

Dividend announcement effects on Malaysian stock market return: new empirical evidence using panel data approach

Anastasia Harbi and Imbarine Bujang
Universiti Teknologi MARA, Malaysia.

Key Words

Dividend Signalling, Unexpected Changes in Dividend Announcements, Cumulative Abnormal Return, Stock Return.

Abstract

This paper examines on effects of changes in dividend announcements on stock return to prove the relevancy of dividend signalling theory in Malaysian capital market. Numerous studies have been conducted in developed and emerging market and yet no attempt has been made by local studies to investigate the relationship between unexpected changes in dividend announcements and cumulative abnormal return based on Malaysian economic conditions namely before Asian financial crisis (1990-1996), during Asian financial crisis (1997-1998), after Asian financial crisis (1999-2007) and during global crisis (2008-2010). This paper employs both robust panel data and cross-sectional analyses for comparison purpose. Panel data approach reveals that the unexpected changes in dividend announcements are positive and significantly correlated with cumulative abnormal return for overall period (1990-2010), during and after financial crisis. On the other hand, cross sectional approach offer similar results only in period before and during financial crisis.

Introduction

A recent study by Norhayati et al. (2005) found that 73% of listed companies on KLSE paid dividends between periods of 1980 to 2000. The result indicates that Malaysian companies are aware on the importance of dividend payment as a signal mechanism to the investors. According to Miller and Rock (1985), since investors have incomplete information about the actual state of firm's current earnings, it is rationale for a market to take announced dividends as a sign to the unobserved earnings. Bhattacharya (1979) proposed dividend signalling and cash flow model to justify the relevance of dividend proposition. The changes in dividend become a signal of a firm's future earnings if only inside managers have superior information of the firm's current earnings than the outside investors. The investors will depend upon changes in dividend announcements in valuing the firm. In addition, most firms prefer to dividends payment than capital gains despite higher tax rate imposed on the dividends as ordinary income further support the function of dividend as a signal mechanism to the investors. The strong interest of this topic has been triggered by Miller and Modigliani (1961) with irrelevance dividend proposition. The authors proposed that the stock price is not affected by changes in dividends in a perfect capital market with costless investment transactions. The fact is we are in an imperfect capital market where investment costs are met for every financial instrument traded caused us to believe that changes in dividend really matter. These days, buying stocks are expensive after covered with brokerage fees and other fees. Thus, it is logic for a firm to convince investors to invest funds by offering attractive dividend payments. There has been an increasing amount of literatures that investigate the kind of information signalled by firms when they changes dividend. These include dividend clientele, free cash flow, agency costs and other theories. The objective of this paper is to test the relevancy of dividend signalling theory. The theory assumes that unexpected increase in dividend will send good (bad) signal to investors regarding the firm's financial performance (current and/or expected earnings) and lead the stock price to increase (decrease). Norhayati, Mohammad Ali, Anuar and Shamsheer (2006), Borde, Byrd, and Atkinson (1999) Lonie, Gunasekarage, Power and Sinclair (1996), Gunasekarage and Power (2006), and Ryan, Besley and Lee (2000) found that changes in dividend announcements and stock returns are significantly correlated which constitute supports on the dividend signalling theory. However, Nur Adiana, Rosemaliza, and Yusnidah (2004), Haitham, Ayman, Wasim, and Husni (2009) and Karim (2010) found opposite results which constitute no supports for the theory. This paper therefore examines the effect of

unexpected changes in dividend announcement on cumulative abnormal return to prove the relevancy of dividend signalling theory in Malaysian capital market. Until now, no attempt has been made by local studies to investigate the correlation between unexpected changes in dividend announcements and cumulative abnormal return according to Malaysian economic conditions namely before financial crisis (1990-1996), during financial crisis (1997-1998), after financial crisis (1999-2007) and during global crisis (2008-2010). No local evidence also has been found to investigate the correlation of the variables using robust panel data. This paper therefore provides empirical evidence on the relationship between unexpected dividend changes and cumulative abnormal return based on Malaysian economic conditions using the panel data and cross-sectional approach for comparison purpose.

