

Board structure, free cash flow and dividend per share in Malaysia listed firms: An empirical study of interaction effect

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Abstract

One of a firm's major financial decisions that lies in the hands of the board of directors is dividend policy which has long been linked to the firm's profitability and performance. From the shareholders' viewpoint, profitability does not necessarily add value to their wealth unless and until it translates into dividend payment and price appreciation. Therefore, how corporate governance via board structure influences the use of free cash flow and how this interaction affects dividend payment are crucial. This study examined the interaction effects of firm's characteristics such as board structure and free cash flow on divided per share as a proxy of firm's performance. The fixed effect regression with a sample of 361 non-financial Malaysian listed firms over the period of 2002 to 2007 were employed in the analysis. The interaction between board structure, independent directors, board size and free cash flow revealed that duality weakens the positive effect of free cash flow on dividend, while independent directors strengthen the positive effect of free cash flow on dividend payment. Overall, the results of this study may be surmised to suggest that large number of independent directors in the board of directors benefits the firms in the use of free cash flow, leading to an increase in distributable income to shareholders; but the existence of duality role does not benefit firms in the use of free cash flow, leading to a decrease in distributable income to shareholders. However, board size does not have an effect on the use of free cash flow and performance.

Keywords: board structure, dividend policy, free cash flow, Malaysian listed firms, performance, profitability

Introduction

One of firm's major financial decisions that lies in the hands of the board of directors is dividend policy which has long been linked to firm's profitability and performance. From the shareholders' viewpoint, profitability does not necessarily add value to their wealth unless and until it translates into dividend payment and price appreciation. Free cash flow available to entrenched managers is likely to lead to overinvestment or underinvestment. This study differs from (Holder et al., 1998; Hossain et al., 2001; Knyazeva, 2006 and Adjaoud & Ben Amar, 2010) and in that it extends to examine the interaction effect of different board structure and available free cash flow and how this interaction effect affects firm performance in terms of dividend payment. Holder et al. (1998) examined how ownership structure in terms of insider affects dividend payment with the presence of free cash flow. Hossain et al. 2001, for example examined how external factor like a passage of legislation regulation interacts with outside directors to influence firm performance. This study also extends Adjaoud and Ben Amar's (2010) corporate governance structure in terms of board composition by including board of directors' size. Suraiya and Raflis (2015) emphasize that strong business entity is supported by strong organizational structure and effective method of financial distribution.

Therefore, how corporate governance via board structure influences the use of free cash flow and how does this interaction affects dividend payment are crucial to be examined. This study then contributes to

the existing literature by examining the interaction effects of internal governance structure in terms of board structure and decision made by the board of directors through free cash flow on dividend payment by incorporating other crucial financial decisions including investment and operating cash flow over sales as measure of profitability. In brief, this study takes the relatively less attended perspective of shareholders' returns by focusing on dividend streams as a measure of firm performance, instead of stock price appreciation. This study proposes that the increase in corporate performance in the terms of dividend per share is the result of firm's adoption of best governance and capital structure practices. Using a sample of 361 non-financial Malaysian firms which were listed for 6 consecutive years on Bursa Malaysia from 2002 until 2007, this study constructs a balanced panel data consisting of 2166 yearly observations.

The paper proceeds as follows. In Section 2, related literature is reviewed and hypotheses are developed; Sections 3 presents the variables, sample and methodology; and Section 4 presents the empirical results. The paper concludes in Section 5 which also offers the implications and suggestions for future research.

