

Credit relevance after mandatory IFRS adoption in deposit money banks of Nigeria

Effect of IFRS
on credit
relevance

A difference-in-differences (D-in-D) approach

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Abstract

Purpose – Credit relevance of financial reporting can be influenced by change in financial reporting framework. This study aims to examine the effect of mandatory international financial reporting standards (IFRS) adoption on credit relevance quality of financial reporting of deposit money banks (DMBs) in Nigeria.

Design/methodology/approach – This study uses difference-in-differences (D-in-D) design for its modelling. Panel data regression analysis based on the D-in-D model is used in analysing the data collected from secondary sources.

Findings – The findings of this study are that based on the D-in-D approach, there is a significant and positive effect of mandatory IFRS adoption on credit relevance quality of financial reporting of DMBs in Nigeria, and that there is also a significant difference in the credit relevance quality of financial reporting of mandatory adopting banks in the post-mandatory IFRS adoption period compared to pre-mandatory IFRS adoption period.

Research limitations/implications – To the best of this study's review, there is inadequacy of literature within the credit relevance research in Nigeria. In the light of this, this study intends to fill the gap.

Practical implications – This study is specifically important to regulatory authorities, both primary and secondary regulators. Specifically, this study has implications in the regulatory roles of Central Bank of Nigeria (CBN) and Financial Reporting Council of Nigeria (FRC). However, the study recommends that regulatory authorities should encourage DMBs to avail their financial reports annually to credit rating agencies (local and international) for proper evaluation for subsequent ratings.

Originality/value – The peculiarities in this study, that is the utilisation of the D-in-D design and the use of credit relevance metric as the dependent variable, made this study important and novel to push the frontier of existing knowledge.

Keywords Mandatory IFRS adoption, Credit relevance, Quality of financial reporting, Difference-in-differences

Paper type Research paper

JEL Classification — M4, M42, M48

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1. Introduction

In recent times, the world has experienced quite a number of corporate failures. These corporations were mostly companies that were quoted on stock exchanges and regulated by the relevant statutory authorities. A few cases were the failures of Enron and WorldCom in the USA, Parmalat in Italy and Allied Irish Bank (AIB) and National Irish Bank (NIB) in the Ireland since 2001 (Ebert and Griffin, 2009). In Nigeria, the cases of Cadbury (Nigeria) Plc overstating its accounts of 2002–2005, and failed banks of 1994 and 2008/2009 are examples. Different factors were responsible for these corporate failures, but the prominent amongst them were bad corporate governance framework and inadequate institutional framework, which includes inadequate framework for financial reporting (Dibra, 2016; Moxey and Berendt, 2008).

More often, regulations and reforms in financial reporting are initiated after well-publicised corporate scandal (Haslam and Chow, 2016). For instance, the number of corporate scandals that took place in the USA between 2000 and 2001 through creative accounting practices eroded trust in financial reporting, thereby giving way for a reform through the promulgation of Sarbanes–Oxley Act in 2002, with the main aim of restoring the integrity of financial reporting (Cohen *et al.*, 2008). The global financial crisis of 2007/2008 has shown how incredibly weak the checks and balances in the public capital markets can be, leading to several financial reporting regulations by International Accounting Standards Board (IASB) (Hoogervorst, 2012).

In Nigeria, the banking reform championed by the Nigerian apex bank, Central Bank of Nigeria (CBN) in the mid-2009 included accounting reform in a policy statement. The reform issues were that all banks and their subsidiaries must change and adopt common financial year end for the year 2009 and beyond to enhance comparability (Central Bank of Nigeria, 2009), and all banks should adopt international financial reporting standards (IFRS) by the end of 2010 (Alford, 2010). This was followed by the announcement in 2010 of the Roadmap to the Adoption of IFRS in Nigeria.

