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CORPORATE DIVIDEND POLICY AND BEHAVIOUR: THE MALAYSIAN EVIDENCE

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ABSTRACT

This study examines corporate dividend policy and behaviour of the Kuala Lumpur Stock Exchange (KLSE) companies. Our results confirm the influence of industry on payout ratios. We also find that payout ratios in a given industry vary significantly across time. The results of multinomial logit analysis reveal that the KLSE companies' dividend actions are sensitive to the changes in earnings. Probabilities of dividend increases, decreases and omissions are high, respectively, with earnings increases, decreases and losses. This causes volatility in dividend payments. The KLSE firms appear to be reluctant to omit dividend except when they suffer losses. Further, using Lintner's framework and panel data regression methodology, we find evidence in favour of regular, but less stable, dividend policies being pursued by the KLSE companies. This is contrary to the experiences of companies in the developed capital markets. The results of the two-way fixed firm and time effects model reveal that there are significant differences in dividend policies across individual firms and over time.

INTRODUCTION

The study of corporate dividend behaviour has been a key research area in finance. Yet we do not have an acceptable explanation for the observed dividend behaviour of companies and the "dividend puzzle" still remains unsolved (Black, 1976)[1]. It is a long-standing position of well-known finance researchers that dividends are irrelevant, and they have no influence on the share price, given that the capital markets are perfect (Miller & Modigliani, 1961). Some researchers have held a contrary position that considers that since capital markets are not perfect, dividends do matter. Several empirical surveys indicate that both managers and investors favour payment of dividends. Lintner (1956) found that US companies in the sixties distributed a large part of their earnings as dividends, and they also maintained stability of dividends. These findings have been vindicated in different countries and at different time periods.

The focus of this research is to study how companies trading in the KLSE, an emerging market in Southeast Asia, decide their dividend payments and to examine empirically whether they follow stable dividend policies, as is generally the case in developed markets. This study provides evidence that the KLSE firms follow less stable dividend policies and their dividend payments are closely related to changes in earnings but they do not immediately omit dividends when earnings decrease.

The rest of the paper is organised as follows: The next section reviews some important previous studies conducted abroad and in Malaysia. The third section describes the data and methodology. In the fourth section, we present the results and the last section contains the main conclusions of the study.

REVIEW OF PREVIOUS STUDIES

Lintner (1956) for the first time uncovered that firms maintain a target dividend payout ratio and adjust their dividend policy to this target. The long-term sustainable investment and growth objectives determine the firms' target payout ratios. Further, Lintner found that firms pursue a stable dividend policy and gradually increase dividends given the target payout ratio. This implies that firms set speed to move towards the full achievement of payout. These findings suggest that firms establish their dividends in accordance with the level of current earnings as well as dividends of the previous year. Lintner also pointed out that managers believe that investors prefer firms with stable dividend policies.

A number of survey and empirical studies have been conducted in USA and other countries using Lintner's framework. In USA, Fama and Babiak (1968) and Brittain (1966) use a modified and extended Lintner model to confirm his findings. A survey of the NYSE companies by Baker, Farrelly, and Edelman (1985) supports the Lintner findings, and they conclude that the major determinants of dividend payments are future earnings and past dividends. The subsequent survey study of Pruitt and Gitman (1991) also confirms these results.

Lintner's model has been generally found applicable in a number of developed markets. It has been tested by Chateau (1979) in Canada, Shevin (1982) in Australia, McDonald, Jacquilland and Nussenbaum (1975) in France, Leithner and Zimmermann (1993) in West Germany, UK, France and Switzerland and Lasfer (1996) in UK. Dewenter and Warther (1998) compare dividend policies of firms in USA and Japan for the period from 1982 to 1993. Their results show that USA firms tend to choose stable dividend policies whereas Japanese firms prefer to omit dividends and follow relatively unstable dividend policies.

Researchers have recently started looking at the dividend policy and behaviour of companies in regulated and emerging markets. Glen, Karmokolias, Miller and Shah (1995) find substantial differences in dividend policies of companies in developed and emerging markets. They show that dividend payments are much lower in emerging markets and companies follow less stable dividend policies, although they do have target payout ratios. A study by Pandey and Bhat (1994) in India supports the Lintner findings and reveals that Indian managers confirm that companies maintain an uninterrupted record of dividend payments and also try to avoid abrupt changes in their dividend policies. Ariff and Johnson (1994) confirm Lintner's model for firms in Singapore. In Turkey, Adaoglu (2000) finds that earnings are the main determinant of dividend payments. Until 1994, companies in

Turkey were required to distribute 50% of the distributable profits as cash dividends. His results show that because of regulation of compulsory distribution of profits, the ISE (Istanbul Stock Exchange) companies followed stable dividend policies until 1994, but once the companies were given the flexibility of choosing their own dividend policy, they followed unstable dividend policies. Gul (1999) provides evidence on dividend policy in Japan, and studies by Gul (1999) and Zhao (2000) relate dividend policy to ownership structure in China.

