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Dynamic panel model of dividend policies: Malaysian perspective

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Dynamic Panel Model of Dividend Policies: Malaysian Perspective

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ABSTRACT The aim of this paper is to identify the key determinants of the dividend policies for Malaysian listed firms. The sample in this study incorporates the top 100 listed firms on Bursa Malaysia (Bursa) over a ten-year period from 2007 to 2016. The dynamic panel data set was constructed using the sample firms. The results indicate that dividend policies are positively significantly related to profitability and firm size in Malaysia. Thus, this suggests that Malaysian listed firms determine their future dividends based on past dividend payments. Meanwhile, dividend policies are negatively and significantly associated with leverage and business risk. Therefore, this study used the generalized method of moments (GMM) to reveal unique findings and the findings should inspire analysts, policy makers, institutional investors and investors to examine the dividend policy puzzle, especially for developing countries.

KEY WORDS: Dynamic panel, key determinants, lagged dividend, developing countries, dividend policy

JEL Classification: G35, O16

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1. Introduction

One of the main objectives of financial management is to maximize the shareholders' wealth. Thus, financial management is mainly concerned with the decision making regarding dividend policies, and managers must follow the payout policy when determining the size and pattern of the dividends to shareholders over time (Baker, Veit, & Powell, 2001; Mrzygłód & Nowak, 2017). There are several types of dividends such residual dividends, stable dividends and low-regular-dividends-plus-extras (Sierpińska-Sawicz, 2016). To make optimal dividend decisions, corporate finance needs to determine which variables should be used when determining dividend payouts. According to Baker, Singleton, and Veit (2011), despite extensive research into dividend policies for many decades, a universal explanation has not yet obtained.

Furthermore, most of empirical studies have been carried out in the context of listed companies in developed and emerging markets. As such, the conclusions from these previous studies may not be relevant for developing countries with different corporate regimes and economic structures. Bekaert and Harvey (2000) proposed and developed corporate finance models with an assumption that is consistent with developed markets. This caused these models to fail when they were applied to emerging markets. Most managerial models were developed in Western countries, which makes these models poor guides, especially in different institutional contexts (Lagoarde-Segot, 2013). Nevertheless, the determination of dividend policies

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has remained a controversial and unsolved issue since the evolution of corporate financial research on dividend policies, especially for developing markets. Thus, to develop an appropriate approach regarding these issues, this study recommends reviewing the established models that consider developing markets.

According to Yusof and Ismail (2016), Malaysia is classified as a developing country in which the capital market is more consolidated than other emerging markets. The reasons for choosing this country were that it has different country-specific factors, institutional factors and firm financial structures. Thus, these differences might require appropriate dividend policies that suit developing markets. Furthermore, this study will add to the literature and extend the existing empirical evidence on the key determinants of dividend policies by using current data and methods to bridge the gap in the literature, especially in the context of developing countries that is currently limited. The objective of this research is to examine the key determinants that affect dividend policies in developing countries such as Malaysia. The sample that is used in this study is top 100 listed firms in Malaysia over a period from 2007 to 2016. This research will use the generalized method of moments to analyze the effects of the most important factors that are identified in the literature on dividend policies.

2. Dividend Policies in Malaysia

About a decade ago, Malaysia was facing Asian financial crisis in which the impacts were traumatic, and there were economic and political disturbances. When facing this situation, the currency market, stock market and property market nearly collapsed. In 1999, the Malaysian economy started sharply rebounded due to several factors and the capital market has experienced substantial progress over the past decade. Transforming from an emerging country, Malaysia is now a developing country and its capital market is more developed than that of any other emerging market. Thus, Malaysia was chosen, since it represents the different features of different markets. It is also a rapidly growing country that is situated between a developed and emerging economy. Moreover, Malaysia has sought to become a fully developed country by the year 2020 by modernizing its economy through industrialization (Thanoon, Baharumshah, & Rahman, 2006), and the economic transformation might need a different dividend policy that could be different from those of developed and emerging countries.

