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Market Reaction Around Ex-Dividend Date

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Abstract. A dividend is a component of returns for the investors besides capital gains. Hence, its payment becomes attractive for investors to own the stocks. According to the informational content dividend theory, the market reacts positively around the ex-dividend dates when they enhance their amount and vice versa. Motivated by the debatable evidence from many previous studies, this research wants to prove this theory by classifying the companies into two groups. Group one consists of the companies going up dividends per share. Group two contains the opposite ones. This research population is the consistent companies becoming members of the LO45 index between 1 February 2015 and 31 January 2019, where the number is 21. To calculate the total samples, we use the Slovin formula and get 17 companies. To take these companies, we use the simple random sampling method. Then, we obtain 49 and 29 ex-dividend dates for the companies elevating and decreasing dividends, one-to-one. To examine the proposed hypotheses, we utilize the one-sample t-test. Generally, this study disputes the informative content of dividend theory. In its place, this study supports the informational market inefficiency in the semi-strong form, evidenced by the lengthy market reaction. The adverse market reaction still occurs for the companies elevating dividends on the fourth day after the ex-dividend date. However, the positive reaction still happens for the companies reducing them on the third day after this date.

Keywords: ex-dividend date; market reaction; the decision of the company to elevate and cut dividends; the informationally inefficient market in semi-form

Abstrak. Dividen merupakan bagian dari tingkat pengembalian bagi investor selain selisih positif harga saham sehingga pembayarannya menarik bagi investor untuk mempunyai saham. Menurut teori kandungan informasi dividen, pasar bereaksi positif di sekitar tanggal ex-dividend ketika perusahaan menaikan jumlah dividen yang dibayarkan. Dengan dimotivasi oleh hasil yang tidak seragam, penelitian ini hendak membuktikan teori ini dengan mengklasifikasikan perusahaan menjadi dua kelompok. Kelompok pertama terdiri dari perusahaan yang menaikan dividen. Kelompk kedua terdiri dari perusahaan yang menurunkan dividen. Populasi penelitian ini yaitu perusahaan yang secara konsisten yang menjadi anggota indeks LQ45 dari 1 Februari 2015 sampai 31 Januari 2019, dimana jumlahnya yaitu 21 perusahaan. Untuk menghitung jumlah sampel, kami memakai rumus Slovin dan nemperoleh 17 perusahaan. Selanjutnya, perusahaan tersebut diambil oleh metode acak sederhana. Setelah itu, kami mendapatkan 49 dan 29 tanggal ex-dividend untuk perusahaan yang menaikan dividen dan menurunkannya. Untuk menguji hipotesis yang diajukan, kami menggunakan uji t-statistik satu sampel. Secara keseluruhan, penelitian ini tidak menolak teori kandungan informasi dari dividen Sebagai gantinya, penelitian ini mendukung teori pasar tidak efisien dalam bentuk setengah kuat secara informasi dengan mengungkapkan terjadinya reaksi pasar yang berkepanjangan. Untuk perusahaan yang menaikkan dividen, pasar masih bereaksi secara negatif pada hari keempat setelah tanggal ex-dividend. Untuk perusahaan yang menurunkan dividen, pasar masih bereaksi positif pada hari ketiga setelah tanggal ini.

Kata kunci: ex-dividend date, reaksi pasar, keputusan perusahaan menaikkan dan menurunkan dividen, pasar inefisien dalam bentuk setengah kuat secara informasi.

INTRODUCTION

Dividends are a company incentive for investors because of the willingness to let their money on a risk (Black, 1976). When the company pays cash for dividends, the ex-dividend date will become their attention (Nasir & Sari, 2014). Investors purchasing stocks on or after this date do not obtain them. Instead, they have to buy shares before this date to acquire dividends (Hanafi, 2017). The research about market reaction around the ex-dividend date is attractive for the previous scholars (Sularso, 2003; Virda & Karlina, 2009; Noviyanti, Medyawati, & Yunanto, 2013; Yang & Wu, 2015; Ozo & Arun, 2019; Tamara, Munir, & Maria, 2020). Excitingly, market reaction around the ex-dividend date of the group consisting of firms increasing dividends can be positive (Virda & Karlina, 2009; Yang & Wu, 2015; Khan et al., 2016; Ozo & Arun, 2019) and negative (Sularso, 2003; Noviyanti et al., 2013). Similarly, the market reaction of the group consisting of companies reducing dividends can be positive (Sularso, 2003), negative (Virda & Karlina, 2009; Ozo & Arun, 2019; Tamara et al., 2020), and insignificant (Yang & Wu, 2015). Regarding the various outcomes of those studies, this study wants to prove the companies' market reaction in paying dividends by utilizing the consistent members of the LQ45 index between 2015 and 2018. Additionally, the utilization of the firms forming the LQ45 index is due to the speedy adjustment of their price (Utama, 1992), as the efficient capital market theory investigation requires (Hartono, 2017).

