
**EFFECT OF INVESTORS' SENTIMENT ON STOCK MARKET RETURNS IN NIGERIA
(1990-2017)**

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ABSTRACT

The study investigated the effect of investor sentiment on stock market returns in Nigeria, using a 28-year time series data from 1990-2017. The method of analysis used is multiple regression techniques. We analyze the impacts of sentiment on stock market returns. We consider the impact of five variables to estimate sentiment index whose data derived from: Nigerian Stock Exchange, Central Bank of Nigeria statistical bulletin, Nigerian Bureau of Statistics, Securities and Exchange Commission and so on, including 189 (observations) securities quoted on the capital market. The investors' sentiment predictors used are Consumer Confidence Index (CCI) Stock Price (P) Turnover ratio (Turn) Dividend Premium (DP), Initial Public Offering (IPO). The result of the analysis shows that there is a positive correlation between changes in sentiment predictors and stock market returns for some variables, demonstrating that individual investor sentiment affect stock prices. Though, the influence of individual investor sentiment seems to be affected by the force of arbitrage. The study also reveals that bullish sentiment leads to higher market excess returns, while bearish sentiment leads to lower excess return. It was recommended that the capital market should create an enabling environment that is highly regulated to cause a free flow of information to enable investors to be rational and mitigate their sentiment backdrops.

KEYWORDS: investor sentiments, noise traders, stock market returns, sentiment index, consumer confidence, arbitrage

1. INTRODUCTION

Investors' sentiment, otherwise known as market sentiment has been a subject of interest for many years, essentially in the finance literature. In investment context, sentiment is considered to mean fluctuations in risk tolerance or to overly optimistic or pessimistic cash flow forecasts. Sentiment is expected to have an impact on assets pricing which is different from the impact of fundamentals (Edelen, Marcus, Tehrnan. 2010). When sentiment rises, investors seek to increase their investment allocations to risky assets, thereby bidding up valuations and, in the process, lowering the expected future return (given fundamentals) on those assets. Sentiment according to Yoshinaga and Figueiredo de Castro Junior (2012) can be defined as beliefs about future cash flows and investment risks that are not rationally justifiable considering the information available to the investor. While Baker and Wurgler, (2006) asserts that investor sentiments as the belief about future cash flows or

discount rates that are not supported by the prevailing fundamentals.

Investors' sentiment refers to the overall attitude of investors towards the financial market. It represents the feeling, mood, belief or expectation of investors and may have an influence on their decision making. Recent studies provide explanations for the influence of financial market sentiment as against two types of investors. According to De long, Shleifer, Summer and Waldman (1990): (a) the rational arbitrageurs not influenced by sentiment (b) irrational investors vulnerable to exogenous sentiment. Both trade in a competitive market and set prices and expected returns for the assets. The study of market sentiment has its basis in the theories of Noise Traders Models. Black (1986) suggests that if some traders trade on noisy signals, unrelated to fundamental data, then the market prices may deviate from intrinsic value. The Noise Trader Sentiment must be difficult to predict to avoid arbitrage. In same direction, De long, Shleifer, Summer and Waldman (1990) surmise that the assets that are disproportionately exposed to Noise Trader- risk are both riskier and have to offer an extra return premium.

Sentiment could be induced by noisy information limited trading experience, or is a response to Pseudo-signals convincing investors to contain new information. The financial gurus or stock brokers are the examples of such Pseudo-signals (Shleifer and Summers, 1990). It may stimulate investors to trade at illogical moments and either to over or to underestimate the stock performance. As a result of the complexity of the market and of investors, several biases can influence investors at once. Sentiment is also called a "top-down approach" as it is the measure that sums multiple biases into lone variable (schaul, 2013).

Most models that investigate the effects of investor sentiment on stock market pricing adopt the important assumptions that noise traders fulfill an important role in financial markets. The noise traders who are described as investors that trade not fully on new information, but on beliefs or Pseudo-signals are called Pessimistic. Their expectations of future dividends are below the expectations of rational arbitrageurs. They have less skills and trading experience, who cannot properly judge the quality of information and therefore trade more on emotions than rational investors do.

The traditional asset pricing theory according to Yang and Copeland (2014) suggests that rational arbitrage necessarily forces price closer to fundamentals and leaves no role for Investor sentiment. The Capital Asset Pricing Model (CAPM) theoretically argues that systematic risk is measured by the exposure to the market portfolio. prior literature has shown, however, that the standard CAPM cannot explain the returns on stock with certain firm characteristics or price histories such as the size effect, value effect, and momentum effect, which have been termed as asset-pricing anomalies in literature.

In the words of Baker and Wurgler (2006, 2007), they postulate that sentiment affect the cross-section of stocks returns. They give us an excellent illustration of the theoretical effect of sentiment on stock returns. The main channels by which sentiment can affect pricing are investor sentiment and arbitrage. That is, sentiment demand shocks vary across stocks while arbitrage limits are constant. Investor sentiment can be interpreted as the propensity to speculate. Sentiment drives the relative demand for stocks that are more vulnerable to speculation, whose valuations are subjective and difficult to determine. Like, small or young, extreme growth, unprofitable, and non-dividend paying stocks, should be difficult to price. As a result, opaque stocks are more vulnerable to broad shifts in investor sentiment. On the other hand, translucent stocks are less likely to be affected by fluctuations in the propensity to speculate (Yang and Copeland, 2014).