3. Literature Review and Hypothesis Development

The financial literature contains some main theories that clarify the determinants of dividend policies over time and offers an ample amount of information and research on the topic. In a seminal paper, Miller and Modigliani (1961) stated that dividend payments are irrelevant based on conditions of a perfect capital market and rational behavior based on the value of the firm. They stated that the dividend policy is not affected by the share price of a firm and the shareholder's wealth or capital costs, since they believe that the selection of an investment will determine the value of the firm, and it is based on how the distribution of the cash flow is being managed. Moreover, the bird in the hand theory, which was proposed by Gordon (1963) and Lintner (1962), criticized the findings of Miller and Modigliani. They stated that investors prefer the certainty of available cash instead of capital gains in the future. Nevertheless, the theory itself indicated that the money that is paid to shareholders is more valuable than the money that is reinvested. Instead, life cycle theory states that firms pass through several stages in their lives and firms tend to modify their dividend policies based on the financial needs of each stage (Mueller, 1972). Additionally, from that argument, agency costs can be experienced by shareholders, since they can result from potential conflicts between managers' and shareholders' interests. Short, Zhang, and Keasey (2002) state that dividend policies play important roles in minimizing the agency costs that have arisen from the conflicting interests of both parties.

In the Malaysian perspective, even though numerous studies have been conducted to examine the factors influencing dividend policies, the findings from these prior studies were mixed and the data that were used were not current (Ameer, 2015; Benjamin, Mohamed, & Marathamuthu, 2018; Mui & Mustapha, 2016; Subramaniam & Devi, 2011). Moreover, few previous studies used different methods and focused on specific sectors. For example, Omar and Echchabi (2019) used qualitative methods to analyze semi struc-

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tured interviews and (Lin, Thaker, & Khaliq, 2018) covered the property sector. The main motivation of this study is to fill the existing gap in the literature by exploring the factors affecting dividend policies in Malaysia, which is representative of a developing market.

Considering the review of the literature, there are key variables that are used and analyzed to reveal their relationship and impacts on the determinants of dividend policies. In this paper, the explanatory variables are lagged dividends, profitability, leverage, liquidity, firm size, business risk, free cash flows and growth opportunities.

3.1 Profitability

Profitability is the capability of generating profits from the firms' operations where the firms use their resources to generate revenues in excess of their expenses. According to Jabbouri (2016), coherent with the free cash flow hypothesis, firms tend to increase their dividend payment accordingly to increase their profitability and avoid retaining earnings within the firm. In particular, studies that have been done that have discovered a positive relationship between profitability and a dividend policy (Ajanthan, 2013; Benavides, Berggrun, & Perafan, 2016; Brunzell, Liljeblom, Loflund, & Vaihekoski, 2014; Issa, 2015; Yegon, Cheruiyot, & Sang, 2014). In contrast, Kaźmierska-Jóźwiak (2015) and Mehta (2012) find that profitability has a significant and negative relationship with the dividend payout ratio.

H1: Profitability will have a positive effect on dividend policies in Malaysia

3.2 Leverage

In relation to debt financing, Yusof and Ismail (2016) indicated that more cash is needed by firms with high debt due to the obligation to settle their debt, which might reduce the funds that are available to shareholders. This in line with the transaction cost theory of Al-Malkawi (2007) in which firms have to pay their obligations and maintain their cash flows instead of paying dividends. Thus, it leads to lower dividend payments. Furthermore, from previous studies, it is found that the relationship between the leverage of firms and dividend payments is negative (Abdulkadir, Abdullah, & Wong, 2015; Jabbouri, 2016; Moon, Lee, & Dattilo, 2015; Yensu & Adusei, 2016). Meanwhile, Rehman and Takumi (2012) and Osman and Mohammed (2010) find a positive relationship between leverage and dividend payouts.