The main objective of IASB is to develop a globally acceptable set of financial reporting standards, which is of high quality called IFRS. The expectation here is that the adoption of IFRS should enhance the relevance quality of financial reporting (Barth *et al.*, 2008). The anticipated outcome of financial reporting reform, especially the adoption of IFRS by different countries – developed and emerging – has sparked-off different research (Adereti and Sanni, 2016; Alfaraih, 2009; Barth *et al.*, 2008; Chen *et al.*, 2013; Dang *et al.*, 2017; Devalle *et al.*, 2010; Kaaya, 2015; Kasztelnik, 2015; Lee *et al.*, 2013; Mohammed and Lode, 2016, 2015; Omokhodu and Ibadin, 2015; Onalo *et al.*, 2014a, 2014b; Ouezzani and Alami, 2014; Oyerinde, 2011; Paglietti, 2009; Sovbetov, 2015; Tsalavoutas, 2009; Umoren and Enang, 2015) on the effect of adoption of IFRS on the desired outcome, basically value relevance. A few foreign studies (Chan *et al.*, 2013; Florou *et al.*, 2017; Kosi *et al.*, 2010; Lima *et al.*, 2016) were carried out on the effect of IFRS adoption on credit relevance.

This study focuses on the Nigerian situation; therefore, the review of Nigerian empirical studies on the effect of IFRS adoption on relevance quality of financial reporting reveals some gaps. Firstly, most of the Nigerian studies exclude the use of credit relevance metric as surrogate for relevance quality of financial reporting. Credit relevance model was recently developed by scholars (Florou *et al.*, 2017; Hann *et al.*, 2007; Kosi *et al.*, 2010), because of the numerous demands for financial reporting information from users other than stock market investors to address specific needs for useful financial reporting information (Pășcan, 2015). Credit relevance is developed to investigate the effects of IFRS on financial reporting quality (FRQ) in terms of the needs of banks and creditors. However, there is the need to bridge that gap as far as the review is concern in IFRS studies in Nigeria to consider credit relevance as a measurement for relevance quality of financial reporting. This study is an extension of the study of Dang *et al.* (2017), which finds a significant effect of mandatory IFRS adoption on

value relevance quality of financial reporting in the Nigerian deposit money banks (DMBs). This current study uses similar data to test the effect of mandatory IFRS adoption on credit relevance quality of financial reporting in Nigeria. Secondly, most of the Nigerian studies on relevance quality of financial reporting consider only the quoted DMBs. Whereas, all banks are considered as public interest entities by virtue of the provision of Section 77 of the Financial Reporting Council of Nigeria (FRC) Act 2011. Lastly, the review reveals the non-use of difference-in-differences (D-in-D) research design. Current studies on the effects of IFRS adoption on value relevance quality of financial reporting around the world adopt the use of D-in-D research design (Chen *et al.*, 2015; Doukakis, 2014; Hong *et al.*, 2014; Li and Yang, 2016), because of its ability to test the effect of pre- and post-IFRS adoption on credit relevance quality of financial reporting of different treatment and non-treatment (control) groups. Therefore, the use of the D-in-D research design for a Nigerian study will bridge the gap in existing empirical literature in Nigeria as reviewed. However, to fill the gaps in the existing empirical literature, this study intends to examine whether mandatory adoption of IFRS has any effect on the credit relevance of financial reporting of DMBs in Nigeria using the D-in-D design. To the best of this study's review, there is inadequacy of literature within the credit relevance research in Nigeria. In the light of the above research problem, the objective of this study is to examine the effect of mandatory IFRS adoption on credit relevance of DMBs in Nigeria using the D-in-D approach.

This study is specifically important to regulatory authorities, both primary and secondary regulators. The peculiarities in this study, that is the utilisation of the D-in-D design and the use of credit relevance metric as dependent variable, made this study important to push the frontier of knowledge. The remaining part of this paper comprises of literature review, methodology, results and discussions and conclusion and recommendations. Some of these sections have subsections for clearer perspective of this study.

2. Literature review

2.1 Conceptual framework

Financial reporting standards, otherwise known as accounting standards, are a set of accounting theories that create a framework, which ensures an accounting practice complies with the requirement of conformity and uniformity (Glautier *et al.*, 2011; Godfrey *et al.*, 2010; Hendriksen, 1982; Russell, 2006). Simply put, accounting standards are rules or principles that govern the manner in which specific business transactions of incorporated companies are recorded and reported to the public in corporate financial statements. Accounting standards establish and maintain a common language for communicating financial information. These standards are used by management/directors in preparing financial reports in compliance with Section 335 of CAMA 2004.