Empirical Model

The unexpected dividend changes consist of subgroup of dividend increases (DI), dividend decreases (DD), and dividend no-changes (DNC). The unexpected dividend changes are classified as dividend increases if the amount of the dividend has increased of more than 10% from the previous year. Same concept applies to decreasing dividend announcements if the amount of dividend has decreased of more than 10% from previous year. If the amount of announced dividend is similar or between +10% to -10% from the previous year, the dividend is classified as dividend no-change. The changes in dividend are computed based on a model used by Nur Adiana et al. (2004), Norhayati et al. (2006) and Karim (2010). Let D_{it} = expected dividend per share of firm i at time t , and let D_{it-1} = actual dividend per share of firm i at time t

$$\Delta Div_{it} = \frac{D_{it} - D_{it-1}}{D_{it-1}} \tag{1}$$

The abnormal return is the difference between actual returns of firm i over the event window and expected return generated by a risk-adjusted market model of Sharpe-Lintner Capital Asset Pricing Model. Let R_{it} = actual returns of firm i at time period t , let $\hat{\alpha}_i, \hat{\beta}_i$ = the parameters of market model, and let R_{mt} = return on KLCI at period t .

$$AR_{it} = R_{it} - [\hat{\alpha}_i + \hat{\beta}_i R_{mt}] \tag{2}$$

The abnormal returns are aggregated over event windows to derive cumulative abnormal return. The event window is on the announcement date and two days after the announcement date (0 to +2 days) following Norhayati, et al. (2006). The authors found that unexpected dividend changes and cumulative abnormal return are statistically significant for event period of 0 to +2 days.

$$CAR_i(t_1, t_2) = \sum_{t_1}^{t_2} AR_{it} \tag{3}$$

Following Lonie, et al. (1996) and Gunasekarage and Power (2006), the market model parameters (α and β) are estimated based on previous 300 days' daily returns data on the individual security and market portfolio. Based on panel data approach on cumulative abnormal return, the empirical model used is as follows:

$$\text{Log } CAR_{it} = \alpha + b_1 UDC_{it} + e_{it} \tag{4}$$

Let $\text{Log } CAR_{it}$ = log cumulative abnormal returns of firm i at time t , let UDC_{it} = unexpected dividend changes of firm i at time t , let e_{it} = disturbance term assumed to be normally distributed, let t = time, and let i = firm. Below is the empirical model under cross-sectional approach on cumulative abnormal return.

$$\text{Log } CAR_i = \alpha + b_1 UDC_i + e_i \tag{5}$$

Data and Methodology

The sample data is 41 listed companies following the companies have had continually announced dividends for 21-year from 1990 to 2010. The reason is to observe the reactions of the companies in dividend announcements according to changes in Malaysian economic conditions.

Table 1: No of Observations on Unexpected Dividend Changes (UDC) included Dividend Increases, Dividend Decreases and Dividend No-Change based on Economic Conditions

No.	Economic Conditions	UDC	Dividend Increase	Dividend Decrease	Dividend No-Change
1	Overall Period (1990-2010)	861	264	175	422
2	Before Financial Crisis (1990-1996)	287	93	45	149
3	During Financial Crisis (1997-1998)	82	15	24	43
4	After Financial Crisis (1999-2007)	369	118	74	177
5	During Global Crisis (2008-2010)	123	38	32	53

According to Ariff and Johnson (1990), Norhayati, et al. (2006), Haitham et al. (2009) and Imbarine and Annuar (2007) dealing with daily or monthly data can resulted to non-synchronous trading bias particularly if the stock is thinly traded A biased systematic risk as measured by β can lead to biased abnormal returns. Thus, the thin trading bias is improved using the Dimson-Fowler-Rorke model. According to Dimson (1979) the estimation of unbiased $\beta_{i,Dim}$ for security i on t time is as follows:

$$R_{it} = \alpha + \beta_{-2} R_{m, t-2} + \beta_{-1} R_{m, t-1} + \beta_t R_{m, t} + \beta_{+1} R_{m, t+1} + \beta_{+2} R_{m, t+2}$$

However, Fowler and Rorke (1983) as outlined by Imbarine (2005) recommended that the beta coefficients should be weighted by serial correlation in the market return in order to yield a consistent and unbiased beta coefficient. This study used two-lead and two-lag market returns as stated in equation 6.