Studies of dividend behaviour of companies in Malaysia support Lintner's model. In a survey study, Isa (1992) finds that firms in Malaysia follow stable dividend policies and a number of internal and external factors govern these policies. Kester and Isa (1996) also confirm these results. Other studies confirming the applicability of the Lintner model in Malaysia include Annuar and Shamsher (1993) and Gupta and Lok (1995). Consistent with the tax imputation hypothesis, Isa (1993), in a study of Malaysian companies for the period from 1981 to 1992, finds a positive relationship between P/E ratio and payout ratio. The relation between dividend yield and P/E ratio is negative, which contradicts the tax imputation hypothesis. Isa finds a positive relation between dividend yield and payout.

There is a need for a comprehensive study of dividend behaviour of companies in Malaysia. Our study of the dividend behaviour of the Malaysian companies uses a larger sample, covers a number of issues vis-à-vis dividend policy and employs different methodologies than used in the previous studies. We used a multinomial logit approach to analyse the dividend actions of the Malaysian companies. Further, we used panel data regressions to test for the stability of the dividend policy of the Malaysian companies. We controlled both the firm and temporal effects in our estimations. The different tests indicated the robustness of our results.

DATA AND METHODOLGY

We used the financial data of 248 companies listed on the KLSE Main Board as at 31 December 2000. The criteria for sample selection are as follows: First, financial, trusts and closed-end funds companies are excluded. These companies have very high leverage and they are generally governed by different rules and practices with regard to earnings management. Second, we used a balanced sample of companies for eight years, i.e., from 1993 to 2000. Thus the sample companies should be continuously listed on the KLSE and should have financial data for eight years. Third, we excluded companies with negative shareholders' equity[2]. Fourth, industries (sectors) with fewer observations are excluded. The sample companies, as per the KLSE classification, are grouped into six industries (sectors): construction (15), consumer products (36), industrial products (60), plantation (32), property (46) and trading/services (59). We used earnings per share (EPS) and dividend per share (DPS) data from the database of Dynaquest Sdn Bhd[3]. Both EPS and

DPS are adjusted for bonus and rights issues. DPS is on gross basis (before deduction of tax payable by shareholders). Gross DPS is the actual cash disbursement by companies.

In the first stage of our analysis, we examined if dividend payout ratios of the KLSE companies differ across sectors. We used non-parametric, Kruskal-Wallis (K-W) one-way analysis of variance of ranks[4] (Michel, 1979) because tests of normality show that the underlying distributions are non-normal[5]. The K-W technique tests the null hypothesis that the unrelated-k samples belong to the identical population. This test helps to assess whether the differences among samples characterize significant population dissimilarities. The null hypothesis is rejected if calculated H statistics is greater than $\chi^2_{(k-1,\ \alpha)}$, α signifying the level of significance. We also used Friedman's test to examine the differences in payout ratios within each sector across time. This method tests the null hypothesis that the locations of all k populations are the same[6]. As in the case of K-W test, we reject the null hypothesis when the test statistic (F_r) is larger; *viz.* $F_r > \chi^2_{(k-1,\ \alpha)}$.

We next examined how firms' decisions to change dividend payments are affected by changes in earnings. We used multinomial logit analysis for this purpose. Three categories of earnings changes are identified: increases, decreases and negative earnings. Under each category of earnings change, four possible dividend actions are recognized. 'Increases' show cases where DPS increases for a given change in EPS; 'no changes' show cases of DPS maintenance at the previous level; 'decreases' show cases where DPS decreases; 'omissions' show cases where positive DPS moves to zero. When DPS moves from zero to positive (initiations), it is included under increases. Similarly, if omissions continue, it is included under omissions[7]. The change in DPS is our response variable and the change in EPS is our explanatory variable. Both variables are treated as categorical variables. We categorised the change in dividend into four categories: increase (1), no change (2), decrease (3) and omission (4). Similarly, the change in earnings has three categories: increase (1), decrease (2) and negative (3). We aimed at estimating the probability for a particular dividend action of each firm based on its earnings change. We fit the following logit model[8]:

$$\ln\left(\frac{m_{i,j}}{m_{1,j}}\right) = \delta_i + \gamma_j \qquad (1)$$

where m_i is the index for dividend change and m_j for earnings change. The equivalent log-linear model is:

$$\ln\left(m_{i,j}\right) = d_i + \left(de\right)_{i,j} \qquad (2)$$

where d_i is the main-effects term for change in DPS and $(de)_{i,j}$ is the corresponding term to change in DPS (d) by change in EPS (e). From Eqs. (1) and (2), we obtain:

