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The Dividend and Earnings Behaviour of Firms on the Kuala Lumpur Stock Exchange

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ABSTRAK

Terdapat banyak bukti berdokumen mengenai gelagat dividen dan perolehan firma di negara-negara maju. Di Malaysia, bukti tersiar mengenai isu-isu ini sangat berkurangan. Kajian ini menyelidik mengenai gelagat dividen dan perolehan firma-firma yang tersenarai di Bursa Saham Kuala Lumpur (BSKL). Penemuan kajian ini menunjukan: (i) keputusan dividen firma-firma ini sebahagiannya bergantung kepada perolehan semasa dan dividen masa yang lepas; (ii) firma mempunyai dividen sasaran jangkamasa panjang yang dibentuk berdasarkan kemampuan perolehan, dan (iii) perubahan perolehan firma berlaku secara rambang, ini bermakna ada kemungkinan ramalan perolehan yang dibuat oleh para analisis tidak berkesanan dari segi ekonomi.

ABSTRACT

The dividend and earnings behaviour of firms in developed economies are well documented. In Malaysia, there is hardly any published evidence on these issues. This study investigates the dividend and earnings behaviour of firms listed on the Kuala Lumpur Stock Exchange (KLSE). The findings suggest that: (i) the dividend decisions of these firms partially depend on their current earnings and past dividends; (ii) firms have long-term target dividend which is conditioned upon their earnings ability, and (iii) earnings changes of firms are random which implies that earnings forecasts by analysts might be of no economic significance.

INTRODUCTION

(a) Dividend Behaviour

There is a great deal of evidence in the finance literature on the role of dividends in corporate policy, primarily concerned with providing explanations on why firms actually pay dividends (Feldstein and Green 1983; Miller 1986). However, till today the role of dividends in corporate policy remains an unsettled issue. Dividend policy can be defined as the decision on how much of the earnings should be paid as cash dividends to shareholders. There is also evidence that firms in developed economies have a target dividend payout ratio and only partially adjust their actual current dividend payout in any payment period to a change in the basis for their target payout ratio. Lintner (1956) suggested a lagged partial adjustment model of dividend behaviour which views current dividend as a function of past dividends and current earnings. This model or its modification has been applied to U.S. data (Roy and Cheung 1985), U.K. data (Ryan 1974) and Australian data (Shevlin 1982; Partington 1984) and the findings support the proposition that a target payout ratio and partial adjustment are reasonable representations of the dividend policy decision among firms in developed economies.

Lintner (1956) suggested the following partial adjustment relationship to explain dividend decisions:

$$\Delta D_{it} = a_i + c_i(D_{it}^* - D_{it-1}) + u_{it}$$

where ΔD_{it} : the change in dividend per share of firm i from time t–1 to t (i.e $D_{it} - D_{it-1}$)

D_{it}^* : the target dividend of firm i in period t

D_{it-1} : the actual dividend of firm i in period t–1

c_i : the speed of adjustment in dividend to the difference between the target dividend and last period's dividend

a_i : intercept, and

u_{it} : a zero mean, constant variance, non-autocorrelated error term.

The target dividend, D_{it}^* is assumed to be related to a measure of earnings, E_{it}, such that $D_{it}^* = r_i E_{it}$, where r_i is firm i's payout ratio. Hence, the above equation can be rewritten as:

$$\Delta D_{it} = a_i + c_i r_i E_{it} - c_i D_{it-1} + u_{it}$$

Lintner's model essentially suggests that changes in dividends of firm i is a function of earnings in the current period t, and dividends in previous period.

(b) Earnings Behaviour

Earnings forecast is an important input for the valuation of securities and has important implications for asset-pricing theories. In developed capital markets, researchers have addressed various issues concerning earnings of firms. For example, Ball and Watts (1972) address the computation of earnings forecasts using naive models; and Deschamps and Mehta (1980) address the same issue using complex models. Neiderhoffer and Regan (1972) investigated the incidence of security price changes with earnings behaviour, that is whether or not positive (negative) price changes are observed when earnings changes are positive (negative). If such relationships exist, then there is economic rationale for forecasting earnings.

There is also substantial evidence that earnings behave as a random variable at best with a time trend. For example, Fama and Babiak's (1968) study on American firms, Finn and Whittred's (1982) study on Australian firms and Ariff and Johnson's (1990) study on Singapore firms support the proposition that growth in earnings follow a random walk and therefore it is unlikely that one could meaningfully predict earnings changes.