H2: Leverage will have a negative effect on dividend policies in Malaysia

3.3 Liquidity

Liquidity measures the ability to pay the short-term debts of firm using the firms' liquid assets (Tahir and Mushtaq, 2016). Firms with greater liquidity offer more security and managers can maintain or even give out higher dividend payouts. Thus, firms with more cash should pay more dividends. Otherwise, managers may invest the cash irrationally. Most previous studies have been reported inconsistent results and there are no commonly accepted explanations for the adequate liquidity of firms with respect to a uniform dividend payment. The positive relation is in line with (Olang, Akenga, & Mwangi, 2015) who noted that firms with higher rates of return on equity paid higher dividends than firms with the lowest returns on equity. Labhane and Mahakud (2016) and Mui and Mustapha (2016) found that liquidity has a statistically significant relationship with the dividend payout ratio, which indicates that highly liquid firms would paid higher dividend payout rates.

H3: Liquidity will have a positive effect on dividend policies in Malaysia

3.4 Firm Size

The size of a firm is one of the factors that most influences the dividend policy (Hellstrom & Inagambaev, 2012). Paying dividends lessens the problem. In particular, larger firms tend to pay higher dividends than smaller firms. Past studies generally showed that the size of the firm and dividend policy are positively correlated with each other (Alzomaia & Al-khadhiri, 2013; Anjana & Balasubramaniam, 2017; Jabbouri, 2016; Mehta, 2012; Mui & Mustapha, 2016). Others concluded that there is a positive and significant relationship between firm size and the dividend policy and have stated that larger firms have easier access to funds and are able to distribute dividends to shareholders much better compared to smaller firms. Conversely, Fairchild, Guney, and Thanatawee (2014) concluded that firm size does not influence the likelihood of dividend payments.

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H4: Firm size will have a positive effect on dividend policies in Malaysia

3.5 Business Risk

According to Rozeff (1982), business risk is a factor that affects dividend policies when a firm does not have sufficient cash to cover its liabilities, such as paying dividends. Therefore, the relationship between expected profits and actual profits will be uncertain if business risk is high. By minimizing firm risk, a firm will pay a lower dividend (Lestari, 2018). Business risk is often discussed when firms with more systematic risk (beta) tend to adopt a relatively low dividend payout rate. The proxy for business risk is beta, which measures the systematic risk or volatility of a portfolio or a security in comparison to the whole market. Most previous studies found that risk (beta) is negatively related to dividend policies (Amoako-Adu, Baulkaran, & Smith, 2014; Ardestani, Rasid, Basiruddin, & Mehri, 2013). This agrees with other studies that show that a firm with a higher beta establishes lower dividend payouts since a high beta is a sign of strong operating and financial leverage, which lead to firms undertaking external financing. Meanwhile, (Al-najjar & Kilincarslan, 2018; Alzomaia & Al-khadhiri, 2013; Hassonn, Tran, & Quach, 2016) show that there is no significant impact on the dividend policy.

H5: Business risk will have a negative effect on dividend policies in Malaysia.

3.6 Free Cash Flow

One of the important factors that determine the level of firms' dividend payments is the size of the free cash flows that are created by firms' operations. Jensen (1986) stated that firms with high free cash flows must pay higher dividends to reduce the agency conflicts between shareholders and managers. Conversely, managers can follow their own personal agendas and maximize their personal wealth or invest in negative net present value investments instead of maximizing the shareholders' wealth. This is supported by agency theory and free cash flow theory (Easterbrook, 1984; Jensen & Meckling, 1976; Rozeff, 1982). A study (Amidu & Abor, 2006; Kouki & Guizani, 2009; Lestari, 2018) indicated that there is a significant positive relationship between cash flows and dividend payouts. They stated that firms with unstable cash flows may not easily pay dividends compared with firms with good and stable cash flows. According to Baker and Kapoor (2015), earnings tend to be highly correlated with cash flows and cash serves as a basis for dividend payments. Meanwhile, Kent Baker, Dewasiri, Koralalage, and Azeez (2019) found that free cash flows have a negative influence on dividends and are a significant determinant of dividend payouts.