$$\delta_i = d_i - d_1 \tag{3}$$

$$\gamma_{i,j} = (de)_{i,j} - (de)_{1,j} \tag{4}$$

In the third stage of our analysis, we used Lintner's model to study the stability of dividend. If p_i is the target payout ratio for firm i and $E_{i,t}$ are ith firm's earnings in period t, then the Lintner model for dividends ($D_{i,t}$) in the current year (target dividend) is as follows:

$$D_{i,t} = p_i E_{i,t} \tag{5}$$

and the dividend change would be:

$$D_{i,t} - D_{i,t-1} = p_i E_{i,t} - D_{i,t-1} \tag{6}$$

In practice, as Lintner finds, firms do not change dividends immediately with changes in earnings. They adjust dividends gradually towards the achievement of target payout[9]. If the adjustment factor for ith firm is s_i, then Eq. (6) can be rewritten as follows:

$$D_{i,t} - D_{i,t-1} = s_i (p_i E_{i,t} - D_{i,t-1}) \tag{7}$$

It is shown in Eq. (7) that the change in dividends results from the difference between the target dividends ($D_{i,t}$) and the actual dividends of the previous period ($D_{i,t-1}$). The term s_i shows the dividend stability; it depicts the speed of adjustment towards the target payout ratio (p_i). The value s_i reflects dividend smoothing behaviour of firms to changes in the level of earnings ($E_{i,t}$). A higher value implies less dividend smoothing and vice versa. From Eq. (7) we can derive the following empirical model to test the Lintner model:

$$\begin{aligned} D_{i,t} - D_{i,t-1} &= s_i (p_i E_{i,t} - D_{i,t-1}) \\ D_{i,t} &= s_i (p_i E_{i,t} - D_{i,t-1}) + D_{i,t-1} \\ D_{i,t} &= s_i p_i E_{i,t} + (1 - s_i) D_{i,t-1} \\ D_{i,t} &= a_{i,t} + bE_{i,t} + cD_{i,t-1} + u_{i,t} \end{aligned} \tag{8}$$

where $b = s_i p_i$ and $c = (1 - s_i)$. A positive $a_{i,t}$ is an indication of the regularity of the dividend payment.

Following Fama and Babiak (1968), we used earnings per share (EPS) and dividends per share (DPS) rather than total earnings and dividends for testing the dividend stability of the KLSE firms. Instead of using either a pure time series or pure cross section approach, we

employed panel (pooled time-series cross-section) analysis to estimate Eq. (8). The basic regression model using panel data is (Greene, 2000, 560) as follows:

$$y_{i,t} = \alpha_i + \hat{a}'\mathrm{x}_{i,t} + \varepsilon_{i,t} \quad (9)$$

The panel data have N × T observations, where t = 1…T (time period) of each I = 1…N cross-sectional observation unit in the sample. β' are the parameters to be estimated. There are **k** regressors in $\mathbf{x_{i,t}}$ (explanatory variables), not including the constant term. α_i is the firm effect, which is assumed as constant over time and specific to the individual cross-sectional unit in the fixed effects model. $\varepsilon_{i,t}$ is a stochastic error term assumed to have a mean of zero and constant variance. In a random effect model, α_i is disturbance specific to cross-sectional unit. We can extend Eq. (9) by including dummies for the time variable in order to control the temporal effect.

Pooling of time-series cross-sectional data increases the sample size; reduces cross-correlations; provides increased degrees of freedom and allows more efficiency in estimation (Baltagi, 1995). More importantly, panel data are more proficient to identify and measure effects that are undetectable in pure cross-sections or pure time-series data. Moreover, the measurement biases resulting from aggregation of firms or individuals and biases arising from omitted-variables are reduced (Pindyck & Rubinfeld, 1998: 250). The merit of a panel data over cross-section data is the ease of modeling the differences in behaviour across individuals (Greene, 2000).

RESULTS

Industry Influence on Dividend Payouts

We examined the differences in payout ratios of industries. Payout ratio is calculated as gross DPS divided by EPS. Payout ratio is limited to 1 when dividends are paid in spite of negative current earnings, or when earnings are less than dividends paid. Table 1 shows the mean and standard deviations of payout ratios by sectors (industries) from 1993 to 2000. We observed that plantation companies pay higher dividends and construction sector companies pay lower dividends. For instance, in the six years of the eight-year period, plantation sector companies had the highest payout ratios, while construction companies had the lowest dividend payout. The significant variations in payout ratios of sectors are verified by the K-W test. The computed K-W χ^2 is significant at 1% level for each year in the analysis. Thus, we reject the null hypothesis and conclude that dividend payout ratios differ across sectors. From Table 1, we also observed that payout ratios within each sector vary across time. As a case in point, payout ratios for plantation sector range between 35% (1998) to 70% (1993). The computed Friedman χ^2 is significant at 1% level for all sectors

except for consumer products. Thus, with the exception of consumer products sector, payout ratios of various sectors show variations over time.

