



## Investors' Psych and Stock Return in Nigeria during the Covid-19 Pandemic Era

**Segun Kamoru Fakunmoju**

Lagos State University, Nigeria | e-mail: [segun.fakunmoju@lasu.edu.ng](mailto:segun.fakunmoju@lasu.edu.ng)

**Bello Ibrahim Abdullahi**

University of Ilorin, Nigeria | e-mail: [abibrahim@unilorin.edu.ng](mailto:abibrahim@unilorin.edu.ng)

**Oketoyin Abraham Gbadebo**

Osun State University, Nigeria | e-mail: [abraham.gbadebo@uniosun.edu.ng](mailto:abraham.gbadebo@uniosun.edu.ng)

Volume 13 No 1 (2023) | ISSN 2158-8708 (online) | DOI 10.5195/emaj.2023.284 | <http://emaj.pitt.edu>

### Abstract

Investors' attitudes were severely altered by the Covid-19 crisis, which had an intolerable effect on volatile returns in Nigerian stock market and other stock markets worldwide. Psychological trauma was experienced by stock investors due to the inability to foresee returns following the worldwide shock of Covid-19 and the subsequent drop in stock investments brought on by the unpredictability of macroeconomic behavior. This study analyzed the link effect of investor psyche on stock returns in Nigeria between March 2019 and December 2022. For this research, Sentiment Index (SMI) model was employed for the connection between investors psyche and returns on the Nigerian stock market. It was found that, investors psyche during Covid-19 pandemic negatively affected stock returns, resulting from negative concerns about their survival and financial security than the stock market, thus triggered sharp decline in stock investment. Thus, study concluded that Covid-19 outbreak impacted stock returns negatively. The research recommends that the Nigerian stock exchange commission should increase disclosure of market information, which is related to the magnitude and potentials of stock returns and degree of volatility at all times. The concerned volatility and potentials during the Covid-19 era were also influential to enhance investors' confidence.

**Keywords:** Covid-19 Pandemic, Investors' Psych, Nigerian Stock Market, Stock Return, Prospect Theory



*New articles in this journal are licensed under a Creative Commons Attribution 3.0 United States License.*



This journal is published by the [University Library System](#) of the [University of Pittsburgh](#) as part of its [D-Scribe Digital Publishing Program](#), and is cosponsored by the [University of Pittsburgh Press](#)

# Investors' Psych and Stock Return in Nigeria during the Covid-19 Pandemic Era

**Segun Kamoru Fakunmoju**  
**Bello Ibrahim Abdullahi**  
**Oketoyin Abraham Gbadebo**

## I. Introduction

The stock market is vital for raising capital for publicly traded companies worldwide. Moreover, the stock market is a crucial part of the economy and a significant revenue generator for traders and investors. Therefore, any intelligent individual investor must be able to mentally calculate how to maximize their profits on stock market investments. Unfortunately, however, the investor psyche is agitated by the age of the worldwide pandemic (Covid-19 pandemic), resulting in skewed judgement concerning the market analysis of indexes (Naseem, Mohsin, Hui, Liyan, & Penglai, 2021; Raifu, Kumeka, & Aminu, 2021).

There has been widespread mental distress among investors in industrialized, emerging, and developing stock exchange markets since the start of the Covid-19 epidemic. In this context, investor anxiety is a symptom of a broader pattern of internal (worries, increased anxiety, dysthymia) and external (economic, political, social) psych imbalance (anxiety, tension, fear, unpleasant experiences, or occurrences). Similarly, Bagus, Pena-Ramos, and Sanchez-Bayon (2021) noted that mass hysteria, PTSD, panic attacks, OCD, and GAD resulted from the psych effect of Covid-19, which in turn led to a misalignment of market information with global market reality and a consequent reduction in expected stock returns.