The capital market as an entity suffered some major financial crashes in 1929, 1962, 1987, 1998, 2000, and 2008. Which prompted most researchers to think beyond the financial and economic variables, this also affect emotional aspects of the investors. The emotional aspect which shape the decision making process of the investors (Rheman 2013). Human sentiments are better indicators in the determination of final security prices than any other economic variables (Wang, Li, and Lin 2009). Studying the impact of sentiments in developing market, the selection of sentiments is crucial and emerging market in the world have higher velocity but the persistence is low as compared to the developed markets (Michelfelder and Pandya, 2005). The challenge is that many researchers all over the world have investigated the impact of investors' sentiment in other countries but not so common in regards to stock markets in African countries. How has investors' sentiment really driven stock markets and returns in Nigeria? Most of the reviewed studies have some methodological and conceptual problems that undermine their accuracy and thus their efficacy for effective investment decisions. For instance, non application of unit root test to reduce or if possible, eliminate spurious regression due to non-stationary properties of the time series and the use of cross-country analysis that precludes the country specifics, which may lead to biased inferences.

In the light of foregoing therefore, it is also to be noted that literature on investor sentiment is still in its infancy stage and much remains to be developed, discovered and learnt. As a result of the limited amount of research in this area, this research work attempts to fill the gap in the literature by investigating the predictability of investor sentiment on stock returns in the Nigerian stock market. The work draws from earlier work by Baker and Wurgler (2000, 2004, 2006, 2007), Brown and Cliff (2004), DeLong, Shleifer, Summer and Waldmann (1990), Baker, Wurgler, Malcolm (2004), Qui and Welch (2006), Tetlock (2007), with respect to the chosen proxies for investors' sentiment.

In the light of foregoing, the following hypotheses were formulated to guide the study:
Ho1 The consumer confidence index does not significantly affect stock market returns.

- Ho2 The initial public offerings do not have significant impact on stock market returns.
- Ho3 Dividend premium does not affect stock market returns.
- Ho4 The stock price does not significantly affect stock market returns.
- Ho5. The turnover ratio does not have any positive relationship with stock market returns.

2. REVIEW OF RELATED LITERATURE

2.1 conceptual review

Previous market crashes have mainly focused on the concept of efficient market hypothesis thus ignoring the effect and importance of investor's sentiments but now increasing number of investors do believe on noise trader's theory and Investor's Sentiments and Stock Market Volatility Approaches of the investors (Li et al 2008). Financial markets are composed of mainly three types of investors, first one are the rational traders whose decisions are solely based on fundamental knowledge, then second type are the emotional investors making decision on emotions, self perceptions and finally the noise traders who make random decisions without any logical basis (Kuzmina 2010). Noise traders are present in almost every stock market but their impact is influenced by whether the market is emerging or stable enough to absorb such disorders or distortions caused by these noise traders. If the effect of these noise traders does not cancel out in aggregate, then the risk for arbitragers increases. Noise traders have a major role in the disruption in regularity of the rational investors as their non-fundamental knowledge makes it more risky for the arbitrageur, thus having noise impact on the stock market returns and vice versa. These noise traders have no sophisticated or specialized knowledge and their emotions play a major role in their investment decisions in stock markets (Glaser et al 2009).

According to Zhang (2008), sentiment can be defined as any erroneous beliefs that individuals have about an economic variable, such as asset prices. For Smidt (1968), it is the presence of sentiment that leads to speculative bubbles. For Zweig (1973) sentiment is related to cognitive biases of investors. Lee, Shleifer and Thaler (1991) define the market sentiment as part of their expectations about the returns of assets which are not justified by economic fundamentals. Baker and Wurgler (2006) define sentiment as the investor propensity to speculation; that is, sentiment drives the demand for speculative investments. According to Shiller (1984), investors' behaviour often leads to fluctuations in asset prices, with no justifiable rationale. Black (1986) called investors' expectations about the returns of assets that are not based on its fundamentals of value noise trader sentiment. Likewise, Baker and Wurgler (2006) argue that the main cause of price fluctuations is the difficulty in valuing companies since investors do not have homogeneous expectations as predicted by the EMH. How market sentiment affects asset prices is a question that still generates different opinions. There are two possible explanations for the existence of these disparities: individuals correctly use

misinformation or individuals incorrectly use accurate information. The first alternative assumes that investors adjust their beliefs about the fundamentals of value incorporating the noise, and the second assumes that they do it while misusing statistical tools.

The measurement of sentiment can be made through a latent variable, as Hair, Anderson, Tatham and Black (1998: 581) states: “construct or latent variables cannot be measured directly, but can be represented or measured by one or more variables”. Thus, one way proposed by researchers to measure the expectation of investors about price trends in the market was by creating an index. There are several explanations for the association of a given variable to the construct of sentiment. Some of them relate to the market negotiability (turnover, IPOs, volatility) and others try to capture investors’ mood variations (weather, sunny hours in day, season of the year, soccer results). For a detailed description of sentiment variables used in behavioural finance studies.

Many studies have been trying to find out if sentiment has a predictive power on stock returns. There is a variety of sentiment measures that were included in pricing models to test its relationship with stocks’ price behaviour. Lutz (2010) verifies the influence of three different sentiment measures on future performance of stock prices: the Baker and Wurgler’s Sentiment Index (Baker & Wurgler, 2006, 2007); the smoothed earnings-price ratio and the VIX (Volatility Index) calculated by the Chicago Board Options Exchange. His dependent variable is the market weighted portfolio return, using Fama-French approach. In this study, we use individual stocks in the pricing model, since there is not a concern of stocks being continuously traded without interruption (Saito & Bueno, 2007). His findings present that those sentiment measures have very little out-of-sample predictive power, though they present significant in-sample results.

