

Patterns of Stock Returns in Indonesia from 2003 To 2008

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Abstract: This study examines the pattern of stock returns in the Indonesian stock market. Using the GARCH (1, 1) model, the study investigates the effects of day-of-the-week, month-of-the-year and monthly on the daily return series from January 2003 to August 2008. The study also examines the combined effect of the three anomalies. Overall, stock returns are found to be lower at the beginning of the week but closed higher by the end of the week. The stock returns are also found to be lower during the first quarter of the year but they register higher returns throughout the remaining months of the year, particularly towards the end of the year. The stock returns consistently produced significant positive returns on Wednesday throughout the month of April and May. Although evidence of significant positive returns is also found on other days within certain months, they do not prevail throughout the entire month. They are confined either to the first or second half of the month. The presence of seasonal effects in the Indonesian stock market indicates that market participants have the chance of making significant returns when trading on the specific days of the months. However, the abnormal gains are subject to the transaction cost which is not accounted for in this study.

Keywords: Stock Returns, Indonesia, Indonesian stock.

INTRODUCTION

Evidence of the presence of calendar anomalies has long been documented. Persons [1] has acknowledged the presence of January effect where the average stock return in January is said to be significantly higher compared to any other months. Kelly [2] and Fields [3] are credited for discovering the presence of Monday or weekend effect where stock returns on Monday are found to be significantly negative and relatively lower when compared to returns from the rest of the week. Ariel [4] finds that stock returns during the first fortnight of the month are significantly higher than that of the second half of the month. This phenomenon is known as the monthly effect. Mills [5] believes that the presence of such trends raises hope for investors to produce abnormal returns during certain period of the year.

The presence of patterns in stock returns implies the lack of informational efficiency. Under the traditional belief of the Efficient Market Hypothesis (EMH), stock prices move randomly and would react to the arrival of new and relevant information in the market. Prices will adjust simultaneously to reflect the informational content of the news and thus settling down at a new equilibrium level. As such, under an ideal situation within an efficient market framework, the potential to reap abnormal profits will become impossible as stock prices will response spontaneously with great accuracy. Even if there is a slight departure from the equilibrium level, the incurrence of transaction costs will eat away any potential gains which are tantamount to abnormal profits. Nonetheless, Chan *et al.* [6] provide evidence that investors can still obtain positive returns in some Asian countries even after accounting for transaction costs. This goes to show that there still is prospect to exploit the market for some profits should one understand the patterns of stock returns within a country.

Most of the previous studies on stock market seasonality are focused on the Western countries such as the United States, United Kingdom, Australia and other European countries. Studies in Asia tend to focus on Japan, China, South Korea, Hong Kong, Taiwan and Singapore. Studies on other Asian countries such as Malaysia, Thailand and particularly Indonesia are limited in number (for a brief review of studies on calendar anomalies, see Yakob *et al.* [7]). In addition, these studies tend to focus on the period during the financial crisis. Up against this backdrop, this study is designed to seek greater understanding on the patterns of stock returns in Indonesia in recent years.

Being one of the most populous countries in the world and blessed with huge supply of natural resources, Indonesia has the potential to become a great economic powerhouse judging from the experience of China and India.

Having experienced the political, social and economic turbulent in the late 1990's (in addition to a number of tragic natural catastrophes), Indonesia has managed to pick itself up owing to the various measures introduced by the Government which bring about economic stability. Its gross domestic product (GDP) has increased from Rp502,249,558 million in 1995 to Rp2,678,664,096 million in 2005 (source: International Monetary Fund). Such a remarkable growth indicates the potential for the increase in demand for funds in the future to facilitate further development. Indonesia has an extensive financial system ranging from the banking system to the capital markets. In fact, its stock market is one of the fastest growing markets in the region in terms of market capitalization and value transaction (source: Bapepam Annual Report 2007).