One of the goals of global investors is to achieve a specific rate of return on their stock investments, but the worldwide lockdown caused by Covid-19 waves made this goal more challenging to achieve. Most corporate leaders and stock market investors spent their time working more and more. However, they spent much of Covid-19 at home, as concerns about the status of the financial markets, the pressure to make investment decisions, and the mental health of family members kept them from venturing out (Li, Wang, Xue, & Zhao, & Zhu, 2020). Everything in life, including people's health, are jeopardized by the Covid-19 explosion. All nations' economies will be affected by the continuing health of international markets for stocks and shares of financial institutions (Huang & Zheng, 2020; Wang, Yang, & Li, 2022). Investor psychology (emotions) and the degree to which an individual is optimistic or pessimistic about the future value of stocks may shift as a person integrates into a particular social structure. Because of the extreme

swings in market sentiment (mood) throughout the pandemic, stock prices or returns plummeted in most countries worldwide.

Investors' emotional and psychological thinking were adversely skewed towards sound criteria for investment selection due to the economic lockdown, mobility restrictions, and closing of offices and institutions during the Covid-19 outbreak. As a result, stock investors became more cautious since the advent of the Covid-19 epidemic that hit stock markets throughout the world, from the United States and the United Kingdom to France and China, Japan, Turkey, South Africa, Tunisia, Nigeria, and other rising and developing economies (Dertli & Eryuzlu, 2020). Covid-19 epidemic did lead to a decrease in market investments and lowered associated returns.

Nigeria experienced the Covid-19 pandemic as well. The first case of Covid-19 was reported in Nigeria on February 27, 2020. As of July 24, 2020, Nigeria had recorded 39,539 cases of Covid-19, including 22,135 active cases, approximately 16,559 discharged patients and 845 deaths. By January 13, 2021, the number of reported cases had risen to 249,586. 3,092 deaths had been reported, while 220,839 patients had been recovered. During Covid-19, several governments enacted measures that effectively shut down the economy. As a result, many firms and organizations were forced to close their doors, and the banking industry saw a decline in revenue (Worldometer Report, 2022). As a result, investors of Nigerian stocks felt emotional or psychological trepidation, and they did put off making new purchases on the stock market. This study was motivated by the fact that investors worldwide, including those in the Nigerian stock market, are facing new emotional and psychological difficulties in interpreting stock market indices due to the Covid-19 epidemic.

## II. Conceptual Review, Empirical Review and Hypothesis Development

The study conceptually viewed investors' psych in terms of their patterns of behavior, including their attitudes, motivations, and choices, all of which fall under the umbrellas of behavioral finance and contemporary financial theory. Accordingly, stock returns is the revenues or benefit from securities trading or the profit generated. Investor psych focus on the investors' reasoning as to how they perceive the markets and hence why they might just do the wrong thing at the wrong time.

Ahmad (2020), Saivasan and Lokhande (2022) as well as others conducted related empirical research. Covid-19 uncertainty was significantly moderated in a study by Wang, Zhang, Ahmed, and Muhammed-Shah (2021). Covid-19 uncertainty's moderating influence on relationship between how individuals feel about risks and how willing they are to take them financially was also calculated. In general, financial risk aversion and aversion to risk were also included while assessing the impact of the profitability rate. The link between how one feels about risk and how comfortable one takes it monetarily was also investigated. When weighed

against the average threat to tolerance, the impact of pleasure was considerable.

Based on their empirical research, Moueed and Hunjra (2020) concluded that investors' psyches matter while making stock market investments. Experts in the financial sector are known to follow reported projections, but they sometimes use hunches (Riaz & Hunjra, 2015). Therefore, it is reasonable to conclude that general investors are susceptible to the psychological factors affected by events like SARS, Swine Flu, and Covid-19 (Ali, Alam, & Rizvi, 2020; Conlon & McGee, 2020). Similar results were observed during the Ebola outbreak when investor apprehension led to lower market returns (Ichev & Marinc, 2018). During the swine flu epidemic of 2009, Kiruba and Vasantha (2021) investigated what factors led people to make financial investments. Effects on anxiety, risk aversion, risk propensity, market volatility worries, herd behavior, herd immunity, and the current situation reports were all proxies for psychological behavior in the study. The research results showed that, investors' choices during the Covid-19 epidemic were affected by their emotional reactions to news about the virus, herd behavior, risk aversion, and vaccinations.

