GREEN PRACTICES AND STOCK MARKET PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA: A DYNAMIC PANEL DATA ANALYSIS APPROACH

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ABSTRACT

This study investigates the impact which green practices and stock market performance of deposit money banks (DMBs) in Nigeria. The period which the study covers is from 2012 to 2019 of twelve banks quoted in the Nigerian Stock Exchange as information about them are extracted from their financial statements. The dependent variable is stock market performance proxied by market price per shares while the independent variables are environment reporting, human rights, women's economic empowerment, financial inclusion, capacity building and governance. The results of the Dynamic Panel Ordinary Least Squares reveal that lag1 of market price per share (MPS (-1)) and human rights (HR) are positively and statistically significant with stock market performance. While capacity building and women's economic empowerment relationship with MPS are positively insignificant, that of environment reporting, financial inclusion and governance with MPS are negatively insignificant at the 5% level. We gave some recommendations.
Keywords: Deposit money banks, green practices, market price per share.

INTRODUCTION

For over forty (40) years now, an increasingly worrying issue which has received great attention from various stakeholders (citizens, government and industry) is the issue about our environment. Carbon Disclosure Project Worldwide (2017, as cited in Kumar & Dua, 2021) stated that just a hundred of large enterprises have contributed more than 70% of the world's greenhouse gas emissions. Since 1972 when the first United Nations Conference on the Human Environment (UNCHE) was held; to 1980 when the concept of sustainable development appeared for the first time in World Conservation Strategy (WCS); to 1987 when "Our Common Future" Report (Brundtland Report) took place, to 1992 Earth Summit and until now, one important issue facing the world is sustainable development. Sustainable development was defined in Brundtland Report as "a development mode that fulfills the needs of present generation without compromising the ability of future generations to fulfill theirs."

It can be seen as the ability to ensure that the quality of the Earth's natural systems is maintained so as to meet the needs of this present generation without hurting the ability of future generations to meet their own needs (Ambec & Lanoie, 2008). Starik and Marcus (2000) listed various reasons why green management matters, of which are: wisdom and responsibility in the use of natural resources**;** protection of the environment; minimization of the amounts of air, minerals, water, energy and other materials used in the final goods people consume; respect for the calmness,

tranquility, and beauty of nature; elimination of harmful toxins in the communities and workplace; reduction of greenhouse gas emissions and avoidance of those activities that may damage the climate irrevocably.

Voinea et al. (2020) noted that greenhouse gas emissions, waste and toxic substance disposal, an ever growing population and the use of natural resources all have a strong effect on climate change just as expectations for future welfare improvements will definitely impose higher constraints on the world's resources. Zamil and Hassan (2019) pointed out how difficult but how interesting an issue to carry out a research work on environmental reporting just as plethora of studies from various countries have been done and that environmental reporting is now popular among organisations.

This growing awareness of the influence of goods and services produced on our environment has resulted in increased pressures from customers, non-governmental organisations and governments on captains of companies and industry. With these ever growing awareness of a global environmental protection, there is an overwhelming interest in the green trend of conserving the Earth's resources and protecting the environment (Sarkis & Tamarkin, 2005). Large multinational firms have been making great progress in integrating environmental concerns into their normal activities due to increasing awareness and pressure from investors customers, employees and regulators shifting from a regulatory driven reactive approach to a proactive one (Kumar & Dua, 2021).

Therefore, governments have come up with laws and other regulations which require that firms should do all possible to conserve the environment. These exert pressure on firms to improve their environmental performance which consequently improve financial performance. The improvement in financial performance is as a result of procedures in managing wastes reduction, improvement in corporate reputation, reduction in overall costs, among other factors (Hoffman 2000). Klassen and Johnson (2004) were of the view that environmental or green practices generally results in actions which reduce or eliminate waste, pollution, hazardous materials; emphasize compliance; review supplier environmental performance and lead to increases in financial performance.

STATEMENT OF THE PROBLEM

Reddy and Gordon (2010) in Zamil and Hassan (2019) observed that KPMG (2008) reported that about 80% of the world's largest 250 firms issued ethical, social and environmental reports. KPMG (2020) key indicators for sustainability reporting show that 80% of firms worldwide now report on sustainability, of which North Americans firms have the highest of 90%. According to the rating of a team of environmental experts at Yale University and Columbia University, Nigeria is ranked as follows for the year 2020 as seen in their Websites: Environmental Performance Index (100), Environmental Health (159), Air Quality (152), Water and Sanitation (168), among other factors, out of 180 countries. This, of course is quite expected. The activities of oil and gas firms in Niger Delta of Nigeria; food and beverages, tannery, ceramics, cement and engineering sectors of Bangladesh; the pharmaceutical sector of Pakistan; the electronic sector of Brazil, etc. (Zamil & Hassan, 2019).

