adoption era); SIZE: natural logarithm of total assets; CFEES: commission and fees income to total assets; CGI: the mean of the six quality of governance indicators from the world development indicators; GDP: yearly change in the growth rate of the gross domestic product; EBT*IFRS9: interaction of earnings before tax and loan loss provisions with IFRS9 dummy variable; EBT*CGI: interaction of earnings before tax and loan loss provisions with country governance index. T-statistics in parenthesis, ***, **, *significance at 1, 5 and 10% respectively.

The second variable of interest, EBT*CGI shows a negative coefficient and statistical significance at the 10% level. This significant negative coefficient of EBT*CGI supports H2 which predicted that the strength of the country-level governance quality mitigates income smoothing behavior among banks. Thus, country-level governance and institutional quality will be essential in limiting the opportunistic use of earnings before taxes and loan loss provisions for smoothing income. The result is consistent with prior literature (Ball et al., 2003; Leuz et al., 2003) that documents a positive effect of a country's governance and institutional framework on the quality of reported accounting information.

## Robustness checks and sensitivity analysis

A battery of sensitivity tests and robustness checks are conducted. First, the model is devoid of multicollinearity problems. Additionally, the model has been estimated with robust standard errors with firm-level clustering and is heteroscedasticity and autocorrelation consistent.

Hasan and Wall (2004) indicated that LLP can be segregated into discretionary and non-discretionary components. Leventis et al. (2011) used the change in loans to control for the non-discretionary portion of LLP. Kanagaretnam et al. (2004) used loan loss allowance and non-performing loans to account for the non-discretionary component of LLP. Consistent with their studies, the authors opine that by using loan loss allowance, non-performing loans, and change in loans, they have explicitly accounted for the non-discretionary component of LLP.

Ahmed et al. (1999) opined that earnings management in particular income smoothing results reported in prior research is dependent on the inclusion of non-performing loans in the model. This assertion was also evaluated by Kanagaretnam et al. (2004). Consistent with their assertion, the researchers evaluate the robustness of the results to the omission of non-performing loans in the model. The test results reported in Panel A of Table 5 did not change. Thus, they conclude that the results are robust to the inclusion of non-performing loans in the model.

Furthermore, Ahmed et al. (1999) and Kanagaretnam et al. (2004) admitted that macroeconomic factors may impact LLP. Nevertheless, they argued that the inclusion of non-performing loans in their models reduces the explanatory power of the macroeconomic variable.

Accordingly, the non-performing loan was included in their models to control for macroeconomic effects such as GDP. Consistent with this analogy, GDP is excluded from the model and the results re-estimated. The findings reported in Panel B of Table 5 are consistent with the earlier estimates.

The authors check the sensitivity of the models to outliers by winsorizing at the extreme higher and lower ends as developed in the study of Leventis et al. (2011). The models are re-estimated and the results reported in Panel C of Table 5 remain consistent.

## Comparing Income smoothing in European banks versus Sub-Saharan African banks post-IFRS 9 adoption

The previous analysis above pooled banks in Europe and Sub-Saharan Africa together and controlled for some countries' specific factors such as GDP, and country-level governance quality. Notwithstanding the controls in the previous analysis, there are potential concerns that these two jurisdictions have strikingly disparate characteristics regarding their country-level governance, institutional setting and firm size among others that may impact income smoothing activities differently in these regions which have not been accounted for in the earlier analysis. For instance, data from the World Bank (World Bank, 2016) show that banks in Sub-Saharan Africa lack the necessary breadth and depth and are inefficient relative

**Table 5.** Robustness checks.

| Variable | Panel A (NPL excluded) | Panel B (GDP excluded) | Panel C: Winsorized results |
|---|---|---|---|
| Intercept | 0.15465** (2.02) | 0.15465** (2.02) | 0.15465** (2.22) |
| EBT | 0.12538 (0.85) | 0.12538 (0.85) | 0.12409 (1.14) |
| LLA | 8.37E-08 (1.37) | 8.37E-08 (1.37) | 4.16E-08 (0.78) |
| CLOANS | 0.00010 (0.40) | 0.00010 (0.40) | 0.05009***(3.0) |
| IFRS9 | 0.00036 (0.21) | 0.00036 (0.21) | -0.00015 (-0.38) |
| SIZE | -0.01534* (-1.79) | -0.01534* (-1.79) | 0.00087 (0.62) |
| CFEES | -0.22274* (-1.79) | -0.22274* (-1.79) | -0.00926** (-2.0) |
| CGI | 0.00043 (0.12) | 0.00043 (0.12) | -0.27155** (-2.07) |
| GDP | -0.00086* (-1.70) | -0.00086* (-1.70) | 0.00009 (0.03) |
| EBT*IFRS9 | -0.08735* (-1.94) | -0.08735* (-1.94) | -0.00075 (-1.63) |
| EBT*CGI | -0.28012* (-1.86) | -0.28012* (-1.86) | -0.08273** (-2.28) |
| $R^2$-adjusted | 5.83% | 5.83% | -0.19396* (-2.28) |
| F-static | 2.94*** | 2.94*** | 11.08% |
| Observations | 416 | 416 | 3.16*** |
|  | - | - | 416 |

