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Full Length Research Paper

Investment opportunity set and dividend policy in Malaysia

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This paper investigates the relationship between Investment Opportunity Set (IOS) and dividend policy and if ownership structure moderates this relationship in an emerging economy context. The contracting theory based on Jensen's free cash flow (FCF) theory is empirically examined using a series of firm characteristics including size, return on assets, board size, board composition, duality and debt to assets. The results suggest that in the Malaysian context, there is a strong support on the negative significant association between growth opportunities and dividend payout in the context of non-government linked companies (non-GLCs). Hence the theory backs the fact that high growth firms make lesser dividend payments. Further, on the interaction between IOS and family controlled firms, the negative relationship between high growth firms and dividend policy is weaker for family controlled firms.

Key words: Dividend policy, investment opportunity set, government ownership, family ownership, contracting theory, free cash flow theory.

INTRODUCTION

Dividend policy has brought about an international perspective of theoretical issues on dividends (La Porta et al., 2000; Denis and Osoboc, 2008; Abor and Bokpin, 2010). The main difference can be attributed to institutional variables, ownership structure, legal system, lack of investor protection and shareholdings both by family businesses and state controlled firms. This paper contributes to the dividend debate albeit from the perspective of an emerging economy. Several theories are advanced such as tax clientele theory, signaling theory, contracting theory based on Jensen's free cash flow theory to solve the dividend puzzle.

There are numerous studies primarily from the developed countries that examine the relationship between growth opportunities (investment opportunity set, IOS) and dividend policy decisions (Smith and Watts, 1992; Gaver and Gaver, 1992; D'Souza, 1999; Gul and Kealey, 1999; Alonso et al., 2005; Amidu and Abor, 2006). However, the studies on developing countries have been limited to China, Korea and Ghana. Three prior studies namely (Smith and Watts, 1992; Gaver and Gaver, 1993; Gul, 1999) are of particular interest as they suggest on the contracting hypothesis and free cash flow relationship between (i) growth opportunities and dividend policy decisions. Further, the difficulty in comparing the findings from these earlier studies such as (Kallapur and Trombley, 1999; Perfect and Wiles, 1994; Chung and Charoenwong, 1991; Gul, 1999) relates to the vast array of IOS proxy variables used. In this study, the IOS

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Abbreviations: GLCs, Government linked companies; **FCF,** free cash flow theory; **IOS,** investment opportunities set; **MBA,** market to book asset ratio; **EP,** earnings per share ratio; **CAPX/PPE,** capital expenditure to value ratio; **DPP,** dividend payout ratio; **FLYC,** family control; **CEO,** chief executive officer; **LOGMKTC,** logarithm of market capitalisation; **ROA,** return on assets; **DTA,** total assets; **PE,** pooled effect; **FE,** fixed effect; **RE,** random effect; **OLS,** ordinary least square; **LSDV,** least-squares dummy variable; **DW,** Durban Watson; **CEO,** chief executive officer.

measurement used is market to book equity - MBE (Gul, 1999; Adam and Goyal, 2008).

Beginning with Jensen and Meckling (1976), Smith and Watts (1992), Gaver and Gaver (1993), Skinner (1993) and Gul (1999) many research studies in the accounting and finance literature use agency and contracting theory to explain variation in important corporate policy decisions. However, the gap here is that, none of the prior studies focus explicitly on the link between a firm's investment opportunities set (IOS) and dividend policy and more importantly, whether corporate governance variables such as ownership structure moderates the relationship between investment opportunity set and dividend policy.

Government linked companies (GLCs) have been established in many countries since independence for numerous reasons and at various times, often as an integral part of national development and economic development (Turner and Hulme, 1997). Malaysia and other developed countries too established many GLCs for one reason or another. Malaysia established many GLCs as part of the affirmative action policy initiated in 1971 to bring social balance (Thillainathan, 1999; Salleh and Osman-Rani, 1991). The study by Abdul-Aziz et al. (2007) has established four aspects on the formation of GLCs, that is, social responsibility, competition, efficiency and income generation. They are explored based on the fact that firstly, GLCs are created to fulfil certain social obligation (Puthucheary, 1979a), secondly the commercial obligations are meant to represent Bumiputera entrepreneurs (Thillainathan, 1975b), thirdly the efficient usage of the government fund and policy money (Affandi, 1979) and lastly for commercial reasons the entities should be profitable (Puthucheary, 1979).

In this study, Malaysia is examined as a case due to its high concentration of ownership and its unique government policies, legal system and capital structure that differs with other Asian counter parts in the region. The government ownership and family ownership is examined because of its high concentration of ownership. Studies by La Porta et al. (1999) and Tam and Tan (2007) observe that in most Asian countries, specifically developing countries, many family firms are closely owned or privately held with the principle shareholders typically playing an active role in management. Further, Tam and Tan (2007) posit that state firms are found to have the highest ownership concentration and these provides an opportunity to examine the dividend policy of government linked, non-government linked and family owned businesses.

LITERATURE REVIEW

Prior research suggests that high-growth firms are relatively riskier than low growth firms and risk is positively associated with earnings volatility. Miller and Modigliani (1961) stated that, 'growth stocks…may well be riskier than non growth stocks'. There are many theoretical arguments for growth opportunities however the main theories in the context of growth opportunities are such as the signalling theory, contracting theory and the free cash flow theory (FCF). In the signalling theory reasoning, high growth firms have higher debt and dividend polices in order to signal to the market that they have better earnings prospects and anticipate better growth prospects and in the context of the contracting theory reasoning, high growth firms have future prospective investment opportunities and associated dividend distributions and hence are less likely to pay dividends. Jensen (1986) suggest that low growth firms have more free cash flow and as such would try to maintain more debt in order to pay out more dividends. On the other hand, high growth firms have less free cash flow and therefore lesser level of debt in their capital structure. Jordon (1999) posits that there are two issues of primary importance in Asian corporate governance, that is, ownership structure of business and conflicts of interest and self-dealing. Commonly, the conflict of interest between outside shareholders and managers in a diffused ownership structure is found in the UK and the US. However in Asia, the agency problem centres on conflicts between the controlling owners and minority shareholders where ownership concentration is prevalent (Claessens and Fan, 2002). Another issue of concern relating to Asian corporate governance is the significant concentration of control rights with Thai and Indonesian companies having the concentration of 35.25 and 33.68% respectively followed by Malaysian and Hong Kong companies at 28.32 and 28.08% respectively. The least concentration of control rights is documented in Japan, Korea and Taiwan.

On the state of group ownership of corporations in East Asian economies, Cheung and Chan (2004) reports that Singapore has the highest level of state-controlled listed companies compared with other East Asian countries with a market value of 23.5%, followed by Malaysia with a 13.4% of value under state control. On the separation of ownership and control in state controlled firms, Claessens and Fan (2002) found that this separation in state controlled firms are common in Malaysia, Philippines and Singapore however they are more pronounced in the latter. It is also evident that the smaller the firm the more the separation of ownership. Japan is the only country with a measurable separation of ownership and control among large institutional companies whereas Malaysia is the only country with a measurable wedge between cash flow and voting rights in firms controlled by widely held corporations. However, Cheung and Chan (2004) argue that some corporate governance practices in the western corporate governance model may not be fully effective in the Asian setting of concentrated ownership structure.

Regarding to the impact of political influence on

financial reporting practices, government intervention in the financial reporting process varies across East Asian economies with the Hong Kong government adopting a lazier-faire approach, the Malaysian and Singapore governments taking a more interventionist approach and a more direct approach from the Thailand government in standard setting and financial reporting practices (Ball et al., 2003). However, one of the major factors that have shaped Malaysia's capital market is the close identification between racial and economic functions. Ethnicity has shaped how the country and businesses are run externally, through political means (Yatim et al., 2006). Further, Sawicki (2009) posit that there is a clear distinction between the three common law countries (Singapore, Hong Kong and Malaysia) on the basis of ownership concentration, legal and corruption indices. A strong positive relationship between governance and dividend emerges from post crisis, consistent with substantial improvements in governance empowering shareholders. In his study of ownership concentration of listed companies in 1998, Abdul (2002) found the means for the largest shareholder and the five largest shareholders to be about 30 and 60% respectively and stressed the fact that the companies in Bursa Saham is less diffused and dominated by companies with substantial shareholders, who are typically government owned or promoted institutions.

