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Harnessing the Upside Potentials in Stock Returns Volatility amidst the Corona Virus Pandemic in Nigeria

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Abstract
This study, 'Harnessing the Upside Potentials of Stock Returns Volatility Amidst the Corona Virus Pandemic in Nigeria' is germane due to the negative perceptions of investors about the stock market in the face of the COVID-19 pandemic. There is an enormous fear of loss in investment and the uncertainty in the future of the market. This is despite measures adopted to properly bulwark the stock market amidst the Novel Corona Virus (COVID-19) pandemic. In attempt to unravel the true position of stock returns in the stock market, different data estimation intervals involving daily, weekly and monthly aggregate stock price data using the Nigeria Stock Exchange All Share Index series obtained from Nigerian Stock Exchange Reports spanning from 2nd January, 2020 to 29th January, 2021. To test for its conditional variance (volatility), asymmetric effect and volatility persistence, the EGARCH framework was employed. After the analysis, daily stock returns proxied by all share indexes empirically found (with slight variants in results from weekly and monthly data) that conditional variance (volatility) exerted insignificant impact on the stock market returns in Nigeria amidst COVID-19 for over a year of the outbreak. It was also found that stock return volatility is persistent amidst COVID-19 in Nigeria within the period of this study. Asymmetry parameter was found to be positive and significant, invalidating asymmetric effect in Nigeria stock market. This signposts that good news from the COVID-19 was increasing volatility more than bad news of the same magnitude in the Nigeria stock market for a year now. In the light of the findings, for instance that, conditional variance (volatility) exerted insignificant impact on the stock market returns in Nigeria amidst COVID-19 for almost a year of the outbreak, the researcher is bold to suggest to investors that good potentials abound in the stock market despite the pandemic ravaging the globe. No wonder, on January 29, 2021 as reported in Vanguard, the Nigerian Stock Exchange emerged the African Best performing Stock Exchange having ended the week and month of January in green territory. Again investors are encouraged to go ahead with their normal business activities in the stock market, because what is playing out is asymmetric effect.

Keywords: Stock Returns, Conditional Variance, Corona virus, EGARCH-in-Mean, Nigeria

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I. Introduction

In finance and general terms, risk is always associated with bad outcome, unfavorable event, peril, uncertainty etc, and this conforms to the connotations put on the term by most investors. Experts often talk about downside risk and upside potential. The veracity is not in doubt because risk has to do with bad outcomes, potential with good ones. In the words of Kenton (2019), downside risk is seen as the estimation of a security's potential to suffer a decline in value if the market conditions change, or the amount of loss that could be sustained as a result of the decline. Depending on the measure used, downside risk explains a worst-case scenario for an investment or indicates how much the investor stands to lose, which exactly the precarious situation investors of the stock markets assume and foresee amidst the COVID-19 pandemic, mostly in Nigeria. This type of risk examines one-sided tests because it does not consider the symmetric case of upside potential, but only about potential losses.

The perceptions of the investors about the stock market in this pandemic are not actually out of place because most investments parade a finite amount of downside risk, whereas others have infinite risk. For instance, buying of a stock is associated with finite amount of downside risk bounded by zero; that means the investor can lose his entire investment. A short position in a stock, however, as accomplished through a short sale, entails unlimited downside risk since the price of the security could continue rising indefinitely. In the same vein, as long an option; either a call or a put has a downside risk limited to the price of the option's premium, while a short options position has an unlimited potential downside. For that, investors do compare the potential risks inherent in a particular investment to its possible rewards. Downside risk is in contrast to upside potential, which is the likelihood that a security's value will increase (Bhalla, 2011; Kenton, 2019).

This study is apt because investors need to be frequently informed about the happenings in the Nigerian stock exchange, mostly now the COVID-19 is seriously ravaging the global economy. Investors are anxious to know if their investment is safe or weather the anticipated risk in the stock market could result to withdrawal. They need to be informed and encouraged. And research of this nature will go a long way to ameliorating the situation. The veracity is not in doubt since theoretical evidence supported that news in general cannot be ignored when predicting the movements in economic/financial variables. This is captured in the Price pressure hypothesis or Attention theory and "network analysis (Nofsinger and Sias, 1999; Barber and Odean, 2008; Narayan, 2019).