The market model is stated as follows;

$$R_{mt} = \rho_0 + \rho_1 R_{m, t-1} + \rho_2 R_{m, t-2} + U_t$$

The weight (W) for correcting the beta coefficients is:

$$W_1 = (1 + 2\rho_1 + \rho_2) / (1 + 2\rho_1 + 2\rho_2)$$

$$W_2 = (1 + \rho_1 + \rho_2) / (1 + 2\rho_1 + 2\rho_2)$$

Based on Dimson (1979) and Fowler and Rorke (1983) model, the adjusted beta, $\beta_{i,0}$ for stock i on day 0 is as follows:

$$\beta_{i,0} = W_2(\beta_{i,-2}) + W_1(\beta_{i,-1}) + \beta_{i,0} + W_1(\beta_{i,+1}) + W_2(\beta_{i,+2})$$

The adjusted beta, $\beta_{i,0}$ is then, substitute to equation (2). As shown in table 2, this paper has 10 hypotheses testing. The first 5 hypotheses are to examine the relationship between unexpected dividend changes and cumulative abnormal return according to Malaysian economic conditions using panel data approach. The remaining hypotheses have the same objectives but with cross-sectional approach.

Table 2: Summary of Hypotheses Testing According to Economic Conditions

Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)	Estimation Method
H1	H2	H3	H4	H5	Panel Data Approach
H6	H7	H8	H9	H10	Cross-Sectional Approach

Notes: H1 = Hypothesis 1, H2 = Hypothesis 2, H3 = Hypothesis 3, H4= Hypothesis 4, H5 = Hypothesis 5, H6 = Hypothesis 6, H7 = Hypothesis 7, H8 = Hypothesis 8, H9 = Hypothesis 9 and H10 = Hypothesis 10.

Analysis of Findings

As shown in table 3 are the results of panel unit root tests of Levin, Lin and Chu (LLC) and Im, Pesaran and Shin (IPS) test. The unexpected dividend changes and cumulative abnormal return are recorded significance at 1% level when lags 2 included and demean removed. The results indicate that the null hypothesis are rejected and conclude the panels used in this paper are stationary for overall period (1990-2010), before financial crisis (1990-1997) and after financial crisis (1999-2007). The test cannot be done in period during financial crisis (1997-1998) and during global crisis (2008-2010) due to insufficient data.

Table 3: Results of Panel Unit Root Tests on Unexpected Dividend Changes (UDC) and Log Cumulative Abnormal Return (LogCAR)

Statistic	LogCAR	UDC
<u>Overall Period (1990-2010)</u>		
LLC	-4.6912	-21.7145
p-value	(0.0001)***	(0.0001)***
IPS	-3.4382	-20.9282
p-value	(0.0003)***	(0.0001)***
<u>Before Financial Crisis (1990-1996)</u>		
LLC	-13.3877	-52.7699
p-value	(0.0001)***	(0.0001)***
IPS	-2.5025	-18.7052
p-value	(0.0062)***	(0.0001)***
<u>During Financial Crisis (1997-1998)</u>		
LLC	N/A	N/A
p-value		
IPS	N/A	N/A
p-value		
<u>After Financial Crisis (1999-2007)</u>		
LLC	-4.423	-8.755
p-value	(0.0001)***	(0.0001)***
IPS	0.589	-9.345
p-value	(0.7221)	(0.0001)***
<u>During Global Crisis (2008-2010)</u>		
LLC	N/A	N/A
p-value		
IPS	N/A	N/A
p-value		

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

N/A denotes the test cannot be performed.