TABLE 1
MEAN AND STANDARD DEVIATION OF PAYOUT BY SECTORS, 1993–2000

		1993	1994	1995	1996	1997	1998	1999	2000	Friedman χ^2
Construction (15)										
	Mean	0.328	0.309	0.238	0.264	0.295	0.260	0.262	0.351	8.380
	Stdev.	0.228	0.212	0.129	0.174	0.220	0.332	0.309	0.373	
Consumer (36)										
	Mean	0.628	0.592	0.521	0.506	0.501	0.634	0.470	0.514	17.63**
	Stdev.	0.298	0.310	0.324	0.323	0.338	0.384	0.384	0.387	
Industrial (60)										
	Mean	0.603	0.515	0.501	0.492	0.450	0.548	0.515	0.403	19.38*
	Stdev.	0.348	0.347	0.318	0.320	0.300	0.428	0.436	0.426	
Plantation (32)										
	Mean	0.702	0.655	0.445	0.525	0.532	0.350	0.408	0.562	58.69*
	Stdev.	0.332	0.361	0.323	0.333	0.361	0.339	0.342	0.410	
Property (46)										
	Mean	0.520	0.422	0.383	0.314	0.361	0.337	0.251	0.306	27.73*
	Stdev.	0.366	0.347	0.341	0.331	0.320	0.371	0.345	0.388	
Trading (59)										
	Mean	0.493	0.459	0.444	0.473	0.507	0.467	0.350	0.338	17.58**
	Stdev.	0.325	0.280	0.280	0.311	0.354	0.416	0.394	0.384	
K-W χ^2		17.79*	18.23*	12.91**	20.24*	10.62**	19.1*	15.18*	12.51**	

* Significant at 1%, ** significant at 5%, *** significant at 10%.

Note: Numbers within parentheses show number of firms.

Earnings Changes and Dividend Behaviour

In Table 2 we present the aggregate frequencies of dividend and earnings changes for 248 sample companies for eight years (1993–2000). From the cross-tabulation of earning and dividend changes, it may be observed that when earnings increase, there are about 50% cases of dividend increases. When earnings decrease, only about one-third of firms reduce dividends and about 7% omit dividends. In more than 50% cases, firms either increase or maintain dividends when their earnings fall. It may be noted that a large number of firms resort to dividend omissions when they experience losses. We find about 63% cases of dividend omissions when firms have negative earnings. The computed Pearson chi-square (615.223) and the likelihood statistics (556.384) reject the null hypothesis that earning changes and dividend changes are independent.

TABLE 2
CROSS-TABULATION OF EARNINGS AND DIVIDEND CHANGES

Earnings change		Dividend change				
		Increase	No change	Decrease	Omission	Total
Increases	Count	433.0	223.0	130.0	92.0	878.0
	Expected Count	313.1	191.2	201.3	172.5	878.0
	% Within Earnings Change	49.3	25.4	14.8	10.5	100.0
	% Within Dividend Change	70.0	59.0	32.7	27.0	50.6
	% of Total	24.9	12.8	7.5	5.3	50.6
Decreases	Count	157.0	124.0	193.0	36.0	510.0
	Expected Count	181.8	111.0	116.9	100.2	510.0
	% Within Earnings Change	30.8	24.3	37.8	7.1	100.0
	% Within Dividend Change	25.4	32.8	48.5	10.6	29.4
	% of Total	9.0	7.1	11.1	2.1	29.4
	Count	29.0	31.0	75.0	213.0	348.0
Negative	Expected Count	124.1	75.8	79.8	68.4	348.0
	% Within Earnings Change	8.3	8.9	21.6	61.2	100.0
	% Within Dividend Change	4.7	8.2	18.8	62.5	20.0
	% of Total	1.7	1.8	4.3	12.3	20.0
Total	Count	619.0	378.0	398.0	341.0	1736.0
	Expected Count	619.0	378.0	398.0	341.0	1736.0
	% Within Earnings Change	35.7	21.8	22.9	19.6	100.0
	% Within Dividend Change	100.0	100.0	100.0	100.0	100.0
	% of Total	35.7	21.8	22.9	19.6	100.0

What are the chances of a particular dividend action, given the change in earnings? We used the multinomial logit model to estimate the odds of a particular dividend action (increase, no change, decrease, or omission) of each firm based on its earnings change (increase, decrease, negative). The parameter estimates of the multinomial logit model are shown in Table 3. The estimates of all parameters and constant terms are statistically significant.

