

One of the  
investment theory  
called the efficient  
market hypothesis  
(emh)



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## **Introduction**

One of the investment theory created in the 1970s by Eugene Fama call the Efficient Market Hypothesis (EMH) that states it is impossible to “ beat the market,” because stock market efficiency causes existing share prices, this is expected to always incorporate and reflect all relevant and given information. Fama in his EMH theory suggested that, stocks always trade at their fair value on stock exchanges. This makes it impossible for an investor to purchase undervalued stocks or sell his stocks at an inflated price, resulting making it impossible to outperform the overall market through expert stock selection or market timing. Fama then quoted that to obtain higher returns, one must purchase riskier investments.

Although it is a cornerstone of modern financial theory, the EMH is highly controversial and often disputed. Some school of thoughts say that it is pointless to search for undervalued stocks or to try to predict trends in the market through either fundamental or technical analysis .

The EMH has been a subject of main debate of traditional finance over the years. Fama stated that a stock market could be classified as efficient only if the security prices always fully reflect the available information. When this condition is accomplished, the market participants cannot achieve rare returns, some times greater than those that can be obtained by holding a randomly selected portfolio of individual stocks with comparable risks. The EMH has been known to be associated with the concept of “ random walk”, which assumes a price series where all subsequent price changes represent random departures from previous prices. This paper will discuss ways of

finding new evidence on the EMH on the Romanian stock market, Bucharest Stock Exchange.

The EMH was widely accepted 2 decades ago by academic financial economists such as Malkiel & Fama (1970). It was generally believed that securities markets were extremely efficient in reflecting information about individual stocks and the stock market .

EMH has dominated the field of research on capital market theory. It states that asset prices are rationally connected to economic realities and always incorporate all the information available to the market. In this way, securities markets shows efficient in reflecting information about individual stocks or about the stock market as a whole. Several theories and empirical papers around the world have had as objective testing this hypothesis. Beside reviewing the most important part of literature in this respect, the paper has as aim testing the Efficient Market Hypothesis on Bucharest Stock Exchange. The tested hypothesis is carried on time series of stock index BET (daily observations), for the period 2000- 2009. The econometrical results assert that the weak form of the efficiency market hypothesis is accomplished.

### **Literature review of EMH**

A literature review regarding the EMH will be presented in three (3) main categories as discussed by Fama (1991) . These are:

- Revisions about the likelihood of the returns
- Studies about the events that may lead to changes in the assets' prices (changes in the distributed dividends, investment decisions or capital structure decisions) and

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- Studies about private information (are there investors that possess private information that is not totally reflected in the market prices?) will be addressed.

Fama outlined the fact that the market efficiency cannot be tested, but linked with an equilibrium model. In other words, it is possible to test whether the information is rightly fused in the market prices only when there exists an adequate model of price formation. Moreover, it is worth mentioning that the markets do not become automatically efficient. It is the action of rational investors trying to maximize their benefits that makes the markets efficient. Apparently, there is a contradiction between rational investors and efficient markets in the sense that if the markets were efficient, then the rational investors would stop looking for inefficiencies to make benefits, which would lead to inefficient markets. It makes sense thinking of an efficient market like a self-corrective mechanism, where all the inefficiencies appear at regular period of time, but disappear almost instantaneously when the investors find them and trade (Damodoran, 1996). Fama also identified three levels of efficiency that a market might actually have, these are:

- The strong form
- The semi-strong form and
- The weak-form of efficiency

Strong-form EMH - In its strongest form, the EMH says a market is efficient if all information relevant to the value of a share, whether or not generally available to existing or potential investors, is quickly and

accurately reflected in the market price. For example, if the current market price is lower than the value justified by some piece of privately held information, the holders of that information will exploit the pricing variance by buying the shares. They will continue doing so until this supplementary demand for the shares has taken the price to the level supported by their private information. At this point, they will have no incentive to continue buying, so they will withdraw from the market and the price will become constant at this new equilibrium level. This form of EMH is the most satisfying and compelling form of EMH in a theoretical sense, but it has one important drawback in practice. It is difficult to confirm empirically, as the necessary research would be unlikely to win the cooperation of the relevant section of the financial community – insider dealers.

Semi-strong-form EMH – In this case, the semi-strong form of the EMH adopts, in a less rigorous form, that a market is efficient if all relevant publicly available information hurriedly reflected in the market price. It says that the market will quickly incorporate the publication of relevant new information by moving the price to a new equilibrium level that reflects the change in supply and demand caused by the emergence of that information. What it may lack in intellectual accuracy, the semi-strong form of EMH certainly gains in empirical strength, as it is less difficult to test than the strong form.

Weak-form EMH – The weak-form of EMH states that the only relevant information set to the determination of current security prices is the historical prices of that particular security. In this regard, investors

cannot expect to find any patterns in the historical sequence of security prices that will provide insight into future price movements and allow them to earn abnormal rates of returns. In most of the empirical literature, the random walk behavior of security prices is used as the basis to test for weak-form EMH. Since new information is believed to come in a random fashion in an efficient market, changes in prices that occur because of that information will seem random. Thus, price movements in a weak-form efficient market occur randomly and successive price changes are independent of one another.

### **Comparing the EMH and the financial crisis**

A critical hypothesis about EMH is that rivalry is very keen among stakeholders of the capital market. The effect of this concept is that competition imposes a communication between costs and increased revenue. In other words, to overcome the market forces and make more profit, the nature of competition will require a proportionate increase in cost. What this refers to is your net will still be the same and so there is no need for that activity when the market is proficient.

### **Key misunderstanding of EMH and financial crisis**

There are several misunderstandings about EMH and financial crisis; this paper will try to explain the key issues about these.