Despite the aforementioned assumptions, investors are still optimistic that the losses in the stock are ephemeral, that potential price or gain is expected in a security. This is usually expressed in terms of the price to which it might possibly rise. For instance, investors in the stock market are hopeful that a stock trading at ₦20 will rise to ₦30; showing an upside potential of ₦30. It is pertinent to know that when evaluating a stock as an investment target, investors do conduct an analysis comparing the upside potential of the position relative to its downside risk. This is a sine qua non for maximizing rewards of investing in the stock market, especially in the midst of the corona virus pandemic ravaging the world at large.

However, this outbreak, Corona virus, formerly known as 2019-nCoV as a result of the SARS-CoV-2, which was triggered in December 2019 in Wuhan city in Hubei province of China has dragged down the economy at the global and country levels since the beginning of 2020. In Nigeria, since the first index case heralded the nooks and crannies on February 27, 2020, the overall macroeconomic indicators and activities became unsettled. The stock market was not left out, investors pessimism about their returns were not hidden. As a result, government at various levels around the world and Nigerian government in particular devised measures to douse the tension and goose pimples the COVID-19 pandemic has induced on investors, mostly the stock market investors, since its outbreak. Yet, substantial efforts have been not been made scholars and policy makers are still unsettled on the whether investors are making abnormal or incurring huge loss as the COVID-19 ravaging the world and Nigerian economy in particular.. These insinuations bring to the fore this paper, 'Harnessing the Upside Potentials of Stock Returns Volatility Amidst the Corona Virus Pandemic in Nigeria.

The remaining sections of the paper are decomposed as follows; section 2 discusses review of literature, while, sections 3 talks about materials and methods, whereas empirical results in section 4 and the final section concludes the paper.

1.1 Capital Market, COVID-19 and Volatility

The capital market provides the required mechanism that facilitates the flow of long term funds. That means it provides the needed network of facilities for transferring the long term claims and funds so transacted. There are basically two components of the capital market; the primary market (market for issuing new securities) and the secondary market (market for dealings in existing securities) (Ezirim, 2005; Ilahi, Ali, and Jamil, 2015). The stock market is the foundation and engine that propels economic growth and development of a nation, it is inextricably interwoven in the fabrics of nation' economic life. Forson and Janrattanagul (2014) added that stock markets facilitate economic growth by enhancing liquidity and providing funds for industrialization and economic development. In the words of Adeboye (2012), the stock market plays a major role in financial intermediation in both developed and developing countries by channeling idle funds from the surplus to deficit units of the economy. Capital market instruments include bonds, shares, long term development stocks of government (Onoh, 2002; Ezirim, 2005). The absence of the stock market will frustrate the savings of the society, which are the sinews of economic progress and productive efficiency (Bhalla, 2011).

Corona virus (formerly known as 2019-nCoV) was as a result of the SARS-CoV-2 virus, started in Wuhan city in Hubei province of China, December, 2019. Hence, the epicenter of the outbreak was assumed to be China with reported cases either in China or travelers from China. The outbreak was formerly named on February 11, 2020 by the World Health Organization (WHO) as the Severe Acute Respiratory Syndrome Corona virus 2 Disease (SARS-CoV-2). The novel COVID-19 continues to spread across the world with many records of pneumonia cases. This outbreak after thorough examination was declared a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO) on January 30, 2020. Thereafter, the disease was named the Corona virus disease 2019 with abbreviation; COVID-19 (Zhu, et'al, 2020; World Health Organization, 2020).

The COVID-19 pandemic has caused mixed feelings among scholars and economic agents around the globe and country levels since the beginning of 2020. Though investors and other participants have developed thick skin to absorb the shocks and the volatility of the capital market and economy in general, yet there are fears of uncertainty on what the future holds. The astronomical increase of the COVID-19 cases over time, despite drastic measures to curtail the pandemic has led to negative distortions in the economy and the capital market in particular. The stock markets of developed and emerging market also have experience hard times and crashes and the overall economic environment and economic activity get depressed (Corbet et al.,

