Mandatory Disclosures and Investment Decisions in Consumer Goods Sector of Nigerian Economy

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ABSTRACT
Recent financial crises and global corporate failures have been attributed to inadequate provision of information to investors. This study determined the effect of mandatory disclosures of accounting information on investment decisions in consumer goods sector of the Nigerian economy. Positive Accounting Theory and Portfolio Theory were reviewed as the theoretical foundation for this study. Data were collected from audited financial reports of 8 out of 22 firms in consumer goods sector listed on Nigerian Stock Exchange as of 2016 for a 10-year period from 2007 to 2016, using purposive judgment sampling. Pre-estimation and post estimation tests were conducted on the series and the final regression estimate was made. The Hausman test result favors the adoption of random effect models without control variables, while models with control variables indicated the appropriateness of fixed effect using Breusch-Pagan Lagrangian Multiplier test. Both models confirmed the presence of heteroscedasticity and robust standard errors were used to estimate them to avoid estimation bias. The probability value for Wooldridge tests for autocorrelation at 0.67 and 0.07, for volume of share traded and market value of shares respectively, confirmed absence of first order autocorrelation. Final regression analysis shows that both IFRSDI and RinDI at 146.75 (p = 0.00) and 825.53 (p = 0.00) for volume of shares traded and market value of shares respectively, have positive and significant relationship with investment decisions in consumer goods sector of Nigerian economy. The study concluded that accounting information disclosures are among determinants of investment decisions in consumer goods sectors in Nigeria. It was recommended that investors should always demand adequate disclosure of accounting information by corporate entities in Nigeria before investing in those companies.

Key words: Accounting disclosure, International financial reporting standard disclosure, Investment decisions, Mandatory disclosure, Regulatory induced disclosure.

JEL Code: G01
1.0 BACKGROUND INFORMATION
The introduction of International Financial Reporting Standards (IFRS) by the International Accounting Standards Board (IASB) replaced the International Accounting Standards (IAS) and created the need for the harmonisation or convergence of accounting standards of different countries across the globe in order to conform to international best practice. One of the merits of this uniformity in accounting standards is the seamless capital market trading among nations without the need to re-adjust their financial reports before international capital market activities are conducted. By 2016, 149 countries had converged to IFRS either by adapting, adopting or harmonising their local standards to international standards (IASB, 2016). The fact that the whole world has become a global village, without any hindrance resulting from differences in financial interpretation from one country to another, has led to increased demand for quality financial reporting by discerning investors. Quality financial reporting can only be possible when all material facts are contained in a firm’s annual report. According to Popova et al. (2013), disclosure is one of the tools used by a firm’s management to communicate information to investors and all other stakeholders. Wallace and Nassir (1995) regard disclosure as a way of communicating economic information concerning a firm’s financial performance and position. Disclosure can take two forms: mandatory and voluntary. While mandatory disclosures are compelled by statutes and accounting standards, voluntary disclosures are at the discretion of a firm’s management (Umoren, 2009). Both mandatory and voluntary disclosures are needed by investors for the purpose of investment decisions. The focus of this study is on mandatory disclosures.

Authors are divided on what is to be regarded as mandatory disclosures. While authors such as Akhtaruddin (2005), Owusu-Ansah (1998) and Sejjaaka (2004) regard mandatory disclosures as those imposed by law and other regulations within a country; others like Umoren and Okougbo (2011) regard mandatory as only those required by international standards. Eintwistle (1997) was more specific when he asserted that mandatory disclosures occur when companies are compelled by the regulatory authorities to disclose certain amount of information in corporate reports, but he failed to mention that corporate entities are also compelled to comply with the disclosure requirements imposed by accounting standards set and recognised by the country. This study, therefore, considered the two classes of mandatory disclosures namely: mandatory IFRS disclosures and mandatory Regulatory-induced disclosures.

Akintoye (2016) classified the functions of financial management into five decisions: investment, financing, profit, dividend and retention, and liquidity. For Akintoye, investment decision takes the center stage as it involves commitment of resources towards the acquisition of assets for a longer period. One of the criteria on which an investor bases his investment is access to information on that investment. Non-availability of vital information is tantamount to information asymmetry which may result in serious agency problems and wrong investment decisions. Herbei et al. (2015) believe that the increasing need for information as an important tool in investment decision guidance which creates close tie between information and investment decisions making process; hence, information is vital when it comes to investment decisions.

Under the Nigerian government’s support, studies were conducted by World Bank on the compliance of Nigerian firms with international best practices. Aside from the World Bank reports (2004) and (2011) numerous other authors including Adeyemi (2006); Adeyemi and Asaolu (2013); Bala (2013); Feyintimi (2014); Ibrahim and Jafar (2013); Saidu and Dauda (2014); Siyanbola et al., (2014); Umoren and Okougbo (2011); Wallace (1988); Zango et al., (2015) have also investigated disclosure practices in Nigeria. They observed weak corporate reporting practices aside from the fact that the level of disclosure compliance by listed companies in Nigeria lag behind what is obtainable in other markets. This study examined the effect of mandatory disclosures on investment decision in firms operating in the consumer goods sector in Nigeria economy during and post IFRS adoption periods. Twenty five generally applicable IFRSs and thirteen SAS were selected for this study as IFRS mandatory disclosure requirements and disclosure requirements mandated by Companies and Allied Matters Act (CAM), and the Nigerian Stock Exchange were regarded as
Regulatory induced mandatory disclosures. Investment decisions were represented by volume of shares traded and market value of shares of the selected firms.

