BOARD CHARACTERISTICS AND FINANCIAL REPORT TIMELINESS IN THE NIGERIAN FINANCIAL SECTOR: A DYNAMIC PANEL DATA ANALYSIS

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Abstract

Lack of timely financial report is an issue to different stakeholder groups because it allows a segment of investors to have costly private information, which they will exploit to the detriment of the less-informed segment. It has also resulted into loss of credibility in published accounts and led to substantial criticisms of the effectiveness of corporate governance mechanisms like board characteristics. This paper employed dynamic panel data analysis to examine the impact of board characteristics (size, diligence, financial expertise and independence) on financial reports timeliness in the Nigerian financial sector. The study used system generalized method of moments (GMM) to analyze the corporate governance mechanism and financial reports data, collected from 24 purposively-selected listed firms over 11 years. Consistent and strong evidence revealed that board characteristics (size, independence and financial expertise) had significant effect on financial report timeliness. While board independence and board financial expertise led to untimely audited report, board size led to timely audited report. The insignificant effect of board diligence suggests that a mere increase in board meetings was not effective in predicting timely audited financial statements in the selected companies. We recommend increased quality board members with relevant accounting, financial reporting expertise and managerial experience, among others.

Keywords: Financial report, Board size, Board diligence, Financial expertise, Board independence.

1. Introduction

One of the qualities of accounting information is financial report timeliness. It has significance value to stakeholders (e.g. management executives, creditors and potential investors) who require timely financial information for decisions making (Uthman, Ajadi & Asipita, 2018). Due to this importance, the Securities and Exchange Commission (SEC) in Nigeria issued Code of Corporate Governance (2012), which mandated all publicly-listed companies to file audited accounts not later than ninety (90) days after their accounting year-end. This requirement was to help build trust, efficiency and confidence in governance (Warrad, 2018), as any delay in releasing earnings information decreases the value of information efficiency (Hashim & Rahman, 2010). The requirement therefore means that boards of directors must be interested in early filing of annual reports, as failure to do so will indicate their own failure (Handayani & Yustikasari, 2017).

Preliminary data from audited accounts of financial institutions, collected from the Nigerian Stock Exchange (NSE), showed that a higher proportion of the companies (about 65%), on the average, reported within 90 days during the period 2010 and 2020 (Appendix 1). In addition, the proportion of the companies that reported timely rose from about 46% in 2010 to about 54% in 2013; 75% in 2017 and 79% in 2020. This showed that the efforts of the SEC at ensuring timely financial information to stakeholders paid off and empirical evidence on board characteristics responsible for this improvement should be brought into focus. This is because the Board, by Law, is responsible for setting policies and strategies needed to achieve timely financial information.

Lack of timely financial report is an issue to stakeholders who need financial information. This is because delay in releasing earnings information allows a segment of investors to have costly private information, which they will exploit to the detriment of the less-informed segment of investors (Afify, 2009). The concern was based on the notion that corporate governance, especially the board, can be used to reduce delays in financial reporting, as posited by the agency theory; to monitor the actions, policies and decisions of managers (OECD, 2004); and to reduce inefficiencies from moral hazards and adverse selection that may arise from agency problem (Afolabi & Dare, 2015). The concern therefore requires that a strand of studies be carried out on the factors influencing financial report timeliness quality and the main research question should be whether board characteristics, bear sufficient information content to predict timeliness of financial report.

Financial report delays have resulted into loss of credibility in published accounts (Saad & Jarboui, 2015). They have also led to substantial criticisms of the effectiveness of corporate governance mechanisms in the literature (Uthman, et al., 2018). We follow this line of inquiry by addressing the following question:

> *How do board characteristics influence timeliness of financial reports of listed companies in the Nigerian financial sector?*

Therefore, this study investigates the effect of board size, board diligence, board members' financial expertise and board independence on the timeliness of accounting information of publicly-quoted companies in the Nigerian financial sector, as captured by the time it takes a company to prepare and audit annual accounts and reports. We hypothesize that the four board characteristics, as a corporate governance mechanism, do not bear information contents to explain and predict timeliness of financial report prepared by listed deposit money banks and insurance companies in Nigeria.

This study contributed to knowledge in many ways. First, unlike many previous papers, we established average time (number of days) financial institutions in Nigeria used in preparing and auditing of annual financial reports. Absence of reliable empirical evidence on this can serve as hinderance to relevant stakeholders and government authorities obtaining ample information on the progress and success of the various Codes of Corporate Governance issued in the past and the need to carry out more monitoring activities. Second, we cover four vital board characteristics in the financial report timeliness model while controlling for some firm-specific factors such as size, audit quality (big-4) and financial conditions (leverage and profitability) of the financial institutions. Despite their popularity in corporate governance studies, very few studies explore their relative importance to financial reports' quality in the Nigerian financial institutions.

Third, findings from literature about corporate governance mechanisms and timeliness of earnings information were mixed (positive, negative and no relationships). They were inconclusive, given the diverse mechanisms and methodology adopted. Besides, most of the studies skewed towards non-financial companies and the little ones on financial institutions in Nigeria used discretionary accruals to capture quality of financial information. In particular, we acknowledge few recent notable studies, which investigated board characteristics and timeliness quality of accounting information prepared by financial institutions in Nigeria (Asiriuwa, et al., 2021; Igbekoyi & Agbaje, 2018; Uthman, et al., 2018 and Derri & Abdullahi, 2017). The issue of unequal measurement, especially for financial report quality, however needs critical examination, as many studies have used the difference between accounting year-end and when Annual General Meeting (AGM) was held as a measure of audit report lag. This present study deviates from this by considering the actual number of days a financial institution used to prepare and audited annual reports after accounting year ends, as a measure of financial report timeliness. The lower the number, the timely the audited reports.

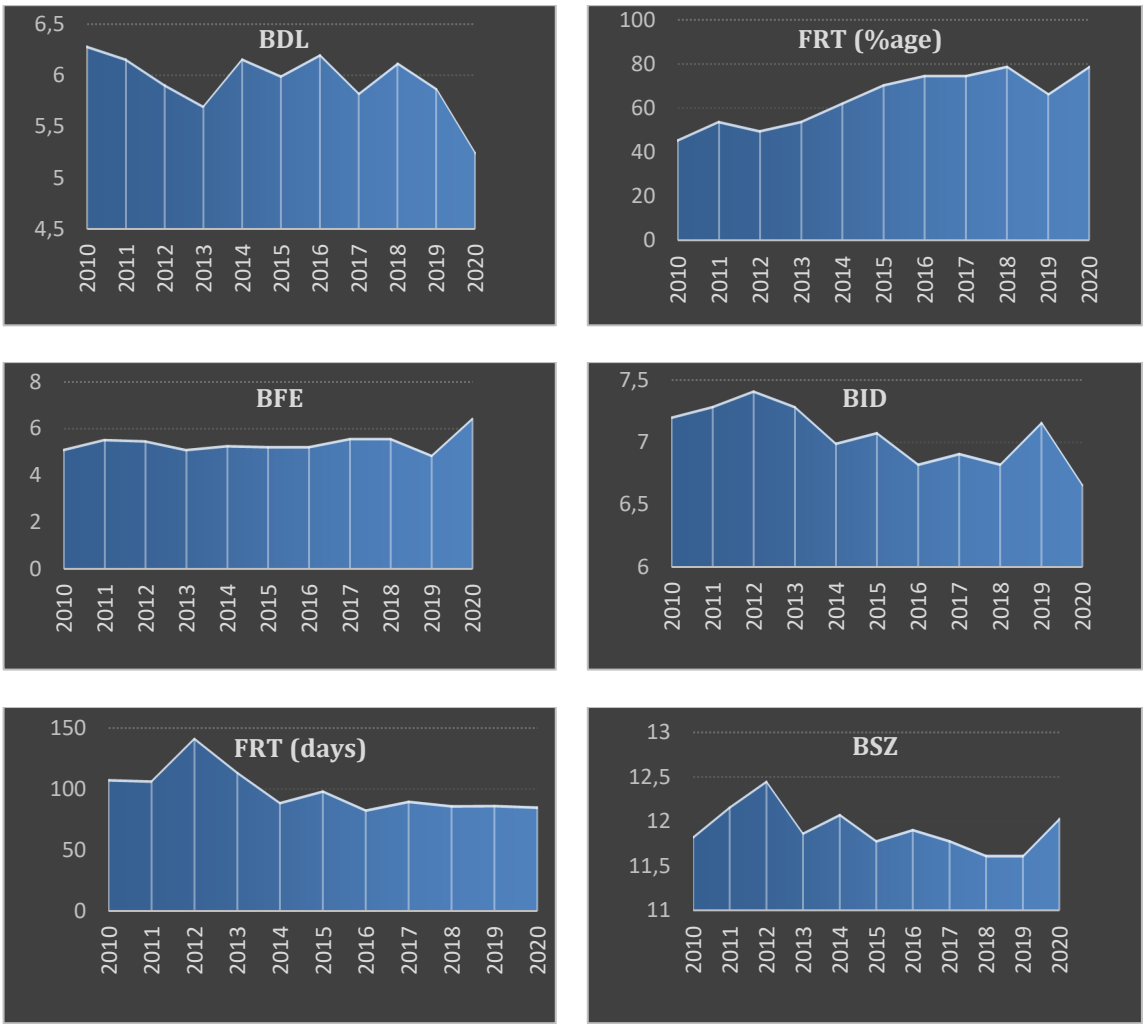
Fourth, different modelling and estimation techniques were used in previous studies, some of which fell short of econometrics tests such as normality, multicollinearity, heteroskedasticity and serial correlation. We took into consideration the unobserved heterogeneity of the sampled financial institutions due to differences in size (assets), financial conditions (leverage and efficiency in resources use) and capacity to engage Big-4 audit firms. We also considered the short panel nature of the data where the number of cross sections is greater than the time dimension as well as the possible endogeneity of both dependent and explanatory variables, which were found to be autoregressive of higher order, respectively. Both the standard ordinary least squares (OLS) and fixed effect (FE) estimators, used in previous studies, would be strongly biased upward and downward, respectively. We therefore employed dynamic panel data technique using system GMM suggested by Blundell and Bond (1998). This, to the best of our knowledge, was not used in previous studies.

