



# DO ETHICAL FACTORS INFLUENCE THE STOCK RETURN AND VOLATILITY PERFORMANCE OF LISTED FIRMS IN NIGERIA?

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**Abstract:** Ethically-minded firms usually have stronger market and investment-propelling force in the eyes of the investing public than unethical ones given their social acceptance and public good will. Against this backdrop, this study empirically investigates whether ethical factors influence return and volatility using evidence from an ethical and socially responsible publicly listed firm-Unilever Nig Plc, compared with a non-ethical and very low socially responsible listed firm, Guinness Nig Plc. The long memory and volatility asymmetric properties based on GARCH and asymmetric GARCH approaches are utilized for quarterly data covering 2008Q1- 2022Q4. The results show that ethical and socially responsible firms have higher returns and lower volatility compared to the non-ethical firm, and by implication, are less affected during financial crises, compared to unethical and conventional investments. This is attributable to the positive perception, credibility and confidence by investors on the ethical company, relative to the non-ethical firm. The variance process of the ethically listed financial firm is mean-reverting, as the coefficients on ARCH and GARCH effects sum to less than one, while that of the non-ethical counterpart appears permanent, an indication that shocks tend to be persistent. The paper recommends sound ethical requirements to drive stock performance, especially for a large market like Nigeria.

**JEL Classification:** G11, G12, G14, G17, C58

**Keywords:** Ethical financial firms, Stock Volatility, Long-memory effects, Asymmetric properties, GARCH

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## 1. INTRODUCTION

Ethical finance issues have dominated theoretical and empirical research in the finance literature in recent times. Essentially, investments in the portfolios of ethically and socially responsible firms are an important issue in mainstream behavioural finance. The concept of ethically responsible in organizations connotes a high sense of morality and high number of socially responsible activities. These business organizations conduct their activities in line with the ethos, code, tenet, demands to save, protect the environment and improve the conditions of the host community, and advancing new ways to enhance and elevate the level of corporate governance and transparency (Diaz, 2016).

The growing cases of ethical issues in organizations in recent time made socially responsible investments (SRIs) more appealing to the greater number of discerning stakeholders. These issues were intensified by the emergence of the Sub-prime Mortgage Crisis or the Great Recession in 2008, in which financial services companies were found to be at the centre of the problem. Mounting criticisms arose against big financial institutions like the American International Group (AIG), Lehman Brothers and Goldman Sachs pertaining to the thoughtless and irresponsible manner with which they carried out their businesses, necessitating the clamour for both internal and external stakeholders in having more honest and transparent and environmentally conscious reporting standards, especially in the financial services industry (Diaz, 2016).

For instance, an active external stakeholder in business ethics, the Ethisphere Institute, a non-profit organization that advances the standards of ethical business practice, in February 2019, released the list of 128 World's Most Ethical Companies. The list identifies enterprises that go beyond the legal requirements of conducting business; promote ethical business practices in both inside and outside of their organizations; and help shape future industry standards by being role models of best practices. The list covered 50 industries and 21 countries, and named 13 financial services companies that have high standards in five key categories: 1) ethics and compliance; 2) corporate citizenship and responsibility; 3) culture of ethics; 4) innovation and reputation; and governance and leadership. The World's Most Ethical Companies is based upon the Ethisphere Institute's Ethics Quotient (EQ) framework, which offers a quantitative assessment of a company's performance in an objective, consistent and standardized manner. All firms that participate in the assessment process receive an Analytical Scorecard providing them with a benchmark of how they stack up against leading organizations against

definitive criteria of core competencies as highlighted above. In 2020, 131 companies were recognized for setting the global standards of business integrity and corporate citizenship. The honourees span 21 countries and 50 industries and includes 14 first-time honourees and 7 companies that have been named to the list every year since its inception in 2015.

For Nigerian firms, no one was on the list. This does not however imply that there are no companies undertaking ethical initiatives and making progress in SRI and CSR in Nigeria. For example, as noted by Euromonitor International (2020), “CSR has certainly become standard practice in Nigeria and several manufacturers of “super brands” use it as a means of building a strong foundation within the country, portraying themselves as part of the community within which they operate. For example, PZ Cussons Nigeria Plc, Cadbury Nigeria Plc and Unilever Nigeria Plc are all involved in CSR programmes, promoting their actions through annual reports and press releases. These companies have global perspective and have practiced CSR in their markets around the globe in different dimensions.