The FRC of Nigeria Act 2011, Section 77 defines financial reporting standards (FRS) as "accounting, auditing, actuarial and valuation standards issued by the Council under this Act". In 2011, it was expected that IFRS opening statement of financial position would have been prepared by significant and public entities (SPEs) before finally preparing the first set of IFRS financial reporting by SPEs in 2012. These processes involving the SPEs are categorised by the report as Phase 1 of the roadmap (Deloitte Global Services Limited, 2013). However, DMBs are part of the SPEs and were, therefore, expected to mandatorily adopt to IFRS fully by 2012. The mandatory position of the IFRS adoption by 2012 was backed by the promulgation of FRC of Nigeria Act 2011.

Value relevance focuses on the equity user-group of financial reporting information, whereas there are other primary user-groups, such as creditor user-group, which also need relevant financial reporting information. However, it is also important to evaluate how relevant financial reporting information is reflected in the debt markets, such as the banking

sector. Credit relevance is not among the commonly used metrics for FRQ in accounting research. The study of [Hann et al. \(2007\)](#) is one the first studies to provide a good explanation of credit relevance. [Hann et al. \(2007\)](#) define credit relevance as the association between financial reporting information and creditors' future cash flow expectations that are captured by credit ratings. [Wu and Zhang \(2009\)](#) measure credit relevance of financial reporting information as the sensitivity of credit ratings to various financial reporting variables.

Credit relevance model was recently developed by scholars because of the variety of demands for financial reporting from users other than stock market investors to address specific needs for useful financial reporting information ([Pășcan, 2015](#)). Credit relevance metrics were developed to investigate whether IFRS adoption provides quality financial reporting in terms of the needs of lenders, such as banks and other creditors.

Credit relevance can be defined as the association between financial reporting measures and market value of debt ([Florou et al., 2017](#)). Credit ratings, such as Standard and Poor's (S&P) credit ratings are identified with financial analysis, especially ratios. However, credit relevance can be summarised as the reflection of financial reporting information on the credit ratings of a bank influenced by financial reporting framework, which has predictive and/or confirmatory relevance to creditors and other credit providers. If changes in financial reporting information relate to changes in credit rating of the bank, it is viewed that the financial reporting information produces relevant information for decision-making ([Oyerinde, 2011](#)).

2.2 Empirical review and hypothesis development

Apart from the value relevance metrics used by different research, a few studies rely on credit relevance metrics to test for IFRS adoption effects. [Kosi et al. \(2010\)](#) investigate whether mandatory IFRS adoption affects the credit relevance of accounting information. The study finds a significant increase in the credit relevance of financial statement information for mandatory IFRS adopters in the post-adoption period. [Florou et al. \(2017\)](#) examine whether firms reporting under IFRS exhibit credit relevance of financial statements. The study finds an improvement in credit relevance for firms in 17 countries after mandatory IFRS reporting is introduced in 2005 in Europe; this increase is higher than that reported for a matched sample of US firms. [Chan et al. \(2013\)](#) examine whether the mandatory IFRS adoption affects the credit ratings of foreign firms in the USA using regression analysis. The study finds significant higher credit ratings among cross-listed firms after IFRS adoption. [Lima et al. \(2016\)](#) analyse the effects of mandatory IFRS adoption on the Brazilian credit market, with emphasis on the relevance of accounting information to creditors. The results of the analysis suggest that the ability of accounting information to explain corporate credit ratings increased after mandatory IFRS adoption. All the reviewed studies on credit relevance show positive results of IFRS adoption having effect on credit relevance of financial reporting information. However, none of the reviewed studies on credit relevance considers Nigeria as the area of study.

In summarising the outcome of the review of existing literature on IFRS adoption effects and credit relevance quality in Nigeria, a number of gaps are established. Firstly, most of the reviewed studies focus on either quoted companies or quoted banks, thereby ignoring the inclusion of non-quoted banks that have a statutory regulator (CBN) in the analysis. Non-quoted banks are included in the definition of public interest entities by FRC of Nigeria Act 2011; therefore, they must adopt IFRS in their financial reporting. This has opened a gap in the existing Nigerian literature for non-inclusion of non-quoted banks in their analysis.

Secondly, most of the IFRS studies on banks could not differentiate the banks that voluntarily adopted IFRS prior to 2012 and the banks that only adopted IFRS when it is

mandatory in 2012. Effects of IFRS adoption may differ between the two groups of banks, due to differences in the incentives for the adoption of IFRS. Therefore, there is a need to carry out a study analysing the effect of IFRS adoption on value relevance of these two groups, voluntary adopters as the control group and mandatory adopters as the treatment group, as no Nigerian study has done that.