Previous market returns are significant sentiment predictors, as highlighted by Li et al. (2020) and Brown and Cliff (2004), and changes in investor attitude are strongly correlated with recent market results. If the stock market continues its positive association with investor sentiment, there will be further evidence that investors' emotional state is a counter-cyclical predictor of market movement. Conversely, when investors' moods have a negative (positive) effect on stocks, it tends to be more noticeable in the case of firms that are relatively simple to value (Xiang, Yang, Li, Zhang, Zhang, & Cheung, 2020).

Lan, Huang, and Yan (2020) discovered ample proof that the pre-announcement abnormal performance is caused by investor emotions which in turn adversely affected market index return. According to the data, investor sentiment is the primary factor in the intelligent mispricing of earnings contributions that ultimately leads to stock market mispricing (Cheema, Man, & Szulczyk, 2020; Mian & Sankaraguruswamy, 2012). Despite how the financial crisis has altered the environment apart from market forces, there is a favorable association between attitudes and returns (Ryu, Ryu, & Yang, 2020). Investors can take more mental and emotional strain than the general public. Anxiety over Covid-19 were on the rise for specific weeks, and it was not only because of the rapid growth of the epidemic. The financial news, the media, and amplifiers have all played a role. In the post-covid-19 period, few empirical research were conducted in Nigeria. This study contributes to the literature by investigating the impact of investor psych on stock return at Covid-19 period. Also, to the best of researcher's knowledge, no studies were conducted within the Nigerian environment using the Exponential Generalized Auto-Regressive Conditional Heteroscedasticity (EGARCH) approach to examine the nexus between investor psych and stock return during the Covid-19 era

(March 2019 to December, 2022). As a result, the hypothesized the following:

**H<sub>1</sub>:** Investors' psych during the Covid-19 pandemic era had an effect on stock return in Nigeria.

The study is also grounded in the idea of prospect theory via expected utility developed by Kahneman and Tversky (1988). Loss-aversion theory is another name for prospect theory or expected utility theory, which centers on the psychology of decision-making in the face of uncertainty and catastrophic events like the Covid-19 epidemic. The prospect theory was created by Kahneman and Tversky (1988) to describe the mental processes behind economic decisions. They gave it a fresh spin by introducing cumulative prospect theory, which considers how risk and uncertainty at the time of investment choice could impact returns on investment. For example, investors nervousness about the future could have caused them to miss lucrative possibilities because they were worried about the Covid-19 epidemic. Nasic and Weber (2010) state that, a person's propensity to invest may be influenced by risk aversion, confidence in the financial instrument, and overall perception of risk. Many previous studies used prospect theory to investigate the link between human psychology and financial markets, including those by Lyn and Zychowicz (2010), Ullah et al., Ullah, Elahi, Pinglu, and Subhani (2020), Wei-Shan Hu, Lee, and Chen (2018), and Zajac (2004). In light of these and other relevant prior research, prospect theory was used as the study's guiding theoretical framework to achieve the objectives of research.

### III. Methodology

All Share Index (ASI) and investor psych (investors' sentimental factors measured via stock turnover - STOV), market capitalization (MC), verified Covid-19 cases (VCC), and mortalities rate from Covid-19 (MCD) used daily data from a secondary sourced, which followed an ex-post facto research design. This research used daily data with the ARCH and EGARCH distribution estimators. In addition, the study used data collected daily between March 2019 and December, 2022 from the fact books from the Nigerian Stock Exchange and a report from the Nigerian Centre for Disease Control.

Considering the objective and anchored theory, the model specification for the study is stated below:

$$\begin{aligned} \text{ASI} &= f(\text{Investors' Psych (IP)}) \\ \text{ASI} &= f(\text{Investors' Sentimental Index (ISI)}) \\ \text{ASI} &= f(\text{STOV, MC, VCC, MCD}) \\ \text{ASI} &= \alpha_0 + \tau_1 \text{STOV} + \lambda_2 \text{MC} + \gamma_3 \text{VCC} + \theta_4 \text{MCD} + \epsilon_i \end{aligned}$$

Where;

- ASI was proxied for stock return, while stock turnover (STOV), market capitalization (MC), variations in verified covid-19 cases (VCC), and mortalities rate from covid-19 (MCD); and  $\epsilon_i$  = Error Term.