Literature review and hypotheses development

a) Agency theory, free cash flow and dividend policy

In the presence of high agency costs of free cash flow, the corporate board of directors (BOD) can play a greater role in influencing corporate performance through dividends. The BOD is entrusted with the power and authority to act on behalf of the shareholders to oversee and control the upper management's actions and decisions (Fama & Jensen, 1983). According to agency theory, firms can minimize agency costs by establishing appropriate monitoring systems especially through their BOD which have the "top hands" to effectively supervise the managers (Fama & Jensen, 1983; Bryd & Hickman, 1992; Sulong & Mat Nor, 2007). If the BOD decides to distribute cash in the form of dividends, it reduces the likelihood of managers to over invest, that is investing in negative net present value (NPV) project. Holder et al. (1998) and John and Knyazeva, (2006) found a positive association between free cash flow and dividend payouts. Wei and Zhang (2008) concluded that the positive relationship between cash flow and investment from agency cost's perspective is basically a symptom of overinvestment; while from asymmetric information's perspective it is basically a symptom of underinvestment. They further described that overinvestment is due to managers' tendency to overspend their free cash flow while underinvestment is due to firm's tendency to forgo positive NPV projects because the cost of external capital is too expensive as compared to cost of internal capital. Wang (2010) examined how free cash flow relates to agency cost and how free cash flow and agency cost influences firm performance. He found that free cash flow could lead to agency cost but at the same time could lead to better performance.

As described in literature, there are various recommendations and rules for governance reforms (Fama & Jensen, 1983a, 1983b; The Cadbury Committee 1992). Others have shown that the effectiveness of BOD can be the result of having the right structure. Hossain, Prevost and Rao (2001) found direct effects of board composition and structure on firm performance. They also found an interaction effect between outside directors and changes in external environment like passage of law on firm performance in New Zealand. In relation to governance structure and dividend payment, Wood and Tashakori (1989) discovered that board composition affects dividend policy. Adjaoud and Ben-Amar (2010) also found that board composition is positively related to payout ratio, and they concluded that firms with stronger corporate governance have higher dividend payouts.

b) Board governance

This paper focuses on three aspects of board governance in light of board structure namely, board duality, BOD independence and BOD size. Empirical studies have found that increased outsiders on the board are likely to promote decisions that are in the interests of external shareholders (Brickley et al., 1997; Tosi et al., 1997; Weisbach, 1988). Evidently, Rosenstein and Wyatt (1990) found that stock market reacts favorably to the appointment of additional outside directors. Kyereboah-Coleman and Biekpe (2006/2007), however, argued that board independence fails to create the expected impact on firm performance due to lack of training and unfamiliarity with the procedures. Specifically, we hypothesize that the greater the number of independent directors in the BOD, the better the performance of the company as there are more outside, independent directors to monitor effectively the actions of the executive directors.

Another facet of board governance that has been associated to the BOD effectiveness is role duality which occurs when the same person undertakes the roles of both the board chairman and the company's chief executive officer (CEO). There are empirical evidence in support of the views of both the proponents (Finkelstein & D'Aveni, 1994); (Boyd 1995); and opponents (Dahya et al. 1996; Kyereboah-Coleman & Biekpe 2006/2007); (Bozec & Dia, 2007) of role duality. Yet, there are also those (Baliga et al. 1996; Brickley et al. 1997; Dalton et al. 1998; Vafaes & Theodorou 1998) who found that role duality has no particular effect on performance. Proponents of role duality argue that having the same person for the top posts indicate greater understanding and knowledge of as well as commitment to the firm's operating environment. The opponents on the other hands argue that giving too much power to one person is undesirable as it can create problem in monitoring and controlling the decision making process. In the context of Malaysian companies, we hypothesize that role duality has a negative effect on firm performance as this is more consistent with the recommendations of the Malaysian Code of Corporate Governance 2001 (MCCG 2001); i.e. to separate the roles of the Chairman and CEO.

The last facet of board governance examined in this study is the board size, which refers to the number of directors serving in a firm's BOD. Kiel and Nicholson (2003) and Haniffa and Hudaib (2006) found positive effect of small board size while Canyon and Peck (1998) found negative effect of certain number of board size. In the context of this study, we hypothesize that small board size is positively related to firm performance.

Methodology

To examine the effects of board structure and free cash flow on dividend per share this study used the yearly data of companies that were consistently listed on the Main Board of Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange) for the period from 2002 to 2007¹. This period is observed to exclude the external shock due to subprime crisis that may start to affect the Malaysian firms and financial market in the following years. The structure of the panel, by number of annual observation over the 6 years period per company for a total of 361 sample firms, provides a total of 2166 yearly firm observations on a balanced panel data basis. Effect of market timing which promotes higher equity and thus, lower debt during good market condition (Elliot, Koëter-Kant and Warr 2008) seems to be a negligible issue in this study as it covers period of tranquility after the market is relatively free from the 1997 Asian financial crisis.