The rest of this paper is organized such that after this introduction is section two on stylized facts about financial reports timeliness and board characteristics over the period 2010-2020. This is followed by section three, which covers literature review, while methodology is presented in section four. In section five, we discuss empirical results and section six concludes the paper with recommendations.

2. Stylized facts on financial report timeliness and board characteristics

Figure 1 depicts the trend analysis of the average financial report timeliness (FRT) and board characteristics – independence (BID), diligence (BDL), financial expertise (BFE) and size (BSZ) of 24 companies operating in the Nigerian financial sector, over the periods 2010-2020. Before issuing corporate governance codes for banks in 2012, less than 46% of the banks, especially in 2010 prepared and audited financial reports within 90 days (see Appendix 1). This means that the rest (54%) of the banks used more than 90 days to prepare and audit their yearly reports.

Figure 1 − Trends of financial report timeliness, board financial expertise, board independence, board size and board diligence in the Nigerian financial institutions (2010-2020).



Source: The Nigerian Stock Exchange, 2020.

During the year, the financial institutions used an average number of about 108 days to have an audited account. Compliance rate however rose to 54.17% (13 out of 24 firms) in 2011, which indicated a marginal improvement in early reporting to stakeholders. The average time the financial institutions used to prepare and audit financial reports during the year was about 107 days, which indicated that unnecessary delays were still recorded by some of the financial institutions.

In 2012, there was a decrease in the rate of compliance with the regulation as only 50% of the financial institutions met the benchmark of 90 days and the average number of days recorded was about 142 days. By 2013 however, 54.17% of the financial institutions also presented their annual reports timely, with average time period of 104 days after financial year end, which showed an improvement in the rate of compliance with the regulation. More so, in 2014, about 63% of the companies were able to meet the stipulated time, which further reduced average time period to about 89 days.

In addition, the figure showed a continuous improvement in the proportion of the financial institutions that made public their audited reports and accounts timely from about 71% in 2015 to 75% in 2016 and 2017 to 79% in 2018. This showed that more financial institutions realized that timely presentation of financial reports was important for decisions making. During the years, the average number of days it takes most of the firms to make public their financial reports and accounts was about 98 days, 83 days, 90 days and 87 days, respectively for 2015, 2016, 2017 and 2018. A sharp decrease in the proportion of the financial institutions that complied with the regulation in 2019 from 79% in 2018 to about 67% in 2019 was recorded. However, this did not affect the timeliness of accounts as the average time of 87 days was still recorded. There was improvement also recorded in 2020 with a percentage of 79% of the financial institutions that made public their financial reports and accounts early with an average time period of about 86 days. It can therefore be posited that the year 2020 witnessed the highest rate of compliance with the requirement of the Code.

Fig. 1 further shows average board diligence for the selected financial institutions. The number of board meetings, on the average was about 6 from 2010 to 2019 and 5 times, on the average, in 2020. The financial institutions were adjudged to have done well in this corporate governance mechanism because the Law requires their boards to hold four (4) meetings within a year. Whether this culminated into timely preparation and presentation of audited financial reports and accounts is however yet to be ascertained. In the same vein, the Law requires financial institutions to have a maximum board size of 20. However, most of the selected firms did not achieve this maximum during the period under consideration. The average number of directors revolves around 12 throughout the period. This means that most of the financial institutions had potentials to increase the size of their board whenever the need arises.

Moreover, trends of the independence of the boards during the period was also presented. The average size of independent directors was 7 during 2010-2020. This was found to be more than proportionate to the average board size of 12 and the maximum expected by the Law if the maximum of 20 directors is complied with. It can therefore be posited that boards of directors of most of the financial institutions were independent. The financial expertise of the boards shows that, on the average, 5-6 directors had financial background and the required expertise in each of the years, with just little difference from one year to the other. We therefore reasonably expected board directors with financial expertise to significantly impact on audited reports timeliness for the selected companies.

3. Literature review

Agency theory forms theoretical bedrock of this study. The theory explains board characteristics whereby each of them functions as a monitoring mechanism that can be used to reduce financial reports delay in corporations (Jensen & Meckling, 1976). The theory posits that a relationship exists when one person or a group of people, called agent, is acting

on behalf of another, called principal (Okpala, 2012) and that how the agents and principals relate may cause agency conflicts. The theorists posited that governance is based on resolving conflict of interests between a company's owners or providers of finance or shareholders and its managers. The theory therefore emanated as a result of the issues that normally arise between the shareholders and those in charge of the company (management), otherwise referred to as agency problem.

According to the proponents of the theory, agents will act with rational self-interests. This is because they will want to maximize monetary compensations, job stability and other perks of office and do no more than seek to appease the shareholders. They cannot be expected to act to protect shareholders' interests, as they would want to first satisfy their own self-interests. Therefore, they are to be monitored and controlled to ensure that their principals' interests are best served (Garuba & Otomewo, 2015). To do this, the theory pointed out certain roles that corporate governance mechanisms should play, which were assumed to be an effective tool to minimize agency problems (Sakka & Jarboui, 2016). The primary responsibility of directors therefore relates to governance functions of board in serving the shareholders' interests of wealth maximization by approving the decisions made by the management and monitoring their implementation.

According to Wan & Adamu (2012), corporate governance is an important monitoring device that boards of directors use to minimize the problems brought about by the principal-agent relationship. It was primarily developed to ameliorate inefficiencies, which emanate from moral hazards and adverse selection (Afolabi & Dare, 2015). According to these authors, corporate governance mechanisms include board diligence, board size, board financial expertise, board independence, internal audit, boards structuring, segregation of duties and policy development.

The governance mechanisms are used by owners to protect themselves against any expropriation by outsiders and to monitor the actions, policies and decisions of the agent (OECD, 2004); to monitor the activities and progress made by a company; and to take remediating actions when the company goes off the track. The lack of these mechanisms in a company will therefore allow managers to deviate more easily from shareholders' interests (Omolaye & Jacob, 2017).