Shu (2010) studies the influence of mood on financial market behavior. The study shows how investor mood variations affect equilibrium asset prices and expected returns. The results indicate that both equity and bill prices correlate positively with investor mood, with higher asset prices associated with better mood. The Relationship between Market Sentiment Index and Stock Rates Contrary to efficient market hypothesis there are two assumptions that need to be focused, first the rational investors that have complete and more sophisticated knowledge and the second one is the existence of these irrational trading investors that have no fundamental beliefs and so the arbitrageurs cannot control the noise created by these irrational investors and therefore these noise traders affect the security returns (Shleifer and Summers 1990). In the context of classical finance, the rational calculations about the stock returns bring estimated value close to the intrinsic value of the security, unlike in case of noise traders where the sentimental judgments about the stock returns overvalue or undervalue any asset far extent (Lahmiri 2011). Short term effects are hold more and price pressure effects whereas long term effects are volatility in the returns following the actions of variations in sentiments (Lei et al 2011). The stock markets in reality are too vast and complicated

that selecting merely few factors of these biases (sentiments) will not serve the purpose. The main goal is to pinpoint those factors that shape the sentiments Investor's Sentiments and Stock Market Volatility.

In making decision about stock trading rather than pointing that these sentiments affect the stock market returns (Baker and Wurgler 2006). In behavioral finance studies, many proxies of the investor's sentiments i.e., investor's mood, trading volume and closed end fund discount have been identified to measure the impact of these sentiments in the decision making process of the investors (Lahmiri 2011). Baker and Wurgler (2006) mentioned some proxies that play a major role in shaping the sentiments of these irrational traders. These proxies are investors surveys, retail investor traders, investor mood, trading volumes, mutual fund flows, dividend premium, closed end fund discount, option implied volatility, IPO's first day returns, IPO's volume, insider trading and equity issues over total new issues. In real markets, investor's sentiments are treated as a proxy measure of the noise trader's behaviors. These sentiments can affect the returns both in the long and short term.

The sentiments of investors do play an important role in returns of the stock market if the retail investors are in great number but in developed markets, the institutional investors are in dominant position and therefore minimize the influence of this volatility of returns due to the sentiments of these irrational traders (Finter et al 2010). But, even in the developed market, the investors spend less time in investment analysis and more time on trading activities mainly based on the information from their counterparts, resulting in a deviation from the market co movements and therefore assets dominated by such kind of investors could be characterized by pricing anomalies (Kumar and Lee 2006). Noise traders have the capability to limit the activities of the arbitrageurs and therefore they themselves earn smart money. So, sentiments of the noise traders do explain the excessive returns by the retail investors as it is the systematic part of the risk present in the market (Lux 2008). According to him, sentiments do not provide any additional information about the stocks except the information content and past returns of the stocks. So, if any additional information is available, then the process of the arbitrage will be evoked. Noise traders risk exists in most of the markets and these noise traders have above average returns than the rational investors.

Stocks that have not been performing well or having low current market prices are perceived by the irrational investors to have low returns in the future also, whereas any stock that is not performing well is expected to have low price to earnings ratio, but indirectly with this low ratio they are earning more on the market price of a specific stock, so investors usually make investment decisions based on beliefs held by them (Liang and Ouyang 2010). According to Michelfelder and Pandya (2005), the volatility shocks are persistent for smaller time in mature markets than the emerging markets and similarly non trading days have less impact on the mature markets as in these markets the developed information systems do not allow such information to accumulate for a long time to

eventually have a collective volatility effect. Conditional volatility of stocks is more influenced by negative shift in sentiments as compared to positive shift in sentiments. Sentiments do have an influence on the prices of the stock especially in the emerging stock markets (Huerta and Liston 2011). Sentiments do have forecasting power about the stock returns but it is limited and the more volatility is shown by the negative stock returns. The sentiments and negative shocks to the returns are neutralized by the arbitrageurs, still the sentiments play additional role in such transactions (Wang et al 2009).

2.2 Theoretical Framework

Three theoretical models explaining noise trading or investor sentiment are presented to give a clear overview of the structure of the work that shaped the behavioral finance.

2.2.1 Noise Trader Risk in Financial Markets

The model of DeLong, Shleifer, Summers and Waldman (1990) was one of the first models that explain noise traders in the calculation of market prices. They introduced the concept of the noise trader risk which has to be borne by arbitrageurs with a short time horizon.

The model is a simple overlapping generation's model with two groups of agents: On the one hand, there are risk adverse sophisticated investors with rational expectations, and on the other hand, there are noise traders with incorrect beliefs and irrational misperceptions. Agents have the choice between a safe asset with a fixed dividend and perfectly elastic supply, and an unsafe asset with the same fixed dividend but without elastic supply - it is in fixed and unchangeable quantity. Agents live two time periods. They choose their portfolios in the first period to maximize the perceived expected utility given their own beliefs about the mean of the distribution of the price in the second time period. The representative sophisticated investor accurately perceives the distribution of returns from holding the risky asset, and so maximizes expected utility given that distribution. The representative noise trader misperceives the expected price of the risky asset.

2.2.2 A Model of Investor Sentiment

Barberis, Shleifer, and Vishny (1998) present a model of investor sentiment which explains phenomena of under reaction to new information as well as overreaction to either good or bad news because people tend to see familiar patterns.

The model incorporates one risk-neutral representative investor and one asset. The beliefs of this representative investor should be regarded as 'consensus beliefs' even when real investors' opinions are different. The investor's beliefs affect prices and returns. The earnings of the asset follow a random walk. However, the representative investor believes that the behavior of earnings moves between two states (or regimes): In the first state, earnings are mean-reverting. That means e.g.

upward price movements are followed by price declines with a high probability. In the second state, earnings trend, i.e. earnings tend to rise further after an increase and to decline after a drop. The probabilities for the change between two states, i.e. the transition probabilities, are fixed in the investor's mind. In any given period, the investor thinks that the firm's earnings are more likely to stay in the state they are in than to change to the other state. The investor then observes earnings and updates his beliefs according to the Bayes' model. In particular, he raises the likelihood that he is in the trending state if earnings increase in subsequent periods. On the other hand, the likelihood for the mean-reverting state is increased if good and bad earnings alternate.