Thirdly, considering the period covered for the analysis in all the value relevance and IFRS adoption studies reviewed, none of the studies uses up to a six-year period, with three years as pre-IFRS adoption period and three years as post-adoption period. There is the need to conduct a study in Nigeria with longer period of analysis. This might make the findings more convincing.

Fourthly, the use of the D-in-D research design in all the reviewed Nigerian studies is absent. Current research on the effects of IFRS adoption on FRQ around the world currently use D-in-D regression analysis, because of its ability to test the effect of pre- and post-IFRS adoption on FRQ of different treatment groups under study. That is testing the treatment effect of a policy change like the mandatory IFRS adoption. Therefore, there is also the need to consider the use of the D-in-D research design for a Nigerian study to bridge the gap in the existing literature. Lastly, none of the Nigerian studies uses credit relevance metric as a measure of FRQ to test the effects of IFRS adoption on FRQ, thereby leaving a gap that needs to be filled.

To fill these gaps in existing literature on IFRS adoption and credit relevance quality, this current study formulates a hypothesis on credit relevance as a measure for relevance quality of financial reporting, considering financial and non-financial data as control variables, longer period of analysis of eight years, division of DMBs as mandatory adopting banks and voluntary adopting banks with all quoted and unquoted banks combined together and use of the D-in-D research design. The period of analysis intends to cover 2009–2011 (three years) as pre-IFRS adoption period and 2012–2016 (five years) as post-IFRS adoption period.

Credit relevance model as a measurement of relevance quality of financial reporting has not been used in any Nigerian IFRS adoption study as far as the literature of this study is concerned. Therefore, it creates a gap in the present literature in the area of IFRS adoption and FRQ in Nigeria. This current study will use credit relevance metric as a measurement for relevance quality of financial reporting to fill the gap in the present empirical literature. This is justified by the research of [Florou *et al.* \(2017\)](#), and [Kosi *et al.* \(2010\)](#) and the process credit rating by credit rating agencies, which involves considering financial reports. The financial reports of a company are the bases for the analysis done by credit rating agencies. Such analysis is expected to take cognizance of the financial reporting framework used in preparing the financial reports of the company. Understanding the impact of financial reporting framework such as IFRS is very important in the process of financial analysis (S&P's Rating Services, 2008). This also leads to the development of the hypothesis of this study.

H1. Mandatory IFRS adoption has no significant effect on credit relevance quality of financial reporting of DMBs in Nigeria.

2.3 Theoretical framework

There are different assumptions, motivations and philosophies explaining the adoption of IFRS by countries, encapsulated as theories influencing IFRS adoption by this study. Several theories influence the adoption of IFRS by countries, but the one adopted by this study is discussed here. That is the decision-usefulness theory.

The decision-usefulness theory was propounded in 1966 by the American Accounting Association (AAA) Committee to prepare a statement of the basic accounting theory ([American Accounting Association. Committee to Prepare a Statement of Basic Accounting](#)

Theory, 1966). According to the Committee, decision usefulness of financial reporting information to users is the best postulate to use in choosing a measurement method in financial reporting. Dandago and Hassan (2013) describe the decision-usefulness theory as an approach usually adopted to satisfy the information requirements of the primary users of the financial reports of the reporting entities, who are investors and creditors. The decision-usefulness theory tries to build up an empirical and unbiased technique that will aid in the selection of the optimum choices of accounting measurements and disclosures by standard setting bodies. The theory affirms that good FRS are those that give the right financial reporting information that will aid users make informed decisions.

3. Research design and methodology

This study uses a control sample of voluntary IFRS adopting banks and uses a D-in-D design to examine the effect of mandatory IFRS adoption on value relevance as used by similar studies (Chen *et al.*, 2015; De George, 2013; den Besten *et al.*, 2015; Doukakis, 2014; Florou *et al.*, 2017; Hong *et al.*, 2014; Li and Yang, 2016; Mazboudi, 2012; Ta, 2014). The D-in-D design is a quasi-experimental research design used to understand the effect of a change in the economic environment, such as IFRS adoption for corporate economic players or government policy, such as enactment of statutes (Roberts, 2009).

