

# Do globalisation and adoption of IFRS by banks in Africa lead to less earnings management?

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## Abstract

**Purpose** – This paper aims to analyse the implications of globalisation and the adoption of international standards (International Financial Reporting Standards [IFRS]) for accounting information quality.

**Design/methodology/approach** – This paper uses a sample of 329 banks across 29 countries leading up to and beyond the implementation of IFRS to test for related hypotheses.

**Findings** – First, banks' financial statements are prepared on the basis of international standards as national economies are integrated when social norms are diffused. Building on these results, the second test suggests that the relatively high-quality earnings among banks in Africa during the period is attributable to the adoption of and interaction of IFRS with globalisation and the strategy of banks to diversify within and across interest and non-interest income.

**Originality/value** – The authors investigate how globalisation and the adoption of IFRS affect accounting information quality.

**Keywords** IFRS, Globalization, Earnings management, African banking systems

**Paper type** Research paper

## 1. Introduction

The expansion of international trade and increased access to foreign stock and debt markets have given impetus to the debate on whether or not there is the need to have a global set of accounting standards. As companies compete globally for scarce resources, investors and creditors as well as multinational companies are required to bear the cost of reconciling financial statements that are prepared using national standards. Again, the increasing internationalisation of businesses and the capital markets naturally creates the need for harmonisation of norms for external reporting at regional and global levels (Klaassen and Krens, 2004). This increasing need for harmonisation in the rules for financial reporting made the European Union decide to introduce the International Financial Reporting Standards (IFRS). More so, globalisation of capital markets is an irreversible process, and there are many potential benefits to be gained from mutually recognised and respected International Accounting Standards (IAS). The adoption of uniform standards minimises the costs of doing business across borders by reducing the need for supplementary information. It makes information more comparable, thereby enhancing evaluation and analysis by users of financial statements (Adekoya, 2011). In addition, the use of



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international standards not only allows the providers of capital to monitor the use of capital, it enables the investors to evaluate the return potential of investment opportunities.

IFRS are standards and interpretations introduced by the International Accounting Standards Board (IASB). IFRS represent a single set of high quality, globally accepted accounting standards that can enhance comparability of financial reporting across the globe. This increased comparability of financial information could result in better investment decisions and ensure a more optimal allocation of resources across the global economy (Jacob and Madu, 2009). Cai and Wong (2010) posit that having a single set of internationally acceptable financial reporting standards will eliminate the need for restatement of financial statements, yet ensure accounting diversity among countries, thereby facilitating cross-border movement of capital and greater integration of global financial markets. Epstein (2009) emphasises that the universal financial reporting standards will increase market liquidity, decrease transaction costs for investors, lower cost of capital and facilitate international capital formation and flows. Research shows that countries that adopted IFRS experienced significant increases in foreign direct investment flows (Irvine and Lucas, 2006), high degree of integration (Cai and Wong, 2010) and improved quality of accounting information indicators (Meeks and Swann, 2009; Barth *et al.*, 2008). Furthermore, Latridis (2010) concludes that IFRS implementation has favourably affected firms' financial performance.

However, there are also a growing number of studies that question the relevance of IFRS in developing and emerging economies. The development of a globalised set of accounting standards provides other benefits that are not so relevant to developing and emerging nations. Irvine and Lucas (2006) contend that the adoption of IFRS only saves multinational corporations the expense of preparing more than one set of accounts for different national jurisdictions; the professional status of accounting bodies are enhanced and the big accounting firms benefit in their efforts to expand the global market for their services. Perera (1989) posits that the accounting information produced according to developed countries accounting system is not relevant to the decision models of less developed countries. Despite these drawbacks, one of the main issues of IFRS is uniformity in accounting rules and regulations which ensure that financial statements are more reliable and transparent, and therefore have a greater value to stakeholders due to this higher quality. This increase in comparability puts pressure on managers to reduce earnings management (Van Tendeloo and Vanstraelen, 2005; and Jeanjean and Stolowy, 2008). According to Healy and Wahlen (1999, p. 368), earnings management occurs:

When managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.

This means that earnings management can be used to reduce outsider interference and to protect insiders' private control benefits. For instance, Schipper (1989) argues that insiders can use their discretion in financial reporting to overstate the true level of earnings and conceal unfavourable earnings realisations which would prompt outsiders to take actions against insiders. Moreover, in the event of extensive earnings management, financial reports inaccurately reflect firm performance and consequently weaken outsiders' ability to monitor the firm (Leuz and Verrecchia, 2000). Earnings management is one of the proxies that has an influence on the quality of financial reporting (Dechow *et al.*, 2010).

On whether voluntary or mandatory adoption of international standards improves the information content of financial information, studies have shown that firms adopting IFRS

have high earnings quality, more timely loss recognition, and more value relevance of earnings, all of which are interpreted as evidence of higher financial reporting quality (Hung and Subramanyam, 2007; Jermakowicz *et al.*, 2007; and Barth *et al.*, 2008). The application of accounting standards also involves considerable judgment and the use of private information, and as a result, IFRS provide managers with substantial discretion. How far this discretion is used depends on firm-specific factors (Burgstahler *et al.*, 2006), and national legal institutions (Ball *et al.*, 2003). Research on the implications of IFRS have focussed mainly on Europe (Barth *et al.*, 2008; Devalle *et al.*, 2010; Franzen and Weißenberger, 2018). Pelucio-Grecco *et al.* (2014) have observed that, empirical works on the implementation of IFRS in emerging markets are rare and there is no unimpeachable evidence on their benefits. With little or no research done on the link between globalisation, accounting information quality and the adoption of international standards of banks in Africa, this paper is motivated to empirically analyse the interaction among globalisation, earnings management and adoption of IFRS. In particular, it examines two related hypotheses. First, globalisation increases the adoption of international standards. Second, the increasing economic integration and adoption of IFRS increase accounting information quality and reduces earnings management by banks.

The contribution of this paper is twofold: first, it evaluates the impact of the process of globalisation on the adoption of IFRS by banks in Africa. Certain unique characteristics of the African banking system make it an interesting case study. Based on World Bank data (World Bank, 2016), African banks lack breadth and depth and are inefficient compared to the global average. The average private credit provided by banks and other financial institutions over the period 2011-2014 was 16.5 per cent of GDP for Sub Saharan African (SSA) countries compared to a worldwide average of 42.3 per cent of GDP, which is indicative of lack of depth by the banking sector in SSA. The lack of breadth of Africa's banking sector is revealed in the number of bank accounts per 1,000 adults which is an average of 511.7 in the world and only 150.3 in SSA. Bank net interest margin is 5.7 per cent for SSA and 3.7 per cent for the world implying that the efficiency of the African banking system is below the global average. Another reason why Africa presents an interesting case for banking sector studies is that, unlike Europe and USA where financial markets are advanced and well developed, in the case of Africa, the financial system is mainly bank dominated. The few literature on Africa have often focussed on the benefits and challenges of IFRS adoption (Owolabi, 2012) without considering globalisation and earnings quality, or the link between IFRS and accounting information without considering the effect of globalisation (Ames, 2013). From an economic policy perspective, it is important to identify the consequences of economic, political and social integration so as to reduce the bank failure associated with the globalisation and adoption of international standards.

Second, this paper analyses how the introduction of IFRS and globalisation affect the production of reliable and quality accounting information by banks in emerging markets. Here, instead of documenting trends and the relative importance of globalisation, as is common in the prevailing literature, it takes the relationship between globalisation and adoption of IFRS as examined in the first objective and investigates their relationship as well as the sensitivity of globalisation and international standards at the individual bank level. Thus, we further examine how globalisation has influenced the effect of IFRS on earnings management. This contribution is unique since in the earnings management literature, we are not aware of any study which analyses the interactive effect of IFRS and globalisation on earnings quality. Moreover, the relevance of this contribution has been supported by Gallhofer and Haslam (2006, p. 926) who argue that "the accounting-

globalisation interrelation [. . .] is a crucial focus and project, on which further research is needed”.

Globalisation index is used to measure the level of integration. The index captures integration which is a process that erodes national boundaries, allows free entry and exit of foreign banks, integrates national economies, cultures, technologies and governance, and finally produces complex relations of mutual interdependence (Dreher, 2006). Given the nature and discretionary choices associated with banks, we examine both the income statement account version of loan loss provisions (LLP) and the balance sheet component, which is loan loss reserves/allowance (LLA) for the evidence of earnings management. The adoption of IFRS is a dummy variable that takes the value one if the bank financial statement is prepared on the basis of IFRS during the sample period, zero otherwise.

The rest of the paper is organised as follows: Section (2) reviews existing literature, section (3) constructs various specifications of the globalisation index, a proxy for the level of integration, the two discretionary choices, other control variables and estimation strategy. Section (4) contains the empirical results and section (5) concludes and gives policy implications.

## 2. Literature review

### 2.1 Theoretical background

This study is explained by two main theories: costly contracting theory and stakeholder theory. The majority of the literature that seeks to explain the incentives for managing earnings draws on costly contracting theory. These studies use costly contracting theory which characterises the corporation as a “legal nexus of contractual relationship” and assumes that corporate reporting enables principals (shareholders) to monitor agents’ (managers) compliance with contractual obligations (Godfrey *et al.*, 2009). Jensen and Meckling (1976) identify the existence of two agency relationships:

- (1) The manager-shareholder relationship (e.g. bonus plans) where the manager acts as an agent for the shareholders who are considered to be the owners.
- (2) The shareholder-debt holder relationship (e.g. debt contracts) where the manager is assumed to act on behalf of the shareholders; thus the manager is an agent whereas the debt holder becomes the principal.