2020; Zhang et al., 2020). Scholars around the world have also added their voices to ascertain the effect of COVID -19 on the financial markets, particularly the stock market. Hand full of the researchers has found uncertainties in the stock market amidst the Corona virus pandemic. Evidences from studies reveal that uncertainties inherent with COVID-19 cases have badly positioned the stock return in general and participants are panicking (Libo, 2021;Ashraf, 2020; Baker et al., 2020; OECD, 2020). This of course signals the potential trajectory of the economy and strict regulatory interventions of government, such as quarantine, lockdown and vaccination of citizens, restrictions on mobility of labour etc. These measures are reportedly slowing down the world economy. With the growing uncertainty in the business arena and no end in sight, the choice of making investment decisions under an extremely dicey condition becomes increasingly inevitable. As if the prediction of doom days was not enough, Apergis and Apergis (2020), in a study sounded that the global economy is expected to experience the worst corona virus recession since the Great Depression and that Covid-19 pandemic shock drives the Chinese market crazy. Apergis and Apergis (2020) further said that the Covid-19 event represents a fearsome and novel risk. As such, it stirred feverish behaviour by investors.

Numerous occurrences have actually stimulated the interest of researchers to work on capital market returns and volatility and COVID-19 pandemic is not an exception. In the words of Karolyi (2001) the existence of excessive volatility or 'noise', in the stock market undermine the usefulness of stock prices as a 'signal' about the true intrinsic value of a firm, a concept that is core to the true paradigm of the information efficiency of markets. Emenike and Aleke (2012) are of the view that volatility is a measure of risk; hence an increase in volatility signals and higher expected future risk. To bear this risk, investors will require higher returns and are thus inclined to pay less for the relevant equity. That lay bare the relationship between expected returns and expected volatility. Theory generally predicts a positive relationship between expected stock returns and volatility, if investors are risk averse. That is, equity premium provides more compensation for risk when volatility is relatively high, that is investors require larger expected return from a security that is riskier (Okpara, 2012). Emenike (2009) also added that volatility clustering occurs when large stock price changes, of both signs, and small price changes are followed by periods of small price changes. In another way, Asymmetry (leverage effect) means that a fall in returns is followed by an increase in volatility greater than the volatility induced by an increase in returns. This implies that more prices wander far from the average trend in a crash than in bubble because of higher perceived uncertainty (Fama, 1965; Black, 1976). These characteristics are perceived as indicating a rise in financial risk, which can adversely affect investors' assets and wealth. A greater risk premium results in a higher cost of capital, which then leads to less private physical investment (Okpara, 2012).

The orthodox measure of volatility as represented by variance or standard deviation is unconditional and does not recognize that there are interesting patterns in asset volatility, example, time-varying and clustering properties Bollerselev (1986). Scholars and researchers have introduced various models to explain and predict these patterns in volatility. Engle (1982) introduced the autoregressive conditional heteroscedasticity (ARCH) to model volatility. Engle (1982) modeled the heteroscedasticity by relating the conditional variance of the disturbance in the recent past. Bollerselev (1986) generalized the ARCH model by modeling the conditional variance to depend on its lagged value as well as squared lagged value of disturbance, which is called generalized autoregressive conditional heteroscedasticity (GARCH). The model includes GARCH-in-mean (GARCH-M) model introduced by Engle and Granger (1987) and EGARCH, an improvement of GARCH by Nelson (1991).

II. Literature Review

2.1 Theoretical Review

This study is built on the Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT); theoretical departure of the Markowitz efficient portfolio theory (capital market line), which states that in equilibrium; the expected return of a portfolio is a linear function of the portfolio standard deviation of returns, as well on Price pressure hypothesis or Attention theory and "network analysis.

2.1.1 Capital Asset Pricing Model/Security Market Line (CAPM/SML)

This model (CAPM) was developed by William F Sharpe and John Linter in 1963 and 1964 as testable model for determining the value of individual securities or portfolio. This model is a significant departure from the efficient market model, which as earlier discussed focused attention on the risk-return features of portfolio (Sharpe, 1964; Linter, 1965). The CAPM contends that the expected return on any asset is a linear function of its systematic risk (Sharpe, 1964; Lintner, 1965, 1969; Fama & French, 2004).