Table 4: Results of Regression Analysis between Unexpected Dividend Changes (UDC) and Log Cumulative Abnormal Return (LogCAR) based on Panel Data Approach. Dependent Variable: LogCAR

Statistic	Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
Breusch Pagan LM Test					
p-value	4203.59 (0.0001)***	405.43 (0.0001)***	15.59 (0.0001)***	1113.68 (0.0001)***	108.67 (0.0001)***

Hausman Specification Test	0.01 (0.9282)	1.92 (0.1662)	0.22 (0.6357)	0.31 (0.5755)	0.00 (0.9443)
UDC	0.1196	0.0901	0.916	0.1482	0.0355
β	3.79	1.36	3.67	4.76	1.14
Z-stat	(0.0001)***	(0.172)	(0.0001)***	(0.0001)***	(0.256)
p-value					
Constant	1.9682	1.865	2.0238	1.9183	2.3447
β	15.62	15.44	15.85	13.49	15.98
Z-stat	(0.0001)***	(0.0001)***	(0.0001)***	15.980	(0.0001)***
p-value of α	14.23	1.86	12.31	21.92	1.28
LR Chi Square	(0.0002)***	(0.173)	(0.0005)***	(0.0001)***	(0.258)
p-value of LR Chi Square					

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

As shown in table 4, the unexpected dividend changes included all dividend changes without restriction of more than 10%. This is due to dividend no-change has dominated the total number of observations of dividend changes for every economic condition. This study therefore aimed to investigate the reactions of stock price to dividend no-change announcements. The results of panel regression revealed that there is a significance positive correlation between unexpected dividend changes and cumulative abnormal return with $p = 0.01$ level for overall period, during and after financial crisis. A significance positive correlation indicates that unexpected increase (decrease) in dividend will increase (decrease) the cumulative abnormal return. The outcomes also indicate that the dividend no-change has significant positive effect on the cumulative abnormal return due to the market reacted positively on stable dividend policy. Overall results in table 4 constitute support on the dividend signaling theory.

Table 5: Results of Regression Analysis between Standardized Unexpected Dividend Changes (SUDC) and Log Cumulative Abnormal Return (LogCAR) based on Panel Data Approach. Dependent Variable: LogCAR

Statistic	Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
Breusch Pagan LM Test	1445.13 (0.0001)***	170.09 (0.0001)***	4.73 (0.0297)**	313.21 (0.0001)***	37.08 (0.0001)***
p-value					
Hausman Specification Test	0.05 (0.8158)	0.1 (0.7509)	1.69 (0.1935)	0.09 (0.7676)	0.00 (0.9603)
p-value					
SUDC	0.1122	0.1111	1.0688	0.1207	0.0314
β					
Z-stat					

p-value	3.30 (0.001) ^{***}	1.55 (0.121)	3.98 (0.0001) ^{***}	3.35 (0.001) ^{***}	1.11 (0.269)
Constant					
β					
Z-stat	1.9719	1.8336	2.1163	1.9286	2.3834
p-value of α	15.80	13.43	13.68	13.01	13.28
LR Chi Square	(0.0001) ^{***}	(0.0001) ^{***}	(0.0001) ^{***}	(0.0001) ^{***}	(0.0001) ^{***}
p-value of					
LR Chi Square	10.73 (0.001) ^{***}	2.38 (0.1231)	14.1 (0.0002) ^{***}	10.86 (0.001) ^{***}	1.21 (0.2723)

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Following the studies of Norhayati et al. (2006), Nur Adiana, et al. (2004) and Karim (2010), the standardized unexpected dividend changes (SUDC) included only dividend changes of more than 10%. This mean only subgroup of dividend increases and dividend decreases are included in the sample. Surprisingly, both results in table 4 and 5 recorded similar outcomes of significance positive correlation between unexpected dividend changes and cumulative abnormal return of p = 0.01 level for overall period, during and after financial crisis. A significance positive correlation indicates that unexpected increase (decrease) in dividend will increase (decrease) the cumulative abnormal return. Overall results in table 5 constitute support on the dividend signalling theory.