Such situations impose agency costs, due to the existence of conflicts of interest between the agents and the principals. Bartov *et al.* (2000) postulate that management has a preference for managing earnings numbers to benefit from the contracting process. In addition, higher transaction costs result from greater information asymmetry amongst market participants. When the markets or investors have less information and cannot observe a company’s performance and prospects, they then require higher rates of return and lower current company’s stock prices and thus, the existence of information asymmetry between managers and shareholders is a necessary condition for earnings management (Dye, 1988; Bartov and Bodnar, 1996). This is because shareholders have less information, thus management can use its’ insider position to manage reported earnings.

Where ownership is highly concentrated, majority shareholders have more information about expected future earnings than minority shareholders which brings about information asymmetry (Shi *et al.*, 2012). In this situation, more disclosure may involve higher monitoring costs for external stakeholders and higher reputational costs for the firm when disclosures are disproportionate (Cumming and Walz, 2010). Agency theory postulates that majority shareholders will be reluctant to voluntarily disclose information when there are high benefits associated with private expropriation (Shleifer and Vishny, 1997). However,

the rewards of disclosure especially those associated with costs of financing, are more imperative to majority shareholders than minority shareholders (Shi *et al.*, 2012). Therefore, the explanation from agency theory is that, quality accounting information is an effective mechanism by which firms decrease the cost of financing when encumbered by significant agency problems.

Stakeholder theory gives further explanations for the reasons why firms may adopt certain international standards. Stakeholders are defined as: "Any identifiable group or individual who can affect the achievement of an organisation's objectives, or who is affected by the achievement of an organisation's objectives" (Freeman and Reed, 1983, p. 91). The stakeholder theory is founded on the view that organisations have responsibilities to various stakeholder groups. Based on stakeholder theory, the different stakeholders of a business mount pressures on the firm to embrace some practices and operational procedures. This theory argues that the corporation has responsibilities to stakeholders besides its obligations to shareholders (Mason *et al.*, 2007). On this basis, corporations then pursue actions that will promote stakeholders' long-term interests. Prakash and Potoski (2007) and Fikru (2014) agree that investors and creditors can exert pressure on corporations to adopt and follow international best practices. The implication of stakeholder theory for the current study is that stakeholders of banks operating in a globalised setting such as local and foreign customers, local and foreign investors, auditors, local and foreign suppliers, local and foreign tax authorities, regulatory authorities, various shareholders, domestic and international creditors, local and global media, local community, international affiliates among others will wield an influence on their reporting and accounting practices and standards.

### *2.2 Empirical literature*

The term Globalisation is a relatively new concept. It was first introduced by Marshall McLuhan (1962) in his book *The Gutenberg Galaxy*. A comprehensive definition of globalisation is provided by McGrew (1992) as follows:

Globalisation refers to the multiplicity of linkages and interconnections that transcend the nation-states which make up the modern world system. It defines a process through which events, decisions, and activities in one part of the world can come to have significant consequences for individuals and communities in quite distant parts of the globe. Nowadays, goods, capital, people, knowledge, images, communications, crime, culture, pollutants, drugs, fashions, and beliefs all readily flow across territorial boundaries. Transnational networks, social movements and relationships are extensive in virtually all areas of human activity from the academic to the sexual. (McGrew, 1992, pp. 65-66)

The above definition views globalisation as a process and not a destination. The conceptualisation of globalisation as a process and not an outcome has been further buttressed by Legrain (2002, pp. 4 and 9): who argues that:

Globalisation is shorthand for how our lives are becoming increasingly intertwined with those of distant people and places around the world – economically, politically and culturally [...]. (However) globalisation is a process, not a destination.

Thus, Globalisation is the growing economic interdependence of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and of international capital flows and also through the more rapid and widespread diffusion of technology. Globalisation refers to the rapid growth, development and transformation in multinational corporation's operations, employing regionalisation, rather than national base, to create resource centres at home and using mergers, acquisitions and

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strategic alliances abroad to create borderless markets. The process exploits modern technology, economies of scale, staff competition and integrated management strategies to achieve low production cost, high profit and economic eminence in world business thus having the world as its field of operation (Fapohunda, 1997).

It must be made clear that globalisation brings both negative and positive changes. Gallhofer and Haslam (2006) have summarised the implications of globalisation which we discuss here. Starting with the negative consequences of globalisation, globalisation has heightened economic restructuring and volatility which has led to poverty, inequality and job losses for some; it has increased insecurity and pollution in many respects; it leads to the dilution and erosion of traditional cultures and values. Since every coin has a flipside, globalisation comes with many benefits, namely, globalisation has engendered global coordination and collaboration to fight global forces such as climate change, terrorism, human rights and financial risk; it has enhanced democratic governance; it has also helped in the spread of technology, ideas and positive norms.

Somewhere in 1973, the Board of the International Accounting Standards Committee (IASC) started issuing IAS with the main objective of unifying financial reporting requirements of European firms (Ames, 2013). Subsequently in April of 2001, the International Accounting Standards Committee (IASC) succeeded the IASC to be the body setting standards for European firms. The IASC implemented the existing standards and later started releasing additional standards termed IFRS. While the adoption of IFRS is wide among European and Developed Countries (Nobes, 2011; Franzen and Weißenberger, 2018), it is not widely adopted in Africa. Some African countries such as Ghana, Kenya, Nigeria, Sierra Leone, South Africa, Tunisia and Zimbabwe have either adopted or have confirmed intentions to adopt the standard (Owolabi, 2012). With the note by Ball (2006) that the IFRS are a kind of public good that does not have a marginal cost for each extra user that adopts them, one would have expected a wider adoption of these standards across African countries than is the case now.

To place the discussion in context, Owolabi (2012) has examined the benefits as well as the challenges of IFRS adoption in Africa, which we present here. The most important benefits of IFRS perceived by African companies include ease of using one consistent reporting standard in subsidiaries from different countries, facilitation of mergers and acquisitions, improvements in management information for decision-making, reduced cost of capital and improved access to capital, including from foreign sources. For investors, the perceived benefits of IFRS adoption are more confidence in the information presented; companies can be compared to a peer group of companies; better understanding of risk and return; easier access to financial reporting; and better information for decision making. For their part, regulators perceived the benefits of IFRS to encompass a higher standard of financial disclosure, better ability to attract and monitor listings by foreign companies, enhanced regulatory oversight and enforcement, and quality information for market participants. Preparers and users of IFRS however enumerated the challenges to the adoption of IFRS in Africa as ethical environment, retention of key employees, compliance and enforcement, complexity of conversion, funding of conversion and training of relevant personnel.

According to Burgstahler *et al.* (2006), accounting standards afford corporations considerable discretion in the preparation of financial statements. If earnings play a major role in communicating information to outsiders, managers (corporate insiders) will use their private knowledge to provide information that reflect performance and are informative to outsiders. On the other hand, if earnings play a minuscule role in reporting earnings to corporate outsiders, corporate insiders will be reluctant to do so. In this case, reporting



decisions will be based on factors such as desire to reduce taxes, determine dividend levels, hide poor performance, attain certain earnings targets or dodge covenant violations (Burgstahler *et al.*, 2006). There are some other conditions which encourage earnings management, among them is weak investor protection laws' enforcement. It has been found that firms operating in countries with weak investor protection are more likely to engage in earnings management (Lang *et al.*, 2006). Some other studies (La Porta *et al.*, 1998; Dyck and Zingales, 2004) have found that strong institutions diminish the ability for corporate insiders to consume private control benefits and by so doing improve the quality and accuracy of accounting information. Meanwhile, earnings management has effects on the cost of debt and risk profile of banks. It has been found by Crabtree *et al.* (2014) that, firms that employ real earnings management techniques have a poorer credit rating and a greater cost of debt at the time of issue. Again, evidence provided by Zalata *et al.* (2018) show that firms with audit committees that are endowed with financial expertise are less subject to earnings management.

It is argued that IFRS can ensure more accurate, comprehensive and timely financial statement information than local standards, particularly if the standards they replace have been influenced by national, legal, political and taxation agendas (Ball, 2006). Ewert and Wagenhoffer (2005) recommend the tightening of accounting standards to reduce the level of earnings management and improve reporting quality. However, reducing the amount of reporting discretion can in fact make it difficult for firms to convey information through their financial statements (Watts and Zimmerman, 1986), while regional differences in economies may not be adequately reflected in a common set of standards. Some are of the view that a single set of standards might not accommodate the differences in national institutional features which caused divergent accounting systems to arise in the first place (Ali and Hwang, 2000; Ball, 2006; Ding *et al.*, 2007). Furthermore, the "comparability argument" is based on the assumption that IFRS reporting makes it less costly for investors to compare firms across markets and countries. Morck *et al.* (2000), for example, argue that in a country with poorer investor protection, an insider can predate the company's profit without getting punished. However, this holds only if outsiders do not know the existence of earnings management. Jin and Myers (2006) argue that imperfect protection for investors does not mislead outsiders if the firm is completely transparent. For example, if outsiders get informed and understand the possible adverse effects of earnings management, they are suspicious about the reported financial statements, and thus take actions to deny insiders from enjoying the private benefits of earnings management. Compensation agreements tie the remuneration of management to the performance of the company that aligns the interests of both management and stakeholders. Watts and Zimmerman (1986) on the contrary contend that compensation agreements under the bonus plan hypothesis of positive accounting theory create an incentive for management to engage in earnings management. Maroun and van Zijl (2016, *abr*) show the existence of a "mutually reinforcing relationship between the introduction of new accounting requirements and the application of these requirements in complex social settings characterised by a 'logic of resistance'".

