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## SPEED OF ADJUSTMENT AND TARGET DIVIDEND PAYOUT RATIO IN INDONESIA

Eduardus Tandelilin  
Universitas Gadjah Mada

### ABSTRAK

*Penelitian ini bertujuan untuk menganalisis kecepatan penyesuaian dan target rasio pembayaran dividen di Indonesia dengan menggunakan model Lintner. Sampel penelitian terdiri dari 975 perusahaan yang terdaftar di Bursa Efek Jakarta (BEJ) yang melakukan pembayaran dividen selama periode 1994 sampai dengan 1999. Penelitian ini menemukan empat hal penting, yaitu: pertama, selama berlangsungnya krisis moneter di Indonesia, jumlah perusahaan yang mengumumkan earning dan membayar dividen mengalami penurunan yang signifikan. Kedua, perusahaan-perusahaan di Indonesia selama periode 1994-1999 cenderung lambat melakukan penyesuaian pembayaran dividen mereka terhadap target dividennya, yaitu sekitar 0,36. Hasil ini menunjukkan kecenderungan yang lebih lambat dibanding hasil penelitian sebelumnya yang dilakukan oleh Sutojo dan Irianto (1990; 1995) selama periode 1986-1993, serta Selvi (1999) selama periode 1991-1996. Ketiga, perusahaan-perusahaan di Indonesia selama periode 1994-1999 membayarkan dividen bagi pemegang sahamnya sebesar 0,53 dari earning yang diperolehnya. Hasil ini lebih rendah dibanding temuan penelitian sebelumnya oleh Sutojo dan Irianto (1990;1995) dan Selvi (1999). Keempat, ada kecenderungan bahwa selama periode 1994-1999 investor di Indonesia lebih berorientasi pada capital gain. Hasil ini konsisten dengan hasil penelitian sebelumnya oleh Sutojo and Irianto (1990, 1995) serta Selvi (1999).*

**Kata Kunci:** *Kecepatan penyesuaian, Rasio target pembayaran dividen, Model Lintner, Orientasi capital gain.*

### BACKGROUND

Many studies on dividend policy have been conducted in western countries. The initial work in this area was done in the United States (US) by Lintner (1956), who interviewed managers in 28 carefully selected companies to determine their thinking on dividend policy. Lintner stated that firms only increase their dividend payments if the increase of earnings is stable. As a result of these interviews, Lintner

posited a lagged partial adjustment model of dividend behavior, which views the current dividend as a function of past dividends and current earnings. This model, or variations of it, has been applied in some western countries, Singapore and Indonesia.

Ariff and Johnson (1989) applied Lintner's model in Singapore using the data of 274 firms listed in the Stock Exchange of Singapore (SES) from 1974 through 1985. They estimated

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I would like to thank Ms. Selvi for sharing some of her data. This paper has benefited from comments by participants at the 1<sup>st</sup> Asian Academic Accounting Association Inaugural World Conference in Singapore, August 2000.

that the speed of adjustment in Singapore is about 0.40, broadly similar to that reported in other countries, and that the estimated target dividend payout ratio is much smaller, about 0.12. There are several possible explanations for these results. A possible reason for such a low estimated target dividend payout ratio in Singapore may be that there are certain characteristics of the Singapore equity market which encourage firms to adopt a low dividend payout ratio. The ownership structure of firms listed on the SES offered a probable explanation for a low earnings coefficient. An interesting observation in Ariff and Johnson's 1980 survey was an increase in ownership by corporations and institutions and a corresponding decline in ownership by individuals. One implication of large shareholdings by the corporate sector was that corporate holders might hold shares for strategic purposes rather than for dividend income. The differences in the system of tax payment may also encourage Singapore firms to adopt a lower dividend payout ratio. Dividend income is subjected to double taxation in the US. The dividends are paid to shareholders at net amount, and are taxed at the corporate tax rate. Net dividend income received by the shareholders is further taxed at their own personal income tax rates with minor exceptions. On the other hand, when shareholders in Singapore receive net cash dividends, they benefit from a tax credit equivalent to the amount of tax paid by the firms under Singapore's imputation system. Dividends declared by firms and received by shareholders are actually taxed only once at the shareholder's personal tax rate.