The main stock exchange in Indonesia is known as Bursa Efek Indonesia (IDX). It comes into existence in 2007 as a result of the merger between Bursa Efek Jakarta (JSX) and Surabaya Stock Exchange (SSX). To date, there are 381 listed companies, spreading over nine different sectors. Over the years, the stock market has experienced tremendous growth in market capitalization. This is evident from the movement of its main stock index, i.e. the Jakarta Composite Stock Index (JCI) which is made of all listed shares as its component (see Figure 1). As an illustration, the JCI was hovering around the 500 level in early 2000 but by the end of 2007 it was traded around 2,700 marks, a sharp increase over a seven-year period. Total volume also soars as evident from the volume recorded in 2002, i.e. 171,207 million, as compared to that of 2007, i.e. 1,039,542 million (source: IDX Fact Book 2008). In terms of its transactional value, it has also gone up over the same five-year period. For instance, the total value in 2002 was Rp120,763 billion but it has gone up to Rp1,050,154 billion in 2007.

Given the exciting growth experienced by the nation's stock market, it is not surprising that it captures the attention of some finance researchers to look into the behavior of the Indonesian stock market. Among other topics, the issue of calendar anomalies has also been investigated. But past studies reported inconsistent findings on the seasonal effect in Indonesia. For instance, Bashes and Sadorsky [8] examine the day-of-the-week effect from December 1992 to October 2003 using the OLS method. Their results show no evidence to support the presence of the day-of-the-week effect in the stock returns. However, when market risk is included in the return, they find traces of Tuesday effect, i.e. stock return is significantly higher on Tuesday than the rest of the week.

Kok and Wong [9] also investigate the effect of day-of-the-week. Their study covers the period from January 1992 to August 2002. They employ GARCH-M model to examine the issue in three different phases i.e. before, during and after the financial crisis. Their findings are different from that of Bashes and Sadorsky's [8]. They detect the presence of Thursday and Friday effects during the pre-crisis period, i.e. stock returns are significantly higher on the two days. No seasonal effect is reported during the crisis period. However, the Thursday effect continues to prevail after the crisis period.

Yakob *et al.* [7] examine the day-of-the-week, month-of-the-year as well as the monthly effects in several Asia Pacific countries including Indonesia. They employ the GARCH model for the data set running from January 2000 to March 2005. Their results also differ from the two studies reported above. The presence of Monday and Friday effects are detected. Stocks in Indonesia seem to yield significant negative returns on Monday but they produce significant positive returns on Friday. In addition, stock returns are found to be significantly higher during the months of April, May, June, November and December. Stocks are also found to yield significant positive return during the first half of the month.

DATA & METHODOLOGY

This study is designed to trace any seasonal effects in the stock returns in Indonesia. It focuses on the day-of-the-week, month-of-the-year and monthly effects. In this study, the performance of the stock market is observed by monitoring the movement of the Jakarta Composite Stock Index (JCI). The data set runs from January 2003 to August 2008. Figure 1 shows the movement of JCI over the stipulated period. This period is chosen to reflect the recent trends (if any) of stock returns in Indonesia over the past five years. The daily return is computed using the closing and opening indices for the respective day as follows:

$$R_t = \text{Ln}(\text{Close}_t / \text{Open}_{t-1}) \times 100\%$$

The use of closing and opening indices reflects the daily returns generated during the trading day. Jacobsen [10] and Francis *et al.* [11] make the distinction between returns produced over the trading and non-trading periods. The later would include events that occur overnight which may not capture the actual sentiment in the market during the daytime. By only accounting for returns over the trading period, this study provides the actual returns produced over each respective day.