Although the literature on the relation between government ownership and corporate policy is as yet unexplored, there is relatively more evidence on the institutional ownership literature that provides relevant linkages (Brickley et al., 1988; Pound, 1988; Bushee, 1998). Furthermore, Abdul Wahab et al. (2007) found that although there is no evidence that politically connected firms perform better, political connections do have a significantly negative effect on corporate governance, which is mitigated by institutional ownership. Further, Guo and Ni (2008) document that firms with higher institutional ownership are more likely to be dividend payers, that is, the firms with higher institutional ownership are more likely to pay and continue paying dividends.

According to Jensen (2000), ownership structure is a very significant element in determining a firm's objectives, shareholders wealth and how managers of a firm can be disciplined. However, Amidu and Abor (2006) found no association between institutional shareholding and dividend payout ratio to show that the higher the percentage of institutional holding the lower the dividend payout ratio. In contrast, Guo and Ni (2008) argue that dividend payers are more associated with institutional investors than non payers whereby the firms with higher institutional ownership are more likely to pay and continue to pay dividends. In this study, there is likely to be a positive relationship between government linked company and dividend payout due to factors such as Malaysia's political economy and social responsibility with regards to the positive affirmative actions taken by the government. Furthermore, there is also some anecdotal evidence that suggest that government ownership have relatively less difficulty raising funds to finance investments and hence able to pay dividends.

Rozeff (1982) posits that dividends are model as a function of growth, beta and agency costs and underlying the model is the visibility that dividend payout creates. Most importantly, Kose and Knyazeva (2006) found that firms with weak governance pay higher dividends and the relationship is stronger for firms with high free cash flow. Also, Claessens and Fan (2002) support and show that risk of appropriation is the major principle-agent problem for firms in East Asia as opposed to empire building.

As regards to family ownership, in Malaysia, the 'primary founder as prime shareholder' still dominates the business practice (Miles, 2009). The cross ownership in Malaysia and Singapore is at 14.9 and 15.7% respectively. Chen et al. (2005) found positive relationship between family ownership and return on assets; return on equity and the market to book assets. Cheung and Chan (2004) report that approximately 58% of all Asian companies can be classified as being family owned (based on 20 % cut-off point). In addition to this, Hong Kong and Malaysia show the highest degree of family ownership via total market capitalisation controlled by family groups at 66.7 and 67.2% respectively.

Alpay et al. (2008) found that the family controlled firms appear to maximise sales and shareholder's value. The study using 218 Chinese controlled public listed companies in Malaysia show that the prescribed corporate governance code on the listing requirements to maintain a structure of separate chairman and chief executive officer (CEO) has no significant impact on the financial performance of the companies (Lai and Hock, 2007). On the study on corporate takeovers in Malaysia, Imm Song et al. (2007) found that there is an interaction effect between family ownership and premiums paid which has contributed positively to the post take over performance and hence suggest that family ownership mitigates agency problem in corporate takeovers. Imm Song et al. (2008) also posit that ownership by family has aligned the interests of the owners to that of the shareholders rather than resulting in the expropriation of minority shareholders. However, Miles (2009) argue that family run business in Asian markets such as Hong Kong and Malaysia, presents difficulty in evolving positive corporate governance practice as there is a strong resistance to transparency and accountability. The main reason being where the founder dominates the overall business practice and makes all major decisions. Furthermore, Hanasaki and Liu (2007) document that, the majority of the family controlled firms face severe internal financing constraints than non-family-controlled firms hence suggest that the mechanism in East Asian mechanism with regards to smooth reallocation of money among investment projects does not work well. However, a study on family owned firms in a developed country, it was

Table 1. Sector representation of the sample companies.

Variable	Number of companies	Percent
Consumer product	28	9.33
Trading/Services	108	36.00
Properties/Hotel	50	16.67
Construction	19	6.33
Plantations	32	10.67
Industrial	63	21.00
Total	300	100.00

Table 2. Total market capitalisation by GLCs and non-GLCs.

Type	No of Companies	Percent	2004		2005		2006	
			RM billion	Percent	RM billion	Percent	RM billion	Percent
GLCs	32	10.67	196,693	39.30	199,943	39.70	237,721	39.44
Non- GLCs	268	89.33	303,750	60.70	303,750	60.30	364,954	60.56
Total	300	100.00	500,443	100.00	503,693	100.00	602,675	100.00

Source: Extracted from OSIRIS.

envisaged that, family owned businesses pay a lower dividend and do not smooth their dividends. The reason being they do not emphasize on dividend payout and hence dividends payout is more volatile (Li et al., 2006).

Another study by Lai (2007) posits that the Chinese (typically the family orientated businesses) control more than half of the family owned public listed companies in Malaysia. He also posit that in the Chinese family owned companies, family members usually control the board and management, hence the accountability aspect of corporate governance may not be important and as such the business prosperity aspect of corporate governance is fulfilled as long as the company thrives. Further, as majority of the shareholders are family members, they are unlikely to expect higher dividends and most of the profits would be retained for investment purposes.

Hence, the dividend policy administered in Malaysia differs with other developed and developing economies primarily because of Malaysia's institutional characteristics with a predominantly less diffused ownership structure.

RESEARCH DESIGN

Sample selection

The sample of the study consists of three hundred of the highest capitalised companies listed on Bursa Malaysia for the years ended 2004 till 2006. All the information obtained is published data as the companies are listed in the Bursa. The analysis involved all the sectors (Table 1) of the economy.

Table 2 provides statistics on the market capitalisation of GLCs for the period 2004 to 2006 and the market capitalisation of the government linked companies is in the range of 40% in the year 2006 although it only represents 11% of the overall sample, the sampling is also consistent with other studies on GLCs (Ang and Ding, 2006; Ramirez and Ling, 2004).

After elimination of missing data, the sample size is reduced to 409 (Table 3). The GLCs are still under the observation of the Kuala Lumpur Stock Exchange (Bursa Malaysia) and Securities Commission where reporting activities have to be done as any other privately owned listed companies. The GLCs are also engaged in hiring capable executives and they are also obligated to maximize shareholders' wealth'.

Data on CEO duality, board size and board composition are obtain from the Malaysian stock performance guide books. Data relating to financial information such as return on total assets, debt to total assets, market capitalisation, market to book equity and dividend payout are obtain from the OSIRIS and BANKSCOPE. On the measurement of independent variable, several proxies have been used in the accounting and finance literature for growth opportunities. Adam and Goyal (2008) evaluates the four most commonly used proxy variables, that is, market to book asset ratio (MBA), market to book equity ratio (MBE), earnings per share ratio (EP) and capital expenditure to value ratio (CAPX/PPE). In this study, the independent variable, IOS is measured in terms of MBE. This proxy variable has also been use extensively on prior studies (Anderson et al., 1993; Baber et al., 1996; Gaver and Gaver, 1993; Gul, 1999; Hossain et al., 2000; Skinner, 1993).

Dependent variable is the dividend payout ratio (DPP) and the moderating variables are ownership structure consisting of family control (FLYC), government linked and non-government linked companies. GLCs are defined as a company in which the

Table 3. Derivation of sample 2004 to 2006.

Sample selection	Total
Top 300 of the market capitalisation of the companies for the three years as listed on the Main Board of Bursa Malaysia	900
Less:	
Banks, Insurance and unit trusts	24
Companies with incomplete data	467
Final sample	409

government owns at least 20% of the issued and paid-up capital (Ministry of Finance, 1993). The formation of GLCs is carried out progressively through the process of privatisation and corporatisation. Government linked companies are evaluated by the government ownership of shares and by the shares held by the 10 largest shareholders that is categorised as a measure of ownership concentration. Subsequently, ultimate ownership is defined as the sum of shares owned directly or indirectly by a single owner through crossholdings or pyramids. As a measurement a dummy variable of 1 for government linked companies and 0 for non-government linked companies are used. Other studies that use similar methodology include (Gul, 1999; Gugler, 2003; Goergen et al., 2005 and Amidu and Abor, 2006). Family ownership is defined as firms controlled by a specific family. Family ownership is determined by the presence of family members on the BOD and by the equity ownership of the family firms of at least 20% (Hanazaki and Liu, 2007). As a measurement, a dummy variable of 1 for family control and 0 for non-family control is use. Other studies that use the same measures are for instance, Gul and Kealey (1999), Kang (1999), Goergen (2003), Lai (2007) and Gadhoum et al. (2007).