H6: Free cash flows will have a positive effect on dividend policies in Malaysia

3.7 Growth Opportunities

There are not many studies on growth or investment opportunities as there have been on other determinants of dividend policies. Firms with high growth and investment opportunities need more money to finance their future investments. Thus, they tend to pay lower dividends and make more investments to maximize their expected returns (Myers & Majluf, 1984). According to life-cycle theory (DeAngelo, DeAngelo, & Stulz, 2006), young and growing firms face greater investment opportunities compared to stable and mature firms with fewer investment opportunities. Hence, new firms would reinvest their excess cash instead of paying dividends to shareholders. Growth opportunities can be defined as opportunities to invest in profitable projects (Mallisa & Kusuma, 2017). Firms with greater growth and investment opportunities will need funds to finance those investments and, in that situation, firms tend to pay minimal or zero dividends. Similarly, from previous studies, some hypotheses have argued that there is a reciprocal relationship between investment opportunities and dividend policies. The significant negative influence of growth opportunities on dividend payments was evidenced in past studies (Ghalandari, 2013; Hussainey, Mgbame, & Chijoke-Mgbame 2011; Jabbouri, 2016; Kouki & Guizani, 2009; Subramaniam & Devi, 2011). Meanwhile, there are also other studies reported positive impact of growth opportunities on dividend policy (Kent Baker et al., 2019; Masry, Sakr, & Amer, 2018; Utami, Tobing, & Longkutoy, 2015; Yusof & Ismail, 2016).

H7: Growth opportunities will have a negative effect on dividend policies in Malaysia

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4. Methodology

This study used dynamic panel data to analyze the key determinants of dividend payouts using dividend payouts as the dependent variable and profitability, financial leverage, liquidity, firm size, business risk, free cash flows and growth opportunities as the independent variables. Moreover, the variables that were used in this study were taken from prior studies. In particular, regression analysis was carried out using the generalized method of moments (GMM) that can efficiently estimate the panel dynamic model and can be employed to address the endogeneity problems in corporate finance data. In addition, it allows for the past levels of a variable to affect its current level and the lagged dependent variable is most likely to be correlated with firm specific and economic variables, which cannot be done using the ordinary least squares (OLS) estimation.

4.1 Sample Selection and Data Collection

The sample of this study is unbalanced panel data and contains the top 100 firms that are listed on Bursa Malaysia, which is based on the highest and current market capitalization. The main reason for selecting large firms is the huge propensity of these firms to pay dividends to their shareholders (Yusof & Ismail, 2016). The financial data were collected for ten years (from 2007 to 2016) and the data were collected using the Datastream Thomson Reuters database. In addition, out of the 100 listed companies, we excluded those firms from the financial sectors and business activities since the financial decision and rules of those firms are different from the rest of the market and the firms with missing data (Hussain, Abidin, Ali, & Kamarudin, 2018). As a result, only 67 listed firms were included in this study after removing these firms. The data were analyzed by using the Stata version 13.0 software.

4.2 Variables and Measurements

Dependent variable: The **dividend payout ratio (DPR)** is the ratio of dividends per share to earnings per share (Chaudry, Iqbal, & Butt, 2015; Musiega, Alala, Douglas, Christopher, & Robert, 2013; Tahir & Mushtaq, 2016). The dividend payout ratio is chosen as the dependent variable due to the consideration of dividend payouts and dividend retention. The consideration is important since one of the hypotheses in this study is to examine the relationship between dividend payouts and the amount of cash that is retained in the business and how this may reduce agency costs and increase future investment.

Independent variables: Furthermore, this study adopted the firm characteristics from previous studies as independent variables in order to re-estimate the model. There are seven independent variables that are included in the dynamic panel model to account for the impact of the lagged dividend payout ratio on firm dividend decisions.

