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The Efficient Market Hypothesis: A Review of Precise Literatures

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Abstract: *The notion of efficient market hasdominated the stage in finance. Over the years, academic scholars in finance and economics have strived to understudy the underlying conception of efficiency as it ascribed to capital markets. This topic has generated numerous opposing and opposite views and understandings with regard to efficient market hypothesis, some of the views rejected the underlying principles of EMH while others lent credence and support to it. However, a trace of the way in which the studies emerged in the last decade is of paramount importance.This study therefore stretches itself toscrutinize the increasing breadth of empirical works that boarder on the efficiency of markets, taking into consideration the underlying hypothesis. The resolve of the study is that ascertaining efficiency of market per time is cumbersome thereby raising thelikelihood that, because of vagaries in market environment, uncertainty surrounding economic settings, new modalities, theories and model as a frame work should be figured out so as to capture various emerging changes and challenges. To this end, more effort should be employed towards empirical studies to actually ascertain whether the efficiency of capital markets is informational driven.*

Keywords: *Efficient Market Hypothesis; Stock Market; Market Efficiency*

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I. Introduction

One of the theories that has taken a center stage in the modern day finance, is the theory of efficient capital markets. Efficiency in its real sense connotes that investors are operating on a level playing ground without anyopening of amassing undue or anomalous gains from market activities when likened to other investors operating in the same market, meaning that none will outsmart others through privileged information or asymmetric information. So, if the above assumptions or accretion holds through, it there means that the only way in which an investor may amass bigger returns is chiefly by investing in more volatile security or assets. The Efficient Market Hypothesis theory, (EMH) as concisely tailored in the following pages, has generated a lot of heated debates and controversial views, especially from the tables of finance and economics profession, professors and researchers as proven by the huge body of extant literatures. Adding to this is the fact that even when one tries to figure out the actuality relative to EMH, no definitive conclusion established so far. There exist several opposing views opinions and thoughts vis-à-vis efficient market hypothesis theory, (EMH); for each of the extant article that lends support and validates the hypothesis, on the flip page is another that disagrees and invalidates it. This syndrome has ran through in many economies, with no exceptions, to incipient economy, developing or industrialized ones. Based on the inclusiveness surrounding the resolve and unresolved state of (EMH), the quest to provide an all-inclusive to the answers to these questions so as to ascertain if the markets are efficient or not still remains in a state of comatose.

The origin of (EMH), has been traced to the 1960s, with landmark paper of Fama (1965) and Samuelson (1965). After which many more studies began to invalidate all the hypothesis of efficient market hypotheses, that is, the forms, weak, semi-strong and strong.

Taking a leap from the work of Eugene Fama in the year 1970, published in his work, asides the meaning of markets efficiency, he x-rayed the distinctions associated with all form of market efficient hypothesis (EMH) –the weak efficiency market, semi-strong market efficiency and of course the strong form of efficient market. The efficient market was defined as "a market that comprised a group of rational, profit-maximizers vigorously contending, with each other, trying to predict the would-be future market values of individual assets or securities, especially in a situation where existing but significant information concerning the security is almost freely and readily accessible to all market participants. This kick off by Famasaw the upsurge of various researchers coming with different definitions.

In 2003, Malkier said that capital market is considered operating at efficient level if "prices completely mirror all known information, to the extent where even unacquainted investors can buy a diversified portfolio at certain prices as determined by the forces of market and will by it obtain a rate of return as generous as that that can be achieved by the expert traders.

Cueing behind Fama (1969 and 1970), the weak form of EMH as offered by him reflects a situation of which the prevailing prices of financial securities or asset adjust at any moment in time not minding how short it could be to reflect all existing historical as well as financial information of the securities. To this effect, the model lends support to the notion that investors have no lee way of making abnormal returns as a result of investment made in these financial securities. This type of efficient market hypothesis suggests that prices will be arbitrary (random walk.)

comparing the Weak Form Efficient Market Hypothesis with the Semi-Strong Form Efficient Market Hypothesis, the Semi-Strong Form shoulders the opinion that prices of assets in the financial market is a true reflection of the value of the asset, at any point in time, And thatprevailing information on the market, together withpast prices and other historical information. (This connotes that semi-strong form of market efficiency does work in isolation of the weak form, meaning the weak form as encapsulated in semi-strong form EMH is a sub-set of strong form efficient market hypothesis). This infers that prices change swiftly without recourse to incorporate any other fresh public information made available to the market. In a situation where the capital market reflects semi-strong form of efficient market hypothesis (EMH), it presupposes that none of technical or fundamental analysis will be able to deterministically figure out the way in which active investors should apportion funds such that the returns generated is greater than that realized in investing in an unsystematic financial securities or assets.