Ball and Watts (1972) tested whether a naive earnings forecasting model is as good as a complex model and concluded that a naive model is as good as any prediction model. Deschamps and Mehta (1980) reported essentially the same findings.

There is hardly any published evidence on any of these issues in Malaysia, which in turn constrains broader discussion about findings from other related areas such as dividend behaviour. This paper provides evidence on the dividend behaviour of firms listed on the Kuala Lumpur Stock Exchange (KLSE) over a fifteen-year period using both the Lintner's model and a simpler model of the analysis of distribution of changes in dividends conditional on the changes in earnings. It also presents evidence on the randomness of earnings changes of Malaysian firms.

The remainder of this paper is organized as follows: firstly, a description of the data and methodology used. Next, a report on the preliminary findings, followed by the highlights of the main findings, and the conclusion.

DATA AND METHODOLOGY

The data used for analysis in this study consist of annual earnings and dividends of sixty randomly chosen firms for the period 1975 to 1989. Dividends and earnings data were gathered and verified from a variety of sources such as the *Investors Digest*, financial newspapers, annual *Companies Handbook* and company annual reports. The earnings per share (EPS) is estimated by taking the yearly earnings before tax and dividing it by the number of outstanding ordinary shares. Dividends per share (DPS) is estimated by taking the total amount of yearly dividends and dividing it by the number of outstanding ordinary shares. A total number of 900 observations for EPS and DPS respectively were used in the empirical work reported in the next section. The payout ratio was calculated by dividing the DPS by EPS. The coefficient of variation (CV) for earnings (dividends) is estimated by dividing the standard deviation of EPS (DPS) by its mean.

To verify the relationship between dividend and earnings patterns of Malaysian listed firms, the simple model and the Lintner's model were used. The simple model explains the change in current dividends conditioned upon changes in current and past earnings using direction of

changes, whereas the Lintner's model explains the change in current dividends based on current earnings and past dividends using both sign and magnitude.

The randomness of earnings changes is measured by the difference between the expected and actual percentage of earnings changes. Using historical frequencies of changes in earnings of each firm across the market, the conditional probabilities of observing the significance of runs of earnings of the sampled firms were estimated. Ball and Watts (1972) and Deschamps and Mehta (1980) reported that the use of the above (simple) model does as good a job as any other complex model.

PRELIMINARY FINDINGS

Evidence from Table 1 suggests that the average DPS were much more stable over the period of study than the average EPS. The relative variability of EPS is more than twice that of DPS. The Mann-Whitney U test confirms that at α = 0.001 the average DPS is more stable than the average EPS. This implies that firms listed on the KLSE only change dividends based on the perceived change in the ability to pay dividends in the long term and not on transitory earnings changes. This is consistent with the theory that management will only change dividends when they are confident that the dividends can be maintained in the future. The mean coefficient of variation for EPS over the fifteen-year period was lower (0.50) compared to the mean coefficient of variation for DPS (0.63). The average payout ratio over the period was slightly over 33 per cent.

The relative constancy of mean DPS over the study period does not imply that listed firms did not change dividends, as about 55.5 per cent of all dividend announcements were dividend changes from the dividends declared in the previous period (see Table 2). Of the 55.5 per cent dividend changes, 28.3 per cent were dividend decreases while 27.2 per cent were dividend increases.

The average payout ratio for the period 1975-1989 is 33 per cent and has shown only a slight increase from 31 per cent in 1975 to 34 per cent in 1989, which is consistent with the assumption of relatively constant payout ratio in the valuation literature (Fama and Babiak 1968).

TABLE 1
EPS, DPS and payout ratio of Malaysian listed firms by year

Year	EPS in cents			DPS in cents			Payout ratio
	Mean	S.Dev.	C.V.	Mean	S.Dev.	C.V.	Mean
1975	22.19	27.10	1.22	6.88	18.94	2.75	0.31
1976	26.09	45.88	1.76	5.64	12.04	2.21	0.21
1977	30.57	55.94	1.83	8.42	15.56	1.85	0.28
1978	32.82	68.42	2.08	11.24	27.91	2.45	0.34
1979	35.66	51.53	1.45	12.54	30.55	2.44	0.35
1980	34.33	37.80	1.10	15.37	49.57	3.23	0.45
1981	28.86	41.24	1.43	11.51	29.83	2.59	0.39
1982	24.63	40.57	1.65	8.54	17.74	2.08	0.35
1983	33.98	79.76	2.35	14.55	42.54	2.93	0.42
1984	17.36	27.34	1.57	3.92	5.68	1.45	0.23
1985	11.24	27.71	2.47	2.82	7.81	2.77	0.25
1986	11.05	48.80	4.40	2.34	5.54	2.37	0.21
1987	1.18	34.52	29.25	1.22	7.08	5.80	1.03
1988	11.15	23.22	2.08	3.65	8.70	2.38	0.33
1989	9.47	24.85	2.62	3.19	5.96	1.87	0.34
Average 1975-1989	22.04	11.05	0.50	7.46	4.68	0.63	0.33