2.2.3 Distinguishing Between Rationales for Short-Horizon Predictability of Stock Returns

The model by Subrahmanyam (2005) is primarily concerned with short-horizon return reversals. He identifies two possible explanations in the literature: Some authors take the position that market microstructure phenomena (e.g. risk-aversion-related inventory effects or the bid-ask bounce) are the causes of these reversals. Subrahmanyam (2005) presents an equilibrium model that incorporates both risk aversion- related inventory phenomena as well as behavioral effects. In his model, risk adverse agents absorb order flow from outside investors. A risky security is traded at dates 1 and 2, and pays off a random amount at date 3. There is a continuum of risk adverse agents who absorb liquidity shocks that appear in the market. At date 2, each agent receives a signal. Part of the agents mis-assesses the variance of the signal as too low. This captures overreaction and correction in the model. A demand shock arrives at the market on date 2, and risk adverse agents demand a premium to absorb it. Therefore, the security price has two components: The liquidity premium and the conditional expectation of the asset's value.

By capturing agents' beliefs as well as risk aversion, the model allows obtaining implications for the relation between current returns, past returns, and past order flows. The model indicates that risk-aversion-related inventory effects are accompanied by a relation between current returns and past order flows. However, no such relation can be found with respect to belief reversion. Subrahmanyam (2005) concludes – as other research indicates – that inventory effects do not appear to completely account for the return reversal usually found at a monthly horizon. His results accord with the notion that monthly reversals are caused, in substantial part, by reversals in beliefs of financial market agents.

The study anchored on the noise traders risk in the financial market for the reason that it introduced the concept of the noise trader risk which has to be borne by arbitrageurs with a short time horizon.

2.3. Empirical findings of the sentiment-return relation

Over the last decades a large body of research shows that investor sentiment influences stock prices. Though the issue is no longer whether investor sentiment affects stock prices alone, but rather how

to measure it and to what extent sentiment influences the stock market. Lee et al (1991) examine close-end fund discounts as a proxy for individual sentiment and if this explains the fluctuations of prices and returns on close-end funds. Their findings indicate that close-end fund discounts are negatively correlated with fund's returns, which suggests that optimism or high sentiment leads to low fund's returns and vice versa. The explanation they propose states that if sentiment is high in the beginning of the period, noise traders over-estimate the underlying value of a security and are more driven to buy the stock. This will drive up the trading prices and depressing realized returns.

Comparing sentiment of individuals with sentiment of institutional investors, Fisher and Statman's (2000) used data from the American Association of Individual Investors that conducts a monthly survey among members. They compare this direct measure of individual sentiment to the sentiment level of newsletter writers and Wall Street strategists and examined if it predicts stock returns. Their result suggests that high consumer confidence is an indicator for low subsequent returns. Looking at the flow variable of sentiment, that is changes in consumer confidence, they argue that it moves in the same direction with returns.

Another measure of sentiment proposed by Brown, Goetzmann, Hiraki and Watanabe (2002) is based on daily mutual fund flows. Their findings support the hypothesis that the sentiment factor is persistent and should be priced. Interesting to note is that they both look at the U.S. and Japanese stock market and find that for Japan sentiment is negatively correlated with equity funds, but positively in the U.S. market. This suggests that there is foreign vs domestic sentiment factor in Japan that does not appear in the U.S.

Brown and Cliff (2004) and (2005) propose a sentiment index, by employing PCA to combine several sentiment proxies. In addition they employ a Vector Auto Regression (VAR) to examine the causal relation between their sentiment index and expected returns. The findings indicate that most proxies used for their sentiment index are highly correlated with a survey, conducted to directly measure sentiment. Furthermore, investor sentiment affects asset valuation and market pricing errors are positively related to sentiment. Next to that, over multiple years they find future returns to be negatively related to sentiment, but the predictive power of the sentiment index for future stock returns is relative weak and often insignificant. Building on the insights of Brown and Cliff (2004), Baker and Wurgler (2006) construct a sentiment index by using a PCA to combine six proxies for sentiment. They find that if sentiment is high, there will be speculative stocks profit and vice versa. In addition they state that small stocks, growth stocks and young stocks are most difficult to value and thus are most affected by sentiment.

Tetlock (2007) measures investor sentiment by analyzing media content of the Wall Street Journal column. He finds that high media pessimism (low investor sentiment) predicts downward pressure

on stock prices followed by a reversion to fundamentals. In addition he states that an extreme value of pessimism predicts high market trading volume.

While, earlier evidence of the sentiment-return relation is primarily focused on the U.S. stock market, only a limited number of studies analyze the relation for non-U.S. markets. Jansen and Nahuis (2003) use the European Commission's consumer confidence index (CCI) as a proxy for sentiment and find that it is positively correlated for nine European countries. Baker, Wurgler and Yuan (2011) construct sentiment indices for six major stock markets and find that global sentiment is a contrarian predictor of country-level returns. In addition, for both global and local sentiment it proves that when sentiment is high, future returns are low. So, fluctuation of sentiment is inversely correlated with stock returns. Also Schmeling (2009) examines the sentiment-return relation internationally. He finds that sentiment negatively forecasts stock market returns on average across countries. Furthermore, the cross-sectional model suggest that the impact of sentiment on stock returns is higher for countries which have less market integrity and which are culturally more prone to herd-like behavior and overreaction.