Empirical studies have provided explanations on the validity or otherwise of governance mechanisms effectiveness, most importantly board characteristics. In terms of cross-country studies, Baatwah, et al. (2015) examined the effect of governance mechanisms on timeliness of accounting information from companies in the Middle East and North African countries. The study collected information from 116 companies listed on the Muscat Securities Market over 2007-2011. Random effects model was used and board characteristics (expertise and size) and financial expertise of audit committee negatively affected timeliness of accounting information. The association of board independence and diligence; audit committee's independence, size, and diligence; and external auditor type with timeliness of accounting information was however insignificant. The authors concluded that the governance mechanisms were not effective in Middle East and North Africa countries as in developed countries.

Holtz & Neto (2014) studied the association between board structural compositions and accounting information of non-financial firms listed on the Brazilian Securities, Commodities and Future Exchanges. The Economática database and annual reports of the firms provided data covering 2008-2011 for the study. The authors employed multiple regression to analyze data. The analysis provided data that indicated positive effect of that

board independence on financial reports' quality and that stronger governance structures led to increased quality of accounting information.

The validity or otherwise of the predictability of board size and independence on audit time lag was also investigated by Agyei-Mensah (2018) and Al-daoud, et al. (2015). Al-daoud, et al. (2015) explored information collected from 112 Jordanian business entities listed on the Amman Stock Exchange over 2011-2012 and multiple regression was also employed to analyze data.

Results from the analysis showed that companies with more independent board members significantly took shorter time to prepare and audit accounts and that companies with larger board size significantly led to higher audit report lag. Again, boards with more diligence (meetings) recorded shorter audit report lag.

In the same vein, Agyei-Mensah (2018) investigated the impact of corporate governance and reporting lag on financial performance of quoted companies in Ghana. The author used 90 firm-year data over 2012–2014 and employed descriptive analysis tools to obtain background information on the variables of interest. This was followed by inferential statistical analysis using multiple regression to analyze data. Descriptive analysis results indicated that over the period, mean value of audit report lag was 86 days; with standard deviation of 21 days, minimum of 55 days and maximum 173 days. Data from using regression analysis technique showed that board independence and board size had significant negative impact on audit report lag.

Moreover, the inter-relationship of corporate governance, auditors' characteristics and timeliness of accounting information in the light of Financial Security Law (2005) amendments in Tunisia, was examined by Sakka & Jarboui (2016). The study collected panel data from 28 listed companies over the years 2006-2013. The data was analyzed using generalized least square (GLS) regression analysis technique. Empirical evidence showed that audit report publication date was short and external auditor's characteristics were high and that good corporate governance played a pivot role in improving quality of accounting information.

In Nigeria, some studies gave explanations on the impact of different corporate governance mechanisms on the quality of earnings information. These included Azubike & Aggreh (2014), Chi-chi & Friday (2016), Ohaka & Akanni (2017), Paulinus, et al. (2017), Uthman, et al. (2018); Igbekoyi & Agbaje (2018); and Asiriuwa, et al. (2021). Azubike & Aggreh (2014) investigated factors determining audit reports timeliness and adopted cross-sectional design, which relied on data sourced from audited accounts and reports of listed manufacturing firms during 2010-2012. Results from ordinary least squares (OLS) regression analysis provided data, which showed significant positive influence of board size and board independence on audit report lag. Contrastly, Ohaka & Akanni (2017), using data from listed firms in Nigeria over 2000-2011, found non-significant impact of board independence on timely financial reporting.

While Chi-chi & Friday (2016) analyzed data collected from five purposively selected listed companies in Nigeria over the period 2006-2015 using vector autoregressive (VAR) analysis and found positive impact of board structure on financial reports quality, Paulinus, et al. (2017) analyzed data collected from 15 quoted companies producing consumer goods over the periods 2012-2016.

The authors employed simple regression technique and found significant negative relationship of board size with audit delay. However, Igbekoyi & Agbaje (2018) used survey method of enquiry and employed econometric tools such as unit roots, co-

integration and error correction model to analyze data from Nigerian listed banks over 2006-2015. The authors found board structure had significant positive effect on accounting information disclosure and concluded that corporate governance contributed to accounting information quality in the Nigerian banking sector.

Financial reports timeliness model was estimated by Uthman, et al. (2018) by employing generalized least squares (GLS) technique to investigate the effects of some board characteristics on financial report timeliness in 15 Nigerian listed insurance companies over 2011-2016.

Random effect regression results showed that board meetings and board size had significant positive effect on the quality of accounting information. But Almasdy (2018) failed to support the finding for board size because evidence from Pearson correlation used to analyze data obtained from 68 companies listed on Amman Stock Exchange over 2011-2015 accepted null hypothesis of no significant relationship. Companies with less than eight board members led to untimely financial reports while companies with more than eight board members led to financial reports timeliness.

The foregoing clearly shows that extant literature on financial report quality is quite extensive. However, a number of gaps still existed and necessitated further researches. To the best of our knowledge, unlike for other sectors, ample empirical evidence is lacking on the average time financial institutions in Nigeria used to prepare and audit financial reports. Again, the focus of most of the previous studies has been on board size and board independence with little attention on board diligence and financial expertise. Besides, little studies provided explanations on the predictability of the four selected board characteristics (size, independence, financial expertise and diligence) on the timeliness of accounting information from financial institutions in Nigeria.

In addition, empirical evidences from previous studies were mixed and inconclusive, given the diverse methodologies adopted, some of which fell short of econometric tests such as normality, multicollinearity, heteroskedasticity and serial correlation; the short panel nature of data used; and the autoregressive nature of the dependent and explanatory variables, which informed the need to adopt a better analytical method. Thus, there is need to adopt dynamic panel data approach using system GMM estimator to analyze data. However, ordinary least squares (OLS) and generalized least squares (GLS) were commonly used in previous studies (see Table 1).

We therefore extended previous studies such as Azubike & Aggreh (2014), Chi-chi & Friday (2016), Paulinus, et al, (2017), Ohaka & Akanni (2017), Igbekoyi & Agbaje (2018); Uthman, et al. (2018) and Asiriuwa, et al. (2021) with additional variables and a different estimation technique.

Consequently, academics irrespective of their socioeconomic status expect improvement in what bothers on BPC elements such as poor funding, inadequate infrastructure, neglect of collective agreements, delay in promotions, arbitrary decisions, among others. However, their awareness of participation in, and level of benefit from collective agreements can be largely determined by their sociodemographic characteristics.

Table 1 − Summary of review of methodological literature on board characteristics and financial report timeliness

	Author	Year/ Country	Variables measured	Methods of Analysis	Major Findings
1	Singh & Sultana	2011/ Australia	Board independence, financial expertise, diligence.	OLS regression	Boards played substantial role in reducing audit lag.
2	Apadore & Noor	2013/ Malaysia	Board independence, Audit time	Descriptive statistics, OLS Regression	Board independence did not play any significant role in reducing audit report lag
3	Sakka & Jarboui	2014/ Tunisia	Board size	Generalized least square and logistic regression. Panel data approach	The panel data regression analysis revealed that board size significantly affected financial reports timeliness.
4	Holtz & Neto	2014/ Brazil	Board size, board independence	Multiple OLS regression model	Board independence positively influenced quality of accounting information. Board size negatively affected quality earnings information.
5	Baatwah, Ahmad & Salleh	2015/ Oman	Board independence, board expertise, board size	Panel data, Multiple regression analysis	Board size and expertise significantly associated with audit report lag. There is insignificant association between board independence and audit report lag.
6	Ishak	2015/ Malaysia	Board size, Board independence	Descriptive and multivariate analysis (Logistic regression)	Board independence negatively related to acceptance of modified audit report. Board size did not influence the issuance of modified audit report.
7	Al daoud, Ku ismail & Lode	2015/ Jordan	Board size, board diligence, board independent, board financial expertise	Multiple OLS regression analysis	Greater number of directors related with higher audit report lag. Boards with more meetings had shorter audit report lag. Board independent significantly led to shorter financial reporting time. Board financial expertise associated positively with financial reports timeliness.
8	Basuony, Mohamed, Hussain & Marie	2016/ Arab	Board size, Board independence	Ordinary least square (OLS)	Board size and board independence had significance relationship with audit report lag.
9	Sakka & Jarboui	2016/ Tunisia	Board size, Board independence	Generalized least squares	A good structure of corporate governance played key role in improving the quality (timeliness) of financial reports.
10	Alfraih	2017/ Kuwait	Board independence, board size	Multivariate regression	Board independence and board size had significant effect on audit report lag
11	Raweh, Handayani, Yustikasar	2017/ Indonesia	Board independence	Multiple OLS regression analysis	Board independence had no influence on audit report lag

