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Stock Price Reactions Around Cum-Dividend Date in Indonesia Stock Exchange

Eka Lavista*
Elok Sri Utami†

Abstract

Purpose – This study is trying to examine whether there is significant stock prices and volume of shares traded on the cum-dividend date, the last day where shareholders will still be entitled to receive dividends.

Design/methodology/approach – This study employs an event study methodology to test the hypotheses. The population of this study are all companies paying dividends continuously from 2014 to 2016 at Indonesia stock exchange. The sample consists of 118 companies. Abnormal returns are measured by deducting real return over expected return. The expected return is derived using the single index model.

Findings – Employing the event study methodology, the study finds that there is positive significant abnormal returns on the cum-dividend date. There is also significant difference of abnormal returns and trading volume activity between cum-dividend date and after cum-dividend date.

Research limitations/implications – This study does not examine the behavior of stock prices with-in industry in the manufacturing sector. As there are three different industries in the manufacturing sector, one industry may have unique characteristic or extreme behavior compared to the others. In addition, this study uses the Single Index Model in estimating expected return. The model is selected mainly due to simplicity reason.

Practical implications – The findings reported in this study could benefit investors in understanding the behavior of stock prices around cum-dividend date and this could be used as an investment strategy. Investors may obtain significant positive abnormal returns by using the cum-dividend date event.

Originality/value – There are many theories on dividend proposed by scholars. One of the theory suggests that dividend can be used as a signal about the quality of the firm. If the extent of dividend matters, the investor could use the dividend as their signal for investment in the capital market. This study could be the first in Indonesia setting that examines the price movement around cum-dividend date

Keywords: dividend, cum-dividend date, abnormal return, event study.

I. INTRODUCTION

The process of determining or deciding on dividend payments is not always the same among companies, between industries, and even between countries. Unlike in the western countries where the size of the dividend is set by management, in Indonesia the decision on the amount of dividend is determined in by general meeting of shareholders. This difference brings consequences to the investor's response where the uncertainty associated with dividing or not dividing dividend in western countries is

* Faculty of Economics and Business, University of Jember. E-mail: ekalavista@gmail.com.

† Faculty of Economics and Business, University of Jember. E-mail: elok_utami@gmail.com.

higher than in Indonesia. Investors in Indonesia are facing less uncertainty about dividends because the amount is known at the general meeting of shareholders.

Dividends as a signal will be the reason for the company to demonstrate its financial and performance capabilities. The signal will succeed if what is done by the company with good performance through dividend distribution cannot be followed by its competitors. Investors with a capital gains orientation expect that the stock price of the company that divides the dividend will rise. If the stock price rises, investors will not only get capital gain, but also earn cash dividends if they still hold the company's shares up to the ex-dividend date.

Existing theories posit that dividend can used as a signal about future prospect of the firms. Under the bird in the hands theory, companies with high dividend will have higher returns, i.e., stock price tends to go up, than firms with low dividend yields. Conversely, the tax preference theory suggests that investors prefer company that pays less dividend. Empirical research results are still not conclusive. Aharony and Swary (1980) report that companies announcing an increase in dividends will experience an increase in stock prices as reflected by changes in cumulative abnormal returns and vice versa.

Previous studies mainly examine the stock price behavior on the ex-dividend date that is whether the stock price will drop less than the amount of dividend. The evidence suggests that the stock price tend to drop less than the amount of dividend. Kalay (1982) and Elton et al. (1984) report the evidence in the US market. Brown and Walter (1986) report lower price drop in Australian capital market. Recent study by Isaksson and Islam (2013) examines four major capital markets, namely US, UK, China, and Japan. They find no significant different on stock prices drop and no evidence of abnormal return on the New York and Shanghai Stock Exchanges. They find stock prices fall less than the dividend amount on the Tokyo Stock Exchange. Conversely, they document stock prices fall more than the dividend amount on the London Stock Exchange. The also report abnormal return on the Tokyo and London Stock Exchanges. Dasilas (2009) examines the stock price and trading volume behavior around ex-dividend date in the Greek stock market. Dasilas finds that there is no significant price drop on the ex-day. Dasilas concludes that this finding supports the short-term trading hypothesis. In addition, Dasilas reports significant abnormal returns on the ex-dividend day and abnormal trading volume. Interestingly, this significant abnormal returns were concentrated on the last cum-dividend day as well on the ex-dividend day.