Gaver and Gaver (1992) use the dividend payout ratio and the dividend yield as the two measures for dividend policy. The dividend payout ratio in this study is dividend per share divided by primary earnings per share before extra ordinary. It is noted that the dividend yield is sensitive to share price whereas the dividend payout is not. For this reason, the dividend payout ratio is taken as the primary measure of financing and dividend policy (DPP). Other studies (Smith and Watts, 1992; Gaver and Gaver, 1993; Gul, 1999; Adam and Goyal, 2008) used similar measures. Ownership is examined because there seems to be a high concentration of GLCs as well as family owned businesses. Further the corporate governance variables such as ownership structure are investigated to gauge the extent to which the association between growth opportunities (Investment opportunities set or IOS) and dividend policies are moderated by each of these corporate governance variables.

The control variables are firm size, performance, financial leverage and duality. Smith a Watts (1992) find firm size is positively associated to various types of CG variables such as debt covenants, dividend policy and management compensation. In this study logarithm of market capitalisation (LOGMKTC) is use as a measure for firm size. Market capitalisation measures the percentage of market captured by the firms (Black et al., 2006; Leng and Aik, 2007). Return on assets (ROA) is use to evaluate the extent in which the assets are put to good use. Wang et al. (1993), Ling et al. (2008) and Imm Song et al. (2008) measure corporate performance by the ratio of earnings before interest and taxes over total assets. The financial leverage is measured as the ratio of the book value of long term debt divided by the book value of total assets (DTA). CEO duality is widely discussed in the literature and is commonly measured as a dummy variable (Daily and Dalton, 1995; Abdullah, 2007; Ponnu, 2008).

ECONOMETRICS METHODOLOGY

Regression model and discussion

The panel character of the data allows for the use of panel data methodology. Panel data involve the pooling of observations on a cross-section of units over several time periods and provide results that are simply not detectable in pure cross-sections or pure time series studies. Pool regression with cross sectional data is use for hypotheses testing and to reveal the relationship among IOS, DPP and control variables. In this regard, appropriate regression tests should incorporate some specific methods under the panel data analysis. These methods include pooled effect (PE), fixed effect (FE) and random effect (RE). PE is only used for robustness check which is quite similar to ordinary least square (OLS) and thus this part is excluded in the study. However, for modelling purposes, the main focus is to choose either FE or RE as these models take time variant and cross-sectional effect into consideration. This could be accomplished by conducting an additional test known as Hausman Test. The details are as follows;

The fixed effects model

The fixed effects model is basically a linear regression model in which the intercept terms vary over the individual firms, that is, *i.*

Hence;

$$y_{it} = \alpha_i + x_{it}^{'}\beta + \mu_{it} \qquad \mu_{it} \sim IID(0, \sigma_u^2),$$

Where $x_{it}^{'}$ are independent of all μ_{it}. Based on this, the regression model can be re-written by including a dummy for each firm *i* in the model (Verbeek, 2008). This explanation goes in line with least-squares dummy variable (LSDV) (Gujarati, 2003). The model is as follows;

$$y = \sum_{j=1}^{N} \alpha_j d_{ij} + x_{it}^{'}\beta + \mu_{it}$$

Where $\sum_{j=1}^{N} d_{ij}$ ~ d_{ij} = 1 if i = j, N = set of dummy variables, α_i (*i* = 1, 2. 3,…N) and β can even be estimated using the OLS method and implicitly known as LSDV. However, data transformation need to be done here to eliminated the individual effects (α_i) and models are given below (notation of each component remains the same).

$$\bar{y}_{it} = \alpha_i + \bar{x}_i^{'}\beta + \bar{\mu}_j$$

$$y_{it} - \bar{y}_i = \left(x_{it} - \bar{x}_i\right)^{'}\beta + \left(\mu_{it} - \bar{\mu}_i\right)$$

Hence, the actual transformed model to be the estimator of the fixed effects is as follows;

$$\hat{\beta}_{FE} = \left(\sum_{i=1}^{N}\sum_{t=1}^{T}\left(x_{it} - \bar{x}_i\right)\left(x_{it} - \bar{x}_i\right)^{'}\right)^{-1}\sum_{i=1}^{N}\sum_{t=1}^{T}\left(x_{it} - \bar{x}_i\right)\left(y_{it} - \bar{y}_i\right)$$

Where $x_{it}^{'}$ are independent of all μ_{it}, μ_{it} is assumed for normality, $\hat{\beta}_{FE}$ has a normal distribution and it requires $E\{(x_{it} - \bar{x}_i)\mu_{it}\} = 0$.

The random effects model

As for random effects, the model can be written as follows;

$$y_{it} = \beta_0 + x_{it}^{'}\beta + \alpha_i + \mu_{it}$$

$$\mu_{it} \sim IID\left(0, \sigma_u^2\right)$$

$$\alpha_i \sim IID\left(0, \sigma_\alpha^2\right)$$

Where $\alpha_i + \mu_{it}$ is treated as an error term that comprises of an individual component (does not vary over time) and the remainder component is assumed to be uncorrelated over time.

Fixed effect or random effect

Researchers do have the option to choose the better model between fixed effect method and random effect method. As for this purpose, the Hausman test (1978) is used in most cases as it tests whether the fixed effects and random effects estimators are significantly different (Verbeek, 2008) and the statistical model can be computed as follows;

$$\xi_H = \left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)^{'}\left[\hat{V}\left\{\hat{\beta}_{FE}\right\} - \hat{V}\left\{\hat{\beta}_{RE}\right\}\right]^{-1}\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)$$

$\left[\hat{V}s\right]$ refers to true covariance matrices. $\left(\hat{\beta}_{FE} - \hat{\beta}_{RE}\right)$ = 0 (null hypothesis), ξ_H refers to asymptotic chi-squared distribution with K degrees of freedom, where K = number of elements in β.

If the Hausman test is significant at least at 0.05, then the RE models is rejected in favour of the FE and vice versa.

Regression analysis based on the panel data is used to specify the relationship among the dependent, independent and control variables in this study. The equation suggests that the IOS of a firm can be influenced by corporate governance variables and control variables. Specifically, the model is to detect whether the level of corporate governance moderates the negative association between growth opportunities and dividend policy. The government linked and family owned companies are used to gauge to what extent dividend payout varies based on the Malaysian scenario.

$$DPP = \alpha_0 + \beta_1\, MBE_{it} + + \beta_2\, FLYC_{it} + \beta_3\, GLC_{it} + \sum_{i=1}^{n}\beta_4\, OTHERS + \varepsilon_{it}$$

Where:

MBE = Market to book value of equity at the end of year t
FLYC = Value '1' for family and '0' otherwise
GLC = Value '1' for government linked and "0" for otherwise

Others

DUAL = Role duality
BSIZE = Board size
BCOM = Board composition
LOGMKTC = Log of market capitalisation
DTA = Debt to Total Assets
ROA = Return on assets
INDUSTRY TYPE = Consumer sector, Trading sector, Properties, Hotel and others, Construction, Plantations and Mining and Industrial
ε,ĩ and t = Error term, company and time respectively
α_0 = Intercept of the model

The significance of the *f* statistic proves a relationship between the dependent variable (dividend policy) and independent variable (IOS). However, any violations of the classic linear regression assumptions then the issues such as multicollinearity, autocorrelation and heteroscedasticity could arise but not serious. Further, the Durban Watson (DW) test is use to detect autocorrelation in this model. Durban Watson (DW) statistic of *0* is known as no residual autocorrelation whereas DW of between *0 - 2* is known as positive residual correlation and above *2* is categorised as negative residual autocorrelation. Standard remedial measures are use to remove the autocorrelation from the IOS model (Vogelvang, 2005). Vogelvang (2005) suggest that the phenomenon of heteroscedasticity in the disturbance occurs only in models for cross-section data. The panel data methodology allows the control of the so-called unobservable constant heterogeneity as each firm has its specificity and secondly because of the dynamic dimension where the panel data is tested for long time adjusting processes and determining the firm value reaction when the explanatory variable changes (Arellano and Bover, 1990; Arellano, 1993). Additional econometrics and statistical tests used in this study include correlation tests, descriptive tests and sensitivity analysis. Correlation is a method to compute several associational statistics. Descriptive statistics is used to analyse the basic features of the data in this study. An analysis of the corporate structure variables is also performed to examine the variables relevant for DPP and IOS in an individual manner. Furthermore, the interactions with IOS with the inclusion of two experimental variables that is, family control and government linked are also analysed.