#### IV. Results, Interpretation and Discussion of Findings

The first stage in computing the stock return volatility and psych factors (sentimental index through STOV, MC, VCC, and MCD) model is to determine if the daily series on the research variables displays the ARCH effect. This implies that the ARCH exam must be taken by the STOV, MC, VCC, and MCD between March 2019 and December, 2022.

The results of an ARCH test performed on the study variables between March 2019 and December 2021 are shown in Table 1. These variables include the ASI, MC, VCC, and MCD. The F-statistic and Obs\*R-squared statistics, together with their respective values and p-values, were displayed in the test findings. Table 1 displays the statistical analysis findings, revealing that the ASI, MC, VCC, and MCD all demonstrate volatility with p-values lower than 5% ( $p < 0.05$ ). Since the results are statistically significant, the no-ARCH effect null hypothesis was rejected. The findings imply that the investigated variables (the ASI, MC, VCC, and MCD) are highly volatile due to an ARCH effect.

**Table 1: ARCH Test Results for Study Variables**

	Statistic	Value	p-value
ASI	F-statistic	11.532	0.0000
	Obs*R-squared	7.294	0.0000
MC	F-statistic	8.212	0.0001
	Obs*R-squared	5.732	0.0003
VCC	F-statistic	23.521	0.0000
	Obs*R-squared	19.422	0.0000
MCD	F-statistic	14.921	0.0000
	Obs*R-squared	8.735	0.0000

**Source:** Authors' Computation (2023)

The EGARCH findings from March 2019 through June, 2022 were displayed in Table 2. This table demonstrates the impact of investors' psych on the stock return volatility. At a significance level of less than 5%, the mean equation revealed that MC positively affected the volatility of stock returns with ASI, whereas VCC and MCD had a negative influence. The impacts of information, information asymmetry, and leverage are investigated alongside the constant term in the variance equation. The statistical significance of the probability value of the information impact coefficient is shown in Table 2 under the variance equation, implying that there is volatility among the research variables in the Nigerian stock exchange market. Furthermore, information asymmetry and leverage both had statistically significant coefficients with high probability values. This demonstrates that the information impact is asymmetric, suggesting that either positive and negative information (or news) significantly affect the volatility of stock returns in Nigeria. In other words, poor news had a more significant destabilizing influence on stock returns than good news, as measured by its negative value (-0.17), indicating an asymmetric or leverage effect.

The GARCH feature focuses on information asymmetry, which shows that if the asymmetry term is negative, then adverse shocks have a more significant effect on stock return than positive shocks of the same size. As a result, investors are more likely to react negatively to bad news than positively, as shown by the magnitude of adverse shocks persistence or the volatility

asymmetry. This suggests that the volatility spillover process is asymmetric, resulting in meaningful and substantive variations in stock performance and the combined ARCH( $\alpha$ ) and GARCH( $\beta$ ) measure of volatility persistence was 1.59. This value is more than 1, indicating that Nigeria's stock market has a high volatility of stock return since volatility takes a long time to decrease. The outcome also showed that, previous volatilities affected volatility returns in the future. Since the reported value of the Durbin-Watson statistic is 2.39, which is less than or equal to 2.0, we may conclude that autocorrelation is not present. The research concludes that, the Covid-19 pandemic's asymmetric information led to bad news (leverage effect), which established volatility of stock returns in the Nigerian market, as evidenced by several prior works of literature, including those by Ali et al., 2020; Ahmad, 2020; Conlon & McGee, 2020; Ichev & Marinc, 2018; Kiruba & Vasantha, 2021; Lan, Huang & Yan, 2020). This research points out that, investors avoid the stock market at times of worldwide pandemic or global shock out of a concern for their safety as consistent with the leading theory examined in the study, prospect theory.