The above negative impact of firms prompted great anger and concern from society which has taken a much more active stands on the need for firms to implement green practices. Sheikh and

Odock (2019) noted that in terms of emissions and pollutions, the banking sector used to be seen as environmental friendly but presently, global studies show that the industry is now an epicenter for E-waste production every year just as ever increasing range of obsolete recording devices, electronic devices and automobile electronic devices are found there. The Central Bank of Nigeria (CBN) in 2012 initiated the Nigerian Sustainable Banking Principles which are:

Principle 1 | Our Business Activities1: Environmental and Social Risk Management
Principle 2 | Our Business Operations2: Environmental and Social Footprint
Principle 3 | Human Rights
Principle 4 | Women's Economic Empowerment
Principle 5 | Financial Inclusion
Principle 6 | E&S Governance
Principle 7 | Capacity Building
Principle 8 | Collaborative Partnerships
Principle 9 | Reporting

It was clearly stated that these nine (9) principles have been developed by, and for the banking sector in Nigeria to signal our commitment to economic growth that is environmentally responsible and socially relevant. As financiers and business leaders, we recognize the role that we can play to deliver positive development impacts to society whilst protecting the communities and environments in which we operate. We will regularly review and report on our progress in meeting these principles at the individual institution and sector level. We, therefore, want to test if these principles have any significant relationship with stock market performance in the Nigerian banking sector. The main objective of this study is to investigate the impact of green practices and stock market performance of deposit money banks in Nigeria. The specific objectives of this research include to:

   a) ascertain the extent to which environment reporting impact on stock market performance of deposit money banks in Nigeria.
   b) examine the effect of human rights impact on stock market performance of deposit money banks in Nigeria.
   c) assess the impact of women's economic empowerment impact on stock market performance of deposit money banks in Nigeria.
   d) determine whether financial inclusion impact on stock market performance of deposit money banks in Nigeria.
   e) establish if capacity building impact on stock market performance of deposit money banks in Nigeria.
   f) evaluate the extent to which governance impact on stock market performance of deposit money banks in Nigeria.

THEORETICAL REVIEW

This study is founded on ecological modernization theory (EMT). According to Andersena and Massa (2000), two German political scientists, Huber (1982, 1985) and Jänicke (1984, 1988) coined the term *okologische Modernisierung*, meaning ecological modernization, in the 1980s. EMT has its origin first in sociological theory and then in policy and organizational theories (Spaargaren & Mol, 1992). EMT is one of the social theories that has contributed immensely and as well profited from the maturation of environmental social sciences. EMT has generated many

criticisms and questions but both opponents and proponents have co to term that EMT is a veritable useful vehicle for coordinating some of the most urgent contemporary debates environmental social sciences (Mol & Spaargaren, 2000). Its aim is to achieve environmental protection and industrial development through modernity or the development of innovation and technological breakthrough (Jänicke, 2008).

With environmental modernization, firms are able to engage in environmental planning and to restructure production process in such a way that minimizes the negative environmental impact by major manufacturers The end result according to Jänicke (2008) observations was that firm which decided to ecologically go green with respect to their business practices in Germany benefited from environmental performance and improved economic performance. EMT stands for the possibility of developing a set of new and integrated technologies which will be able to reduce the consumption of raw materials, reduce the emissions of various pollutants and creating innovative and competitive products which will impact positively on the existing institutions expected to bring about structural changes in production and consumption (Andersena & Massa, 2000). Finally, Andersena and Massa (2000) were of the view that even though the EMT was mostly an academic exercise, it has over the years had a number of policy ramifications with respect to environmental management systems, green accounting and cleaner technology development.

EMPIRICAL REVIEW

Kumar and Dua (2021) conducted a research study to verify whether environmental management practices have had any impact on financial performance in India. While profitability was the dependent variable, environmental management was the independent variable. The researchers comprehensively developed a dataset for 459 large Indian firms listed in New Delhi Stock Exchange from 2008 to 2018. The results of the dynamic and static regression models showed that environmental management and firm profitability were positively and statistically significant.

