The International Journal of Banking and Finance 2 (2004) 1-18

INFORMATION CONTENT OF DIVIDEND CHANGES IN AN EMERGING MARKET

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Abstract

Supports on the free cash flow and agency cost theory from dividend announcements studies have been heavily discussed in the Western literature, but they have not been given much attention in the Asian countries, particularly in Malaysia. This paper focuses on examining the relationship of the stock market reactions due to dividend announcements and ten company-specific variables identified from the literature as potential determinants. The results from cross-sectional and stepwise regressions both showed that none of the determining variables could explain the variation in cumulative abnormal returns (CARs) for the increasing dividend announcements. For decreasing dividend announcements, both regressions identified the degree of anticipation to be significant and inversely related to CARs. In addition, the indigenous population ownership, which is a unique characteristic of the Malaysian equity market is also found to be significant in influencing the effect of decreasing dividend announcements. The findings provide no support for the free cash flow and agency cost theory.

Keywords: Dividend announcements, emerging market, corporate finance theoretical models, company-specific characteristics

1. Introduction

Most of the studies on dividend announcements were implemented in the Western countries, with the exception of Annuar and Shamsher (1993), Ariff and Johnson (1990), Glen, Karmokolias, Miller and Shah (1997), Lok and Gupta (1995), and Mansor and Subramaniam (1992). However, none of these studies examine the determinants of dividend announcements' effect on stock returns.

Based on information content hypothesis, Miller and Modigliani (1961) explicitly suggest that managers use cash dividend announcement to signal changes in their expectation about the future prospect of a company when the markets are imperfect. This is consistent to the cash flow signaling theory which theorized that dividend changes are explicit signals about future earnings, sent intentionally and at some costs by the management to the company's stockholders (Bhattacharya, 1979, 1980; John and Williams, 1985; Miller and Rock, 1985). Furthermore, Jensen (1986) in his

free cash flow hypothesis associates increase in dividend with less free cash flow and thus less tendency to over-invest, for example accepting marginal investment projects that have negative net present value (NPV). The signaling theory thus hypothesizes that a management decision to increase dividend will lead to a higher stock return while a decision to decrease dividend, conversely, will reduce the stock returns.

Literature in the area of corporate finance, both theoretical and empirical, goes beyond the issue of whether dividend payments have implications on stock returns, suggesting that market reactions to dividend announcements are not homogeneous but vary according to company specific characteristics. These characteristics could be converted into some determinants to be regressed against the stock return reactions to dividend announcements. This is crucial to provide insights into why the reaction took place and what forms of information content conveyed by the announcements. Thus, it might provide further explanation on whether the cash flow hypothesis, free cash flow hypothesis and the agency theory could be applied in the Malaysian equity market.

Empirical investigation on the determinants has therefore been used as a test for these hypotheses (Yoon and Starks, 1995). A study by Lang and Litzenberger (1989), for example, investigates the relationship between over investment activities and stock market reaction to dividend announcements, in order to examine whether the free cash flow hypothesis can be supported. Many studies involving different contexts of dividend payment announcements, such as dividend initiation, omission, decrease and increase in relation to determining variables were undertaken in the UK and US. These studies provide mixed evidence, but they have to some extent contributed to the understanding of the relevancy of dividend payment in those countries. As limited number of research on the determining variables involving the Malaysian equity market has been documented, it calls for the study to be undertaken by the authors.

The remainder of this paper is organized as follows. Section II provides the corporate finance theoretical background and reviews the empirical evidence on stock market reactions to dividend announcements and its determinants. This is followed by a description of the data and methodology in Section III. Section IV analyzes the results and Section V concludes the paper.

2. Theory and evidence

Several theories concerning the relationship of dividend policies and stock returns have been documented in the financial literature due to the share price maximization goal being the central focus in the discipline of finance. In 1961, Miller and Modigliani (M&M) advanced the dividend irrelevance theory which theorizes that in a perfect world, the value of a company and thus its share prices are unaffected by the distribution of dividends. Though the validity of the perfect world is empirically unjustified, the irrelevance theory is crucial for providing the background for the formulation of further theories that account for various imperfections in the real world.

One such imperfections which is critical to the development of theories relating to dividend is the asymmetric information problem which brings importance to the

signaling theory, also referred to as the information content of dividend hypothesis. According to the theory, also founded by M&M, dividend announcements are hypothesized to have information content that would cause shareholders to react to the announcement and thus influence the company share prices. There are however debates with respect to the form of information content that is being conveyed to the market through the dividend announcements.

Built on the premise of the information content of dividend hypothesis, other theories were then posted to explain the nature of information content in a dividend announcement. The cash flow signaling theory, also referred to as the cash flow hypothesis, developed by Bhattacharya (1979, 1980), John and Williams (1985) and Miller and Rock (1985) theorized that dividend changes are explicit signals about the current and/or future cash flows, sent intentionally and at some costs by management to the company and its stockholders. The theory hypothesized that an increase (decrease) in dividend will lead to an increase (decrease) in stock prices where the levels of cash dividends are associated with the levels of permanent earnings that would affect the stock value.