The informational content of dividend theory enlightens the change in dividends is associated with the view modification of managers on prospective earnings (Miller & Modigliani, 1961). According to the investor

perspective, the companies elevating the dividends deliver a positive signal in the future; therefore, investors boldly buy the stocks at the premium price. Conversely, if the companies diminish these rewards, the investor will have a negative image. Hence, investors sell their shares; thus, their price decreases (Gitman & Zutter, 2012). This theory is supported by Virda & Karlina (2009) by studying the market reaction around ex-dividend dates in Indonesia. They find that when companies cut the cash dividend, an adverse market reaction occurs. Similarly, Oman, Al-Yahyaee, Pham, & Walter (2011) confirm this theory by showing that when companies raise the cash dividend, a positive market reaction happens, and vice versa. Correspondingly, Ozo & Arun (2019) prove that the increase and the decrease in dividends make the market react positively and negatively, one-to-one, during ex-dividend dates. Partially, the empirical evidence backing this theory comes from (Sularso, 2003; Virda & Karlina, 2009; Al-Yahyaee, 2011; Ozo & Arun, 2019), showing a positive market reaction of the companies elevating dividends. Conversely, the study of (Virda & Karlina, 2009; Ozo & Arun, 2019) finds that the decreasing market reaction happens when the companies cut them. Besides, when investigating the market reaction of the firms elevating the dividend cut only, Tamara et al. (2020) find that an undesirable response. Based on this explanation, the first hypothesis formulated is in this way:

H_1: A desirable market reaction around the ex-dividend date exists when the firms increase dividends.

H_2: An undesirable market reaction around the ex-dividend date exists when the firms decrease dividends.

METHOD

A market reaction, measured by an abnormal return, becomes the research variable. By definition, the abnormal return gets calculated by subtracting the actual return in the window period from the expected return (Hartono, 2017). Moreover, this expected return is calculated by mean return in the estimation period. By referring to Dasilas & Leventis (2011), the number of days used in the estimation period is 100, started from t-105 until t-6. Additionally, by denoting (Marfuah, 2006; Virda & Karlina, 2009; Dasilas & Leventis, 2011; Do & Hieu, 2018), the total days utilized in the window period is 11, started from t-5 to t =+5 (see Figure 1).

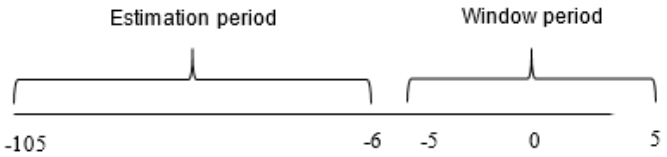


Figure 1. Estimation and Window Period
Source: Modified figure of Hartono (2017)

The population of this study is the companies consistently becoming members of the LQ45 index, having an ex-dividend date from 1 February 2015 to 31 January 2019. After observing the data, this study finds 21 suitable companies with the names in Table 1.

Table 1. The names of the companies becoming a population

No	Code	The name of the company
1.	ADRO	Adaro Energy Tbk.
2.	AKRA	AKR Corporindo Tbk.
3.	ASII	Astra International Tbk.
4.	BBCA	Bank Central Asia Tbk.
5.	BBNI	Bank Negara Indonesia (Persero) Tbk.
6.	BBRI	Bank Rakyat Indonesia (Persero) Tbk.
7.	BBTN	Bank Tabungan Negara (Persero) Tbk.
8.	BMRI	Bank Mandiri (Persero) Tbk.
9.	GGRM	Gudang Garam Tbk.
10.	ICBP	Indofood CBP Sukses Makmur Tbk.
11.	INDF	Indofood Sukses Makmur Tbk.
12.	INTP	Indocement Tunggal Prakasa Tbk.
13.	KLBF	Kalbe Farma Tbk.
14.	PTBA	Tambang Batubara Bukit Asam (Persero) Tbk.
15.	SCMA	Surya Citra Media Tbk.
16.	SSMS	Sawit Sumbermas Sarana Tbk.
17.	TLKM	Telekomunikasi Indonesia (Persero) Tbk.
18.	UNTR	United Tractors Tbk.
19.	UNVR	Unilever Indonesia Tbk.
20.	WIKA	Wijaya Karya (Persero) Tbk.
21.	WSKT	Waskita Karya (Persero) Tbk.