TABLE 3
EARNINGS AND DIVIDEND CHANGES: THE MULTINOMIAL LOGIT MODEL

				Asymptotic 95% CI	
Parameter	Estimate	SE	Z-value	Lower	Upper
d_1	–1.9792	0.1964	–10.08	–2.36	–1.59
d_2	–1.9136	0.1909	–10.03	–2.29	–1.54
d_3	–1.0395	0.1339	–7.76	–1.30	–0.78
d_4	0.000[x]	–	–	–	–
d_1*e_1	3.5239	0.2274	15.50	3.08	3.97
d_1*e_2	3.4414	0.2689	12.80	2.91	3.97
d_1*e_3	0.000[x]	–	–	–	–
d_2e_1	2.7959	0.2274	12.29	2.35	3.24
d_2*e_2	3.1406	0.2681	11.72	2.62	3.67
d_2*e_3	0.000[x]	–	–	–	–
d_3*e_1	1.3837	0.1908	7.25	1.01	1.76
d_3*e_2	2.7075	0.2247	12.05	2.27	3.15
d_3*e_3	0.000[x]	–	–	–	–
d_4*e_1	0.000[x]	–	–	–	–
d_4*e_2	0.000[x]	–	–	–	–
d_4*e_4	0.000[x]	–	–	–	–

Note: 'x' indicates an aliased (or a redundant) parameter. These parameters are set to zero.

We thus hypothesized that there are very high chances for firms to increase DPS when EPS increases. Similarly, chances are very high that firms would reduce DPS when EPS falls. Further, we hypothesized that dividend payments would be omitted if firms suffer losses. We used the multinomial logit analysis to test these hypotheses. Tables 4 and 5 show, respectively, generalized log-odds ratio and generalized odds ratio. We find that computed generalized log-odds ratios and generalized odds ratios are significant.

TABLE 4
GENERALIZED LOG-ODDS RATIO

					95% CI	
Parameter	Estimate	SE	Wald	Sig.	Lower	Upper
G1:$\ln(m_{21}/m_{11})$	–0.6625	0.0823	64.7213	0.0000	–0.8239	–0.5011
G2:$\ln(m_{31}/m_{11})$	–1.2005	0.0998	144.5634	0.0000	–1.3962	–1.0048
G3:$\ln(m_{41}/m_{11})$	1.5447	0.1145	181.8963	0.0000	–1.7692	–1.3202
G4:$\ln(m_{12}/m_{32})$	–0.2059	0.1073	3.6793	0.0551	–0.4162	0.0045
G5:$\ln(m_{22}/m_{32})$	–0.4410	0.1149	14.7314	0.0001	–0.6662	–0.2158
G6:$\ln(m_{42}/m_{32})$	–1.6680	0.1805	85.4319	0.0000	–2.0217	–1.3143
G7:$\ln(m_{13}/m_{43}$	–1.9792	0.1964	101.5345	0.0000	–2.3642	–1.5943
G8:$\ln(m_{23}/m_{43})$	–1.9136	0.1909	100.5234	0.0000	–2.2877	–1.5396
G9:$\ln(m_{33}/m_{43})$	–1.0395	0.1339	60.2698	0.0000	–1.3019	–0.7771

We first considered how increase in EPS affects the odds of taking a dividend action other than of increasing DPS. The estimated odds for dividend maintenance (no change), dividend decreases or dividend omissions are, respectively, 0.52, 0.30 or 0.21 times lower than the estimated odds for dividend increase shown in Table 5. The relative probability of DPS increase is much higher when EPS increases. Given decreases in EPS, the estimated odds for dividend increases, dividend maintenance, or dividend omissions are, respectively, 0.81, 0.64 or 0.13 times lower than the estimated odds for dividend decreases. It may be noted that there are very low chances for dividend omissions. Firms may even increase or maintain dividends when earnings drop. When EPS is negative, the estimated odds for dividend increases, dividend maintenance, or dividend decreases are, respectively, 0.14, 0.15 or 0.35 times lower than the estimated odds for dividend omissions. The probability of Malaysian firms omitting dividend payments is very high when they experience negative earnings. Overall, we find that the KLSE firms would normally increase DPS when EPS increases. It is interesting to note that when earnings decrease, the chances of dividend omissions are much lower than the odds of decreasing the dividend. Malaysian firms, however, resort to dividend omissions when their earnings are negative. The general applicability of the multinomial logit model is satisfactory as indicated by both the likelihood ratio and Pearson chi-square. The measure of association are $R_H = 0.1181$ for entropy and $R_C = 0.1126$ for concentration.

