

Did The Indonesian Stock Exchange Efficient? (Testing Lq 45 Period 2017 with Weak Form)**Hakiman Thamrin***

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Abstract: Investors can choose to invest in the real investment sector or in the financial sector. The decision to choose the investment sector is mainly determined by the amount of return (return) generated and the risk (risk) that will be received by investors due to the investment. Theoretically the risks and returns received from an investment will go hand in hand. The higher the rewards expected to be received, the greater the risk that investors will receive. Fama (1970) classified information into three types, namely; (i) oast price change (past price changes), (ii) public information (publicly available information) and (iii) public and private information (good information available to the public and not). The efficient market hypothesis has been widely tested and, with the data in a wide variety of markets and variety result. The Structure of Scientific Revolutions, we seem to be entering a stage where widely scattered and as yet incohesive evidence is arising which seems to be inconsistent with the theory. Daily observations are taken for the period January 2017 to December 2017 on LQ-45 at IDX. Autocorrelation, Ljung-Box Q-statistic Test, to test the hypothesis that the stock market follows a random walk. Daily returns are not normally distributed, because they are negatively skewed and leptokurtic. In aggregate we concluded that the daily prices do not follows random walks in LQ-45 IDX. The investors can take the stream of benefits through arbitrage process from profitable opportunities across these markets.

Keywords: EMH, random walk, return, LQ 45, autocorrelations.

INTRODUCTION

Investors can choose to invest in the real investment sector or in the financial sector. The decision to choose the investment sector is mainly determined by the amount of return (return) generated and the risk (risk) that will be received by investors due to the investment. Theoretically the risks and returns received from an investment will go hand in hand. The higher the rewards expected to be received, the greater the risk that investors will receive. The election decision whether in the real sector or in the financial sector was explained by Fisher in 1930 which later became known as Fisher's theory [1].

Formally, an efficient capital market is defined as a market whose securities have reflected all relevant information. The faster new information is reflected in the price of securities, the more efficient the capital market is. Thus it will be very difficult (even impossible) for investors to get abnormal profits.

If changes in stock prices follow a random walk pattern, then the price changes in the past cannot be used to estimate future price changes.

That is why even though the concept of an efficient capital market is generally trusted among academics, it is not financial. This is indicated by the number of suggestions for investing based on observing the behavior of stock price changes.

Kendal [2], said that he did not find a pattern of the formation of stock prices or stock prices seemed to follow a random walk pattern. Roberts [3] also said that stock prices follow a random walk pattern.

Beja [4] showed that the efficiency of a real market is impossible. Grossman and Joseph E. Stiglitz [5] showed that it was impossible for a market to be perfectly informationally efficient. Because information is costly, prices can not be perfectly reflected in the information which is available.

LeRoy and Porter [8] showed that stock markets exhibit 'excess volatility' and they reject market efficiency.

Milgrom and Stokey [9] showed that under certain conditions, the receipt of private information can not create any incentives to trade.

In 1985 Werner F. M. De Bondt and Richard Thaler [10] discovered overreact stock prices, evidencing substantial weak form market inefficiencies.

Marsh and Merton [11] rejecting the EMH. French and Roll [12] deduced this is due to trading on private information-the market generates its own news.

Lo and MacKinlay [13] strongly rejected the random. Poterba and Summers [14] showed that stock returns show positive autocorrelation over short periods and negative autocorrelation over long horizons.

Lehmann [15] found returns and rejects the efficient market hypothesis. Jegadeesh [16] documented strong evidence of predictable behavior of security returns and rejects the random walk hypothesis.

Jegadeesh and Titman [17] found that there are significant abnormal returns. Roll [18] observed that in practice it is hard to profit from even the strongest market inefficiencies.

Lee *et al.* [19] investigated the stationary of real stock prices for 32 developed and 26 developing countries covering the period January 1999 to May 2007 and including that stock markets are not efficient.

Husnan [20] researching on the Jakarta Stock Exchange found that many of the stocks on the Jakarta Stock Exchange had significant autocorrelation of price changes.

Other research conducted by Unggul Widayat (Unggul Widayat, Indonesian Capital Market Efficiency Analysis Period 1980 - 1983, Thesis, Faculty of Economics UGM, Yogyakarta) also shows that the Indonesian capital market is not efficient according to weak form testing.

Andrianto [21], conducting research for LQ 45 on the IDX for the period 2013 - 2014 found that stock movements on the IDX followed a random walk pattern, and there was no relationship between today's stock prices and stock prices the previous day.

Ady [22], conducts research that emphasizes behavioral finance to find that IDX follows a random walk pattern and by using technical analysis, investors will find it difficult to get the maximum return.

Based on the description above, it can be concluded that the problems on the IDX are:

- Can the Indonesia Stock Exchange be categorized as an efficient exchange?
- Is the Indonesia Stock Exchange with a "weak form test" efficient?
- Can investors get greater profits than expectation returns?
- Is the deviation of the profit level random?

Fama [23] classified information into three types, namely; (i) oast price change (past price changes), (ii) public information (publicly available information) and (iii) public and private information (good information available to the public and not).