12	Agyei-Mensah	2018/ Ghana	Board size, board independence	Multiple OLS regression analysis	Board size and board independence had negative impact on audit report lag
13	Almasdy	2018/ Jordan	Board size	Pearson correlation coefficient matrix analysis	Board size showed no significant effect.
14	Mohamed & Elshawarby	2018/ Egypt	Board size, board expertise, board independence	Multiple OLS regression analysis	Board size, board expertise and board independence had significant impact
15	Warrad	2018/ Jordan	Board size, board diligence	Multiple OLS regression analysis	There is a significant relationship between corporate governance characteristics and audit report lag in Jordan
16	Raweh, Kamardin & Malek	2019/ Oman	Corporate governance mechanism - audit committee characteristics	Panel data, Multiple OLS regression	There was no significant relationship between audit committee independence, meetings and audit report lag in Oman.
17	Azubike & Aggreh	2014/ Nigeria	Board size, board independence	Cross- sectional research design, ordinary least square regression technique	A significant relationship existed between board size and audit report lag and between board independence and audit report lag.
18	Ilaboya & Christian	2014/ Nigeria	Board independence, board size	OLS regression analysis	Board size had significant effect on audit report lag, Board independence had no significant effect on audit report lag
19	Chi-chi &Friday	2016/ Nigeria	Board size, board independence	Multiple OLS regression analysis	Board independence negatively affected financial reporting quality, Board size had positive impact on financial reporting quality
20	Paulinus, Oluchukwu& Samtochukwu	2017/ Nigeria	Board size	Simple regression technique, OLS estimation technique	Board size had significant negative relationship with audit delay of corporate firms in Nigeria.
21	Ohaka & Akanni	2017/ Nigeria	Board independence	Multiple OLS regression analysis	Board independence was found to be insignificant.
22	Igbekoyi & Agbaje	2018/ Nigeria	Board size	Unit root, Co-integration and error correction model	Board size had significant positive relationship with accounting information disclosure.
23	Uthman, Ajadi & Asipita	2018/ Nigeria	Board size, Board independence, Board meeting	GLS multiple regression technique	Board meeting, had negative effect on the timeliness of financial reporting. Board size had positive and significant effect on the timeliness of financial reporting.
24	Asiriuwa, Adeyemi, Uwuigbe, Uwuigbe, Ozordi, Erin & Omoike	2021/ Nigeria	Board size, Board independence, Board diligence, Board financial expertise, CEO gender	Logistic regression analysis, OLS estimation technique	All the board characteristics had bigger effect on the timeliness of financial statements of the financial institutions.

Source: Prepared by the Authors, 2022.

4. Methodology

Ex-post facto research design, which deals with existing data that cannot be manipulated by researchers, was employed. We obtained data from audited reports of 24 purposively-selected financial institutions based on data availability: 12 deposit money banks and 12 insurance companies listed on the Nigerian Stock Exchange (NSE) as at December 2021. Currently, only 13 deposit money banks and 23 insurance companies were listed on the NSE. So, to arrive at the sample size of 24 financial institutions, companies that failed to have audited accounts consistently over the period of interest were dropped. At one time or the other, some of the companies were delisted and hence, their annual reports were not publicly available during these periods. Financial sector was selected due to the pivot role it plays in the Nigerian economy, the various financial scandals that have caused loss of credibility in financial reports in the past and the regulatory requirements developed by appropriate authorities and regulators in order to stabilize the sector. The data were publicly available and collected from the NSE. The data covered eleven (11) years from 2010-2020, making a total number of 264 observations of panel data. Panel data is suitable for controlling unobserved individual specific effects caused by heterogeneity of cross sections in a sample. Non-controlling of these effects often leads to bias in the resulting estimates (Olubusoye, et al., 2016). Pane data is employed where more informative and richer data sets, more degrees of freedom, more variability, less collinearity among variables, more reliable estimates and more accurate inference of model parameters are needed. It is also appropriate for studying complex issues of dynamic behavior.

4.1 Model specification

The financial report timeliness model is specified using equation in static form as

$$InFRT = \beta_0 + \beta_1 BID_{it} + \beta_2 BDL_{it} + \beta_3 BFE_{it} + \beta_4 InBSZ_{it} + \beta_j \lambda_{j,it} + \varepsilon_{it} \quad (1)$$

However, the dynamic panel data version of the model is specified as follows:

$$f_{it} = \sum_{m=1}^{n} \beta_{f,m} f_{i,t-m} + \sum_{p=0}^{n} \beta_{d,p} d_{i,t-p} + \sum_{q=0}^{n} \beta_{l,q} l_{i,t-q} + \sum_{r=0}^{n} \beta_{e,r} e_{i,t-r} + \sum_{s=0}^{n} \beta_{z,s} z_{i,t-s} + \beta_j \lambda_{j,it} + \omega_i + \theta_t + \varepsilon_{it} \quad (2)$$

where:
f = FRT, which is financial report timeliness
d = BID is board independence
l = BDL is board diligence
e = BFE is board financial expertise
z = *In*BSZ is board size
λ = vector of control variables i.e. leverage (LEV), profitability (ROA), audit type (AUD) and firm size (FSZ)
$\beta_1 - \beta_j$ = coefficient of explanatory variables;
ε = stochastic term
i = cross sectional (banks)
n = 1,2,…
In = natural logarithm
t = time series
ω_i is included to capture unobservable individual firm fixed effects.

We also considered the unobservable fixed effects over time (δ_t). The *a priori* expectation is that $\beta_1 - \beta_j < 0$.

4.2 Measurement issues

Dependent variable of this study is financial report timeliness while board characteristics (independence, diligence, financial expertise and size) are the explanatory variables. We introduced some control variables to the model in a stepwise manner for robustness check. These included audit type, financial conditions (leverage and profitability) and firm size, as used by Singh & Sultana (2011) and Uthman, *et al.* (2018). We measured all variables as follows:

4.2.1 Financial report timeliness

This can be achieved through reporting accounting information on time and with sufficient regularity so as to fulfill users' economic decision-making needs (Ohaka & Akanni, 2017). Companies and Allied Matters Act, 1990 requires all limited liability companies to lay audited reports before shareholders at AGM not later than six months after year-end. However, SEC imposed restriction on the number of days that financial institutions should file annual audited reports to the Commission and the general public, which is 90 days after accounting year ends. Where earnings information is not provided on time then, it may not be relevant for decision-making. Many previous studies measured this variable using audit report lag with the presumption that accounts must be audited before they can be presented to the public. Financial report timeliness was therefore measured as the difference between accounting year-end and the date audited report is signed (Raweh, *et al.,* 2019). Since we are interested in how fast a financial institution makes audited earnings information readily available to users, we measured the variable as the number of days a financial institution used to prepare and audit accounts after year-end. Hence, the shorter the number of days, the timely the financial reports.

4.2.2 Board independence

Corporate Governance Code developed by SEC (2012) provided that non-executive directors should be in majority of all board members. Again, the CBN (2014) Code of Corporate Governance for Banks and Discount Houses specified the number to be five (Ofo, 2015) while the National Code of Corporate Governance, 2018 provided that not less than two-third of a board should be composed of non-executive directors, and that half of it should be independent directors (Derri & Abdullahi, 2017). According to Ilaboya & Christian (2014), the importance of non-executive directors was justified for two reasons. First, they will be able to carry out their functions freely as they will not be subjected to influence from the majority shareholders or the management. Second, they are in position to monitor the management and ask questions since they have no economic interests in the companies. This shows that non-executive directors, with right skills set and who have no interests that can conflict with their power to exercise independent judgment, are in better position to monitor management and all executive directors who are insiders (Ibadin, *et al.*, 2012). In line with the provisions of extant codes and previous studies like Ilaboya & Christian (2014) and Sakka & Jarboui (2016), we measured this explanatory variable as the size of non-executive directors in a board.

