The Concept of Efficient Capital Market

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Abstract

The efficient market capital was defined in 1939 by the American economist Eugene Famma which started from the fact that the information, which is essential for determining the price of a financial asset, has an asymmetric distribution in the market, and therefore there are different decisions sale / purchase of one and the same security title. The asymmetric information distorts the value by later incorporating it in the price. A price that does not reflect accurately the characteristics of the issuer has the effect of reducing the expected real return of the seller or buyer. The only factor that should affect future expectations is the investor's attitude towards risk.

Key words: efficient market, the symmetry of information, the independence of exchange rates, lack of transaction costs, atomization of the.
J.E.L. classification: F30, G01

1. Introduction

The concept of efficient market theory is formulated under the following main assumptions: the symmetry of information, the independence of exchange rates, lack of transaction costs, atomization of the etc. Thus, a model is created to highlight the potential of the market to which can relate the real returns. Even these assumptions may not be realistic, in practice, has been created a coherent set of evaluation models developed on the price-value arbitrage processes (Stancu, 2010).

The concept of arbitration is based on the net actuarial value (VAN) invalid as a main rule for determining the present value of financial securities.

$$VAN = -I_0 + \frac{\sum CF}{(1+r)^n} = 0$$

For which: I_0 - is the expenditure purchasing securities;

$\sum CF$ - Capital gains and remuneration (dividends) during holding period;

r - market interest rate plus risk class as an updating factor;

n - holding period.

The requirement for VAN to be zero is that the discount rate is equal to the internal rate of return of the investment. The difference between the purchase price and the current value of future income obtained from holding a financial deed initiates the arbitration process for these differences.

The consequence is the tendency to equalize the marginal return of securities with the interest rate charged on the market at a particular moment.

2. The relationship between expected return and informational efficiency

Financially, the information is the decisive factor in determining the value by incorporating it in the market price for establishing the expected return and for assessing the risk the investors have to face. Setting the right price means the investors have at their disposal three types of information: information about the past, private and public activity of the issuer (Vlad, 2015).

The information about the past is available for all market players being already included in the price. Source for this type of information is the periodic reports that are made public by the issuer. The way of receiving past information is largely influenced by the opinions of market analysts.

Public information may be considered as present, its dissipation in the market having effects on the price. Before being made public this type of information has a privileged character and is known only to those who initiate it, this allowing its manipulation in the market for the benefit of those who have it, even in well-regulated markets.

Private information is held by managers, shareholders and by those who conceive the development plans for the issuer of securities and they can use in their own interest, even under clear legal regulations.

Including the information into price depends on the market reaction and on the type of economic environment. If necessary, the latter allows, projections in time with a greater or lesser degree of certainty regarding the development of the events and of the effects the new information may have on future return. Market reaction depends on the maturity level.

One of the information features is its asymmetrical distribution in the market, driven primarily by the aforementioned fact that in creation stage the information is first privileged then public. Technical factors can intervene on the access to sources, processing time, cost, etc.

Another important aspect to be pursued is the accuracy of the information. The information appearing in the market may be intentional information, concrete information or rumours. Advertisements on negotiations concerning acquisitions, investments in some countries, mergers, divisions, large orders, etc., induce some market reaction reflected by a modest upward trend in the price. News on the completion of the operations is reflected in a rapidly increasing volume of purchase, which place the price on an upward trend. This scenario can be considered specific for a mature market, but not for an evolving one where the investors may have hastened reactions.

On November the 15th, 2006, the company Citigroup announced its intention to acquire a major Chinese bank. Investments in China and India are favourably rated on the US market, both countries being listed with the highest potential growth in the future. The information resulted in only a 2.7% increase in the price of the day and a slight increase in turnover. The reason for moderation of the investments was that in the competition were three other big companies. Announcing that the winner was Citigroup led, on medium term, to rapid growth of the volume of transactions and of the price.