Hammermeister and Zimmermann (2010) draw the link between globalisation and the diffusion of accounting standards which we summarise here. According to the authors, the impact of globalisation on accounting standards began to be felt in the 1970s when different accounting reporting regimes started emerging. Globalisation wipes off social, economic and political barriers and puts pressure on countries for the harmonisation of accounting systems. In a globalised world, the competitiveness of nations is at stake; investors and multinationals yearn for comparability of accounting reports for cost, convenience and efficiency reasons; capital markets compete for investors and market shares. Thus,

globalisation mounts pressure on firms and regulators to harmonise accounting systems. Countries differ in the degree to which they respond to these pressures resulting in cross-country differences in the regime of accounting systems practiced. There are two main factors that drive nation states to adopt accounting standards in response to globalisation:

- (1) lobbying by investors, stock markets and firms; and
- (2) a genuine desire by the state to adopt international regulations and standards to increase international competitiveness and boost capital markets, all to the betterment of the quality of life of the citizenry.

At the firm level too, firms respond differently to the pressure to harmonise, and in some cases, firms comply only when it is mandatory to do so. A number of reasons may inform the adoption of international standards by banks some of which are to meet regulatory requirements, gain legitimacy in international markets; to reduce cost of capital and meet the demands of investors.

The proponents for IFRS argue that IFRS are superior accounting standards for several reasons. First, IFRS can reduce the choice of accounting methods, thus constraining managerial discretion (Ashbaugh and Pincus, 2001). Second, IFRS require accounting measurements and recognition that reflect better firms underlying economic position, hence providing more relevant information for investment decisions (Barth *et al.*, 2008). Third, IFRS increase required disclosures, thereby mitigating information asymmetries between firms and their shareholders (Leuz and Verrecchia, 2000). Besides the higher financial reporting quality argument, it is also claimed that the adoption of IFRS increases comparability of firms across markets and countries. Evidence has shown that accounting comparability reduces home bias (Covrig *et al.*, 2007), and improves the efficiency of information intermediaries (Bradshaw *et al.*, 2010). Covrig *et al.* (2007) show that voluntary IFRS adoption facilitates cross-border equity investments. Yu (2010) reveals that mandatory IFRS adoption also increases cross-border equity holdings. Horton *et al.* (2012) find that analyst forecast errors decrease for firms that mandatorily adopt IFRS relative to forecast errors of other firms. Similarly, Iatridis (2010) discovers based on UK data that IFRS adoption increases the quality of accounting information and reporting. The author further finds that IFRS implementation enabled timely recognition of losses and enhanced the value relevance of accounting information. Using a sample based on Greece, Iatridis and Rouvolis (2010) find that the cost of IFRS implementation led to unfavourable performance outcomes of firms in that country in the first year of implementation. It has further been shown that in the long run, IFRS adoption reduces firm's cost of capital and improves income statements and balance sheets (Persakis and Iatridis, 2017). Baig and Khan (2016) find that IFRS adoption did not significantly reduce earnings management in Pakistan. In all these, three important factors according to Soderstrom and Sun (2007); and Jeanjean and Stolowy (2008) determine the success of the implementation of IFRS: the quality of the standards, the country's legal and political system and, finally, the financial reporting incentives. This is what this study seeks to explore. It investigates whether the effect of IFRS on earnings quality is dependent on the level of integration and the use of IAS.

### 3. Methodology and data

This study uses both micro-bank level and macro-country level data. Bank level data are taken from the Bankscope database maintained by Fitch/IBCA/Bureau Van Dijk. Series are yearly, covering a sample of 330 banks across 29 African countries for the period 2002-2009. All bank-specific variables are averaged by bank during the period 2002-2009. The period of study is chosen largely based on the availability of data for LLA, LLP, Globalisation and



other explanatory variables. It is also a period within which the adoption of IFRS gained prominence within the African continent. To reduce the possibility of introducing data aggregation bias in the empirical analysis, unconsolidated financial statements of the banks are used. The sample includes all commercial banks, cooperative banks, development banks, savings banks, real estate and mortgage banks for which annual data is available. To ensure that banks that are important players in the deposit and/or loan markets are not omitted, medium and long-term credit banks and specialised government institutions are included in the sample. Observations with outliers such as zero and/or negative capitalisation are dropped. In addition, observations for capitalisation above the 99th percentile are dropped. Also loan growth rate observations above 99th percentile of the distribution were equally dropped. This is to correct for mergers, acquisitions and start-ups during the study period. Macroeconomic data and globalisation index were sourced from the World Bank Economic Development Indicators and Dreher (2006) respectively.

### 3.1 Measures of earnings management

Previous studies show that earnings management in banks commonly occur using loan loss provisions (Beatty *et al.*, 2002; Fonseca and Gonzalez, 2007). Similarly, Adams *et al.* (2009) and Nichols *et al.* (2009) document the use of loan loss reserves and allowance to manage accounting earnings. Given the nature of discretionary choices associated with banks, income statement account loan loss provisions (LLP) are examined for evidence of earnings management. Again, in addition to increasing loan loss allowance (LLA) in the balance sheet, increases in loan loss provision decrease net earnings, return on assets (ROA), as well as return on equity (ROE). Therefore, to analyse the influence of managerial discretion on IFRS, a two-stage approach is used to identify discretionary LLP. In the first stage, the normal or nondiscretionary component of LLP is estimated by regressing LLP on beginning loan loss allowance, net loan charge-offs, growth in loan, change in total loan outstanding, total loans outstanding, non-performing loans, market share of loans, earnings before tax and loan loss provisions and country-specific variables using the following model:

$$LLP_{it} = \beta_0 + \beta_1 lla_{it} + \beta_2 chgoff_{it} + \beta_3 gloan_{it} + \beta_4 \Delta Loans_{it} + \beta_5 Loans_{it} + \beta_6 DNPA_{it} + \beta_7 MKTS_{it} + \beta_8 EBTP_{it} + \sum_{j=4}^k \alpha_j M_j + \lambda_t Yeardummy_t + \varepsilon_{it} \quad (1)$$

where  $LLP_{it}$  is the level of loan loss provision based on coefficient estimates from the sample of African banks during 2002-2009.  $LLA_{it}$  is the loan loss allowance of bank  $i$  in period  $t$ ,  $chgoff_{it}$  is the net loan charge-off of bank  $i$  in period  $t$ ,  $gloan_{it}$  is the growth in loans of bank  $i$  in period  $t$ ,  $\Delta Loans_{it}$  is the change in total loan outstanding of bank  $i$  in period  $t$ ,  $Loans_{it}$  is the loan portfolio of bank  $i$  in period  $t$ ,  $DNPA_{it}$  is an indicator variable that equals one if the value for nonperforming assets (NPA) is missing and zero otherwise,  $MKTS_{it}$  is the loan market share of bank  $i$  in period  $t$ , the variables  $M_{i,j}$  are a set of  $\{k\}$  variables controlling for the respective countries' macroeconomic environments and bank level variables and  $\varepsilon_{it}$  is the error term. The macroeconomic variables include GDP growth, GDP per capita and inflation while the bank level variables are bank size, capitalisation, diversification and loan ratio. The estimation of discretionary loan loss provisions (DLLP) and that of discretionary loan loss allowance (DLLA) is computed by subtracting the predicted level or non-discretionary component of LLP and LLA from the actual level of LLP and LLA[1]. Before estimating the first stage regression, we performed an endogeneity test to see whether LLP

and LLA are endogenous. We rely on Durbin–Wu–Hausman chi-square test and the Wu–Hausman  $F$  test. For both tests, the null hypothesis is that the explanatory variable (LLA) is exogenous. For the Durbin–Wu–Hausman chi-square test the computed chi-square value is 1.52716 with a  $p$ -value of 0.21654. In the case of the Wu–Hausman  $F$  test, the computed value is 1.50123 with a  $p$ -value of 0.21654. For both test the  $p$  values are greater than even 10 per cent level implying that we cannot reject the null hypothesis of exogeneity. Thus, LLP and LLA are not endogenous. The implication is that we do not need an instrumental variable model to produce reliable results for the first stage regression. Estimation with panel least squares or panel fixed effects will be adequate.

In the second stage, we test the link between our proxies for globalisation and IFRS and the absolute value of negative DLLP and DLLA. Again, we control for bank-specific variables (bank size, the level of leverage, market share and performance) and country-level variables (such as inflation, GDP growth and GDP per capita).