According to prior studies, the D-in-D approach is suitable when testing the effect of a sharp change in financial reporting framework, such as mandatory IFRS adoption (L. Chen *et al.*, 2015; Doukakis, 2014) or Sarbanes–Oxley Act 2002 in the USA (Cohen *et al.*, 2008) on FRQ. This should have two groups of cross sections (control and treatment groups) and two time periods of before the change in the financial reporting framework and after the change in the financial reporting framework. Applying D-in-D to this study, DMBs are divided into two groups; treatment group tagged mandatory adopting banks and control group tagged voluntary adopting banks. Whereas, IFRS adoption periods constitute 2009–2011 as the pre-mandatory IFRS adoption period and 2012–2016 as the post-mandatory IFRS adoption period. Having a control sample group of voluntary adopting banks and mandatory adopting banks (treatment sample group) from the same industry, such as DMBs has the advantage of likeness in firm-level characteristics as required by D-in-D assumptions. Therefore, there is homogeneity in the cross sections. Voluntary adopting banks as the benchmark sample does not prevent finding the effect of mandatory adopting banks post-mandatory IFRS adoption. In essence, mandatory IFRS adoption does not imply a significant change in voluntary adopting banks' financial reporting practice (Doukakis, 2014). This satisfies the parallel trend assumption between the treatment and control group.

The population of this study constitutes all listed and significant public interest entities (PIEs), other public interest entities (OIEs) and small- and medium-scale enterprises (SMEs) that are enumerated in the Roadmap to IFRS Adoption in Nigeria to transit and adopt to IFRS within 2010–2014. However, the research sample of this study consists of the companies under the significant PIEs group. DMBs are significant PIEs because they are mostly quoted on the floor of the Nigerian Stock Exchange (NSE) and are all regulated by CBN. Therefore, they were all expected to fully mandatorily adopt IFRS by 2012 reporting year. The sample is arrived at after applying purposive sampling technique (Kothari, 2004). Considering data availability requirement, the study arrives at the final test sample size of 128 bank-year observations (16 banks and eight years' sample period). This is made up of 48 observations in the pre-mandatory IFRS adoption period and 80 observations in the post-mandatory IFRS adoption period. The type of data for this study is panel data on DMBs for the sample period of 2009–2016. These data are financial reporting data obtained from secondary sources, which are published internal and external documents on DMBs financial reporting system. The internally published documents are annual report and accounts of DMBs and other

related information from the banks. The external documents include NSE Fact Book. The reputation and recognitions of both internal and external secondary sources (organisations) enhance the reliability and suitability of the data obtained for this study.

Following prior research (Florou *et al.*, 2017; Kosi *et al.*, 2010), credit relevance, being the dependent variable is proxied by S&P credit rating. But, this study refines the credit relevance metric by deflating the S&P credit ratings of Nigeria by *Q* test scores of each bank for the period 2009–2016. Putman *et al.* (2005) develop an earnings quality metric called *Q* test, which focuses on how corporate earnings drive corporate value to determine earnings quality using ratios. Credit relevance is the capability of numbers in the financial statements to explain the credit rating of a company (Hann *et al.*, 2007; Kosi *et al.*, 2010), while *Q* test figures are scores based on the numbers in the three main financial statements. This study interprets the differences in the model's explanatory power between pre- and post-mandatory IFRS adoption as evidence of differences in credit relevance (Hann *et al.*, 2007; Jorion *et al.*, 2009). The *Q* test scores are calculated based on the Putman *et al.* (2005) model in Eqn 1:

$$Q \text{ Test} = 10(\text{CFO}/\text{Rev}) + (\text{CFO}/\text{PBIT}) + (\text{COI}/\text{NI}) + 10(\text{CFO}/\text{TL}) + (\Delta\text{Rev}/\Delta\text{AR}) \quad (1)$$

where:

$10(\text{CFO}/\text{Rev})$ = Cash flow margin, which is arrived at after dividing cash flow from operations by sales of the same year then multiply by 10.

CFO/PBIT = Operating cash ratio, which is arrived at after dividing cash flow from operations by profits before interest and tax for the same year.

COI/NI = Repeatable earnings ratio, which is arrived at after dividing income from continuing operations by net income for the same year.

$10(\text{CFO}/\text{TL})$ = Leverage ratio, which is arrived at after dividing cash flow from operations by total liabilities of the same year then multiply by 10.

$\Delta\text{Rev}/\Delta\text{AR}$ = Receivables accruals ratio, which is arrived at after dividing change in gross revenue by change in account receivables for the same year.