A Canadian company has announced its intention to buy Antibiotice Iasi (ATB). Bucharest Stock Exchange opening next day registered a +0.0150 lei increase of the price for an extremely low volume of 15,000. Due to the news on the transaction, in two hours, the trading volume increased to 170,000, and the price increase with 0.0300 lei. The next day, there was other news that another big company planned to buy ATB. The market reaction was a volume growth due to refraining from the previous maximum levels of the price. The two purchasing intentions have not materialized even after a year, their effect being that they had propelled ATB on the top list of the Stock Exchange.

Regarding the *"rumour" information* (Stancu, 2010), it can have adverse effects on the emerging markets as the economic environment may know sudden changes which psychologically prepare the investors for extreme situations and the possibilities for verifying the information are limited.

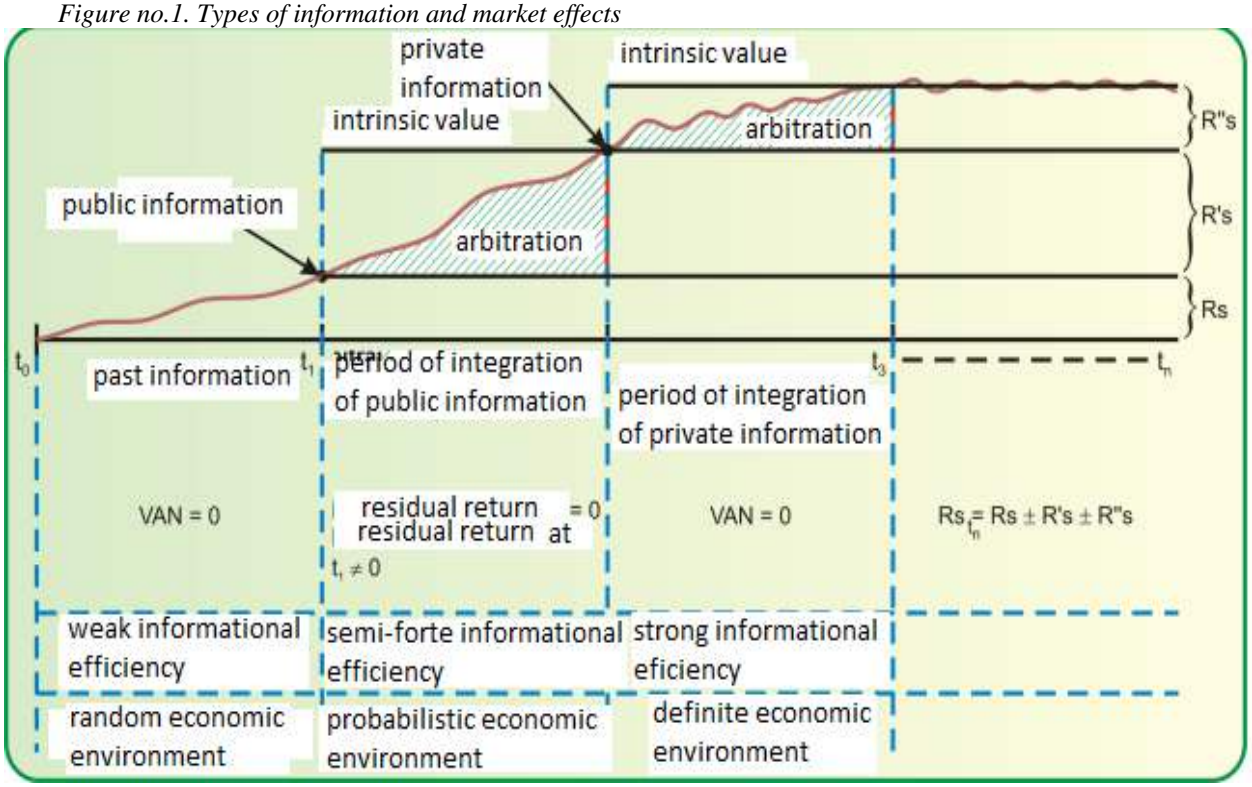
Another very important aspect is the way *of presenting the information*. Even if have been developed international standards of presenting the information, they are disclosed on one's account. Managers of companies that have financial problems or other problems have the tendency to "makeover" the information or to introduce some "innovations" in the accounting rules.