There is paucity of empirical evidence on return and volatility performance between ethical and unethical firms in Nigeria, as this aspect seems not to have received noticeable empirical attention in the literature.. To this end, this study seeks to investigate the performance of ethical and socially responsible firm listed on the Nigerian Exchange Limited (NGX) in terms of returns and volatility (risk) with that of low ethical-based firm. Such analysis will be of immense value to fund and portfolio managers, investing public, market regulators, and government and policy makers.

In attempting to investigate whether ethical factors influence the stock and return volatility of listed firms in Nigeria, the following specific objectives are developed to achieve the aim of this study

- (i) compare the stock series of ethically-minded and non-ethical firms in Nigeria.
- (ii) examine which of the firm has higher returns and steadier (or lower) stock price volatility.
- (iii) Identify the presence of the leverage effects and volatility asymmetry phenomena in the time-series of ethical and non-ethical companies .

Aside this introductory Section, the rest of the paper is structured as follows: Section 2 presents a review of the pertinent literature and Section 3 contains the methodology, model and data. The empirical results and discussion is presented in Section 4 and Section 5 concludes the paper with some evidence-based policy perspectives

## 2. LITERATURE REVIEW

There is no single universal definition for the term “ethical or socially responsible investment as the concept has been subject to various conceptualization at different times. The concept has been variedly described as ethical investment, responsible investment, socially responsible investment, screened investment, sustainable investment or environmental, social and governance. Chelawat and Trivedi (2013), define ethical investment as ‘integrating investment decisions with concerns for the environment and society’. It is generally about management of financial resources in a responsible way that maximizes financial returns together with social and environmental good.

Ethically responsible firms explains the extent and type of perceptions and concern a firm has towards the operating environment in that firms/ organizations should operate within the ethos/tenets/codes/principles/moral beliefs norms, value and expectations of the general public. Expounding this, Chelawat and Trivedi (2013) posit that ethical issues are no longer the domain of a marginal group of investors in the financial community, disconnected from mainstream investment activity. If the general investment trends are observed on a global scale, it can be noticed that an increasing number of investment analysts and consultants are recognizing the importance of these extra-financial criteria and integrating them into investment decision making.

In the literature, the benefits of patronizing ethical businesses have been found by Bercicci, Hockerts and Wagner (2001), who find evidence that SRIs experience positive returns and are used as proxy for the good overall performance of firms. The finding is corroborated by the claim of O’Rourke’s (2003) that the performance of ethical mutual funds exceeded the market averages of S&P 500, when considered against the backdrop of inception.

Kreander, Gray, Power and Sinclair (2005) compared European ethical and non-ethical mutual funds. They find no significant differences between return performances, and concluded that neither fund could accurately time the market. Nevertheless, some studies such as Bauer et al., (2006) show that returns of SRI funds are performing below expectation compared to non-SRI counterparts. investments.

Bauer, Kodejik and Otten (2006), find evidence that the returns of SRI funds actually underperformed on account of the excessive screening fees. Bauer et al. (2005), for instance, find no significant differences in risk-adjusted returns among ethical and conventional funds of advanced countries like Germany, UK, and the US.

Reenebog, Jenke and Chendi (2008) find that SRI funds in European, North American, and Asia-Pacific portfolios have stronger performance than the comparison local portfolios. Further evidence shows that SRI funds in France, Ireland, Sweden, and Japan performed below conventional market portfolios.

Pitluck (2008) investigate the dilemma of why the inclusion of non-financial social justice or religious criteria by professional fund managers gained prominence in Malaysia and nevertheless, has had comparatively slight impact in the United States stock market. Drawing evidence from over 125 ethnographic interviews with financial workers in Malaysia, he concludes that moral investment behaviour in stock markets is shaped primarily by 'market structure' rather than by 'mandates.' In both countries mandates are a weak form of social control of fund manager's behavior. This is because mandates are not principal-agent contracts but are primarily marketing exercises and cultural tools.