Based on the form and level of efficiency of a capital market, Fama [23] divides capital market efficiency into three; (i) Weak Form of efficiency is a condition in which prices reflect all information contained in the price record at a past time. Under these circumstances investors cannot obtain above normal levels of profit by using trading rules based on price information in the past. (ii) Semi strong is a condition where prices not only reflect prices in the past, but the price reflects all information published. Here, investors cannot get profit above noormal by utilizing public information. (iii) Strong form is where prices not only reflect all published information but also information from fundamental analyzes of the company and the economy. Here the capital market will always reflect prices that are always reasonable and no investor is able to obtain a better estimate of the stock price.

Other studies conducted on the Indonesia Stock Exchange were Hidayat [24], Mirdah and Solikhin [25], Matiningsih and Salamah [26], Dewi [27], Khoiruddin and Falzati [28], and Yulia [29], Dini Nurliani [30] which shows the results that the market is not efficient.

However, research conducted by Kurnianingsih [31], Putra [26], Hidayati [32], Pratama [33], and Nurmala and Salmah [34] show that the market (Indonesia Stock Exchange) is efficient.

DATA AND METHODS

Testing whether the Indonesia Stock Exchange is efficient or does not use samples from the daily data of stocks included in the LQ-45 IDX in the January - December 2017 period other shares must be taken out of the research sample because they are not listed in the LQ-45 BEI group for the period of 2017.

Market returns are computed as follows.

$$R_t = \ln (P_t / P_{t-1})$$

P_t = Market Price at time 't'

P_{t-1} = Market Price at time 't-1'

Descriptive Statistics Descriptive Statistics for the stock returns includes the Arithmetic Mean, Median, Standard Deviation Jarque-Bera, Variance, Kurtosis, Skewness, and Range. The Jarque-Bera statistics is used to test the normality of the data series.

Auto Correlation and Ljung Box Statistics the serial autocorrelation is used to test the relationship between the time series its own values at different lags.

If the serial autocorrelation is negative it means it is mean reverting and accepts the null hypothesis and if the result is positive coefficients then it rejects the null hypothesis.

RESULTS AND DISCUSSION

The data comprises of daily closing values of stock price for LQ – 45 at BEI. The data includes daily

observations from January 2017 to December 2017. Almost all of the stock prices are on an upward trend throughout 2017, only a few stocks have decreased like AALI and LPPF stocks. During which some of these stocks remained volatile, especially in the case of GGRM and UNTR, as shown in Figure 1.

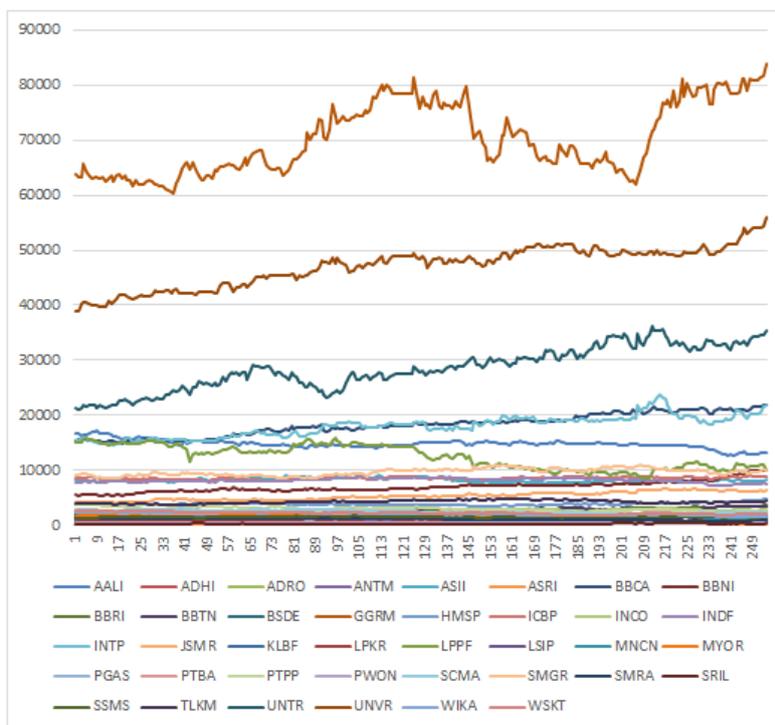


Fig-1: Trend of daily stock price

LQ 45's daily stock price trend shows that prices move cumulatively systematically. Descriptive statistics for the LQ-45 daily stock price for 2017 show a negative direction for all stocks.

The kurtosis is positive for all stocks which mean that the distribution of stock prices is leptokurtic meaning higher than expected from normal distribution. The Jarque-Bera test rejects the normal distribution hypothesis

From the results of the p test produced and by using a significance level of 5%, it can be seen that there is no autocorrelation of the stock price between this day and the previous day, so that market efficiency in the weak form does not apply.

CONCLUSION

This empirical study investigates the weak form of market efficiency on the Indonesia Stock Exchange. The sample consisted of 38 stocks that entered the LQ-45 group in 2017. The purpose of this study was to investigate whether the IDX stock market

was efficient if tested with a market model in a weak form.

The result is that the market is not efficient in a weak form, meaning that the prices formed in the market do not reflect all available information. So that the price pattern on the IDX for LQ-45 stocks follows the Random Walk pattern. Therefore, it can be concluded that investors can benefit from arbitrage because of the market inefficiencies that occur on the IDX

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