THE EFFICIENT MARKET HYPOTHESIS: REVIEW OF LITERATURE AND EMPIRICAL RESEARCH ON NIGERIAN CAPITAL MARKET

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Abstract

The contrasting views on the efficiency of capital markets in both developed and developing nations among researchers which dates back to over forty years is the basis of this research. Hence this paper examines the efficient market hypothesis on the Nigerian capital market spanning the period of 2012-2021. The paper deals with empirical research that has been published in various research journals on the Nigerian capital market. Findings from the empirical research show that there have been mixed feelings on the efficiency of the Nigerian capital market. Nevertheless, the market seems to be efficient in the weak-form. The paper opines that there are inherent difficulties in testing for market efficiency in developing countries capital market due to certain market imperfections that could affect the informational efficiency of the market. Stock market regulators in Nigeria should therefore step up their efforts to improve the adequacy and quality of information flow in the market so as to make the market competitive.

Introduction

The debate on efficiency of the capital market has been a subject of discussion for over four decades starting from the works of Fama (1965, 1970). Since then, a lot of empirical studies on efficient capital market have been conducted in both developed and developing countries. However, despite the increased research attention, there is limited work on the review of empirical studies on the efficient capital market. Hence, this constitutes the need for this study.

An efficient market is one in which security prices quickly and fully reflects all available information (Fama, 1991). Implied from this is that in an efficient market, the same rate of return for a given level of risk should be realized by all investors. The behaviour of any participant or group should not influence the price of a security in the market (Khoury, 1983). This paper attempts to review the status of the Efficient Market Hypothesis (EMH) with the emphasis on the Nigerian capital market. A market is efficient with respect to a set of information if it is impossible to make economic profits by trading on the basis of this information set. This implies that no arbitrage opportunities can be tapped using ex ante information as all the available information has been discounted in current prices (Magnus, 2008).

Even if many tried to find the truth behind the EMH, no ultimate conclusion exists. There are many opposing opinions regarding this for each article that confirms the hypothesis, there is another that invalidates it. This is true in any economy, without exception, whether it is an emerging economy or a developed one. As a result, the question of whether the markets are efficient or not still remains unanswered (Titan, 2015).

This paper is organized into five sections. Section 1 deals with introduction. Section 2 examines the methodology for the study while section 3 deals with the empirical literature on forms of market efficiency. The fourth part presents results and discussions of the study while the fifth section which is the final part concludes the study.

Methodology

This paper is empirical research in outlook as it examines research works that have been published in academic journals in Nigeria on the efficiency of the Nigerian capital market for a period of 2012 to 2021. The ten- year period is considered reasonable for the study.

Empirical Literature on Forms of Market Efficiency

Three forms of market efficiency have been identified in the literature. They are; the weak-form efficiency, semi-strong efficiency and strong form (Fama, 1970). Weak-form efficiency implies that asset prices include all information from the historical record. Implying that prices in a weak-form efficient market incorporate all information about price trends or repeating patterns that occurred in the past. Therefore, trading strategies based on analysis of historical pricing trends or relationship cannot be used to beat the market thus making prices in a weak -form efficiency to be erratic and will change only in response to the arrival of new information. In order words, this means that prices follow a random walk.

Samuels and Yacout (1981) was the first attempt to test weak-form of efficiency of the Nigerian capital market in Nigeria. Their test covers the period of three years, namely; 1977-1979 with the use of 21 companies quoted on the exchange. They found out that Nigerian share prices follow a random walk.

Ayadi (1984) used weekly data of closing prices of thirty firms on Mondays from 1977-1980 quoted on the Nigerian Stock Exchange to examine the efficiency of the Nigerian stock market. Non-parametric tests were used to determine if the Nigerian

stock market is weak form efficient. He found that share prices in Nigeria follow a random walk implying that the market was weak form efficient.

Ekechi (1989) investigated most actively traded firms in the Nigerian stock market between 1980 and 1986 with the use of serial correlation and runs tests techniques. He provided evidence that the Nigerian stock market was weak-form inefficient thereby conflicting the studies of Samuels and Yacout.

Since the above studies were carried out, subsequent researches have been conducted on the weak form of efficiency in the Nigerian capital market with mixed results. For instance, many studies such as Gimba (2012), Ajao and Osayuwu (2012), Yadirichukwu and Ogochukwu (2014), Nelson and Gbalam (2019) have shown that the Nigerian capital market is weak-form efficient. However, the works of Afego (2012), Nneji (2013), Obayagbona and Igbinosa (2015), Ogbulu (2016), Adebanjo et. al (2018), Nageri and Abdulkadir (2019), Ejem, Ogbonna and Okpara (2020), Daniel and Omiete (2021) have shown that the Nigerian capital market is weak-form inefficient.