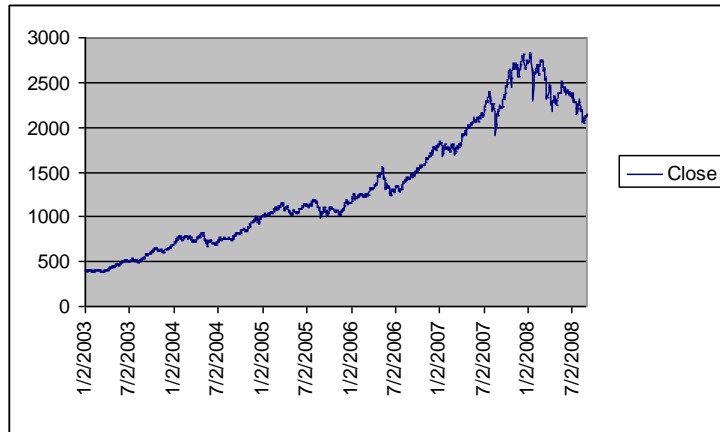


Fig-1: The Jakarta Composite Stock Index from 2003:01 to 2008:08

Using the series of daily returns, this study examines the presence (or lack) of seasonal effects by applying the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model as follows:

$$R_t = \sum_{i=1}^5 \theta_i Day_i + \varepsilon_t \quad \dots\dots\dots \text{Model I}$$

and,

$$R_t = \sum_{i=1}^5 \theta_i Month_i + \varepsilon_t \quad \dots\dots\dots \text{Model II}$$

where,

$$\varepsilon_t | \Omega_{t-1} \sim N(0, \sigma_t^2)$$

and,

$$\sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2$$

This study is confined to GARCH(1,1) model following the suggestion by Bollerslev [12] who says that the used of last period’s squared errors as well as last period’s conditional variance is sufficient to model stock returns.

Model I is used to check for the day-of-the-week effect while Model II is for the month-of-the-year effect. R_t represents the daily return, Day_i (and $Month_i$) is the dummy variable that take the value of one to mark the various calendar conditions and becomes zero otherwise. The coefficient ε_t represents the residual term. In this study, it is assumed to follow the generalized error distribution to account for the fat tails usually observed in stock returns as advocated by Nelson [13]. Coefficient Ω_{t-1} marks the set of information available at time $t-1$. The conditional variance σ_t^2 is assumed to be a function of the last period’s squared error as well as the last period’s conditional variance. The coefficient α_0 is a constant while the estimated parameters are represented by α_1 , β and θ_i . The coefficient α_1 and β capture the presence of heteroscedasticity in daily return series. The significance of coefficients θ_i suggests the presence of seasonality.

The results obtained from Model I and II are used to further analyze the presence of monthly effect on stock returns of the respective day (and month) in Indonesia. Based on the significant coefficients θ_i found from Model I and II, the monthly effect is tested following the models below:

$$R_t = \sum_{i=1}^5 \sum_{j=1}^2 \gamma_i Day_i^* \times Half_j + \varepsilon_t \quad \dots\dots\dots \text{Model Ia}$$

and,

$$R_t = \sum_{i=1}^{12} \sum_{j=1}^2 \gamma_i Month_i^* \times Half_j + \varepsilon_t \quad \dots\dots\dots \text{Model IIa}$$

Day_i^* and $Month_i^*$ are the dummy variables representing the days and months that produced significant daily returns as determined by Model I and II. $Half_j$ represents the first and second halves of the month. When $Half_j$ represents the first half of the month, it takes the value of one while the rest is zero, and vice-versa. The estimated parameter, i.e. γ_j , will be tested to check for the monthly effect. If it is found to be significant then the monthly effect is believed to be prevalent in the return series.

A more detailed analysis is also performed to see whether the day-of-the-week effect occurs throughout every month-of-the-year. To accomplish this objective, the results obtained from Model I and II are combined and regressed in accordance to the following model:

$$R_t = \sum_{i=1}^5 \sum_{j=1}^{12} \pi_i \text{Day}_i^* \times \text{Month}_j^* + \varepsilon_t \quad \dots\dots\dots \text{Model III}$$

Coefficient π_i is the estimated parameter that represents the return of a predetermined day during a predetermined month as observed from Model I and II. Its significance shows that stock returns on that particular day of the month are indeed different from zero.