The study by Hong and Kacperzyk (2009) came out with distinctive findings that sin stocks such as tobacco and alcohol have higher expected returns during recessions, by virtue of the tendency of people to indulge in vices during miserable times. Hayat and Kraeussl (2011) find that Islamic equity funds are underperformers in comparison to the usual equity benchmark funds. The study also concluded that Islamic equity funds performed worse in the recent financial crisis. Neutral findings in the literature are also evident.

### **Responsible and Ethical**

The study by De and Clayman (2014) find evidence that asset managers with high environment, social and governance (ESG) ratings experience higher portfolio returns over low ESG ratings. Further findings show that the benefit on CSR investment strengthens when markets are more volatile. Liu, Diaz and Ivagov (2014) utilizing ARMA-APARCH models studied return and volatility relations of the three main Thomson Reuters CSR indices, and their three major stock market indices counterparts. The findings revealed both positive and negative effects of the CSR indices on the stock indices. The paper concludes that both indices have typical investment characteristics and are not immune to bad economic fundamentals and other similar negative shocks.

Diaz (2016) compares return and volatility performance of ethical and non-ethical publicly listed financial companies through their long-memory and volatility asymmetry properties, using evidence from Taiwan. They find

that the volatility of the daily stock price returns for both groups of financial companies are useful in predicting future values. The paper further finds evidence of asymmetric volatility response properties that are not immune to negative shocks and economic downturns. Ethical financial companies are found to have higher returns and lower volatility than their non-ethical counterparts do. The paper recommends fund managers and investors to continuously include ethical investment instruments in portfolio related to corporate social responsibility initiatives.

Orcek (2021) utilizing evidence from a sample of Spanish ethically and non-ethically –minded firms investigate the investment performance of ethical firms. Using volatility and returns comparison of investment over a three year period of 2014-2015, he find evidence that ethical firms have larger investment finance capacity base due to the public confidence and goodwill they enjoy, leading to larger investment subscriptions in the firm by investors.

Olofsson et al (2021) investigate the time-varying volatility and risk measures generalized of ethical and unethical investments. They utilize Bayesian Markov-switching generalized autoregressive conditional heteroscedasticity (MS- GARCH) technique to estimate the Value-at risk (VAR) and expected shortfall (ES) of ethical and unethical return indices, which enables the identification of the differences between ethical and unethical investments. The findings reveal that ethical investments are less affected during global financial crises, compared to unethical and conventional investments. In line with the findings, the authors suggest that greater investment consideration should be given to ethical firms by investors as a hedging asset for their portfolios during extreme market condition.

Yang (2022) examines and how, and the extent to which CSR affects the stock prices of virtue ethics firm in Ireland. Specifically, the study sought to analyse the real world gains and losses in applying virtue ethics character, using evidence from a soap and cosmetic company, and to demonstrate how organizational factors affect the impact of CSR on the share price of soap and cosmetic industry. Utilizing mean and volatility comparison approach, the findings indicate that ethical and unethical factors, to some extent, affect stock price in the soap and cosmetics market, The findings further indicate that ethical behaviour has a minor positive impact on stock price, with the variation not immediately noticeable., while unethical behaviour negatively impacts company's stock price directly and quickly, and hence, easily noticeable.. In view of this finding, the author concludes that unethical behaviour that

negatively affects stock prices may have to serve as signal to other businesses in dealing with management and market investment decisions.

Gao, Zhao and Sun (2022) examine the effects of investor sentiment on stock volatility, based on new evidence from multi-source data evidence in China's green stock markets. They utilized stocks from 106 firms in new energy, environmental protection, and carbon –neutral sectors, and constructed two investor sentiment proxies, internet text and stock trading data. The Internet sentiment is based on East Money Guba posts, while the trading sentiment comes from a variety of indicators of trading. They further divide the realized volatility into continuous and jump dimensions, and subsequently investigate the investor sentiment effects of different kinds of volatilities. The empirical findings show that both sentiments indices has significant positive effects on realized, continuous, and jump volatilities, where trading sentiment is the key factor. The authors examine the mediating impact of information asymmetry, captured by the volume-synchronized probability of informed trading (VPIN), on the path of investor sentiment affecting stock volatility. The results find investor sentiments to be positively associated with VPIN. By dividing the total sample around the COVID-19 pandemic, the findings show that market volatility after the COVID-19 pandemic is more susceptible to investor sentiment. The authors suggest strong policy measures to maintaining the stability of green stock markets, as well as reducing market volatility.