**Table 2: EGARCH Result for Objective of the Study**

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Mean Equation				
C	3.034440	0.028396	1.29015	0.0729
MC	6.493521	0.041700	2.89332	0.0000
VCC	-2.64212	0.005362	-6.83521	0.0001
MCD	-1.83622	0.736212	-5.73210	0.0000
Variance Equation				
Constant	-0.878477	0.088586	-9.916680	0.0000
Information Effect (ARCH)	2.459485	0.069777	6.585016	0.0000
Information Asymmetry (GARCH)	-0.865107	0.052105	-1.249530	0.0115
Leverage Effect (EGARCH)	-0.173281	0.095994	1.417816	0.0562
Durbin-Watson stat	2.389165			

#### Dependent Variable: ASI

**Source:** Authors' Computation (2023)

#### V. Conclusion, Policy Recommendations and Limitations of Research

The study concluded that, during the peak of Covid-19 period, there was hike in trauma and imbalance psych among stock investors, which had triggered high volatile in returns within the period of March 2019 and December, 2022. As the study indicates, the Nigerian stock market experienced severe volatility due to adverse news triggered by downward shifts in Market Capitalization (MC), VCC, and MCD during the research period. Based on the findings, the study recommends that, stock market managers should implement effective market information transparency policies and present an accurate situation of the market to the investors during any pandemic period so that individual stock market investors can be guided against the psych pressure from market misinformation.

While investors faced with continued difficulties related to Covid-19, analysis of the study only covers the period between March, 2019 and December, 2022. Unfortunately, the study could not extrapolate research's results to other time periods or years. In addition, there is diversity in the make-up and structure of investors' underlying psychological processes of

reasoning and observation. As a result, it is improbable that stock market investors' decisions about psycho factors or investors' emotional index model are consistent or universal.