LLP: Loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; LLA: loan loss allowance to total assets; NPL: non-performing loans to total assets; CLOANS: yearly change in loans; IFRS9: dummy variable (1: post-adoption era; 0 pre-adoption era); SIZE: natural logarithm of total assets; CFEES: commission and fees income to total assets; CGI: the mean of the six quality of governance indicators from the world development indicators; GDP: yearly change in the growth rate of the gross domestic product; EBT*IFRS9: interaction of earnings before tax and loan loss provisions with IFRS9 dummy variable; EBT*CGI: interaction of earnings before tax and loan loss provisions with country governance index. T-statistics in parenthesis, ***, **, * significance at 1, 5 and 10% respectively.

to the global average. The Europe region is characterized by relatively developed stock markets with a high level of investor sophistication. Furthermore, the European banks in the sample are bigger in terms of size. In contrast, the Sub-Saharan African setting is characterized by less developed stock markets with a low level of investor sophistication. Also, the SSA banks in the sample are smaller in size compared to the European banks. The mean bank size reported in Panel B and C of Table 2 is 11.34 and 7.52 in Europe and Africa respectively providing conventional evidence that European banks are larger than African banks. Extant literature (Watts and Zimmerman, 1990) argues that bigger firms have greater incentive to manipulate earnings to meet earnings target as bigger firms are closely monitored by the public relative to smaller firms. These distinguishing features between the European banking system and the Sub-Saharan African banking system present an interesting argument to replicate the analysis on a cluster basis to assess whether these differences between the Europe cluster and SSA cluster have different implications on the income smoothing behavior of banks following the implementation of IFRS 9 in the banking industry on January 1, 2018. Corroborating the above argument, Deloitte (2016) argues that the adoption effects of IFRS 9 are expected to vary across jurisdictions depending on several factors like country, firm size, and institutional factors among others. Accordingly, the researchers postulate that European banks in the sample engage in

more income smoothing than the SSA banks in the sample post-IFRS 9 adoption. To achieve this, they split the initial sample into Europe cluster of banks and SSA cluster of banks.

**Univariate analysis**

The cluster analysis begins with a univariate analysis by splitting the sample based on regions post-IFRS 9 adoptions to see how the key variables differ between the European region and SSA after the adoption of IFRS 9 in these two regions. The results of the Shapiro-Wilk test indicate that the variables do not follow a normal distribution. Accordingly, the results of two non-parametric tests; the Kruskal-Wallis test and the Wilcoxon test are presented.

Table 6 reports the results of the Kruskal-Wallis test and the Wilcoxon test of differences between the key variables between Europe and Africa post- IFRS 9 regime. In general, there are significant differences in LLP between Europe and Africa post-IFRS9 implementation. LLP is significantly higher in Africa relative to Europe post-IFRS 9 regime. The results of the Kruskal-Wallis test and Wilcoxon test reveal significant differences in EBT between Europe and Africa post-IFRS 9 adoptions. Though there are higher NPLs in Africa than in Europe, the difference is not significant. Change in loans which depicts the incremental addition to the

**Table 6.** Test of differences.

| Europe and Africa Post-IFRS9 | Kruskal-Wallis Test | Wilcoxon test |
|---|---|---|
| LLP | Chi-squared (tie-adj) 31.217*** | Z=5.587*** |
| EBT | Chi-squared (tie-adj) 84.638*** | Z=9.20*** |
| NPL | Chi-squared (tie-adj) 2.542 | Z=1.594 |
| CLOANS | Chi-squared (tie-adj) 20.310*** | Z=4.507*** |
| LLA | Chi-squared (tie-adj) 16.201*** | Z=4.025*** |
| Observation | 104 | 104 |

LLP: loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; NPL: non-performing loans to total assets; CLOANS: yearly change in loans; LLA: loan loss allowance to total assets ***, **, * significance at 1, 5 and 10% respectively.

outstanding loan portfolio is significantly higher in Africa than in Europe. This shows that post-IFRS9, the variation in the loan portfolio is higher in Africa relative to Europe. LLA is significantly higher in Africa compared to Europe following the adoption of IFRS 9.

