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Efficiency Level and Market Respond to Disclosed Information Examining Efficiency from Informational Point of View Study over Emerging Markets: Case of Karachi Stock Exchange

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Abstract

There is a great debate that how information signals pass through markets and how markets respond to those signals. Many researchers have worked on it but usually the work has been done in context of Developed markets. The study is important in nature as it unveils that how emerging markets process the publicly available information and how that information reflects in the stock prices. The study analyzes the relationship between value of stock calculated on the basis of earning per share and prevailing interest rate, and actual market value. KarachiStock Exchange has been taken as a case to analyze and results indicate that KarachiStock Exchange is a weak form of market, where information in the market has less significant impact over share prices.

Keywords: Market Efficiency, Intrinsic Value, Earning Per Share, Interest Rate

Introduction

Market efficiency can be viewed either from fundamentally point of view or informational point of view. Fundamental point of view deals with the value determine through discounting the future expected cash flows with a fixed market valuation model, and informational efficiency relates with the flow of information and adjustment of stock prices according to it. In widely accepted view the capital markets are efficient either in strong, semi strong or weak form, this classification based upon reflection of information in the price, more the information reflect in price more the market will be efficient(Fama, 1991) But the question is; what are the determinants of an efficient market? How can it be taken into account? And what kind of information up to what extent should be reflected in the stock prices? In a study conducted way back on New York Stock Exchange it was found that there is evidence to support the argument that market is efficient by using stock split as a determinant and results suggest that prices adjust quickly to this new information (Fama, Fisher, Jensos, & Roll, Feb 1969).

However splits are a tool into the developed markets if we analyze an emerging or underdeveloped market these tools are not available there, rather investors are dealing with old basic type of transactions. Another important factor to consider is what is the importance of studying the efficiency level of a market?An investor must have knowledge to determine the efficiency level of the market in which he is investing and he can allocate portfolio across efficient and inefficient market for the purpose of diversification, further intelligent analyst may use available information to get more gains. This study based upon solving some of the basic questions i.e. what are the determinants of market efficiency in relation to an emerging/ underdeveloped stock market? And, how emerging markets respond to information change?This paper comprises of 5 sections, section 2 deals with the literature review in relation to scope of this article, section 3 discuss the variables, in section 4 hypothesis and methodology will be presented and finally the section 5 describes the results, conclusion and study limitations.

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Literature Review

In efficient markets where information passes in a real flow, investors will earn average return while taking average risk and for any return above the average the investor has to accept above average risk (Malkiel, 2003). Different types of information flows into the market, market may respond to a new information either in an overreaction or under reaction, in efficient market the frequency of both type of reactions are about to same (Fama, 1998). However being perfect in efficiency is difficult and usually markets reward the arbitragers and investors who primarily process the information (Grossman & Stiglit, 1980). In a study it was found that market usually react more strong to bad news in comparison to good news (Brown, Harlow, & Tinic, 1988). However another factor is the level of certainty in the available information, uncertainty in available information and market respond to it, is directly related, in case of good news, more the uncertainty more will be the expected return and bad news usually followed by lower expected return (Zhang, 2006). Study shown that announcement in relation to earnings affect the stock prices for following 120 days in a direct relationship (Bernard & Thomas, 1990).

In a study on Karachi Stock Exchange it was found that high prices in previous year and last year earnings per share effect the share prices, however Pakistani market need to be reformed to avoid uncertainty and high risk level (Mehr-un-Nisa & Nisat, 2011). Sometimes to improve stock prices, firms spread the good news using media and this use of media affects the investors' expectations and increase the announcement returns(Solomon, 2012). However there is a difference in reaction of emerging and developed markets in emerging markets usually the investors follows each other and prices move together more in emerging markets then developed ones (Morck, Yeung , & Yu, 2000). Usually the investors in emerging markets are not able to develop strategies to earn excess return through trading (Urrutia, 2014). In a previous study on Karachi Stock Exchange it was described that KSE is following random walk theory and index is efficient (Mustafa & Nishat, 2007) but the study analyzed the index return whereas in this study we are examining the behavior of individual stocks in relation to disclosed information.