This study exhausts a formula created by Slovin in equation one with the error margin (em) as high as 10% to get the total representative samples (TRS) of the population (TP).

$$TRS = \frac{TP}{1 + TP(em)^2}$$

As soon as utilizing this formula, the total samples obtained are $\frac{21}{1+21(0,10)(0,10)} = \frac{21}{1,21} = 17{,}36 \approx 17$ companies. Then, we take them by a simple random sampling, and the codes obtained are (1) ADRO, (2) ASII, (3) BBCA, (4) BBNI, (5) BBRI, (6) BBTN, (7) BMRI, (8) ICBP, (9) INDF, (10) INTP, (11) KLBF, (12) PTBA, (13) SCMA, (14) SSMS, (15) TLKM, (16) WIKA, and (17) WSKT.

The variable utilized in this research is single: market reaction measured by abnormal return; therefore, following Hartono (2012), the hypotheses constructed are descriptive. Thus, by mentioning Ghozali (2016), this study employs a one-sample t-test to check them based on the output of IBM SPSS 19. To statistically verify a positive or negative average abnormal return in this output, we compare the probability (1-tailed) of the t-statistic with the relaxed significant level as high as 10%.

a. If this probability is the same or above 10%, the positive or negative sign is meaningless; therefore, the abnormal return does not exist.

b. If this probability is below 10%, the positive or negative sign is meaningful; therefore, the abnormal return is available according to its sign.

As the requirement, the normality of the abnormal return has to be achieved to support a one-sample t-test (Hartono, 2012). Following Ghozali (2016), we use the Kolmogorov-Smirnov Z-statistic to examine this assumption by comparing the asymptotic significance (2-tailed) of Z-statistic with the 1% tightened significance level. Furthermore, to test the null hypothesis declaring that the abnormal return follows a normal distribution, we refer to this instruction: (a) If the significance (2-tailed) is higher than or the same as 1%, the null hypothesis is acknowledged; and (b) If the significance (2-tailed) is lower than 1%, the null hypothesis is refused.

RESULT

Table 2 demonstrates the Kolmogorov-Smirnov testing result examining the normality of abnormal return before, at, and after the ex-dividend date for the companies elevating dividends. Furthermore, the asymptotic significance (2-tailed) for abnormal return in this table is between 0.013 and 0.394. These values are still higher than the significance level of 1%; therefore, the null hypothesis stating abnormal return following normal distribution is accepted.

Table 2. The normality test result on the market reaction of the companies elevating dividends

Market Reaction	Kolmogorov-Smirnov Z	Asymptotic Significance (2-tailed)
Day (-5)	1.226	0.099
Day (-4)	1.162	0.135
Day (-3)	0.899	0.394
Day (-2)	0.917	0.370
Day (-1)	1.585	0.013
Day (0)	0.783	0.572
Day (1)	1.285	0.074
Day (2)	1.043	0.227
Day (3)	1.316	0.063
Day (4)	1.468	0.027
Day (5)	1.424	0.035

Source: Output of IBM SPSS 19

Table 3 shows the Kolmogorov-Smirnov testing result examining the normality of abnormal return before, at, and after the ex-dividend date for the companies cutting dividends. Furthermore, the asymptotic significance (2-tailed) for abnormal return in this table is between 0.279 and 0.997. These values are still higher than the significance level of 1%; therefore, the null hypothesis stating abnormal return following normal distribution is accepted.

Table 3. The normality test result on the market reaction of the companies cutting dividends

Market Reaction	Kolmogorov-Smirnov Z	Asymptotic Significance (2-tailed)
Day (-5)	0.916	0.371
Day (-4)	0.969	0.305
Day (-3)	0.819	0.514
Day (-2)	0.992	0.279
Day (-1)	0.664	0.770
Day (0)	0.470	0.980
Day (1)	0.593	0.873
Day (2)	0.653	0.787
Day (3)	0.446	0.989
Day (4)	0.645	0.799
Day (5)	0.400	0.997

Source: Output of IBM SPSS 19

Table 4 present the result of a one-sample t-test for abnormal return before, at, and after the ex-dividend date for the companies enhancing dividends. It can be seen that a negative abnormal return exists on: (a) Day one before the ex-dividend date (see the negative mean of 0.005945 and probability (1-tailed) of 0.091, lower than 10%); (b) The ex-dividend date (see the negative mean of 0.011231 and probability (1-tailed) of 0.001, lower than 10% on day 0); (c) Day one after the ex-dividend date (see the negative mean of 0.006392 and probability (1-tailed) of 0.029, lower than 10%); and (d) Day four after the ex-dividend date (see the negative mean of 0.006216 and probability (1-tailed) of 0.079, lower than 10%).

