PRICE MOMENTUM IN BULL AND BEAR MARKET CONDITION AT THE INDONESIA STOCK EXCHANGE

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Abstract: *Goals to be achieved from this research is the establishment of a draft formulation and model price momentum in the Indonesia stock exchange. Formulations and the model was able to conduct a study empirical efficient market hypothesis (EMH) and see price momentum in the condition of the capital market in the condition of bullish as well as in the condition of bearish.*

An object of research being elected are 41 manufacturing companies who is enrolled in BEI in 2003 until 2012. A method of analysis of data used is logistic regression used to find information which giving indications market conditions in bullish or bearish, and General Linear Model (GLM) procedures using Anova to find different market information which affects price momentum in the condition of bullish and bearish market.

The research results show that the trade volume and exchange rate significant against the probability of the occurrence of bullish / bearish market. Besides that market information in the past influence good or poor performance of stock on the condition of bullish and bearish. Thus capital market efficiency of Indonesian stock exchange is semi strong efficiency, where securities prices fully reflect all the information published including information issuers who are in financial reports.

Keywords: *price momentum, bullish market, bearish market, Efficient Market Hipotesis (EMH).*

I. INTRODUCTION

Investors need a strategy and proper momentum when choosing stocks that can produce higher return. Momentum stock show a trend that has a good performance and will continue good in future, vice versa if shares having bad performance and in future also will continue bad sign (Jones, 2004). Anomalous phenomenon of the momentum implies a puzzle that opposed the weak form efficiency market. Empirical studies show that when facing a bullish market, investors tended to increase predictive value stock prices, so that eventually they were late to realize

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that they have been many made mistake prediction. As a consequence, they bought shares at higher or sold at prices lower than the fundamental (La Porta, 1996; Ritter, 1991; Shevrin, 2000; Tvede, 2000).The market conditions that excites or weak affect price momentum. The economic situation being rewards to the risk that the momentum of price. The influence of different markets at a time when the bullish or bearish the market pricing results in a high risk of failure, perhaps even cause the company to experience financial difficulty. Fabozzi dan Francis, Bhardwaj dan Brooks said that the risk systematic (beta) as an essential component for estimating a stock return is not stationary from time to time, so that it necessary to adjusted for the market conditions have been happening. Ang and Chen (2002) found that the correlation between the portfolio return and higher return market for small-size shares and higher book to market on down market in compare when up market. Zang and Petkova (2005) have also found that beta and book to market of small size shares changes by expected of higher risk premium. Vennet and crombez (1997), shows empirical evidence about significant differences of the systematic risk on bull market and bear market.

Research support Efficient Market Hypothesis (EMH) said that abnormal return opposed to market efficient are proofs that cannot be trusted. Abnormal return is a reasonable compensation of the risks. Specific variables of companies such as size, book to market earning price, book to equity are the instruments that is appropriate for the risk of beta that could not be arrested and explain excess return in cross-section(Campbell, et. al., 2004).

Aggrawal and Taffler (2005) also give support that the market still uneficience. Based on these issues this research aims to do testing empirically Aggrawal and Taffler finding on the Indonesia Stock Exchange. Besides Ajayi and Mboja (1996) found implicit relationship between the price of shares with the value of foreign exchange. Thus, this paper aims to investigate two main issues: (1) How the influence of market information which includes the price earnings ratio, size, beta, volume of trade and exchange rate against the occurrence of bullish and bearish condition in the capital market?; (2) Is there a different market information which include price earnings ratio, size, beta, the trade volume and exchange rate that affects price momentum in the condition of bullish and bearish market?

I. LITERATURE REVIEW

A market called to be efficient if the market can provide services required by investors at a cost of at least. The capital market efficient are defined as market which are in good balanced so that the decision stock trading based on information available in the market which cannot give an advantage over their profits balanced or which are often called external efficiency.

There are three types of an efficient market, namely: (1) informationally efficient market is the balance the price of reflect consensus joint between market participants about the value of assets that is based on the information available quickly and accurately; (2) operationally efficient market is market operation can be done faster (liquid) and the cost is low; and (3) decisionally efficient market is the market that reflects availability of information and smart investors can make true decisions (sophisticated investors).

Efficient market hypothesis basically relating to the market reaction reflected on the adjustment of the price of the emergence of new information. Fama (1970) presents three main form of information based on three forms of market efficiency namely: (1) weak form efficiency; (2) semi stong form efficiency; (3) strong form efficiency.

Weak-form efficiency pertaining to a random walk theory who claimed that there is not relations between the past and the present value. According to this theory, technical analysis to predict stock prices based on the historical price is a futility. The weak form (fama, 1965) is: (a) the price swings independent of each other and (b) the price changes based on probability.

Semi-strong form efficiency is that the share price already reflected all the information available to the public (all publicity) available information. There are not investors who enough profit merely on the information available to the public. Published information can be:

1. Information that affect only prices for securities companies that publish, for example: profit announcement, the division of dividend and turn of the management changes.

