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by Nell Nell

Submission date: 03-Oct-2020 07:44PM (UTC+0700)
Submission ID: 1404119874
File name: AEJ_UiTM_2018.pdf (330.75K)
Word count: 2182
Character count: 12099

AEJ ASEAN ENTREPRENEURSHIP JOURNAL
ASEAN ENTREPRENEURSHIP JOURNAL
VOL. 4 (2), 59-64, 2018 (e-ISSN 2637-0301)
http://aej.uitm.edu.my

The Impact of New Information Regime on the Indonesian Stock Exchanges: The Weak Form Efficiency Hypothesis

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ABSTRACT

The efficiency of the emerging markets assumes greater importance as the trend of investments is accelerating in these markets as a result of regulatory reforms and removal of other barriers for international equity investments. This study provides empirical evidence on the impact of new information regime on the Indonesia Stock Exchanges: The Weak Form Efficiency Hypothesis.

This study uses the data from the Composite Index before regulation changes from 1991 to 1995 and after regulation changes from 1996 to 2014. This paper employs the Simple Random Walk Test. The findings indicate that in general and exceptions the null hypothesis follow the random walk before and after regulation changes and are more prominent after the imposition of the new regime.

The results suggest that it is difficult to reject the random walk hypotheses for most of the market return series after the regulatory reform. This result confirms that the market is weak-form efficient for monthly returns before and after regulation. The results also implied that the new information regime have impacted on the Indonesia Stock Exchange by making it more efficient.

Key Words: The Weak-Form EMH, the Indonesia Stock Exchanges, the Simple Random Walk Model and the Information Regime

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1. INTRODUCTION

Stock market efficiency is an important concept for understanding the working of the capital markets particularly in emerging stock markets such as Indonesia. The efficiency of the emerging markets assumes greater importance as the trend of investments is accelerating in these markets as a result of regulatory reforms and removal of other barriers for the international equity investments. There is enough evidence concerning the validity of the weak-form efficient market hypothesis (EMH) with respect to developed and emerging stock markets of the world. The weak-form of the EMH postulates that successive one-period stock returns are random walk.

This paper attempts to investigate the impact of new information regime on the Indonesia stock exchanges. This paper used the *Simple Random Walk Model* (Mesee and Rogoff, 1983). The rest of the paper is organized as follows; Section 1 explain introduction, section 2 overviews the efficiency evidence on the Indonesia stock exchanges while section 3 describes the data collection procedure and methodology. Section 4 discusses the findings and section 5 concludes the paper.

2. REVIEW OF LITERATURE

Relatively several evidences were available evaluating the efficiency of the Indonesia Stock Exchange, Suad (1987), Rusity (1990) and Amani B. & Fatma S. G. (2016) found that the market is fairly efficient in the weak sense. However, Suad (1990), Balsius (1993), Agus (1995) and Vladimir Khrapko (2013) found that the sufficient conditions for weak form of efficincy were not satisfied.

Further, Suad (1990) also investigates the semi strong form efficiency using earning, additional issue, and new issues announcements. The general findings indicate that the market is not efficient in semi-strong form. Further studies by Rusiti (1990), Muhammad (1993), Agus (1995), Mutamimah (1995), Untung, and Sidharta (1998) substantiated the findings of Fuad (1990). Endang (2000) found that the share price response to bond announcements procedure an average excess return significantly different from zero while Eka (2000) and Airin Pangastuti & Ann Shawing Yang (2016) found that the average abnormal return is significantly positive at pre-announcement date of merger and acquisitions.

In summary all evidence leads to the conclusion that the Indonesian stock market is generally inefficient.

3. METHODOLOGY

3.1 The Data set

The data originates from official publications of the Indonesia Stock Exchange. The data sets used in this paper are the monthly closing prices of Composite Index before

regulation changes from 1991 to 1995 and after regulation changes from 1996 to 2014. The data for IDX Composite Index were extracted from the computer service of Daily Dairy. The data set were divided into two categories. They are; (a) the Composite Index before regulation changes from 1991 to 1995, (b) the Composite Index after regulation changes from 1996 to 2014.

3.2 Methodology

The weak form of efficiency asserts that stock prices in an informational efficient stock market reflect all relevant information. The behavior of stock prices resembles a random walk so that current stock prices provide no information beyond their relative frequency in predicting future prices. To capture the essence of the weak form EMH specify random walk model, this model has received widespread attention as it out-performed the structural model in predictive performance and explanatory power (Mesee and Rogoff, 1993).