Table 6: Results of Regression Analysis between Dividend Increases (DI) and Log Cumulative Abnormal Return (LogCAR) based on Panel Data Approach. Dependent Variable: LogCAR

Statistic	Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
Breusch Pagan LM Test					
p-value	569.79 (0.0001) ^{***}	97.92 (0.0001) ^{***}	12.56 (0.0004) ^{***}	88.56 (0.0001) ^{***}	11.25 (0.0008) ^{***}
Hausman Specification Test					
p-value	0.02 (0.8814)	0.02 (0.8811)	-0.01 N/A	0.02 (0.8764)	0.89 (0.3456)
DI					
β	0.0507	-0.1779		0.0839	0.0164
Z-stat	1.07	-1.51		1.61	0.22
p-value	(0.285)	(0.132)		(0.108)	(0.826)
Constant					
β	2.0286	2.0532		1.9700	2.3099
Z-stat	15.51	13.73		12.3	11.83
p-value of α	(0.0001) ^{***}	(0.0001) ^{***}		(0.0001) ^{***}	(0.0001) ^{***}
LR Chi Square	1.14	2.24		2.55	0.05
p-value of LR Chi	(0.2861)	(0.1343)		(0.1101)	(0.8249)

Square					
<u>DI</u>					
β					
t-stat				-0.0714	
p-value				-0.06	
<u>Constant</u>				(0.95)	
β					
t-stat				2.5498	
p-value of α				4.68	
F-Statistic				(0.0001)***	
P-value of F-Statistic				0.00	
R-Squared				(0.9501)	
				0.0003	

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

N/A denotes the data set cannot be pooled. The result is taken based on OLS.

Further investigation is made by divided unexpected dividend changes into subgroup of dividend increases and dividend decreases. Panel regression analysis revealed that dividend increases and dividend decreases have insignificant effect on the cumulative abnormal return for the overall period. For period before and during financial crisis, dividend decreases and cumulative abnormal return are reported to have significant positive relationship indicates that a decrease in dividend will decrease the cumulative abnormal return. The result of regression analysis on dividend increases and dividend decreases with cumulative abnormal return can be seen in table 6 and 7.

Table 7: Results of Regression Analysis between Dividend Decreases (DD) and Log Cumulative Abnormal Return (LogCAR) based on Panel Data Approach. Dependent Variable: LogCAR

Statistic	Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
Breusch Pagan LM Test					
p-value	168.15 (0.0001)***	3.97 (0.0462)**	2.07 (0.1502)	57.14 (0.0001)***	6.63 (0.0100)***
Hausman Specification Test					
p-value	16.45 (0.0001)***	0.15 (0.7030)	N/A	41.73 (0.0001)***	0.63 (0.4273)
<u>DD</u>					
β		1.6516			-0.2524
Z-stat		2.87			-0.28
p-value		(0.004)***			(0.779)
<u>Constant</u>					
β		2.3571			2.3265
Z-stat		8.68			6.12
p-value of α		(0.0001)***			(0.0001)***
LR Chi					

Square p-value of LR Chi Square		7.54 (0.0060)***			0.08 (0.7793)
DD					
β	-0.0968		1.7929	-0.4386	
t-stat	-0.36		2.60	-1.85	
p-value	(0.719)		(0.016)**	(0.072)*	
Constant					
β	1.882		2.3319	1.684	
t-stat	17.15		8.21	17.2	
p-value of α	(0.0001)***		(0.0001)***	(0.0001)***	
F-Statistic	0.13		6.76	3.43	
p-value of F-Statistic	(0.7189)		(0.0164)**	(0.0718)*	
R-Squared	0.0390		0.2350	0.0828	

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

N/A denotes the data set cannot be pooled. The result is taken based on OLS.

The results of hypothesis testing as shown in table 8 recorded that null hypothesis (H_0) of

hypothesis 1, 2 and 4 are rejected indicates that the dividend signaling theory is relevance for overall period as well as in period during and after financial crisis.

Table 8: Results of Hypothesis Testing between Unexpected Dividend Changes (UDC) and Log Cumulative Abnormal Return (LogCAR) based on Panel Data Approach. Dependent Variable: LogCAR

Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
H1:	H2:	H3:	H4:	H5:
H_0	H_1	H_0	H_0	H_1
Rejected	Rejected	Rejected	Rejected	Rejected

Notes: H1 = Hypothesis 1, H2 = Hypothesis 2, H3 = Hypothesis 3, H4 = Hypothesis 4, and H5 = Hypothesis 5.

The results shown significance at 1% level.