Many studies such as Ailwan et al., (2013); Al-jabali and Ata (2014); Dutta and Nezlobin (2016); Klinkshon and Ussahawanitchakit (2016); Wen (2007) were carried out in developed countries on the impact of accounting information disclosures on investment decisions, but in Nigeria only few related studies are in place, such as Adeyemi and Ogundele (2003); Agboola et al., (2013) and Kantude (2005). These studies provided no significant validity of existing empirical evidence of the impact of accounting information disclosures on investment decisions in Nigerian firms. This study intends to fill this gap in the literature.

Onoh et al., (2017) examined trading volume and market turnover in the Nigerian Capital Market: Implication to stock market returns using data sourced on daily statistics from trading at the stock market from 2001 to 2015. The study found the all share index increased the volume of the transaction ratio by 6%. It also found that volume of the transactions having a positive correlation with turnover ratio as a 1% increase in volume of shares traded increases turnover ratio by 24%. Low trading volume stocks also out-performed the high trading volume stocks due to illiquidity. The true position of the model validity would have been revealed by the result of robustness test which was not carried out. Our study addressed this oversight.

The study by Angahar and Malizu (2015) adopted an ex-post facto research design with population of 198 companies listed in the Nigerian Stock Exchange as of 2011, using a sample of 40 companies reveals a significant relationship between earnings and stock returns, but non-significant relationship between change in earnings and stock returns. The study was affected by the period of the study, which was 5 years; this was considered too short for this type of study. The recommendation that listed companies should work toward increasing their earnings at the end of the year, since stock returns are related to earning pose some dangers because companies would go extra miles, including manipulation of accounting figures in order to meet this objective. This is tantamount to fraud and the gap in the period of study had been guarded against in this study by using 10 years period between 2007 and 2016. This is long enough to bring out generalizable conclusion.

Most prior studies traced variations in disclosure compliance to different firm attributes including profitability, age, liquidity, leverage, size, industry type and audit quality (Glaum and Street, 2002; Street and Bryant, 2000; Street and Gray, 2001). Few other studies, such as Ailwan, Katrib and Samara (2013); Al-jabali and Ata (2014) and Dutta and Nezlobin (2016) were related to investment decision concentrated on share price as the proxy for investment decision. Since share price can be affected by many factors including inflation and state of the economy, we, therefore, used both the volume of share traded and the market value of shares that can be directly attributed to the level of disclosure by companies in this study. We only controlled for profitability, size, leverage and liquidity to bring out the impact of these variables.

Two approaches of deriving the disclosure indices are Dichotomous (Cooke, 1992) and Partial Compliance (Al-Shaib, 2003). Dichotomous is unweighted as each item in the standard is treated equally; the only fault in it is that standards with higher number of items to be disclosed would have a higher score than those with smaller ones. Partial compliance approach, on the other hand, treats all standards equally no matter what the number of items is required to be disclosed by a standard. Since full disclosure is required to help investors in their investment decisions, this study was based on Dichotomous approach.

The remaining sections of this paper are organized as follows: Section 2 discussed statement of the problem including the objective of the study; Section 3 reviewed the relevant literature including empirical review of mandatory disclosure and investment decisions, theoretical framework and hypotheses development. Methodology and variable measurement are contained in Section 4; detailed analysis and discussion of results are reflected in Section 5; and the conclusion and recommendations are presented in Section 6.
2.0 STATEMENT OF THE PROBLEM
For a financial report to be considered appropriate for investment decision, certain qualities must be present. Such qualities include verifiability, relevance, completeness, neutrality, timeliness, understandability and reliability (IASB, 2010). Since investors depend on financial reports in making decision, they are always eager to believe that all the qualities mentioned are present in the report. However, problems relating to the quality of financial information contained in financial reports have been an area of debate in accounting theory and practice. In theory, the problem of relevance of financial information to investment decision had been directed at the failure of traditional accounting to recognize and measure intangible assets (Barth et al., 2008). Of all the 4ms (man, machine, money and material) of production, it is only human resource (men), which is the coordinating aspect of all the other 3ms, that is treated as expenses (in the Statement of Profit or Loss) while others are capitalized in the Statement of Financial Position. In practice, the effect of Enron, WorldCom and other international financial scandals had called to question the quality of financial reporting. This led to the enactment of Sarbanes-Oxley Act by the US government in 2002 (Klinskhn & Ussahawanitchakit, 2016). Nigeria also had similar scandal in Cadbury Plc. due to over-inflated financial statement, which was estimated to be between N13bn and N15bn (Ajayi, 2006). It led to the adjustment of the company’s account, thus, leading to an operating loss of N4.665bn in 2006 from the previous year’s profit of N2.711bn (Cadbury Plc. 2006). This led to loss of value to investors as their stock prices slid in the market. The above problems occurred in spite of the local accounting standards (SAS) and other regulations before the adoption of IFRS and the monitoring through Financial Reporting Council of Nigeria in 2011, a consequent of the recommendation of World Bank Report (2011). It is not certain if compliance with the mandatory IFRS, and other reviewed regulations, had helped to resolve the transparency problems. This paper was directed at determining the effect of mandatory disclosures on investment decisions in listed firms within the consumer goods sector of Nigerian economy in pre and post IFRS periods.