Table 4. Hausman test

Correlated random effect			
Test summary	**Chi-Sq Statistic**	**Chi-Sq d.f**	**Prob**
Cross-section random	8.076	8	0.426

EMPIRICAL FINDINGS

Descriptive statistics

Table 4 shows the summary of Hausman test which indicate insignificant result (*p*-value = 0.426) and thus FE is rejected in favour of RE. Hence, the following regression models are based on the RE method.

As reported in Table 5 (Panel A), the minimum value and maximum value for the residuals of pooled data and the individual years for the market capitalisation are in the range of 2.400 to 2.480 and 10.580 to 10.610 respectively. In terms of ROA, there is a constant increase in the mean ROA that is, from 0.038% in year 2004, 0.062% in year 2005 and subsequently 0.080% in year 2006. This indicates that the companies in general are maximising their usage of assets to generate revenue. Similarly, the mean of total book value of debts to total book value of assets (DTA) is at 56.3% for the three years in total and the mean range from 51.6 to 60.3%. The DTA is considered low with the maximum debt representing 9.28% of the total assets of the company. BSIZE results show a minimum of 2 and a maximum of 12. BCOM as depicted show an average 41.2% of the board is represented by independent directors and hence almost 70% of the companies meet the recommendation of the MCCG 2000 to have at least 1/3 of the board to be represented by independent directors.

In terms of IOS, the minimum and maximum values varies within the years, that is, 13.280, 14.266 and 11.737 respectively and it is rather close to the overall pull average data of 13.011. There has been a drastic decline in the total value of IOS from the year 2004 onwards in which from 135.800, it drop to 39.890. The minimum DPP is where there are no dividends paid and the maximum DPP is at 87.5% in year 2006. The high DPP in Malaysia could be attributed to the dividend policy of Malaysian listed companies where the managers are reluctant to cut or avoid omitting dividend even when the performance of the company is deteriorating (Ponnu, 2008).

Table 5 (Panel B) reports the descriptive statistics of variables on the number of observations available on skewness and kurtosis of the data.

Table 5 (Panel C), shows that the family owned businesses represent 9.67%, that is, equal to 87 companies, government linked companies with a 10.67%, that is, equal to 96 companies and non-government linked companies with a 89.33% , that is, equal to 804 companies, respectively.

Correlation analysis

To examine the correlation between the independent variables, a Pearson product moment correlation (*r*) is computed. As illustrated in Table 6, IOS is negatively and significantly correlated with DPP indicating that high growth firms have lower cash flow and, hence, pay lower dividends. This is consistent with prior studies (Jensen, 1986; Easterbrook, 1984; Gul and Kealey, 1999; Amidu and Abor, 2006). The FLYC is negatively correlated with IOS and this implies that family controlled firms are paying lesser dividends. Additionally, the results provide strong positive support of the relationship between the LOGMKTC and ROA, which reveal that higher market capitalised companies maintain a higher return on assets ratio. Furthermore, in terms of BSIZE, the variable is positively and significantly correlated with DPP and hence indicates that larger boards pay more dividends. DPP is also negatively and significantly correlated with CEO duality and LOGMKTC and hence imply that companies that maintain CEO duality and high market capitalisation pay more dividends. On the correlation among variables, there is no multicollinearity as none of the variables correlates above 0.80 or 0.90.

Multivariate analysis

Table 7 (Panels A and B) shows the summary of the results for the pooled data for all three years (2004-2006). To test the robustness of the basic model, additional variables are progressively added to the existing model to evaluate the impact on the association between IOS and DPP. The objective of progressively adding control variables is to observe the magnitude of the coefficient on dividend policy when each variable is added on to the basic model. The additional variables referred to are FLYC, IOSFLYC and IOSGLC. Further, the variables are controlled for type of industry by using

Table 5. Descriptive statistics of continuous variables.

Variable	Panel A				
		All	2004	2005	2006
DPP	Mean	33.789	34.040	33.769	33.600
	Median	31.905	34.041	31.220	31.970
	Standard deviation	18.902	18.641	18.354	19.764
	Minimum	0.000	0.670	1.530	0.000
	Maximum	87.500	85.330	76.300	87.500
	N	592	178	197	217
MBE	Mean	13.011	13.280	14.266	11.737
	Median	10.260	9.640	11.180	10.100
	Standard deviation	16.418	22.977	10.553	10.802
	Minimum	-94.340	-94.340	0.800	-17.990
	Maximum	135.800	135.800	56.070	39.890
	N	571	214	157	200
LOGMKTC	Mean	6.406	6.390	6.305	6.521
	Median	6.270	6.250	6.110	6.380
	Standard deviation	1.371	1.346	1.387	1.376
	Minimum	2.400	2.480	2.480	2.400
	Maximum	10.610	10.580	10.610	10.610
	N	825	275	275	275
ROA	Mean	0.062	0.038	0.062	0.080
	Median	0.050	0.060	0.050	0.050
	Standard deviation	0.315	0.543	0.080	0.137
	Minimum	-8.170	-8.170	-0.160	-1.500
	Maximum	1.260	0.630	0.610	1.260
	N	780	238	272	270
DTA	Mean	0.563	0.603	0.516	0.570
	Median	0.450	0.450	0.440	0.455
	Standard deviation	0.719	0.875	0.492	0.741
	Minimum	0.000	0.000	0.000	0.000
	Maximum	9.280	8.030	3.990	9.280
	N	832	270	276	286
BSIZE	Mean	5.384	5.384	5.384	5.384
	Median	5.000	5.000	5.000	5.000
	Standard deviation	2.161	2.163	2.163	2.163
	Minimum	2.000	2.000	2.000	2.000
	Maximum	12.000	12.000	12.000	12.000
	N	843	281	281	281
BCOM	Mean	0.412	0.412	0.412	0.412
	Median	0.400	0.400	0.400	0.400
	Standard deviation	0.252	0.252	0.252	0.252
	Minimum	0.000	0.000	0.000	0.000
	Maximum	1.000	1.000	1.000	1.000
	N	843	281	281	281

Table 5. Contd.

Variable	Panel B (Descriptive statistics)		
	N	Skewness	Kurtosis
LOGMKTC	825	0.554	0.705
ROA	780	-22.819	602.095
DTA	832	6.380	56.249
MBE	571	1.599	13.669
BCOM	843	0.256	-0.236
BSIZE	843	0.524	0.005
DPP	592	7.625	94.548

	Panel C (Descriptive statistics of dichotomous variables)							
Variable	**All {N = 900(%)}**		**2004{N=300(%)}**		**2005 {N=300(%)}**		**2006 {N=300(%)}**	
Dichotomous Variable	1	0	1	0	1	0	1	0
Government linked & non-linked (GLC/NGLC)	96 (10.67)	804 (89.33)	32 (10.67)	268 (89.33)	32 (10.67)	268 (89.33)	32 (10.67)	268 (89.33)
Industry type								
CONSUMER	84	816	28	272	28	272	28	272
TRADING	324	576	108	192	108	192	108	192
PROPERTIES	150	750	50	250	50	250	50	250
CONSTRUCTION	57	843	19	281	19	281	19	281
PLANTATION	96	804	32	268	32	268	32	268
INDUSTRIAL	189	711	63	237	63	237	63	237
Duality (DUAL)	120(13.33)	780(86.67)	40(13.33)	260(86.67)	40(13.33)	26086.67)	40(13.3)	260(86.67)
Family Control (FLYC)	87(9.67)	813(90.33)	29 (9.67)	271 (90.33)	29 (9.67)	271 (90.33)	29 (9.67)	271 (90.33)

dummy variables. There are six dummy variables and the dummies use are one less than the number of categories on industry type. In all there are five different models in which the association between the IOS and dividend payout policy are tested.