Assumption 1: Return distributions do not change over – A major limitation of market efficiency is that it is completely silent about the shapes of the distributions of securities' returns but assumes that distribution does not change (Soros, 2009) . This does not imply that past return distributions like the means, variances, skewness, and

correlation matrices will instinctively repeat themselves in the future but rather given a certain amount and kind of publicly available information, security prices are “efficient” in the statistical sense in that they have minimum variance forecasts of future prices. If markets are not efficient they expose the investor to future price variability. On the other hand if the market is efficient no future price reaction to that information is necessary and the investors will not be exposed to future price variability. At the core of these assumptions has been the theory of efficient and rational markets. The Market Should Have Predicted the Crisis.

The concept about EMH does say that the market should be able to predict the future and hence any possible financial crisis. If we say it is possible to predict financial crisis then we are rather saying the market is inefficient because current market price would not reflect the information embodied in the prediction. It is possible to predict that large market changes will occur but the difficult is when that will happen. It is a well-known fact that we can predict stock price changes but not when the changes will occur. That is one cannot predict that start and the end of a financial crisis.

Assumption 2: No one should act on information if investors do not act on information the market would cease to be efficient - The misunderstanding arises from confusing efficiency as a statement about the equilibrium resulting from investors' actions with the actions themselves. Investors act on information in a fiercely competitive market, and the average investor is not expected to make unusual

returns. The implication here is that on the average investors would not make abnormal returns by acting on information, which does not mean that investors should not act on information. Very few investors would gain on the average when they act on information. This is the essence of the claim that market participants were seduced into believing that since market prices already reflected all available information and hence nothing to gain from producing or searching for information. Critics of EMH believe that it made people not to act on information allowing security prices to stray significantly from their market values of which this is not the case.

Assumption 3: The stock market should have prompted us of financial crisis bubbles - It will be very difficult for the market to determine the occurrence of financial crisis, therefore a unique way of defining the market to know about a possible financial crisis is to find out how often investors tried to convert their investment into cash. EMH may not know about a possible financial crisis but can be immediately identified and it does by the market, the bubble will burst because there will be huge selling of stocks pushing price to the cost to investors of acquiring public information is negligible, information processing (or interpretation) costs are an entirely different matter. Market efficiency does not clearly explain the role of transaction cost. The EMH assumes the markets themselves are costless to operate.

In general, stock markets are pattern examples of low-cost, high-volume markets, but they are not entirely without costs. The issue is that if there are pricing errors that are not eliminated because they are



smaller than the transactions costs of exploiting them, is the market judged to be efficient or inefficient. Similarly, the EMH implicitly assumes continuous trading, and hence ignores liquidity effects. There is evidence that illiquidity is a “ priced” factor, which is, higher returns compensate for lower liquidity. Few would take the fact that markets are closed on weekends or overnight as a serious violation of market efficiency. The EMH also is silent on the issue of investor taxes. In reality, many investors pay taxes on dividends and capital gains, with some offsets for capital losses. The effects of investor taxation on security prices and expected returns are potentially large, but not well understood. We could conclude from the above that the EMH adopts a simplified view of markets and that should not be translated to mean that EMH is cause of financial meltdown.

### **Critiques of EMH**

Over the years, there has been a growing storage of works which has been focusing, from the early 1980s, on giving arguments in contradiction with the EMH theory. Schleifer, 2000 , Barber and Odean, 2000 all aimed at proving that in their case this theory does not holds up. Notable shift exist towards studies that relate some financial behavioural science issues. In the contradiction with the neo-classical paradigm, these studies suggest that the entities that operate on the market may be as well irrational in their reactions to new information and may take wrong decisions regarding their investment portfolio. Consequently, the markets will end up with asset prices not reflecting predictions of past market models. The new approach of behavioural

finance is brought here in order to show anomalies in which concerns the behaviour of the entities operating on the market. Of the most significant papers in this area we can mention Thaler's contribution (1993 , 2005 ) as well as Shefrin (2000 , 2005 ) and Shleifer (2000) . One of the main anomaly associated to the supporters of behavioural finance is the one of excess volatility. Price movements tend to be much greater than they were supposed to be, according to the efficient market hypothesis (according to which there are no opportunities for achieving exceptional returns because if such opportunities existed, they would be quickly discovered and implemented by almost everyone). Many economists and psychologists as well have shown that cognitive biases and irrational behaviour are pervasive, crowds can be foolish as well as wise and the asset prices do not necessarily always make sense.

### **Conclusions**

In what concerns the Romanian capital market the empirical study proved some evidence regarding the informational efficiency (at least in what concerns the weak form of the EMH). This means, in the line of literature, that the only relevant information set to the determination of current security prices is the historical prices of that particular security. In other words, investors cannot expect to find any patterns in the historical sequence of security prices that will allow them to earn abnormal rates of returns. But, when analysing the Romanian capital market case, the conclusions may become slightly different than the ones stated in the literature. This, considering the fact that we are

talking about a “ turbulent” capital market, in a non-entire crystallized stage of development, with relative important and quickly changes in structures and mechanisms, with asymmetric and imperfect information, non-accurate rules of functioning and not well contoured support institutions. Moreover, in the context of the current financial crisis, when emotions and fears have replaced any theoretical principle, the investors are being negatively influenced in their market behaviour, this leading further to significant changes in the stock returns of the emergent capital markets, like the Romanian one. Different methodologies can be used for improvement of testing the informational efficiency; among these, we could mention a wider data set, as well of some variables that reflect the impact of institutional and functional changes that influence the capital market (using some dummy variables).