4.2.3 Board diligence

This refers to the frequency of meetings held by a board in a year. It is a means of evaluating how well members of a board play their roles in representing shareholders (Hashim & Rahman, 2014). This is because board activities are reflected through the commitment of board members in playing their role as an agent of shareholders (Jensen & Meckling, 1976). Bala & Kumai (2015) argued that more diligent boards are likely to improve internal governance, which can have positive effect on early submission of annual reports and accounts. In addition, Hashim & Rahman (2014) asserted that board meeting frequency facilitates auditors' reliance on a firm's internal controls, used to minimize board's workload and consequently result in decreased financial report delay. The board is therefore probably suited to monitor the production of financial reports by the management (Ebimobowei & Yadirichukwu, 2013). The Law requires that board of directors must hold meetings at least once every quarter. Baatwah, *et al*. (2015) used number of meetings to measure this variable and we also adopted this measure in this study.

4.2.4 Board financial expertise

It is ordinary expected that boards with financial and accounting knowledge are likely in a better stance to monitor and guide management activities. This is because boards with the expertise are expected to follow up financing, accounting and financial management activities at all stages and when preparing accounts as well as ensuring compliance with generally accepted accounting principles (GAAPs), accounting standards and other regulatory and professional requirements (Mohamed & Elshawarby, 2018). To carry out this task effectively and efficiently, according to Bala & Kumai (2015), board members must be able to ask vital questions from management. The quality of internal resources (human) can be helpful to a board by having the skills, experience and knowledge, which can lead to timeliness and reliability of accounting information. As used by Al-daoud, *et al.* (2015), we measured financial expertise as the number of members with relevant financial and accounting skills and experience in a board.

4.2.5 Board size

This represents the number of members on a board of directors (Ibadin, *et al,* 2012). CBN Code of Corporate Governance, 2014 stipulated board size for a financial institution to be a minimum of 5 and a maximum of 20, comprising independent, executive and non-executive directors. According to agency theory, boards with large number of directors will cause agency cost like communication issue between the management and directors (Ngamchom, 2015). Salehi & Abedini (2008) established that board size significantly related to early submission of audited reports of corporations. In addition, larger boards were found to have cooperative expertise and were more capable of carrying out responsibilities (Akhtaruddin, *et al.*, 2009). We measured this explanatory variable as done by Sakka & Jarboui (2016) and Azubike & Aggreh (2014) that is, the total number of board members in a company per year.

4.2.6 Control variables

We considered some control variables that can be correlated with financial report timeliness in the model. As documented in the literature, audit type (AUD), firm size (FSZ), leverage (LEV) and profitability (ROA) are determinants of financial report quality. We measured audit type by considering whether or not the audit firm engaged by each financial institution during a year was a Big-4. Where a Big-4 auditor is engaged,

we assigned 1 and if not, 0. This means that audit type is a dummy variable. In addition, we measured firm size as total assets for a year and profitability as a ratio of earnings before taxes (EBT) to total assets while leverage was measured as a ratio of total debts to total assets.

4.3 Estimation techniques

For proper estimation of equation (2), there is the need to address some econometric issues. We carried out pre-estimation tests such as normality test using Skewness/Kurtosis and Shapiro-Wilk tests; Pearson's multiple correlation for multi-collinearity; and autocorrelation using Cumbi-Huizinga (1992) test. We tested the dependent variable for possible autoregressive (AR) or moving average (MA) for the series generating process in order to determine whether or not lagged dependent variable should be included as a regressor in models. The autocorrelation test was also carried out on all explanatory variables to ascertain whether or not they are strictly exogenous. Based on the results obtained from these tests, we employed dynamic panel data technique using system GMM to estimate models. This technique is appropriate due to the nature of dependent variable i.e. financial report timeliness, which was autoregressive of higher order. We estimated models by using Stata command xtabond2, developed by Roodman (2006). Moreover, post-estimation tests such as serial heteroskedasticity, over-identifying restrictions and joint significance of parameters using Blundell-Bond, Sargan/Hansen tests and F-test, respectively were carried out to ensure robustness of estimated results.

5. Results

5.1 Descriptive statistics

Results in Table 2 showed timeliness of audited reports, which was the number of days listed financial institutions used to prepare and audit financial information after year-end. Data from the table showed an average ratio of 99 days with variability around the mean of about 51.5 days. On the average, this indicated that majority of the financial institutions had audited reports after the 90 days stipulated by Law during the period. The minimum number of days recorded was 30 days, which implies that some of the companies made available their annual audited reports very timely while the maximum of 358 days recorded implies some of them did not comply with the regulation at all. These results were far higher than those obtained by Baatwah, et al. (2015), which recorded that, on the average, external auditors took 51-52 days after accounting year-end of companies to finalize audit tasks in Omani and the results established by Abernathy, et al. (2014) and Ghafran & Yasmin (2018) for US (55 days) and UK (64 days) firms.

Differences in timeliness of audited accounts of corporations among countries may not be unconnected with differences in industries and board characteristics like financial expertise, which was found to be 43% by Baatwah, et al. (2015) in Oman, on the average. Differences in board independence, board diligence and board size could also have accounted for the difference. It was revealed in Table 2 that the average number of independent directors was seven (7) out of the average board size of 12, implying 58%, with a minimum of three (3) directors and a maximum of thirteen (13) directors. This showed that on the average, board members were more independent compared to the 33% required by 2018 Code. In addition, the table shows average board diligence of about 6

meetings, on the average, were held per annum by the boards of the selected companies. This was also higher than the minimum of four meetings required by the Law and 2014 CBN Code. Average board size (board members) was found to be 12 directors with a minimum of six (6) directors and a maximum of 21 directors, against the maximum of 20 directors recommended by the 2018 National Code. This therefore suggested that some of the companies can still accommodate more board members, where and when necessary.

Table 2 − Descriptive Analysis Results

Variable	Observation	Mean	Standard deviation	Minimum	Maximum
FRT (days)	264	99.303	51.502	30	348
BID (directors)	264	7.064	2.254	3.00	13.00
BDL (times)	264	5.958	1.923	2.00	13.00
BFE (directors)	264	5.417	2.654	1.00	16.00
BSZ (directors)	264	11.928	3.419	6.00	21.00
AUD (dummy)	264	0.845	0.363	0.00	1.00
FSZ (₦)	264	1.12e+12	1.79e+12	4.33e+9	9.86e+12
ROA (%)	264	0.0355	0.041	-0.1422	0.3412
LEV (%)	264	0.6721	0.298	0.0012	2.547

Source: Authors' Computation (2022).

For control variables, a high mean value of 0.845 for audit quality indicated that most of the companies engaged big-4 firms to audit accounts during the period. In addition, firm size recorded an average value of about N1.12 trillion with standard deviation of N1.06 trillion and a minimum and maximum value of N4.33 billion and N9.86 trillion worth of total assets, respectively. The average firm size indicated that the companies invested heavily in both short and long-term assets. Again, a higher mean leverage of about 67% was found for the financial institutions with standard deviation of about 30% from the mean value. This showed that the assets of the companies were financed heavily by debts and hence; highly levered. Their financial condition further shows a ROA (return on assets), on the average, of 3.55% per annum (standard deviation of 4.1%) with a maximum of about 34% and a minimum of -14.2%.

5.2 Preliminary analysis

Due to the different scales of measurement of the variables, we transform FRT, BSZ and FSZ. This helps to reduce the problem of heteroskedasticity in the variables. Besides, standard deviation and range (difference between maximum and minimum values) for all the variables, especially, financial reporting timeliness, firm size and leverage were very large but not higher than their mean values except in the case of ROA and firm size. Prior to estimating the regression model of this study, we carried out preliminary analyses. These include normality test using Skewness/Kurtosis and Shapiro-Wilk statistics; multicollinearity test using Pearson's multiple correlation and autocorrelation test using Cumby-Huizinga test. All these tests assisted in determining the appropriate technique for estimating the financial report timeliness models.

5.2.1 Normality test results

Table 3 shows the extent of normality of each variable of interest in this study. Kurtosis is a measure of combined weight of the tails relative to the rest of the distribution while

skewness measures the symmetry in a distribution. Skewness and kurtosis statistics, respectively showed that all variables positively skewed and were less than 3, which is an indication of platykurtic distribution of the variables. The adjusted chi-square statistics rejects the null hypothesis of normal distribution for all variables except board diligence and board financial expertise. The z-score for the variables under Shapiro-Wilk test also showed similar results. Therefore, one of the conditions for using OLS technique has been violated.