### **Gap (s) in the Literature**

From the review of the pertinent literature, there is paucity of empirical evidence on the returns and volatility performance comparison between ethical compliant and non-ethical compliant firms in Nigeria, necessitating this study.

## **3. METHODOLOGY**

### **3.1. Population and Sample**

PZ Cussons Nigeria Plc, Cadbury Nigeria Plc and Unilever Nigeria Plc are some of the firms that have been adjudged involved in CSR programmes, promoting their activities through various means. Nevertheless, for an explicit one-to one comparison, this study adopts a convenient sample of two firms, which are Unilever Nig Plc and Guinness Plc. Unilever is specifically chosen in this study due to the positive comments provided by Euromonitor International (2020) on its CSR and SRI activities. The firm is adjudged to



take both a consolidated and long-term approach to business in Nigeria. As such, it has added to its targeted CSR actions a more ethically- minded agenda. Its foundation's targets are focused on four critical areas: potable water, road rehabilitation, education and healthcare. The company being the largest in Nigerian in fast moving consumer goods (FMCG provides affordable, accessible and nourishing products, in addition to its detergents that assist in improving hygiene standards in the country. Unilever also supports the health and safety of its employees through various health and safety training programmes both in Nigeria and abroad. These include training and workshops on reducing / eliminating pollutants and hazards in the work environment, accident control training programmes, promoting employee safety and physical or mental health, and compliance with health and safety standards and regulations.

As a leading manufacturer of FMGC, Unilever provides cheap and healthful products while its soap and detergents assist in improving hygiene standards in the country. Unilever also strives to make its business model environmentally sustainable by sponsoring responsible palm oil sourcing and supporting the health and safety of its employees In doing this, Unilever attempts to make its business model environmentally sustainable, ethically and socially oriented by supporting the health and safety of its employees through various trainings abroad. This is a step beyond pure CSR and is in line with what other major FMCG companies are doing in developed markets.

### 3.4. Model Specification

In the context of this study, the stock returns of Unilver Nig Plc and Guinness Nig Plc are calculated using the formula for stock returns as:

$$R_t = \left( \frac{P_t - P_{t-1}}{P_{t-1}} \right) \times 100 \quad (3.1)$$

where  $R_t$  is stock returns,  $P_t$  is the stock price. In the same vein, the return of the general market performance is generated using the return on All Shares on Index (RASI) derived as;

$$RASI_t = \log \left( \frac{ASI_t}{ASI_{t-1}} \right) \times 100 \quad (3.2)$$

The volatility series for Unilever and Guinness stock price series are generated using the Generalized Auto-regressive Conditional Heteroscedasticity (GARCH model developed by Bollerslev (1986). The specific model uses is has



a first-order GARCH term and a first-order ARCH term (i.e. GARCH [1,1]) and is specified as:

$$VOL_t = X_t\gamma + \varepsilon_t \quad (3.3)$$

$$\sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad (3.4)$$

Equation (3.3) is the mean equation, whereas equation (3.4) is the variance equation.  $\sigma_{t-1}^2$  is the conditional variance it is the one-period ahead forecast variance based on past information.

### 3.5. Data

The data span the period 2008Q1- 2022. The choice of the period is hinged on the fact that it characterizes several economic and financial upheavals, such as the global financial recession (2007-2009), deep recessionary phase in Nigeria (late 2014,) and the Covid-19 pandemic (2019-2020) that would have considerably influence stock return and volatility performance of ethical and non-ethical firms, and as such, warranting an empirical investigation.