Research on the market response to dividend policy so far is more directed to the presence or absence of abnormal returns on the day or date of dividend announcement. A study that specifically examines changes in stock prices and stock volumes traded on the last day where shareholders will still be entitled to a dividend (cum-dividend date) has not been done. One exception is Dasilas (2009) who examines the Greece stock exchange. The objectives of this study are: (1) to analyze the difference of abnormal stock returns before, moment and after cum-dividend date; (2) Analyze the difference between stock trading volume before, during and after cum-dividend date.

A total of 118 companies that pay dividends continuously from 2014 to 2016 at Indonesia stock exchange are examined. The study finds that there is positive significant abnormal returns on the cum-dividend date. In addition, it finds significant difference of abnormal returns and trading volume activity between cum-dividend date and after cum-dividend date. The remaining of the paper is organized as follows. Next

section review the literature and the proposed hypotheses. Section three provides the research methods. This is followed by results and discussion. Final section concludes the paper.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

So far, research on dividend policy has much to do with the study on the factors that influence the dividend policy. Nevertheless, studies of the effects of dividend changes and dividend announcements using event study approach are also widely practiced. These studies try to prove a number of theories about dividend policy. For example, testing of irrelevance theory of dividend (Miller & Modigliani, 1961), bird in the hand theory or signaling theory (Baker et al., 2007).

Previous researches are more directed to the relationship between profit changes, dividend changes, and stock price changes. However, the majority of these studies tested separately without attempting to specifically link these three aspects together with whether there was an impact of dividend changes on the volume of stock trading around the cum-dividend date. The study of market reaction around the cum-dividend date becomes interesting because logically there will be price to go up before or on the cum-dividend date and go down afterward.

As elaborated in the study of the results of previous research, the capital market reaction to the dividend announcement is not always the same. For example, at the Karachi Stock Exchange, Bashir et al. (2013) are able to answer questions about the information content of dividend information where investors in the market can get positive returns in response to dividend announcement. At Muscat Securities Market, Al-Yahyaee et al. (2011) indicate that the announcement of dividend increases in relation to rising stock prices, while the declining dividend announcement led to a decline in stock prices. Whilst Fargher and Weigand (2009) report positive and significant relationship between cumulative abnormal returns (CAR) and the company's profitability and stock prices.

Nevertheless, some studies have found a negative CAR relationship with risk (Frankfurter & Wood, 2002; Bozos et al., 2011). How et al. (2011) find that stock prices increase at the time of dividend announcement. In the Malaysian capital market, Yip et al. (2010) generally find evidence supporting the signaling hypothesis. Lee et al. (2012) indicate that dividend changes are strongly associated with contemporary earnings changes, although they weaken over the next year and largely unrelated to earnings changes of more than one year.

The results of research in Indonesia show conditions that are not much different from the results in other countries. The market reaction to changes of dividend or dividend announcements is not always consistent. For example, Siaputra and Atmadja (2006) and Firmansyah and Violita (2007) find differences in stock prices between before and after ex-dividend date. But, Winarno (2006) does not find any positive market reaction to the announcement of the dividend increase.

Based on the above description can be summarized several main points, as follows.

1. The cum-dividend date becomes one of the important date where investors will still receive dividends if they are registered as shareholders.
2. Investors react to changes in the size of dividends.
3. If investor reacts positively to the dividend announcement, especially, the announcement relating to the increase, the number of transaction frequency around the day where the shareholder will still receive the dividend will increase.

Based on the above summary, it is clear that the investors' reactions to dividend announcements vary, whether on days around the dividend announcement, around the cum-dividend date or around the ex-dividend date. In general, there is support for signaling hypothesis theory, such as Yip et al. (2010) or How et al. (2011). With regard to it, the hypothesis of this study is as follows:

H₁: abnormal return of stock differs between before, on, and after cum-dividend date.

The volume of securities trading is believed to contain information important for decision making in the capital market. Some researchers believe that the volumes of stock traded in the capital market contain information and many studies use it as a measure of information. Such opinions can be found in Morse (1982), Richardson et al. (1986), Chan and Chen (1988), Jain (1988), Ziebart (1990), Campbell et al. (1993), and Easley et al. (1998). The turnover of shares is defined as the number of shares traded divided by the number of shares of the company in circulation.