As shown in table 9 are the results of regression analysis using cross-sectional approach. The significance positive correlation between unexpected dividend changes and cumulative abnormal return is recorded of $p=0.1$ level in period before and during financial crisis.

Table 9: Results of Regression Analysis between Unexpected Dividend Changes (UDC) and Log Cumulative Abnormal Return (LogCAR) based on Cross-Sectional Approach. Dependent Variable: LogCAR

Statistic	Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
UDC					
β	0.6655	1.2146	1.1545	-0.3997	0.0747
t-stat	0.64	1.87	1.81	-0.68	0.35
p-value	(0.529)	(0.069)*	(0.078)*	(0.5)	(0.732)
Constant					
β	2.0403	1.8298	2.1395	2.0511	2.358
t-stat	11.19	12.75	16.4	12.63	14.15
p-value of α	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***	(0.0001)***
F-Statistic	0.4	3.51	3.27	0.46	0.12
p-value of F-Statistic	(0.5286)	(0.0686)*	(0.0785)*	(0.4995)	(0.7316)
R-Squared	0.0069	0.0533	0.0821	0.0062	0.0009

Notes: Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Based on results of hypothesis testing of cross-sectional approach as recorded in table 10, the null hypothesis (H_0) of hypothesis 7 and 8 are rejected indicates that the dividend signalling theory is relevance only in period before and during financial crisis. However, for overall period, the regression results using cross-sectional approach constitute no support for the dividend signalling theory.

Table 10: Results of Hypothesis Testing between Unexpected Dividend Changes (UDC) and Log Cumulative Abnormal Return (LogCAR) based on Cross-Sectional Approach. Dependent Variable: LogCAR

Overall Period (1990-2010)	Before Financial Crisis (1990-1996)	During Financial Crisis (1997-1998)	After Financial Crisis (1999-2007)	During Global Crisis (2008-2010)
H6:	H7:	H8:	H9:	H10:
H_1	H_0	H_0	H_1	H_1
Rejected	Rejected	Rejected	Rejected	Rejected

Notes: H6 = Hypothesis 6, H7 = Hypothesis 7, H8 = Hypothesis 8, H9 = Hypothesis 9, and H10 = Hypothesis 10. The results shown significance at 10% level.

Conclusion

One issue that emerges from these findings is panel data and cross-sectional analysis recorded inconsistent finding on the relevancy of dividend signalling theory for overall period. A possible explanation for this is due to the approach is different itself. Panel data approach combines both time series and cross-sectional dataset which resulted to all information is utilized. On the other hand, the cross-sectional approach used only average data based on number of samples at a specific point in time. Based on cross-sectional approach, this study believed that the insignificant positive relationship between unexpected dividend changes and cumulative abnormal return for overall period is due to loss of information. Interestingly, both panel data and cross-sectional approach reported similar findings of dividend signalling theory is relevance in period during financial crisis. A possible explanation for this is investors become sensitive with changes in dividend policy by being fundamental in valuing the stock price only in a period of crisis. This is consistent with Manzor and Lim (1992) as outlined by Imbarine and Annuar (2007) that the fundamental practice is only relevant during bearish market.

Research Limitations and Recommendations

Several limitations of this paper need to be acknowledged. First, the sample size used is relatively small of 41 companies only. Though the sample fitted the required criteria but some tests are not applicable due to insufficient data. For example; panel unit root and diagnostic tests are not applicable for period during financial crisis and during global crisis due to insufficient data. Next, this paper used a census study caused the sample cannot be confidently generalized to the population. Even so, it is the appropriate technique to avoid missing data as only a few listed companies must have had announced dividends annually for 21-year from 1990-2010. The reason is to observe the reactions of sample data in dividend announcements following changes in Malaysian economic conditions. Lastly, the event of interest of this study is only on the event window return (0 + 2 days) where on the announcement date and two days after the announcement date (0 to +2 days) following Norhayati, et al. (2006). The investigation of this study does not include the pre-event and post-event announcement returns. It is recommended that further research should be undertaken in the following areas. First, the sample size should be expanded. The focus should be given to other companies aside from sample data that have had consistently announced dividends for 21-year. Next, two or more proxy variables needed to be included in future study to identify elements or factors that might influence the correlation of either predictor or response variable. Other estimation methods should be explored aside from cross-sectional and robust panel data analysis which has been covered in this study. The investigation on the pre-event and post-event announcement returns should be included for upcoming study following the focus of this study is only on the event window return. Lastly, this study recommended sample design from probability sampling aside from a census study so that the sample can be confidently generalized to the population.