Table 3 − Normality Test Results

Var	Skewness/Kurtosis test				Shapiro-Wilk test				Remark
	Skew-ness	Kurto-sis	Adj. chi2	Prob.	W	V	*Z*	Prob.	
Infrt	0.475	0.001	10.71	.005	0.940	5.647	3.87	.000	Not normal
Bid	0.005	0.070	9.75	.008	0.944	5.306	3.73	.000	Not normal
Bdl	0.653	0.191	1.95	.377	0.993	0.627	-1.1	.852	Normal
Bfe	0.282	0.397	1.92	.384	0.993	0.685	-0.9	.802	Normal
Inbsz	0.025	0.242	6.09	.048	0.979	1.975	1.52	.064	Not normal
Infsz	0.097	0.005	9.21	.010	0.961	3.664	2.91	.002	Not normal
Aud	0.000	0.000	68.9	.000	0.821	16.86	6.32	.000	Not normal
Lev	0.247	0.000	29.6	.000	0.521	45.13	8.52	.000	Not normal
Roa	0.000	0.010	23.1	.000	0.894	10.00	5.15	.000	Not normal

Source: Authors' Computation (2022).

5.2.2 Multicollinearity test results

Table 4 shows results of pair-wise correlation of all variables. It provides information that indicate absence of multicollinearity problem among the regressors. The rule of thumb specified by Lewis-Beck (1993) is that the correlation between any pair of two variables must not be high and not more than 0.8 for there to be lack of evidence of collinearity. The data in Table 4 showed no evidence of multicollinearity problem among the variables because all of them (including control variables) had a correlation of less than 0.8, pairwise.

Table 4 − Correlation Results Matrix

	Infrt	Bid	Bdl	Bfe	Inbsz	Infsz	Aud	Lev	Roa
Infrt	1.0000								
Bid	0.0605	1.0000							
Bdl	0.1885*	0.0868	1.0000						
Bfe	0.2181*	0.1518	0.1899*	1.0000					
Inbsz	0.0857	0.3176*	0.3497*	0.5184*	1.0000				
Infsz	- 0.2962*	0.1111	-0.1733	-0.0110	0.0481	1.0000			
Aud	0.0570	0.4269*	0.0051	0.1725	-0.0473	0.4076*	1.0000		
Lev	0.0129	-0.2346*	0.0604	0.2819*	0.3461*	-0.0563	-0.2485*	1.0000	
Roa	- 0.0237	-0.0679	-0.2069*	-0.1376	-0.1615	0.1836*	0.1558	-0.1270	1.0000

Source: Authors' Computation (2022). * significant at less than 5 % level.

5.2.3 Autocorrelation test results

To obtain information on time series properties of financial report timeliness and regressors, we carried out autocorrelation tests. In each case, we test for the null hypothesis that a variable is not serially correlated at specified lags. Table 5 shows that all the variables: dependent, explanatory and control variables were endogenous. Except

financial report timeliness (*Lfrt*) and board financial expertise (*bfe*) that exhibited autoregressive of order 4, that is, AR(4), all other variables depended on their past values at higher lag orders (endogeneity problem), indicating that all the regressors were not strictly exogenous.

Table 5 − Autocorrelation test results

Variable	AR statistics		Order	Remark
	Chi-square	P-value		
Lfrt	7.875	.005	AR(4)	Endogenous
Bid	7.390	.007	AR(6)	Endogenous
Bdl	4.109	.043	AR(5)	Endogenous
Bfe	11.025	.001	AR(4)	Endogenous
Lbsz	5.624	.018	AR(7)	Endogenous
Lfsz	7.665	.006	AR(8)	Endogenous
Aud	6.473	.011	AR(6)	Endogenous
Lev	5.419	.020	AR(7)	Endogenous
Roa	19.292	.000	AR(5)	Endogenous

Source: Authors' Computation (2022).

Given the variables' time series properties and the short panel data used in this study, we employed dynamic panel data model, which included unrestricted lag structures and used GMM because estimating static model might lead to some problems. The technique helped to control for endogeneity problem of lagged dependent variable, omitted variable bias and unobservable panel heterogeneity as well as measurement errors in variables.

5.2.4 Testing for appropriate estimation method

To compare different estimation methods such as OLS, FE, difference GMM and system GMM in column 1-4, regression analysis was carried out on financial report timeliness model and results were presented in Table 6. We presented results for the four different estimation methods for AR(1) process because lags of the explained variable for orders higher than 1 were not significant. Results showed that coefficients behaved exactly as expected and estimates for lagged explained variable were 0.418 in specification (1); 0.157 in specification (2); 0.220 in specification (3); and 0.402 in specification (4). In OLS model, estimate was biased upward; and both FE and difference GMM estimates were biased downward. Estimate in system GMM lies between upper bound of OLS model and lower bound of fixed effects and difference GMM models. This showed that system GMM technique should be used to estimate dynamic model specified in equation (2). A system GMM is an augmented estimator, which uses two sets of equation, one of them written in levels form with first differences as instruments and the other in first differenced form with levels as instruments (Roodman, 2009).

Blundell & Bond (1998) developed system GMM estimator and it was an improvement on the standard Arellano and Bond GMM estimator. We used two-step system GMM. This is because it is more robust to address heteroscedasticity and autocorrelation problems than one-step system GMM and yields a more asymptotically efficient estimates than the later (Olubusoye, Salisu & Olofin, 2016).

Table 6 − AR(1) Process of financial report timeliness

Variable	1 OLS	2 FE	3 dGMM	4 sGMM
Lag Lfrt	0.4184*** (*.000*)	0.1567** (*.047*)	0.2196 (*.239*)	0.4015*** (*.009*)
Constant	1.1086*** (*.000*)	1.6118*** (*.000*)		1.1416*** (*.000*)
Observations	264	264	264	264
No. of firms	24	24	24	24

*** and ** denote significant levels at 1 and 5 percent, respectively.
Source: Authors' Computation (2022).

5.2.5 Control variables and financial report timeliness

Appendix 2 showed the results obtained from estimating the effect of the four control variables on financial report timeliness using the system GMM estimation method. The results showed that only profitability and firm size had significant relationship with financial reports timeliness in all the models. For all estimations made individually and for all the possible combinations of the control variables, these two variables consistently had significant effect whereas, audit type and leverage consistently did not have any significant effect. The negative results for models that involved profitability and firm size in the table implied that higher profitability and larger firms tend to lead to lower number of reporting days hence, timely financial reports were prepared and audited. These results indicated that only profitability and firm size should be included as regressors in financial report timeliness models to be estimated.

5.3 Regression results and discussion

Table 7 contains results of different models estimated in this study. We introduced control variables and dummy variable (industry) in a stepwise manner to check robustness of models. Specification (5) shows results from model without any control variable; specification (6) with profitability (ROA) as the only control variable; and specification (7) shows results from model with firm size (FSZ) as the only control variable while specification (8) combines ROA and FSZ as control variables in model. The choice of specification will only affect control variables and has no influence on the estimates of board characteristics (size, independence, diligence and financial expertise).

In Table 7, all reported robust standard errors were corrected for sample bias, considering small sample size used in this study (Windmeijer, 2005). In the table, we reported instrument counts and post-estimation test statistics to show robustness of our estimates. Wald-statistics were all significant at 1 percent level, which confirmed joint significance of explanatory variables. Again, insignificant of the second order autocorrelation AR(2) test statistics suggested that lagged endogenous variables are valid instruments. In addition, Hansen/Sargan test of over-identification did not reject the null hypothesis at 5 percent significance level, which further confirmed the appropriateness of instruments used in all estimations.

Results across different specifications in the table were qualitatively similar, especially for lagged dependent variable and explanatory variables. The coefficient of the lagged financial report timeliness was significant and positive in all the five regressions, which

showed the importance of the variable in the models. This suggested strong conditional convergence of financial report timeliness in the short time period. The size (0.347, 0.357, 0.414, 0.309 and 0.455 for column 5 to 9, respectively) of the coefficient was relatively stable in all specifications. According to Roodman (2006), variables that are not strictly exogenous, can either be dealt with as predetermined or endogenous in GMM system framework. Since we treated board characteristics as endogenous, valid instruments stop one year before, that is, at period *t-2* for the first differenced equation and at *t-1* for levels equation in period *t*.