3.0 LITERATURE REVIEW
3.1 Mandatory Disclosures
To assist investors in forming opinion about a company, all necessary information must be provided in the annual report. Karim and Ahmed (2005) regarded disclosure as the appearance of an item of information in the annual report of an entity, but Khodadadi et al. (2010) were more specific as to the type of information involved by defining it as the transferring and presentation of economic information (financial/non-financial and quantitative/qualitative) relating to the status and operations of the firm. Alberto (2010) categorized disclosure practice into institutional or mandatory and voluntary or firm specific. Information are said to be mandatory, if they are required by accounting standards (IFRS disclosures). They are also mandatory if required by law, regulations and widely used in business practices; this is called regulatory induced disclosure. Each institution is mandated to disclose certain information in line with the statute guiding it, aside from the accounting standard (Seijaaka, 2004). To achieve uniformity, this study only considered the requirements of CAMA and NSE as mandatory regulatory disclosures. CAMA CAP. C20 LFN 2004 is presently the major statute governing financial reporting of private and public companies in Nigeria (Umoren, 2009). Matters relating to financial reporting in CAMA can be obtained from Part XI – Financial Statement and Audit. Specifically Ss331 – 334 are concerned with accounting records; form and content of company individual and group financial statements are contained in Ss335 - 341. Section 19 of amendment to the listing rules released by SEC in May 2014 (NSE, 2014) detailed the disclosure requirements in the financial report of listed companies in Nigeria.

3.2 Accounting Standards
Accounting practices are guided by rules and regulations which are compiled into accounting standards (Izedonmi & Ola, 2001). Before the convergence to International Financial Reporting Standards (IFRS), Nigeria regulated its accounting practices through the application of both the
3.3 Investment Decisions

The process involved in investment decision includes the giving up of consumption of resources in exchange for security acquisition. Once the investor decided to utilise funds to acquire securities, the next move is to allocate the funds among available securities in the market. Anao et al. (1993) recognised investment environments to be legal and financial. While the legal environment takes care of the various statutes establishing an organization, which include such issue as its investment windows, the financial environment is made up of money market and capital market. The money market exists for sourcing short term finance with maturity ranging from one to two years. The capital market is in place for sourcing long term funds, such as corporate stocks, preference shares, debentures and bonds. They also recognised other types of investments such as: investment in real estate; investment in chattels; insurance policy (life and non-life); pension funds; investment trust and unit trust. The most common investment open to individual investor is investment in stock/shares of entities which form the basis of our study.

Portfolio theory can be used to explain the type of financial information that an individual requires when investing or divesting in a company. Therefore, individual investor can split investment between a company that provides inadequate information and the one with full and adequate information, with a view to reducing the impact of risk by engaging in what is termed as portfolio diversification (Markowitz, 1959). There are three methods of measuring investment decisions: volume of shares traded; market value of shares and volume of new issues within the period. Out of these three, volume of shares seems to be more appealing as it can be directly attributed to level of disclosure by a company. Market value of shares is also good but the price involved in the computation can be affected by many factors including inflation and state of the economy. Volume of new issue within the period is less popular in the sense that not all the listed companies embark on new issue of share in the period under investigation. To avoid such gaps, we dropped this last method and adopted the first two measurements to represent our dependent variables in this study. Volume of share is the quantity or number of shares traded daily in Nigerian Stock Exchange. The growth of any capital market is attributable to the volume of shares traded in that market as captured by Oluwatoyin & Gbadebo (2009). Market value of shares, sometimes regarded as market capitalization, is defined as the product of share price and number of outstanding shares of listed domestic companies. It is one of the indicators used in determining the growth of national economy; hence, it is normally compared with the country’s GDP from one period to another. According to statistics from World Federation of Exchange data base (2016), the total market capitalization of listed domestic companies in Nigeria in 2015 was $49,973,880,000. The value had fluctuated over the past 22 years with the highest growth reported at 51.00% in 2007 and the lowest at 4.02% in 2002.

3.4 Empirical Review

Various scholars discussed in this study had studied the effect of mandatory disclosures on investment decisions in firms. Onoh et al. (2017) investigated the effect of trade volume and market turnover on daily stock returns of NSE (using stata statistical package to regress the relationship) found trade volume having negative but significant effect on stock returns attributable to possible anticipation of higher market illiquidity by investors. This was consistent
with the positive cross-sectional relationship between stock returns and illiquidity. Biddle and Hillary (2006), in their study on the relationship between accounting information quality and investment efficiency, found accounting information quality negatively associated with both firm under-investment and over-investment. Firms with higher quality information deviate less from anticipated investment levels and also are insensitive to macro-economic conditions. This relation between accounting information quality and investment efficiency was supported more directly by Cheng et al., (2013) in their examination of investment behavior of sampled firms that disclosed internal control weaknesses under the Sarbanes Oxley Act. They found that prior to the disclosure, firms under-invest when they are financially constrained and over-invest when they are financially unconstrained. They also found that after the disclosure, the firms’ investment efficiency improves significantly.

Ren (2016) also found the improvement of the accounting information quality to be a solution to under or over investment of a firm, which can lead to improvement in efficiency of capital allocation. Several studies such as those by Daske et al. (2008); Li (2010); and Soderstrom and Sun (2008) emphasized the importance of enforcement mechanisms in investment decisions resulting from IFRS adoption. This implies that convergence to IFRS may not be effective unless there is enforcement mechanism which includes the activities of regulatory bodies and local statutes, such as the Financial Reporting Council of Nigeria regulations, the Companies and Allied Matters Act and Nigerian Stock Exchange Rules. Since IFRS are principle based accounting standards, firms need to follow general principles rather than the detailed standards and adapt these general principles to specific situation (Ball, 2009). Therefore, the legal system or what we regard as other regulatory induced activities are important in determining accounting quality needed for investment decisions in firms. Various studies were industry specific: Bala (2013) wrote on effect of IFRS adoptions on financial report of Nigerian listed companies – case study of Oil and Gas Co.; Siyanbola et al., (2014) assessed compliance with disclosure requirements of IAS 16 by listed agricultural firms in Nigeria; Amaoko and Asante (2012) were on six of the eight listed banks in Ghana; Adekunle and Asaolu (2013), Bshayreh et al. (2014), Saidu and Dauda (2014), Sejaaka (2014), Zango et al. (2015) were all based on the banking subsector of financial service sector. From empirical review, we observed the paucity of literature relating mandatory disclosure to investment in firms in consumer goods sector in Nigeria.