A globalisation index is used to measure the level of integration (Dreher, 2006). The measure enhances harmonisation of accounting standards as the process erodes national boundaries, allows free entry and exit of foreign banks, integrates national economies, cultures, technologies and governance and finally produces complex relations of mutual interdependence (Norris, 2000). This index, also called the KOF index of globalisation, affects the reporting environment as it integrates countries economically, socially and politically. The index enables the employment of three dimensions (economic, social and political) to describe the extent of integration and globalisation. In constructing the index (Appendix), the weights are 36 per cent for economic globalisation, 37 per cent for social globalisation and 27 per cent for political globalisation. *Economic globalisation/integration* is computed from two main indicators namely actual flows and restrictions. The two components are equally weighted. The sub indicators for actual flows include trade as a percentage of GDP, stock of foreign direct investment as a ratio of GDP, portfolio investments as a ratio of GDP, and payments to foreign nationals. The sub indicators for restrictions include hidden import barriers, tariff rate, taxes on international trade and capital account restrictions. Economic globalisation is therefore characterised by long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges. *Political globalisation/integration* is computed from measures such as the number of embassies in a country, the number of international organisations of which the country is a member and the number of UN peace missions a country has participated in. *Social globalisation/integration* is expressed as the spread of ideas, information, images and people. It is computed from measures involving personal contact, information flows and cultural proximity. The various components and subcomponents of globalisation and their associated weights are shown in Appendix.

There are several advantages to using the KOF measure of globalisation. First, it allows for ease of comparison for the same country over time and comparison between countries. Second, it uses 24 different indicators of globalisation covering three main dimensions of globalisation: economic, political, and social. Third, it is available for a large number of countries for a fairly long time span (since 1970). Fourth, it uses a weighting system that minimises the affect that missing data would otherwise have on the overall score for any given country. Because of these advantages, the KOF measure of globalisation has been used extensively in the globalisation literature (Ivanov and Webster, 2013a, 2013b; Leibrecht *et al.*, 2011).

An indicative variable is used to capture the adoption and the use of international financial reporting standard. It takes the value of 1 if a bank's financial statement is prepared on the basis of international standard, and zero otherwise. In some countries, the

adoption of IFRS is mandatory. Where the use of IFRS is voluntary, the decision lies with the firm or in the case of a subsidiary the parent company might be the final decider. A number of additional control variables, which prior studies have shown to affect the adoption and implication of IFRS, are employed (Beatty *et al.*, 2002; Fonseca and Gonzalez, 2007; Adams *et al.*, 2009; and Nichols *et al.*, 2009). For bank-level controls, the ratio of equity to total assets (*bank equity*) is used as a measure of the level of capitalisation. The logarithm of total assets is employed as a proxy for bank *size*. *Revenue diversification* is measured by constructing the Herfindahl Hirschmann Index for each bank. This measure accounts for diversification between major activities: net interest income and non-interest income. It should be emphasised here that a rise in the Herfindahl Hirschmann index shows an increase in revenue concentration and less diversification.

### 3.2 Main estimation strategy: the dynamic panel model approach

Given that bank managers are faced with situations for which discretion is required, we must find a way of capturing how this discretion is employed in earnings management. Managers have some discretion in determining what amount is set aside as provisions for loan losses. An increase in loan loss provisions increases loan loss reserves in the balance sheet, but decreases ROA and ROE. For this reason, we use DLLPs and discretionary loan loss reserves as measures of earnings management. A regression approach, which is the framework for testing the relationship between globalisation, earnings management and IFRS is developed. It first analyses whether the level of integration affects the adoption of IFRS. Second, whether the effect of IFRS on earnings quality is dependent on the level of integration and the use of IAS. The empirical model that investigates these relationships is:

$$dllp/dlla_{it} = \beta_1 dllp/dlla_{it-1} + \beta_2 glob_t + \beta_3 IFRS_{it} + \beta_4 (glob_t * IFRS_{it}) + \sum_{j=3}^k \alpha_j X_{ij} + \varepsilon_{it} \quad (2)$$

where  $dllp/dlla_{it}$  is the estimated loan loss provision/allowance of bank  $i$  at period  $t$ , and  $dllp/dlla_{it-1}$  is the observation on the same bank  $i$  in the previous year [2].  $glob_t$  is a measure of level of integration of a country in period  $t$ ,  $IFRS_{it}$  is the adoption and the use of international financial reporting standard of bank  $i$  in period  $t$ ,  $(glob_t * IFRS_{it})$  is the interaction between globalisation and the adoption of IFRS of bank  $i$  at period  $t$ , the variable  $X_{i,j}$  are a set of  $\{k\}$  variables controlling for bank-specific characteristics, respective countries' macroeconomic environments and contestability variables.  $\beta$ 's are the parameter vectors. Here, the disturbance term  $\varepsilon_{it}$  has two components: the  $\mu_i$  is an unobserved time-invariant bank-specific effect, and  $v_{it}$  is the time variant component of the disturbance term.

The main model estimation procedure employed is two stage least squares. We applied this strategy because of its capacity to deal with endogeneity and reverse causation. The two stage least square approach is superior to GMM when the errors are independently and identically distributed. Two important econometric issues could be the dynamic nature of earnings management and the possibility of endogeneity of some of the regressors. To address these econometric problems, the lagged dependent variable is included among the explanatory variables to address reverse causality. Lagged values have been employed by previous studies to overcome reverse causality (Issahaku *et al.*, 2018; Agbloyor *et al.*, 2016). Moreover, estimation is done using two-stage least squares dynamic panel estimation techniques to contain endogeneity. Lagged endogenous variables were used as instruments following Issahaku *et al.* (2018, 2017).

Given the difficulty in getting appropriate instruments, we also used the lagged values of the endogenous explanatory variables as instruments. The two-stage least approach is said to be more efficient than GMM techniques when the error term is homoscedastic. Consequently, we performed the estimations with robust standard errors to correct for heteroscedasticity. The following diagnostic tests are conducted and reported: Sargan  $N^*R^2$  test of over identifying restrictions which measures instruments exogeneity are reported; the R squared which measures the goodness of fit,  $F$ -test which measures joint significance of explanatory variables, and the Wu–Hausman  $F$ -test and Durbin–Wu–Hausman  $\chi^2$  specification which compare the difference between the IV and the OLS estimators. All the diagnostics test show that our models are well specified and that the parameter estimates are reliable.

## 4. Results and discussion

### 4.1 Descriptive statistics

Table I reveals the extent of globalisation in our sample countries. Surprisingly, South Africa is ranked third with respect to economic integration among African countries. According to the index, Egypt has the highest political integration followed by Nigeria, Morocco and Tunisia in that order. Thus, the northern African countries are well integrated politically. Swaziland is the country with the lowest average score for political integration during the period 2002–2009. Table II also shows that overall the least globalised country in Africa is Rwanda, followed by Sierra Leone and Sudan. Wars, genocide and weak institutions might have accounted for this phenomenon, which has affected their economic growth and development. GDP growth, Inflation, and GDP per capita growth are included in the regression to account for differences in macroeconomic environments. While *GDP per capita growth* is used to control for the general economic development, GDP growth captures the possible effect of the business cycle. *Inflation* is defined as the rate of annual growth in the consumer price index (CPI).

Table II presents mean values of bank-specific variables of the selected banks. All bank-specific variables are averaged by bank during the period 2002–2009. Banks operating in Algeria provide the highest DLLP in their financial statements while Angolan banks are the most capitalised with a percentage of 88. Banks in Uganda are the most concentrated in the sample in terms of generating revenues. The total asset measure denominated in US dollars, is used as a proxy for bank size. Banks in South Africa (SA) are the largest banks in terms of size. The average size of a bank in South Africa is more than \$18, 251.52m. On the average, more than 78 per cent of Tunisian banks' assets in the sample are loans extended to customers. This is the highest in the sample. The least is Angolan banks whose average loan portfolio is 28 per cent.

Table III presents the pair-wise correlation coefficients as a preliminary analysis of the relationship between earnings management, IFRS and Globalisation. It is only the social and political integration components of the globalisation process that are significantly correlated with the adoption of IFRS. The size of the bank and the capitalisation levels of banks correlate significantly with the adoption of IFRS. Political and overall globalisation measures are significantly correlated with earnings management. The correlations (even the significant ones) are generally very low implying that multicollinearity is not a serious problem in this study.

### 4.2 Stage-one regression: estimating abnormal loan loss provisions

The result of the first-stage regression is presented in Table I. As expected, the LLA is positively and significantly related to LLP since a lower initial loan loss allowance will require a higher LLP in the current period. Consistent with earlier studies, net charge-off, growth in loan and loans outstanding have positive association with LLP (Adams *et al.*, 2009; Kanagaretnam *et al.*, 2010). These results mean that an increase in current LLP is as a result of