The *F*-value for each of the models from 1 to 5, based on pooled data, is statistically significant at the 1% level. The adjusted R^2 is the total variance of the dividend policy of the companies listed on the Bursa Saham. The adjusted R_2 for all the models are in the range of 6% for the combined three year period of the panel data. Although the adjusted R^2 is considered low, it is slightly higher than the prior studies reported by Gul and Kealey (1999) who examined the dividend policies among Korean companies, which is at 0.010%. The adjusted R^2 of Model 1 combined for the three years period is 3%. From the analyses conducted, it is found that the four variables tested in the study are significantly associated with DPP. The results presented in Table 7 (Panel A) show significant associations between IOS, ROA and industry type (consumer; plantations). This study finds a significant negative association between IOS and DPP. The negative and significant result between dividend policy and IOS supports the

Table 6. Correlation.

	DPP	MBE	DUAL	LOGMKTC	ROA	DTA	FLYC	GLCNGLC	BSIZE	BCOM
DPP	1									
N	592									
MBE	-0.147(0.002)***	1								
N	434	571								
DUAL	-0.112(0.007)***	0.107(0.012)***	1							
N	579	555	843							
LOGMKTC	0.083(0.044)**	-0.029(0.493)	-0.056(0.114)	1						
N	586	566	807	825						
ROA	-0.023(0.586)	0.028(0.515)	0.008(0.826)	0.138(0.000)***	1					
N	577	537	760	759	780					
DTA	0.036(0.400)	-0.021(0.632)	-0.045(0.207)	-0.001(0.969)	-0.033(0.379)	1				
N	545	532	781	764	722	832				
FLYC	-0.048(0.242)	-0.025(0.545)	0.177(0.000)***	0.164(0.000)***	0.006(0.861)	0.028(0.424)	1			
N	592	571	843	825	780	832	900			
GLCNGLC	0.006(0.881)	-0.011(0.787)	-0.014(0.692)	0.344(0.000)***	0.039(0.273)	-0.021(0.545)	-0.113(0.001)***	1		
N	592	571	843	825	780	832	900	900		
BSIZE	0.090(0.031)**	-0.025(0.556)	0.025(0.475)	-0.125(0.000)***	-0.001(0.971)	-0.030(0.404)	0.139(0.000)***	-0.026(0.454)	1	
N	579	555	843	807	760	781	843	843	843	1
BCOM	-0.020(0.637)	0.037(0.388)	0.013(0.706)	0.084(0.017)***	0.010(0.785)	-0.052(0.147)	-0.033(0.336)	0.041(0.234)	-0.285(0.000)***	843
N	579	555	843	807	760	781	843	843	843	

*, Significance at 10% level; **, significance at 5% level; ***, significance at 1% level (two-tailed); DPP, dividend payout; MBE, [Shares outstanding multiply shares closing price] divided by common equity; LOGMKTC, Log of market capitalisation; ROA, return on assets; DTA, debt to assets; FLYC, family controlled firms; GLCNGLC, government linked and non-government linked companies; BSIZE, Board size; BCOM, Board composition.

FCF hypothesis, which suggests that high growth firms pay lower dividends and low growth firms pay higher dividends. These findings are consistent with prior findings by (Ferris et al., 2009; Amidu and Abor, 2006; Mitton, 2004 and La Porta et al., 2000). Other studies such as Smith and

Table 7. Multiple regression results.

Model	Panel A								
	1			2			3		
	Coefficients	t-stat.	p-value	Coefficients	t-stat.	p-value	Coefficients	t-stat.	p-value
Pooled EGLS									
(Constant)	28.161	3.812	0.000***	25.328	3.407	0.000***	26.663	3.586	0.000***
CONSUMER	10.567	2.446	0.015***	11.667	2.711	0.007***	12.449	2.891	0.004***
TRADING	3.549	0.976	0.329	4.110	1.140	0.254	4.598	1.276	0.203
PROPERTIES	2.627	0.699	0.484	3.185	0.855	0.392	3.776	0.014	0.311
CONSTRUCTION	1.649	0.323	0.746	2.325	0.460	0.654	2.132	0.423	0.672
PLANTATION	7.130	1.747	0.081*	8.739	2.130	0.033**	9.400	2.290	0.022**
GLC.NGLC	2.245	0.517	0.605	0.535	0.122	0.902	0.517	0.119	0.906
DUAL	-8.449	-1.515	0.130	-5.388	-0.946	0.344	-6.126	-1.076	0.282
BSIZE	0.495	0.869	0.385	0.652	1.147	0.252	0.553	0.972	0.331
BCOM	0.302	0.056	0.955	-0.293	-0.055	0.956	-1.159	-0.218	0.827
LOGMKTC	0.642	0.623	0.533	1.055	1.015	0.311	1.058	1.019*	0.308
ROA	-28.915	-2.806	0.005***	-29.451	-2.869	0.004***	-30.066	-2.943	0.003***
DTA	0.969	1.039	0.299	1.051	1.128	0.259	1.113	1.202	0.230
MBE	-0.107	-1.758	0.079*	-0.112	-1.857	0.064*	-0.171	-2.686	0.007***
FLYC				-8.765	-2.126	0.034**	-15.307	-3.252	0.001***
IOS.FLYC							0.552	2.867	0.004***
R^2			0.067			0.091			0.105
Adjusted R^2			0.030			0.039			0.056
Durban Watson			1.627			0.739			0.737
F statistic			1.905			2.102			2.527
N			409			409			409

***, Significance at 1%; **, significance at 5% level; *, significance at 10% level. Industry type; MBE, [shares outstanding multiply shares closing price] divided by common equity; BSIZE, board size; BCOM, board composition; DUAL, duality; GLC.NGLC, government linked and non-government linked companies; FLYC, family control; ROA, return on assets; LOGMKTC, log of market capitalisation; IOSFLYC, interaction between IOS and FLYC.

Model	Panel B					
	4			5		
	Coefficients	t-stat.	p-value	Coefficients	t-stat.	p-value
Pooled EGLS						
(Constant)	27.907	3.774	0.000***	26.364	3.540	0.000***
CONSUMER	10.419	2.408	0.016***	12.314	2.854	0.005***
TRADING	3.327	0.913	0.361	4.336	1.200	0.231
PROPERTIES	2.477	0.658	0.510	3.619	0.969	0.333
CONSTRUCTION	1.248	0.244	0.807	1.592	0.314	0.753
PLANTATION	6.956	1.702	0.089*	9.229	2.243	0.025**
GLC.NGLC	-0.674	-0.134	0.893	-3.425	-0.678	0.498
DUAL	-8.589	-1.538	0.124	-6.309	-1.106	0.269
BSIZE	0.519	0.909	0.363	0.582	1.020	0.308
BCOM	0.308	0.057	0.954	-1.219	1.021	0.308
LOGMKTC	0.728	0.703	0.482	1.179	1.131	0.258
ROA	-28.657	-2.783	0.006***	-29.795	-2.923	0.003***
DTA	0.991	1.064	0.287	1.149	1.246	0.213
MBE	-0.129	-2.022	0.044**	-0.204	-3.037	0.002***
FLYC				-15.850	-3.355	0.000***
IOS.FLYC				0.586	3.033	0.002***
IOS.GLC	0.234	1.156	0.248	0.314	1.556	0.121

Table 7. Contd.

R^2	0.066	0.104
Adjusted R^2	0.030	0.060
Durban Watson	0.707	0.718
F statistic	1.861	2.519
N	409	409

***Significance at 1%; **, significance at 5% level; *, significance at 10% level. Industry type; MBE, [shares outstanding multiply shares closing price] divided by common equity; BSIZE, board size; BCOM, board composition; DUAL, duality; GLCNGLC, government linked and non-government linked companies; FLYC, family control; ROA, return on assets; LOGMKTC, log of market capitalisation; IOSFLYC, interaction between IOS and FLYC; IOSGLC, interaction between IOS and government linked companies.