Theoretically, variables which are related to the investor behavior should anticipate market sentiment. Thus, it is expected that $TURN_{t-1}$, DIV_{t-1} and $TRIN_{t-1}$ present greater correlation with the sentiment index than their contemporaneous values. Moreover, variables that reflect the firm behavior, like St and $NIPO_t$, should be directly related to market sentiment, being more correlated with the index than their respective lags.

Regarding the expected signs, variables related to the intensity of the volume of traded stocks are directly related to market sentiment. Thus, S and $NIPO$, which indicate a greater supply of equity shares by companies, as well as $TURN$, that shows increased trading on the stock exchange, must have positive sign in the sentiment index. On the other hand, variables $TRIN$ and DIV , should present negative signs. Dividend-payer firms, in theory, have fewer opportunities to grow since they are not retaining resources to reinvest, and demand for them should occur more strongly when the market is pessimistic and less confident in investment projects. Conversely, when the market is optimistic, the demand should be greater for firms with investment opportunities which pay fewer dividends. The variable $TRIN$, likewise, has an inverse relationship with the sentiment index. Higher $TRIN$ values indicate the expectation of a pessimistic market and vice-versa.

Baker and Stein (2004) suggest that turnover, or more generally liquidity, can serve as a sentiment index. In a market with short-sales constraints, irrational investors participate, and thus add liquidity, only when they are optimistic. Hence high liquidity is a symptom of overvaluation. Supporting this, Jones (2001) finds that high turnover forecasts low market returns. Turnover displays an exponential positive trend over a given period. As a partial solution, we define $TURN$ as the natural log of the

raw turnover ratio, detruded by the five-year moving average.

The IPO market is often viewed as sensitive to sentiment, and high first-day returns on IPOs are cited as a measure of investor enthusiasm. Likewise, the low idiosyncratic returns on IPOs are often interpreted as the result of market timing (Stigler (1964), Ritter (1991)). We take the number of IPOs NIPO and the average first-day returns RIPO from Jay Ritter's website, which updates the sample in Ibbotson, Sindelar, and Ritter (1994). The share of equity issues in total equity and debt issues is another measure of financing activity that may capture some aspect of sentiment. Baker and Wurgler (2000) find that the equity share is inversely related to subsequent market returns.

The last sentiment proxy is the dividend premium, Baker and Wurgler (2004) used this variable to proxy for relative investor demand for dividend-paying stocks. Given that payers are larger, more profitable, and have weaker growth opportunities, this variable may proxy for the relative demand for this correlated bundle of characteristics.

Each sentiment proxy is likely to include a sentiment component and as well as idiosyncratic or non-sentiment-related components. Another issue in forming an index is deciding on the relative timing of the variables—i.e., if they exhibit lead-lag relationships, some variables may reflect a given shift in sentiment earlier than others. For instance, Ibbotson and Jaffe (1975), Lowry and Schwert (2002), and Benveniste et al. (2003) find that IPO volume lags the first-day returns on IPOs. Perhaps sentiment is in part behind the high first-day returns, and this attracts additional IPO volume with a lag. More generally, one suspects that proxies that involve firm supply responses (S and NIPO) would lag behind proxies that are based directly on investor demand or investor behavior (RIPO, PD-ND, TURN, and CEFD).

3. METHODOLOGY

The study adopted a composition of descriptive, qualitative, and quantitative method of research for the reason that, it allows proper investigation of a contemporaneous issue like investor sentiment to be assessed. It is proper to create the variable that can measure the market sentiment and then check their relationship with stock returns listed on Nigeria stock exchange (NSE). To estimate the sentiment index, we chose to apply the multivariate technique of multiple regressions.

There are many proxies that can be included in the sentiment index, previous researchers used different proxies based on their understanding and also impact which these proxies have on stock market returns. This study employed five sentimental proxies whose data have been drawn from NSE, CBN, statistical bulletin, BGL research, N OI polls, CCI result release, NBS, SEC, others include: annual reports, journals, financial statements, published materials and many others from the period 1990-2017, affecting 189 securities listed on the capital market.

To construct the market sentiment index, the following variables already used by other researchers such as Baker and Wurgler (2006, 2007), Wang, Keswani, and Taylor (2006), and Lee, Shleifer and Thaler (1991), were considered:

- Consumer confidence index
- Turnover ratio
- Initial public offerings
- Dividend premium
- Stock price.

3.1 Model Specification

As a result of the empirical review made on several works, the study specifies that the investors’ sentiment is proxies by economic fundamentals. Multiple regression analysis was employed to evaluate the effect of investors’ sentiment on stock market returns in Nigeria. Stock market is proxies by All Share Index (ASI) which represents the dependent variable. The model is thus, specified in its functional form as well as its implicit form as follows:

$$ASI = f(CCI, IPO, TURN, DP, SP) \dots\dots\dots (i)$$

The independent variables are defined as follows:

- CPI – Consumer confidence Index
- IPO – Initial public offerings
- TURN – Turnover
- DP – Dividend premium
- SP – Share Stock price

The model can be restated using the explicit form as follows:

$$ASI = \partial_0 + \partial_1 CCI + \partial_2 IPO + \partial_3 TURN + \partial_4 SP + \partial_5 DP + \varepsilon_t \dots\dots\dots (ii)$$

$\partial_1 > 0, \partial_2 > 0, \partial_3 > 0, \partial_4 > 0, \partial_5 > 0 \dots\dots\dots$

Where:

∂_0 = intercept value of the dependent variable,

ε_t = the random error term,

$\partial_1, \partial_2, \partial_3, \partial_4, \partial_5$ = the regression coefficients of the independent variable.