The trend of presentation in a favourable light manifests at companies of all sizes. General Motors case is well known, which in 1988 reported record earnings, atypical for the car industry. This drew the attention of the market analysts which have noted that 40% of the reported profits (790 billion USD) have been caused by the increase of the amortization period, from 35 to 45 years, and not the main activity itself (Halpem et. all, 1998).

Almost constant financial scandals, determined a representative of the Securities and Exchange Commission (SEC), the US market surveillance authority, to declare that such situations may be limited but not completely removed (Vlad, 2015). For this reason, financial reporting, both at national and at company level are looked on sceptically.

To emphasize *the dynamic relationship* between information and expected return, a defining scenario has been analysed for the implementation of the transactions on the market: an investor has acquired securities at a certain point in time t_0, for the financial time horizon t_0 - t_n based on an analysis of return and risk of the securities, and a comparison with other investment opportunities offered by the market.

Figure no.1. Types of information and market effects



Source: Vlad C., *Finances in the Globalization Era*,Lambert Academic Publishing, Germany, 2015

Depending on the available information and on the possibility to design the future, an investor establishes an expected return for a certain assumed risk (Stancu, 2010).

✓ *Only past information available*

The price willing to be paid at t_0 is determined by the price previously recorded and by the expected return for a given time period (t_n). At its turn, the expected return is determined to by the estimated potential of the security bond weighted by a risk factor which usually has large values for an uncertain economic environment, for which the forecasting possibilities are reduced.

✓ *Available public information*

On top of the last information overlaps new information that changes the intrinsic value of the security bond. The financial market reaction means initiating an arbitration process and its new trend aims to its intrinsic value ($t_1 \div t_2$). Basically, the integration of public information should be immediate and accurate but this process is dependent on a number of factors such as: market maturity, the time for information processing, market regulations. Depending on its purpose (favourable or unfavourable) the integration of the information changes the expectations for t_n counting on a new level of return.

$$Rs_{t_n} = Rs \pm R's \quad [13]$$

Where:

R - the expected return obtained by integrating past information

$R's$ - the deviation from Rs determined by integrating the new information

✓ *Available privileged information*

Such a situation is characteristic only for the theoretical economic environment in which the participants have equal positions, securities bonds are easy to be negotiated and the market liquidity is sure. In fact, holding this type of information is possible only for limited periods of time. Integration of privileged information also requires reformulation of return expectations:

$$Rs_{t_n} = Rs \pm R's \pm R''s \text{ (Stancu, 2010)}$$

Where:

$R''s$ - the impact on return determines the integration of inside information

In conclusion, the influence of the three categories of information on the value of financial securities bonds is complementary in the sense that new information overlaps the past one and, where necessary, amend one way or another the previously expected expectations about the value of a financial bond.

Depending on the type of the integrated information financial markets can be classified as (Stancu, 2010):

✓ *Markets with low efficiency*. Poor efficiency is characteristic of most markets representative for less developed economies where the quantification of future development can be done with a low probability.

The information used is the one prior to the decision which complies with "past repeats itself" principle.

The risk factors are unpredictable in the context of the magnitude of the event, the only landmark which can be considered being the analysis of the chronological series of historical prices of a financial asset.

Depending on the values of the autocorrelation coefficient between the covariance and the successive price dispersion, there can be given the following interpretations:

- If the values are *close to zero* than the variations of the past exchange rates are random and the future developments are not determined by them;
- If values are *positive* it means that an increase of a prior exchange rate compared with the average rate triggers an increase of the next rate, and vice versa;
- If the values are *negative* than a previous growth of an exchange rate determined the decrease of the next rate, and vice versa.