The random walk model is represented by first order autoregressive process, i.e., *AR(1):*

$$\text{Log } P_t = \rho \log P_{t-1} + \varepsilon_t \quad , \qquad (1)$$

where log P_t signify the natural logarithm of the price index and stock prices, ε_t is classical error term.

The random walk model hypothesis states that $\rho = 1$. The equation (1) can be specified as random walk with drift: log $P_t = \alpha + \rho \log P_{t-1} + \varepsilon_t$, or the index and stock prices is growing over time. In that circumstance the constant will be small and positive growing over time. Therefore, the null hypothesis would become: $\alpha = 0$ and $\rho = 1$. The autoregressive process is stationary if and only if $|\rho| < 1$, since var (log P_t) = $\sigma^2 / 1-\rho^2$ must be finite and non-negative. The random walk model seeks to identify whether the stock price and stock index follows random walk or reverts to some log trend following shock.

Alternatively, Eq. (2) may be parameterized as:

$$\Delta \log P_t = \alpha' + \varepsilon_t \,. \qquad (2)$$

Under RWH the constant term should be insignificantly different from zero and resultant residuals are uncorrelated (Chappell et al., 1998).

4. The Weak Form Efficiency Test results using Simple Random Walk Model

The results relating to the simple random walk model for composite index for log P_t as dependent variable are shown in Table 1 (Panel A). The results indicate that there is no autocorrelation for all the series (value of Durbin h between -1.96< h <+ 1.96). The values of adjusted R^2 is 31.42% for before regulation changes and 68.65% for after regulation changes . The estimated coefficients attached to the lagged dependent variable and they are close to one (unity) with a degree of significance $\alpha = 0.01$. This means that the findings support the random walk hypothesis and that the market is weak form efficient.

Table 1 (Panel B) shows the results of the alternative first difference model, where Δ log P_t is regressed on a constant which indicates that the constant term is very small and has insignificant difference from zero for the series. Durbin h indicates that there is no autocorrelation for the series. The values of adjusted R^2 is 0.028% for before regulation changes and 0.016% for after regulation changes.

This finding suggests that the proportional change on the composite index is characterized by white-noise process and lends support for the random walk hypothesis and the market is weak form efficiency. The finding more efficient after regulation changes then before regulation changes

Table 1: Results of Estimates the Simple Random Walk before Regulation Changes

Panel A: Normalized Equation on the Composite Index					
	log P_t= ρ log P *(t-1)* + e	*Adj R^2*	*S.E.*	*t-Stat*	*Durbin-h*
Before Regulation Changes	log P_t=0.9977 log P *(t-1)* + e	31.42%	0.4245	9.17***	-0.0074
After Regulation Changes	log P_t= 0.9982 log P *(t-1)* + e	68.65%	0.2028	36.55***	1.34E-05
Panel B: The First Difference Equation on the Composite Index					
	Δlog P_t= α' + e	*Adj R^2*	*S.E.*	*t-Stat*	*Durbin-h*
Before Regulation Changes	Δlog P_t=-0.00154 + e	0.028%	0.3275	-0.2560	-0.007665
After Regulation Changes	Δlog *Pt*=-0.00032 + e	0.016%	0.2212	-0.2792	1.46E-05

*** Significant at the 1% level

5. CONCLUSION

The findings reported in this conclusion shows that the price behavior confirms the weak-form efficiency on composite index for their series before and after regulation. However, the finding is more efficient after regulation changes then before regulation changes; the first reason being that before 1995, the Indonesian stock market used the old regulation, the Emergency Law Number 13 dated September 1, 1951, and the Indonesia Accounting standard and other regulations. These regulations did not support the activities of stock markets. The second reason is that, there was thin stock trading in the Indonesian stock market at that time and the trading days of companies were non-synchronous etc.

However, after 1995 the Indonesian government restructured regulations in the Indonesian stock market, by approving new stock market regulations i.e., the new accounting system, the International Accounting Standard (IASs). New roles to operate the stock market were also approved, i.e. disclosure reporting, settlement procedure, investment procedure, accounting procedure, and foreign investment procedure etc. The purposes of these regulations were to support the stock market activities.

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