The appropriate econometric model for this study is specified as follows:

$$ASI_t = +\partial_0 + \partial_1 CCI_t + \partial_2 IPO_t + \partial_3 TURN_t + \partial_4 DP + \partial_5 SP + \varepsilon_t \dots\dots\dots (iii)$$

Where: ASI_t = represents composition of all share price index proxy for capital market prices, CCI_t = Consumer confidence index proxy by bandopadhayaya index, IPO_t =Initial public offering, $TURN_t$ =Turnover for the 12 months period for the equity market representing excess demand, DP = dividend policy for trading period, SP = Share Stock price, moreover, ε_t = Error term or disturbance term and ∂_1 = coefficient of estimates. The market fundamental from these variables are CCI, IPO, TURN, DP, and SP. In representing non-market factors, the investors' sentiment index was used ($Sent_t$) while expected consumer sentiment (sent) is used to proxy economic fundamental

The study adopted the error correction model in examining the long-run and short-run dynamic relationship in equation (iii). According to Granger (1988) and Miller and Russell (1990) there are two potential sources of causation of dependent variables by the independent variables. This includes the error correction coefficient (β) and short coefficient (δ) which measures the long-run and short-run relationship between the dependent variables and the independent variables. This therefore necessitates the need to re-specify equation (iii) into an error correction model. This is shown in equation (iv);

$$\Delta Asi = \partial_0 + \partial_1 \sum_{i=0}^p \Delta Cci_{t-i} + \partial_2 \sum_{i=0}^p \Delta Ipo_{t-i} + \partial_3 \sum_{i=0}^p \Delta Turn_{t-i} + \partial_4 \sum_{i=0}^p \Delta Dp_{t-1} + \partial_5 \sum_{i=0}^p \Delta sp_{t-1+i} + \beta ecn_t + \varepsilon_t \dots \dots (iv)$$

3.2 Methods of Data Analysis

The secondary data for the study was collected, coded and analyzed using e-view 9.0 computer software. Multiple Regression Analyses was used to assess the nature and degree of relationship between the dependent variable and a set of independent or predictor variables. However, standard error of the estimate was used to test the five hypotheses for this study.

DATA ANALYSIS AND INTERPRETATION

4.1 Descriptive Statistic

It describes variable used in the model and also provides an idea of the characteristics of the variables. The mean, standard deviation and probability values are clearly stated. The mean and standard deviation of any given set of data are usually reported together, standard deviation is a measure of uncertainty. They measure how spread-out a trend is in a given set of data. A high standard deviation of any given data indicates that the data points are far from the mean and a low standard deviation shows that the data points tends to be very close to the mean.

Table 4.1: Measure of Dispersion.

	ASI	TURN	CCI	IPO	DP	SP
Mean	26085.31	6.336800	-0.800000	6.024000	5.042400	11.43240
Median	12137.70	5.960000	1.000000	0.890000	2.740000	1.750000
Maximum	157097.7	17.56000	8.000000	61.09000	17.02000	159.0000
Minimum	513.3000	0.020000	-9.000000	-0.170000	0.840000	0.310000
Std. Dev.	40432.73	4.959256	4.636809	13.82398	4.725656	31.74044
Skewness	2.533772	0.592598	-0.073712	3.157003	1.315982	4.267200
Kurtosis	8.395631	2.480481	2.183928	12.12578	3.847244	20.29621
Jarque-Bera Probability	57.07586 0.000000	1.744366 0.418038	0.716361 0.698947	128.2776 0.000000	7.963605 0.018652	387.4947 0.000000
Sum	652132.9	158.4200	-20.00000	150.6000	126.0600	285.8100
Sum Sq. Dev.	3.92E+10	590.2613	516.0000	4586.456	535.9639	24178.94
Observations	25	25	25	25	25	25

Source: author's computation using E-view 9.0 computer software.

From the above table, the standard deviation of TURN, CCI, IPO SP and DP shows that the data points are close to the mean and the spread out of the data are not far from one another. While ASI indicates a high output of 40432.73 and this shows that the spread out of data is far from one another.

4.2 Unit Root Test Using ADF Statistics.

The Augmented Dickey Fuller Test (ADF) is used to test whether the variables under consideration are stationary or not, and at what level of stationarity.

Table 4.2: ADF Unit Root Test Result.

Variable	ADF TEST STATISTICS				
	P. Values	ADF Statistics	Critical Value (5%)	Level of Integration	Stationary
ASI	0.0000	-6.129619	-2.998064	1 (1)	Stationary
TURN	0.0116	-3.685195	-2.998064	1 (1)	Stationary
CCI	0.0263	-3.300529	-2.991878	1 (0)	Stationary
IPO	0.0011	-4.698107	-2.991878	1 (0)	Stationary
DP	0.0005	-5.019659	-2.991878	1 (0)	Stationary
SP	0.0005	-5.046548	-2.991878	1 (0)	Stationary

Source: Author's computation using E-views 9 computer software.

The unit root test results in Table 4.2 shows that ASI and TURN, are integrated at 1st difference 1(1) at 5% significant level. While other variables such as CCI, IPO, DP and SP were integrated at levels 1(0).

This means that there exists a mixed order of integration which calls for Autoregressive Distribution Lag (ARDL) test approach. The data were estimated and the results are presented in accordance with the procedure required for ARDL technique.

4.3: ARDL Optimal Lag Selection

Given that the data on variable for this study are stationary at order one 1(1) and order zero 1(0), Auto regressive distributed lag (ARDL) method is used to select the optimal lag order for the study. The result of the lag order selection is presented in Table 4.3

Table 4.3; ARDL Optimal Lag Selection Results

Lags	ALC	SC	HQ
1	1.858191	2.299961	1.975392
2	1.845604*	2.260559*	1.964934*

Source: Author’s computation From E-views 9.5

*Indicated lag order selected by the Akaike information criterion (AIC), schwarts criterion (SC) and Hannan-Quin criterion (HQ), because there values are minimal at lag 2. The results of the residual and stability are presented in Table 4.