2. Information that affects prices for securities of a number of companie. Example: government regulation.

3. Information affecting the stock prices of go public companies. Example: regulations which requires those companies include cash flow reports.

Strong-form efficiency (efficiency potent) is that a stock price already reflect all the information about company, whether it is information which was publicated or information that is not published (private information).In this way there is no outcome business investors who have information general and insider information to predict stock prices.

The third form of efficient market is interconnected. The relation of the third form of efficient market cumulative level of this, namely the form of weak is part of semi strong form and semi strong form is part of the strong form. This cumulative levels have an implication that semi strong form market efficient are also weak form

efficient market. Strong form efficient market is also semi strong form and weak form efficient market. The implications of this is not effect on the contrary, namely weak form efficient market must not mean the semi strong form efficient market.

Momentum in return said a tendency stock shares having a good performance next will have good as well otherwise when having poor performance next will also have poor performance (Jones, 2004). Titman and Jagadesh (1993) showed that trading strategies buy shares occurs when the value of a shares rose for 6-12 months and sell stocks adverse at the time when the abnormal return get a superior return. Hong and lee (2003), stated that shares with high momentum tend to produce return high in the future. This is due to fundamentally, these stocks is riskier so expected high return (Konrad and Vows, 1998, Moskowitz and Grinblat, 1999).

Based on the description above, then to answer the formulation of the first problem formed the first hypothesis (H1) as follows: *information market that includes price earnings ratio, beta, size, the trade volume and exchange rate impact on price momentum.*

According to Jones (1998), a bullish market is a trend of increase in the prices of stocks (index) has able to penetrate the top value price (market index) before, or if there is a price drop, the decline is not to cross the line (index) the lowest price that occurred earlier. Instead, the bearish market is defined as the tendency of the price movement (index) has failed to penetrate the highest previous price limit, or if the decline in prices (index) that happened to able to penetrate the lower limit price (index) that occur before.

The condition of the bullish or bearish will affect beta (systematis risk) shares as an essential component for estimating return a share is not always stationary from time to time (Tandelilin, 2001). Therefore it's necessary adjustment towards the condition of the market which is taking place. Systematic risk calculation separately on condition bullish and bearish needs to be done to anticipate market changes in the condition that occurs. If the risk of a stock return systematic change then required towards the shares were to be adjusted (Vennet and Crombes, 1997; Tandelilin, 2001). Adjustments should also be done to make the right decision and investor losses can be avoided. The high default risk on the company financial difficulties cause need to see the effect of market pricing different market conditions in bullish or bearish. The condition of different markets will result different return also.The company in financial difficulties is more potent good at a high rate of economic growth (Aggrawal and Taffler, 2005).

Based on the description above, then to answer the formulation of the second problem formed the second hypothesis (H2) as follows: *there are differences indicators price momentum in a bullish and bearish in the Indonesia Stock Exchange.*

II. RESEARCH DESIGN

The population in this research was manufacturing companies listed on the Indonesia Stock Exchange during 2003-2012 and having financial report complete. The sample collection technique which is used is purposive of sampling.

2.1 Measurement of Variable

1. Return calculated by using formula with the closing price of shares for current reduced by closing price of shares for the last period divided by closing price of shares for last period. After the return obtainable monthly average of return during the 12 months. It is held every year for every portofilio formed.

2. Betas portfolio estimated with regression excess return monthly on portfolio during 24 months with return market on equally weighted market index.

3. Size calculated with the price of shares multiplied by the number of shares.

4. Price Earnings Ratio calculated by equity per share divided by closing price of shares.

5. Trading Volume form trading volume on data base of Indonesia Stock Exchange.

6. The Rupiah exchange rate against the US Dollar.

2.2 Hypothesis Testing 1

The model used is:

$P(BU) = \beta it + \beta 1t it\text{-}1 + \beta 2ln\ size_{t}\text{-}1 + {}_{2t}P/E_{it\text{-}1+\ 3t}1n(vol_{it\text{-}1)+\ 4}\ lnKurs_{it}\text{-}1$

P(BU) = The probability of stocks experienced bullish market

 it-1= Beta portfolio

ln *size*it-1= The logarithm natural of the value of a market capitalization of shares in the period of t-1.

P/Eit-1 = Price earnings ratio of shares in the period t-1

1n(volit-1)= The logarithm natural of trade volume of the shares in period t-1

Kursit-1 = The natural logarithm of the rate in the period t-1.

2.3 Hypothesis Testing 2

Hypothesis testing use General Linear Model (GLM) procedure using anova to find out if there is a difference in the average (means) price momentum in the condition of a bullish and bearish market.

The Model used is:

rit-rft = αit + γ1t it-1 + γ2ln sizet-1 + γ_{2t}P/E$_{it-1+}\gamma_{3t}$1n$_($vol$_{it-1)+}\gamma_4$ lnKursit-1+dummy BU

rit-rft = price momentum

Dummy BU = If the bullish given the digits 1 and the digits 0 for bearish condition.