The SML is mathematical represented in terms of the covariance of individual securities with the market portfolio, that is, $Y = a + bx$

$$E(R_i) = R_f + \frac{(R_m - R_f)}{r_m^2 - O} Cov(R_i, R_m)$$

Where,

$E(R_i)$ = expected return on an individual Security ith
R_f = the risk free security,
R_m = expected return on the market portfolio
r_m^2 = variance of returns on the market portfolio
$Cov(R_i, R_m)$ = covariance of returns between security ith and the market portfolio
Where,
$\frac{(R_m - R_f)}{r_m^2 - O}$ = the slope of the SML
= $R_f Mk$ (SML) shown below.
Graphically SML Model is given below:

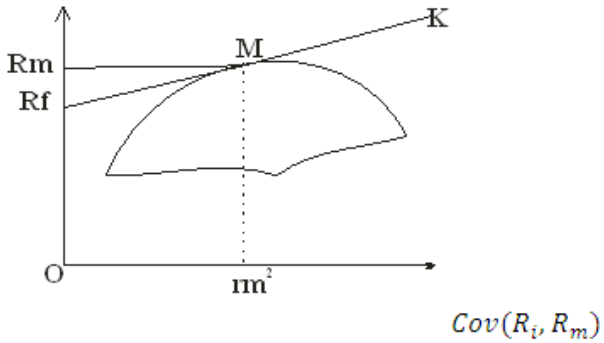


Figure 1: Security market line (SML)

Thus, the expected return $E(R_i)$ on a security is the appropriate discount rate to use in valuing the ith security: this is cost of capital for that security's amount of systematic risk. In other words, the SML equations states that in equilibrium, an individual security or portfolio expected return is a linear function of its covariance of return with the market, that is, the expected return from any market security or portfolio is an increasing function of its systematic risk or (beta coefficient) (Sharpe, 1964; Linter, 1965). Since systematic risk is that portion of a security's total risk which cannot be diversified away therefore, the more systematic risk a security has, the more the return investors will require inducing them to hold the security in their portfolio Though with inherent limitation of CAPM are; it is based on unrealistic assumptions, it is difficult to test the validity of CAPM, betas do not remain stable over time and CAPM is single factoral (has only one factor) (Cuthbertson and Nitzsche, 2005; Ibenta 2005; Bodie, Kane, Marcus and Mohanty, 2013).
The SML equation can be restated in terms of the beta coefficient, thus,
$E(R_i) = R_f + \frac{Cov(R_i, R_m)}{r_m^2}(R_m - R_f)$
That means it has been restated in beta coefficient (β), $\beta = \frac{Cov(R_i, R_m)}{r_m^2}$
Therefore, $E(R_i) = R_f + \beta(R_m - R_f)$
This is a measure of an individual risk that relates to the market risk of securities in the market. β Co-efficient is also known as a systematic risk of the security (that means it cannot be diversified). Meanwhile, the beta coefficient (β) (market risk) is the systematic risk of a security and is measured by its covariance with the market (Cov (Ri, Rm).

2.1.2. The Arbitrage Pricing Theory (APT)

The inherent limitations of the CAPM led to the evolvement of Arbitrage Pricing theory by Stephen Ross in 1976; Stephen Ross argued clearly that in a situation where different portfolios with multiple factors (betas) exist, CAPM with one-factor model (one beta) may not be able to produce the desired results (actual returns) for efficient portfolio (Ross,1976). He further emphasized that APT is a multifactor model (multiple betas model) that accommodates all types of security investments. The sensitivity of the return on asset to each of these factors is known as the 'factor beta'. Economic variables have a systematic consequence on stock market returns because economic forces affect discount rates, the ability of the firm to generate cash and future dividend payments (Chen et'al, 1986).

Meanwhile, in APT, there may be one or more macroeconomic factors that may measure the systematic (non- diversifiable) risk of an asset. The fundamental logic of APT is that investors always indulge in 'arbitrage' whenever the find differences in the returns of assets with similar risk features. The APT is a multifactor model

since unlike the CAPM allows a number of potential variables (factors) to influence the expected on asset-*i*(Cuthbertson and Nitzsche 2005; Ibenta 2005; Bhalla, 2011). Generally, the APT allows the actual return to be influenced by a numbers of market wide variables or factors such as interest rate, the exchange rate, change in inflation, change in output etc. The sensitivity of the return on asset to each of these factors is known as the 'factor beta'

The APT model is restated as: $E(R_i) = R_f + (\beta_1 F_1 + \beta_2 F_2 + \beta_3 F_3 + \cdots + \beta_n F_n + UR_s)$

Where, β_i = Factor betas,

F = factor variable,

UR_s = Random Error term (unanticipated part of return).