## Income smoothing in European banks versus Sub-Saharan African banks post-IFRS 9 adoption

Finally, Panels B and C of Table 2 show that the mean bank size of 11.34 and 7.53 for Europe and Africa respectively is significantly different. The potential concerns that the findings may be driven by economic heterogeneity across the sample are addressed by partitioning the sample into two sub-clusters; the Europe cluster and the Africa cluster, and re-estimate the results. For the Europe cluster, the interaction term EBT*CGI is dropped due to multicollinearity concerns.

Table 7 presents the results of the sub-sample analysis. For the Europe sub-sample, the variable of interest EBT*IFRS9 is positive and statistically significant. Extant literature shows that a positive and significant coefficient of EBT is evidence of income smoothing using earnings before taxes and loan loss provisions (Anandarajan et al., 2003, 2007). Accordingly, the results of the Europe sub-sample analysis show an increase in income smoothing among the sample banks post-IFRS 9 adoption. This finding also highlights how the European banks in the study utilize the inherent discretion under IFRS 9 for opportunistic income smoothing activity and further demonstrates how firms exercise their discretion over their financial reporting choices. As indicated earlier, the European banks in the sample are larger than the SSA bank. Accordingly, this finding is also consistent with prior literature that shows that larger firms have a greater incentive to manipulate earnings or smooth earnings to reduce earnings volatility and ultimately meet earnings targets (Watts and Zimmerman, 1990). Furthermore, given the rise in income smoothing among the Europe sub-sample, the findings also highlight how too much leeway and discretion in accounting standards may affect

the quality of financial reporting.

However, for the SSA sub-sample, the authors document a negative and significant coefficient for EBT*IFRS9. Thus, they find evidence to suggest a decline in income smoothing among the banks in the SSA sample. The decline in income smoothing among the SSA sub-sample also demonstrates an improvement in financial reporting quality among the sample banks following the adoption of IFRS in SSA. The finding is also consistent with the prudent risk management hypothesis of (Leventis et al., 2011) who argue that not only are managers inclined to utilize the inherent discretion and flexibility offered by accounting standards for opportunistic behavior but, it can be utilized for prudent and efficient risk management. In line with this assertion, they argue that because SSA is characterized by low level of stock market development, low level of investor sophistication coupled with small firm sizes, the SSA banks in the sample are under less pressure to meet earnings targets compared to the European banks.

Accordingly, the SSA banks in the sample are more inclined to utilize the inherent flexibility and discretion under IFRS 9 for efficient risk management rather than engaging in opportunistic behavior. Also, they document a significant negative coefficient for EBT*CGI. Thus, the results of the SSA sub-sample show that country governance and institutional quality mitigates the incidence of income smoothing which corroborates the findings of the full sample. Overall, the sub-sample analysis provides evidence consistent with theoretical literature (Deloitte, 2016) that the implementation effects of IFRS 9 differ across jurisdictions due to factors such as country of incorporation and firm size among others.

## Conclusion

The implementation of IFRS 9 on January 1, 2018 was heralded by much theoretical debate on the expected impacts in both academic and corporate literature. Key expected effects and ramifications commonly highlighted are the  expected increase in levels of LLP, earnings

**Table 7.** Sub-sample results.

| Variable | Panel A: Europe sub-sample | Panel B: Africa sub-sample |
|---|---|---|
| Intercept | 0.06027 (1.43) | 0.11987 (1.00) |
| EBT | 0.00502 (0.06) | -0.14533 (-0.98) |
| LLA | 4.91e-08 (1.37) | 9.43e-07 (0.22) |
| CLOANS | 0.00434** (2.44) | 0.00005 (0.17) |
| IFRS9 | -0.00239** (-2.08) | 0.00153 |
| SIZE | -0.00534 (-1.41) | -0.01900 (-1.24) |
| CFEES | 0.71271* (1.71) | -0.31718** (-2.11) |
| CGI | -0.00099 (-0.72) | -0.08043* (-1.89) |
| GDP | -0.00019 (-0.72) | -0.00232** (-2.34) |
| EBT*IFRS9 | 0.11540* (2.00) | -0.14591* (-1.83) |
| EBT*CGI | - | -0.60069* (-1.67) |
| $R^2$-adjusted | 29.58% | 4.79% |
| F-static | 9.45*** | 4.28*** |
| Observations | 208 | 208 |

LLP: Loan loss provisions to total assets; EBT: earnings before tax and loss provision to total assets; LLA: loan loss allowance to total assets; CLOANS: yearly change in loans; IFRS9: dummy variable (1: post-adoption era; 0 pre-adoption era); SIZE: natural logarithm of total assets; CFEES: commission and fees income to total assets; CGI: the mean of the six quality of governance indicators from the world development indicators; GDP: yearly change in the growth rate of the gross domestic product; EBT*IFRS9: interaction of earnings before tax and loan loss provisions with IFRS9 dummy variable; EBT*CGI: interaction of earnings before tax and loan loss provisions with country governance index. T-statistics in parenthesis, ***, **, *significance at 1, 5 and 10% respectively.

management and financial stability implications (Krüger et al., 2018; Novotny-Farkas, 2016).