TABLE 5
GENERALIZED ODDS RATIOS

		95% CI	
	Value	Lower	Upper
G1:m_{21}/m_{11}	0.5156	0.4387	0.6059
G2:m_{31}/m_{11}	0.3010	0.2475	0.3661
G3:m_{41}/m_{11}	0.2134	0.1705	0.2671
G4:m_{12}/m_{32}	0.8140	0.6596	1.0045
G5:m_{22}/m_{32}	0.6434	0.5137	0.8059
G6:m_{42}/m_{32}	0.1886	0.1324	0.2687
G7:m_{13}/m_{43}	0.1382	0.0940	0.2031
G8:m_{23}/m_{43}	0.1475	0.1015	0.2145
G9:m_{33}/m_{43}	0.3536	0.2720	0.4598

Stability of Dividend Policy

We used Lintner's model to test for the stability of dividend policies of the KLSE companies. As stated earlier, dividend stability means a regularity of dividend payments and a gradual adjustment of dividend payments towards a target payout ratio. Our estimation model uses panel data. We employed the fixed firm and time effects model, which allows us to control unobservable heterogeneity through individual firm effect (η_i)

and to measure temporal effects through the time variable dummies (γ_i). Thus, our estimation model is as follows:

$$DPS_{i,t} = \alpha_0 + \alpha_1 EPS_{i,t} + \alpha_2 DPS_{i,t-1} + \eta_i + \gamma_t + \varepsilon_{i,t} \quad (10)$$

Table 6 provides estimates of the model for overall sample combining all sectors, and for the samples of each sector individually for the 1994–2000 period. The Hausmam statistics indicate that the fixed effects model is the appropriate estimation method (rather than the random effects model). We shall first discuss the results of the overall sample. The adjusted R^2 of 0.68 implies a high explanatory power of the regression results. The coefficients of constant term, the earnings per share ($EPS_{i,t}$) except for the industrial sector, and lagged dividend per share ($DPS_{i,t-1}$) are all significant at the 1% level. The significantly positive intercept term indicates that Malaysian firms pay dividends regularly and are reluctant to avoid payment of dividends. The regression coefficients of current earnings ($EPS_{i,t}$) and past dividends ($DPS_{i,t-1}$) are highly significant. The higher coefficient and the associated t-statistics of DPS_{t-1} imply the greater importance of past dividends in deciding the dividend payment.

TABLE 6
ESTIMATES OF FIXED FIRM AND TIME EFFECTS MODEL

		Constant	EPS_1	DPS_{t-1}	R^2	F-value	Hausman statistic
All sectors	Coefficient	0.0167	0.0587	0.7778	0.68	55.11*	17.02
	t-statistic	4.87*	8.50*	47.25*			
Consumer	Coefficient	0.1937	0.1992	–0.1547	0.77	19.56*	142.97*
	t-statistic	6.55*	2.48*	–2.28*			
Construction	Coefficient	0.0156	0.0700	0.3431	0.48	5.12*	3.73**
	t-statistic	2.65*	3.37*	3.21*			
Industrial	Coefficient	0.0354	–0.0004	0.5052	0.70	15.06*	69.36*
	t-statistic	7.16*	–0.05	9.63*			
Plantation	Coefficient	0.1147	0.0246	0.4324	0.86	34.51*	90.75*
	t-statistic	8.56*	2.22*	7.81*			
Property	Coefficient	0.0235	0.0368	0.3704	0.80	24.12*	75.71*
	t-statistic	9.03*	4.33*	8.29*			
Trading	Coefficient	0.0364	0.0369	0.4624	0.87	41.22*	109.60*
	t-statistic	9.52*	6.02*	10.37*			

* Significant at 1%, ** significant at 5%

Like the results of the overall sample, the intercept terms are significantly positive for the samples of individual sectors. Thus, Malaysian companies across all sectors have a tendency of regularly paying dividends (irrespective of how small the amount of dividend

per share is). We did observe differences in the dividend policies of the companies across different sectors. In the case of industrial products sector, current earnings do not influence the current year's dividends. The dividend policy of the consumer product sector is not stable as trends in past dividends is not relevant in deciding current dividends. In all other sectors, past dividends play a significant role in influencing the current dividends. We witnessed significant differences across sectors in terms of the Lintner target payout ratios and adjustment factors. All sectors have high adjustment factors and very low target payout ratios. The Lintner target payout ratio is zero for industrial products sector and 0.17 for consumer products sector. The adjustment factors are 0.50 and above. In the case of the consumer products sector, it is as high as 1.15, which implies that companies in this sector maintain high dividend payments even in the event of low or negative earnings. The high adjustment factors specially for consumer products (1.45), construction (0.66) and property (0.63) sectors indicate that management do not smooth dividends.

In sum, there is evidence that Malaysian companies consider past dividends as an important benchmark for deciding the current dividend payment. Further, the high adjustment factors together with low payout ratios indicate that the KLSE firms frequently change their dividend payments with changes in earnings, and dividend smoothing is of a lower order. This causes more variability in dividend payments of the KLSE companies. The Hausman statistics reject two-way random effects model (REM) in favour of the two-way fixed effects model. Our results confirm that dividend policies of Malaysian companies vary across firms and time.