Phan et al. (2020) examined the relationship between a firm's sustainable development practices and its financial performance. Mixed method survey was used to obtain data from 389 textile firms in Vietnam. The independent variable in this study was sustainable development practices which was represented by environmental practices, social practices in the workplace and social practices in the community, while the dependent variable was financial performance which was proxied by profitability and growth. The findings of the Partial Least Squares Structural Equation Modeling revealed that sustainable development practices positively affected financial performance.

Jannah et al. (2020) analyzed the influence of ISO 9001 quality management system, ISO 45001 safety management system and ISO 14001 on financial performance of manufacturing industries. Data for the study were obtained from an online electronic questionnaire distributed to 220 finance managers of manufacturing firms online using a snowball sampling system. The results of the data analysis showed that ISO 9001, ISO 45001 and ISO 14001 influence financial performance.

Liu et al. (2019) empirically investigated the micro-institutional costs of air pollution. Factors like environment, ownership structure, the demographic traits of the board of directors' chairman, and employees were used in this study. The results of the study shows that in China, firms' internal control quality is significantly and negatively associated with these verity of air pollution in its home city and that the most significant effects of air pollutants are those of PM2.5 and SO,

confirming that air pollution incurs micro-institutional costs. The study further revealed that micro-institutional costs of air pollution and identified the mechanisms by which air pollution affects the quality of macroeconomic development.

Sheikh and Odock (2019) determined the adoption of green operations practices and their influence on the financial performance of commercial banks in Kenya. Primary and secondary sources of data were used in the study. Secondary data on return on investment (ROI) was obtained from published financial reports of the Kenyan banks. Primary data was collected using a structured questionnaire that was administered through the 'drop and pick later' method. The finding of the correlation analysis showed an insignificant positive relationship between green operations practices adoption and financial performance.

Zamil and Hassan (2019) examined the impact of environmental reporting on the financial performance of Fortune 500 firms from 2013 to 2017. The dependent variable used was financial performance while the independent variables were reduction in greenhouse gas emissions, reduction in waste, and reduction in water consumption. The findings of the descriptive statistics, correlation, and regression analysis indicated that reduction in nominated variables such as greenhouse gas emissions and water consumption had a positive and significant impact on financial performance while reduction in waste had a negative and significant impact on financial performance.

Purnomo and Widianingsih (2019) analyzed the influence of environmental performance and CSR disclosure on financial performance with the influence of environmental performance on financial performance by using the CSR disclosure as a moderating variable. Secondary data over the period from 2006-2010 collected from the annual report of companies listed in Indonesia Stock Exchange (IDX) was used. The dependent variable was net profit margin while the independent variables were environmental performance proxied PROPER rating and CSR Index. The results of the Ordinary Least Squares regression indicated that (1) environment performance has a positive effect on financial performance; (2) CSR disclosure was not able to strengthen the influence of environmental performance on financial performance.

Okegbe and Ofurum (2019) determined the effect of environmental management accounting on corporate performance in Nigeria. Annual secondary data over the period from 2011-2017 extracted from the financial reports of listed consumer goods in the Nigeria Stock Exchange were used in the study. The dependent variable in this study was return on asset (ROA) while the independent variables were environmental restoration cost, pollution prevention cost and environmental protection cost. The OLS regression analysis showed that environmental restoration cost, pollution prevention cost and environmental protection cost have effect on return on assets.

Akhtar (2019) explored the drivers of GSCM initiatives and their effect on the performance of manufacturing companies in Pakistan. The three driver social pressure, competitive pressure, and institutional pressure were chosen as the enablers of GSCM initiatives in Pakistan's manufacturing sector. The data was collected through a questionnaire of 263 responses distributed among managerial level employees. The results of the partial least squares structural equation modeling (PLS-SEM) method showed that institutional pressures were the most significant enablers towards

competitiveness and instituting GSCM initiatives while social pressures and competitive pressures had a substantial impact.

Al-Ghdabi et al. (2019) tested the impact of the green supply chain management practices on corporate image of chemical industries in Jordan. Primary data collected through questionnaires administered to 250 mangers of chemical companies in Jordan were used in the study. The results of the study showed that green supply chain management practices had a direct impact on corporate image.