As in seen in CAPM, in APT also, there is no compensation for risk arising from firm- specific factors (UR_s).

2.1.3 Price pressure hypothesis or Attention theory and "Network analysis

The Pressure price hypothesis opines states that individual investors tend to buy stocks that attract their attention because individual investors do not have enough time or resources to examine thousands of stocks. This often implies that stocks capturing investors' attention (often through news) and searched intensively tend to generate abnormally high returns and trading volume (Takeda and Wakao, 2014). The Network analysis on its own asserts that individual or retail investors tend to adopt feedback strategies and rely primarily on stock information to infer value of a stock; hence, co-attention networks promote information that captures investors' attention (Bange, 2000; Chen, Kim, Yao and Yu, 2010)

2.2. Empirical Review

Maybe because the affect of COVID-19 on economic variables is a new discourse; there are scanty empirical literatures on this study. For instance, Libo (2020) in a study examined stock returns and the COVID-19 pandemic. The study used daily data to know the stock market's dynamic responses to COVID 19 shock for Canada and US employing bivariate structural GARCH-in-Mean VAR. The result found that COVID-19 uncertainty adversely affected the stock market. It was also revealed that the stock market responses are asymmetric in the increase and decrease in the cases of Canada. Employing the impulse response functions of the structural VAR model, it was found that an unexpected increase in the COVID-19 cases hurts the stock return with persistence in Canada. Again that the uncertainty associated with COVID-19 cases amplifies stock return responses to make them worse. The study disclosed that the responses of stock return are asymmetric in the increase and decrease in the COVID-19 cases in Canada, whereas, for the stock return in the US, it is amazing that the uncertainty associated with COVID-19 is not a big concern of the US stock market.

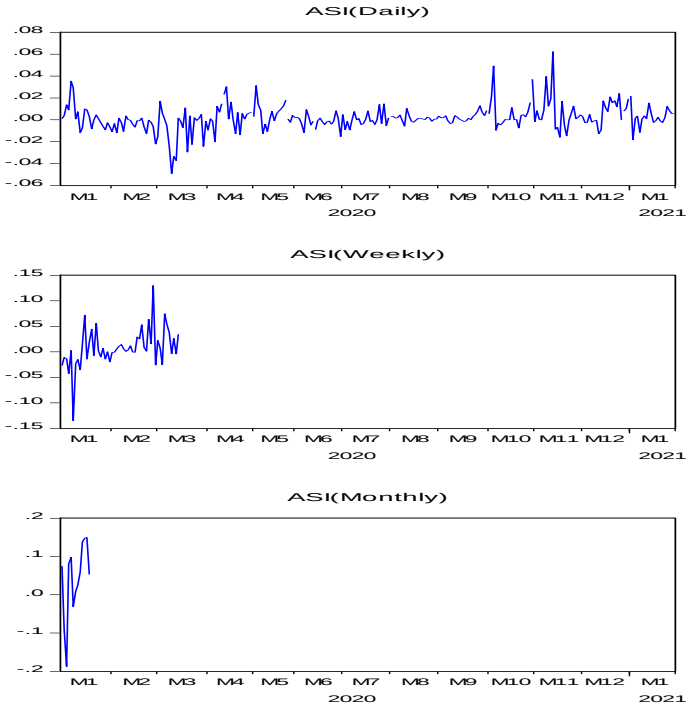
In another study, employing Panel data regression model and GARCH Salisu and Vo (2020), predicting stock returns in the presence of COVID-19 pandemic with data covering top-20 worst-hit countries, distinctly in terms of reported cases and deaths. The results revealed that the model that incorporates health-news index outperforms the benchmark historical average model, indicating the significance of health news searches as a good predictor of stock returns since the emergence of the pandemic. It was also found that accounting for "asymmetry" effect, adjusting for macroeconomic factors and incorporating financial news improve the forecast performance of the health news-based model. Te results were consistently robust to data sample (both for the in-sample and out-of-sample forecast periods), outliers and heterogeneity.