Several studies have shown different results on the volume of stock trading related to market reaction with respect to dividend announcement. For example, Suganda and Sabbat (2014) do not find significant different of trading volume activity between before and after the dividend announcement. Isaksson and Islam (2013) examine the relative trading volume around ex-dividend day in four world-wide markets, namely the New York Stock Exchange, the Shanghai Stock Exchange, the Tokyo Stock Exchange, and the London Stock Exchange. The results show no significant relative trading volumes on the New York Stock Exchange, the Shanghai Stock Exchange. But significant relative trading volume differences are found on the Tokyo Stock Exchange and the London Stock Exchange.

When there is hope to get a dividend, the investor will try to get a share that will pay out dividends. As a result, it can be predicted that transactions on the day that shareholders are still eligible to receive dividends will increase. This condition will increase both stock transaction and trading volume activity.

Based on the above arguments, the research hypothesis is as follows:

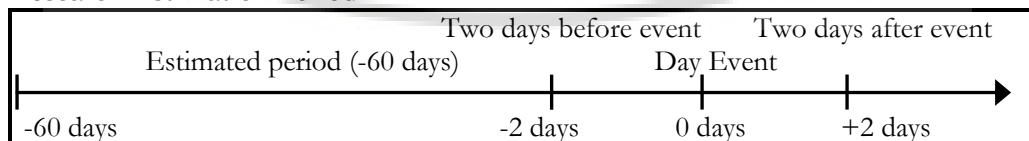
H₂: stock trading volume activity differs between before, on, and after cum-dividend date.

III. METHODOLOGY

This study employs the event study methodology to test the hypotheses. Thus, it has to estimate the abnormal returns for the test periods. The time frame and data analysis estimation period of this study is shown in Figure 1.

Figure 1

Research Estimation Period



This study tests all companies that pay distribute cash dividends from 2014 to 2016. The sample is determined using the following criteria:

1. The company must have been a public company before 2014. This is set to avoid a bias on the amount of dividend prior to the initial public offerings (IPO) year compared to the period after the IPO.
2. The company must pay dividend for three consecutive years.

- The stock of the company must be liquid for which in one year it must be traded of at least 500 times and 150 days. This is set to avoid bias on stocks that are not traded on a regular basis (sleeping stock).

The mean difference test is used to test the hypothesis if the data are normally distributed. If the distribution of data is not normal, then the Wilcoxon test is used.

IV. RESULTS AND DISCUSSION

Based on the sample determination criteria, the final sample comprises 118 companies that consistently pay the dividend for three consecutive years (2014-2016). Table 1 provides the descriptive statistics of variables examined in the study.

Table 1

Descriptive Statistics Abnormal Return in Days around Cum-Dividend

No	Description	Mean	Median	Min.	Max.	Dev. Stand.
Panel A. Year 2015						
1	Day Minus 2	0,0053	0,0027	-0,0451	0,0789	0,0185
2	Day Minus 1	-0,0006	-0,0005	-0,0904	0,1302	0,0224
3	Cum-dividend date	0,0023*	-0,0002	-0,0525	0,1113	0,0209
4	Day Plus 1	-0,0117	-0,0068	-0,1920	0,1036	0,0333
5	Day Plus 2	0,0025	0,0004	-0,0513	0,0678	0,0216
Panel B. Year 2016						
1	Day Minus 2	0,0072*	0,0006	-0,0934	0,1897	0,0317
2	Day Minus 1	0,0053	0,0004	-0,0551	0,2337	0,0296
3	Cum-dividend date	-0,0002	-0,0002	-0,0784	0,0440	0,0196
4	Day Plus 1	-0,0121*	-0,0067	-0,1002	0,1109	0,0315
5	Day Plus 2	-0,0047*	-0,0017	-0,1008	0,0629	0,0235

* Denotes that the average abnormal return is significantly different from zero (test for mean difference), two tailed.

The average positive abnormal returns on the cum-dividend date for 2015 data implies that on average the investor earns a profit on the cum-dividend date. The opposite occurs for 2016 data, where the average value of abnormal return on cum-dividend date is negative. That is, on that day, on average, the investors lose their investment.

Table 2 shows descriptive statistics of stock trading volume in the days around cum-dividend. The median value of stock trading activity tends to increase ahead of and during the cum-dividend date, then decreases after the cum-dividend date. This implies an increase in the frequency of shares traded ahead of and during the cum-dividend date.