Jensen (1986), on the other hand, proposed a theory that is widely known as the free cash flow hypothesis. According to Jensen (1986), the free cash flow exists in a company when there are excess funds left over after taking into account all positive net present value projects. He argues that a conflict of interest between shareholders and managers over the payout policies of these free cash flows could explain the stock price reaction. The theory predicts that stock prices will increase if there is unexpected dividend payment.

Similar predictions could also be inferred from the agency cost theory forwarded by Easterbrook (1984). According to him, the separation of ownership from control would encourage managers to misuse the company's resources for their personal gain. A regular cash dividend ensures that managers are alert with their actions. If there is a reduction in dividend, this would increase access to internally generated funds where there is a likelihood of the management to allocate a greater proportion of the company's resources into perquisites. In such a case, the agency cost theory associated cash dividend decrease with a reduction in a company's equity value, hence a negative price effect is expected out of the announcement.

Numerous empirical studies have been carried out to determine the stock market reactions to dividend announcements. Even though these studies were carried out in a wide variety of settings that include dividend initiation, omission, increase, decrease or a combination of several dividend announcements, the findings of these studies do provide support for the information content of dividend hypothesis. Studies focusing on the reactions to dividend initiations or increase announcements conducted by Aharony and Swary (1980), Asquith and Mullins (1983), Healy and Palepu (1988), Jin (2000), Lipson, Maquieire and Megginson (1998), Mitra and Owers (1995), and Venkatesh (1989) documented a positive relationship between stock prices and dividend initiations or increase announcements. Conversely, dividend omission and reduction announcements were found to have a negative effect on the stock prices (Dielman and Oppenheimer, 1984; Eades, Hess and Kim, 1985; Ghosh and Woolridge, 1988; Healy and Palepu, 1988; Impson and Karafiath, 1992; Impson, 1997). Studies

conducted in countries other than the United States (US) such as those by Lonie, Abeyratna, Power and Sinclair (1996) and Balachandran, Cadle and Theobold (1999) in the United Kingdom (UK) stock market also produced similar findings. As for evidence from the emerging market, not too much effort has been made to identify the effects of dividend announcements as documented by Glen et al. (1997). At least, one study has been found in the Malaysian equity market that is by Mansor and Subramaniam (1992). They examined the effect of dividend and earning announcements on share prices using weekly data. The results of the study showed that dividend and earnings increase is associated with positive effects whereas dividend and earning decrease lead to negative reactions.

Literature in the area of corporate finance, both theoretical and empirical, goes beyond the issue of whether dividend payments have implications on stock prices to suggest that market reactions to dividend announcements are not homogeneous but vary according to certain company-specific characteristics. Most of the determinants of stock price reactions to dividend announcements are associated with information asymmetry and information content hypothesis (Miller and Modigliani, 1961), specifically in relation to the signaling hypothesis (Bhattacharya, 1979; Miller and Rock, 1985) and the agency cost theory (Easterbrook, 1984; Jensen and Meckling, 1976).

Consistent to the free cash flow hypothesis, Lang and Litzenberger (1989) hypothesized that the reaction of stock prices to dividend announcements is associated with the company's investment opportunities. Their study involved 429 dividend announcements with absolute changes of more than 10% made from 1979 to 1984. Tobin's Q was used as a proxy for investment opportunities. Their analysis supported the hypothesis that dividend increases announced by companies with inferior investment opportunities have a more positive reaction relative to the reaction derived from similar announcements made by companies with superior investment opportunities.

Dennis, Dennis and Sarin (1994) replicated Lang and Litzenberger (1989) study and found similar findings. Additional test which include dividend yield and the size of dividend change as additional independent variables showed that the stock price response to dividend announcements is significantly affected by these variables but less affected by the investment opportunities. They interpreted their findings as being consistent to the cash flow hypothesis and dividend clientele hypothesis, but not the free cash flow hypothesis.

A subsequent study by Bajaj and Vijh (1995) focusing on several aspects of the price formation process surrounding dividend announcement periods examined company size, stock prices and microstructure effects (by looking at trade and quote prices) during dividend announcements. Utilizing a sample size of 67,256 dividend announcements by companies listed on the New York Stock Exchange for the period July 1962 until December 1987, their results confirmed the unconditional positive excess return reported by Kalay and Lowenstein (1985). Both the WLS multivariate regressions observed higher significant excess returns for small-companies and low-priced stocks. Assessment of the microstructure effects indicates that the excess returns were not due to measurement errors or spillover effect of tax-related ex-day

trading. Further examinations suggested that the excess returns were related to the absorption of dividend information, hence supporting the information content of dividends' hypothesis.

Mitra and Owers (1995) looked at the information content of dividend hypothesis by focusing on the relationship between security price reaction to dividend announcements and the company's information environment (company size, institutional holdings in company's equity, number of institutions holding companies equity and number of analysts following a company). The sample used in the study consists of 80 dividend initiations announced by companies between January 1976 and December 1987. The data was obtained from the CRSP daily master and was cross-checked against the Moody's Annual Dividend Record and/or the Wall Street Journal Index. By using a cross-sectional regression model, they found that the coefficients for company size and the number of institutions holding companies' equity are negative and significantly related to the standardized CAR, while the coefficient for dividend yield is positively related. Market capitalization seems to be the most powerful measure of information environment followed by the number of institutions holding companies equity and dividend yield.