The last stroke of efficient markets is the strong form of EMH which its assumptionsare hinged on the fact that prices of financial assets reflect all current information regarding the market and this includes: the weak form efficient market hypothesis which captures the historical financial information about the financial assets, the semi strong form of market efficiency which infers that prices of financial assets reflect all new public information and all private information regarding a financial asset. (Semi-strong form)

Over the years and until now, divergent opinions and views begging for clarifications regarding the efficiency of Efficient Market Hypothesis as it relates to the capital markets have been staring on our facing for harmonization. So many are the different views that worth dissipation of energy and intellectual tasking to review them and see if there is a predominant one that can prevail with verifiable evidences over the others.

Many studies have elaborated the test on the test of these three types of Efficient Market Hypothesis, of whichmost of the tests annulled the semi-strong and the strong forms of efficient market hypothesis, especially the ones that are not supported by data from the financial market, as opinions and views took different direction for weak form of EMH (random walk theory included). Barely a handful of the weak form efficient market hypothesis studies validated the abnormal returns, though was attributed to have been occasioned mainly by chance, of which the probability of over rated-reaction being almost about same as the probability of under-reaction. This consequently supported the weak form of efficient market hypothesis (EMH). Another observation worthy to mention is the various but common conclusions supporting the fact that abnormalities tend to disappear as variations in used models and methodologies occur.

Majority of the studies are hinged on occurrence or event studies, of which most of the papers examine the reaction of financial markets in the first few days after certain announcements, this notion was conceived on the basis that financial asset prices swiftly adjust so as to reflect new information. And this by extension, affirms the efficiency of capital markets. the opposite direction is characterized with various studies that employed a longer time framework to ascertain the level or degree of market efficiency, the idea behind this was to show that prices progressively reflect current information as they are released, and this negates the efficient market hypothesis when considering long term and medium horizon.to this effect, this study will consider various finding from extant literatures in the following ways: the short run and long run behavior of stock prices in relation to different types of news and announcement.

II. Test of weak form of EMH(Random Behavior)

Considering the weak form market efficiency form, there exist a remarkable built-up of literatures evaluating the random walk behavior of prices of stocks in the financial market. The thrust of random walk theory shoulders the opinion that future development with regards to prices of stock cannot be foretold. And that an upsurge in demand or in prices of stocks on a particular day does not spontaneously indicate a deterministicsurge or decrease in the prices of stocks the next day. Based on this, it is believed that market does not consider the past or have retentive stamina to recall past prices. This notion was first nurtured and considered by Jules Regnault in his book captioned "Calcul des Chances etPhilosophie de la Bourse**"**, and made public in the year 1863. Subsequently, this model was reiterated by Louis Bachelier in his PhD paper in 1900, with the title "Théorie de la speculation". Though this model or theory was jettisoned by other scholars until 1930s. The periods 1930 and 1940, witnessed few scholarly works written on this topic, of which one of them was written by Alfred Cowles. In his work, "Stock Market Forecasting" in the year 1944 also 1960 saw "A Revision of Previous Conclusions Regarding Stock Price Behavior" after which conclusion that investors do not manage, usually, to attainanomalousearnings as likened to market was made by the author. Shortly after 1960s',

this model and theory witnessed a boom in research of which Eugene Fama became famous through his works on random walk model as were madeavailablethrough publication in mid 1960s and 1970s. In his work, the scholar reinforced the random walk model with the help of empirical studies. More so, Kendall and Hill (1953) in his work as published in the Journal of royal statistical society, maintained the random walk reactions and pattern that financial assets exhibit in prices.