Insert Table 2 here.

For normality test data on abnormal returns for 2015 and 2016, shows that only day Plus 1 where the distribution of data is normal. Meanwhile, on the other days, the distributions of data are not normal. As for the volume of stock trading for 2015 and 2016, none of the data has a normal distribution. Given that most of the data are not normally distributed, the hypotheses test is based on non-parametric statistics.

4.1. Test on Abnormal Returns

For year 2015, there is only one day where the abnormal return is positive and different from zero. On that day, on average, investors earn abnormal return when she bought the stocks before cum-dividend date and sold them after cum-dividend date. For year 2016 data, there are three days whose average abnormal return value is

significant (different from zero). The three days are the day Minus 2 (positive), Plus 1 (negative), and Plus 2 (negative).

Table 2

Descriptive Statistics of Stock Trading Volume in the Days around Cum-Dividend

No	Description	Mean	Median	Min.	Max.	Dev. Stand.
Panel A. Year 2015						
1	Day Minus 2	0,0053	0,0027	0,0000	0,0216	0,0024
2	Day Minus 1	-0,0006	-0,0005	0,0000	0,0378	0,0037
3	Cum-dividend date	0,0023	-0,0002	0,0000	0,0165	0,0026
4	Day Plus 1	-0,0117	-0,0068	0,0000	0,0214	0,0029
5	Day Plus 2	0,0025	0,0004	0,0000	0,0417	0,0039
Panel B. Year 2016						
1	Day Minus 2	0,0072	0,0072	0,0000	0,0216	0,0033
2	Day Minus 1	0,0053	0,0053	0,0000	0,0257	0,0038
3	Cum-dividend date	-0,0002	-0,0002	0,0000	0,0216	0,0028
4	Day Plus 1	-0,0121	-0,0121	0,0000	0,0216	0,0025
5	Day Plus 2	-0,0047	-0,0047	0,0000	0,0216	0,0025

In general, the results of the analysis on the presence or absence of an abnormal return indicate inconsistency. The average abnormal return is not always positive on the cum-dividend date and the days before the cum-dividend date. Similarly, the average abnormal return is not always negative after the cum-dividend date. Nevertheless, there is at least some evidence supporting the theory and empirical that on the ex-dividend date, the average abnormal return is negative.

Table 3 presents the results of hypothesis testing whether or not there are differences in abnormal returns. As shown in Table 3 Panel A, the results of the first hypothesis testing for 2015 show significant differences abnormal returns between the days examined. There are differences in abnormal return values between the days before and the day of the cum-dividend and between the cum-dividend and the following days. Thus, it can be stated that for 2015 data, the first hypothesis of research is accepted.

In year 2016 of the four pairs of days tested, significant differences were found only between cum-dividend date and day Plus 2. That is, there is significant difference of abnormal returns between cum-dividend date and day Plus 2. While the other three pairs of days do not show any significant difference. Thus, it can be stated that for the data of 2016, the first hypothesis of research is rejected.

This study shows inconsistencies in results. The research results for 2015 data are interesting to observe. The negative abnormal return value on the cum-dividend date is however contrary to the expectations of investors. Nevertheless, the evidence of significant abnormal returns on cum-dividend date and significant abnormal return differences between days (Table 3 Panel A) implies that Indonesia's capital market at least has not been able to classify as the semi-strong efficient market (Fama, 1970). According to Fama (1970), the market is said to be semi-strong form, as we are likely to obtain an abnormal return by relying on public information. The announcement of dividend payments is a reflection of public information. In a semi-strong efficient market, public information and past stock price information cannot be used to continually gain an abnormal return.

Table 3
Median Abnormal Returns Test Results

Description	M2-CD		M1-CD		CD-P1		CD-P2	
	M2	CD	M1	CD	CD	P1	CD	P2
Panel A: Year 2015								
Median	0.0027	-0.0002	-0.0005	-0.0002	-0,0002	-0,0068	-0,0002	0,0004
Median dif.	0.0025		-0.0003		-0.0066		-0.0002	
z-value	-3.949		-4.399		-3.831		-2.653	
p-value	0.000		0.000		0.000		0.008	
Conclusion	There is a difference		There is a difference		There is a difference		There is a difference	
Panel B: Year 2016								
Median	0.0004	0.0006	0.0004	0.0006	0,0006	0,0004	0,0006	0,0004
Median dif.	-0.0002		-0.0002		-0.0002		-0.0002	
z- value	-1.247		-0.721		-4.057		-2.358	
p-value	0.213		0.471		0.000		0.018	
Conclusion	There is no difference		There is no difference		There is a difference		There is a difference	

Note: M2 is day Minus 2, M1 is day Minus 1, CD is cum-dividend date, P1 is day Plus 1, and P2 is day Plus 2.