The corporate governance variables show consistent effect on financial reporting timeliness across the specifications except for board diligence. Given the estimates in column (8) of the table, result for board independence (*bid*) was consistently positive and significant at different levels, suggesting that higher board independence was significantly associated with untimely financial report. The result showed that the more independence a board, the higher the number of days used to prepare and audit financial reports during the period hence; the more the untimely of the financial reports. We expected *a priori* that board independence would lead to reduced number of days used to prepare and audit accounting information. However, the results showed otherwise, indicating that large number of independent directors did not intensify monitoring of the management and executive directors, as demanded by agency theory.

The result is likely to be an indication of many issues affecting accounts or conflicts between management and non-executive directors, the resolution of which caused delays in accounts and reports preparation and/or auditing. The result supported the findings of Agyei-Mensah (2018); Ohaka & Akanni (2017); Raweh, *et al.* (2019); Ishak (2015); and Apadore & Noor (2013) who found positive influence of board independence on audit report lag hence; untimely preparation and audit of financial reports. However, it contrasted the outcomes of Bausony, *et al.* (2016); Al-daoud, *et al.* (2015); Holtz and Neto (2014); Azubike & Aggreh (2014); and Ilaboya & Christian (2014) who found significant negative impact of board independence on audit report lag hence; timely preparation and audit of financial reports.

Estimates in column (8) further showed that increasing the number of independent directors by one led to 0.2 percentage increase in the number of days used to prepare and audit financial reports in the short run, *ceteris paribus*. The impact of board independence is economically meaningful given the sample mean of financial reports timeliness of 99 days. Increasing the number of independent directors in a firm by 5 will therefore lead to an increase of 1 percent (that is, 1 day) in the number of days that is likely to be used in preparing and auditing of the financial report of the firm; making it 100 days, on the average. This is therefore a warning to any of the financial institutions that may likely be contemplating increasing the number of independent directors that greater independence of directors will marginally lead to a little delay and untimely financial reporting.

Similarly, board financial expertise (*bfe*) had significant positive effect on financial report timeliness contrary to *a priori* expectation of negative effect. This means that the corporate governance mechanism significantly caused delayed financial report preparation and auditing during the period. This is because the results in column (8) showed that higher board members with financial expertise led to increased delays in preparing and auditing of financial report. The result is not in tune with that of Mohamed & Elshawarby (2018) and Al-daoud, *et al.* (2015) who established that board financial expertise had significant influence on early submission of audited reports. Given estimates in column (8), increasing

number of board members with financial expertise by 1 marginally led to 0.03 percentage increase in period (days) a company used to prepare and audit report, in the short run. Since, the effect was not substantial, the result was an indication that board members with financial expertise exercised minimal monitoring and control functions, which hence led to little delay in reporting.

Table 7 − Regression results from system GMM

Variables	(5)	(6)	(7)	(8)	(9)	(10)
L.Lfrt	0.347**	0.357*	0.414***	0.309*	0.455**	0.360*
	(0.168)	(0.188)	(0.149)	(0.170)	(0.209)	(0.199)
Bid	0.0677**	0.0800**	0.0220*	0.199*	0.0823**	1.872**
	(0.0273)	(0.0400)	(0.0130)	(0.105)	(0.0370)	(0.684)
Bdl	0.0591	0.00371	-0.0141	-0.0115	0.0133	-0.0845
	(0.0589)	(0.0244)	(0.0192)	(0.0182)	(0.0220)	(0.0886)
Bfe	0.0165	0.0292**	-0.0210*	0.0258*	0.0414**	0.0321*
	(0.0125)	(0.0120)	(0.0121)	(0.0143)	(0.0190)	(0.055)
Lbsz	-1.009***	-0.953**	0.483*	-0.770*	-1.371*	-0.721**
	(0.340)	(0.403)	(0.248)	(0.397)	(0.770)	(0.303)
Lfsz			-0.154***	-0.0815***	-0.0658**	-0.0942**
			(0.0534)	(0.0305)	(0.0308)	(0.0411)
Roa		-1.611***		-1.810**	-1.932***	-1.867*
		(0.502)		(0.894)	(0.728)	(1.077)
Ind					0.474*	
					(0.269)	
Constant	4.471***	4.495***	2.326***	3.985***	5.091**	-1.704
	(1.187)	(1.298)	(0.778)	(0.953)	(2.033)	(1.172)
Observations	240	240	240	240	240	240
Number of firms	24	24	24	24	24	24
Hansen test	16.43	14.06	11.12	12.70	10.54	15.66
Hansen Prob.	0.423	0.297	0.348	0.625	0.722	0.405
Sargan test	15.27	13.18	17.60	24.35	10.70	18.53
Sargan Prob.	0.505	0.356	0.0620	0.0593	0.709	0.236
AR(1) test	-2.532**	-2.386**	-2.424**	-2.665***	-2.377**	-2.120**
AR(1) Prob.	0.011	0.017	0.015	0.008	0.018	0.034
AR(2) test	-0.455	0.0847	0.310	0.0462	-0.142	-0.360
AR(2) Prob.	0.649	0.933	0.757	0.963	0.887	0.719
Wald Chi-square	30.25***	45.13***	38.84***	52.86***	106.89***	7.23***
Wald Prob.	0.000	0.000	0.000	0.000	0.000	0.000
Instruments count	22	19	17	23	23	23

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' Computation using *Stata* (2022).

For board size (*bsz*), this study found significant negative effect on financial reporting timeliness unlike the findings in past studies such as Almasdy (2018); Basuony *et al.* (2016); and Ishak (2015) who found insignificant influence of board size on early

submission of financial reports. However, the finding is consistent with the conclusions reached by Alfraih (2017); Hassan (2016); and Al-daoud, *et al. (*2015) that board size led to timeliness of financial reports. Estimates in column (8) indicated that firms that consistently recorded untimely or delayed financial reports more or less than the average of 99 days (but not below 90 days stipulated by Law) can address this problem by increasing the number of directors in their boards since larger board size led to financial report timeliness. The magnitude of the coefficient is however an indication that unnecessary increase in board size may not bring drastic reduction in number of days used in preparing and auditing financial report, in the short run. The result further showed that a percentage change (increase) in board size by one director will likely lead to a percentage change (decrease) of less than one (0.8) day to be used in preparing and auditing financial report. However, the results for board diligence (*bdl*) were consistently insignificant for all specifications. The finding is therefore not inconsistent with that of Raweh, *et al.* (2019); Warrad (2018) and Baatwah, *et al.* (2015) who concluded that board diligence did not significantly affect early submission of audited reports. The result contrasted assumption of agency theory that when board members meet to discuss urgent matter affecting firms, there will be reduction in late presentation of annual reports. Expectedly, the two control variables that is, profitability (*roa*) and firm size (*fsz*) had significant negative effect on the time spent by the selected financial institutions to prepare and audit annual reports. These results supported the findings of Adebayo & Adebiyi (2016) and indicated that increased profitability is likely to lead to timeliness of financial information while larger firms tend to prepare timely financial reports than smaller ones.

5.3.1 Robustness checks

For robustness checks, we add additional control variable by considering dummy variable for the industry (banks and insurance) of the selected sample in column (9) of Table 7. The result provided evidence, which showed that industry had significant positive impact on timeliness of financial information. This means that audited accounts and reports of listed insurance companies in Nigeria were not as timely as that of banks. In addition, we use different measures for both the dependent and explanatory variables (except board size) as follows. We measured financial report timeliness as a ratio of the number of days used to prepare and audit financial reports after the year-end to the number of days required by Law (90 days). In addition, board independence was measured as a ratio of independent directors to board size in a year; and board diligence as a ratio of number of board meetings actually held in a year to the number of board meetings (4 times a year) specified by Law. Again, we measured board financial expertise as a ratio of board members with financial expertise in a year to board size of a company. Results were presented in column (10) of Table 7, which shows estimates that suggested similar results with the results presented in column (8).