## References

- Ahmad, M. (2020). Does under-confidence matter in short-term and long-term investment decisions? Evidence from an emerging market. *Management Decision*, 59(3), 692–709. <https://doi.org/10.1108/MD-07-2019-0972>
- Ali, M., Alam, N., & Rizvi, S. A. R. (2020). Coronavirus (COVID-19) – An epidemic or pandemic for financial markets. *J. Behav. Exp. Finance*, 27, 100341.
- Bagus, P., Pena-Ramos, J. A., & Sanchez-Bayon, A. (2021). COVID-19 and the political economy of mass hysteria. *Int. J. Environ. Res. Public Health*, 18(4), 1376; <https://doi.org/10.3390/ijerph18041376>
- Brown, G. W., & Cliff, M. T. (2004). Investor sentiment and the near term stock market. *J. Empirical Finance*, 11(1), 1–27. doi: 10.1016/j.jempfin.2002.12.001
- Cheema, M. A., Man, Y., & Szulczyk, K. R. (2020). Does investor sentiment predict the near-term returns of the Chinese stock market? *Int. Rev. Finan.* 20, 225–233. doi: 10.1111/irfi.12202
- Conlon, T., & McGee, R. J. (2020). Betting on Bitcoin: does gambling volume on the blockchain explain Bitcoin price changes? *Economics Letters*, 191, 108727. doi:10.1016/j.econlet.2019.108727
- Dertli, S. K., & Eryüzlü, H. (2020). Early warning signals from global financial markets at the beginning of Covid-19 pandemic. *Turkish Studies*, 15(8), 35073520. <https://dx.doi.org/10.7827/TurkishStudies.45964>
- Huang, W., & Zheng, Y. (2020). COVID-19: structural changes in the relationship between investor sentiment and crude oil futures price. *Energy Res. Lett.* 1, 13685.
- Ichev, R., & Marinc, M. (2018). Stock prices and geographic proximity of information: Evidence from the Ebola outbreak. *International Review of Financial Analysis*, 56, 1 53–166. <https://doi.org/10.1016/j.irfa.2017.12.004>
- Kahneman, D., & Tversky, A. (1988). Prospect theory: An analysis of decision under risk. In P. Gärdénfors & N.-E. Sahlin (Eds.), *Decision, probability, and utility: Selected readings* (183–214). (Reprinted from “Econometrica,” 47 (1979), 263–291) Cambridge University Press.
- Kiruba, A. S., & Vasantha, S. (2021). Determinants in investment behaviour during the Covid-19 pandemic. *Indonesian Capital Market Review*, 13, 71–84.
- Lan, Y., Huang, Y., & Yan, C. (2020). Investor sentiment and stock price: empirical evidence from Chinese SEOs. *Economic Modelling*, 94, 703–714. doi: 10.1016/j.econmod.2020.02.012
- Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of Covid-19 epidemic declaration on psychological consequences: a study on active Weibo users. *Int. J. Environ. Res. Public Health*, 17, 20–32. doi: 10.3390/ijerph17062032
- Lyn, E. O., & Zychowicz, E. J. (2010). The impact of faith-based screens on investment performance. *The Journal of Investing*, 19(3), 136–143. doi:10.3905/joi.2010.19.3.136
- Mian, G. M., & Sankaraguruswamy, S. (2012). Investor sentiment and stock market response to earnings news. *Accounting Review*, 87(4), 1357–1384. doi: 10.2308/accr-50158
- Moueed, A., & Hunjra, A. I. (2020). Use anger to guide your stock market decision-making: results from Pakistan. *Cogent Economics & Finance*, 8(1), 1733279.
- Naseem, S., Mohsin, M., Hui, W., Liyan, G., & Penglai, K. (2021) The investor psychology and stock market behavior during the initial era of COVID-19: A study of China, Japan, and the United States. *Front. Psychol*, 12, 626–934. doi: 10.3389/fpsyg.2021.626934
- Nosić, A., & Weber, M. (2010). How riskily do I invest? The role of risk attitudes, risk perceptions, and overconfidence. *Decision Analysis*, 7(3), 282–301. doi:10.1287/deca.1100.0178
- Raifu, I. A., Kumeka, T. T., & Aminu, A. (2021). Reaction of stock market returns to COVID-19 pandemic and lockdown policy: evidence from Nigerian firms stock returns. *Future Business Journal*, 7(1), 1–16.
- Riaz, L., & Hunjra, A. I. (2015). Relationship between psychological factors and investment decision making: The mediating role of risk perception. *Pakistan Journal of Commerce and Social Sciences*, 9(3), 968–981.
- Ryu, D., Ryu, D., & Yang, H. (2020). Investor sentiment, market competition, and financial crisis: evidence from the Korean stock market. *Emerging Markets Finance and Trade*, 56, 1804–1816. doi: 10.1080/1540496X.2019.1675152
- Saivasan, R., & Lokhande, M. (2022). Influence of risk propensity, behavioural biases and demographic factors on equity investors' risk perception. *Asian Journal of Economics and Banking*, 6(3), 373–403.

- Wang, F., Zhang, R., Ahmed, F., & Muhammed-Shah, S. M. (2021). Impact of investment behaviour on financial markets during Covid-19: A case of UK. *Economic Research-Ekonomska Istraživanja*, doi: 10.1080/1331677X.2021.1939089
- Wang, Q., Yang, X., & Li, R. (2022). The impact of the COVID-19 pandemic on the energy market – A comparative relationship between oil and coal. *Energy Strategy Reviews*, 39,100761. <https://doi.org/10.1016/j.esr.2021.100761>
- Wei-Shan Hu, J., Lee, Y., & Chen, Y. (2018). Mutual fund herding behavior and investment strategies in Chinese stock market. *Investment Management and Financial Innovations*, 15(2),87-95. doi:10.21511/imfi.15(2).2018.08
- Worldometer Report (2022). Report on Covid-19 across the globe. <https://www.worldometers.info/coronavirus/>
- Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*, 7,228–229. doi: 10.1016/S2215-0366(20)30046-8
- Zajac, J. (2004). Risk investment, asset returns, and information. *Risk, Decision and Policy*, 9(2),161-176. doi:10.1080/14664530490464879
- Ullah, S., Elahi, M. A., Ullah, A., Pinglu, C., & Subhani, B. H. (2020). Behavioural Biases in investment decision making and moderating role of investor's type. *Intellectual Economics*, 15(1), 87-105.