## 4. RESULTS AND DISCUSSION

### 4.1. Descriptive Statistics

Table 1 shows the stock series characteristics in terms of returns and risk (volatility) of ethical and non-ethical firms. For the ethical firm, Unilever, the mean (average) returns and volatility are 12.15 and 0.11, respectively. For the non-ethical firm, the corresponding average returns and volatility are 11.58 and 0.13, respectively. Comparably, the return/risk ratios are for the ethical and socially responsible firm, Unilever is 110.45, while that of the non-ethical firm is 89.07. Invariably, the Unilever had better performance given its CSR and SRI activities that made it more ethically-minded agenda.

All data samples also have positive kurtosis and the significant Jarque-Bera statistic, an indication of a non-symmetric distribution. The higher returns and steadier (low) stock price volatility of the ethical firm is attributed to the positive perception and confidence of the investing public, which tends to attract investors that provide them with steady investment flows. On the other hand, the lower returns and large fluctuations in stock prices of the non-ethical firm can be attributed to the undesirable perception of the investing community. The findings of higher returns in ethical investments are consistent with the earlier findings De and Clayman (2014), Diaz (2016), Olofsson et al. (2021), and Gao, et al. (2022).

**Table 1: Returns Rates and Volatility in the Nigerian Stock Market**

	<i>Mean Return</i>	<i>Std. Deviation</i>	<i>Return /Risk Ratio</i>	<i>Kurtosis</i>	<i>J-B</i>
Unilever Nig Plc	12.15	0.11	110.45	1.26	14.22
Guinness	11.58	0.13	89.07	1.35	18.75

Source: Author’s calculation: Underlying quarterly data from NSE

### 4.2. Unit Root Analysis

Table 2 illustrates the time-series properties of the stock series using ARMA and GARCH filters.

**Unit Root Stationary Test**

<i>Variables</i>	<i>ADF</i>	<i>ARMA</i>	<i>Order of Integration</i>	<i>Remark</i>
Unilever Nig Plc	-15.1667**	(1,1)	I(0)	“
Guinness Nig Plc	-14.440**	(1,1)	I(0)	Stationary

\*(\*\*) denotes significance at 5% (1%) level

Source: Author’ calculation

The Augmented Dickey-Fuller (ADF) was used to carry out the test of stationarity for the two firms. The result clear absence of unit roots in the series, given the ADF values that are significant at levels. The study utilized the basic combination of one-lag AR and one-lag MA with its corresponding Akaike Information Criterion (AIC) as filters. All stock returns have no serial correlation, based on the insignificant results of the Lagrange Multiplier (LM) test. The current study uses the ARCH-LM process to identify the ARCH effect, and the evidence showed that GARCH models could be applied in the sample, with the initial test having significant results. The asymmetric GARCH model (T-GARCH) is also estimated to investigate the existence of leverage and long memory effects.

### 4.2. Long-Memory and Asymmetric Volatility Analyses Using ARMA-APARCH and ARFIMA-FIAPARCH Models

The results of long-memory models and the asymmetric volatility properties of the two firms (i.e ethical and corporate socially responsible firm and non-ethical firm returns performance is presented and analyse in this section, as presented in Table 3. From the results, a more consistent influence of previous volatility innovations is demonstrated.

**Table 3: Long-Memory and Asymmetric Volatility Analyses Using ARMA-APARCH and ARFIMA-FIAPARCH Models**

ARMA-APARCH Models		ARFIMA-FIAPARCH Models
		Returns Volatility Gamma d-coefficient
Unilever Nig Plc	0.8064 (0.000)	-0.624 0.2083*** 1.0671 (-0.843) (0.022) ( 0.174)
Guinness Nig Plc	0.227 (0.182)	-0.1070* 0.1752** 0.0361* (0.03) (0.000) (0.042)

Note: \*, \*\*, and \*\*\* are significance levels at the 10, 5, and 1% levels respectively.