TABLE 2
Distribution by sign of ΔD_t, conditional on ΔE_t, ΔE_{t-1}, ΔE_{t-2}

Panel	ΔE_t	ΔE_{t-1}	ΔE_{t-2}	ΔD_t – No.	– % of row total	0 No.	0 % of row total	+ No.	+ % of row total	Total	% Total
A	+			18	5.78	133	42.77	160	51.45	311	49.36
	–			160	50.16	148	46.39	11	3.45	319	50.64
		Total		178	28.25	281	44.60	171	27.15	630	100.00
B	+	+		7	5.07	34	24.64	97	70.29	138	21.90
	+	–		11	9.82	47	41.96	54	48.22	112	17.78
	–	+		83	56.85	48	32.88	15	10.27	146	23.17
	–	–		77	32.91	152	64.96	5	2.13	234	37.14
		Total		178	28.25	281	44.60	171	27.15	630	100.00
C	+	+	+	4	8.33	12	25.00	32	66.67	48	7.62
	+	+	–	4	5.41	22	29.73	48	64.86	74	11.75
	+	–	+	4	5.48	27	36.99	42	57.53	73	11.59
	–	+	+	40	51.28	29	37.18	9	11.54	78	12.38
	+	–	–	12	13.19	53	58.24	26	28.57	91	14.44
	–	+	–	39	44.32	41	46.59	8	9.09	88	13.97
	–	–	+	43	51.81	34	40.96	6	7.23	83	13.17
	–	–	–	32	33.68	63	66.32	0	0	95	15.08
		Total		178	28.25	281	44.60	171	27.15	630	100.00

FINDINGS

(a) Dividends and Lagged Earnings - Simple Model

The literature on dividends assumes that the current dividend payments for a firm depend upon both current and past profits. This assumption is verified in the Malaysian context by examining the relationship between the change in dividend (ΔD_{it} or change in dividend for firm i in period t–1 to period t) and the change in earnings (ΔE_{it}) in both current and past periods. The summary of the results of such a relationship is presented in Table 2. This table shows the distribution by the sign ΔD_{it}, conditioned on the signs of the per share earnings changes over the current and two prior periods, that is ΔE_{it}, ΔE_{it-1} and ΔE_{it-2}.

In Panel A of Table 2, when ΔE_{it} is > 0, 51.5 per cent of the cases have $\Delta D_{it} > 0$, whereas only 5.8 per cent have $\Delta D_{it} < 0$, with the rest maintaining the dividend payments. In Panel B, when both ΔE_{it} and ΔE_{it-1} are positive, the proportion of positive dividend changes is 70.3 per cent, whereas when ΔE_{it} is positive and ΔE_{it-1} is negative, there is 48.2 per cent dividend increase. When there are three consecutive increases in annual profits, the proportion of positive dividend changes is 66.7 per cent. When there are two successive earnings increase preceded by a decrease, 64.9 per cent of the cases have an increased current dividend. These findings provide evidence for a lagged relationship between current and past earnings change and dividend changes. Table 2 also shows that the effect of a change in earnings on dividends declines over time, which provides further evidence for a lagged relationship. For example, if two or three profit changes are negative, the proportion of negative dividend changes for the sequence (– – +), is higher than

for the sequence (– + –) which in turn is higher than for the sequence (+ – –).

(b) Dividends and Lagged Earnings - Lintner's Model

An empirical test of Lintner's model using data on Malaysian listed firms from 1975 to 1989 was carried out and the findings are reported in Table 3. The speed of adjustment, c_i, is approximately 0.08. The implied target payout ratio, r_i, is 0.34, which is below that of developed economies reported in Ariff and Johnson (1990). This could be due to several possible reasons, one of which is that the EPS used in the analysis is not a good measure of firm's ability to pay dividends. Possibly, the ability to pay dividends is better measured by cashflow estimation.