3.5 Theoretical Consideration and Hypothesis Development

Both positive accounting theory and portfolio theory form the basis on which the hypotheses of this paper were developed. The relevance of positive accounting theory, used in several similar studies by Adeyemi, 2006; Ali, Ahmed and Henry, 2004 and Umoren, 2009 is believed to have direct linkage with four other theories namely: agency, shareholders, stakeholders and information asymmetry. As the theory emphasised, the manager acts as the agent (agency theory), in his selfish way of withholding information (asymmetric information theory) from the owners (shareholders theory) and others including creditors (stakeholders’ theory), by not disclosing fully all material information deemed useful for the decision making by other parties.

Portfolio theory as developed by Markowitz (1959) is premised on risk and returns accruable to an average investor; all subsequent theories of finance and investment borrow from this theory. Therefore, every investor requires adequate information relating to the entities to which he wants to put his money. This paper makes the following testable hypotheses:

(i) IFRS and other regulatory induced disclosures have no significant relationship with volume of shares of listed consumer good firms in Nigeria; and

(ii) IFRS and other regulatory induced disclosures do not have any significant relationship with market value of shares of listed consumer good companies in Nigeria.
4.0 DATA AND METHODOLOGY

This study adopted an ex-post facto research design. Secondary data were extracted from annual reports and accounting information of eight companies for a period of ten years (2007 – 2016). Purposive sampling method was used to select the sampled firms from the total population of one hundred and seventy four (174) firms listed on Nigerian Stock Exchange (NSE, 2017). The criterion for selection is the availability of data. Three variables were identified: dependent variable represented by investment decisions with two proxies of volume of shares traded and market value of shares; independent variable represented by mandatory disclosure indices with two proxies of IFRS Disclosure Index (IFRSDI) and Regulatory induced Disclosure Index (RinDI) and the control variables of firm characteristics proxies of profitability (ROE), firm size, leverage (LEV) and liquidity (LIQ). The measurement procedures of these variables are as discussed below.

4.1 Investment Decisions

Several studies in the past, for example, Ailwan et al., (2013); Al-jabali and Ata (2014) and Dutta and Nezlobin (2016) showed that accounting disclosure relates to investment decisions; they concentrated on share prices as proxy for investment decision. Since share price can be affected by many factors including inflation and state of the economy, we used both volume of shares traded and market value of shares that can be directly traced to the level of disclosure by companies. Volume of shares (VS) and market value of shares (MV) are defined as: VS\text{it} = \text{Volume of Shares of individual firm obtained from NSE} \text{ and } MV\text{it} = \text{Share price multiplied of the Volume of shares traded}.

4.2 Mandatory Disclosures

The Dichotomous approach (Cooke, 1992) was adopted to determine the disclosure indices using 25 commonly applicable IFRS and 13 SAS for the period prior to IFRS adoption. ‘Yes’ was indicated when disclosed and ‘No’ for non-disclosure. The same approach was adopted for RinDI using disclosure requirements in CAMA and NSE. The study examined 23 of such items, assigning ‘Yes’ for disclosure and ‘No’ for non-disclosure.

4.3 Firms’ Characteristics

Profitability can be measured using Return on Equity (ROE) (ratio of net income to shareholders’ equity). It can also be measured by using Return on Assets (ROA) (ratio of net income to total assets). Other variants of profitability used in the past are: Return on Capital Employed (ROCE) used by Agyei-Mensah (2013) and Profit margin adopted by Akman (2011), Feyitimi (2014), Gongon and Gongon (2014) and Mbetu et al., (2014). Scholars who had earlier used ROE as proxy for profitability include: Agyei-Mensah (2012); Alanezi et al., (2016); Atanasovski et al., (2015); Demir and Bahadir (2014); Kareem and Ahmed (2005); Pounce et al., (2016) and Santos et al. (2014). Those that had used ROA in the past include: Abid and Sahiq (2015) and Adeyemi & Asaolu (2013). We defined profitability as ROE, computed as Profit after Tax/Total Equity.

Studies of the association of disclosure compliance with company size have attributed higher disclosure of information by larger firms than smaller firms (Owusu-Ansah and Yeoh, 2005; Wallace et al. (1994). Scholars have also used several concepts to define company size in their studies. Some of these concepts include: book value of equity; total assets; log of market capitalization; net assets; log of total assets; total sales; number of employees; log of value traded; assets-in-place; asset size. This study adopted Demir and Bahadir (2014) concept of total assets to proxy company size, that is, the size of a firm is measured by the magnitude of its balance sheet position at the end of the period.

Some studies used different proxies for leverage in a firm using either debt/equity ratio (Agyei-Mensah, 2013; Bothelo et al., 2015; Kang and Grey, 2011; Yiadom and Atsunyo, 2014), or debt/total asset ratio (Abid and Shaiq, 2015; Demir and Bahadir, 2014; Santos et al., 2014), or total
liabilities/total assets ratio (Alturki, 2014), or log of total debt/equity (Alanezi et al., 2016). For the purpose of this study, we defined leverage as the ratio of total debt on equity.