Source: Author's computation

The positive gamma parameter implies that the stocks exhibit asymmetric volatility properties; although the degree of volatility is lower in the case of the ethical firm than that of the non-ethical firm. The implication of this is that firms in Nigeria whether ethical or non-ethical are vulnerable to negative shocks, which shows that bad news intensify stock volatility than good or positive news. This is because bad news tends to generate pronounced level of irrational activities and expectations that amplifies the market shocks further. This distinctive feature is in reality, applicable to all investment instruments, and is in line with the findings of Chen (2011), Chen and Diaz (2012) and Diaz (2016), Olofsson et al (2021, Yang (2022) and Gao et al. (2022) Prior findings by Bekaert and Wu (2000) owed that negative shocks increases conditional variances in the financial markets significantly due to the high volatility feedback mechanism. Tan and Khan (2010) also buttress this finding using evidence from Malaysian stock markets during the subprime mortgage crisis.

Although returns of ethical financial companies are higher and their volatility are lower and, thus steadier, these findings suggest that fund managers should not treat ethical financial companies as safe haven portfolios in times of economic downturns, because like many other investments they are also vulnerable to negative shocks. One of the significant features of the long-memory parameter is through the d-coefficient, which determines the predictability of a given time series data. The results of the returns d-coefficient showed no long-memory properties for the ethically based firm, Unilever, due to insignificant values, while the evidence of long-memory effects were observed at the 10 percent significant level for the non-ethical firm. The finding is in sync with Olofsson et al (2021).

However, positive dependence properties were evident in the volatility d-coefficient for all the results. The findings are thus, consistent with the objective of investigating long-memory process in the stock return and volatility series. The findings provides a stark contrast to the weak-form EMH of Fama (1970) that future prices cannot be predicted by analyzing previous prices, which also means that excess returns cannot be gained in the long-run through past information. Nevertheless, analogous to this findings, empirical findings with respect to the predictability of some investment instruments using technical analysis have been found by Kang and Yoon (2007), Korkmaz, Cevik and Ozatac (2009).

## **5. CONCLUSION**

This study compares the return and volatility performance of ethical and non-ethical publicly listed firms through their long-memory and volatility asymmetry properties using the GARCH and asymmetric GARCH approaches utilizing quarterly data that span the period 2008Q1-2022Q4. The paper finds that the volatility of the daily stock price returns for both groups can be used to predict their future values. Both stock series also market fundamentals by exhibiting asymmetric volatility response properties, are not immune to negative shocks and economic deceleration. Importantly, ethical finance firms have higher returns and lower volatility than their non-ethical counterparts. By implications, ethical investments have greater resilience to domestic and externally induced and transmitted shocks, thus less affected during financial crises, compared to unethical and conventional investments. This can be explained by the positive perception of the investing public on ethical companies, which concomitantly attracts potential investor that provide stream of steady investment flows.

The variance process of the ethical firm is also non-mean- reverting, as the coefficients on ARCH and GARCH effects sum to one, indicating that shocks leading to a change in volatility appear permanent, while that of the ethically-based firm tend to revert after some time. Evidence of volatility clustering is observable in the market model results, implying the internal and exogenous variability to shocks in both firms. In terms of the long-memory properties, positive dependence on distant observations were evident in the volatility, leading to the inexorable supposition that historical values of stock returns and the the volatility can be used to predict future values. Without doubt, the existence of long-memory and asymmetric volatility properties can assist fund and investment managers, as well as traders and investors in developing

equity portfolios that can possibly that are highly-return yielding and volatility-minimizing.

In the light of the foregoing findings, it is recommended that investors properly monitor and understudy stocks over a range of period, good times and bad times in order to arrive at the optimal decision on which to invest in as ethical and socially responsible ethical firms, as well as the non-ethical counterparts both are vulnerable to negative shocks. In this regard, a performance index and comparison analysis is imperative for sound investment decisions. It is also recommended that fund managers increase ethical financing and corporate social responsibility (CSR) related investments in their equity portfolios, since they create positive public perception and corporate image that tend to attract larger pool of investors. Strong institutional and regulatory structures, as well as appropriate monitoring and supervision of listing and trading of stocks are also important to keep the market stable, viable and efficient.

### *Further Studies*

Future studies in should examine the effects of non-quantitative factors involving psychological and behavioural perception variables, such as investor sentiments in the determination of return and volatility properties of ethical and socially responsible firms compared to that of the non-ethical counterparts.

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