The period, 1990s, ushered in a new wave of thinking and idea on behavioral finance. This new approach started questioningthe random walk hypothesis thereby contradicting and invalidatingthe random walk hypothesis through strong emphasis on the impacts of investors' behavior. Someof the notable scholars that championed the contradiction of the random walk idea were **Lo and MacKinley (1999), Lo, Mamaynski and Wang (2000).** Who used variance ratio to assess the Random Walk, suggested that variance the holding period should be interconnected, through a linear relationship

The work of Horvatic et al., in 2011 and that of Peng et al in the year 1994 independently used de-trended fluctuation analysis to contradict the random walk theory. By testing if there are evidences of long-term dependences on financial assets' prices on the market.

III. Efficient Market Hypothesis on Short-term

Many evidences of miss conclusions abound on price reactions of financial assets from studies on short term. Most of which centered on assessments concerning the swift response of the financial asset prices in relation to new information available on the market. Fama, Fisheret,al (1969) studied 940 different events in 1927 and 1959 respectively and found that a higher thoughanomalous returns are noted within 3-5 months after a market driven statement is made. Another study in 1968 by Ball and Brown,where a sample 2340 were recorded within the years 1946 – 1966 with keen interest on market reactions to announcements on accounting income indicated that capital markets are inefficient. Prices of financial assets (stocks) respondsluggishly and adjust to new announcementwithin the first 12 months of market driven announcement. This finding invalidates the Efficient Market Hypothesis. Similar findings were also observed afterwards as evidenced in the editorial of Bernard and Thomas published in the year 1990 on financial announcements where 2626 companies were used as sample within the periods 1974 – 1986 to ascertain the response at quarterly financials' publication. The findings showed the presence of autocorrelation in prices of stocks at the first 3 lags of the regression.It was also observed that autocorrelation tends to reduce gradually between lags, as it becomes negative at the fourth one. Similar article published by Jegadeesh and Titman in the year 1993 once again voids the Efficient Market Hypothesis through its observation which states that stocks recorded abnormal reduction in returns in the first month 12 of portfolio creation and maintains negative strength in returns until month 31. Notwithstanding that the first 6 months witnessed increase in prices after announcement, and thereafter lost about 50% of their values until month 24.

The results obtained in the work of Chowdhury, Howe and Lin (1993) and that of Vanketash (1995) on returns made companies' insiders, showed that the insiders maintainfrequent and significant positive returns, meaning that the Efficient Market Hypothesis is not sustainable.

The work of Drew and Noland in the year`2000) also showed that active capital market directorsin Australia that manage pool of investment funds obtain irregularprofits on regular basis, compare to the returns of an average capital market participant. This once more questions the efficiency of the Efficient Market Hypothesis.

But on the contrary, Malkiel in his work in 2003, maintained that capital markets are efficient and challenging to predict than what various scholarly articles have shown. Adding that, "the evidence is irresistible, and that whatever may be the case of irregularconduct of stock prices, it does not have the ability to construct a portfolio that give investors a lee way to make abnormal risk adjusted returns on investment. The import of the finding of Malkielis that capital marketsmay be considered efficient irrespective of the facts that anomalies exist, regardless of the irrational behavior of investors. Malkielcontested that anomalies normally are not sufficient to offset investors cost of transaction, more so obtaining a significant abnormal but positive returns from the market.

Konak and Seker in 2014 examined the mode in which FTSE 100 progresses and if its progression sustains and reflects efficiency of the EMH. In accordance to their investigation, within the periods 2001 and 2009, FTSE 100 index favored the random walk theory and sustained the weak form efficient market.

There are many extant articles that considered the Romanian capital market of which most of the findings of these articles established that Efficient Market Hypothesis does not hold. Within the periods 2004 and 2005Dima, Pintea and Murgea (2006) studied the development of BET, BET-C and BET-FI stock exchange indexes; they resolved that EMH is not sustainable in Weak form, Semi- strong or Strong Form of Efficient Market Hypothesis. The same observation was made by Barna, Dima and Laburnet in 2007. The empirical work made use of same indexes but within the periods 1999-2003. The findings suggested that one of the reasons

efficient market hypothesis does not hold swayin the Romanian capital market could possibly be the shallow state market maturity.