(1) Profitability (PROF) uses the ROE to assess a firm's profitability. Thus, this study uses the measurement of net income to total equity as the proxy. Profitability is a measurement of the efficiency and ultimate success or failure of a company. **(2) Leverage (LEV)** is used by previous studies such as (Al-Kuwari, 2009; Mahdzan, Zainudin, & Shahri, 2016; Mui & Mustapha, 2016; Tahir & Mushtaq, 2016), and this study adopts total debt over total equity. This represents the proportion of debt that is financed by creditors relative to shareholders and is an ideal measurement variable in this study. Moreover, the debt ratio reflects the wider picture of a company's liabilities. **(3) Liquidity (LIQ)** measures a firm's ability to meet its short term demands in terms of cash. It can happen that a firm has enough profits to declare dividends but somehow they do not have sufficient cash in hand to pay the dividends. (Kaźmierska-Jóźwiak, 2015; Labhane & Mahakud, 2016; Mui & Mustapha, 2016; Tahir & Mushtaq, 2016) measured liquidity as the current ratio of current assets to current liabilities. **(4) Firm size (SIZE)** is measured using the natural log of total assets (Dang, Li, & Yang, 2018). **(5) Business risk (RISK)** uses beta as a proxy as was done by previous researchers such as (Al-Kuwari, 2009; Asadi & Oladi, 2015; Hellstrom & Inagambaev, 2012). **(6) Free cash flow (FCF)** is to measure the cash position of the company (Al-Kuwari, 2009) and is measured by the net operating cash flow over total assets. **(7) Growth opportunities (GROWTH)** in this study use Tobin's Q as the proxy. James Tobin (1969) measured a firm's assets in relation to the firm's market value. A higher Q reflects when an additional investment in a company would generate profits that exceed the costs of the firm's assets.

This study estimates the dynamic relationship by including the lagged dividend payout ratio (DPR_{t-1})

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Table 1. Variables and Proxies of Variables

Variables	Represent by	Proxy Variables
Dividend Payout Ratio	DPR	$DPR = \frac{\text{Dividend per share}}{\text{Earnings per share}} * 100$
Profitability	PROFIT	$ROE = \frac{\text{Net Income}}{\text{Total Equity}} * 100$
Leverage	LEV	$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}} * 100$
Liquidity	LIQ	$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} * 100$
Firm size	SIZE	Firm Size = ln (Total Assets)
Business Risk	RISK	$\beta = \frac{\text{Cov}(r_i, r_m)}{\text{Var}(r_m)}$
Free Cash Flow	FCF	$\text{Free Cash Flow} = \frac{\text{Net operating cash flow}}{\text{Total assets}}$
Growth Opportunities	GROWTH	$\text{Tobin's Q} = \frac{\text{Market Value of Firm Total Equity} + \text{Total debt}}{\text{Total Assets Value}}$

in the model. Thus, the dynamic panel model is calculated as follows:

$$DPR_{it} = \beta_0 + \beta_1 DPR_{it-1} + \beta_2 PROFIT_{it} + \beta_3 LEV_{it} + + \beta_4 LIQ_{it} + \beta_5 SIZE_{it} + \beta_6 RISK_{it} + \beta_7 FCF_{it} + +\beta_8 GROWTH_{it} + \varepsilon_{it}$$

where
β_0 = Intercept,
$\beta_{1...}\beta_8$ = Coefficients, and
ε_{it} = Error term.

