The Validity of Efficient Market Hypothesis –Basis and Dimension

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The information is indeed the best available source to understand any phenomenon. The same holds true for financial information, be it publically available or otherwise. The Efficient Market Hypothesis (EMH) substantiates the same postulate that the price of a financial asset reflects all the available information to some or the other extent. Thus, EMH lays down the basis for forecasting and prediction of fair market value of such assets. The present paper tends to study EMH in detail its various dimensions. The peculiarity of information lies in the fact that no investor can use it to obtain excess return – the price of such asset would have already absorbed sufficient information, consequently only a new piece of information can alter the prices. Due to the content that information contains the phenomenon is typically called – Random Walk Hypothesis as well. In this era especially when information is spread all across the globe and that too in abundance, has further helped international investors to invest in cross border stock markets as such and enhance their returns.

Keywords: Information, Efficient Market Hypothesis, Returns, Price

Introduction

The fundamental analysts believe in macro aspects in predicting the intrinsic price of securities, viz. economic forces, industry factors and particular company's information about product demand, earnings, dividend and so on. Thus, an investment decision is reached by comparing this intrinsic value with the current price of the security. On the contrary technical analysts believe that future price of securities can be predicted by studying the past price patterns, validating the fact that prices follow a trend of past behavior and

can be predicted with near accuracy. The third ideology called 'Efficient Market Hypothesis or Theory' (referred to as EMH hereafter) nullifies both, the fundamental approach as well as the technical approach, in predicting the future or intrinsic stock price. EMH establishes a postulate that markets in themselves are efficient enough to absorb all the information. It also establishes that the price movements of shares are pretty much random and do not follow any regular pattern. Owing to this randomness, this theory is called as 'Random Walk Theory or Hypothesis'. EMH was developed by Paul A. Samuelson and Eugene F. Fama in the 1960s, which basically dealt the pedagogy of price discovery of scrips. The assumptions for securities markets to be efficient are:

i) Price efficiency to absorb the new information that further motivates investors to supply fresh capital.

ii) Free availability and accessibility of information on which investors react.

iii) Absence of transaction costs.

iv) Dormant effect of taxes on investment decisions.

v) Investors can borrow or lend at the same rate.

vi) Rational investors, who prefer investment in assets with high returns to assets with low returns.

Forms of Efficient Market Hypothesis

Three general types of information are taken into consideration – past prices, other public information and insider information – to earn above par returns from the market. This myth was broken with the advent of EMH as such that no investor make above par returns from the market, unless abnormal risk undertaken. No investor or investors can consistently outperform peer investors in "such" market. The tests to study market efficiency are also termed as:

→ Weak form (past prices)

→ Semi strong form (other public information)

→ Strong form (insider information)

Weak Form

The oldest statement of the EMH postulates that current stock prices reflect all past stock prices related information. Therefore, past data cannot be used to predict the future prices, as it already reflects the same. As time advances, prices wander or represent more of a random walk. Due to this reason it is asserted that stock market is "weak form efficient". There are few statistical tools that support weak form of EMH namely, filter test, serial correlation test and runs test.

Semi Strong Form

The semi strong form postulates that with how much accuracy and rapidly market prices adjust to new publically available information, including – expectations from the market, incompatibility between the sources of published data and government influence on economic data in order to make data more appealing. There is a paradigm shift from random walk hypothesis to semi strong form test. This form does not deny the efforts put in, in order to earn superior returns.

Strong Form

The strong form of EMH postulates that certain individuals or groups have a better access to insider information that can used make above par profits. Certain classes of investors are at advantage in terms of access to the information about market and prices, due to this advantage, they usually earn superior returns. This is the reason that financial watchdogs put curb on the insider trading practices as such.

Review of Literature

EMH did not gain much attention till 1960s. Fama (1965) was of the view that short term stock price movements are unpredictable and approximate a random walk. The sited here was that in an active market majority investors were well informed and securities would be "appropriately priced" reflecting all available information. Fama et al (1969) advocated some event studies that studied the stock price behavior to information. Barberis and Thaler (2002) focused their research on behavioral financeviz a viz rationality and irrationality of investors, stating the dislocations caused by less rational investors to rational investors. Similarly, at psychological level that reflect the deviation of investors from rationality. Kothari (2000) brought about the relationship between capital markets and financial statements. The reason for giving so much emphasis to financial statements is the relative importance of the same in fundamental analysis, i.e. the accounting information plays a vital role in testing the efficiency of market. Lo (2007) threw light on psychological aspect of investors based on rationality regarding investment decisions. He argued that in the long run even rationality fails to show the validity as fear and greed overpowers the former factor. Fama (1997) again reiterated and nullified the abandonment of EMH in the modern era. The facts that underestimate the EMH are normally anomalies such as chance results and over reaction of information to share prices at times.