Table 4. A one-sample t-test result for abnormal return before, at, and after the ex-dividend date for the companies enhancing dividends

Market reaction	Test value = 0				
	Mean	t	df	Probability	
				2-tailed	1-tailed
Day (-5)	-0.002431	-0.922	48	0.361	0.181
Day (-4)	-0.002759	-0.761	48	0.450	0.225
Day (-3)	0.001597	0.683	48	0.498	0.249
Day (-2)	0.001319	0.375	48	0.709	0.355
Day (-1)	-0.005945	-1.359	48	0.181	0.091
Day (0)	-0.011231	-3.414	48	0.001	0.001
Day (1)	-0.006392	-1.939	48	0.058	0.029
Day (2)	-0.002892	-0.741	48	0.463	0.232
Day (3)	0.000247	0.085	48	0.933	0.467
Day (4)	-0.006216	-1.436	48	0.158	0.079
Day (5)	0.002997	0.814	48	0.420	0.210

Source: Output of IBM SPSS 19

By the facts presented in Table 4, we reject the first hypothesis stating that a desirable market reaction around the ex-dividend date exists when the firms increase dividends. Table 5 presents the result of a one-sample t-test for abnormal return before, at, and after the ex-dividend date for the companies cutting dividends. It can be seen that a negative abnormal return exists on: (a) Day one before the ex-dividend date (see the positive mean of 0.00564 and probability (1-tailed) of 0.065,

lower than 10%); (b) The ex-dividend date (see the positive mean of 0.01069 and probability (1-tailed) of 0.011, lower than 10% on day 0); and (c) Day three after the ex-dividend date (see the positive mean of 0.01540 and probability (1-tailed) of 0.000, lower than 10%).

Table 5. A one-sample t-test result for abnormal return before, at, and after the ex-dividend date for the companies reducing dividends

Market reaction	Test value = 0				
	Mean	t	df	Probability	
				2-tailed	1-tailed
Day (-5)	-0.00172	-0.537	28	0.596	0.298
Day (-4)	0.00084	0.205	28	0.839	0.419
Day (-3)	-0.00127	-0.338	28	0.738	0.369
Day (-2)	-0.00528	-1.080	28	0.290	0.145
Day (-1)	0.00564	1.562	28	0.129	0.065
Day (0)	0.01069	2.437	28	0.021	0.011
Day (1)	-0.00058	-0.135	28	0.894	0.447
Day (2)	-0.00009	-0.018	28	0.986	0.493
Day (3)	0.01540	4.257	28	0.000	0.000
Day (4)	-0.00066	-0.170	28	0.866	0.433
Day (5)	0.00472	1.193	28	0.243	0.121

Source: Output of IBM SPSS 19

By the facts presented in Table 5, we reject the second hypothesis stating that an undesirable market reaction around the ex-dividend date exists when the firms decrease dividends. Based on statistical testing, an undesirable market reaction exists when the companies elevate dividends, which supports Sularso (2003) and Noviyanti et al. (2013). However, a desirable market reaction happens when the companies cut dividends, and this circumstance verifies the work of (Virda & Karlina, 2009; Ozo & Arun, 2019; Tamara et al., 2020). Also, this study confirms the study of Warrad (2017), Hadianto et al. (2020), declaring that the more dividends compensated for public shareholders, the more diminishing stock price. By this evidence, we refuse the informational content of dividend theory. Instead, we acknowledge Brealey, Myers, and Allen's perspective (2020), stating that the public shareholders prefer the companies cutting dividends to the firms increasing dividends. By reducing them, these shareholders believe that the companies can allocate their money to invest in promising projects to increase their value in the future. Additionally, this evidence supports the informational market inefficiency in the semi-strong form, reflected by the market reaction after the event: (a) For the first event, the companies enhancing dividends, the market reaction is still available on the fourth day after the ex-dividend date; and (b) For the second event, the companies reducing dividends, the market reaction is still is obtainable on the third day after the ex-dividend date.

CONCLUSION

This study goals to check the market reaction around the ex-dividend date for the companies chosen consistently to be the members of the LQ45 index from 1 February 2015 to 31 January 2019. By employing 49 and 29 ex-dividend dates for the companies that increase and decrease dividends, respectively, we test the abnormal return to measure the market reaction. After checking the market reaction, we infer that a desirable market reaction is available when companies cut dividends and vice versa. Also, the extended market reaction in two events, i.e., the companies enhancing and reducing dividends, shows that the market is informationally inefficient in the semi-strong form. Although this study result informationally supports the inefficient market, some restrictions are still available: Firstly, this study uses a small sample size: 17 companies with 78 observations of abnormal returns. Secondly, this study utilizes the average-adjusted model to calculate the expected return as one of the components of abnormal return determination. As the first restriction solution, the subsequent scholars are expected to use more companies forming the specific index: the KOMPAS 100. Moreover, as the second restriction solution, the subsequent scholars can use the expected return based on the single-index model and its adjusted one.

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