✓ *Markets with semi-forte efficiency*. This type of efficiency is characteristic for the countries with the most economically developed markets. The semi-forte efficiency is assessed pursuant to the null return residues.

Residual return = actual return - expected return = 0.

The residual return is not zero, within the interval $t_1 \div t_2$ so the timing of the occurrence of the new information until its complete on-going integration as a result of the arbitration processes.

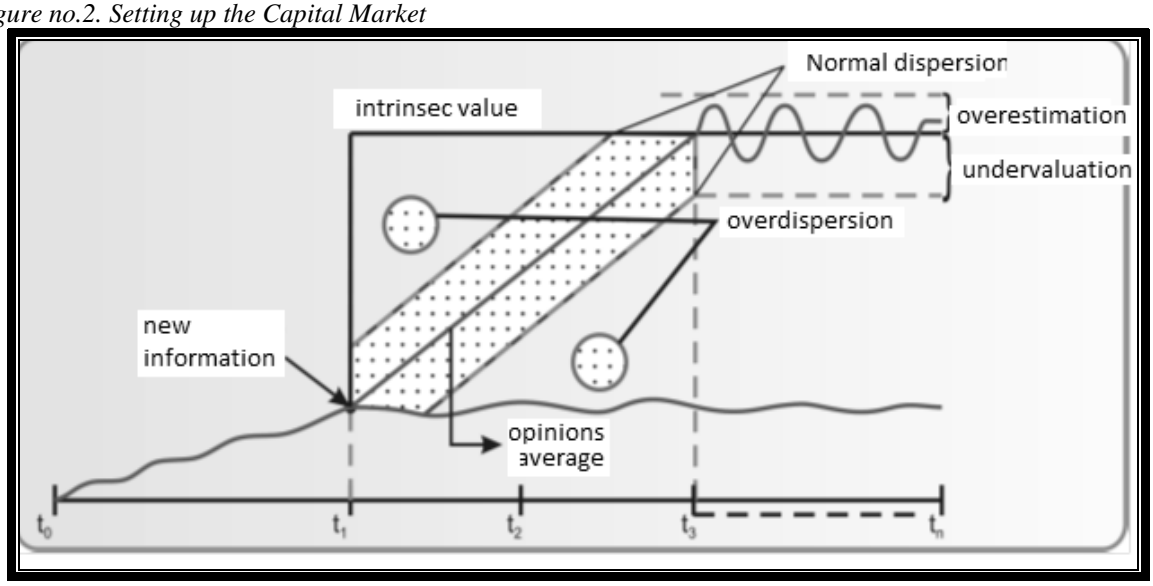
✓ *Markets with forte efficiency*. It is a theoretical market that actually occurs only on limited periods of time. It provides the symmetry of information that does not leave room for speculation.

Both the strong and weak efficiency is assessed on the basis of void net actuarial value (VAN).

3. Allocational efficiency

Pursuant to fundamental analysis, the emergence of the new information leads to the discovery of new intrinsic values, different from current market prices. Logically, the intrinsic value becomes the target of the market pursuant to which the price trend is established. After reaching the intrinsic value, the rate registers variations around this value, on a consolidation trend, until new information. Such a development is possible if we consider that the security bond is independent from the overall market.

Figure no.2. Setting up the Capital Market



Source: Vlad C., *Finances in the Globalization Era*,Lambert Academic Publishing, Germany, 2015

Investment decision is taken according to a number of factors, such as:

- return and risk, determined based on the new information;
- the period of time considered;
- individual attitude towards risk;
- anticipation of the behaviour of the majority in the market.

Within the time period $t_1 \div t_2$ the uptrend (descending trend) creates a concentration of opinions around the average that forms the market and far beyond the average assessments, the so-called speculative "bubbles" or "balloons" which are to be used by those who belong to the average range.