5. Empirical Results

5.1 Descriptive Statistics

Table 1 shows the descriptive analysis for all measures that are used in the panel model analysis of all the 67 listed firms in Malaysia. The dividend payout ratio (DPR) is 43.24 percent on average, which represents the average dividends that are paid by the sample of 67 companies over the 10 years. Next, the mean leverage (LEV) is 69.16 percent, which the highest among all variables. It indicates that higher leverage represents higher risk and aggressive financial strategies by Malaysian firms. The mean profitability (PROFIT) of 23.5 percent indicates that 23.5 percent of the profits are generated by total equity. The firm size (SIZE) has a mean of 6.11, which indicates that the sample companies have average total assets of USD 6 billion. Growth opportunities (GROWTH) have a mean of 2.1, which represents that the average growth of the companies' market value is 2.1 times. Hence, it indicates that firms have more growth opportunities since Tobin's Q, as a proxy, is more than 1. Meanwhile, the mean free cash flow (FCF) of firms is USD 0.01. The average business risk (RISK) of the firms is 0.99, which suggests that firm risk is lower than market risk by 0.01. Finally, liquidity (LIQ) is 2.18, which indicates that a one percentage increase in liquidity (LIQ) could increase the dividend payout by 2.18 percent.

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Table 2. Descriptive Statistics

Variable	Mean	SD	Maximum	Minimum
DPR	43.24	27.44	100	0
PROFIT	23.5	35.61	369.91	-63
LEV	69.16	92.44	768.28	0
LIQ	2.18	1.77	14.61	0.34
SIZE	6.11	0.69	7.5	4.066
RISK	0.99	0.55	3.35	-0.99
FCF	0.01	0.1	0.86	-0.49
GROWTH	2.09	2.1	16.28	0.15

Notes: DPR= dividend payout ratio, PROFIT= profitability, LEV= leverage, LIQ= liquidity, SIZE= firm's size, RISK= business risk, FCF= free cash flow and GROWTH= growth opportunities.

Table 3. Correlation analysis for Malaysia

	DPR	PROFIT	LEV	LIQ	SIZE	RISK	FCF	GROWTH
DPR	1.0000							
PROFIT	0.3703	1.0000						
LEV	-0.0620	0.1477	1.0000					
LIQ	-0.0364	-0.1364	-0.2984	1.0000				
SIZE	-0.0922	-0.2069	0.3523	-0.0722	1.0000			
RISK	-0.3706	-0.2436	0.04	-0.0269	0.1795	1.0000		
FCF	-0.0758	-0.0012	-0.1051	0.1091	0.0109	0.0417	1.0000	
GROWTH	0.4360	0.7346	-0.0725	0.0132	-0.3692	-0.2953	-0.0649	1.0000

Notes: DPR= dividend payout ratio, PROFIT= profitability, LEV= leverage, LIQ= liquidity, SIZE= firm's size, RISK= business risk, FCF= free cash flow and GROWTH= growth opportunities. level

5.2 Correlation Analysis

The table 3 shows the pairwise correlation matrix for the variables that are analyzed in this study. This correlation test is applied to test the relationships among the variables. Generally, there is negative correlation between leverage (LEV), liquidity (LIQ), the size of the firm (SIZE), the firms' risk (BETA) and free cash flow (FCF) for Malaysian firms. Thus, the correlation matrix shows that the independent variables are not strongly correlated with each other and this can represent the absence of multi-collinearity among the explanatory variables.

5.3 Determinants of Dividend Policies: Dynamic Panel model

This section presents and discusses the results of the employed generalized method of moments (GMM) that estimate the dynamic panel model for all sample companies from 2007 to 2016. Based on a prior study by Arellano and Bond (1991), we conduct a post estimation of the specifications test for over-identifying restrictions. A different GMM is used to estimate the first differences using the level regressors as the instruments to control for unobservable firm heterogeneity in which poor lagged levels of the series provide week

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instruments for the first-differences. Moreover, the result will be reported for both Difference GMM estimators: the *One –Step* and *Two-Step* estimators. The Sargan test is used for the over-identification, and the Arellano – Bond test is used for the zero autocorrelation among the first differenced errors. For the Sargan test, P> 0.05 shows that over-identifying restrictions are valid. The values that are reported for the Arellano-Bond test for the second order serial correlation fail to reject the null hypothesis due to the absence of second order serial correlation. The coefficient for the lagged dependent variable (DPR_{t-1}) is positive and significant at the 1 percent level. The coefficient values are 0.38 (*One step*) and 0.394 (*Two step*), which indicate that the dividend payouts for Malaysian listed companies is likely to increase when it has increased in previous period. The regression results in Table 3 show that profitability is the only variable that is negative and significant at the 1 percent level. Meanwhile, the other variables such leverage, business risk and growth opportunities are significant at the 5 percent and 1 percent level for the two step estimation. With respect to the specification test, the Sargan test for over-identification accepts the validity of the instruments and the AR(2) test does not reject the null of second order serial correlation.