Semi-strong efficiency is the second form of market efficiency and it implies that asset prices include all publicly available information. The major requirement about this form of efficiency is that it takes into consideration only those prices that reflect information that can be obtained from public sources. Hence, the level of asset prices should correctly reflect all pertinent historical, current, and predictable future information that investors can garner from public sources and asset prices should change fully and immediately to the arrival of fresh information. Thus, in semi-strong-form efficiency no public information will help investor select undervalued securities. Event studies and portfolio studies are widely used to verify semi-strong-form of efficiency (Abdullahi and Garba (2017).

However, there has not been consensus among the researches that have been carried out on the semi-strong form in the Nigerian capital market. For instance, Imafidon and Arowoshegbe (2015) found that the Nigerian capital market was by and large efficient in responding to the information of removal of the Director-General of the Nigerian Stock Exchange in August 2010. Using event study with the aid of non-parametric tests, they concluded that the Nigerian capital market is information efficient. However, Ajayi, Oshadare, and Ajala (2018) used daily stock prices from the Nigerian stock market to test the semi-strong form of efficiency in the Nigerian capital market by employing transfer function approach from the period of 2005-2013 found that the Nigerian stock market is semi-strong inefficient.

The strong-form efficiency is the third level of efficiency where asset prices reflect public and private information. This market efficiency implies that important-specific information will be fully incorporated in asset prices with the very first trade after the information is generated. In strong-form efficient markets, most insiders trading would not be profitable, and there would be no benefit to search about information on publicly traded companies.

Any data morsel so obtained would already be reflected in stock and bond prices. Few studies have been carried out on this form of efficiency in the Nigerian capital market and this includes the works of Azeez and Sulaimon, (2012), Fapetu and Adesina (2013), Whisky, (2014). Their findings showed that the Nigerian capital market is strong-form efficient.

Table 1 below summarizes some selected empirical studies on efficiency of the Nigerian capital market

Table 1: Summary of Some Selected Studies on Efficiency of the Nigerian Capital Market (2012 – 2021)

Year	Author(s)	Data	Analysis	Result
2012	Azeez and Sulaiman	Returns on 240 stocks for a period from 2003 to 2007; and Daily index numbers ranges between January 2008 and December 2010	Ordinary Least Squared (OLS)	Strong-Form Efficient
2012	Afego	This paper examines the weak-form efficient markets hypothesis for the Nigerian stock market by testing for random walks in the monthly index returns over the period 1984-2009	Non-parametric runs test	Weak-Form Inefficient
2012	Ajao and Osayuwu	End of Month value of the All-Share Index, 2001 – 2010	Serial correlation technique	Weak-Form Efficient
2013	Fapetu and Adesina	Average monthly returns data of five banks over the period of 2007 to 2011	Market model for estimating residuals	Strong-Form Efficient
2013	Nneji	Stock prices from 1986 to 2009	ADF unit root test, the Cointegration analysis and the Vector Error Correction Test	Weak-Form Inefficient
2014	Yadirichukwu and Ogochukwu	Monthly stock market indexes of the Nigerian stock market within the period s of 1984 and 2012	Unit root test and t-test to investigate efficient market hypothesis. Johansson cointegration test was used to establish relationship between the monthly share prices	Weak-Form Efficient
2014	Whisky	Monthly stock data for the period January to December 2011	Runs and GARCH techniques	Strong-Form Efficient
2015	Obayagbona and Igbinosa	Three tests of randomness were used t to check for the presence or otherwise of autocorrelation in daily stock prices from the Nigerian stock exchange, January 2006 to December 2011	Autoregressive technique	Weak-Form Inefficient
2015	Imafidon and Arowoshegbe	Daily stock prices data used was three months to the event day (6th August 2010)	Augmented Dickey-Fuller test	Semi-Strong-Form Efficient