III. MATERIAL AND METHOD

Object of research being elected are 41 manufacturing companies who is enrolled in BEI in 2003 until 2012. Data analysis of first issues conducted by using logistic regression. Meanwhile tool analysis for second issues with the General Linear Model (GLM) procedures using Anova.

IV. DATA AND FINDING

Table 1
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Mom	4920	-99.4287	329.6054	2.337116	19.5474274
Beta	4920	-2.5842	12.4154	.618248	.6178047
Capseb	4920	0	125065721	3954622.41	11573243.570
Volseb	4920	500	6498887500	126982705.81	421049527.075
Kursseb	4920	8275	12360	9298.45	692.341
Perseb	4920	-8170000.00	9523809.52	26312.3207	551522.35906
Valid N (listwise)	4920				

From the table 1, the amount of data in this research was 4920 data. While the average price momentum over a period of time observation is 2.337, maximum price momentum is 329.6 and minimum price momentum is -99.42. This shows that on average stock price movements at The Indonesia Stock Exchange experienced positive change and above advantages if investors invest on an investment risk free. Vice versa, if the worst conditions happen then investors should be prepared to lose the whole assets invested.

Testing with the logistic regression can be used if the assumption multivariate normal distribution are not fulfilled. The following is the data processed:

Table 2
The amount of data included in processing

Case Processing Summary			
Unweighted Cases[a]		*N*	*Percent*
	Included in Analysis	3908	79.4
	Missing Cases	1012	20.6
	Total	4920	100.0
Unselected Cases		0	.0
Total		**4920**	**100.0**

a. If weight is in effect, see classification table for the total number of cases.

Data which meet the conditions and included in processing is 3908 data (79, 4%).

Table 3
Varibles in Equation

Variables in the Equation						
	B	*S.E.*	*Wald*	*df*	*Sig.*	*Exp(B)*
Step 1[a] Lvolseb	.200	.020	97.677	1	.000	1.221
Lkursseb	-3.932	.995	15.631	1	.000	.020
Constant	13.931	3.956	12.404	1	.000	1122487.002

a. Variable(s) entered on step 1: lvolseb, lkursseb.

From the table, it is evidence that the trade volume and exchange rate variables significant against the probability of the occurrence of bullish market. In practice, there are two groups of market participants that is rational and quasi rational participants. Example: the analist behave quasi-rasional related economic incentives or when they predict earning, then the results of their prediction will shows is a systematic pattern as those of many described in the literature of behavioral finance.

Table 4
Parameter Estimates

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-2.545	1.256	-2.026	.043	-5.009	-.081	.002
Lbeta	.043	.034	1.258	.209	-.024	.110	.001
Lcapseb	-.057	.012	-4.901	.000	-.079	-.034	.013
Lvolseb	.051	.006	7.926	.000	.039	.064	.033
Lkursseb	.879	.315	2.795	.005	.262	1.496	.004
Lperseb	.018	.007	2.559	.011	.004	.032	.004
[BUBE=0]	-1.125	.030	-37.016	.000	-1.185	-1.065	.424
[BUBE=1]	0[a]	.	.	.	.	.	.

a. This parameter is set to zero because it is redundant.

In corrected a model column of the table, visible figures 0.000 (under α=0.05). Thus, regression models that there can be considered worthy to predict a link between beta, capitalisasi market, the volume of trade, exchange rate changes and price earnings ratio in the condition of bullish and bearish with price momentum. The table show that capitalisasi market, the volume of trade exchange rate changes and price earnings ratio having price momentum differences in the condition of bullish and bearish market. It means, information market in the past, (i.e capitalisasi market, the trade volume, exchange rate changes and price earnings ratio) will affect good or bad stock performance in bullish and bearish market. Capitalisation market, the volume of trade exchange rate changes and price earnings ratio in condition bullish and bearish effect on 45,4% price momentum changes. Thus, the other factors beyond the factors included in this research are 54,6%.

The research results show that the trade volume and exchange rate significant against the probability of the occurrence of bullish/bearish market. Besides that market information in the past influence good or poor performance of stock on the condition of bullish and bearish. The finding of this research support capital market efficiency of Indonesian stock exchange is semi strong efficiency, where securities prices fully reflect all the information published including information issuers who are in financial reports. Thus there is not investors can use the publish

information to gain an abnormal return in a long time. The Indonesian stock exchange still is considered not efficient according to the research of Husnan (1991), Manurung (1994), Hermanto (1998), Affandi and Utama (1998), Jasmina (1999) and Suha (2004).

V. CONCLUSION

1. The trade volume and exchange rate influential significantly to the probability of the occurrence of bullish and bearish market. The participants quasi rational dominated in the decision-making process at the Indonesian Stock Exchange, so that is not equilibrium rational market.

2. Capitalisasi market, the volume of trade exchange rate changes and price earnings ratio having price momentum differences in the condition of bullish and bearish market. It means, information market in the past, (i.e capitalisasi market, the trade volume, exchange rate changes and price earnings ratio) will affect good or bad stock performance in bullish and bearish market.

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