Again, Apergis and Apergis (2020) used GARCHX model to investigate the role of Covid-19 for Chinese stock returns in China. The GARCHX model permitted for inclusion of Covid-19 information within the GARCH framework. It was revealed that daily increases in total confirmed Covid-19 cases in China, measured as total daily deaths and cases, have a significant negative impact on stock returns, with the negative impact of the Covid-19 on stock returns being more pronounced when total deaths proxy the effect of this infectious disease. The results disclosed that Covid-19 has a positive and statistically significant effect on the volatility of these market returns. In all, new evidence is offered that infectious diseases, such as Covid-19, can seriously impact market returns, as well as their volatility.

III. Methodology

3.1 Data

This study in attempt to unravel the true position of stock returns in the stock market amidst the COVID-19 pandemic used different data estimation intervals involving daily, weekly and monthly aggregate stock price data using the Nigeria Stock Exchange All Share Index series obtained from Nigerian Stock Exchange Reports spanning from 2nd January, 2020 to 29th January, 2021. The data can graphically plot as shown below. A close look at the *figures 2, 3 and 4 for Daily, Weekly and Monthly ASI below* suggests the presence of fluctuations or volatility in ASI in Nigeria for the period under study. This confirms ARCH effects in the model and validated the choice of EGARCH framework in the estimation of the model.



***Figures 2, 3 and 4: Trends* of Daily, Weekly and Monthly Stock returns**

3.2 Model

The study employed the EGARCH-in-Mean Model. The decision to use EGARCH framework stems from the fact that it accommodates the examination of conditional variance (volatility), asymmetric effect and volatility persistence (Nelson, 1991).

The model for volatility using EGARCH framework is specified as follows:

$$\ln(\sigma_t^2) = \omega + \beta \ln(\sigma_{t-1}^2) + \gamma \frac{\mu_{t-1}}{\sqrt{\mu_{t-1}^2}} + \alpha \left(\frac{|\mu_{t-1}|}{\sqrt{\sigma_{t-1}^2}} - \sqrt{\frac{2}{\pi}} \right)$$

Where, ω, β, α, γ are constant parameters,

$\ln(\sigma_t^2)$ = the one period ahead volatility forecast,

ω = the mean level,

β = persistence parameter,

α = volatility clustering coefficient,

$\ln(\sigma_{t-1}^2)$ = the past variance, γ = the leverage effect.

According Brooks (2008), the model has several advantages over the pure GARCH specification. First, since the log (σ_t^2) is modeled, then even the parameters σ_t^2 will be positive. There is thus no need to artificially impose non-negativity constraints on the model parameters. Second, asymmetries are allowed for under the EGARCH formulation, since if the relationship between volatility and returns is negative, γ, will be negative.

The EGARCH-in-mean model as pointed out by Brook (2008) is an improvement of the GARCH which imposes a non-negativity constant on market variable, and permits for conditional variance to respond asymmetrically to returns innovations of different signs. If γ is negative, leverage effect exists, implying that, bad news increases predictable volatility more than good news of similar magnitude (Black, 1976; Christie, 1982). In other words, negative value of γ is called the 'sign effect'. If $\propto$ is positive, then the conditional volatility tends to rise (fall) when the absolute value of the standardized residuals is larger (smaller). $\propto$ is called the 'magnitude effect'.

IV. Results and Discussion

4.1 Description Statistics of Daily, Weekly and Monthly Stock returns

Table 1 below depicts the behaviour of the data engage in the study. The first moment or mean (average ASI) are 0.001769, 0.008129 and 0.040392 for Daily, Weekly and Monthly ASI respectively. The second moments (standard deviation) recorded are 0.011617, 0.037363 and 0.097894 for Daily, Weekly and Monthly ASI respectively, revealing small value of risk associated with the various intervals of ASI. Maximum and minimum values for Daily, Weekly and Monthly ASI are 0.062300, 0.129700, 0.149200 and -0.049100, -0.134900, -0.187500 respectively, showing conspicuous volatility of ASI within a year of the COVID-19