If IFRS financial reports have higher credit relevance than Nigerian GAAP financial reports, then we expect an increase in the explanatory power of the credit rating model from the pre- to the post-mandatory IFRS period. The comparative changes (effects) in credit relevance of financial reports in the pre- and post-mandatory IFRS adoption periods of the treatment group of banks is estimated using the D-in-D regression.

The first variable of interest of this study is MANDATORY, a dichotomous variable that takes the value of 1 for banks that did not apply IFRS until compliance became mandatory in 2012. The second variable of interest is POST, a dichotomous variable that equals 1 for observations from 2012. Lastly, the most important variable of interest that is expected to capture any incremental change in credit relevance quality for mandatory IFRS adopting banks is MANDATORY*POST, which is the interaction term in the model.

However, prior studies (Alsaqqa and Sawan, 2013; Barth *et al.*, 2008; Beest *et al.*, 2009; Blanchette *et al.*, 2012; Chen *et al.*, 2015; den Besten *et al.*, 2015; Doukakias, 2014; Ebrahimi Rad and Embong, 2014; Iyoha, 2011; Jeroh and Okoro, 2016; Mohammed and Lode, 2015; Okpala, 2012; Omokhudu and Ibadin, 2015; Onalo *et al.*, 2014a, 2014b; Saidu and Dauda, 2014; Sarea and AlNesuf, 2013; Tanko, 2012) document that credit relevance is affected by factors such as return on equity (ROE), revenue (REV), deposit liabilities (DEP), loan loss provision (LLP), bank size (SIZE), leverage (LEV), interest coverage (COV), big 4 auditing firms (BIG4), going concern statement, (GOING) and foreign direct investment (FDI). These factors are the

financial and non-financial control variables, which are firm- and country-level attributes to be included in the models. The models to be tested for the hypotheses stated earlier are specified here based on the D-in-D design. This model is specified in Eqn 2, and the variables are defined in Table A1:

$$\begin{aligned}
 C_RATING_{it} = & \beta_0 + \beta_1 MANDATORY_{it} + \beta_2 POST_{it} + \beta_3 MANDATORY_{it} \\
 & \times POST_{it} + \beta_4 ROE_{it} + \beta_5 LLP_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} \\
 & + \beta_8 GOING_{it} + \beta_9 FDI_{it} + \epsilon_{it}
 \end{aligned}
 \tag{2}$$

4. Result and discussions

4.1 Results

Table I presents the descriptive statistics of the model variables and their statistical differences between the pre- and post-mandatory IFRS adoption period. Table I presents the descriptive statistics of the model variables and their statistical differences between the pre- and post-mandatory IFRS adoption period. Panel A in Table I presents the descriptive statistics of voluntary adopting banks, being the control group of the D-in-D design. In Panel A in Table I, the means of the dependent variable, credit rating is not significantly different across the pre- and post-mandatory IFRS adoption period.

In Panel B of Table I, credit rating also presents a non-significant difference in their means between the pre- and post-mandatory IFRS adoption period. This means that the mandatory IFRS adoption by these bank has not changed the banks credit relevance of financial reporting when comparing their means.

Table II reports the results of the D-in-D regression model for mandatory IFRS adoption and credit relevance in the Nigerian DMBs. This is to test the hypothesis (H1) for this study. Table II presents the D-in-D regression results with a fitted model (chi-square p -value = 0.0634) at 0.1 level of significance. In Table II, the coefficient of MANDATORY*POST is positive and significant at the 0.05 level of significance. This suggests an increase in credit relevance for mandatory adopting banks from the pre- to post-mandatory IFRS adoption period. Table II also shows that there is a significant difference between the pre- and post-mandatory adoption period for credit relevance with POST p -value of 0.025.