Another reason for the low estimated target payout ratio may be due to certain characteristics of the Malaysian equity market, which encourage firms to adopt a low target payout ratio. For example, large shareholdings by institutions may be for strategic reasons rather than dividend income. In inter-company shareholdings or cross-holdings, the parent companies are likely to retain the earnings of their subsidiaries for expansion and therefore favour a low dividend payout ratio. The differences in the tax systems of Malaysia and of developed economies may account for the different payout ratios. In the U.S., for example, dividend income is subjected to double taxation. The dividends are paid to shareholders at net amount and are taxed at the corporate tax rate. Net dividend income received by shareholders is further taxed at their own personal income tax rate. In Malaysia, when shareholders receive cash dividends, they benefit from a tax credit equivalent in the limit to the amount of tax paid by firms under the Malaysian tax imputation system. Furthermore, to ecourage the public to invest, various tax incentives are offered to investors in the form of tax exemptions and minimum level of taxable dividend income. Hence, though Malaysian firms adopt a lower dividend payout ratio, actual after-tax dividend payout ratios may not be much lower than for firms in the developed economies. This suggests that Malaysian firms need not adopt as high a

TABLE 3
Lintner's partial adjustment model using Malaysian data

Time Period	a_i	cr	–c	R^2
1975-1989	–0.002	0.0276	–0.08	0.22

TABLE 4
Calculated percentages of earnings sequences

Panel	ΔE_t	ΔE_{t-1}	ΔE_{t-2}	Relative Frequencies	Calculated %	Actual %
	+	+		P(+).P(+)	24.36	21.90
X	+	–		P(+).P(–)	24.99	17.78
	–	+		P(–).P(+)	24.99	23.17
	–	–		P(–).P(–)	25.64	37.14
				Total	100.00	100.00
	+	+	+	P(+).P(+).P(+)	12.03	7.62
	+	+	–	P(+).P(+).P(–)	12.34	11.75
Y	+	–	+	P(+).P(–).P(+)	12.34	11.59
	–	+	+	P(–).P(+).P(+)	12.34	12.38
	+	–	–	P(+).P(–).P(–)	12.66	14.44
	–	–	–	P(–).P(+).P(–)	12.66	13.97
	–	–	+	P(–).P(–).P(+)	12.66	13.17
	–	–	–	P(–).P(–).P(–)	12.99	15.08
				Total	100.00	100.00

The relative frequencies of the earnings sign are given as: P(+) = 0.4936, P(–) = 0.5064

dividend payout ratio as firms in developed economies which are subject to different tax systems.

The estimated equation in Table 3 suggests that about 22 per cent of change in current dividends are explained by changes in current earnings and the last period's dividends. Therefore the Lintner's model described partially the dividend behaviour of Malaysian firms.

(c) Randomness of earnings changes

Table 4 shows the expected and actual percentage of earnings changes. These were estimated using the historical frequencies of the changes of earnings of each firm across the market and estimating the conditional probabilities of the sequences of runs in earnings. If the actual earnings sequences are close to expected sequences, this suggests that earnings occurrences or changes follow the normal sequence expected in a run. The overall observed relative frequencies in terms of the signs (+ indicating earnings increases and – indicating earnings decreases) are 0.49 and 0.51.

The expected percentage of different earnings sequences as the weighted average of the observed sequences are computed and shown in column 5: the probability of earnings increase occurring consecutively for three periods [P(+).P(+).P(+)] is 0.1203 or 12.03 per cent. Columns 6 and 7 show that the expected percentages for different combinations of earnings sequences are close to the actual frequencies observed. For both the panels X and Y, a chi-square test at 5 per cent level confirms that the earnings changes are random. This suggests that earnings changes (or at least their signs) are independent over subsequent annual periods. These findings are consistent with those of the developed capital markets (Ariff and Johnson 1990).

CONCLUSION

This study attempts to assess the dividends behaviour of firms listed on the KLSE, specifically whether the current dividend decision is dependent on the current earnings and past period's dividends and whether firms have a long -term target dividend. The findings using Lintner's model provide evidence that the dividend decision of firms listed on the KLSE partially depends on their current earnings and the past period's dividends. The findings from Table 2 (simple model) suggest that the sequence of earnings increases is associated with the decision to increase dividends while dividends decreases are likely to occur when sequence of earnings is showing a declining trend. These findings support the notion that firms have a long-term target dividend which is conditioned upon their earnings ability.

This study also provides evidence that earnings changes (or at least their signs) of Malaysian listed firms are random (independent) and there is an even chance for a firm to report earnings increases or decreases in any particular accounting period. This implies that earnings forecasts by analysts might be of no economic significance. However, these findings are based on average values over a large sample of firms and not targeted to any particular firm. A superior analyst may be able to reward himself for his efforts to forecast earnings changes of a specific individual company.

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