		and three months after the event day		
2016	Ogbulu	The paper employed daily, weekly, monthly and quarterly aggregate stock price data using the NSE All Share Index series from 4th January, 1999 to 31st December, 2013 to test for the weak-form efficiency of the Nigerian Stock Exchange	The study employed a combination of seven (7) statistical and parametric tools namely- Autocorrelation tests, the ADF and P-P unit root tests, Variance Ratio tests, the Normality/Random Walk tests, the Granger Causality test, the ARCH-GARCH test and Regression rest	Weak-Form Inefficient
2018	Ajayi, Oshadare and Ajala	Daily stock prices from 2005-2013	Modified transfer function approach	Semi-Strong Inefficient
2018	Adebanjo et. al	Monthly data from 2004 – 2014	Partial autocorrelation (PACF) test, runs test and Kolmogorov Smirnov test	Weak-Form Inefficient
2019	Gbalam and Nelson	Daily Nigerian Stock Exchange All Share Index from June 27, 2019 to August 18, 2019; Weekly Nigerian Stock Exchange All Share Index from August 5, 2018 to September 22, 2019 and Monthly Nigerian Stock Exchange All Share Index from October 2014 to September 2019	Unit root tests	Weak-Form Efficient
2019	Nageri and Abdulkadir	Secondary data from Nigerian Stock Exchange dated January 2010 to December 2016 divided into pre and post meltdown	GARCH models	Weak-Form Inefficient
2020	Ejem, Ogbonna and Okpara	Daily data from January 02, 2014 to May 20, 2019 and annual data from 1985 to 2018 collected from the Nigerian Stock Market Fact books	Unit root test, GARCH Model and the Autocorrelation	Weak-Form Inefficient
2021	Daniel and Omiete	Secondary 30-day data was secured from the statistical database of Central Bank of Nigeria and the Nigerian Stock Exchange Fact book of various publications covering 1981-2020	Runs test and Ljung and Box-Pierce test	Weak-Form Inefficient

Source: Compiled by the Author

Results and Discussions

In this paper, a total of 16 studies were reviewed from 2012 till 2021which shows that the work is up to date. The evidence to show that the Nigerian capital market is informational efficient in the weak- form supports the earlier work of Samuels and Yacout (1981) and later Olowe (1996), Ajao and Osayuwu (2012), Yadirichukwu and Ogochukwu (2014), Gbalam and Nelson (2019) among others. In another vein, some studies such as Afego (2012), Nneji (2013), Obayagbona and Igbinosa (2015), Ogbulu (2016), Adebanjo et. al (2018) and a host of others. The above results showed that there is a lack of consensus on the weak form of efficiency in the Nigerian capital market. Be that as it may, it appears that the market is efficient in weak-form level.

It is however apparent that the findings on the efficiency of the Nigerian capital market may be influenced by structural problems concerning the level of the market development (Smith, 2007; Chordia et al., 2008). The reality is that stock or equity markets in most emerging economies remain highly illiquid and segmented, with trading and capitalization concentrated on few firms {Abdullahi and Garba, 2017).

Other problems inhibiting against capital market efficiency in Nigeria include; inadequate understanding of financial information by Nigerian investors on the importance of investing in the capital market, lack of depth and breadth of instruments traded in the market, inadequate flow of information, low level of automation, inefficient communication system, aversion to dilution of ownership, inadequate infrastructural facilities, pervading influence of government, low market liquidity, inadequate supply of securities, interference by regulatory authorities, poor investment climate among others (Ogundina, 2015).

In Nigeria, while some investors entered the capital market to buy securities and hold unto them as a status symbol and a source of income, some acquire shares as alternative to savings while others see it as wealth, which should not be sold but bequeathed to children. Invariably, only very few, actually trade in securities for speculative purposes. This buy-and-hold attitude of investors with regard to securities impairs the capital market activities.

Conclusion

This paper provides empirical studies that have been published on the three forms of market efficiency in the Nigerian capital market with particular reference to weak-form spanning the period of 2012 to 2021. The review shows the absence of consensus among the various empirical studies which may be attributed to various forms of certain market imperfections, but, however, the Nigerian capital market appears to be efficient in the weak-form. However, for Nigerian stock market to be efficient in other forms of efficiency efforts should be made by stock market operators and regulatory authorities to improve pricing efficiency in the market, improve allocation efficiency of the market, and improve the adequacy and quality of information flow in the market, improvement in the level of automation in the market.

Regulatory authorities should stop interference in the market and also step up their efforts in sensitizing the public on the importance of investing in securities in the Nigerian capital market. Continuous efforts

should also be made by the market operators and stock market regulators to elevate the level of professionalism in the market so as to

make the market competitive like that of developed nation's capital market.

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