#### **THE OBJECTIVES OF THE STUDY**

The estimated speed of adjustment and target dividend payout ratio is information that investors in the capital market need in order to make sound investment decisions. Lately, the Indonesian capital market has developed rapidly. In previous research conducted by

Sutojo and Irianto (1990, 1995) and Selvi (1999), it was found that investors have changed their dividend behavior from dividend oriented to capital gain oriented. Other research on dividend behavior in other countries also supports this hypothesis. Therefore, the objectives of this study are to analyze the mean estimate of the speed of adjustment and the mean estimate of the target dividend payout ratio of firms in Indonesia using more recent data, from 1994 to 1999.

#### **REVIEW OF PREVIOUS STUDIES**

Sutojo and Irianto (1990) used data from 24 firms listed on the Jakarta Stock Exchange (JSX) from 1983 through 1988. They estimated that the speed of adjustment in Indonesia is approximately 0.43. Furthermore, Sutojo and Irianto (1995) estimate target dividend payout ratio and speed of adjustment in Indonesia by applying Lintner's model. A sample of 135 firms was selected from those listed on the Jakarta Stock Exchange during the period of 1986 to 1993. To estimate the speed of adjustment and target dividend payout ratio, the firms were divided into three groups based on: (1) debt equity ratio (DER), (2) risk, and (3) industry. The study shows that: (1) companies grouped together based on low DER have a speed of adjustment lower than those with high DER, but the target dividend payout ratio is higher than those with high DER, (2) companies grouped together based on low risk have a speed of adjustment and dividend payout ratio lower than those grouped together based on high risk, and (3) manufacturing industries have a speed of adjustment higher than financial industries but lower than other industries and have a target dividend payout ratio higher than financial and other industries. By comparing the time periods of 1986 - 1989 and 1990 - 1993, it is found that estimated speed of adjustment from 1986 to 1989 is faster than during the period of 1990 to 1993. It was observed that internal factors caused firms to

adopt higher target dividend payout ratios during the 1986 - 1989 period than they did from 1990 – 1993.

Related to the previous studies done by Sutejo and Irianto (1990,1995), Selvi (1999) conducted a similar study using more recent data. Both previous studies showed that the speed of adjustment was somewhat higher than reported in table 1 for other countries, except that reported for Australia by Shelvin (1982), which is about 0.51. It means that companies in Indonesia adjusted their dividend payment to the target dividend of 0.78 more quickly than companies in some other countries. This result is larger than reported in Table 1 for other countries, except that reported for America by Roy and Cheung (1985), and the UK by Ryan (1979). It means that in Indonesia, the estimated target dividend payout ratio is generally high enough, especially compared to Ariff and Johnson's estimated target dividend payout ratio for Singapore, which was only

about 0.12. In Indonesia, the high estimated target dividend payout ratio might be influenced by several factors: (1) The firms have not used earnings as source of internal financing yet. Until 1988, there were 24 firms listed on the Jakarta stock exchange, but only two used retained earnings for internal financing. They prefer using debt for expansion. (2) The right issue expectation. From next right issue, firms expect paid in capital. To obtain trust from investors, they set a high dividend payout ratio.

Related to the illustration above, to estimate the speed of adjustment and target dividend payout ratio, Lintner (1956) introduced Lintner's Lagged Partial Adjustment Model, where current dividends (dividend change) are a function of past dividends and current earnings. Lintner's model has been applied in Europe, America, Australia and Asia. The following table presents the results of previous studies, Selvi (1999):

**Table 1.** Selected results of Estimated Speed of Adjustment (c) and Target Dividend Payout Ratio (r) from Previous Studies.

No.	Study	Country	Mean Estimate of c	Mean Estimate of r
1	Lintner (1956)	US	0.25	0.60
2	Britain (1966)	US	0.23	0.66
3	Fama & Biak (1968)	US	0.34	0.49
4	Watts (1973)	US	0.32	0.49
5	Fama (1974)	US	0.27	0.57
6	Roy & Cheung ( 1985)	US	0.29	0.82
7	Chateu (1979)	Canada	0.30	0.31
8	Ryan (1979)	UK	0.18	1.01
9	Shelvin (1982)	Australia	0.51	0.43
10	M. Arief & Lester W.Johnson (1989)	Singapore	0.40	0.12
11	Heru Sutojo & Guntur Irianto (1990)	Indonesia	0.43	0.78
12	Heru Sutojo & Guntur Irianto (1995)	Indonesia	0.44	0.66
13	Selvi (1999)	Indonesia	0.39	0.56