Benartzi, Michaely and Thaler (1997) hypothesized that if dividend changes contain information about future earnings, then the larger the dividend increase, the greater the unexpected earnings in the following years, because if signaling is costly, then the larger the signal, the greater is the cost. Based on this hypothesis, it can be argued that the larger the dividend change, the greater is the reaction of stock prices to the dividend announcement. Based on their study analyzing all companies traded in the NYSE or AMEX during the period 1979-1991, they confirmed the relationship between dividend payment and past and concurrent earnings, but not with future earnings. Their findings implied that earnings lead dividend, and not dividends lead earnings as implied by the information content hypothesis. The disconfirmed of cash flow hypothesis is supported by the finding that there is no positive relationship between the future unexpected earning and the size of dividend increase and the timing of the dividend announcement. The invalidity of cash flow hypothesis indirectly implies that there is no relationship between market reaction to dividend announcement and the dividend size and the timing of dividend announcement.

Keastner and Liu (1998) provide similar argument to that of Benartzi, Michaely and Thaler (1997) on the relationship between dividend changes and the reaction of stock prices to dividend announcements. Keastner and Liu (1998), however, highlighted the need to incorporate company-specific factors into modeling the reaction of stock prices to the dividend announcement. The so called 'multiple-signal model' argued that "the information content of the dividend change is company specific, and the same type of dividend announcement may be viewed as 'good' or 'bad' news by the market depending on the company's characteristics". Based on the dividend clientele hypothesis, Keastner and Liu argued that dividend yield may affect the response of stock prices to dividend announcements. They drew on Bajaj and Vijh (1990) findings that for a company with high dividend yield, an increase in dividend resulted in a significant larger increase in the stock prices. In addition, they also found that, on the average, stock price responses were positively and significantly

related to the size of dividend payment in the case of dividend initiation and specially designated dividend payment.

Mikhail, Walther and Wallis (MWW, 1999) have taken the information content hypothesis further to postulate a significant negative relationship between the quality on earning announcements and stock price reactions to announcements on dividend changes. They argued that dividend changes are a substitute source of information regarding future cash flow when earning quality is low. In studying the relationship between these variables, they controlled for several factors that were found to have some influence on the stock price reactions to announcements on dividend changes. The first control variable is company size (measured by total asset at the end of year preceding the dividend change) to represent the proxy of a company's information environment (Eddy and Seifert, 1988; Mitra and Owers, 1995). The second control variable is dividend yield, which was argued to be the proxy for clientele effects. Consistent to Benartzi, Michaely and Thaler (1997) and Keastner and Liu (1998), MWW associated dividend yield to be positively (negatively) related to the magnitude of abnormal returns around the announcement of dividend increases (decreases). The next control variable is the company's price-to-book ratio, which they argued to be a proxy for the company's investment opportunity set. The influence of the company's investment opportunity set on the stock price reaction to announcements on dividend changes is theorized based on the Jensen's free cash flow hypothesis. The final control variable is the company's cash flow variability as a proxy for company's operating risk. Build upon Lintner's (1956) findings that companies are reluctant to cut dividends, they postulated that shareholders of companies with greater operating risk will react more strongly to a given dividend change than shareholder of companies with lower operating risk. Correlation test showed that the stock price reactions to announcements on dividend changes (CAR) is positively and significantly correlated with the magnitude of dividend change, insignificantly related to price-to-book ratio and variance of operating cash flow and negatively related to total asset.

Jin (2000) drew on Eddy and Seifert (1988) and Mitra and Owers (1990) arguments that a company's size is a good proxy for the degree of public information available about the company whereby the larger the company the greater the availability of information. This suggests that dividend announcement effects reduce with the increase in company size. Built on the premise of agency cost theory, Jin (2000) proposes institutional holdings, board ownership and Tobin's Q as other determinants of the stock price reactions to dividend announcements. As institutional holdings reflect the intensity of monitoring that a company is subjected to, the benefit of agency cost is potentially smaller for company with larger institutional holdings. Hence, negative relationship is theorized between institutional holdings and the stock price reaction to dividend announcements. Similarly, Jin (2000) argued that the larger the board ownership, i.e the percentage of shares owned by the members of the board of directors, the more the board's monitoring activities and therefore the less the information content in dividend announcements. Negative relationship is again theorized between board ownership and the stock price reaction to dividend announcements reduction. Jin also argued that earning volatility is another potential determinant since information provided by dividend announcement will be more

valuable for companies with less predictable earnings. When he executed a cross-sectional regression between the 2-day CAR against the determinants, company size, institutional holdings and pre-announcement CAR were found to be significant and negatively related while earnings volatility, dividend yield and earnings change were found to be significant and positively related. On the other hand, percentage of shares owned by the Board of Directors and Tobin's Q ratios were found to be insignificant. As a whole, the regression explains 34% of the cross-sectional variation in CARS.