| Country       | Globalisation index |        |           |         | Macroeconomic variables |                |           |
|---------------|---------------------|--------|-----------|---------|-------------------------|----------------|-----------|
|               | Economic            | Social | Political | Overall | GDP growth              | GDP per capita | Inflation |
| Algeria       | 50.864              | 33.553 | 82.583    | 52.719  | 3.925                   | 2.371          | 3.452     |
| Egypt         | 46.943              | 43.055 | 91.856    | 57.269  | 5.297                   | 3.393          | 8.804     |
| Morocco       | 47.084              | 48.566 | 88.460    | 58.487  | 4.802                   | 3.667          | 2.059     |
| Sudan         | 39.488              | 19.333 | 55.038    | 36.042  | 6.612                   | 4.062          | 9.213     |
| Tunisia       | 58.309              | 39.501 | 87.231    | 58.872  | 4.624                   | 3.634          | 3.430     |
| Benin         | 35.734              | 25.413 | 71.957    | 41.380  | 4.000                   | 0.842          | 3.175     |
| Burkina Faso  | 38.596              | 24.428 | 71.026    | 41.811  | 5.167                   | 2.134          | 3.199     |
| Cameroon      | 39.893              | 27.630 | 71.722    | 43.662  | 3.208                   | 0.930          | 2.516     |
| Cote d'Ivoire | 49.239              | 35.352 | 57.323    | 46.175  | 1.068                   | -0.634         | 2.935     |
| Ethiopia      | 32.217              | 15.632 | 77.061    | 37.785  | 8.327                   | 5.821          | 14.586    |
| Ghana         | 51.887              | 33.070 | 84.543    | 53.426  | 5.893                   | 3.362          | 15.832    |
| Kenya         | 40.287              | 28.459 | 84.220    | 47.392  | 3.995                   | 1.336          | 11.675    |
| Mali          | 48.835              | 19.760 | 73.942    | 44.565  | 4.870                   | 1.674          | 2.664     |
| Mauritania    | 56.717              | 25.114 | 52.053    | 43.697  | 4.163                   | 1.381          | 6.825     |
| Nigeria       | 63.275              | 23.099 | 89.758    | 55.222  | 6.687                   | 4.076          | 12.063    |
| Rwanda        | 26.929              | 25.821 | 55.318    | 33.960  | 7.488                   | 4.854          | 9.310     |
| Senegal       | 40.384              | 37.758 | 86.687    | 51.545  | 3.972                   | 1.207          | 2.137     |
| Sierra Leone  | 39.910              | 17.803 | 56.623    | 36.040  | 9.237                   | 5.345          | 11.912    |
| Uganda        | 48.562              | 22.619 | 65.873    | 43.417  | 7.937                   | 4.500          | 7.385     |
| Angola        | 71.798              | 17.605 | 48.159    | 45.369  | 13.382                  | 9.836          | 40.673    |
| Botswana      | 68.658              | 37.495 | 48.487    | 51.736  | 3.853                   | 2.502          | 9.018     |
| Malawi        | 49.685              | 26.724 | 46.599    | 40.305  | 5.625                   | 2.690          | 11.278    |
| Mauritius     | 64.566              | 63.297 | 56.246    | 61.910  | 3.892                   | 3.103          | 6.257     |
| Mozambique    | 56.126              | 26.848 | 65.765    | 47.724  | 7.544                   | 4.872          | 10.627    |
| Namibia       | 61.410              | 42.962 | 65.140    | 55.502  | 4.984                   | 3.079          | 6.353     |
| South Africa  | 67.360              | 45.448 | 85.333    | 63.893  | 3.689                   | 2.482          | 6.277     |
| Swaziland     | 58.370              | 46.442 | 36.072    | 48.070  | 2.452                   | 1.395          | 7.627     |
| Tanzania      | 40.011              | 20.438 | 57.096    | 37.185  | 7.074                   | 4.141          | 7.136     |
| Zimbabwe      | 45.974              | 33.052 | 70.667    | 47.625  | -6.845                  | -6.751         | 4443.994  |

**Notes:** Table I shows the averages of country-level variables involving globalisation index and macroeconomic indicators. *Economic integration* is characterised as long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges. *Political integration* is characterised by a diffusion of government policies and it is measured as the number of embassies in a country, the number of international organisations of which the country is a member and the number of UN peace missions a country has participated in. *Social integration* is expressed as the spread of ideas, information, images and people. While *GDP per capita growth* is used to control for the general economic development, GDP growth captures the possible effect of the business cycle, and inflation measures consumer price index

**Source:** Dreher (2006) for globalisation index and Macroeconomic indicators from World Dev. Indicators

**Table I.**  
Sample coverage and  
average of country  
level variables

a corresponding increase in the net charge-off loans, the growth in loans as well as an increase in outstanding bank loans. The managers of banks in Africa thus will manage their earnings by manipulating the net charge-off of loans and extending loans without thorough screening and monitoring of the borrowers. A case of interest here is that of the Lehman Brothers strategy of advancing loans just to meet the regulatory capital requirements (Table IV).

#### 4.3 The effects of globalisation on adoption of International Financial Reporting Standards

Table V presents the regression results where the dependent variable is adoption and preparation of financial statement on the basis of IFRS. Since the dependent variable is a dummy, we cannot use normal regression procedure. Consequently, panel probit is used to

| Country       | LPP/A    | Equity ratio | Diversification | Size (\$'M) | Loan ratio |
|---------------|----------|--------------|-----------------|-------------|------------|
| Algeria       | 0.01666  | 0.12535      | 0.61499         | 4,112.904   | 0.4308     |
| Angola        | 0.01624  | 0.88206      | 0.55773         | 1,274.585   | 0.2855     |
| Benin         | 0.00821  | 0.09817      | 0.55239         | 290.997     | 0.5615     |
| Botswana      | 0.00497  | 0.17756      | 0.60587         | 538.572     | 0.5296     |
| Burkina Faso  | 0.01663  | 0.08065      | 0.52436         | 256.040     | 0.6001     |
| Cameroon      | 0.00592  | 0.07252      | 0.53376         | 515.830     | 0.5043     |
| Cote d'Ivoire | 0.00601  | 0.09767      | 0.51910         | 566.993     | 0.6332     |
| Egypt         | 0.00858  | 0.10532      | 0.56495         | 3,811.385   | 0.4898     |
| Ethiopia      | 0.00624  | 0.10825      | 0.51589         | 538.854     | 0.5604     |
| Ghana         | 0.00848  | 0.11377      | 0.56108         | 248.559     | 0.4283     |
| Kenya         | 0.00597  | 0.16626      | 0.57401         | 337.484     | 0.5596     |
| Malawi        | 0.00354  | 0.14179      | 0.53917         | 99.098      | 0.3669     |
| Mali          | 0.00865  | 0.10771      | 0.54589         | 323.112     | 0.5938     |
| Mauritania    | 0.01137  | 0.22800      | 0.57201         | 124.607     | 0.5610     |
| Mauritius     | 0.00821  | 0.18683      | 0.60176         | 962.955     | 0.5637     |
| Morocco       | 0.01116  | 0.08394      | 0.71039         | 8,048.414   | 0.4989     |
| Mozambique    | 0.00621  | 0.13966      | 0.56267         | 331.496     | 0.4632     |
| Namibia       | 0.00964  | 0.34829      | 0.59091         | 899.694     | 0.7224     |
| Nigeria       | 0.00605  | 0.16096      | 0.53346         | 2,139.348   | 0.3658     |
| Rwanda        | 0.00883  | 0.14199      | 0.54977         | 76.215      | 0.5254     |
| Senegal       | 0.00529  | 0.08470      | 0.60757         | 426.785     | 0.5989     |
| Sierra Leone  | 0.00421  | 0.19102      | 0.53166         | 36.417      | 0.2907     |
| South Africa  | 0.00901  | 0.19974      | 0.63889         | 18,251.518  | 0.6478     |
| Sudan         | 0.01294  | 0.13003      | 0.58348         | 1,561.690   | 0.3383     |
| Swaziland     | -0.00158 | 0.15517      | 0.54673         | 149.836     | 0.7253     |
| Tanzania      | 0.00774  | 0.11277      | 0.54310         | 249.419     | 0.4437     |
| Tunisia       | 0.01500  | 0.14699      | 0.50374         | 1,366.997   | 0.7820     |
| Uganda        | 0.00277  | 0.13675      | 0.71306         | 176.825     | 0.4256     |
| Zimbabwe      | 0.00701  | 0.18476      | 0.68793         | 2,227.259   | 0.3525     |

**Notes:** Table II presents the mean values of bank-specific variables of the selected banks. *DLLP/A* is the discretionary component of loan loss provision and loan loss reserves and it is the proxy for earnings management. *Bank equity* represents average capitalisation of respective countries' banks and used as a proxy for the degree of risk aversion. *Diversification* measures revenue diversification across interest income and within non-interest income generating activities. *Bank size* is the average total assets. *Loan ratio* indicates portfolio mix and measures credit risk of the selected banks. The mean values of the selected banks over the period 2002-2009 are in percentage terms except for bank size which is in millions of US dollars

**Source:** Bankscope and author's own calculation. The data comprise 330 banks across 29 countries over the period 2002-2009

**Table II.**  
Averages for the  
bank-level variables  
by country

estimate the model. The robust probit results are presented in models depending on the type of integration measure used: Model 1, 2, 3, 4 for total globalisation, economic, social, and political respectively. We present the coefficients and their associated marginal effects. The coefficients and marginal effects on both economic and social integration is positive and statistically significant. This result suggests that globalisation in terms of economic and social influences countries, and for that matter banks in Africa to adopt IFRS. However, political integration reduces the probability of a country adopting IFRS. Similarly, the overall globalisation index is not significant which means that wholesale globalisation does not necessarily motivate banks to adopt IFRS. The results are not surprising because it is not all types of globalisation that have direct bearing on the banking system. Economic globalisation will lead to countries having similar financial architecture which may warrant the need to harmonise their financial