Table 4.4: Results of Residual and Stability Analysis.

TEST	F STAT	PRO
Breusch-Godfrey SeialComelation LM Test	0.693966	0.3298*
Breusch-pagan Godfrey Heteloscedasticity test	1.966438	0.1383*
Jaque-Bera normality Test	1.612279	0.4465*

Source: Author’s computation From E-view 9.5

Table 4.4 clearly indicated that there is absence of serial correlation and heteroscedasticity among the residual as shown in the Breusch Godfrey serial correlation LM Test and the Breush-pagan

Godfrey Heteroscedasticity Test results. The Jaque-Bea Normality Test result affirms that the residual are multivariate normal. The stability test shows that CUSUM (cumulative sum of recursive residuals) and CUSMSSQ at 5% level of significance indicate that the model and its parameter estimates are stable. The results of CUSUM and CUSMSQ are presented in figure 1

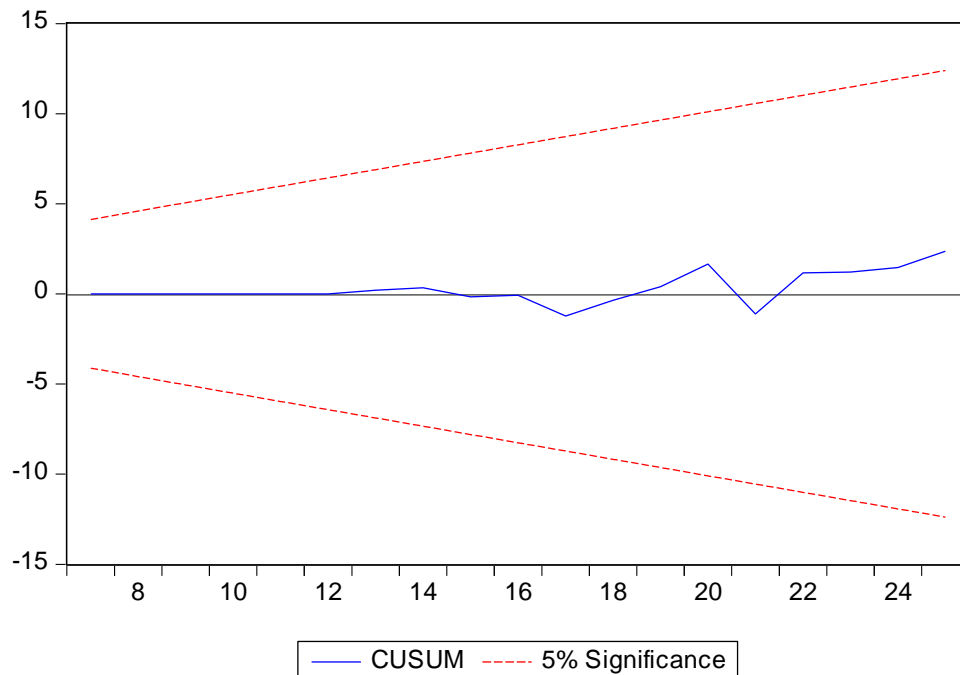


Figure 1
ARDL Bounds Test.

To ascertain whether a long-run relationship exist among the variables in the model, Bounds test was conducted and the results are presented in Table 5

Table 5: ARDL Bounds Test Results.

Test statistic	Value	K
F statistic	5.382844	5
Critical value Bounds		
Significance	10 Bound	11 Bound.
10%	2.08	3
5%	2.39	3.38
2.5%	2.7	3.73
1%	3.06	4.15

Source: Author’s computation from E-views 9.5

It is obvious from Table 5 that there is a long-run relationship among the variable because, F statistic value of 5.382844 is greater than the peasaran criteria upper bound value of 3.38 at 5% level of significance. The long-run ARDL coefficients were therefore estimated and result are presented in Table 4. 6.

Table 4.6: Long Run Co-efficient.

Variables	Co-efficient	std-Error	E-statistic	Prob
TURN	3.188421	13.127298	0.242885	0.8114
CCI	5.199459	22.316919	0.232983	0.8189
IPO	-0.798739	3.527000	-0.226464	0.8239
DP	0.213489	1.264488	0.168835	0.8682
SP	-0.992446	4.245905	-0.233742	0.8183
C	2.68266	24.978667	0.107398	0.9159

Source: Author's computation from E-views 9.5

The result in Table 4.6 shows a positive relationship between turnover ratio (TURN) and Investors Sentiment in Nigeria, a unit increase in TURN lead to a 3.18% increase in Investors Sentiment in the long-run. There is positive relationship between CCI, DP and Investors Sentiment such that CCI and DP influence positively on Investors Sentiment, such that a percentage increase in CCI and DP leads to 5.19% and 0.21% increase in Investors Sentiment respectively.

However, IPO and SP have negative effects on Investors Sentiment in Nigeria. It therefore means that a unit increase in IPO and SP leads to 0.79% and 0.99% decreases in Investors Sentiment. This finding is not in line with a priori expectations.

The probabilities of coefficients of variables in the model show that the variables in the model are not significant in influencing significantly the relationship between the dependent and the independent variables. However, the F-statistic value shows that the variables are collectively significant in explaining the relationship between the dependent and independent variables. The value of Adjusted R-squared (0.8574) indicates that 85% of charges in Investors Sentiment can be explained by the changes in the explanatory variables in the model. The short run estimates of the

coefficients are presented in table 7.