3. Data and Methodology

To examine the effect of dividend announcements and its determinants, this study utilized 187 final dividend announcements from the year 1996 to 1999. These announcements are categorized into three classifications: 'increasing', 'decreasing' and 'no change'. The classification was made based on the work of Impson (1997) whereby a reduction greater than 10 percent on the amount of dividend paid from the previous payment $[(D_t - D_{t-1})/D_{t-1}]$ is categorized as decreasing announcements[1]. Similar classification was applied to identify increasing dividend announcements. If a company pays the same amount of dividend as in the previous year, it would be classified as 'no change'. Out of 187 announcements, only 120 observations from the consumer, industrial, trading/services, hotel, properties, plantation and mining sectors are selected based on the following criteria[2].

1. The common stock is listed on the Kuala Lumpur Stock Exchange (KLSE). It is included to limit the sample into Malaysian quoted and registered companies so as a true representative is selected.
2. The selected dividend payment announcements are on cash basis.
3. There are no major corporate events within one day before, during and after the dividend announcements that would likely influence the risk level of the company.

These observations are then segregated into three sub-samples based on the increasing, decreasing and no change classifications with 40 observations for each category.

All the information required for this study came from secondary data that was taken from the KLSE and Universiti Utara Malaysia library. The dividend announcements' dates are collected from the Investors Digest and are counter checked from the Daily Diary Newsletter of the KLSE to confirm the event date. To examine the effect of dividend announcements, a daily closing adjusted stock price[3] and the KLSE Composite Index are collected from Sequencer. As for the cross-sectional regression analysis which is to find the determining variables which most likely

[1] This classification has been modified by using final-to-final reductions instead of quarter-to-quarter reductions used by Impson (1997). The modification is necessary due to the inconsistency of the interim dividend payments among listed companies in Malaysia.

[2] Financial and utilities sectors were excluded because of their highly regulated nature and different classification of the accounting variables.

[3] An adjusted stock price takes into consideration all announcements or events happening in a company such as stock splits, bonus issue, mergers and dividends.

influence the variation of the dividend announcements' effect, all the data are collected from the KLSE homepage, KLSE Handbook and companies annual report.

Estimation of dividend announcements' reaction

Abnormal returns are estimated by employing the market adjusted return (MAR) model which has been widely used by researchers such as Balachandran, Cadle and Theobald (1999), Kang (1990), Kim and Lee (1990), Marsh (1977), Norhana, Mohamed and Annuar (1999) and Tsangarakis (1996). The abnormal return of company i at time t is defined as:

$$AR_{i,t} = R_{i,t} - R_{m,t} \quad (1)$$

Where $R_{i,t}$ is the fractional change of stock i's adjusted price (P_i) on event day t; and $R_{m,t}$ is the fractional change of the value weighted Kuala Lumpur Composite Index, which represents the market return on event day t.

Following Asquith and Mullins (1983) and Jin (2000), the market reaction to company i dividend announcements is taken as the 2-day cumulative abnormal returns (CARs), which is the summation of company i's abnormal returns from day t-1 and t for increasing dividend announcements and day t and t+1 for decreasing dividend announcements. These are the days found to be significant for the CARs where the t-statistic shows 3.4620 and 11.5706 for the respective increasing and decreasing dividend announcements. As for the no change announcements, the CARs are found to be insignificant[4]. The underlying assumption is that the market reassesses the announcement and reacts immediately.

Cross-sectional regressions on the effect of dividend announcements against Its determinants

To examine that the market reactions to dividend announcements is most likely due to some company-specific factors rather than the announcement itself, a cross-sectional regression analysis is performed between the announcement reactions and the likely explanatory variables. The model used to investigate the determinants of decreasing and increasing abnormal returns is based on Jin (2000)[5].

$$\begin{aligned} CAR_i = \; & \alpha + \beta_1 PREANN_i + \beta_2 LNMC_i + \beta_3 DIVYLD_i + \\ & \beta_4 EARNVOLA_i + \beta_5 EARNCHG_i + \beta_6 BUMI_i + \\ & \beta_7 INST_i + \beta_8 INVOPP_i + \beta_9 LEV_i + \beta_{10} DIR_i + Ui \end{aligned} \quad (2)$$

where

CAR: 2-day cumulative abnormal returns.

[4] The no change announcements' effect has been dropped from the regression analysis.

[5] Most of the determining variables are taken mainly from the work of Jin (2000), Mikhail, Walther and Willis (1999) and Yoon and Starks (1995). A few adjustments have been made on the estimation of the variable to meet the objectives of the study.

PREANN: Pre-announcement CAR from day t=-20 to t=-2 for each observation. It is used to control for market anticipation of the dividend announcements.

LNMC: A proxy for company size which is the natural log of the market value of equity two days preceding the announcements[6]. According to Eddy and Seifert (1988), Mitra and Owers (1990) and Zeghal (1983), company size is associated to the degree of publicly available information where the larger the size of a company, the greater is the access to this information. Furthermore, it reflects omitted market pricing factors such as the information asymmetry between large versus small companies. It is observed that abnormal returns from the announcements of large dividend increases are greater for small rather than for large companies (Eddy and Seifert, 1988). Hence, company size is expected to be negatively related to CAR.