**Table III.**  
Pair-wise correlation  
coefficient between  
selected variables

|                 | IFRS     | Diversification | Equity   | Size    | DLLP/A  | Economic intr | Social intr | Political intr | Globalisation | Inflation | GDP growth |
|-----------------|----------|-----------------|----------|---------|---------|---------------|-------------|----------------|---------------|-----------|------------|
| IFRS            | 1        |                 |          |         |         |               |             |                |               |           |            |
| Diversification | -0.0269  | 1               |          |         |         |               |             |                |               |           |            |
| Equity          | -0.0629* | 0.0838*         | 1        |         |         |               |             |                |               |           |            |
| Size            | -0.2241* | 0.0940*         | -0.1281* | 1       |         |               |             |                |               |           |            |
| DLLP/A          | 0.009    | 0.0016          | 0.0419   | -0.0425 | 1       |               |             |                |               |           |            |
| Economic intr   | 0.0334   | 0.2453*         | 0.3462*  | 0.2704* | -0.0159 | 1             |             |                |               |           |            |
| Social intr     | 0.0739*  | 0.2643*         | -0.2160* | 0.3959* | 0.0272  | 0.3576*       | 1           |                |               |           |            |
| Political intr  | -0.1696* | -0.0224         | -0.3093* | 0.3887* | 0.1172* | -0.0247       | 0.2722*     | 1              |               |           |            |
| Globalisation   | -0.0319  | 0.2455*         | -0.04    | 0.5330* | 0.0634* | 0.6765*       | 0.7854*     | 0.5748*        | 1             |           |            |
| Inflation       | 0.0286   | -0.0427         | 0.0274   | 0.0595* | -0.0268 | -0.0242       | 0.0136      | 0.0002         | -0.0092       | 1         |            |
| GDP growth      | -0.0413* | 0.0382          | 0.2852*  | 0.02    | 0.0349  | 0.1268*       | -0.2028*    | -0.103*        | -0.0566*      | -0.043*   | 1          |

**Notes:** Pair wise correlation coefficients estimated on a sample of 330 banks across 29 Africa countries. \*implies significant at 5 per cent or more. IFRS connotes the adoption of international reporting standards. *Diversification* measures revenue diversification across interest income and within non-interest income generating activities. *Bank equity* represents average capitalisation of respective countries' banks and used as a proxy for the degree of risk aversion. *Bank size* is the log of average total assets. *DLLP* is the discretionary component of loan loss provision. *Economic integration* is characterised as long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges. *Political integration* is characterised by a diffusion of government policies and it is measured as the number of embassies in a country, the number of international organisations of which the country is a member and the number of UN peace missions a country has participated in. *Social integration* is expressed as the spread of ideas, information, images and people. GDP growth captures the possible effect of the business cycle, and inflation measures consumer price index

**Source:** Bankscope and authors' own calculation

| Variable                 | Coefficient | Standard error |
|--------------------------|-------------|----------------|
| Intercept                | -0.00846*** | 0.00260        |
| LLA                      | 0.05175***  | 0.00674        |
| CHGOFF                   | 0.01250***  | 0.00439        |
| GLOAN                    | 0.00850***  | 0.00276        |
| $\Delta$ LOAN            | -0.01567**  | 0.00766        |
| LOAN                     | 0.01397***  | 0.00302        |
| DNPL                     | -0.00783*** | 0.00228        |
| MKTS                     | -0.00475    | 0.00406        |
| EBTP                     | 0.07784***  | 0.01372        |
| GDP per capita           | -0.15563**  | 0.07011        |
| GDP growth               | 0.14241**   | 0.06622        |
| INFL                     | -0.00008**  | 0.00003        |
| <i>Diagnostics tests</i> |             |                |
| Observation              |             | 614            |
| $R^2$                    |             | 47.9           |
| Fixed effect within      |             | N              |
| Year dummy               |             | Y              |
| Country dummy            |             | N              |
| Wald ( $p$ -value)       |             | 161.77**       |

**Notes:** The dependent variable is *LLP* which is the non-discretionary component of loan loss provision. This is regressed against *LLA*, the non-discretionary component of loan loss reserves. *CHGOFF* is the ratio of net charge-offs to average loans during the period. *GLOAN* is the growth in loan,  $\Delta$ *LOAN* is the change in total loan outstanding. *LOAN* is the loan portfolio of bank scaled by total assets. *LEV* is the leverage of bank scaled by total assets. *Size* is natural log of total assets. *DNPL* is an indicator variable equals one if non-performing loan is missing and zero if otherwise. *MKTS* is the market share of the respective bank. *EBTP* is earnings before tax and provisions, and *GDP per capita*, *GDP growth* and *INFL* are the macroeconomic variables representing GDP per capita, GDP growth and inflation respectively. Parameter estimates are reported with the small sample adjusted standard errors; \*\*\*, \*\* indicates statistical significance at the 1 and 5 per cent level, respectively

**Table IV.**  
Stage-one regression  
in estimating  
abnormal loan loss  
provisions

reporting systems. Social integration transfers and entrenches norms across borders and some of these norms may include standard business practices including business ethics, communication and reporting mechanisms. These findings therefore suggest that banks in Africa prepare their financial reporting statements when the national economies are integrated economically and socially. The coefficient on GDP growth is mixed while GDP per capita is negative and significant only in one instance. This means that the role of economic activities in the adoption of IFRS by banks is unclear. Among all the bank level variables, only diversification is significant in all models. It has a positive sign. This suggests that in countries where revenue diversification is low in the banking sector, international reporting standards are likely to be adopted. Capitalisation is significant and negative only in model 4. The lack of significance of the coefficients of most of the bank level variables may suggest that the adoption of International Standards by a country is mandatory and not voluntary.

#### 4.4 Earnings management: the effects of globalisation and adoption of IFRS

Having analysed the relationship between the various forms of globalisation and adoption of IFRS, we now examine the extent to which globalisation and the use of IFRS affect earnings management. The results are presented in Table VI, and similar to the earlier presentation (i.e. in Table V, the results are presented in columns on the basis of the type of globalisation index used). The results show that the adoption and reporting of financial statement on the basis of

**Table V.**  
The effects of  
globalisation on  
adoption of IFRS

| Panel A                     | (1)                 |                     | (2)                 |                     | (3)                 |                    | (4)                  |                     |
|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|----------------------|---------------------|
|                             | Coefficient         | dy/dx               | Coefficient         | dy/dx               | Coefficient         | dy/dx              | Coefficient          | dy/dx               |
| Diversification             | 0.828*** (0.306)    | 0.329*** (0.122)    | 0.862*** (0.306)    | 0.344*** (0.122)    | 0.588* (0.309)      | 0.234* (0.123)     | 0.908*** (0.302)     | 0.362*** (0.121)    |
| Bank size                   | 0.0470 (0.150)      | 0.019 (0.059)       | 0.0820 (0.151)      | 0.033 (0.060)       | -0.0954 (0.151)     | -0.038 (0.060)     | 0.116 (0.152)        | 0.046 (0.060)       |
| Loan ratio                  | -0.0988 (0.163)     | -0.039 (0.065)      | -0.0575 (0.164)     | -0.023 (0.065)      | -0.192 (0.163)      | -0.076 (0.065)     | 0.0101 (0.165)       | 0.004 (0.066)       |
| Capitalisation              | -0.299 (0.226)      | -0.119 (0.089)      | -0.230 (0.222)      | -0.092 (0.089)      | -0.214 (0.226)      | -0.085 (0.090)     | -0.677*** (0.233)    | -0.269*** (0.092)   |
| Globalisation index         | -0.00718 (0.00496)  | -0.003 (0.002)      |                     |                     |                     |                    |                      |                     |
| Economic integration        |                     |                     | 0.006** (0.003)     | 0.002** (0.001)     | 0.0208*** (0.00453) | 0.008*** (0.002)   |                      |                     |
| Social integration          |                     |                     |                     |                     |                     |                    |                      |                     |
| Political integration       |                     |                     |                     |                     |                     |                    |                      |                     |
| GDP growth                  | -0.0823 (0.0513)    | -0.033 (0.020)      | -0.000167 (0.0424)  | -0.0001 (0.017)     | 0.195*** (0.0638)   | 0.078*** (0.025)   | -0.0140*** (0.00189) | -0.006*** (0.001)   |
| GDP per capita growth       | 6.570 (5.496)       | 2.618 (2.190)       | -2.534 (4.667)      | -1.009 (1.859)      | -21.87*** (6.661)   | -8.714*** (2.654)  | -0.0761* (0.0389)    | -0.030** (0.015)    |
| Inflation                   | 8.77e-06 (3.13e-05) | 3.49e-06 (0.000001) | 2.00e-05 (3.13e-05) | 7.95e-06 (0.000001) | 3.58e-05 (3.23e-05) | 0.00001 (0.000001) | 5.413 (4.205)        | 2.157 (1.676)       |
| Constant                    | 0.127 (0.406)       |                     | -0.784** (0.344)    |                     | -1.219*** (0.338)   |                    | 1.36e-05 (3.13e-05)  | 5.41e-06 (0.000001) |
| <i>Panel B: Diagnostics</i> |                     |                     |                     |                     |                     |                    |                      |                     |
| Diagnostics                 | 1,884               |                     | 1,884               |                     | 1,884               |                    | 1,884                |                     |
| Observations                | 20.14***            |                     | 21.67***            |                     | 37.90***            |                    | 70.95***             |                     |
| Wald Chi2                   |                     |                     |                     |                     |                     |                    |                      |                     |