Dragota et al. (2009) take a sample of 18 companies that are floated on the floor of the Bucharest Stock Exchange from their first date of listing to December 2006and argued that the random walk hypothesis cannot be thrown away, neglected or totally rejected. Although they made an adjustment in the sample that removed Friday effect and Monday effect. But their findings once again affirmed that Romanian capital market is not efficient. Dragota et al., Stănculescu and Mitrică (2012) conducted a study on a data series of the 10highly liquid traded stocks at the floor of the Bucharest Stock Exchange. The study revealed that the non-stationarity of the data contradicted the random walk theory.

In 2013, publication of a comparative study by Birau that examined the Romanian and Hungarian capital markets testing the weak form of efficient market hypothesis, using BET and BET-C indexes as samples for stock market of the Romanians and BUX and BUMX indexes as sample for capital market of the Hungarians, incorporating daily data as window of observation from January 2007 and December 2011. The outcome of the finding became that weak form efficient market hypothesis (EMH) was absence in each of the countries. Also, the possible presence of anomalies trailing the Hungarian capital market, though considered smaller when compared to the Romanian market, could be possibly be attributed to the differences in the maturity level of each the markets securities .

IV. EMH on long term

Fama et al. in 1969 conducted one of the famous works on the EMH, he examined the stock prices responses in the events of split. The inference was that, higher level of distributed profits as dividends in most cases is the direct function of split event. This presupposes that investors expect anextemporaneous increase in the prices of stocks after market announcement and until the end of the month. This conclusion originated on the findings from many company samples with data of about 24 months from the date of announcement.

The work of DeBondt and Thaler in 1985, established that most companies with a record of 3-5 years of anomalous impressive stock returns willsooner obtain negative returns. This statement is credited to the fact that investors will most likely invest on stocks based on increase in stocks' and yields during a particular of period of time with no attention given the general behavior of all stock returns, that they are prone to regressing to the equilibrium. This also annulled the weak form EMH.

Much later, Lakonishok et al, in 1994, used the following variables, book to market equity earning/price cash and flow/price to ascertain that companies with high values are most characterized with poor historical growth in terms of stock prices. In effect, this presupposes that companies characterized with small values when analyzed with book to market equity earning/price and cash flow/price appear to record a long history of increasing average return. Should this findings hold through, this would there mean that future performance of the firms captured in the initialclass is anticipated to be better than theprobable expectation for the second group of firms, and this means that semi form of strong efficient market hypothesis does not hold. With regard with the relationship that exist between financial indicators and prices of stocks' development, the work of Peavy and Goodman (1983) significantly indicated that firms with low values of P/E per share is averagely larger than the returns of the share values of firms with poor indicator values. Fluck, Malkiel and Quandt in 1997, published a work using 13 years as window of observation, from 1980- 1993 and find that shares with previous poor results 3-5 years obtained better stock returns. This shows that firmscharacterised with high stock returns in the past periods is disposed to record poor stock returns subsequently – this means that prices tend to regressive to their average value, meaning that market is efficient.

Looking at the response of stock prices at discrete type of statements or announcement made available on the market, an extreme of 45% in terms of stock response could be credited to the dividends distribution announcement, Fama and French in 1993, also Campbell and Shiller in (1988)., these articles were expanded before enhancements in concept that suggested that firmsfrequently transfer shares in lieu of dividend payment especially when the dividend policy in the near future is undetermined .

Concerning the initial public offer, (IPOs), many extant articles that have examined and analyzed thedegree of capital markets efficiency abound. The following authors, Mitchell and Stafford (2000), Loughran and Ritter (1995), Spiess and Affleck – Graves (1995), Levis (1993a) and Marsh (1979), have ascertain that subsequently after the announcement of initial public offer, (IPO) prices of stocks tend to appreciate to a level too high when compared to their initial, normal or equilibrium level while their modificationslowly settleson the average level. Dharan and Ikenberry (1995) in his work established that most of the reduction in prices of stock recorded on the long run after IPO is concluded is the handy work of investors' over bloated reaction immediately events' announcement is made.