pandemic in Nigeria. The third moment (Kurtosis) is 8.553968, 7.357023 and 3.343205 for Daily, Weekly and Monthly ASI respectively, which is higher than 3 which are leptokurtic distributions, suggesting the presence of fat tails in returns. This suggests that large shocks of either sign are likely to present itself with stock return volatility in Nigeria amidst the COVID-19 pandemic. The skewness are 0.538954, -0.168036 and -0.995059 for Daily, Weekly and Monthly ASI respectively, which are positive, except daily ASI that has negative coefficient, confirming asymmetry in the series. It is important to point out that the skewness are negatively and positively skewed indicating the distributions have both long left and right tail respectively. Lastly, Jarque-Bera probability values of 0.000000, 0.000000 and 0.331358 for Daily, Weekly and Monthly ASI respectively, suggesting abnormal distributions for daily and weekly ASI, while monthly ASI exhibits normal distribution.

Table 1: Descriptive Statistics of Daily. Weekly and Monthly ASI

	ASI_DAILY_	ASI_WEEKLY_	ASI_MONTHLY_
Mean	0.001769	0.008129	0.040392
Median	0.000700	0.003000	0.059600
Maximum	0.062300	0.129700	0.149200
Minimum	-0.049100	-0.134900	-0.187500
Std. Dev.	0.011617	0.037363	0.097894
Skewness	0.538954	-0.168036	-0.995059
Kurtosis	8.553968	7.357023	3.343205
Jarque-Bera	358.7614	41.37595	2.209112
Probability	0.000000	0.000000	0.331358
Sum	0.475900	0.422700	0.525100
Sum Sq. Dev.	0.036168	0.071197	0.114998
Observations	269	52	13

4.2 Testing for ARCH Effects

The first step in estimating the GARCH models is to examine the presence of ARCH effect or heteroscedasticity. The result of the Engle (1982) ARCH LM test statistic on daily stock returns on table 2 below shows a value of 17.88191 with probability value of 0.0000, also Obs*R-squared has value of 16.88150 with probability value 0.0000. These suggest rejection of homoscedasticity and validating the presence of ARCH effects in the stock market returns data. This shows that EGARCH model is good to go as already confirmed with the trend analysis.

Table 2: Test of ARCH Effects

ARCH LM Test	Value		Prob.
F-statistic	17.88191	Prob. F(1,266)	0.0000
Obs*R-squared	16.88150	Prob. Chi-Square(1)	0.0000

4.3: Estimation of Model using EGARCH

Daily, Weekly and Monthly returns in table 3 below disclosed as follows; Daily ASI has coefficient of the conditional volatility (b_2) of -2.147635 with Probability value of 0.7909, whereas parades coefficient of the conditional volatility (b_2) of -1268.486 with Probability value of 0.0000, while monthly ASI goes with coefficient of the conditional volatility (b_2) of 122.9821 with Probability value of 0.9468. This reveals that for Daily and Monthly ASI, conditional variance (volatility) impacts insignificantly on the stock returns in Nigeria amidst COVID-19 within the period of this study. But, conditional volatility is negatively and significantly related to weekly stock returns.

The persistent parameter (β) is only positive and significant on daily ASI, and conversely on weekly and monthly ASI. This suggests that the stock return volatility is persistent on daily watch amidst COVID-19 in Nigeria within the period under study.

Asymmetry parameter (Υ) is positive and significant at 10% significant level for daily and weekly stock returns. From the rule of thumb; If γ is negative, leverage effect exists. That is bad news increases predictable volatility more than good news of similar magnitude, but otherwise in this study. This shows that there is no asymmetric effect in the stock market, suggesting good news has the propensity to magnify volatility in the market amidst COVID-19 pandemic within period under study.

The magnitude effects ($\propto$) (volatility clustering) coefficient of EGARCH are positive and significant for daily and weekly returns, except monthly returns. These are sufficient evidences that the conditional volatility tends to rise (fall) when the absolute value of the standardized residuals is larger (smaller). Also the sum of the ARCH and GARCH parameters $\alpha + \beta$ is approximated to be 1 ($\alpha + \beta = 1.490585$) for daily all share index suggesting a high persistent of volatility clustering. Though not obtainable on weekly and monthly return

with $\alpha + \beta = 0.009908$ and 0.145019 respectively. The Durbin-Watson (Dw) statistics for Daily, Weekly and Monthly ASI respectively, signpost absence of autocorrelation in all the models.