Can Market Efficiency be Tested?

There are a few tests available to test the efficiency of the market. The direct techniques suggests to observe the predictions that were made about a stock or to stick to certain trading rules as such. The indirect technique is the application of certain statistical tools that helps in observing prices or returns of stock on pre and post notation and certain deductions are arrived at. The tests can be applied to all three forms of the market efficiency.

Empirical Tests of Weak Form:

Following are the various tests for weak form of market efficiency –

a) **Simulation Test**

In the year 1959 Harry V. Roberts performed a simulation experiment. A series of price changes was generated from random number tables and depicted through graphs simulating the Dow Jones index. When both compared, pretty much similar patterns observed between the actual and simulated series.

b) **Serial Correlation Test**

The price of the same stock is compared over a different time span by way of correlation of price changes over such span. There can be three outcomes as follows:

Positive value - Direct relation

Negative value - Inverse relation

Zero value – No relation

c) **Runs Test**

Serial correlation test absolutely relied numbers, to be more precise on prices and their change, consequently extremely large or small values can unduly influence the results and outcomes as such. The application of runs test takes into consideration the increase or decrease in terms of their signs as follows:

+ Sign – Increase in Price

- Sign – Decrease in Price

0 – No change in the price

Now this method gives some insight into the pattern of the stock price. Continuous similar signs represent one "Run", when these signs change a new "Run" is indicated, supporting the random walk hypothesis.

d) **Distribution Patterns Test**

The normal distribution as the statisticians believe, on the similar pattern the randomly generated prices changes confirm to a normally distributed data. Even though there may be some deviations in such distributions, the same are under acceptable an limit that does not affect the normally distributed data.
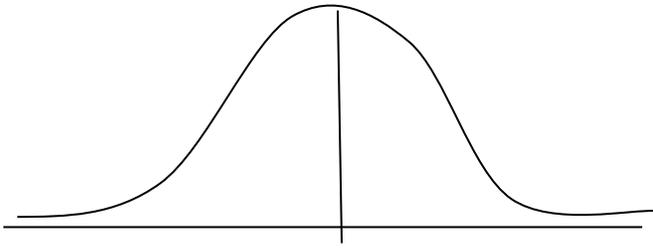
Empirical Tests of Semi Strong Form:

In fact, statistical tests are not available for testing the semi strong form of market as such. Only some studies with accompanying evidences were conducted to substantiate this form. Such evidences are discussed as follows:

a) **Effect of Announcement of Stock Splits and Stock Dividend Policy on Share Price**

The reaction of market to stock splits and changes in dividend policy was noticed during such studies, justifying the efficiency of the market.

b) **Earnings Impact**

Undoubtedly earnings have an impact on the price movements of stocks. The study suggested that companies with higher EPS reported increase in the prices of stocks whereas companies with lower EPS reported decrease in the stock prices. But the study also found an anomaly that such price changes were reported even before the earning figures were released. Thus, semi strong form of market was not supported by the findings.

c) **Impact of Initial Public Offer (IPO)**

Under IPO mechanism the role of underwriters is pivotal as they tend to offer stocks at prices that are attractive for the investors to cover the underwriting risk. On such offering prices investor tend to earn more as compared to the returns earned by purchasing IPO shortly after initially offered. Excessive returns can be made from stocks that were purchased on offering prices because such stock was issued underpriced. Once new issue trading begins the underwriters tend to compensate. This justifies the semi strong form of market.

Empirical Tests of Strong Form:

Just like semi strong form, certain evidences are there to support the strong form of efficient market. These evidences are nothing but certain activities undertaken by a few parties that trade in stock markets. Such activities are discussed as follows:

a) **Trading by Insiders and Stock Exchange Specialists**

Ostensibly, the insiders (those who have better access to inside information about company) like officers, directors, promoters, merchant bankers etc. can earnsuperior returns after adjustment for risk. But this ground does not hold its

validity owing to the fact that watchdogs like SEBI (Securities Exchange Board of India) has put limits to insider trading practices.

b) **Trading by Mutual Fund/ Portfolio Managers**

There are mixed outcomes through study of the behavior of mutual fund managers and portfolio managers, who tend to outperform the investors in terms of returns at one instance whereas at times simply they are not able to earn abnormal returns just through buy and hold strategy as such.

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