The outcomes from Model III will be further analyzed to incorporate the influence of monthly effect. The following model is therefore employed:

$$R_t = \sum_{i=1}^5 \sum_{j=1}^{12} \sum_{k=1}^2 \pi_i \text{Day}_i^* \times \text{Month}_j^* \times \text{Half}_k + \varepsilon_t \quad \dots\dots\dots \text{Model IV}$$

Where Half_k is a dummy variable representing each half of the month

RESULTS AND DISCUSSION

Table 1 presents the descriptive statistics of the daily returns for the respective day and month from January 2003 to August 2008. In general, the average daily return (as measured by the difference between the closing and opening indices for each day) for the overall period is found to be positive, i.e. 0.1206 percent. This is not surprising judging by the upward movement of the JCI over the period understudy as seen in Figure 1. The median is 0.1517 percent and the standard deviation is 1.1476 percent. The highest and lowest average daily returns are 0.61211 percent and -0.7.2271 percent respectively.

Table-1: Descriptive Statistics

Panel A: Day-of-the-week								
Daily Return:								
	Overall	Monday	Tuesday	Wednesday	Thursday	Friday		
Mean	0.1206	-0.0239	0.0893	0.1752	0.0663	0.2989		
Median	0.1517	0.0699	0.0376	0.1718	0.1192	0.3149		
Maximum	6.1211	4.2193	6.1211	4.0284	3.1013	2.9566		
Minimum	-7.2271	-7.2271	-3.5862	-4.4748	-4.8548	-3.7312		
Std Dev	1.1476	1.2699	1.1597	1.1483	1.1173	1.0065		
Skewness	-0.5391	-1.4643	0.3447	-0.3128	-0.4909	-0.251		
Kurtosis	6.5048	9.4825	5.9365	4.6922	4.7586	3.7318		
Obs	1380	272	283	285	274	266		
Panel B: Month-of-the-year								
Daily Return:								
	Mean	Median	Maximum	Minimum	Std Dev	Skewness	Kurtosis	Obs
Overall	0.1206	0.1517	6.1211	-7.2271	1.1476	-0.5391	6.5048	1380
January	0.0493	0.0548	2.9804	-3.5918	1.341	-0.3858	3.3511	124
February	0.0569	0.0796	4.0284	-2.4562	0.8748	0.6146	6.9373	113
March	-0.0134	0.1342	2.48	-3.7312	1.1839	-0.5155	3.4343	123
April	0.1253	0.2995	4.2193	-4.8548	1.3405	-0.6009	4.9416	121
May	0.1016	0.1591	3.5253	-7.2271	1.5223	-1.6727	9.6376	120
June	0.1043	0.03	2.6909	-2.169	0.9499	0.308	2.8879	127
July	0.1719	0.1931	2.2327	-3.8099	0.8897	-0.584	5.0664	131
August	-0.07432	-0.0139	6.1211	-4.4748	1.4276	0.1968	5.784	126
September	0.3585	0.3588	3.2423	-2.1753	0.9901	0.2294	3.6184	104
October	0.2348	0.1617	2.6956	-2.3844	0.941	0.0462	3.1611	102
November	0.2389	0.3062	2.6883	-2.1782	0.9657	-0.0411	2.7	94
December	0.19	0.1612	2.0355	-2.4779	0.9275	-0.2699	3.4426	95

The highest average daily return was recorded on Friday, i.e. 0.2989 percent, while the lowest was recorded on Monday, i.e. -0.0239 percent. Figure 2 illustrates the average daily return throughout the week. Such a discovery fits the

description of weekend effect, as proposed by Kelly [2] and Fields [3], where stock returns produced negative returns on Monday and generated the highest return on Friday. Consistent with the upward trend of the JCI, the median for each day of the week are all positive ranging from 0.0376 percent (on Tuesday) to 0.3149 percent (on Friday). The return series do not seem to follow a normal distribution, judging by the negative skewness and excess kurtosis reported for the overall period.