Table 3: ***EGARCH Estimation for Daily, Weekly and Monthly ASI***

Variables	Daily	Weekly	Monthly
b_2	**-2.147635 *0.7909	**-1268.486 *0.0000	**122.9821 *0.9468
b_1	**0.298695 *0.0000	**0.952707 *0.0000	**0.072653 *0.9713
b_0	**0.000809 *0.2367	**623832 *0.0000	**-0.796764 *0.9510
ω	**-1.228560 *0.0000	-6.599003 *0.0000	**-4.967525 *0.0000
B	**0.577675 *0.0000	**0.000447 *0.8770	**0.125018 *0.9529
γ	**0.080859 *0.0591	**0.023850 *0.0000	**0.087060 *0.9464
$\propto$	**0.912910 *0.0000	**0.009461 *0.0000	**0.020001 *0.9576
Durbin-Watson stat	1.994546	2.244299	1.535288

Note: **Coefficient of the conditional volatility; *Probability value.

V. Conclusion and Policy Implications.

5. 1 Conclusion

This study, 'Harnessing the Upside Potentials of Stock Returns Volatility Amidst the Corona Virus Pandemic in Nigeria, using daily, weekly and monthly All share index was incited because of the perceptions of investors about the stock market in the face of the COVID-19 pandemic. This is despite measures adopted to properly bulwark the stock market amidst the Novel Corona Virus (COVID-19) pandemic. After subjecting the models to empirical investigations, the following were observed; stock returns proxied by all share indexes empirically found (with slight variants in results) that conditional variance (volatility) exerted insignificant impact on the stock market returns in Nigeria amidst COVID-19 for almost year of the outbreak. It was also found that stock return volatility is persistent amidst COVID-19 in Nigeria within the period of this study. Asymmetry parameter was found to be positive and significant, validating asymmetric effect in Nigeria stock market. This signposts that bad news from the COVID-19 is increasing volatility more than goods news of the same magnitude in the Nigeria stock market for a year now.

5.2 Policy Implications

The general perception of the market is adjudged with the preposition of the Capital Asset Pricing Model (CAPM), that expected return from any market security or portfolio is an increasing function of its systematic risk or (beta coefficient) (Sharpe, 1964; Linter, 1965). Since systematic risk is that portion of a security's total risk which cannot be diversified away therefore, the more systematic risk a security has, the more the return investors will require inducing them to hold the security in their portfolio. The CAPM sees every risk in market as single factor (systematic risk). These assumptions have done more harm than good to investors, hence causing withdrawal panic. Again, on network analysis that opines; those individual or retail investors tend to adopt feedback strategies and rely primarily on stock information to infer value of a stock; hence, co-attention networks promote information that captures investors' attention (Bange, 2000; Chen, Kim, Yao and Yu, 2010)

However, the findings of this study have tried to allay the fears of uncertainties on the investors, that the COVID -19 is just a single risk factor; there are numerous factors that could position the stock market for efficiency. On this premise findings of this study corroborate the Arbitrage Pricing Theory (APT), that opine that there may be one or more macroeconomic factors that may measure the systematic (non- diversifiable) risk of an asset. The fundamental logic of APT is that investors always indulge in 'arbitrage' whenever the find differences in the returns of assets with similar risk features. It is allows a number of potential variables (factors), unlike the CAPM to influence the expected on asset (Ross, 1976).

In the light of the findings and policy implications, for instance that, conditional variance (volatility) exerted insignificant impact on the stock market returns in Nigeria amidst COVID-19 for almost a year of the outbreak, the researchers are bold to suggest to investors that good potentials abound in the stock market despite the pandemic ravaging the globe. No wonder, on January 29, 2021 as reported by Vanguard, the Nigerian Stock Exchange emerged the African Best performing Stock Exchange having ended the week and month of January in green territory. Again investors are encouraged to go ahead with their normal business activities in the stock market, because what is playing out is asymmetric effect.

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