Variable	Pre-mandatory adoption			Post-mandatory adoption			Group difference		
	Obs	Mean	Std. dev.	Obs	Mean	Std. dev.	Mean diff	t -statistics	p -value
<i>Panel A: descriptive statistics of voluntary adopting banks</i>									
C_rating	12	-0.0246	0.1008	20	-0.1884	1.1057	0.1638	0.658	0.5182
Llp	12	0.9658	0.6032	20	1.4555	2.4366	-0.4897	-0.8561	0.4009
Size	12	8.3733	0.2414	20	8.572	0.2508	-0.1987	-2.2208	0.0360
Lev	12	0.0358	0.0294	20	0.071	0.0459	-0.0352	-2.6424	0.0130
Going	12	0	0	20	0.35	0.4894	-0.35	-3.1986	0.0047
Fdi	12	0.1567	0.0098	20	0.226	0.0704	-0.0693	-4.3362	0.0003
<i>Panel B: descriptive statistics of mandatory adopting banks</i>									
C_rating	36	-0.0417	0.3362	59	0.0262	0.1171	-0.0679	-1.1696	0.2490
Llp	36	1.2553	2.5805	59	0.8532	1.1627	0.4021	0.8818	0.3827
Size	36	7.8822	0.3807	60	7.8335	0.4034	0.0487	0.5936	0.5545
Lev	36	0.1125	0.2575	60	0.073	0.0476	0.0395	0.9111	0.3682
Going	36	0	0	60	0	0	0	-	-
Fdi	36	0.1567	0.0096	60	0.226	0.0692	-0.0693	-7.6441	0.0000

Table I.
Descriptive statistics

Source: Authors' computation using STATA (2018)

Random-effects GLS regression		Number of obs		Effect of IFRS on credit relevance		
Group variable: banknum		Number of obs group				
R^2		<i>Obs per group</i>				
Within		Min		7		
Between		Avg		7.9		
Overall		Max		8		
Corr(u_i, X)		Wald χ^2 (14)		11.73		
0 (assumed)		Prob > χ^2		0.0634		
C_rating	Coefficient	Standard error	z	p > z	95%	Confidence interval
Mandatory	0.07605	0.1692	0.45	0.653	-0.2555	0.4076
Post	-0.4496	0.2001	-2.25	0.025	-0.8418	0.0574
Mandatory*post	0.4432	0.2181	2.03	0.042	0.0157	0.8706
Llp	-0.0327	0.0243	-1.35	0.177	-0.0803	0.0148
Size	0.1973	0.1233	1.60	0.109	-0.0443	0.4388
Lev	0.1725	0.3024	0.57	0.569	-0.4203	0.7652
Going	0.5119	0.2283	2.24	0.025	0.0644	0.9594
Fdi	1.1168	0.8239	1.36	0.157	-0.4979	2.7315
_Cons	1.8260	1.0669	-1.71	0.087	-3.9171	0.2652
Sigma_u	0					
Sigma_e	0.46710136					
Rho	0	(Fraction of variance due to u_i)				

Table II.
D-in_D regression results

Analysing the overall D-in-D model, 9.05 per cent of the variability in credit relevance quality of financial reporting are influenced by both the test and control variables within the pre- and post-mandatory IFRS adoption period. The variables in the model that show a significant effect of mandatory IFRS adoption on credit relevance quality of financial reporting at both 0.05 and 0.1 levels of significance include POST MANDATORY*POST and GOING.

To test the hypothesis (H1), the p -value of the test variable MANDATORY*POST in Table II is used. The p -value of the interactive term (MANDATORY*POST) is 0.042 at 0.05 level of significance; therefore, the null hypothesis (H1) is rejected. Meaning that mandatory IFRS adoption has a significant and positive effect on credit relevance quality of financial reporting of DMBs in Nigeria. In other words, the study finds a significant increase in credit relevance after the mandatory IFRS adoption in the Nigerian DMBs.

4.2 Discussions

The results of the D-in-D econometric analyses have shown that mandatory IFRS adoption has effect on credit relevance quality of financial reporting of deposit money banks in Nigeria. The effect of mandatory IFRS adoption on credit relevance was tested using the significance of the D-in-D coefficients. Following the decision-usefulness theory, this study finds a positive effect of mandatory IFRS adoption on credit relevance quality of financial reporting based on the fundamental qualitative characteristics (relevance) as highlighted in the IFRS “Conceptual Framework for Financial Reporting”.