5.4 Robustness Test

Furthermore, for the robust check, this study re-estimates the dynamic panel model using the System GMM. The results in Table 4 present the estimations of the dynamic panel model that uses the System GMM, which estimates the first differences and both levels. This is favored since this estimator helps to partially retain the variations between firms apart from controlling for individual heterogeneity. In this study, the best determinants that influence the dividend payout ratio are estimated. For general note for the specifications tests, the result pass the Sargan test of over identifying restrictions and the Arellano-Bond test (AR(2) test) of autocorrelation.

For all tests, the lagged dividend payout ratio (DPR_{t-1}) coefficient continues to be positive and significant, as reported in the previous estimates. The coefficient represents the direct relationship between the lagged dividend and dividend payout, which indicates that increasing the lagged dependent variable will have a significant positive impact on the dividend payout. Furthermore, the results are consistent with the empirical findings of (Abdella, 2016; Al-Ajmi & Hussain, 2011; Turen & Salman, 2012. With respect to profitability, the analyzed Malaysian firms experience a negative but significant relationship between profitability and the dividend payout ratio at the 1 percent level for both estimations. This could suggest that Malaysia is a developing country where the profitable listed companies used retained earnings as resources for capital and are less likely to pay dividends to shareholders. The findings are consistent with previous studies such as (Booth, Aivazian, Demirguc- Kunt, & Maksimovic, 2001; Kaźmierska-Jóźwiak, 2015; Mehta, 2012).

Meanwhile, the results for leverage (*two-step*) show that there is a negative and significant impact on leverage, which agrees with the hypothesis of this study that predicts a negative relationship between leverage and the dividend payout ratio. Thus, the results imply that lower leverage leads to higher dividend payments to shareholders. Hence, it can be concluded that firms with less debt have lesser obligations to the creditors in terms of paying back debt and interest. Hence, the dividends that are to be disseminated to shareholders are subject to the firms first paying their debt obligations. The negative effect of leverage on dividend payouts is documented in the literature (Ahmed & Javid, 2009; Alzomaia & Al-Khadhiri, 2013; Hassonn et al., 2016; Labhane, 2017; Nnadi, Wogboroma, & Kabel, 2013; Patra, Poshakwale, & Ow-Yong, 2012)

Firm size was discovered to be a positive and significant effect on dividend policies. This suggests that larger firms would be able to pay higher dividends, which aligns with agency cost theory. This is due to the larger firms being capable of generating more earnings, which means that they are more capable of paying higher dividends. This results are consistent with the findings of (Forti, Peixoto, & Alves, 2015; Malik, 2013; Mehta, 2012; Moon et al., 2015; Yensu & Adusei, 2016).

In addition, the *two-step* estimation shows that business risk has a significantly inverse relationship with the dividend policy at the 5 percent level. These results suggest that there is a negative and significant relationship between risk and dividend payments, which implies that companies with less risk tend to pay more dividends. The negative relationship could be explained as the riskier companies finding difficulties planning future

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Table 4. Different Dynamic Panel Analysis GMM for Malaysia

Variable	One Step Different GMM	Two step Different GMM
DPR	0.38*** [0.114]	0.394*** [0.402]
PROFIT	-0.639*** [0.113]	-0.604*** [0.078]
LEV	-0.007 [0.03]	-0.026** [0.015]
LIQ	-0.324 [0.823]	-0.198 [0.384]
SIZE	2.69 [6.933]	6.325 [5.019]
RISK	-3.339 [3.353]	-6.983*** [1.442]
FCF	-6.787 [9.139]	-2.706 [7.129]
GROWTH	1.293 [1.01]	1.209*** [0.423]
Specification test		
Sargan test	0.1882	0.409
AR (1)	-	0.000
AR (2)	-	0.532