Study Variables:

3.1Intrinsic Value:

However defined with different approaches, for this study the intrinsic value has been defined in a new way, we calculate the intrinsic value in relation to prevailing interest rate and the Earning Per Share of the last year. The value so driven actually reflects the value of share that should be its market value in relation to interest rate. The formula is;

$$\mathbf{SP_t = \frac{EPS_t}{I_t} \times 100}$$

Where;
SP_t= Share Price at Time t
EPS_t = Earningper Share for the period t
I_t = Interest Rate at Time t

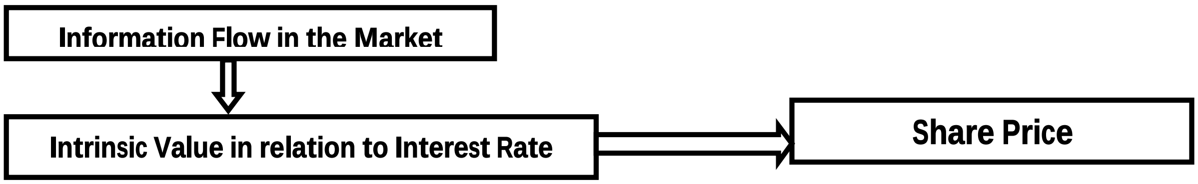
For Interest rate One year Karachi Interbank Offer Rate has been taken. The reason to choose this simple model is to check the market response to this widely available information. Traditional models of discounting future cash flows and expected earnings cannot produce good results as investor in a market like Karachi Stock Exchange is usually not aware enough to conduct such comprehensive analysis.

3.2Share Price:

Share price has been taken as a dependent variable in relation to intrinsic value as defined earlier. The data for the study collected from KarachiStock Exchange from year 2010-2015, based upon prices of shares for 10 companies for the entire period. To confine the study and better result the average price for the complete year compared with the intrinsic value.

Hypothesis and Methodology:

4.1 Theoretical Framework:



4.2 Research Significance and Design:

Study based upon secondary data and as defined in variable the stock prices taken from KSE data and KIBOR is taken as benchmark interest rate. The purpose of the study to ascertain the impact of disclosed information on the stock prices. The study is significant as it will unveil two important aspects, first is the form of KarachiStock Exchange in relation to information availability and use and second is being an emerging market the case can be taken into account that how emerging markets process information disclosed by the companies. We keep the research design simple to initiate the process of determining the market form and impact on share values;

$SHP_t = \alpha + \beta ITV_t + \varepsilon it$
Where;
SHP = Share Price (Market Value)
ITV = Intrinsic Value in relation to Interest Rate

4.3 Hypothesis:

H1= Changes in earning per share affect the stock prices in relation to prevailing interest rate.
Ho= Changes in earning per share does not affect the stock prices in relation to prevailing interest rate.

Results and Findings:

Data has been processed and following results have been obtained;

Variables Entered/Removedb

Model	Variables Entered	Variables Removed	Method
1	Intrinsic valuea	.	Enter

a. All requested variables entered.
b. Dependent Variable: Average Price during period

Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720a	.519	.508	41.1856

a. Predictors: (Constant), Intrinsic value
b. Dependent Variable: Average Price during period

ANOVAb

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82397.601	1	82397.601	48.576	.000a
	Residual	76331.399	45	1696.253		
	Total	158729.000	46			

a. Predictors: (Constant), Intrinsic value
b. Dependent Variable: Average Price during period

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	47.359	9.377		5.050	.000
	Intrinsic value	.604	.087	.720	6.970	.000

a. Dependent Variable: Average Price during period

The results indicate that there is a weak relationship between intrinsic value and share prices. R2 is 0.519 which describes that 51.90 % variation in Share Price is explained by the intrinsic value. F Significant value showed that overall model is good fit. Overall it indicates that this information affect the share prices but with less significant way.

5.1 Conclusion:

The study find out some important aspects that, in KarachiStock Exchange the flow of information affect the stock prices in less significant way and investors tend to invest in stocks despite considering changes in EPS. On the basis of result the opinion can be formed that KarachiStock Exchange is an example of weak form of efficiency due to very less impact of market information on stock prices. Further the market is more speculative in nature like many other emerging markets.

Limitation of the Study:

The study has been conducted with inherent limitation and can be further enhanced in;

- More variables can be added as determinant of efficiency.
- The case discuss the KarachiStock Exchange only, the same study can be explained with context of other markets as well.

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