DIVYLD: Dividend yield is measured as the final dividend payment divided by the share price two days preceding the announcements. Bajaj and Vijh (1990) and Fehrs, Benesh and Peterson (1988) showed that for high-yield shares, the price reactions to dividend increases (decreases) are significantly more positive (negative).

EARNVOLA: Earnings volatility is calculated as the standard deviation of annual earnings per share over four years preceding the dividend announcements. According to Jin (2000), dividend announcements provide additional information and are more valuable for companies with less predictable earnings as compared to those with stable earnings. Hence, he expected EARNVOLA to have positive relationship with CAR.

EARNCHG: Earnings change is estimated by taking the difference between the earnings per share at time t (the announcement's year) and t-1 (a year preceding the announcement). Two separate independent variables for the dummy of earnings change to code for the three categories announcements (increasing, decreasing and no changes) are created. The first variable (EARNCHG1) is coded '1' if the earnings prior to the dividend announcements represent an increase over the earnings a year ago and '0' if it is not. The second dummy variable (EARNCHG2) is coded '1' if the earnings change represents a decrease and '0' otherwise. A variable is not assigned if there is neither an increase nor decrease in EARNCHG because all observations where a '1' is not recorded either for an increase or decrease variable must be 'no changes'.

BUMI: A percentage of the indigenous population (known as *Bumiputra*) ownership in a company, which is taken from the KLSE Handbooks. It is a summation of the percentage held by individuals, corporations, nominees and government agencies that fall under this category. It is a unique institutional characteristic to an emerging capital market such as Malaysia. According to the evidence provided by Ariff and Shamsher (1999) and Nur-Adiana (2002), regulatory intervention such as promoting the indigenous population ownership in a company has somehow explained underpricing of Malaysian companies. Thus by including this variable, we hoped

[6] Bajaj and Vijh (1995), Mitra and Owers (1995) and Yoon and Starks (1995) also used the same measure for size, but the market value of equity is taken from different period preceding the announcements. Bajaj and Vijh used one day before, whereas Mitra and Owers selected the end of the month prior to the announcement, while Yoon and Starks estimated this value at year-end.

that it would assist in understanding the market reactions of dividend announcements in this market.

INST: Institutional shareholdings are the percentage of outstanding shares held by the ten largest shareholders in the fiscal year end preceding the announcements. The information is taken from the company's annual report as it is closer to the dividend announcements' dates. INST is expected to be negatively related to CAR because high institutional shareholdings would mean companies are monitored more closely, which could reduce agency costs. Hence, the benefit of a lower agency cost may be smaller for companies with large institutional holdings. Another explanation might be higher institutional shareholdings are associated with greater information about a company that could reduce the value of future information releases, which in turn would affect its CAR negatively.

INVOPP: A price-to-book ratio is used as a proxy for a company's investment opportunity set. Based on the work of Mikhail, Walther and Willis (1999), this ratio is estimated by dividing the price to the shareholders equity per share at the close of the fiscal year prior to dividend announcements (t=-1). This variable is included to check on the implication of the free cash flow hypothesis where it predicts that companies that have less investment opportunities should pay higher dividends to ensure managers do not invest in unprofitable projects. Therefore, it is expected that a dividend increase would be expected for such companies, which most likely influence their CAR positively.

LEV: Leverage ratio is used to represent the expected cash flows volatility (Bradley, Capozza and Sequin, 1998). It is measured by taking the book value of the total liabilities and divide this figure with the summation of book value of total liabilities and market value of equity a year preceding the dividend announcements. This variable is selected to capture the effect financial leverage has on the level of company's cash flows. If the cash flows volatility increases, dividends are expected to be lower which in turn would probably have a negative effect on the market reactions.

DIR: Board ownership is measured by the percentage owned by members of the board of directors in the fiscal year end preceding the announcements. The figures are taken from the KLSE Handbook where the direct, indirect and deemed interests of the directors' shareholdings are added up[7]. Similar to INST, board ownership is used as a proxy for the board to monitor activities. A high board ownership would therefore mean greater monitoring activities that might lower agency costs and reduce the cumulative abnormal returns. Hence, DIR is expected to have a negative relationship with CAR.

4. Analysis and Finding

Table 1 lists summary of the descriptive statistics for the increasing and decreasing dividend announcements. The mean cumulative abnormal returns for the increasing

[7] There are occasions when this figure exceeded 100% but this is unavoidable as the process would be quite tedious if an exact board ownership is to be calculated.

and decreasing dividend announcements does not show a large difference with 1.82% for increasing and 1.42% for decreasing. For dividend yield, indigenous population ownership, institutional shareholdings, investment opportunities and leverage ratios, the mean for both sub-samples is almost identical.