The three measures of board governance which emphasize on the importance of certain characteristics of the BOD structure in influencing effectiveness of firms' decision making, are measured as follows;

Data in 2001 were used to estimate changes in total assets in the calculations of investment variable in 2002.

- 1. Duality roles in BOD (*BDUA*) is a dichotomous variable which takes a value of 1 if the CEO is also the Chairman of the BOD and zero otherwise,
- 2. Level of independence in the BOD (*BIND*) is the total number of independent (outside) non-executive directors, and
- 3. Size of BOD (BSIZ) is the natural log of the total number of directors in the BOD.

To examine the role of BOD in determining performance, this study focuses on the component of firm performance which is directly under the control of the directors, i.e., dividend payment. While most studies concentrated on market value or stock price changes to gauge the performance of the firms, such measurement has weaknesses particularly because stock price does not always reflect the fundamental values of the companies. More often than not, it is influenced by macroeconomic factors than firm-specific factors. In short, this study proposed that it is more appropriate to judge BOD based on its effectiveness in creating wealth for the firm's shareholders through the effect of decision that it has a direct control on. Dividend payment is examined on the per share basis:

Dividend policy:
$$DPS_{i,t} = \frac{Dividend_{i,t}}{Shares\ Outstanding_{i,t}}$$
 (1)

Dividend per share (DPS) is also more relevant as a measure of firm performance in this study than market performance due to its effect or relationship with the firm's free cash flow. Following previous studies (Vafeas & Theodorou, 1998; Wei & Zhang, 2008), this study used debt ratio to measure leverage;

Leverage:
$$LEV_{i,t} = \frac{BV(Total\ Debt)_{i,t}}{BV(Total\ Assets)_{i,t}}$$
 (2)

As indicated by the preliminary results of this study, there is a tendency for management decision to incline towards maintaining a constant dividend payment per share (DPS) instead of purely distributing dividends based on the availability of positive earnings for common shareholders (net income available to common shareholders or NIACS). Maintaining DPS demonstrates the firm's ability to distribute some profits to their shareholders. However, this ability might be influenced by capital structure because increases in debt increase interest expenses; which in turn, will reduce the net income distributable to the shareholders. Since common shareholders are at the bottom of the priority claimants of firms' income and assets, increases in interest expenses subsequently reduce the DPS unless the debt is raised for recapitalization strategy to retire common stocks. Furthermore, if the signaling hypothesis that debt issuance reflects a firm's future prospect is supported, increase in debt for the financing of firms' positive net present value project could actually increases profitability; and consequently increases or at least maintains DPS.

The impacts of two major financial variables which in the literature are widely accepted as having large impact on performance, specifically in terms of dividend payment, were considered. The first is investment which has a direct negative impact on the availability of cash flows for dividend payment. Since external financing is both costly and takes a longer time to raise, internal capital (retained earnings) is readily available fund in which BOD and management are more likely to favor in financing firms' projects. The greater the fraction of retained earnings allocated for investment, the less there is for distribution to common shareholders. Thus, this study hypothesizes that investment is negatively associated with dividend payment. Investment for the *i*th company at year *t* is defined as follows;

Investment:
$$INV_{i,t} = \ln\left(\frac{Total\ Assets_{i,t}}{Total\ Assets_{i,t-1}}\right)$$
 (3)

The second financial variable is free cash flow, basically because dividend payment is expected to be the result of how firms use free cash flow on available project to generate profit.

Free-Cash-Flows:
$$FCF_{i,t} = \frac{(EBIT + Dep + Int - Tax - Div)_{i,t}}{BV(Total \ Asset)_{i,t}}$$
 (4)