Abba et al. (2018) examined the effect of environmental management reputation on financial performance in Nigeria. Data for the study was collected from 11 Nigerian companies operation in environment sensitive industries for a period of five years. The dependent variable was return on asset (ROA) while the independent variable is environment management reputation with size, audit quality, ownership, debt and age of fixed asset as control variables. The OLS regression analysis showed that reputation had a significant positive effect on ROA.

Bukit et al. (2018) investigated the effect of firm characteristics and green investment on financial performance. The researchers used annual reports of firms listed in the Indonesia Stock Exchanges from 2009 to 2014. The OLS results indicated that firm size, foreign ownership, industry profile, and frequency of audit committee meeting significantly influenced firm performance.

Neeveditah et al. (2017) examined the relationship between environmental management practices and financial performance in Mauritius. Annual secondary data sourced from the selected listed companies over the period 2011 to 2014 was used. The dependent variable was financial performance while pollution control, waste reduction, recycling, cutting use of energy, cutting paper consumption and carbon footprint reduction were the independent variables. The OLS results revealed that all the variables of environmental management practices except cutting use of energy were insignificantly related with financial performance.

Miroshnychenko et al (2017) empirically examined the impacts of corporate green practices on financial performance. Green supply management, pollution prevention, green product development and ISO 14001 adoption were obtained for a panel of 3490 listed firms from 58 countries spanning a period of 13 years. The OLS results indicated that while pollution prevention and green supply chain management were the major environmental drivers of financial performance, green product development was found to be a secondary determinant of financial performance.

METHODOLOGY

The study uses the ex-post facto research design, otherwise called the descriptive or correlational research design, to investigate the relationship, if any, between green practices and share prices in Nigeria. We developed a new dataset based on Central Bank of Nigeria (CBN) nine (9) principles for the Nigerian Sustainable Banking Principles.

The population of this research comprises selected deposit money banks (DMBs) quoted on the floor of the Nigerian Stock Exchange (NSE). Secondarily sourced data obtained from twelve (12) of those banks' annual reports over the period 2012 to 2019, making a total number of 96 firm-year observations, is used in this study.

Table1: Measurement and Definitions of Variables

S/N	Variables Names	Definitions	Types	Measurements
1	MPS	Market Price Per Share	Dependent	Stock Market Performance.
2	ENV	Environment Reporting	Independent	It takes the value of **1** if reported, otherwise **0**
3	HR	Human Rights	Independent	It takes the value of **1** if reported, otherwise **0**
4	WEE	Women's Economic Empowerment	Independent	It takes the value of **1** if reported, otherwise **0**
5	FIN_INC	Financial Inclusion	Independent	It takes the value of **1** if reported, otherwise **0**
6	CAP B	Capacity Building	Independent	It takes the value of **1** if reported, otherwise **0**
7	GOV	E&S Governance	Independent	It takes the value of **1** if reported, otherwise **0**

The functional equations of the working capital management model is stated as:

MPS = f (ENV, HR, WEE, FIN_INC, CAP_B, GOV).   (1)

The functional testable models will be derived as:

$MPS = \beta o + \beta_1 ENV + \beta_2 HR + \beta_3 WEE + \beta_4 FIN\_INC + \beta_5 CAP\_B\ \beta_6 CGOV + \varepsilon_1$ (2).

Where the definitions are as stated in Table1 above.

$\beta1, \beta2, \beta3, \beta4, \beta5, \beta6$ are the beta coefficients of the independent variables. From this study, we expect $\beta1$ to $\beta6$ to be greater than zero.

ε_1 = Error term

Since we are using panel data, the models are specified in the Dynamic Pooled Ordinary Least Squares (DPOLS) model form below:

$MPS_{it} = \beta o + \beta_1 MPS(-1)_{it} + \beta_2 ENT_{it} + \beta_3 HR_{it} + \beta_4 WEE_{it} + \beta_5 FIN\_INC_{it} + \beta_6 CAP\_B_{it} + \beta_7 GOV_{it} + \varepsilon_{1it}$ (3)

Method of Data Analysis

Data collected were analyzed using EViews 10+ in the following order: Descriptive statistics, Estimation of the regression models and performance of some diagnostics tests.