This paper focused on the empirical aspect of the above research niche investigating the impact of IFRS 9 adoption on earnings management in particular income smoothing behavior of listed banks. As a subsidiary issue, the authors examined the effect of country-level governance quality on income smoothing behavior among banks. To increase the generalizability of the findings, the researchers use data of listed commercial banks in both Europe and Africa for four years spanning the pre and post-IFRS 9.

Across the full sample, the authors find evidence that the post-adoption phase of IFRS 9 is associated with a decline in the use of earnings before taxes and loan loss provisions for income smoothing. Furthermore, they find evidence to support that the country-level governance and institutional quality restrains the use of earnings before taxes and loan loss provisions for income smoothing, suggesting that post-IFRS 9, the quality of governance and regulatory bodies will be crucial in leveraging optimal utility from the standard.

Partitioned into Europe sub-sample and SSA sub-sample to explore potential economic heterogeneity and differing institutional settings, the researchers find evidence of an increase in income smoothing via earnings before taxes and loan loss provision among the Europe sub-sample post-IFRS 9 adoption. In contrast, the findings show a decline in income smoothing via earnings before tax and loan loss provision post-IFRS 9 adoptions among the SSA sub-sample.

Overall, the sub-sample analysis provides evidence consistent with theoretical literature (Deloitte, 2016) that the implementation effects of IFRS 9 differ across jurisdictions due to factors such as country of incorporation and firm size among others.

This paper contributes to the accounting literature in important ways. First, this paper makes a novel contribution to the IFRS 9 adoption literature as one of the first to empirically compare the income smoothing behavior of commercial banks in Europe and Sub-Saharan Africa following the adoption of IFRS 9. It, therefore, provides original insight into the theoretical argument that the adoption effects of IFRS 9 are expected to vary across jurisdictions depending on several factors like country, firm size, and institutional factors among others (Deloitte, 2016). Second, the study complements the strand of literature on the use of earnings before taxes and loan loss provision for income smoothing. Third, the study is also the first to examine the income smoothing behavior of banks in Sub-Saharan Africa following IFRS 9 adoption and thereby contributes to the dearth of empirical literature from the SSA perspective. Furthermore, by extending the analysis to examine the effect of country-level governance quality on income smoothing behavior of banks post-IFRS 9 adoption, the paper underscores the fundamental importance of country-level governance and institutional

quality on the quality of reported financial information in the context of IFRS adoption (Ball et al., 2003; Leuz et al., 2003). The results are of utmost importance to international regulators, standard setters and stakeholders with keen interest in evaluating the post-adoption effects of IFRS 9.

Notwithstanding the robustness of the results to several sensitivity analyses, akin to any accounting research that examines the effects of accounting standards in the early years of their implementation, the relatively short study window remains a limitation of this research.

To conclude, the researchers provide some avenues for future research. First, the short time horizon for the study presents clear opportunities for future research to be conducted on a longer time horizon if the authors are to reach any firm consensus about earnings management activities by banks under IFRS 9 regime. Consistent with the prudent risk management hypothesis, it would be interesting to examine the determinants of LLP in future research by comparing pre and post-IFRS 9 regimes.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

## ACKNOWLEDGMENT

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**APPENDIX**

**Table 1**. Sample description.

| Country | Number of banks | Number of observations |
|---|---|---|
| **Europe** | | |
| United Kingdom | 9 | 36 |
| Switzerland | 4 | 16 |
| Belgium | 1 | 4 |
| Sweden | 4 | 16 |
| Spain | 8 | 32 |
| Netherlands | 3 | 12 |
| Italy | 8 | 32 |
| Greece | 5 | 20 |
| Germany | 3 | 12 |
| Ireland | 1 | 4 |
| Austria | 2 | 8 |
| Denmark | 4 | 16 |
| Sub-Total | 52 | 208 |
| | | |
| **Sub-Saharan Africa** | | |
| Zimbabwe | 5 | 20 |
| Kenya | 8 | 32 |
| Zambia | 1 | 4 |
| Uganda | 3 | 12 |
| South Africa | 3 | 12 |
| Tanzania | 3 | 12 |
| Ghana | 8 | 32 |
| Rwanda | 2 | 8 |
| Botswana | 3 | 12 |
| Namibia | 1 | 4 |
| Malawi | 3 | 12 |
| Nigeria | 12 | 48 |
| Sub-Total | 52 | 208 |
| | | |
| **Overall total** | 104 | 416 |