Table 4 presents the results of hypothesis testing whether there is any difference in trading volume activity. Test results for year 2015 data show that there are two pairs of days that the difference in value of stock trading volume activity is statistically significant and two pairs of days are not significant. Differences in value of stock trading volume activity were found to be significant between day Minus 2 and cum-dividend date and between cum-dividend date and day Plus 2. The median value of trading volume activity of day Minus 1 with cum-dividend date and between cum-dividend date and day Plus 1 is not significant. Referring to the test results, it can be stated that for year 2015 data.

Table 4
Different Test Results of Median Trading Volume Activity

Description	M2-CD		M1-CD		CD-P1		CD-P2	
	M2	CD	M1	CD	CD	P1	CD	P2
Panel A: Year 2015								
Median	0.0003	0.0005	0.0004	0.0005	0,0005	0,0004	0,0005	0,0003
Median dif.	-0.0002		-0.0001		-0.0001		-0.0002	
z-value	-2.439		-0.965		-1.747		-3.266	
p-value	0.015		0.334		0.081		0.001	
Conclusion	There is a difference		There is no difference		There is no difference		There is a difference	
Panel B: Year 2016								
Median	0.0004	0.0006	0.0004	0.0006	0,0006	0,0004	0,0006	0,0004
Median dif.	-0.0002		-0.0002		-0.0002		-0.0002	
z-value	-1.759		-1.417		-2.885		-4.152	
p-value	0.079		0.157		0.004		0.000	
Conclusion	There is no difference		There is no difference		There is a difference		There is a difference	

Note: M2 is day minus two, M1 is day minus one, CD is cum-dividend date, P1 is day plus one, and P2 is day plus two.

For 2016 data, the results show that there are two pairs of days that the difference of trading volume activity is statistically significant. Significant differences are found between cum-dividend date and day Plus 1 and between cum-dividend date and

day Plus 2. As for the median of trading volume activity for day Minus 2 with cum-dividend date and between day Minus 2 and cum-dividend date is not significant.

As indicated in Table 4, the differences between pairs do not always have significant difference, i.e. two out of four pairs for each observed years. Stock trading volume activity tends to increase before and cum-dividend date, then decreases after cum-dividend date. There is an increase in the frequency of shares traded ahead of and when cum-dividend date. It can be interpreted that investors use cum-dividend date as a day to add their stock collection in order to receive dividends. Another point implicitly associated with an increase in stock trading activity and stock trading volume is that it can be attributed to the phenomenon that dividends are certain. That is, investors will tend to prefer dividends rather than capital gains that reflect the theory of bird in the hand.

The results of this study at least support the suggestions and what was done by previous research on the importance of trading volume information as one source of information to buy or sell securities. For example, Dasilas (2009) reports significant trading volume activities on ex-dividend date on his study of Greece capital market.

V. CONCLUSION

This study aims to examine the presence or absence of differences of abnormal return and trading volume activity of stocks on the days around cum dividend date. Tests on 118 firms that pay dividend continuously for three years yields two conclusions. First, the investors will get an abnormal return in the days around the cum-dividend date for data of 2015 and 2016. In addition, there is difference of abnormal return on pair-days between both for before and after cum-dividend date. Second, there is also significant difference of trading activity volume between before and after cum-dividend date, although the number of pairs for which the differences are significant is half of the total pairs. The finding reported in this study could be used as a trading strategy by investor. That is, they could buy stocks days before cum-dividend date, and sell them on the cum-dividend date that could give the investors a significant abnormal return.

Looking at the finding reported in this study, two recommendation for future studies are offered. First, future research can specifically examine the differences in abnormal returns and trading volume activity by comparing between industries (sectors). Second, future research can be specifically focusing on samples with high trading rates around cum-dividend date to explicitly observe stocks that have high trading liquidity.

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