Wallace and Nasir (1995) found that firms with lower liquidity tends to provide more detailed information in their annual report than a firm with higher liquidity, hence they found a significant negative association between disclosure levels and liquidity ratios. This contradicts the findings of Adeyemi and Asaolu (2013) and Agyei-Mensha (2012) which showed positive relationship between disclosure levels and liquidity ratios. In this study we defined liquidity as Liquid Asset/Current Liability.

4.4 Modelling
The models used in this study to test the hypotheses are:

Model 1 (without control variables)
\[
\text{Log (VS)}_{it} = \beta_0 + \beta_1 \text{IFRS DI}_{it} + \beta_2 \text{R in DI}_{it} + \mu_{it}
\]

Model 1 (with Control Variables)
\[
\text{Log (VS)}_{it} = \beta_0 + \beta_1 \text{IFRS DI}_{it} + \beta_2 \text{R in DI}_{it} + \beta_3 \text{ROE}_{it} + \\
+ \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{LIQ}_{it} + \mu_{it}
\]

Model 2 (without control variables)
\[
\text{Log (MV)}_{it} = \alpha_0 + \alpha_1 \text{IFRS DI}_{it} + \alpha_2 \text{R in DI}_{it} + \epsilon_{it}
\]

Model 2 (with control variables)
\[
\text{Log (MV)}_{it} = \alpha_0 + \alpha_1 \text{IFRS DI}_{it} + \alpha_2 \text{R in DI}_{it} + \alpha_3 \text{ROE}_{it} + \\
+ \alpha_4 \text{SIZE}_{it} + \alpha_5 \text{LEV}_{it} + \alpha_6 \text{LIQ}_{it} + \epsilon_{it}
\]

We expected accounting information disclosure variants to be significant and positively related to investment decisions because the more the information disclosed by a firm in its annual reports, the more responsive the investors to its shares in the market.

All together we used 80-firm year observations for our models. Data obtained from volume of shares traded in model 1 and market value of shares in model 2 are discussed and analysed.

5.0 FINDINGS AND DISCUSSIONS
5.1 Descriptive Analysis
We provide an overview of the data set including description of main attributes of the data. The descriptive analysis of the panel data was done by numerical representation shown in Table 1. Table 1 shows the mean, maximum, minimum and standard deviation of all variables of mandatory disclosure measured by IFRS (IFRSIDI) and other regulatory induced mandatory disclosures (RinDI); Investment Decisions measured by log of volume of share traded (Ln(VS)) and Log of market value of shares (Ln(MV)); and the control variables of Return on Equity (ROE), firms’ Size (SIZE), Leverage (LEV) and Liquidity (LIQ).

The mean values for RinDI and IFRSIDI were 0.6379 and 0.3424 respectively, while the mean values of Ln(VS), Ln(MV), ROE, SIZE, LEV, and LIQ were 17.808, 22.043, 0.0244, 24.632, 11.175, and 0.6914, respectively. There is also evidence of variation in the minimum and maximum values of all variables for the period of study. The variable with a higher degree of dispersion from the mean is the LEV, indicating variations within the data set over the years under study for quoted firms under the consumer goods sector in Nigeria.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
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<tr>
<td>RDI</td>
<td>0.6379</td>
<td>0.0725</td>
<td>0.13</td>
<td>0.76</td>
</tr>
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</table>
5.2 Empirical Analysis

5.2.1 Correlation Analysis

The empirical analysis began by establishing the nature of the relationship between Mandatory disclosure (measured by IFRS (IFRSDI) and other regulatory induced mandatory disclosures (RinDI)) and Investment Decisions (measured by log of volume of share traded (Ln(VS)) and Log of market value of shares (Ln(MV))) and the control variables (Return on Equity (ROE), firms’ Size (SIZE), Leverage (LEV), and Liquidity (LIQ)). The panel data of all variables under study were correlated and the results obtained are shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>RinDI</th>
<th>IFRSDI</th>
<th>ROE</th>
<th>SIZE</th>
<th>LEV</th>
<th>LIQ</th>
<th>VS</th>
<th>MV</th>
</tr>
</thead>
<tbody>
<tr>
<td>RinDI</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>IFRSDI p-val.</td>
<td>0.472***</td>
<td>1</td>
<td></td>
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<tr>
<td>RinDI p-val.</td>
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<td>0.000</td>
<td></td>
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<tr>
<td>ROE</td>
<td>0.036</td>
<td>0.777</td>
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<tr>
<td>SIZE</td>
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<tr>
<td>LEV</td>
<td>-0.048</td>
<td>-0.110</td>
<td>-0.99***</td>
<td>-0.057</td>
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<tr>
<td>LIQ</td>
<td>0.673</td>
<td>0.330</td>
<td>0.000</td>
<td>0.617</td>
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<tr>
<td>VS</td>
<td>-0.27</td>
<td>0.603</td>
<td>0.226</td>
<td>0.001</td>
<td>0.157</td>
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<tr>
<td>MV</td>
<td>0.289***</td>
<td>0.212*</td>
<td>-0.037</td>
<td>0.847***</td>
<td>0.042</td>
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<td>0.009</td>
<td>0.059</td>
<td>0.747</td>
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<td></td>
<td>0.238**</td>
<td>0.255**</td>
<td>0.024</td>
<td>0.875***</td>
<td>0.004</td>
<td>-0.263**</td>
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<td>0.034</td>
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<td>0.018</td>
<td>0.000</td>
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</tbody>
</table>