CONCLUSION

In this study we examined the dividend behaviour of Malaysian companies. Specifically, we attempted to find answers to the following questions: (1) Do payout ratios differ across industries (sectors)?, (2) What dividend actions are probable when earnings change? and (3) Do Malaysian firms follow stable dividend policies? Our results show that there are significant industrial differences in payout ratios in Malaysia. Plantation and consumer products industries pay highest dividends as they have fewer growth opportunities and higher surplus cash. The construction industry has the lowest payout ratio, as its cash needs are higher for financing growth opportunities. The trading and service sector also pays low dividends due to relatively low profitability. We also witnessed that payout ratios of sectors in Malaysia differ across time periods. In recent years, perhaps due to the financial crisis and general economic slow down, payout ratios of all sectors have declined.

Our results show that a large number of Malaysian firms increase payment of dividends when their earnings increase. They are reluctant to skip dividends when earnings fall. But Malaysian firms tend to omit dividends when they suffer losses. A formal analysis employing the multinomial logit technique reveals that the dividend actions of the

Malaysian firms are very sensitive to earnings changes. There is a high probability of dividend increase when earnings increase. Similarly, the chances are high that dividends will be reduced if earnings fall. There is a very high probability of dividend omission when the Malaysian firms face negative earnings.

We used Lintner's model to test for dividend stability of firms in Malaysia. We employed panel analysis rather than time series or cross section approach as estimation methodology. This methodology provides a wide data set and modelling flexibility. In order to control both the individual firm and the time-variant factors that affect firms generally, we tested the two-way firm and time fixed effects model. This allows us to establish the underlying dynamic relationship between current dividend as dependent variable and current earnings and past dividends as independent variables. Our results show that Malaysian firms rely both on past dividends and current earnings in deciding the current period's payment of dividends. Further, our results uncover that the Malaysian firms have lower target ratios and higher adjustment factors. This points to the low smoothing and relatively low stability of dividend policy in Malaysia.

Our results about the applicability of the Lintner model in Malaysia generally confirm the findings of earlier studies. However, we used different methodologies, and our study makes detailed sector-wise analysis of dividend behaviour of the Malaysian companies. We used, to our knowledge for the first time, the multinomial logit approach to explain the Malaysian companies' dividend decisions when their earnings change, and panel data analysis to test the dividend stability of the Malaysian companies. There are many other aspects of dividend policy in Malaysia for future research. One issue is regarding the effect of the firm size on dividend policy. Do large Malaysian firms pay less or more dividends than small firms? Yet another issue is the relationship between the capital structure and dividend policy of the Malaysian companies. One could draw from the pecking order and the trade-off theories to predict the relationship between the dividend policy and the capital structure. One could also study the relationship between ownership of the Malaysian companies and their dividend policy. A comparative study of dividend policy of companies in Malaysia, Singapore, Thailand and Indonesia before, during and after the economic crisis can reveal interesting insights.

REFERENCES

Adaoglu, Cahit (2000). Instability in the Dividend Policy of the Istanbul Stock Exchange (ISE) Corporations: Evidence from an Emerging Market. *Emerging Markets Review* 1 (3): 252–270.

Annuar, M. N. & Shamsher, M. (1993). Earnings and Dividend Behaviour. *Journal of Social Science and Humanities* 1 (2): 171–177.

Ariff, M. & Johnson, L. W. (1994). Securities Markets and Stock Pricing: Evidence from a Developing Market in Asia, Singapore, Sydney and London. *Journal of Social Science and Humanities* 1 (2): 171–177.

Baker, H., Kent, G., Farrelly, E. & Richard, B. (1985). A Survey of Management Views on Dividend Policy. *Financial Management*: 78–87.

Baltagi, B. H. (1995). *Econometric Analysis of Panel Data*. John Wiley & Sons.

Black, F. (1976). The Dividend Puzzle. *Journal of Portfolio Management*: 5–8.

Brittain, J. A. (1966). *Corporate Dividend Policy*. Washington, D.C.: The Brookings Institution.

Chateau, J. D. (1979). Dividend Policy Revisited: Within- and Without-of-Sample Tests. *Journal of Business Finance & Accounting* 6: 355–372.

Deventer, K. L. & Warther, V. A. (1998). Dividends, Asymmetric Information, and Agency Conflicts: Evidence from a Comparison of the Dividend Policies of Japanese and US Firms. *Journal of Finance* 53: 879–904.

Fama, E. F. & Babiak, H. (1968). Dividend Policy: An Empirical Analysis. *Journal of American Statistical Association*: 1132–1161.

Glen, J. D., Karmokolias, Y., Miller, R. R. & Shah, S. (1995). *Dividend Policy and Behaviour in Emerging Markets: To Pay or Not to Pay*. IFC Discussion Paper No. 26.

Greene, W. H. (2000). *Econometric Analysis.* 4th edition. New Jersey: Prentice-Hall.

Gul, F. A. (1999). Growth Opportunities, Capital Structure and Dividend Policies in Japan. *Journal of Corporate Finance* 5 (2): 141–168.