**Notes:** Table V contains robust probit estimates. The dependent variable is the adoption of IFRS. This is regressed against *diversification*, *bank size*, *bank capitalisation*, measures of globalisation and macroeconomic variables. *GDP growth* and *GDP per capita* account for the differences in economic development across countries. *Inflation* is the rate of inflation based on the CPI. The parameters are estimated with robust standard errors in parenthesis. dy/dx means marginal effect; \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 per cent level, respectively. Panel B reports diagnostic test: which reports the Wald Chi-square used to assess the overall fitness of models

| Panel A                       | (1)                 | (2)                 | (3)                 | (4)                 |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|
| LLP/A <sub>-1</sub>           | 0.1435*** (0.0134)  | 0.1433*** (0.0134)  | 0.1437*** (0.0134)  | 0.1432*** (0.0134)  |
| IFRS                          | -0.0050*** (0.0007) | -0.0049*** (0.0008) | -0.0049*** (0.0007) | -0.0049*** (0.0007) |
| Diversification               | 0.0090*** (0.0032)  | 0.0086*** (0.0032)  | 0.0089*** (0.0032)  | 0.0086*** (0.0032)  |
| Bank size                     | -0.0024** (0.0012)  | -0.0023** (0.0012)  | -0.0022** (0.0012)  | -0.0024** (0.0012)  |
| Bank size <sup>2</sup>        | 0.0001* (0.0001)    | 0.0002* (0.0001)    | 0.0002* (0.0001)    | 0.0001* (0.0001)    |
| Capitalisation                | 0.0037* (0.0022)    | 0.0048** (0.0020)   | 0.0045** (0.0021)   | 0.0047** (0.0020)   |
| Economic globalisation        | 0.0020 (0.0017)     |                     |                     |                     |
| Social globalisation          |                     | 0.0007 (0.0012)     |                     |                     |
| Political globalisation       |                     |                     | -0.0003 (0.0017)    |                     |
| Globalisation index           |                     |                     |                     | 0.0019 (0.0025)     |
| GDP growth                    | -0.0168* (0.0099)   | -0.0154 (0.0106)    | -0.0173* (0.0099)   | -0.0163 (0.0101)    |
| Inflation                     | -0.0001 (0.0001)    | -0.0001 (0.0001)    | -0.0001 (0.0001)    | -0.0001 (0.0001)    |
| <i>Diagnostics tests</i>      |                     |                     |                     |                     |
| Obs                           | 1672                | 1672                | 1672                | 1672                |
| Sargen N* R <sup>2</sup> test | 5.569**             | 4.919**             | 5.136**             | 5.143**             |
| R <sup>2</sup> (uncentered)   | 0.2175              | 0.2171              | 0.2171              | 0.2171              |
| F-test (P-value)              | 23.26***            | 23.14***            | 23.11***            | 23.18***            |
| Wu-Hausman test               | 0.2858              | 0.1008              | 0.4601              | 0.9303              |
| Durbin-Wu-Hausman             | 0.2877              | 0.1015              | 0.463               | 0.9359              |
| Anderson canon test           | 1493.17***          | 1633.79***          | 1562.06***          | 1584.15***          |

**Notes:** The dependent variable is the discretionary component of loan loss provision/allowance (LLP/A). This is regressed against IFRS, *Bank size*, bank *capitalisation*, globalisation index. The *GDP growth* accounts for the differences in economic development across countries. *Inflation* is the rate of inflation based on the CPI. The parameters are estimated with the small sample adjusted standard errors (in parenthesis); \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 per cent level, respectively. Panel B reports diagnostic test: Sargan N\*R<sup>2</sup> test for overidentifying restrictions which measures instruments exogeneity is reported. The R<sup>2</sup> measures the goodness of fit while the p-value of F-test measures the significance of identifying instruments. The Wu-Hausman F-test and Durbin-Wu-Hausman chi2 specification compare the difference between the IV and the OLS estimators

**Table VI.**  
Earnings  
management,  
globalisation and  
adoption of IFRS

IFRS reduces management and manipulation of bank financial earnings. This is because the IFRS adoption introduces more restrictive impairment rules which reduce discretion in loan loss provision and allowances. Thus after the adoption of IFRS, banks generally engage in less earnings management. This result is consistent with the theoretical position of [Ewert and Wagenhoffer \(2005\)](#) that stricter and tighter accounting rules reduce the manipulation of earnings. Both the diversification and the size of the banks reduce earnings management. Fees, commission and other trading income constitute diversification and these incomes are less subject to manipulation. However, the influence of bank size is nonlinear. The positive effect of size on earnings quality is up to a point and above which bank size promotes earnings management. Beyond some size, banks and their finances become unwieldy and management can take advantage of this to manipulate earnings. Surprisingly, capitalisation level does increase earnings management. However, this is not the stringency of capital regulation, which [Gebhardt and Novotny-Farkas \(2011\)](#) found to reduce income smoothening.

#### 4.5 The sensitivity of earnings management to International Financial Reporting Standards and globalisation

This subsection analyses the sensitivity of earnings management to the interaction of IFRS with globalisation. It analyses discretionary response of bank managers in loan loss

provision and allowance to the introduction and adoption of IFRS in an environment of ongoing globalisation. The results suggest that globalisation on its own, no matter the form (i.e. either economic, social or political) makes banks in Africa vulnerable to earnings management. However, when globalisation interacts with IFRS, the result is negative and statistically significant across all models. This finding means that manipulation and engagement of earnings management reduces when globalised banks operate in countries that adopt IFRS. A further implication is that, African countries that open up to globalisation without a concurrent adoption of IFRS will have their banking system exposed to earnings management. The lagged loan loss provision and allowance is positive and significant meaning that management of current year's earnings of the banks are influenced by the previous year's DLLP and allowance (Table VII).

#### 4.6 Determinants of earnings management: Regional analysis

Next is the analysis of Table VIII which is centred on grouping of African countries into regions (column 1 for Northern, column 2 for Central, column 3 for Southern and column 4 for all sample). This categorisation of countries is made by the World Bank

| Panel A: Variable                 | (1)                 | (2)                | (3)                 | (4)                |
|-----------------------------------|---------------------|--------------------|---------------------|--------------------|
| LLP/A <sub>-1</sub>               | 0.7091*** (0.0129)  | 0.7122*** (0.0129) | 0.7056*** (0.0130)  | 0.7055*** (0.0129) |
| IFRS                              | 0.1852*** (0.0468)  | 0.0520** (0.0263)  | 0.1383*** (0.0498)  | 0.2487*** (0.0584) |
| Diversification                   | 0.0077 (0.0084)     | 0.0041 (0.0086)    | 0.0034 (0.0082)     | 0.0017 (0.0085)    |
| Bank size                         | -0.001 (0.0039)     | -0.0008 (0.0039)   | -0.0018 (0.0039)    | -0.0010 (0.0039)   |
| Bank size                         | 0.0001 (0.0003)     | -0.0001 (0.0003)   | 0.0001 (0.0003)     | -0.0001 (0.0003)   |
| Equity                            | -0.0012 (0.0080)    | 0.0140* (0.0073)   | 0.0246*** (0.0080)  | 0.0126* (0.0068)   |
| Economic globalisation            | 0.0284*** (0.0103)  |                    |                     |                    |
| IFRS X Economic globalisation     | -0.0487*** (0.0120) |                    |                     |                    |
| Social globalisation              |                     | 0.0108* (0.0062)   |                     |                    |
| IFRS X Social globalisation       |                     | -0.0165** (0.0076) |                     |                    |
| Political globalisation           |                     |                    | 0.0382*** (0.0099)  |                    |
| IFRS X Political globalisation    |                     |                    | -0.0329*** (0.0115) |                    |
| Globalisation index               |                     |                    |                     | 0.0499*** (0.0124) |
| IFRS x Globalisation index        |                     |                    |                     | -0.064*** (0.0149) |
| GDP growth                        | -0.0749** (0.0338)  | -0.0493 (0.0359)   | -0.0521 (0.0334)    | -0.0573* (0.0337)  |
| Inflation                         | -0.0001 (0.0001)    | -0.0001 (0.0001)   | -0.0001 (0.0001)    | -0.0001 (0.0001)   |
| <i>Panel B: Diagnostics tests</i> |                     |                    |                     |                    |
| Observation                       | 1477                | 1477               | 1477                | 1477               |
| Sargen N* R <sup>2</sup> test     | 1.457               |                    | 1.08                | 1.109              |
| R <sup>2</sup> (uncentered)       | 0.742               | 0.7408             | 0.7428              | 0.7431             |
| F-test (P-value)                  | 317.9***            | 315.14***          | 318.6               | 319.56***          |
| Wu-Hausman test                   | 2.9989              | 1.7999             | 0.0001              | 1.1864             |
| Anderson canon test               | 1146.39***          | 1406.09***         | 1243.03***          | 1331.1***          |
| Cragg-Donald Wald                 | 2539.83             | 1.005              | 3891.77             | 6681.18            |

**Notes:** The dependent variable is the discretionary component of loan loss provision and allowance. This is regressed against IFRS, *Bank size* as proxied by the natural logarithm of total assets, bank *capitalisation*, and *globalisation index* and its components: *economic*, *social* and *political*. We include the interactions of globalisation index with IFRS. *GDP growth* accounts for the differences in economic business cycles across countries. *Inflation* is the rate of inflation based on the CPI. The parameters are estimated with the small sample adjusted standard errors in parenthesis; \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 per cent level, respectively