The agency theory, specifically free cash flow hypothesis, has been used to describe management's decision to return cash to shareholders. It is argued that when given a large amount of cash, managers could over invest in negative net present values projects to the detriment of their shareholders (Easterbrook, 1984); Jensen, 1986). Based on the argument that BOD is responsible in making decision about dividend payment and uses of free cash flow, this study attempted to examine the interaction effect of BOD structure and free cash flow on dividend policy. This study used fixed effect panel regression model by taking the lagged values of each variable in the following representation:

$$DPS_{i,t} = \alpha_{i,t} + \beta_1 (INV)_{i,t-1} + ... + \beta_6 (BSIZ)_{i,t-1} + \beta_7 (FCFxBDUA)_{i,t-1} + \beta_8 (FCFxBIND)_{i,t-1} + \beta_9 (FCFxBSIZE)_{i,t-1}$$

where α is the regression intercepts, β_1 to β_9 are the coefficient estimates of respective independent variables which definitions are as represented in Eq. (1) to Eq.(4) and in corporate governance variable descriptions where FCF x B... are the interactions between debt ratio and each dimension of BOD structure, while the remaining variables are defined as in Eq.(1) to Eq.(4). The results of the Hausman test which suggests the use of fixed as opposed to random effect is more appropriate for the data of this study are reported in Table 1.

Table 1. Results of the Hausman Test

Test Summary	Chi-sq Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.127509	9	0.0121

Results and discussion

The correlation matrix for the variables is shown in Table 2. The financial profiles of the sample firms as far as variables used in this study are concerned are reported in Table 3. The mean dividend per share (DPS) is RM0.0612 with the highest value can go up to RM2.572 per share. Among the top dividend payers are Edaran Otomobil Nasional, Melewar Industrial Group, and Nestle (Malaysia) Ltd. but none is as consistent in paying a handsome dividend as British American Tobacco (M) Ltd. Still, these amounts might be somewhat trivial compared to the average annual return of 15.36 percent from the price appreciation in the common stocks of the sample companies. With regard to the BOD structure, only about 28 percent of the companies are relying on the same person to assume the responsibilities of the CEO and Chairperson of the company. This is in line with the MCCG2001 recommendation of separating the two roles. The average BOD consists 8 directors, 3 of whom are independent outside directors, also suggesting compliance to the MCCG2001 recommendation of 1/3 independent BOD composition.

Variables 1 2 3 4 5 6 7 **INV** 1.00 TD/TA -0.05 1.00 **DPS** -0.03 -0.08 1.00 **FCF** 0.25 -0.190.05 **BDUA** 0.02 0.07 0.06 -0.031.00 **BIND** 0.03 0.03 -0.070.07 -0.101.00

Table 2. Correlations between variables (2002 to 2007)

Note: Column headings correspond to row headings. Variables are defined on page 4, 5 and 6.

-0.02

0.04

BSIZ

Table 3. Financial characteristics of the sample firms, 2002 – 2007

0.06

0.11

-0.15

0.48

1.00

Variables	Mean	Std. Deviation	Minimum	Maximum
Role Duality (BDUA)	0.2770	0.4476	0.0000	1.0000
Independence (BIND)	2.9640	0.9939	0.0000	8.0000
Board Size (BSIZ)	7.7993	2.2304	2.0117	20.000
Dividend per Share (DPS)	0.0612	0.1680	0.0000	2.5720
Investment (INV)	0.0500	0.3127	-3.9267	3.7188
Leverage (TD/TA)	0.2302	0.2096	0.0000	2.9163
Free Cash Flow (FCF)	0.0308	0.1346	1.64	4.21

Notes: In the regression equation, board size is transformed into the natural log and the respective values are mean = 2.0101, std. deviation = 0.3079, minimum = 0.6990 and maximum = 2.9957.

The level of leverage indicates that Malaysian firms are of relatively lesser leveraged than those of other countries. For instance, Table 2 reports mean debt ratio of 23 percent. This could be attributed to the bond market in this market which is considered rather small and accessible only to large and stable companies; as such firms still have to rely on the banking systems for borrowings. The free cash flows (over total assets) are as low as 1.64 percent, up to 4.21 percent (highest value reported in 2003). Evidently, investment only reported a 5 percent growth rate on yearly basis.

The results of the fixed effect regressions of board governance on dividend per share, while controlling for the other variables are reported in Table 3. Specifically, the interaction between duality and free cash flow is significantly negative; therefore, weaken the insignificant positive effect of free cash flow on dividend per share. Meanwhile, the interaction between independent directors and free cash flow is significantly positive; therefore, strengthen the insignificant positive effect of free cash flow on dividend per share. These findings indicate that DPS increases in cases where the BOD is characterized with large number of independent directors in the board of directors to decide on free cash flow but decreases in cases where chief executive officer cum chairman to decide on free cash flow. However, the interaction between board size and free cash flow is not significant. These findings are consistent with Schellenger, Wood and Tashakori (1989) and Adjaoud and Ben-Amar (2010) who discovered that board composition affects dividend policy.