	Panel C			
Model	**GLCs**		**NGLCs**	
	Coefficient	**t-stat.**	**Coefficient**	**t-stat.**
Pooled EGLS				
(Constant)	31.721	1.430	30.681	4.600***
MBE	-0.017	0.071	-0.231	-3.226***
DUAL	-6.600	-0.330	-4.951	-1.044
LOGMKTC	0.693	0.349	0.416	0.441
ROA	-66.404	-0.962	-13.931	-1.201
DTA	-5.824	-1.123	-1.136	-0.717
CONSUMER	-3.600	-0.244	11.062	2.985***
TRADING			9.159	2.950***
PROPERTIES			6.998	2.373***
CONSTRUCTION	-20.629	-1.664	8.072	1.889*
PLANTATION	10.573	0.148	12.084	3.682***
INDUSTRIAL	16.943	1.363		
FLYC			-7.602	-2.426**
BCOM	1.489	0.107	-1.541	-0.339
BSIZE	1.713	0.800	0.339	0.717
Year Dummy 1		0.183		0.031
Year Dummy 2		-0.293		-0.571
Adjusted R^2		0.102		0.075
F statistic		1.365		2.809
F-value		0.235		0.000
N		96		804

Notes: The reported *t*-value and the significance opposite each variable indicates whether the variable is significantly contributing to the equation model. ***, significance at 1%; **, significance at 5% level; *, significance at 10% level. MBE, [Shares outstanding multiply shares closing price] divided by common equity; DUAL, duality, LOGMKTC, log of market capitalisation; ROA, return on assets; industry type = CONSUMER; TRADING; PROPERTIES; CONSTRUCTION; PLANTATIONS and INDUSTRIAL; FLYC, family controlled firms; BCOM, board composition (in terms of proportion of independent directors), BSIZE, board size; Year Dummies = control for years.

Watts (1992), Gaver and Gaver (1993), Gul and Kealey (1999) and Jensen (1986) who also report a significant negative relationship, suggest that high growth firms due to their low cash flow declare lower dividends as compared to low growth firms that declare high dividends due to their anticipated high cash flow. As regard industry dummy variables, the study finds a significant positive association between industry type and dividend policy.

The addition on Model 2 is with regard to family controlled firms. The adjusted R^2 combined for the three years period is 4.0%. A negative and significant association between FLYC indicates that high growth family controlled firms are paying lesser dividends and supports the contention that family controlled firms, appear to maximise sales and shareholder value (Figure 3). The results are consistent with prior findings by (Lim,

1981; Claessens et al., 2000; Alpay et al., 2008). The additions to Model 3 are the variables FLYC and IOSFLYC. The adjusted R^2 combined for the three years period is 5.6%. In terms of IOSFLYC, the results show a positive and significant association and hence indicate that the negative relationship between high growth firms and dividend payout is weaker for family controlled firms. On industry type, only consumer products and plantations related products are positively associated and significant. The additions to Model 4, refer to Table 7 (Panel B), is IOSGLC. The adjusted R^2 combined for the three years period is 3%. The results show a positive but insignificant association. Further, this Model depict the following: consumer and plantations product is positively associated and significant, similar to earlier Models; ROA produce a negative significant relationship as per the earlier Models however LOGMKTC is positive but not significantly related to dividend payout.

In Model 5, Table 7 (Panel B) a combination of the progressive variables discussed earlier is regressed together. The adjusted R^2 combined for the three years period is 6%. The progressive additions of the above mentioned variables have resulted on the significant negative association between IOS, FLYC and ROA. IOSFLYC and the results of consumer and plantations as the industry product show significant positive relationship with dividend payout.

Further, Table 7 (Panel C) report on the significance of dividend payout to government linked and non-government linked companies. The results (Figure 2) show significant negative associations between IOS and dividend policy in the context of non-government linked companies and on the contrary reports a positive and insignificant difference in the context of government linked companies. The results for the non-government linked companies are negatively significant and posit that non-government linked companies pay lesser dividends.

This result is consistent with the theory that growth firms require more funds in order to finance their growth and therefore would retain greater proportion of their earnings by paying lower dividends (Amidu and Abor, 2006).

IMPLICATIONS

This study found a strong negative and significant relationship between growth opportunities and dividend policy. It is reassuring to note that this is consistent and extends the literature on the contracting explanation based on Jensen's Free Cash Flow theory. Furthermore, based on prior studies, the agency approach is highly relevant to an understanding of corporate dividend policies around the world and, hence, the agency theory is another aspect to be considered in ownership structure. On the subject of ownership and family controlled firms, the results show a negative significant association between family controlled firms and dividend payout. The implication of this finding to the policy setters is that family controlled firms pay lesser dividends as compared to non-family controlled firms. This contributes to extant literature as the study offers insights to policy makers interested in enhancing the extent to which minority shareholders are protected.

As regarding the non-GLCs, it is found that there is a negative significant difference between IOS and dividend payout signifying that high growth non-GLCs pay lesser dividend and low growth non-GLCs pay higher dividends. This study contribute to extant literature as it offers insights to policy setters that ownership structure has moderating effect between growth opportunities and dividend policy in the Malaysian context. Considering the interaction between IOS and FLYC, this contributes to extant literature, as the study found a positive significant association between the interactions and dividend policy. This indicates that the negative relationship between high growth firms and dividend payout is weaker for family controlled firms.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study is based on the top 300 highest capitalised Malaysian public listed companies meaning that the validation of the conclusion might be applicable to large companies only. Furthermore, this study uses CG data for three years and, hence, may not be generalised for other periods such as prior to governance reforms or during the crisis.

There is a also a strong element of sample bias as only firms reporting details on all the corporate variables of interest are included in the analysis. Another factor to consider is the unique institutional environment of Malaysia in which caution should be exercised in generalising the results in other economic settings. Further additional IOS measures could be incorporated to further strengthen the results obtained under different economic settings.

Extension to the current study is possible in the following areas: It would be useful for future studies to examine politically connected firms in order to understand how businesses operate in Malaysia as there is a strong possibility that politically and non-politically connected firms in Malaysia have a different impact on dividend payout. Future studies could test the relationship examined in this study using different proxies of investment opportunity set such as price earnings ratio and capital expenditure ratio (research and development expenditures divided by total assets or sales) as suggested by Adam and Goyal (2008) as well as the growth in working capital ratio and growth return on capital employed by Bruton (2003). As researchers do not identity a uniform method to measure growth opportunities, testing the relationship using different proxies of growth opportunities