References

- A.A.Lonie and G. Abeyratna (1996). *The Stock Market Reaction to Dividend Announcements. A UK Study of Complex Market Signals*. Journal of Economic Studies, 23(1), 32-52.
- Abeyratna Gunasekarage and David M. Power (2006). *Anomalous Evidence in Dividend Announcement Effect*. Journal of Managerial Finance, 32(3), 209-226.
- Ariff, M. and Johnson, L. W. (1990). *Securities Markets and Stock Pricing: Evidence from a Developing Capital Market in Asia*. Singapore: Longman Singapore Publishers.
- Dimson, E. (1979). *Risk Measurement When Shares are Subject To Infrequent Trading*. Journal of Financial Economics, 197-226.
- Fowler, D. J. and Rorke, C. H. (1983). *The Risk Measurement When Shares are subjected to Infrequent Trading*. Journal of Financial Economics, 12(2), 279-289.
- Haitham Nobanee, Ayman E. Haddad, wasim K. Alshattarat, and Husni K. Alshattarat (2009). *An Analysis of the Informational Content of Dividend Change Payments at Amman Stock Exchange*. Journal of Middle Eastern Finance and Economics, 5, 76-91.
- Imbarine Bujang (2005). *The Relevance of Gordon's Model and Earnings Multiplier Approaches in Emerging Stock Market: Test with Appropriate Refinements*. Unpublished Master Thesis, Universiti Putera Malaysia.

Imbarine Bujang and Annuar Md Nassir (2007). *The Relevance of Gordon's Model and Earnings Multiplier Approaches in Emerging Stock Market: Test with Appropriate Refinements*. International Research Journal of Finance and Economics, 7, 140-152

Stephen F. Borde, Anthony K. Byrd and Stanley M. Atkinson (1999). *Stock Price Reaction to Dividend Increases in the Hotel and Restaurant Sector*. Journal of Hospitality and Tourism Research, 40-52.

Merton H. Miller and Kevin Rock (1985). *Dividend Policy under Asymmetric Information*. Journal of Finance, 4(4), 1031 – 1051.

Merton H. Miller and Franco (1961), *Dividend Policy, Growth and the Valuation of Shares*. Journal of Business, 34(4), 411 – 433.

Norhayati Mohamed (2005), *Information Signaling and Dividend Policies in Malaysia*. Unpublished PHD Thesis, Universiti Putera Malaysia.

Norhayati Mohamed, Mohamad Ali Abdul Hamid, Annuar Md Nasir and Shamsheer Mohamed (2006). *Information Content of Dividend Changes: Cash Flow Signaling, Dividend Clientele and Free Cash Flow Hypothesis*. Malaysian Accounting Review, 5(1), 65-84.

Nur Adiana Hiau Abdullah, Rosemaliza Abdul Rashid, and Yusnidah Ibrahim (2004). *Information Content of Dividend Changes in an Emerging Market*. International Journal of Banking and Finance, 2(1), 1-18.

Patricia A. Ryan, Scott Besley and Hei Wai Lee (2000). *An Empirical Analysis of Reactions to Dividend Policy Changes for NASDAQ Firms*. Journal of Financial and Strategic Decisions, 13(1).

Sudipto Bhattacharya (1979). *Imperfect Information, Dividend Policy, and "The Bird in the Hand" Fallacy*. Journal of Economics, 10(1), 259-270.

Karim, Mahmood (2010). *Announcement Effects of Dividend on Stock Price of Enlisted Companies in Developed Countries: A Comparative Study Between London Stock Exchange and New York Stock Exchange*. Retrieved from <http://ssn.com/Abstract=1624363/http://dx.doi.org/10.2139/ssrn.1624363>.