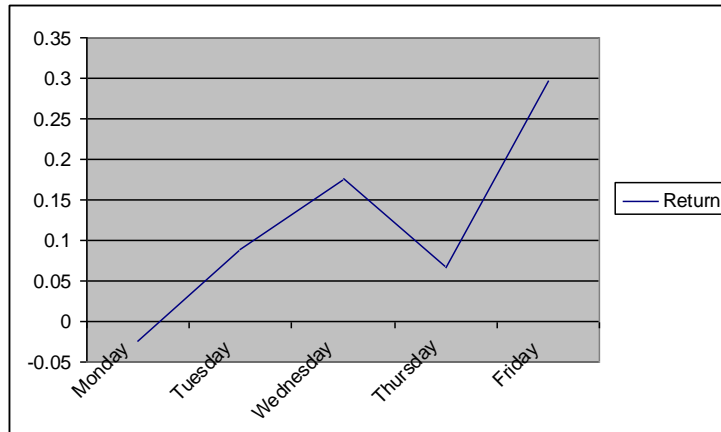


Fig-2: The average daily return on daily basis

The breakdown of the daily return on monthly basis also shows that the median is positive for eleven of the twelve months, except for August (i.e. -0.0139 percent). The highest return was recorded in September, i.e. 0.3585 percent, while the lowest was registered in the month of August, i.e. -0.0743 percent. Figure 3 depicts the average daily return on monthly basis. With the exception of the months of March, (i.e. -0.0134 percent) and August, the rest of the year produced positive average daily return. But the general pattern seems to show that the average return tends to be lower during the first quarter of the year but progressively increasing towards the later periods particularly during the second and fourth quarters.

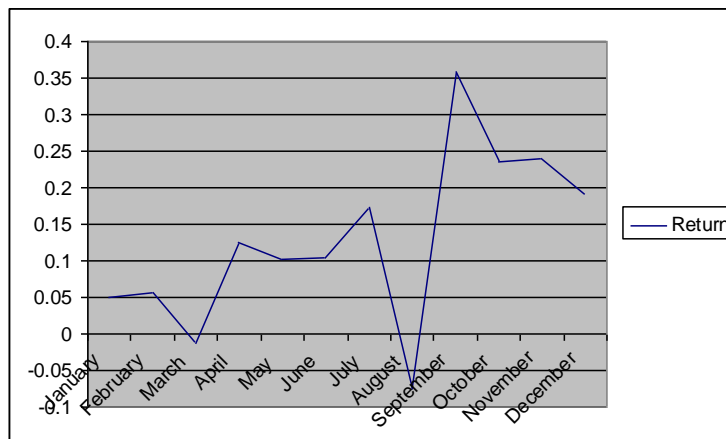


Fig-3: The average daily return on monthly basis

Table 2 presents the result for Model I and IA the former tests for the day-of-the-week effect, while the latter seeks to reaffirm the presence of the day-of-the-week effect within any given week of the month. The results from Model I show that the returns recorded on Wednesday, Thursday and Friday are found to be positive and significantly higher than the rest of the week. The coefficient for Friday is found to be the highest, i.e.0.3069, followed by Wednesday, i.e. 0.2108, and Thursday, i.e. 0.1287. This is consistent with the trend observed in Figure 2. This finding suggests that investors who purchase stocks at the beginning of the three trading days and dispose them towards the end of those days stand to collect positive returns which are significantly higher than that of Monday and Tuesday.

Table-2: Results for day-of-the-week effect and monthly effect

Mean Equation			
Model I		Model Ia	
Mon	0.0731 (0.056)	Wed-First	0.2468 (0.0770)***
Tue	0.0738 (0.0525)	Wed-Sec	0.174 (0.0785)**
Wed	0.2108 (0.0547)***	Thur-First	0.1242 (0.08199)
Thur	0.1287 (0.0558)**	Thur-Sec	0.1346 (0.0764)*
Fri	0.3069 (0.0569)***	Fri-First	0.3139 (0.0800)***
		Fri-Sec	0.2954 (0.0811)***
Variance Equation			
Constant	0.173 (0.0440)***		0.1679 (0.0431)***
ARCH	0.1789 (0.0375)***		0.1767 (0.0371)***
GARCH	0.6863 (0.0563)***		0.6929 (0.0553)***
Note:***, ** and * denote significance at 1, 5 and 10 percent level respectively. Numbers in brackets are the standard errors.			