Regression Models Estimation
Table 4a
Dependent Variable: MPS
Method: Panel EGLS (Period SUR)
Date: 04/19/21   Time: 15:50
Sample (adjusted): 2013 2019
Periods included: 7
Cross-sections included: 11
Total panel (unbalanced) observations: 71
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPS(-1)	0.945919	0.016410	57.64260	0.0000
CAP_B	0.234375	0.609122	0.384774	0.7017
ENV	-0.649432	0.462534	-1.404073	0.1652
FIN_INC	-0.001099	0.438850	-0.002505	0.9980
GOV	-0.168346	0.472784	-0.356073	0.7230
HR	1.288634	0.478036	2.695683	0.0090
WEE	0.243158	0.576068	0.422099	0.6744
C	-0.576273	1.000915	-0.575746	0.5668

Weighted Statistics			
R-squared	0.987190	Mean dependent var	3.683894
Adjusted R-squared	0.985767	S.D. dependent var	8.808697
S.E. of regression	0.882438	Sum squared resid	49.05790
F-statistic	693.5778	Durbin-Watson stat	2.123567
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.852358	Mean dependent var	7.680845
Sum squared resid	920.6672	Durbin-Watson stat	2.173469

DISCUSSION OF RESULTS

Table 4a above show the regression estimation results of the relationship between green practices and stock market performance of deposit money banks (DMBs) in Nigeria.

For the MPS model, the Adj R^2 = 0.986 which means that about 98.6% of systematic variations in stock market performance (MPS) is accounted for by MPS (-1), CAB_P, ENV, FIN_INC, GOV, HR, WEE. The remaining 1.4% can be explained by other factors not captured by our model. The F-stat= 694 confirm that there is a joint significant linear relationship between the variables (dependent and independent).The D.W statistic indicates that there is unlikely that a serial correlation which may render the results spurious exists in the residuals.

A look at the independent variables show that lag1 of market price per share (MPS (-1)) and human rights (HR) are positively and statistically significant with stock market performance both at 1%

level. While CAB_P and WEE relationship with MPS are positively insignificant at the 5% level, ENV, FIN_INC and GOV relationship with MPS are negatively insignificant at the 5% level,

Residual Diagnostic Tests of No Cross Sectional Dependence
An increasing number of literature on panel-data conclude that panel-data models are likely to substantially exhibit cross-sectional dependence in the errors. This may be due to the presence of common shocks and some other unobserved components that may eventually become part of the error term. According to De Hoyos and Sarafidis (2006), the past few decades have witnessed an ever-growing economic and financial integration among countries and this signifies strong interdependencies among cross-sectional units. Thus, there is the tendency for individuals to respond in a similar manner to common "shocks", or some common unobserved factors due to neighborhood effects, herd behavior, social norms and genuinely interdependent preferences (De Hoyos & Sarafidis, 2006). Rodríguez-Caballero (2016) also noted that if cross-sectional dependence exists in a panel data model, it can complicate statistical inference and any estimators that do not take such into account could be inconsistent even if the number of cross section dimension *N* is large with a finite time dimension *T*.

The above necessitate us to test for cross-sectional dependence as such testing is very important in fitting panel-data models. The results of the cross sectional dependence tests in Table 4b below show that all test statistics-Breusch-Pagan LM, Pesaran scaled LM and Pesaran CD-accept the null hypotheses of no cross sectional dependence in the residuals. The normality test result is in the Appendix.

Table 4b: Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in
weighted
Residuals
Equation: Untitled
Periods included: 7
Cross-sections included: 11
Total panel (unbalanced) observations: 71
Note: non-zero cross-section means detected in data
Test employs centered correlations computed from pairwise samples

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	55.79487	55	0.4447
Pesaran scaled LM	0.075787		0.9396
Pesaran CD	1.392054		0.1639

CONCLUSIONS AND RECOMMENDATIONS

In this study, we empirically investigate the impact which green practices and stock market performance of deposit money banks in Nigeria over the periods from 2012 to 2019. The results of the dynamic panel ordinary least squares show that lag1 of market price per share (MPS (-1)) and HR are positively and statistically significant with stock market performance both at 1% level. All the other variables are statistically insignificant. Overall results reveal that green practices of deposit money banks in Nigeria over this period of study does not influence stock market

performance. Based on the results of our study, we recommend that there should be laws to compulsorily regulate the activities of banks with respect to full disclosure of how much is spent on green practices; that incentives and punitive measures should be imposed for failure to comply with full disclosure and that banks should be made to regularly carry out environmental audits so as to ascertain the effectiveness of operations undertaken on financial performance of banks.

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