_____. (1999). Government Share Ownership, Invesment Opportunity Set and Corporate Policy Choices in China. *Pacific-Basin Finance Journal* 7: 157–172.

Gupta, G. S. & Lok, K. S. (1995). Dividend Behaviour in Malaysia. *Capital Market Review*, 73–83.

Isa Mansor Md. (1992). Dividend Policies and Practices of Listed Malaysian Companies. *Securities Industry Review* 18 (1): 53–64.

_____. (1993). Dividend and Share Value: The Case of Malaysia. *Securities Industry Review* 19 (1): 43–56.

_____. (1993). Dividend Policies and Practices. *Investors Digest*: 25–27.

Kester, Georgre W. & Isa Mansor Md. (1996). Dividend Policy in Malaysia: A Comparative Analysis. *Malaysian Journal of Economic Studies* 33 (1) (June): 33–48.

Lasfer, M. (1996). Taxes and dividends: the UK Evidence. *Journal of Banking Finance* 20: 455–472.

Leithmer, S. & Zimmermann, H. (1993). Market Value and aggregate Dividends: A Reappraisal of Recent Tests, and Evidence from European Markets. *Swiss Journal of Economics and Statistics* 129: 99–119.

Lintner, J. (1956). Distribution of Incomes of Corporations Among Dividends, Retained Earnings and Taxes. *American Economic Review*: 97–113.

McDonald, J., Jacquillant, B. & Nussenbaum, M. (1975). Dividend, Investment and Financing Decisions: Empirical Evidence on French Firms. *Journal of Financial and Quantitative Analysis* 10: 741–755.

Michel, A. (1979). Industry Influence on Dividend Policy. *Financial Management*, 22–26.

Miller, M. & Modgliani, F. (1961). Dividend Policy, Growth and the Valuation of Shares. *Journal of Business*: 411–433.

Pandey, I. M. & Bhat, R. (1994). Dividend Decision: A Study of Managers' Perceptions. *Decision* 21 (1 & 2): 67–86.

Pettit, P. R. (1977). Taxes, Transactions Costs and Clientele Effects of Dividends. *Journal of Financial Economics*: 419–436.

Pindyck, R. S. & Rubinfeld, L. (1998). *Econometric Models and Economic Forecasting.* Singapore: McGraw-Hill.

Pruitt, S. W. & Gitman, L. J. (1991). The Interactions Between the Investment, Financing, and Dividend Decisions of Major US Firms. *Finance Review* 26: 409–430.

Shevlin, T. (1982). Australian Corporate Dividend Policy: Empirical Analysis. *Accounting and Finance*: 1–22.

Zhao, Y. (2000). Dividend Payment and Ownership Structre in the Chinese Stock Market. *Asia-Pacific Journal of Accounting & Economics* 7 (2): 129–141.

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ENDNOTES

[1] Black in his article, "The Dividend Puzzle" raised the questions: Why do corporations pay dividends? Why do investors pay attention to dividends? His answers to both questions were: We don't know.

[2] In many countries of British Commonwealth, which include Malaysia, a company could pay dividends if it has reserves (retained earnings) or current profits, irrespective of the status of its equity.

[3] I am thankful to Dr. Neoh Soon Kean, Chairman, Dynaquest Sdn. Bhd. for allowing access to database maintained by his company. I appreciate the help of Mr. Hong Kok Chee, lecturer, School of Management, USM in this regard.

[4] The formula for K-W test is as follows:

$$H = \left[\frac{12}{n(n+1)} \sum_{j=1}^{n} \frac{T_j^n}{n_j} \right] - 3(n+1)$$

where n = the total number of observations over the combined samples; j = the number of samples, j = 1, 2, ……n and T = the sum of ranks assigned to the jth sample. The null hypothesis (H_o) is that means of all samples are equal. It is rejected if $H > \chi^2$.

[5] The Jarque-Bera (J-B) statistics are significant at less than 1% level of significance, which reject the assumption of normality for DPS data of all sectors. For example, J-B statistics for panel data of sectors are: consumer products: 11750.40; construction: 41.65; industrial products: 1271.91; plantation: 2723.22; property: 5163.30 and trade: 1551.79.

[6] The formula for Friedman's test is as follows:

$$F_r = \frac{12}{nk(k+1)} \sum T_j^2 - 3n(k+1)$$

where n = the total number of observations in each sample; k = total number of samples; j = the number of samples from 1…..k; T = the sum of the ranks for the jth sample.

[7] We do not make a difference between "initial omission" and "omission continued" as it is same action as regards vis-à-vis changes in earnings. This distinction is important if one studies the informational impact of dividend policy.

[8] SPSS Advanced Models™ 10.0, SPSS, Inc., 1999.

[9] It is not common for the Malaysian companies to formally state payout ratios. They consider it while deciding the payment of dividends.