Table 7: Short run Estimates

Variable	Coefficient	Std. Error	T-statistic	Prob.
TURN	0.029801	0.044822	0.664879	0.5150
CCI	-0.132436	0.052519	-2.521660	0.0220
IPO	0.025430	0.014776	1.721008	0.1034
DP	-0.029611	0.047179	-0.627645	0.5386
SP	0.018105	0.007085	2.555258	0.0205
ECT (-1)	-1.211518	0.236858	-5.114948	0.0001
C	0.966662	0.433987	20.66111	0.0000

Source: Author's computation from E-views 9.5 Oput.

The ECT (-1) Value of -1.211518 from table 7 shows that even when Investors Sentiment drift away from equilibrium value in the short run, it has the ability to adjust back to long-run equilibrium at 121% speed of adjustment yearly. From the table it can be clearly seen that in the short run TURN affects Investors Sentiment positively. However, CCI has a negative effect on Investors Sentiment in the short run and it is significant at 5% level of significance. IPO and SP show a positive relationship with Investors Sentiment in the short run.

The coefficient of multiple determinations (R^2) revealed from the study shows that the model has good fit because the independent variables were found to jointly explain 0.70% of the variations in the dependent variable with R^2 – adjusted of 0.60% in the short run. The F-statistic was significant at 1% significance level which explains the overall significance of all the variables incorporated in the model as also indicated by both the R^2 and R^2 adjusted.

4.4 Discussion of Findings

The model specification for Sentiment establishes that a positive relationship exist between Consumer Confidence Index (CCI) and Investors Sentiment (SENT) and the relationship is statistically significant ($p < 0.05$) and in line with *a priori expectation*. As shown by the result of the regression analysis, a positive relationship exist between Initial Public (IPO) and Investors Sentiment (SENT) and the relationship is statistically significant ($p < 0.05$) and in line with *a priori expectation*. A positive relationship exist between Dividend Premium (DP) and Investors Sentiment (SENT) and the relationship is statistically significant ($p < 0.05$) and in line with *a priori expectation*. A positive relationship exist between Stock Price (SP) and Investors Sentiment (SENT) and the relationship is statistically significant ($p < 0.05$) and in line with *a priori expectation*. As shown by the result of the regression analysis, a positive relationship exist between Turnover ratio (TURN) and Investors Sentiment (SENT) and the relationship is statistically significant ($p < 0.05$) and in line with *a priori expectation*. These findings are similar to the finding so that Investor sentiment can be

favourably influenced by all these explanatory variables. The coefficient of determination R^2 for the study is 0.872 or 87.20%. This indicates that 87.20% of the variations in the model can be explained by the explanatory variables of the model while 12.80% of the variation can be attributed to unexplained variation captured by the stochastic term. The Adjusted R Square and R^2 show a negligible penalty (85.1%) for additional explanatory variables introduced by the researcher. The Durbin Watson statistics is 2.712 shows that there is a minimal degree of negative autocorrelation in the model of the study; hence the estimates of the model can be used for prediction.

Using the standard error test, we accept the first null hypothesis. That is, we accept that the estimate b_1 is not statistically significant at the 5% level of significance. This implies the Consumer Confidence Index does not affect investor sentiment. Also, using the standard error test, $S(b_2) < 1/2b_2$ above, i.e. $(0.031 < 0.0945)$. Thus, we reject the null hypothesis. That is, we accept that the estimate b_2 is statistically significant at the 5% level of significance. This implies the initial public offerings have significant impact on investor sentiment.

Hypothesis three, testing hypothesis indicates that we accept that the estimate b_3 is statistically significant at the 5% level of significance. This implies that Dividend Premium has a significant effect on investor sentiment. Using the standard error test, $S(b_4) < 1/2b_4$ above, $0.069 < 0.3625$, we reject the null hypothesis. That is, we accept that the estimate b_4 is statistically significant at the 5% level of significance. This implies that the Stock Price does significantly affect investor sentiment. The result of hypothesis five shows that the null hypothesis was rejected. That is, we accept that the estimate b_5 is statistically significant at the 5% level of significance. This implies that Turnover ratio does have any positive relationship with investor sentiment.

CONCLUSION

The available literature and as well as the empirical findings affirm that the direction and magnitude of noise trading is relevant in asset pricing. Noise traders' belief recognized as investor sentiment affects asset return. We investigate the impact of investor sentiment on stock market returns in Nigeria using relevant sentiment variables and these confirm the impact of investor sentiment on stock returns. We found that sentiment is a significant predictor of expected returns. Brown and Cliff (2005) demonstrate that investor sentiment is always an important factor in predicting future market returns.

We also discussed the possible determinants of the strength of the relationship between sentiment and returns and find the influence of noise traders on market returns that if some traders trade on noisy signals unrelated to some economic fundamentals data then the market price may deviate from intrinsic value. In view of the foregoing, and after finding the positive relationship between sentiment and its predictors, we can state that sentiment of the investors play a crucial role in the

stock market returns in capital market. So the impact of investor's sentiment on the stock market returns even in the weak efficient and semi strong efficient form is observable.

On the whole, this paper has its limitation even though it contributes to capital market literature. It focuses on the effect of investor sentiment on stock market returns in Nigeria using only five sentiment predictors where as there are many others predictors not considered in the study. But this does not invalidate the outcome of the findings.

The paper made the following suggestions:

- That the stock market should create an investors-friendly and a sound regulated market.
- The regulatory authorities like Securities and Exchange Commission (SEC), Nigerian Stock Exchange, Central Bank of Nigeria, should regularly monitor, assess, and implement the regulations thoroughly.
- There should be easy flow of information in accordance with strong-form of the EMH.
- Finally, investor education and technology- driven well-managed platform is necessary for the investor to be rational and mitigate their sentiment backdrops.

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