**Table VII.**  
The sensitivity of earnings management to IFRS and globalisation

| Variable                     | (1)                 | (2)                | (3)                 | All sample          |
|------------------------------|---------------------|--------------------|---------------------|---------------------|
| LLP/A <sub>-1</sub>          | 0.6461*** (0.0342)  | 0.6855*** (0.0231) | 0.5915*** (0.0225)  | 0.7055*** (0.0129)  |
| IFRS                         | 1.620 (1.0999)      | 0.2401* (0.1255)   | 0.1886 (0.2126)     | 0.2487*** (0.0584)  |
| Diversification              | 0.0289 (0.0210)     | -0.0042 (0.0158)   | -0.0474*** (0.0129) | 0.0017 (0.0085)     |
| Bank size                    | -0.0444** (0.0193)  | -0.0007 (0.0093)   | -0.0032 (0.0045)    | -0.0010 (0.0039)    |
| Bank size <sup>2</sup>       | 0.0022* (0.0013)    | -0.0001 (0.0008)   | 0.0002 (0.0003)     | -0.0001 (0.0003)    |
| Capitalisation               | -0.1312*** (0.0492) | 0.1123*** (0.0338) | 0.0394*** (0.0081)  | 0.0126* (0.0068)    |
| Globalisation index          | 0.0851*** (0.0263)  | 0.0045 (0.0264)    | 0.0380 (0.0557)     | 0.0499*** (0.0124)  |
| IFRS x Globalisation index   | -0.3994 (0.2700)    | -0.0620* (0.0326)  | -0.0469 (0.0559)    | -0.0649*** (0.0149) |
| GDP growth                   | -0.3068* (0.1690)   | -0.0783 (0.0671)   | -0.1998*** (0.0378) | -0.0573* (0.0337)   |
| Inflation                    | 0.1479** (0.0746)   | 0.0689** (0.0314)  | -0.0001 (0.0001)    | -0.0001 (0.0001)    |
| <i>Diagnostics tests</i>     |                     |                    |                     |                     |
| Observation                  | 361                 | 760                | 466                 | 1477                |
| Sargen N*R <sup>2</sup> test | 0.0000              | 0.0000             | 0.0000              | 1.109               |
| R <sup>2</sup> (uncentered)  | 0.6536              | 0.6589             | 0.7952              | 0.7431              |
| F-test (P-value)             | 54.05***            | 114.17***          | 90.55***            | 319.56***           |
| Wu-Hausman test              | 0.2178              | 0.7284             | 2.4919              | 1.1864              |
| Durbin-Wu-Hausman            | 0.2252              | 0.7394             | 2.5439              | 1.1952              |
| Anderson canon test          | 344.80***           | 647.3***           | 269.48***           | 1331.1***           |
| Cragg-Donald Wald            | 7452.6              | 4305.39            | 623.92              | 6681.18             |

**Notes:** The dependent variable is the discretionary component of loan loss provision and allowance. This is regressed against IFRS, *Bank size* as proxied by the natural logarithm of total assets, the square of the size of the bank, bank *capitalisation*, *globalisation index*, the interaction of globalisation index with IFRS and macroeconomic variables. *GDP growth* accounts for the differences in economic development across countries. *Inflation* is the rate of inflation based on the CPI. The parameters are estimated with the small sample adjusted standard errors in parenthesis, \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 per cent level, respectively. Panel B reports diagnostic test: Sargen N\*R<sup>2</sup> test of overidentifying restrictions are reported and used to measure instrument exogeneity. The K<sup>2</sup> measures the goodness of fit while the p-value of F-test measures the significance of identifying instruments. The Wu-Hausman F-test and Durbin-Wu-Hausman chi2 specification compare the difference between the IV and the OLS estimators

**Table VIII.**  
Determinants of  
earnings  
management:  
Regional analysis

[3]. This allows us to examine whether there are regional differences in the influence of globalisation on earnings management. The results suggest that the adoption of international standards improves the information content of financial information and that banks operating in the central zones that adopted IFRS have less earnings management, have more timely loss recognition and show more value relevance of earnings. All these, according to [Jermakowicz et al. \(2007\)](#) can be interpreted as evidence of higher financial reporting quality. Taking a cursory look at the countries which constitute the central African zone, four of the countries have Stock Exchange market and this could have influence on the adoption and the provision of quality accounting information ([Latridis, 2010](#)).

## 5. Conclusion and policy implications

The expansion of international trade and accessibility to foreign stock and debt markets have given impetus to the debate on whether or not there is the need to have a global set of accounting standards. Against this background, the paper analyses two related issues: first, it evaluates the impact of the process of globalisation on the adoption of IFRS by banks in Africa. Second, is the analysis on how mandatory and/or voluntary adoption of IFRS and globalisation perform in terms of helping banks in Africa produce reliable and quality accounting information. Macroeconomic variables



are used to account for differences in economic development. We sample 330 banks across 29 countries during the eight-year period, 2002-2009. To account for endogeneity, and to provide precise and consistent parameter estimates, 2SLS estimation is employed as the main estimation strategy. A two stage procedure is used to measure earnings management: first, is the construction of a DLLP as a proxy for the degree of discretionary behaviour of managers and second is to use the result (DLLP) to test its relationship with globalisation and the adoption of IFRS.

The result reveals that banks in Africa prepare their financial statements on the basis of international standards as the national economies are integrated when economic policies are diffused and society is well integrated. The increased economic activities propel African countries and for that matter banks to adopt IFRS. Apart from diversification and to some extent bank capitalisation, all other bank specific-variables used do not explain the adoption of IFRS. This means the adoption of international standards by a country is largely mandatory with very little discretion. On whether the effect of IFRS on earnings quality is dependent on the level of integration and the use of IAS, the results suggest that the adoption and reporting of financial statement on the basis of IFRS reduce management and manipulation of banks' financial earnings. This is because the IFRS introduces more restrictive impairment rules which reduce discretion in loan loss provision and allowances. This finding has implications for firms and countries that have not yet adopted IFRS. It will be beneficial for governments and regulators in non-IFRS countries to embrace the IFRS to reduce the incidence of earnings management and provide more accurate information for investors. Diversification by banks reduces earnings management. Fees, commission and other trading income constitute diversification and these incomes are less subject to manipulation. This implies that diversification can be an effective safeguard against earnings manipulations. Thus, shareholders and investors who view earnings management seriously can press for more diversification of the banks in which they have stakes. In terms of banking practice, this finding implies that the benefits of diversification go beyond risk mitigation; it also includes disclosure and reporting benefits.

It has been found that the influence of bank size on earnings management is nonlinear. As bank size increases, earnings management reduces until the size exceeds some threshold after which earnings management increases. The results on the effect of globalisation on earnings management show that, globalisation on its own promotes earnings management. However, when globalisation interacts with IFRS, earnings manipulation is reduced. The implication of this finding is that, African countries that open up to globalisation without adopting international reporting standards will expose their banking system to earnings manipulation. On the whole, the results suggest that globalisation provides banks in Africa the needed platform to adopt accounting standards that reduce earnings management. Generally, the findings imply that the adoption of IFRS is key to the reduction of earnings management among banks in the African continent. This observation should be helpful to:

- banking sector regulators who hope for more accurate and transparent reporting for effective oversight;
- policymakers who aspire for a sound financial system devoid of fraud and opacity; and
- investors who want accurate and reliable information to help them take judicious decisions, and banks who desire to be stable and profitable in order to instill confidence in their stakeholders.

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## Notes

1. This is based on the coefficients from the first-stage regression in [equations \(1\) and \(2\)](#).
2. For the purpose of this analysis DLLP/A is used as a measure of earnings management.
3. Countries included in analysis for Northern Region of Africa are Algeria, Egypt, Morocco, Sudan, and Tunisia; that of Central Africa countries included are Benin, Burkina Faso, Cameroon, Cote d'voire, Ethiopia, Ghana, Kenya, Mali, Mauritania, Nigeria, Rwanda, Senegal, Sierra Leone and Uganda; while Angola, Botswana, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, and Zimbabwe included for Southern Africa countries.

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**Table AI.**  
Measures of  
globalisation and  
their weights (KOF  
index of  
globalization)

| Indices and variables                                      | Weights |
|--|---------|
| <i>A.Economic globalisation</i>                            | [36%]   |
| i) Actual flows  | (50%)   |
| Trade (per cent of GDP)                                    | (21%)   |
| Foreign direct investment, stocks (per cent of GDP)        | (28%)   |
| Portfolio investment (per cent of GDP)                     | (24%)   |
| Income payments to foreign nationals (per cent of GDP)     | (27%)   |
| ii) Restrictions   | (50%)   |
| Hidden import barriers                                     | (22%)   |
| Mean tariff rate   | (28%)   |
| Taxes on international trade (per cent of current revenue) | (26%)   |
| Capital account restrictions                               | (24%)   |
| <i>B.Social globalisation</i>                              | [37%]   |
| i) Data on personal contact                                | (33%)   |
| Telephone traffic  | (25%)   |
| Transfers (per cent of GDP)                                | (2%)    |
| International tourism                                      | (26%)   |
| Foreign population (per cent of total population)          | (21%)   |
| International letters (per capita)                         | (25%)   |
| ii) Data on information flows                              | (36%)   |
| Internet users (per 1000 people)                           | (37%)   |
| Television (per 1000 people)                               | (39%)   |
| Trade in newspapers (per cent of GDP)                      | (25%)   |
| iii) Data on cultural proximity                            | (32%)   |
| Number of McDonald's Restaurants (per capita)              | (47%)   |
| Number of Ikea (per capita)                                | (47%)   |
| Trade in books (per cent of GDP)                           | (6%)    |
| <i>C.Political globalisation</i>                           | [27%]   |
| Embassies in country                                       | (25%)   |
| Membership in international organizations                  | (27%)   |
| Participation in U.N. security council missions            | (22%)   |
| International treaties                                     | (26%)   |

**Source:** Dreher (2006)

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