Upon further inspection, the returns generated on Wednesday and Friday are found to be significantly positive throughout the month. This is evident by the significant coefficients reported from Model Ia for the first and second halves of the month. The returns for Thursday, on the other hand, are found to be significant only in the second half of the month, albeit at 10 percent level. This implies that investor stand a better chance of getting positive returns from investing on Wednesday and Friday and they will not be getting much of the benefit from investing on Thursday especially if they choose to invest during the first half of the month. On a different note, both models, i.e. Model I and Ia, capture the presence of heteroscedasticity as evident from the significant values of ARCH and GARCH. As such, it validates the used of the GARCH model over the traditional OLS regression.

The results for Model II and IIa are presented in Table 3. The month-of-the-week effect is apparent judging by the significant coefficients found for the months of April, May, July, September, October, November and December. The highest coefficient is found for the month of September, i.e. 0.3464. This is followed by November, i.e. 0.2919; April, i.e. 0.2860; October, i.e. 0.1800; July, 0.1796; December, i.e. 0.1705; and May, i.e. 0.1677. But the significant returns are not consistent throughout the month as seen from the results of Model IIa. With the exception of September and November, where returns are found to be significant over the whole month, the returns for April, July and October are significant only in the first half of the month. As for May and December, there is no significant coefficient found which suggests that despite registering positive return in the months of May and December, the significant positive returns do not prevail throughout the month (but instead they only occur during certain days of the week within the month).

Using the results obtained from Model I and II, the combined effect of day-of-the-week and month-of-the-year is tested using Model III. As shown in Table 4, the combined effect is found to be more pronounced in the month of September. This is confirmed by the significant positive coefficients found for Wednesday (i.e. 0.3835), Thursday (i.e. 0.4135) and Friday (i.e. 0.539) of that month. This indicates that investors would be able to get positive returns when investing on the three days during the month of September. As for the other months, April produces significant positive returns on Wednesday (i.e. 0.5993) and Friday (i.e. 0.0359); May yields significant positive returns on Wednesday (i.e. 0.4645); July generates significant positive returns on Friday (i.e. 0.3875) while October provides evidence of significant positive returns on Friday (i.e. 0.4845). This goes to show that the presence of calendar anomalies does not prevail throughout the year but they only happen during certain days of the months.

Table-3: Results for month-of-the-year effect and monthly effect

Mean Equation			
Model II		Model IIa	
Jan	0.0907 (0.0874)	Apr-First	0.3748 (0.1366)***
Feb	0.0886 (0.0759)	Apr-Sec	0.1384 (0.1199)
Mar	0.0991 (0.0870)	May-First	0.1231 (0.1183)
Apr	0.286 (0.0912)***	May-Sec	0.2131 (0.1310)
May	0.1677 (0.0895)*	Jul-First	0.21 (0.1102)*
Jun	0.0888 (0.0816)	Jul-Sec	0.1297 (0.1118)
Jul	0.1796 (0.0782)**	Sep-First	0.3656 (0.1355)**
Aug	0.0333 (0.0841)	Sep-Sec	0.3183 (0.1304)**
Sep	0.3464 (0.0939)***	Oct-First	0.4929 (0.1231)***
Oct	0.18 (0.0905)**	Oct-Sec	-0.0614 (0.1202)
Nov	0.2919 (0.0901)***	Nov-First	0.269 (0.1287)**
Dec	0.1705 (0.0978)***	Nov-Sec	0.2997 (0.1280)**
		Dec-First	0.1613 (0.1244)
		Dec-Sec	0.1951 (0.1540)
Variance Equation			
Constant	0.1615 (0.0440)***		0.1538 (0.0436)***
ARCH	0.1655 (0.0359)***		0.1546 (0.0340)***
GARCH	0.7083 (0.0559)***		0.7231 (0.0553)***
Note:***, ** and * denote significance at 1, 5 and 10 percent level respectively.			
Numbers in brackets are the standard errors.			