Table 1
Descriptive statistics

Panel A. Increasing dividend announcements

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CAR	40	-.0921	.1824	1.82E-02	4.95413E-02
PREANN	40	-.2354	.1172	-1.2E-02	8.22948E-02
LNMC	40	4.47	8.92	6.9125	.9406
DIVYLD	40	.00	.12	2.725E-02	2.439E-02
EARNVOLA	40	.02	.68	9.775E-02	.1244
EARNCHG1	40	0	1	.78	.42
EARNCHG2	40	0	1	.23	.42
BUMI	34	1.72	79.01	32.6885	22.8501
INST	40	38.72	93.54	67.4437	13.0965
INVOPP	39	1.0891	10.1207	2.943351	2.178565
LEV	39	.0724	.9926	.608110	.225334
DIR	37	.00	131.80	31.6877	36.9313
Valid N (listwise)	30				

Panel B. Decreasing dividend announcements

Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation	
CAR	40	-.088	.0838	1.42E-02	3.03520E-02
PREANN	40	-.1327	.8193	3.94E-02	.159435
LNMC	40	3.11	12.14	6.1600	1.4843
DIVYLD	40	.00	.10	2.050E-02	1.739E-02
EARNVOLA	40	.00	2.83	.2033	.4639
EARNCHG1	40	0	1	.15	.36
EARNCHG2	40	0	1	.85	.36
BUMI	37	3.22	75.32	31.3534	19.9887
INST	40	25.61	99.40	69.2925	13.3076
INVOPP	39	.14	11.91	2.3276	2.8437
LEV	39	.1809	.9860	.611219	.198146
DIR	38	.00	135.40	27.8419	32.8805
Valid N (listwise)	36				

However for pre-announcement CAR, the mean for decreasing dividend announcements is about four times (3.94%) that of increasing dividend announcements (-1.20%). As for earnings per share, decreasing dividend announcements has a mean of 20.33%, which is lower than the mean for increasing dividend announcements (9%). However, the board ownerships for companies announcing dividend increase has a higher mean of 31.69% than 27.84% for companies announcing dividend decrease.

Table 2 shows the Pearson correlations between the determining variables for the full sample with Panel A showing the variables used for increasing dividend announcements and Panel B for variables used in decreasing dividend announcements. For increasing dividend announcements, natural log of market capitalization which is a proxy for size is found to be significant and negatively related to earnings volatility at a=0.05 level. This would mean larger size companies with greater availability of public information are associated with less earnings volatility such as shown in Jin's (2000) work. A correlation between DIVYLD and DIR is significantly negative at a=0.05 level is also observed in Panel A where higher board ownership (greater monitoring activities) is related to lower dividend yield. The third relationship that is found to be significant for this sub-sample is between BUMI and INST. It seems higher indigenous population ownership is associated with a larger institutional shareholdings. Surprisingly our second sub-sample, decreasing dividend announcements (Panel B), does not show any significant correlations between the determining variables. Overall the correlation coefficients shown in Panel A and Panel B of Table 2 provide an evidence that multicollinearity problem does not exist in our sample. Hence, the next analysis is to proceed with cross-sectional and step-wise regressions for both sub-samples.

The results of the cross-sectional regressions of CAR against the determining variables are reported in Table 3. None of the variables could explain the variation in CAR for the increasing dividend announcements. Although some variables (PREANN, LNMC, DIVYLD and INVOPP) show the expected sign, but their low t-statistics prove that none of the coefficients is significantly different from zero. This is in contrast to the results reported in Dennis, Dennis and Sarin (1994), Eddy and Seifert (1988), Jin (2000), Lang and Litzenberger (1989) and Mitra and Owers (1995).

The fact that high dividend yield contains information about future earnings that would positively affect the announcements of dividend increase as hypothesized by Benartzi, Michaely and Thaler (1997) and Keastner and Liu (1998) did not materialize in an emerging market such as Malaysia. As for a company's investment opportunity set (INVOPP), the insignificant relationship supports the work of Mikhail, Walther and Wallis (1999).

Similar observations are found for decreasing dividend announcements where DIVYLD and DIR show the expected negative sign against CAR but both coefficients are not statistically significant. The insignificant negative relationship between the board ownership (DIR) and CAR could not support the agency cost theory, which associates a high board ownership with greater monitoring activities that might lower agency costs. Such evidence was not found in this study. This is consistent to Jin's (2000) findings. The only determinant that has significant effect towards CAR when examined individually while holding the remaining predictors constant is PREANN. The coefficient is negative and significant. This result is again similar to what was found by Jin (2000). The market reacts inversely with the degree of anticipation. Overall, the estimated regression for both increasing and decreasing dividend announcements is not significantly different from zero where both F-statistics showed 0.382 and 1.271 respectively.