*Significant at 10%, 5%, 1%
Source: Researcher’s Study, 2018

The correlation analysis in Table 2 reveals a significant positive association between RinDI and SIZE, LIQ, and each of the surrogates of Investment Decision of VS and MV, with an R-value of +0.219, +0.247, +0.289, and +0.238 respectively. IFRSDI also has a significant positive association with SIZE and each of the surrogates of Investment Decision of VS and MV with an R-value of +0.429, +0.212, and +0.255 respectively. Although RinDI has a significant positive correlation with LIQ, IFRSDI has an insignificant negative association with LIQ of consumer goods companies for the period under study. This implies that while RinDI has a direct and positive association with liquidity, IFRSDI has inverse and little connection with liquidity of consumer goods companies in Nigeria. The regression analysis in the next section shows the extent and direction of the relationship of our variables.
5.2.2 Trends of Annualized Average Investment Decision

We show the trends of annualized average investment decision measures of volume of share traded (VS) and market value of shares (MV) for the period under study. Specifically, the data obtained for VS and MV for all the consumer goods companies were aggregated and their mean computed for each year under study as shown in Figure 1 indicating the patterns of the annualized average VS and MV over the period of study. This was performed in order to examine the pattern of the volume of shares and the market value of shares of listed consumer good firms in Nigeria in pre and post IFRS periods.

**Fig. 1.** Trends of annualized average VS and MV

![Trends of annualized average VS and MV](image)

Source: Researcher’s Study, 2018

Figure 1 shows the “trend lines” of annualized average VS and MV for the period of 2007 to 2016. Specifically, it shows that both VS and MV have been fluctuating for the periods before and after the adoption of IFRS. While average annualized VS experienced a sharp decline in the period after the adoption of IFRS, there seems to be a general fluctuation in the periods of pre and post IFRS. However, the patterns in the average annualized MV showed an upward movement for the period immediately after the adoption of IFRS which subsequently had a downward movement in 2014 to 2016. This implies that improvement in the “trend line” was short-lived post adoption period, as the downward pressure in the movement of MV between 2014 and 2016 and in the movement of VS between 2015 and 2016 evidence non-significance of IFRS adoption in consumer goods sector after the first 2 years of convergence to IFRS by Nigeria.

5.2.3 Test of Hypothesis One (H₀₁)

**Research Hypothesis 1 (H₀₁):** IFRS and other regulatory induced disclosures have no significant effect on volume of shares of listed consumer good firms in Nigeria

**Table 3.** Regression Analysis, $n = 80$

<table>
<thead>
<tr>
<th>Dependent Variable: Ln(VS)</th>
<th>Model 1a</th>
<th>Model 1b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Coeff</td>
<td>t-stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The result of the diagnostic tests is shown in Table 3. The Hausman test showed the probability values of 0.12 and 0.04 for models 1a and 1b respectively, implying that the null hypothesis to estimate random effect was accepted for model 1a and it was not accepted for model 1b; thus, model 1a was tested for the appropriateness for random effect using Breusch-Pagan Lagrangian multiplier test. Model 1b was tested for appropriateness for fixed effect using the rho statistic. The significance of the Lagrangian multiplier test at 1% for model 1a shows that random effect is appropriate; the probability value of 0.001 for Rho statistic for model 1b indicates that fixed effect is appropriate. In addition, the probability values of Breusch-Pagan heteroskedasticity test for both models 1a and 1b were significant at 1%, implying that the null hypothesis of constant variance was not accepted and there is presence of heteroskedasticity. As such, if predictions are based on their regression estimates it will be biased and inconsistent.

Furthermore, the probability values for both Wooldridge test for autocorrelation and Pesaran's test of cross sectional independence are insignificant at 10% for both models, indicating that there is absence of first-order autocorrelation and residuals are not cross sectionally correlated. Thus, in line with Hoechle (2007) the presence of heteroskedasticity indicates that there is a need to estimate the models using robust standard errors (to estimate the models) to avoid estimation bias. We present the empirical models in 1a and 1b, thus:

**Model 1a**

\[
\ln(\text{VS})_{it} = \alpha_1 + \beta_1 \text{IFRSDI}_{it} + \beta_2 \text{RDI}_{it} + \mu_1 \\
\ln(\text{VS})_{it} = 15.35 + 0.889\text{IFRSDI}_{it} + 3.597\text{RDI}_{it} + \mu_1
\]

**Model 1b**

\[
\ln(\text{VS})_{it} = \alpha_2 + \beta_3 \text{IFRSDI}_{it} + \beta_4 \text{RDI}_{it} + \beta_5 \text{ROE}_{it} + \beta_6 \text{SIZE}_{it} + \beta_7 \text{LEV}_{it} + \beta_8 \text{LIQ}_{it} + \mu_2 \\
\ln(\text{VS})_{it} = 14.39 - 0.23 \text{IFRSDI}_{it} + 0.23 \text{RDI}_{it} + 0.99 \text{ROE}_{it} + 0.11 \text{SIZE}_{it} + 0.03 \text{LEV}_{it} + 0.41 \text{LIQ}_{it}
\]

The result of the regression analysis in Table 3 shows that mandatory disclosure measured by IFRS and other regulatory induced mandatory disclosures (RinDI) individually have significant positive effects on the log of volume of share traded (\(\ln(\text{VS})\)). This is indicated by the signs and the probability of the t-statistics of the coefficients, that is \(\beta_1 = +0.889>0\) (0.10*); \(\beta_2 = +3.591>0\) (0.02**). However, when the control variables of Return on Equity (ROE), firms’ Size (SIZE), Leverage (LEV), and Liquidity (LIQ) were introduced, both IFRSDI and RinDI have insignificant
negative and positive effects on Ln(VS) respectively. All the control variables also have insignificant positive effects on Ln(VS). This is indicated by the signs and the probability of the t-statistics of the coefficients: \( \beta_3 = -0.23 < 0 \) (0.72); \( \beta_4 = +0.23 > 0 \) (0.84); \( \beta_5 = +0.99 > 0 \) (0.18); \( \beta_6 = +0.11 > 0 \) (0.76); \( \beta_7 = +0.03 > 0 \) (0.17); \( \beta_8 = +0.41 > 0 \) (0.30).