Notes: ***, ** and * denote significant at 1%, 5% and 10%, respectively. The standard errors are reported in parenthesis. DPR= dividend payout ratio, PROFIT= profitability, LEV= leverage, LIQ= liquidity, SIZE= firm's size, RISK= business risk, FCF= free cash flow and GROWTH= growth opportunities.

investments and other activities because of their high market risk. This findings is consistent with the result of the studies that were conducted by (Amoako-Adu et al., 2014; Alzomaia & Al-Khadhiri, 2013; Ardestani et al., 2013; Labhane & Mahakud, 2016; Moradi, Salehi, & Honarmand, 2010; Trang, 2012)

In particular, growth opportunities also have a positive significant influence on dividend policies at the 1 percent level, which does not support the projected hypothesis. This reveals that firms with high growth opportunities pay higher dividends. This can be suggest that Malaysian companies with growth opportunities tend to use external funds to finance debt, which can cause a mismatch in financing their investments. Others previous studies that find the same results as this study are (Forti et al., 2015; Yensu & Adusei, 2016; Thi & Trang, 2012).

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Table 5. System Dynamic Panel Analysis GMM for Malaysia

Variable	One Step Different GMM	Two step Different GMM
DPR	0.506*** [0.071]	0.549*** [0.029]
PROFIT	-0.565*** [0.113]	-0.515*** [0.531]
LEV	-0.002 [0.287]	-0.023** [0.135]
LIQ	-0.588 [0.864]	-0.283 [0.383]
SIZE	1.615 [5.679]	3.505* [2.726]
RISK	-4.834 [3.09]	-7.258*** [1.392]
FCF	-3.523 [9.573]	1.003 [5.054]
GROWTH	1.243 [1.064]	1.048*** [0.317]
Specification test		
Sargan test	0.091	0.551
AR (1)	-	0.000
AR (2)	-	0.31

Notes: ***, ** and * denote significant at 1%, 5% and 10%, respectively. The standard errors are reported in parenthesis. DPR= dividend payout ratio, PROFIT= profitability, LEV= leverage, LIQ= liquidity, SIZE= firm's size, RISK= business risk, FCF= free cash flow and GROWTH= growth opportunities.

6. Conclusion

The study analyzed the key determinants of the dividend policies of listed companies in Malaysia. The study uses the top 100 listed firms from Bursa Malaysia from 2007 to 2016 in order to assess corporate dividend policies in Malaysia, which is a developing market where there is comparatively less empirical evidence. Furthermore, by using the GMM estimation, the study found that lagged dividend payouts, profitability, leverage, firm size, business risk and growth significantly affect dividend policies. Thus, the results indicate that firms with lagged dividends, large sizes, higher growth opportunities, less business risk and low leverage tend to pay higher dividend payments, whereas higher profits makes a firm likely to pay low dividends. However, the firms' liquidity and free cash flows are not significant influences of the dividend decisions of firms.

Furthermore, these results could benefit various groups of people and organizations such as managers, shareholders, investors, policy makers, analysts, banks and governments in terms of making decisions, especially when facing dividends. This paper provides benefits for those groups of people by formulating and revising dividend policies by including the factors that have been used in previous studies that were found to have significant effects on dividend payouts.

The limitations for this study are as follows. First, this paper analyzes Malaysian listed companies using the top 100 highest capitalized firms in the market, which means that the results of the overall study might be relevant only to large firms. Moreover, the coverage of the data is only ten years, and future studies should gather larger samples over more years. Another extension could be to analyze the key determinants of specific industries and other countries. The results should be contribute to the literature, since they will provide exciting results regarding the characteristics of the specific industries and the chosen countries due to the market conditions.

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