Table 2
Pearson correlations

Panel A. Increasing dividend announcements

		Correlations										
		PREANN	LNMC	DIVYLD	EARNVOLA	EARNCHG1	EARNCHG2	BUMI	INST	INVOPP	LEV	DIR
PREANN	Pearson Correlation	1.000	.023	-0.92	.62	.057	..-.057	-.142	-.243	-.167	0.91	-0.73
	Sig. (2-tailed)	.	.886	.574	.703	.726	.726	.422	.131	308	.580	.666
	N	40	40	40	40	40	40	34	40	39	39	37
LNMC	Pearson Correlation	.023	1.000	-.026	-.317*	.036	-.036	.319	.234	.171	.066	-.023
	Sig. (2-tailed)	.886	.	.876	.046	.824	.824	.066	.147	.297	.688	.894
	N	40	40	40	40	40	40	34	40	39	39	37
DIVLYD	Pearson Correlation	-0.92	-.026	1.000	-.113	.262	-.262	-.272	.013	-0.58	-0.99	-.361*
	Sig. (2-tailed)	.574	.876	.	.488	.103	.103	.119	.936	.726	.548	.028
	N	40	40	40	40	40	40	34	40	39	39	37
EARNVOLA	Pearson Correlation	.062	-.317*	-.113	1.000	-.249	.249	-.214	0.78	0.34	.016	-.125
	Sig. (2-tailed)	.703	.046	.488	.	.122	.122	.224	.632	.836	.922	.460
	N	40	40	40	40	40	40	34	40	39	39	37
EARNCHG1	Pearson Correlation	.057	.036	.262	-.249	1.000	-1.000*	-.030	.139	.208	-.064	-.006
	Sig. (2-tailed)	.726	.824	.103	.122	.	.000	.868	.392	.204	.699	.974
	N	40	40	40	40	40	40	34	40	39	39	37
EARNCHG2	Pearson Correlation	-.057	-.036	-.262	.249	-1.000*	1.000	.030	-.139	-.208	.064	.006
	Sig. (2-tailed)	.726	.824	.103	.122	.000	.	.868	.392	.204	.699	.974
	N	40	40	40	40	40	40	34	40	39	39	37
BUMI	Pearson Correlation	-.142	.319	-.272	-.214	-.030	0.30	1.000	.384*	-.182	.291	-.100
	Sig. (2-tailed)	.422	.066	.119	.224	.868	.868	.	.025	.312	.100	.594
	N	34	34	34	34	34	34	34	34	33	33	31
INST	Pearson Correlation	-.243	.234	.013	.078	.139	-.139	.384*	1.000	.122	086	-.203
	Sig. (2-tailed)	.131	.147	.936	.632	.392	.392	.025	.	.461	.602	.227
	N	40	40	40	40	40	40	34	40	39	39	37
INVOPP	Pearson Correlation	-.167	.171	-.058	.034	.208	-.208	-.182	.122	1.000	-.159	.285
	Sig. (2-tailed)	.308	.297	.726	.836	.204	.204	.312	.461	.	.333	.093
	N	39	39	39	39	39	39	33	39	39	39	36
LEV	Pearson Correlation	.091	.066	-.099	.016	-.064	.064	.291	.086	-.159	1.000	.037
	Sig. (2-tailed)	.580	.688	.548	.922	0699	.699	.100	.602	.333	.	.830
	N	39	39	39	39	39	39	33	39	39	39	36
DIR	Pearson Correlation	-.073	-.023	-.361*	-.125	-.006	.006	-.100	-.203	.285	.037	1.000
	Sig. (2-tailed)	.666	.894	.028	.460	.974	.974	.594	.227	.093	.830	.
	N	37	37	37	37	37	37	31	37	36	39	37

* Correlation is significant at the 0.05 level (2 – tailed)

**Correlation is significant at the 0.01 level (2 – tailed)

Panel B. Decreasing dividend announcements

Table 2 *(continued)*

Correlations

		PREANN	LNMC	DIVYLD	EARNVOLA	EARNCHG1	EARNCHG2	BUMI	INST	INVOPP	LEV	DIR
PREANN	Pearson Correlation	1.000	-.104	.149	.109	-.080	.080	-.075	.060	.097	.212	.084
	Sig. (2-tailed)	.	.523	.358	.504	.624	.624	.659	.712	.556	.196	.616
	N	40	40	40	40	40	40	37	40	39	39	38
LNMC	Pearson Correlation	-.104	1.000	-.208	-.109	.308	-.308	-.167	-.110	.118	-.041	.025
	Sig. (2-tailed)	.523	.	.198	.503	.053	.053	.324	.499	.476	.805	.882
	N	40	40	40	40	40	40	37	40	39	39	38
DIVLYD	Pearson Correlation	.149	-.208	1.000	.018	-.257	.257	.056	-.189	-.149	-.058	.009
	Sig. (2-tailed)	.358	.358	.	.914	.110	.110	.742	.242	.367	.726	.957
	N	40	40	40	40	40	40	37	40	39	39	38
EARNVOLA	Pearson Correlation	.109	-.109	.018	1.000	-.110	.110	.279	-.020	.204	.001	-.127
	Sig. (2-tailed)	.504	.503	.914	.	.499	.499	.094	.901	.212	.994	.449
	N	40	40	40	40	40	40	37	40	39	39	38
EARNCHG1	Pearson Correlation	-.080	.308	-.257	-.110	1.000	1.000**	-.168	.019	.248	.033	.054
	Sig. (2-tailed)	.624	.053	.110	.499	.	.000	.320	.908	.128	.843	.749
	N	40	40	40	40	40	40	37	40	39	39	38
EARNCHG2	Pearson Correlation	.080	-.308	.257	.110	-1.000**	1.000	.168	-.019	-.248	-.033	-.054
	Sig. (2-tailed)	.624	0.53	.110	.499	.000	.	.320	.908	.128	.843	.749
	N	40	40	40	40	40	40	37	40	39	39	38
BUMI	Pearson Correlation	-.075	-.167	.056	.279	-.168	.168	1.000	-316	.144	.188	-.112
	Sig. (2-tailed)	.659	.324	.742	.094	.320	.320	.	.057	.402	.272	.516
	N	37	37	37	37	37	37	37	37	36	36	36
INST	Pearson Correlation	.060	-.110	-.189	-.020	.019	-.019	.316	1.000	.208	-.046	-.172
	Sig. (2-tailed)	.712	.499	.242	.901	.908	.908	.057	.	.204	.780	.302
	N	40	40	40	40	40	40	37	40	39	39	38
INVOPP	Pearson Correlation	.097	.118	-.149	.204	.248	-.248	.144	.208	1.000	-.077	-.191
	Sig. (2-tailed)	.556	.476	.367	.212	.128	.128	.402	.204	.	.640	.251
	N	39	39	39	39	39	39	36	39	39	39	38
LEV	Pearson Correlation	.212	-.041	-.058	.001	.033	-.033	.188	-.046	-.077	1.000	.360
	Sig. (2-tailed)	.196	.805	.726	.994	.843	.843	.272	.780	.640	.	.153
	N	39	39	39	39	39	39	36	39	39	39	38
DIR	Pearson Correlation	.084	.025	.009	-.127	.054	-.054	-.112	-.172	-.191	.153	1.000
	Sig. (2-tailed)	.616	.882	.957	.449	.749	.749	.516	.302	.251	.360	.
	N	38	38	38	38	38	38	38	38	38	38	38