Additionally, the adjusted R-squared of model 1a showed that about 7% variations in Ln(VS) can be attributed to IFRSDI and RinDI, while the remaining 93% variations in Ln(VS) are caused by other factors not included in this model. The adjusted R-squared of model 1b showed that about 79% variations in Ln(VS) can be attributed to IFRSDI, RinDI and control variables of ROE, SIZE, LEV, and LIQ while the remaining 21% variations in Ln(VS) are caused by other factors not included in this model. This shows that while model 1a has a weak explanatory power, model 1b has a stronger explanatory power. The probability values of the F-statistic for both models at 10% level of significance shows that the regression results are statistically significant.

The null hypothesis asserting that “IFRS and other regulatory induced disclosures have no significant effect on volume of shares of listed consumer good firms in Nigeria” is rejected. IFRS and other regulatory induced disclosures have significant effect on volume of shares of listed consumer good firms in Nigeria.

5.2.4 Test of Hypothesis Two (H\(_{02}\))

Research Hypothesis 2 (H\(_{02}\)): IFRS and other regulatory induced disclosures have no significant effect on market value of shares of listed consumer good companies in Nigeria

<table>
<thead>
<tr>
<th>Table 4. Regression Analysis , n = 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td></td>
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<tr>
<td>C</td>
</tr>
<tr>
<td>IFRSDI</td>
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<tr>
<td>RDI</td>
</tr>
<tr>
<td>ROE</td>
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<tr>
<td>SIZE</td>
</tr>
<tr>
<td>LEV</td>
</tr>
<tr>
<td>LIQ</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
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<tr>
<td>F-Statistics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hausman test</td>
<td>2.90</td>
<td>0.23</td>
<td>74.5</td>
</tr>
<tr>
<td>Rho Statistics</td>
<td>-</td>
<td>-</td>
<td>0.9</td>
</tr>
<tr>
<td>Lagrangian multiplier test</td>
<td>248</td>
<td>0.00***</td>
<td>-</td>
</tr>
<tr>
<td>Heteroskedasticity test</td>
<td>2.16</td>
<td>0.14</td>
<td>786.37</td>
</tr>
<tr>
<td>Autocorrelation test</td>
<td>3.59</td>
<td>0.10*</td>
<td>1.81</td>
</tr>
<tr>
<td>Cross sectional independence test</td>
<td>1.42</td>
<td>0.27</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Dependent Variable: Ln(MV); *,**,***Significant at 10%, 5%, 1%
Source: Researcher’s Study, 2018

The result of the diagnostic tests in Table 4 showed the various tests performed on the models to determine their appropriateness. Specifically, the Hausman test shows the probability values of 0.23 and p = 0.00 for models 2a and 2b respectively, implying that the null hypothesis to estimate random effect was accepted for model 2a while it was not accepted for model 2b; thus, model 2a was tested for the appropriateness for random effect using Breusch-Pagan Lagrangian multiplier test and model 2b was tested for appropriateness for fixed effect using the rho statistics. The significance of the Lagrangian multiplier test at 1% for model 2a shows that random effect is appropriate, p = 0.00 for Rho statistics for model 2b indicates that fixed effect is appropriate. In
addition, the probability values of Breusch-Pagan heteroskedasticity test for both models 1a and 1b were insignificant and significant at 10% respectively, implying that the null hypothesis of constant variance was accepted for model 2a and there is absence of heteroskedasticity. While it was not accepted for model 2b, there is presence of heteroskedasticity.

Furthermore, the probability values for Wooldridge test for autocorrelation are significant at 10% which implies that there is presence of first-order autocorrelation in both model 2a and model 2b. This indicates that the residuals are correlated over time. The Pesaran's test of cross sectional independence are insignificant at 10% for both models, indicating that there is absence of first-order autocorrelation and residuals are not cross-sectionally correlated. Thus, in line with Hoechle (2007), the presence of autocorrelation in model 2a and the presence of both heteroskedasticity and autocorrelation in model 2b indicate that there is a need to estimate the models using robust standard errors to estimate the models to avoid estimation bias. We present the empirical models 2a and 2b as:

**Model 2a**

\[
\text{LN}(\text{MV})_{it} = \alpha_3 + \beta_9 \text{IFRSDI}_{it} + \beta_{10} \text{RDI}_{it} + \mu_3
\]

\[
\text{LN}(\text{MV})_{it} = 18.28 + 2.80 \text{IFRSDI}_{it} + 4.40 \text{RDI}_{it}
\]

**Model 2b**

\[
\text{LN}(\text{MV})_{it} = \alpha_4 + \beta_{11} \text{IFRSDI}_{it} + \beta_{12} \text{RDI}_{it} + \beta_{13} \text{ROE}_{it} + \beta_{14} \text{SIZE}_{it} + \beta_{15} \text{LEV}_{it} + \beta_{16} \text{LIQ}_{it} + \mu_4
\]

\[
\text{LN}(\text{MV})_{it} = -20.89 - 1.09 \text{IFRSDI}_{it} + 2.38 \text{RDI}_{it} + 3.09 \text{ROE}_{it} + 1.63 \text{SIZE}_{it} + 0.09 \text{LEV}_{it} + 0.93 \text{LIQ}_{it}
\]