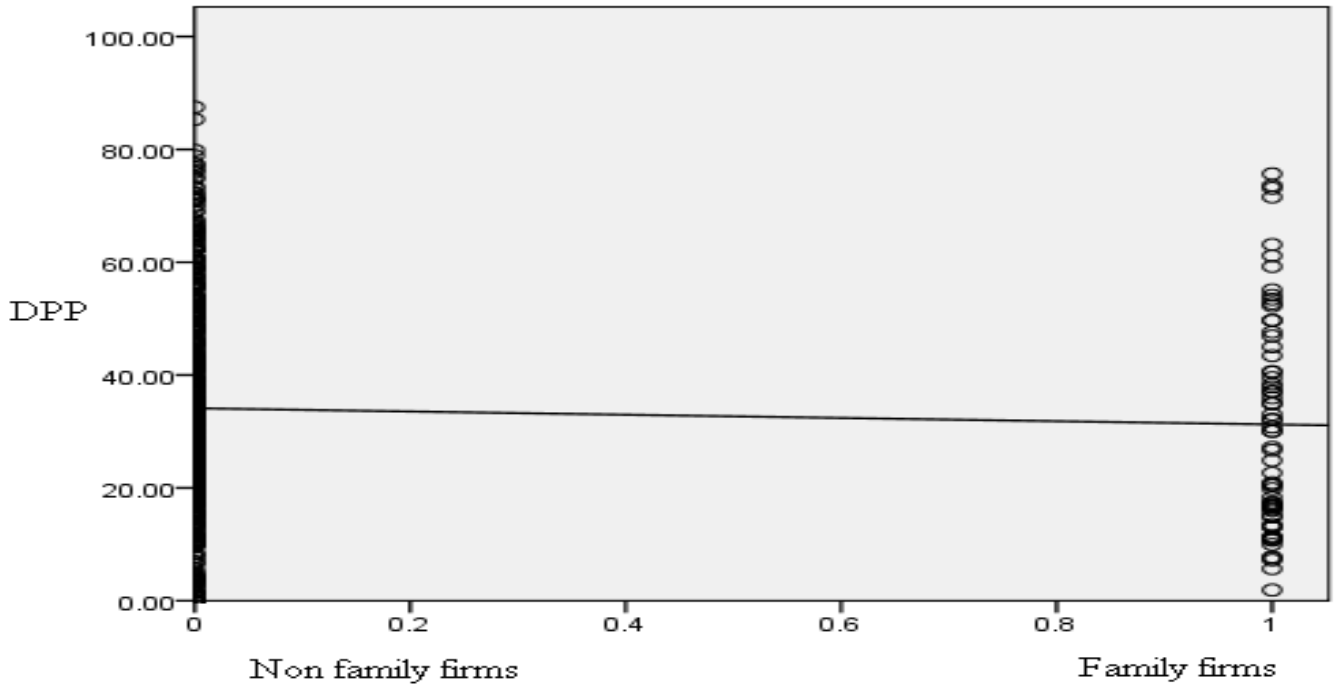

Figure 1. Family and non-family firms.

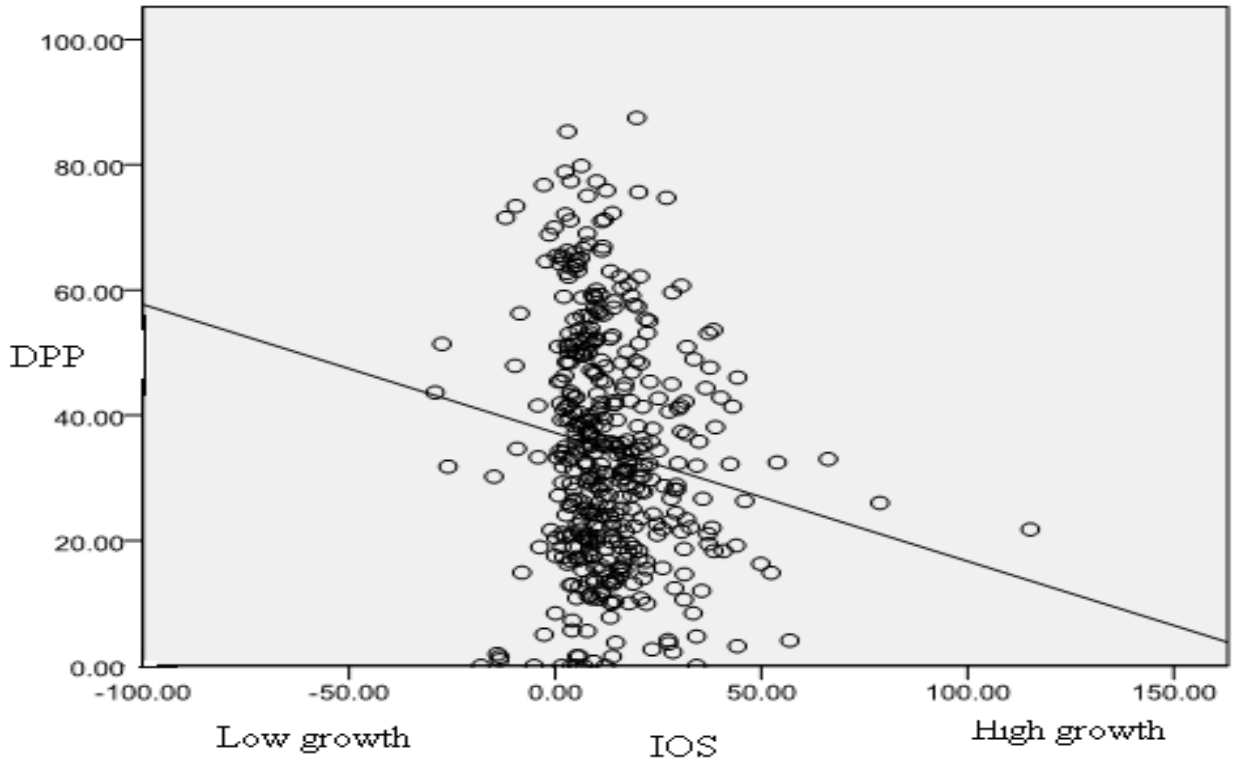

Figure 2. Non-government linked companies.

could validate the existing findings of this study.

Conclusion

More importantly this study focuses on ownership structures and documents the consistent strong support on the negative significant association between growth opportunities and dividend payout for non-government linked companies only. The contracting theory based on Jensen's FCF theory is not applicable for government linked and family controlled firms.

Furthermore, this study found that, on the interaction between IOS and FLYC, the negative relationship between high growth firms and dividend payout is weaker for family controlled firms.

REFERENCES

Abdul SF (2002). "Ownership Structure in the Malaysian Corporation Sector: It's Impact on Corporate Governance, Performance, Financing and Investment Patterns, 'Institute for Development Policy and Management Working Paper July (University of Manchester).

Abdul WEA, How JCY, Verhoeven P (2007). Institutional investors, Corporate Governance and Firm performance in Malaysia. Paper presented at the Symposium Proceedings

Abdul-Aziz AR, Jaafar M, Hussin AA (2007). Are government-linked construction companies in Malaysia still valid? The indigenous contractors' perspective. Construction Manage. Econ., 25: 1009-101

Abdullah SN (2007). Board composition, audit committee and timeliness of corporate financial reports in Malaysia. Corp. Ownersh. Control, 4: 2.

Abor J, Bokpin GA (2010). "Investment opportunities, corporate finance and dividend payout policy: Evidence from emerging markets". Stud. Econ. Financ., 27(3): 180-194

Adam T, Goyal VK (2008). The investment opportunity set and its proxy variables. J. Financ. Res., 31(1): 41-63.

Affandi RM (1979). Public Enterprise in Malaysia: performance and prospects, in Cheong, K.C., Khoo, S.M. and Thillainathan, R. Malaysia: Kuala Lumpur: Malaysia Economic Association.

Alonso PDA, Iturriaga FJL (2005). Financial decisions and growth opportunities: a Spanish firm's panel data analysis. Appl. Econ. Lett., 15: 391-407.

Alpay G, Bodur M, Yilmaz C, Cetinkaya S, Arikan L (2008). Performance inplications of institutionalisation process in family-owned businesses: Evidence from an emerging market. J. World Bus., 43: 435-448.

Amidu M, Abor J. (2006). Determinants of dividend payout ratios in Ghana. J. Risk Financ., 7(2): 135-145.

Anderson D, Francis JR, Stokes DJ (1993). Auditing directorship and the demand for monitoring. J. Account. Public Pol., 12: 353-375

Ang JS, Ding DK (2005). "Government Ownership and the Performance of Government-Linked Companies: The Case of Singapore." J. Multinatl. Financ. Manage., 16: 64-88.

Arellano M (1993). Introduction to analysis econometrics. Ensayos en homenaje a Gonzalo Mato, pp. 23-47.

Arellano M, Bover O (1990). La econometria de datos de paned. Invest. Econo., 14(1): 3-45.

Baber W, Janakiraman S, Kang S (1996). Investment opportunities and the structure of executive compensation. J. Account. Econ., 21, 297-318.

Ball R, Robin A, Wu JS (2003). Incentive versus standards: Properties of accounting income in four East Asian countries. J. Account. Econ. 36: 235–270.

Black BS, Jang H, Kim W (2006) Predicting firms' corporate governance choices: Evidence from Korea. J. Corporate Fin., 12: 660-691.

Brickley JA, Lease RC, Smith CW (1988). Ownership structure and Voting on Antitakeover Amendments. J. Financ. Econ., 20: 267-291.

Burton BM (2003). Evidence on the extent of relationships among investment opportunities set proxies. Appl. Econ. Lett., 10: 437-441.