**Correlation is significant at the 0.01 level (2 – tailed)

Table 3
Results of cross-sectional regressions

	Increasing	Decreasing
Intercept	0.0059 (0.047)	-0.0231(-0.348)
PREANN	-0.0513 (-0.331)	-0.0731(-1.999)*
LNMC	-0.0051(-0.302)	0.0008(0.129)
DIVYLD	0.1510(0.264)	0.02169(0.067)
EARNVOLA	-0.1820(-0.758)	-0.0030(-0.229)
EARNCHG2	-0.0150(-0.443)	0.0111(0.530)
BUMI	-0.0003(-0.372)	0.0005(1.608)
INST	0.0002(0.200)	0.00004(0.098)
INVOPP	0.0048(0.776)	-0.0263(-1.131)
LEV	0.0617(1.158)	0.0203(0.664)
DIR	0.0003(0.518)	-0.000003(-0.018)
R^2	0.167	0.337
F-Statistics	0.382	1.271

*Significant at a=0.05; Numbers in parentheses refer to t-statistics

When a stepwise regression is run for both sub-samples, none of the determining variables could explain the variation in CAR for increasing dividend announcements; however for decreasing dividend announcements, PREANN and BUMI could explain 24.10% of the variation in CAR with an F-statistic of 5.239 and a probability of 0.011 (refer to Table 4). This means the overall significance of the estimated regression is significantly different from zero implying collectively that both variables have a significant effect on CAR. The PREANN coefficient is negative and significant at a=0.05 level. The market reaction is inversely related with the degree of anticipation. When the market anticipation increases by one percentage point, the cumulative abnormal returns decrease by 0.0669 percentage point. As for BUMI, the observed market reaction positively correlates with the indigenous population ownership. A one percentage point increases of the ownership by the indigenous population would increase 0.0005 percentage point of the cumulative abnormal return. The effect to the dependent variable is almost close to zero. Nevertheless, the significance of this variable would mean that in the Malaysian equity market the government regulatory intervention has somehow produced a significant effect towards the market reaction of decreasing dividend announcements.

Table 4
Results of stepwise regression for decreasing dividend announcements against cumulative abnormal returns

Variable	Coefficient	t-statistic	Probability
Intercept	0.0002377	0.027	0.979
PREANN	-0.0669	-2.273	0.030
BUMI	0.0005031	2.127	0.041
R^2	0.241		
F-Statistic	5.239		
Prob(F-Statistic)	0.011		

5. Conclusion

The current study attempts to explain the market reaction of dividend announcements on stock returns and its determinants. A market adjusted return model is adopted to examine the effect, which was then used as the dependent variable that was regressed against ten determining variables. When the effect of increasing and decreasing dividend announcements were regressed against these variables, none of the variables could explain the variation in CAR for the increasing dividend announcements and only PREANN is found to have a significant effect towards CAR for the decreasing dividend announcements. Although pre-announcement CAR, company size, dividend yield and investment opportunity set show the expected sign, but they are not statistically significant. Overall, the estimated regressions for both increasing and decreasing dividend announcements were not significantly different from zero. To ensure a robust result is produced, a stepwise regression is also executed. The result reinforces of what was found in the cross-sectional regression. However for decreasing dividend announcements, an additional variable (BUMI) and PREANN could significantly explain 24.10% of the variation in CAR. It appears that a unique characteristic to promote the indigenous population ownership in a company represented by BUMI has somehow played a significant role in influencing the stock market reactions associated with decreasing dividend announcements in the Malaysian equity market. The findings provide no support for the free cash flow and agency cost theory.

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