Table 4. Results of Panel Regressions

	Interaction Model		
Independent Variables	Coefficient	t-stats	
Intercept	-0.000355	-0.435344	
Role Duality (BDUA)	-0.003718	-2.642219***	
Board Size (BSIZ)	-0.018074	-8.445039***	
Independence (BIND)	0.009912	6.508111***	
Leverage (TD/TA)	-0.022458	-7.397752***	
Investment (INV)	0.000159	0.110333	
Free cash flow(FCF)	0.000319	0.158124	
(FCF*BDUA) ₋₁	-0.007891	-3.634941***	
(FCF*BSIZ) ₋₁	-0.002907	-1.488114	
(FCF*BIND) ₋₁	0.006324	3.226512***	
Adjusted R-Squared	0.957521		
F-Statistics	133.2516		
Durbin-Watson	1.569179		

Notes: *** indicates significance at 1% level, ** indicates significance at 5% level, and * indicates significance at 10% level.

Capital structure (leverage) is also highly significant in influencing dividend payment in manner consistent with the prediction. When firms must commit a larger fraction of their earnings to service higher debts, lesser income would be available for dividend payment to the common shareholders. Not to ignore the fact that dividends to common stockholders can only be paid unless there are residual from earnings after interest and preferred dividend payment are settled. Capital structure is indeed the only *financial* variable that plays a significant role in determining dividend. Both investment and free cash flow do not have significant effects on dividend per share.

Meanwhile, adding the interactions between board structure and free cash flow into the estimation model reveal two interesting findings. First, there are two interaction effects between BOD role duality and free cash flow, and between BOD independence and free cash flow in influencing dividend payment. To begin with, FCFxBDUA and FCFxBIND are highly significant; suggesting that in companies that use free cash flow, duality can decrease the dividend payment while independent directors can increase dividend payment. Duality and free cash flow co-exist probably because they maximize the conflict of interest in CEO/Chairperson's decision on free cash flow available that results in negative project return. Additionally, so does the effect of interaction between BOD independent directors' composition and free cash flow which enhances the positive effect of dividend payment. However, the BOD size is no longer necessarily relevant in influencing dividend payment in the presence of free cash flow.

Conclusion

On the argument that board of directors is responsible for the free cash flow available and dividend per share, the opposite effects but significant as shown by the interaction between board structure (duality and number of independent directors); and free cash flow confirms that board structure has influence on the decision of free cash flow made by the firm. These findings imply that having the same person as Chairman and CEO or duality increases the agency cost with the presence of free cash flow, although duality allows a person to have greater understanding and knowledge of firm (Simpson and Gleason (1999). Meanwhile, having a large number of independent directors do benefit the firms in deciding the use of free cash flow that results to higher dividend payment. These findings support our hypotheses that

duality has negative effect on performance while independent directors has positive effect on performance. Meanwhile, having larger number of independent directors do benefit the firms to decide on free cash flow that leads to higher dividend payment. This finding may not support Coles et al. (2001) that as they lack the knowledge about the firm, they rely on top executives for information to deliver their roles. This study therefore, contributes at highlighting internal factor role in terms of governance structure from agency cost's perspective of free cash flow and its effects on firm performance.

The limitation of study could be due to sample bias as firms with no complete detail of all the corporate variables of interest were not included in the analysis. The period between 2002 and 2007 used in this study does not include external shock due to financial crisis in 1997 and 2008, in which caution should be exercised in generalizing the results in different economic settings. Future research is recommended to examine the issue under the condition where the independent directors are the majority and the Chairman of the Board is a non executive director, as recommended in the revised MCCG in 2012.

Acknowledgement

The authors would like to extend their gratitude to the Ministry of Education (MOE) of Malaysia for providing financial support from the Fundamental Research Grant Scheme (FRGS).

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