The investors' response after M&A the issue of a statement was noticed to be alteredand this was on the perceived analysis occurring at that time and the type of merger or acquisition that occured. Agrawal, Jeffe

and Mandelker (1992) and Asquith (1983) concluded in their separate studies that stockholders of the acquiring company tend to lose about 10% of shares' value within a 5-years period. Langetieg (1978) and Malatesta (1983) proved in their studies that the acquiring firms do not record substantial losses within the first three years after the event. The study of Loderer and Martin (1996) have opposing view with the findings of Langetieg (1978) and Malatesta (1983) since Loderer in his study established that acquiring firms record losses in the first 3-5 years but after 5 years, a reverse to normal returns is achieved.

Evidently, not all papers lent their support to the finding that investors' responses after the announcement of an event move in a solo direction. If this be the case, the investors would decide to invest in a single manner, which is definitely impossible and unattainable. Also concerning the longer time frame responses of stock prices to event announcements, some works showed that there are also evidences when prices have a meagre reaction to event announcement. In these observations, there are periods in which price of stocks adjust to their usual value, like the following scholars Ball and Brown (1968), Jegadeesh and Titman (1993), Joy, Litzenberger and McEnally (1977), Watts (1978), Rendleman, Jones and Latane (1982), Foster, Olsen and Shevlin (1984), Fama (1991), Poterba and Summers (1988), as well as Bernard and Thomas (1990) rightly observed. This also proved that capital market is inefficiency.

Azeez, B.A. &Sulaiman **(**2012) in their work studied the responsiveness of the market financial instruments in terms of prices and found that mutual funds were unable to out-perform the random portfolios created from the index stocks, suggesting that strong form of market efficiency hypothesis holds in the Nigerian Capital Market.

Article released on London capital market in 2012 (analysis of Don Jones Industrial Index), from 1928 to 2012, Sewell established that the weak form of EMH is not realistic. The scholar also observed that, index records an increasing returns for about 1 year then followed by a decreasing returns for next 3 years.

V. Conclusions

One of the explanations why markets' experience possible inefficiency or price reactions to event announcements is that investors are not instantaneous in reacting to the announcement or are not paying attention market events as they unfold. This has been the thrust of argument in most literature: As observed by DeLong et al. (1990), Shleifer (2000), Baker, Ruback, and Wurgler (2007), also DellaVigna and Pollet (2009), Hirshleifer, Lim, and Teoh (2009), Hou, Peng, and Xiong (2009) and Hirshleifer, Hsu and Li (2013). Some maintained that inability of investors to react as market event announcement occurs may possibly cause under-reaction of prices and predictability of returns at the long run.

The Efficient Market Hypothesis exist in theory since it has proven to be difficult to examine and also arrive at clear-cut result, this is because of the divides in terms of agreement among scholars in finance and economists regarding any of these forms of these hypothesis in relation to market efficiency, some researches of renowned academic standing are of the view that Efficient Market Hypothesis is not validated by models is that the models themselves are biased and may provide erroneous results.

Agreeing with the literature of Fama (1998), "market efficiency survives the challenge on long-term return anomalies. This is consistent with the efficiency market hypothesis that the irregularities are chance results and that seeming overreaction to event announcement is as most likely and common as under reaction. Confirming that seeming market efficiency prediction the results in anomalies can be due to methodology since most long-term return irregularities seem to disappear with reasonable changes in technique".

Another proponent of random walk hypothesis is Malkiel, who, in 2003, observed that many studies carried out on this subject are wrong on the ground that there is huge difference between statistically significant results and significant data from economic perspective. The author advocated that statistically significant results are not able to predict the opportunity available for an investor to make abnormal returns when he considers to buy-and-hold strategy because of the huge cost associated to transaction.

Gromb and Vayanos (2010) suggested that to understand and explain the presence of anomalies and why they may not be eliminated demands a robust analysis of the arbitrage process, and understand the cause why the arbitrage strategies does not instantaneously adjust the prices so as to reach their fundamental value implied by standard techniques.

As a result, this literature review call for a continuous room for further empirical works but with intensive focus on the exactness of models.

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