Model III is further extended to incorporate the effect of monthly effect. The modified equation is represented by Model IV and the results are presented in Table 5. Once again, the results confirm the finding obtained from Model IIa that the trends are found to exist only on certain days of the week within any given month. For instance, the significant positive returns registered on Wednesday in the month of April are found to be unswerving during the first and second halves of the month. But for Friday, the returns are found to be significant only in the first half of the month. Likewise, for the month of May, the returns on Wednesday are found to be significant throughout the two halves of the month. In September, the Wednesday returns are found to be positive only in the second half of the month while the Friday returns are only significant during the first half of the month. As for October, only Friday registers significant positive returns but only in the first half of the month.

Table-4: Results for the interaction between day-of-the week and month-of-the-year

Mean Equation					
Model III					
Wed-Apr	0.5993	Wed-Sep	0.3835	Wed-Dec	0.297
	(0.2143)***		(0.1769)**		(0.2187)
Thur-Apr	-0.0237	Thur-Sep	0.4135	Thur-Dec	0.1194
	(0.1781)		(0.02075)**		(0.2134)
Fri-Apr	0.03592	Fri-Sep	0.5539	Fri-Dec	-0.0243
	(0.2008)*		(0.2205)**		(0.2102)
Wed-May	0.4645	Wed-Oct	0.0798		
	(0.1882)**		(0.2024)		
Thur-May	0.1271	Thur-Oct	0.0245		
	(0.2120)		(0.2070)		
Fri-May	0.1609	Fri-Oct	0.4845		
	(0.2395)		(0.2132)**		
Wed-Jul	-0.0754	Wed-Nov	0.2536		
	(0.1787)		(0.2118)		
Thur-Jul	0.1216	Thur-Nov	0.2177		
	(0.1604)		(0.2020)		
Fri-Jul	0.3875	Fri-Nov	0.2992		
	(0.1674)**		(0.1983)		
Variance Equation					
Constant	0.1466				
	(0.0403)***				
ARCH	0.1678				
	(0.0353)***				
GARCH	0.7238				
	(0.0535)***				
Numbers in brackets are the standard errors.					

The test on day-of-the-week effect shows that significant positive returns are produced on Wednesday, Thursday and Friday, while the month-of-the-year effect indicates that significant positive returns are generated in the months of April, May, July, September, October, November and December. Combining the two effects together, this study shows that the significant positive returns produced in September are obtained on Wednesday, Thursday and Friday, while the significant positive returns on April are only produced on Wednesday and Friday. As for the months of July and October, the significant positive returns are produced on Friday only, while for May, Wednesday is found to yield significant positive returns. No significant evidence is documented to suggest that positive returns are produced on the three given days, i.e. Wednesday, Thursday and Friday, for the months of November and December.

However, upon taking the monthly effect into account, the results show that the day-of-the-week effect does not prevail throughout the entire month. For instance, even though significant positive return is reported on Friday in April, it only occurs during the first week of that month. Likewise, for the month of July, the positive return is significant only in the second half of the month. In September, the significant positive return found on Wednesday only occurs in the second half of the month. As for the significant positive returns reported on Friday in the months of September and October, they are only found the first half of each respective month. Nonetheless, the significant positive returns found on Wednesday in the months of April and May seem to prevail throughout the entire month.