A very important aspect to be considered is the correlation between the intrinsic value and the average opinions of the market. A limited number of investors can correctly evaluate the value of the new information, but it will be outside the average range and they will be target of the speculation. On the contrary, those who are close to the average range, as the opinion of the majority, even if they have assessed the information with a certain degree of error, will be the winners. In this context a question is asked, namely whether the discrepancy between the fundamental value of information and appreciation which is given to it by the price does not distort the economic reality of the market and of the issuers of security bonds.

Generally, the subsequent developments may lead to a change of the opinions reflected in the price corrections, but also to their preservation if the interests of those who have the power to decisively influence the market require this.

Since 1992, when Great Britain was forced to withdraw from the European Exchange Rate Mechanism, the large investment funds are constantly accused of market manipulation. F.M.I. has undertaken an extensive research after the Asian crisis of 1997 and has concluded that investment funds have played a minor role. However, the market has maintained the same perception.

4. Conclusions

The real cause of market distortion seems to be *psychological*. The optimism of the investors of the developed markets has been maintained by the conviction that the world economy has entered the era of sustainable growth which means an endless growth, which is also self-supporting. Therefore, it is considered it is better to buy because the price of the financial assets will constantly grow. The financial crisis has refuted this way of thinking and the investors have balanced in the pessimist area.

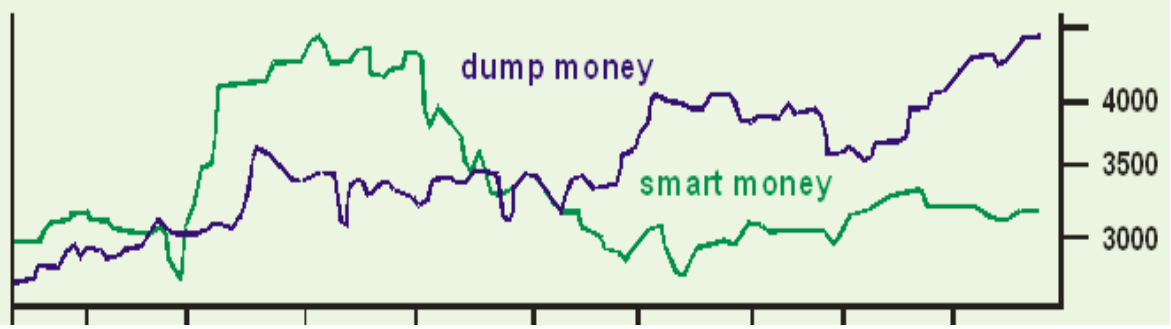
For the period $t_2 \div t_n$, after the *full integration of the current information and in the absence of other information, the price of the financial* security bond should be equal to the intrinsic value, namely to have an linear evolution on a horizontal trend. This is not possible because of other considerations under the impulse given by the investors and under the impulse of the logical belief that there will be new information that maintain dynamic of the capital markets. This way appear deviations of the price from the intrinsic value which represents the average range and correspond to under or overvaluations.

To capture the investors behaviour in the capital market there has been created a psychological indicator that operates with the terms such as: "dump money" - money evil and "smart money" - good money.

The experienced investors do not panic at the occurrence of negative market signals, but on the contrary they analyses them to see if they have current or long-term effects.

On the contrary, the inexperienced investors act hastily to such signals, their reaction most of the times being disproportionate. We have selected an example from the local stock market referring to ATB security bonds.

Chart no.1. Psychological indicator



Source: www.educofin.com

The technical analysis highlights a divergence between price evolution and the relative strength indicator (RSI), which is a sign of the decrease of ATB share price in the near future. The fact that at the time of the analysis the pharmaceutical industry was growing and that there were no negative information about ATB, had led to the idea that the price decrease was on short-term and most likely there has been made a correction.

However the attitude of the two groups of investors was in opposition. By evading the fundamental data, the group with the highest percentage had determined the price in the future.

Such behaviour is dangerous for issuer of the securities because the market could reflect a false public image instead to properly reflect the economic and financial performance and the development prospects.

Therefore, neither the investors who sell the shares of a company with a market distorted image cannot charge the right price.

5. References

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