The result of the regression analysis in Table 4 shows that Mandatory disclosure measured by IFRS and other regulatory induced mandatory disclosures (RinDI) individually have significant positive effects on the log of market value of share (Ln(MV)). This is indicated by the signs and the probability of the t-statistics for the coefficients, that is \(\beta_9 = +2.801 > 0\) (0.00***); \(\beta_{10} = +4.40 > 0\) (0.00***). However, when the control variables of Return on Equity (ROE), firms’ Size (SIZE), Leverage (LEV) and Liquidity (LIQ) were introduced, both IFRSDI and RinDI have insignificant negative and positive effects on Ln(MV) respectively. All control variables also have significant positive effects on Ln(MV). This is indicated by the signs and the probability of the t-statistics for the coefficients, that is \(\beta_{11} = -1.09 < 0\) (0.38); \(\beta_{12} = +2.38 > 0\) (0.25); \(\beta_{13} = +3.09 > 0\) (p = 0.00***); \(\beta_{14} = +1.63 > 0\) (p = 0.00***); \(\beta_{15} = +0.09 > 0\) (p = 0.00***); \(\beta_{16} = +0.93 > 0\) (p = 0.00***).

Additionally, the adjusted R-squared of model 2a showed that about 6% variations in Ln(MV) can be attributed to IFRSDI and RinDI, while the remaining 94% variations in Ln(MV) are caused by other factors not included in this model. The adjusted R-squared of model 2b showed that about 85% variations in Ln(MV) can be attributed to IFRSDI, RinDI and control variables of ROE, SIZE, LEV, and LIQ while the remaining 15% variations in Ln(MV) are caused by other factors not included in this model. This shows that while model 2a has a weak explanatory power, model 2b has stronger explanatory power. However, the probability values of the F-statistic for both models at 10% level of significance show that the regression results are statistically significant. Thus, the null hypothesis 2 that “IFRS and other regulatory induced disclosures have no significant effect on the market value of shares of listed consumer good companies in Nigeria” is rejected. Therefore, IFRS and other regulatory induced disclosures have significant effect on market value of shares of listed consumer good companies in Nigeria.

The result signifies that the combined effects of mandatory disclosures have positive and significant relationship with investment decisions (both volume of shares traded and market value of shares). This suggests that both IFRSDI and RinDI are positively related to both the volume of shares traded and market value of shares and that the effects are also positive. This finding is consistent with our a priori expectations that mandatory disclosures contribute positively and significantly to investment decisions.
Some studies, for example, Al-Sawalqa (2012); DeZoyasa and Rudkin (2010); Kumar (2011); Obamuyi (2013) and Onoh et al. (2017) support this assertion by finding volume of shares traded are influenced by actions of investors with different level of information, most especially mandatory information. Studies by Abiodun (2012); Dung (2010); Loureiro and Taboada (2012) and Oyerinde (2011) also found significant relationship between disclosed information and share values. Nevertheless, studies by Anderson and Epstein (1995); Baker and Haslam (1973; Farj et al. (2016) found information disclosed in the annual reports as a basis for building investment decisions to be moderately but of no significant effect. In the same vein Cortijo and Yezegel (2005) and Saeedi and Ebrahim (2010) also found declining relationship between accounting information disclosed and stock value.

The ex-control variable (model 1a) adjusted $R^2$ of 0.07 indicates a weak explanatory power of this model, which implies that the model explains only about 7% of the variation in volume of shares traded. Nevertheless, when control variables were introduced, the explanatory power improved to 0.79; hence, the role of firm characteristics is much in affecting the relationship between mandatory disclosures and volume of shares traded. Similarly, the ex-control variables (model 2a) adjusted $R^2$ of 0.0591 is also comparable to 0.07 found under the volume of shares. This also indicates weak explanatory power as the model explained only about 5.91% of variations in market value of shares. However, when control variables were introduced, the explanatory power improved to 84.77% compared to 79% reported under the volume of shares traded. Similar to our conclusion under the volume of shares traded, the role of firm characteristics is high in affecting the relationship between mandatory disclosures and market value of shares.

This study is of importance to investors, regulators and other stakeholders as it provides them with empirical evidence on the relationship between mandatory disclosures and investment decisions undertaken by individual investors. Our study is limited to consumer goods sector of Nigerian economy. It also provides a benchmark for measuring level of compliance by each entity and, thus, serves as corrective measures on subsequent transactions between investors and firms.

6.0 CONCLUSION AND RECOMMENDATION

This study focused on the effect of accounting information disclosure on investment decisions in consumer goods sector in Nigeria. This was achieved in three stages: firstly an association was established between and among the variables and it was established that while RinDI has a direct and positive association with liquidity, IFRSDI has inverse and little connection with liquidity. Secondly, the pattern of the movement in dependent variable was reviewed and it was observed that improvement in the trend was short-lived post adoption period, as the downward trend in the movement of MV between 2014 and 2016 and in the movement of VS between 2015 and 2016 evidence non-significance of IFRS adoption in consumer goods sector after the first 2 years of convergence to IFRS by Nigeria. Thirdly, the result of regression analysis shows that both IFRSDI and RinDI have positive and significant relationship with investment decisions in consumer goods sector in Nigeria. It was concluded that accounting information disclosures determine investment decisions in consumer good sectors in Nigeria. We recommend that investors should always demand adequate disclosure of accounting information by corporate entities before investing in those companies.

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