Table-5: Results from the interaction between the calendar effects

Mean Equation			
Model IV			
Wed-Apr-First	0.6014	Wed-Sep-First	0.3194
	(0.2884)**		(0.0.2455)
Wed-Apr-Sec	0.6291	Wed-Sep-Sec	0.5485
	(0.3008)**		(0.2643)**
Fri-Apr-First	0.6537	Thur-Sep-First	0.4534
	(0.2866)**		(0.3330)
Fri-Apr-Sec	0.2345	Thur-Sep-Sec	0.3671
	(0.2914)		(0.2661)
Wed-May-First	0.4184	Fri-Sep-First	0.7935
	(0.2520)*		(0.3148)**
Wed-May-Sec	0.486	Fri-Sep-Sec	0.3717
	(0.2777)*		(0.2987)
Fri-Jul-First	0.2394	Fri-Oct-First	0.8083
	(0.2235)		(0.3271)**
Fri-Jul-Sec	0.6228	Fri-Oct-Sec	0.1817
	(0.2639)**		(0.3417)
Variance Equation			
Constant	0.1492		
	(0.0422)***		
ARCH	0.1578		
	(0.0352)***		
GARCH	0.7256		
	(0.0549)***		
Numbers in brackets are the standard errors.			

CONCLUSION

The Indonesian stock market has experienced tremendous growth, both in terms of trading volume and transaction value. Since the year 2000, the JCI has been moving upward even until today. Over the last five years, it has produced positive average daily return and median which suggests that investors are benefiting from the overall market performance. Such a condition warrants an investigation on the nature of stock returns in the country. Understanding the general pattern of stock returns would be useful to market participants in their attempt to exploit the market for possible abnormal gains. This study shows that there is a tendency for stock returns to be significantly higher during certain days of the months. Over the period understudy, it is found that stock returns are lower at the beginning of the week but closed higher by the end of the week. The stock returns are also lower in the first quarter of the year but they continue to register higher returns throughout the remaining of the year, except for the third quarter of the year. The stock returns are also found to consistently produce significant positive returns on Wednesday throughout the entire months of April and May. Although evidence of significant positive returns is also found on some other days within certain months, they do not last throughout the whole month. They are either confined to the first or second half of the month. The presence of seasonal effects in the Indonesian stock market indicates that market participants have the chance to make potential significant returns when trading on specific days of the months. However, they must account for the transaction costs before any abnormal gains can be realized.

REFERENCES

- Persons, W. M. (1919). Indices of Business Conditions, *Review of Economic Statistics* January, 5-107.
- Kelly, F. (1930). *Why you win or lose: The Psychology of Speculation*, Houghton Mifflin: Boston.
- Fields, M. (1931). Stock Prices: A Problem in Verification, *Journal of Business* 5: 415-18.
- Ariel, R. A. (1987). A Monthly Effect in Stock Returns, *Journal of Financial Economics*, 18: 161-74.
- Mills, T. C. (1992). Predicting the Unpredictable? Science and Guesswork in Financial Market Forecasting, *Occasional Paper 87*, Institute of Economic Affairs, London.

6. Chan, M. L., Khanthavit, A., & Thomas, H. (1996). Seasonality and cultural influences on four Asian stock markets. *Asia Pacific Journal of Management*, 13(2), 1-24.
7. Yakob, N. A., Beal, D., & Delpachitra, S. (2005). Seasonality in the Asia Pacific stock markets. *Journal of Asset Management*, 6(4), 298-318.
8. Basher, S. A., & Sadorsky, P. (2006). Day-of-the-week effects in emerging stock markets. *Applied Economics Letters*, 13(10), 621-628.
9. Kok, K. L., & Wong, Y. C. (2004). Seasonal anomalies of stocks in ASEAN equity markets. *Sunway Academic Journal*, 1, 1-11.
10. Jacobsen, B. J. (2007). Stock Price Patterns, *Applied Financial Economics Letters* 3: 301-306.
11. Francis, J., Pagach, D., and Stephan J. (1992). The Stock Market Response to Earnings Announcements Released during Trading versus Nontrading Periods, *Journal of Accounting Research* 30: 165-184.
12. Bollerslev, T. P. (1986). Generalized Autoregressive Conditional Heteroscedasticity, *Journal of Econometrics* 31: 307-27.
13. Nelson, D. (1991). Conditional Heteroscedasticity in Asset Returns: A New Approach, *Econometrica* 59: 347-70.