Bushee BJ (1998). The Influence of Institutional Investors on Myopic R and D Investment Behaviour. Account. Rev., 73: 305-333.

Campbell J (1996). Understanding risk and return. J. Pol. Econ., 104: 298-345

Chen Z, Cheung YL, Stouraitis A, Wong AWS (2005). Ownership concentration, firm performance and dividend policy in Hong Kong. Pac. Basin Financ. J., 13(4): 431-449.

Cheung SYL, Chan BY (2004). Corporate governance in Asia. Asia-Pac. Dev. J., 11(2): 1-31

Chung K, Charoenwong C (1991). Investment Options, assets in place and the risk of stocks; Fin. Manage., (20): 21-33

Claessens S, Fan JPH (2002). Corporate governance in Asia: A survey. Int. Rev. Fin., 3(2): 71–103.

D' Souza J, Saxena A (1999). Agency cost, Market Risk, Investment Opportunities and Dividend Policy. Int. Perspect. Manager. Financ., 25: 35-43.

Daily CM, Dalton DR, Cannella Jr. AA (2003). Corporate governance: decades of dialogue and data. Acad. Manage. Rev., 28(3): 371-389

Denis JD, Osobov I (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy. J. Financ. Econ., 89: 62-82

Easterbrook FH (1984). Two Agency-Cost Explanation of Dividends. (September), Am. Econ. Rev., 74: 650-659.

Ferris SP, Sen N, Unlu E (2009). An International Analysis of Dividend Payment Behavior. J. Bus. Fin. Account., 36(3-4): 496-522.

Gadhoum Y, Bergeron MY, Gueyie JP (2007). Corporate control, family firms and dividend decisions in Canada. J. Corp. Ownersh. Control, 4(4)

Gaver JJ, Gaver KM (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. J. Account. Financ., 16(1-3): 125-160

Goergen M, Renneboog L, Correia Da Silva L (2005). When do German firms change their dividends. J. Corp. Financ., 11: 375-399.

Gugler K, Yurtoglu B (2003). Corporate governance and dividend pay-out policy in Germany. Eur. Econ. Rev. 47(4): 731-758.

Gujarati DN (2003). Basic Econometrics (4th ed). New York, United States: Mc Graw-Hill.

Gul FA (2006). Auditors' response to political connection and cronyism in Malaysia. J. Account. Res., 44(5): 931-963

Gul FA, Kealey BT (1999). Chaebol, Investment Opportunity Set and Corporate Debt and Dividend Policies of Korean Companies. Rev. Quant. Financ. Account., 13: 401-416.

Guo W, Ni J (2008). Institutional ownership and firms dividend policy. J. Corp. Ownersh. Control, 5(2): 128-136.

Hanazaki M, Liu Q (2007). Corporate governance and investment in East Asian firms - empirical analysis of family controlled firms. J. Asian Econ., 18: 76-97.

Hausman JA (1978). Specification tests in econometrics. Econometrica, 46: 1251-1272.

Hossain M, Cahan SF, Adams MB (2000). The investment opportunity set and the voluntary use of outside directors: New Zealand evidence. Account. Bus. Res., 30(4): 263-273.

Imm Song S, Ruhani A, Subramanim P (2007). Family ownership, premiums paid and performance: Evidence from corporate take-over in Malaysia. Corp. Ownersh. Control, 4(2), 89-99

Imm Song S, Ruhani A, Subramanim P (2008). Effects of Take-over Motives and Ownership Structure on Premiums Paid: Evidence from Malaysia. Int. J. Bus. Manage., 3(6): 75-88.

Jensen M (2000). A Theory of the Firm: Governance, Residual Claims and Organizational Forms: Harward University Press, Cambridge.

Jensen MC (1986). 'Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. Am. Econ. Rev., 76(2) 323-329

Jordon C (1999). Corporate governance in Asia and the Asian financial crisis: Evidence of the Impact and current trends. Paper presented at the Corporate Governance in Asia

Kallapur S, Trombley M (1999). The Association between Investment Opportunity Set Proxies and Realised Growth. J. Bus. Fin. Account.,

26: 3-4.
Kang DL (1999). Ownership structure and corporate dividend policy: How large block family owners increase dividend payouts and achieve superior firm performance (Working paper): Harvard Business School, Division of Research.
Kose J, Knyazeva A (2006). Payout policy, agency conflicts and corporate governance: Stern School of Business Working Paper.
La Porta R, Lopez-De-Silanes F, Shleifer A, Vishny RW (2000). Agency Problems and Dividend Policies around the World. J. Financ., 55: 1.
Lai Y, Hock D (2007). Leadership and Ethnicity in Public Companies in Malaysia. J. Bus. Syst., Govern. Ethics, 2(2): 59-74.
Leng C Aik (2007). The Impact of Internal and External Monitoring Measures on Firm's Dividend Payout: Evidence From Selected Malaysian Listed Companies. Int. J. Bus. Manage., 2(5): 31-45.
Li D, Moshirian P, Pham K, Zein J (2006). When financial institutions are large shareholders: The role of macro corporate governance environments. J. Financ., 61(6): 2975 - 3007
Lim MH (1981). Ownership and Control of the One Hundred Largest Corporations in Malaysia: Oxford University Press.
Ling FS, Abdul MML, Shahrin AR, Othman MS (2008). Dividend Policy: Evidence from Public Listed Companies in Malaysia. Int. J. Bus. Manage., 4(4): 208-222.
Miles M (2009). Corporate Governance in Asia's Emerging Markets - an Overview, Rev. Int. Comparative Manage., 10(2): 1-10
Miller MH, Modigliani F (1961). Dividend Policy, growth and the valuation of shares. J. Bus., 34: 411-433
Mitton T (2004). Corporate governance and dividend policy in emerging markets. Emerg. Mark. Rev., 5: 409-426.
Perfect SB, Wiles KW (1994). Alternative construction of Tobin's q: Empirical Comparison. J. Empir. Financ., 1: 313-341.
Ponnu CH (2008). Corporate Governance Structures and the Performance of Malaysian Public Listed Companies. Int. Rev. Bus. Res., 4(2): 217-230.
Pound J (1988). Proxy contests and the efficiency of shareholder oversight. J. Financ. Econ., 20: 237-265.
Puthucheary M (1979). The control of public enterprises with special reference to state economic development corporations in Cheong, K.C., Khoo, S.M., and Thillainathan, R. (eds). Kuala Lumpur: Persatuan Economi Malaysia
Ramirez CD, Ling HT (2004). Singapore Inc. versus the sector: Are government-linked companies different? IMF Staff, 51(3): 510-528.
Rozeff M (1982). Growth, Beta and Agency Costs as Determinants of Dividend Payout Ratios (Fall). J. Financ. Res., 5: 249-259
Sawicki J (2009). Corporate governance and dividend policy in Southeast Asia pre-and post-crisis. Eur. J. Financ., 15(2): 211-230
Skinner DJ (1993). Asset Structure, financing policy and accounting choice: Preliminary evidence. J. Account. Econ., 16: 407-445
Smith C, Watts R (1992). The investment opportunity set, corporate financing, dividend and compensation policies. J. Financ. Econ., 32: 509-522.
Tam OK, Tan MGS (2007). Ownership, Governance and Firm Performance in Malaysia. Corporate Governance: Int. Rev., 15(2): 208-222.
Thillainathan R (1975b). Public enterprise as an instrument for restructuring society, in Chee, S., and Khoo, S.M. (eds). Kuala Lumpur: Malaysian Economic Association.
Turner M, Hulme D (1997). Governance, Administration and Development. London: Macmillan.
Verbeek M (2008). A guide to modern Econometrics (3rd ed). England: Wiley.
Vogelvang B (2005). Econometrics, Theory and Applications with Eviews. England: Prentice Hall.
Wang K, Erickson J, Gau GW (1993). Dividend Policies and Dividend Announcement Effects for Real Estate Investment Trusts. J. Am. Real Estate Urban Econ. Assoc., 21(2): 185-201.
Yatim P, Kent P, Clarkson P (2006). Governance structures, ethnicity and audit fees of Malaysian firms. Manage. Audit. J., 21(7): 757-782