6. Conclusion

Effective corporate governance mechanisms are very crucial in enhancing timeliness quality of financial reports by corporations, through which investors' confidence and firms' credibility can be restored. A number of studies have empirically examined how board characteristics (independence, diligence, financial expertise and size) individually affect financial report quality. However, few of them explored their relative contributions in the context of the Nigerian financial institutions. In addition, they did not employ dynamic

panel data approach in estimating the econometric equations specified in the studies. Based on this premise, this study investigated impact of board characteristics on financial report timeliness in the Nigerian financial sector. Using information from audited accounts and reports of 12 listed deposit money banks and 12 listed insurance companies over 2010 to 2020, we found strong and consistent evidence that board characteristics (independence, financial expertise and size) had significant impact (positive and negative) on the time spent by the selected financial institutions to prepare and audit their annual reports. For board size that had significant effect on financial report timeliness with the expected negative sign, it means that the selected financial institutions employed the corporate governance mechanism as a monitoring and controlling tool to minimize agency problems. Hence, the results supported the agency theory. The insignificant result for board diligence suggested that a mere increase in board meetings did not significantly improve and was not effective in predicting audited report timeliness.

We concluded that board characteristics such as independence, financial expertise and size, as a corporate governance mechanism, bear sufficient information content and are important factors that can be used to explain and predict timeliness quality of audited accounts and reports. We then recommend as follows. Firstly, regulators like SEC and CBN should monitor the appointment of independent directors into boards of financial institutions after scrutinizing their quality, qualifications and pedigree before approval and confirmation are made. Secondly, since board size had significant negative impact on financial report timeliness, it is recommended that board members should be increased by companies that currently spend more than 90 days stipulated by Law. However, only those that have requisite skills, knowledge and capacity to develop policies that can aid prompt preparation and audit of financial reports should be appointed. Thirdly, management of the firms should employ more accounting professionals with relevant financial reporting expertise and experience so as to enhance timely preparation and auditing of reports. In addition, giving insignificant effect of board diligence, firms with higher frequency of board meetings than necessary should cut down on the frequency of board meetings. The use of committee system is also recommended. Finally, disclosure of board financial expertise in quantitative terms should be made mandatory by regulatory bodies such that the number of directors with the expertise can be readily ascertained for research purposes.

The limitations of this study include non-inclusion of auditor's characteristics rather than audit type used a control variable; its focus on only financial institutions and its inability to obtain data from all the financial institutions (21 deposit money banks and 58 insurance companies). More studies should therefore be carried out on other economic sectors or industries. For further studies, we suggest that the relationship between external auditors' characteristics and financial report timeliness should be investigated though, the effect of audit type was found to be insignificant in this present study. This new research focus will provide some insights into how external auditor's size, years of experience, capacity (number of clients), turnover and other firm-specific characteristics can have influence on financial report timeliness of their clients. Besides, since industry had significant positive effect on financial report timeliness, further studies can look at differential impact of board characteristics on financial report timeliness in banks and insurance companies. This will further provide information on the extent of the corporate governance mechanisms (board characteristics) to explain or predict timely financial report in the two industries. Other corporate governance mechanisms apart from board characteristics should also be looked into.

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Appendix 1: Number and percentage of financial institutions with early and late audited financial statements (2010-2020)

Year	AUDITED FINANCIAL REPORT TIMENESS							% of firms (1-3 months)	% of firms (4- 6 months)	% of firms (7- 9 months)
	1 month	2 months	3 months	4 months	5 months	6 plus Months	Total			
2010	0	1	10	6	4	3	24	45.83	45.83	8.33
2011	0	5	8	5	1	5	24	54.17	37.50	8.33
2012	0	1	12	3	2	6	24	50.00	29.17	20.83
2013	0	3	12	6	3	0	24	54.17	29.17	16.67
2014	0	1	16	3	1	3	24	62.50	37.50	0.00
2015	0	4	14	4	1	1	24	70.83	20.83	8.33
2016	0	3	15	4	0	2	24	75.00	25.00	0.00
2017	0	0	12	3	1	8	24	75.00	16.67	8.33
2018	1	3	15	3	1	1	24	79.17	16.67	4.17
2019	0	5	11	3	4	1	24	66.67	29.17	4.17
2020	0	8	11	3	1	1	24	79.17	16.67	4.17

Appendix 2: Effect of control variables on financial report timeliness

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.Lfrt	0.484** (0.131)	0.387** (0.154)	0.457*** (0.143)	0.509*** (0.173)	0.396*** (0.145)	0.456*** (0.146)	0.461*** (0.155)	0.448*** (0.155)
Lfsz		-0.0312** (0.0155)			-0.0620* (0.0344)			-0.0368** (0.0144)
Lev			0.0156 (0.0791)				-0.0227 (0.0887)	
Aud				0.0199 (0.0580)		-0.0205 (0.0539)		0.120 (0.0898)
Roa	-1.099*** (0.477)				-1.725** (0.760)	-1.211*** (0.420)	-1.117** (0.507)	
Constant	2.341*** (0.598)	2.913*** (0.765)	2.408*** (0.684)	2.167*** (0.798)	3.101*** (0.750)	2.484*** (0.670)	2.457*** (0.741)	2.569*** (0.763)
Observations	240	240	240	240	240	240	240	240
Number of firms	24	24	24	24	24	24	24	24
Hansen test	22.23	19.63	20.21	13.59	18.51	21.49	20.69	16.80
Hansen Prob.	0.328	0.417	0.382	0.257	0.423	0.310	0.354	0.331
AR(1) test	-2.88***	-2.413**	-2.660***	-2.451**	-2.664***	-2.746***	-2.712***	-2.477**
AR(1) Prob.	0.004	0.0158	0.0078	0.0143	0.00772	0.00603	0.00670	0.0133
AR(2) test	0.70	0.370	0.581	0.622	0.391	0.674	0.692	0.427
AR(2) Prob.	0.483	0.711	0.561	0.534	0.696	0.500	0.489	0.669
Wald Chi-square	18.11***	31.62***	14.13***	8.66**	14.55***	18.42***	15.95***	42.03***
Wald Prob.	0.000	0.000	0.001	0.013	0.001	0.000	0.001	0.000
Instruments count	23	22	22	14	22	23	23	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' Computation using Stata (2022).

Appendix 2 (cont.): Effect of control variables on financial reporting timeliness

Variables	(9)	(10)	(11)	(12)	(13)	(14)	(15)
L.Lfrt	0.443***	0.518***	0.419***	0.396***	0.453***	0.460***	0.488***
	(0.162)	(0.155)	(0.135)	(0.131)	(0.158)	(0.150)	(0.155)
Lfsz	-0.0426**		-0.0415***	-0.0449***		-0.0587*	-0.0457***
	(0.0178)		(0.0132)	(0.0152)		(0.0328)	(0.0177)
Lev	0.188	0.0115	`	0.111	-0.0204	0.254	0.174
	(0.142)	(0.0872)		(0.0993)	(0.0879)	(0.424)	(0.126)
Aud		0.00461	0.0786		-0.0183	0.0922	0.124
		(0.0536)	(0.0670)		(0.0521)	(0.0649)	(0.0815)
Roa			-1.436***	-1.393***	-1.211**	-1.286**	
			(0.493)	(0.516)	(0.484)	(0.536)	
Constant	2.587***	2.120***	2.808***	2.918***	2.513***	2.515***	2.306***
	(0.812)	(0.755)	(0.656)	(0.649)	(0.760)	(0.800)	(0.763)
Observations	240	240	240	240	240	240	240
Number of firms	24	24	24	24	24	24	24
Hansen test	16.47	17.96	19.22	19.76	21.13	18.96	16.08
Hansen Prob.	0.352	0.265	0.443	0.409	0.330	0.395	0.377
AR(1) test	-2.358**	-2.593***	-2.709***	-2.730***	-2.677***	-2.587***	-2.457**
AR(1) Prob.	0.0184	0.00951	0.00675	0.00633	0.00743	0.00968	0.0140
AR(2) test	0.272	0.628	0.485	0.355	0.688	0.315	0.326
AR(2) Prob.	0.785	0.530	0.627	0.722	0.491	0.752	0.745
Wald Chi-square	34.63***	16.54***	42.99***	33.64***	18.48***	44.99***	36.34***
Wald Prob.	0.000	0.001	0.000	0.000	0.001	0.000	0.000
Instruments count	19	19	24	24	24	24	20

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' Computation using Stata (2022).