The finding of this study is in the same direction with the *a priori* expectation and other studies (Chan *et al.*, 2013; Florou *et al.*, 2017; Kosi *et al.*, 2010; Lima *et al.*, 2016). The finding contradicts the negative IFRS effect results of the study of Dang *et al.* (2017). The implication of this finding is that credit relevance of DMBs that mandatorily adopted IFRS in 2012 increases after the mandatory adoption. The results of this study are significant to provide the basis for investment decisions by the Nigerian and foreign investors in the Nigerian

banking system after mandatory IFRS adoption in that sector. Regulatory authorities, such as CBN, Security and Exchange Commission and FRC of Nigeria ensure that any financial reporting framework adopted or developed should bring out the quality in the financial reporting. The results in this study have provided these regulatory institutions with an empirical evidence of the positive effect of mandatory IFRS adoption on the quality of financial reporting. The Roadmap for the Adoption of IFRS in Nigeria as announced in the year 2010 by the Federal Executive Council and the subsequent promulgation of the FRC of Nigeria Act 2011 were aimed at improving the quality of financial reporting of PIEs in Nigeria. This study again has provided the empirical evidence that the aim of the Roadmap for the Adoption of IFRS in Nigeria was achieved in terms of credit relevance quality of financial reporting in Nigeria.

5. Conclusion and recommendations

It is established in this study that mandatory IFRS adoption has effect on credit relevance quality of financial reporting of DMBs in Nigeria. However, the difference in the credit relevance quality of financial reporting of mandatory adopting banks in the post-mandatory IFRS adoption period compared to pre-mandatory IFRS adoption period is not material. In essence, this implies that the credit relevance of DMBs in Nigeria increases after the mandatory IFRS adoption in 2012. Quality test (Q test) of banks was used to deflate credit ratings, and Q test is computed based on financial reporting numbers, which are affected by IFRS adoption. This study provides the fact that credit relevance is influenced by IFRS-based financial reporting numbers. However, lack of much differences in the credit relevance between voluntary and mandatory adopters in the pre-mandatory IFRS adoption period contradict the notion and *a priori* expectation that there ought to be a material difference. This is because of willingness of the voluntary adopters to take advantage of the benefits of IFRS adoption and not coerced into the adoption.

To enable the study achieve its significance, the following recommendations arising from the findings and conclusions are provided:

- (1) Despite the statistically significant and positive effect of mandatory IFRS adoption on credit relevance quality of financial reporting as in this study, regulatory authorities should encourage DMBs to avail their financial reports annually to credit rating agencies (local and international) for proper evaluation for subsequent ratings. This would open more opportunities for the Nigerian DMBs in the global financial markets as they are applying the globally accepted FRS.
- (2) CBN should maintain an electronic, time series and accessible database of all audited financial statements of DMBs for credit rating agencies and analysts' evaluation and also for researchers to gain access for their research. That may improve the system of financial reporting of the DMBs.

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Appendix

Effect of IFRS
on credit
relevance

Variable	Code	Definition	Expected IFRS effect	Source
<i>Test variables:</i>				
Mandatory adopting banks	MANDATORY	1 if bank did not use IFRS until it became mandatory, and 0 otherwise	+	Chen <i>et al.</i> , 2015; Doukakis, 2014
Pre- or post-mandatory adoption period	POST	1 for observations from 2012, and 0 otherwise	+	Chen <i>et al.</i> , 2015; Doukakis, 2014
Interaction term	MANDATORY *POST	1 for mandatory adopting bank in the post-adoption period, and 0 otherwise	+	Chen <i>et al.</i> , 2015; Doukakis, 2014
<i>Control variables:</i>				
<i>Firm-level attributes:</i>				
Profitability	ROE	Return on equity	+	Doukakis, 2014; Sarea and Al Nesuf, 2013
Liquidity	LLP	LLP per share	–	Mohammed and Lode, 2015; Onalo <i>et al.</i> , 2014a, 2014b
Capital structure	SIZE	Bank size as natural log of market value of equity	+	Barth <i>et al.</i> , 2008; den Besten <i>et al.</i> , 2015; Devalle <i>et al.</i> , 2010; Onalo <i>et al.</i> , 2014a, 2014b; Tanko, 2012
	LEV	Leverage as a % of fixed interest capital to total capital	–	Barth <i>et al.</i> , 2008; den Besten <i>et al.</i> , 2015; Tanko, 2012
Corporate governance	GOING	1 if bank's financial report has going concern statement, and 0 otherwise	+	Beest <i>et al.</i> , 2009; Braam and Beest, 2013; Mbobo and Ekpo, 2016
<i>Country-level attributes</i>				
Globalisation	FDI	Foreign direct investment as a % RGDP	+	Okpala, 2012; Saidu and Dauda, 2014

Source: Authors' compilation (2017)

Table A1.
Definition of
independent variables

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