## RESEARCH METHOD

**The Data.** Data for the present study were gathered from the Indonesia Capital Market Directory from 1994 to 1999. To be eligible for inclusion as samples, the companies should be listed in Jakarta Stock Exchange from 1994 to 1999 and had a reported earning per share (EPS) and dividend per share (DPS). The total number of companies had reported their EPS and DPS from 1994 to 1999 is 975, which distributed as follows:

**Table 2.** Number of companies that paid cash dividends from 1994 to 1999

Year	Cash dividends
1994	163 companies
1995	215 companies
1996	222 companies
1997	238 companies
1998	82 companies
1999	55 companies
<b>TOTAL</b>	<b>975 companies</b>

**Methodological Procedures.** Lintner posited a lagged partial adjustment of dividend, which views current dividends as a function of past dividends and current earnings. The target dividend payout ratio and the speed of adjustment can be obtained by regression of Lintner's model (Lintner's Lagged Partial adjustment Model). The following Lintner's model is used:

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

where,

$\Delta D_{it}$  : the change in dividend per share of firm  $i$  from time  $t-1$  to time  $t$  (*i.e.*  $D_{it} - D_{it-1}$ ),

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

The target dividend  $D_{it}^*$  is assumed to be related to a measure of profits or earnings,  $E_{it}$ , such that,

$$D_{it}^* = r_i \cdot E_{it} \quad (2)$$

where,

$r_i$  : firm  $i$ 's target dividend payout ratio

$E_{it}$  : the current earnings of firm  $i$  in period  $t$

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

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

$a_i$  : an intercept, and

$\mu_{it}$  : a zero mean, constant dividend, non-auto-correlated error terms.

Combining equation (1) and (2) yields,

$$\Delta D_{it} = a_i + c_i r_i E_{it} - c_i D_{it-1} + U_{it} \quad (3)$$

Cross sectional data  $D_{it}$ ,  $E_{it}$ , and  $D_{it-1}$  was analyzed by linear regression to obtain coefficient regression of  $E_{it}$ , which multiplies  $c_i$  and  $r_i$  and coefficient regression of  $D_{it-1}$ ,  $c_i$  (speed of adjustment). Therefore, the target dividend payout ratio,  $r_i$ , can be obtained:

$$r = c_i r_i / c_i \quad (4)$$

Next, to account for the mean estimate of the speed of adjustment in Indonesia, the sum of each period's speed of adjustment was divided by the sum of time period. Finally, to obtain the mean estimate of the target dividend payout ratio in Indonesia, the sum of each period of the target dividend payout ratio is divided by the sum of time period.

## EMPIRICAL RESULTS AND DISCUSSION

Regressions were run using the entire six year period from 1994 to 1999, as well as for two three year sub-periods from 1994 to 1996 and from 1997 to 1999, and three two year sub-periods from 1994 to 1995, 1996 to 1997, and

from 1998 to 1999. Using the data described in the previous section, ordinary least squares (OLS) estimation of equation (3) yielded the

results contained in table 3, where  $c$  is the speed of adjustment and  $r$  is the target dividend payout ratio.

**Table 3.** Lintner's Partial Adjustment Model Using Indonesia data

Time Period	A	cr	-c	r	R <sup>2</sup>
1994 - 1999	-7.34 (-2.43)	0.09 (12.63)	-0.17 (-11.73)	0.53	0.72
1991 - 1993	-3.95 (-2.35)	0.14 (11.43)	-0.39 (-14.46)	0.35	0.75
1994 - 1996	-12.41 (-1.05)	0.13 (5.75)	-0.22 (-5.02)	0.59	0.30
1994 - 1995	-19.65 (-0.99)	0.31 (6.73)	-0.59 (-10.07)	0.52	0.49
1996- 1997	-15.01 (-2.96)	0.26 (3.75)	-0.34 (-2.86)	0.76	0.34
1998 - 1999	-12.12 (-0.97)	0.19 (5.66)	-0.46 (-9.42)	0.42	0.36
Mean			0.36	0.53	

t-statistics in parentheses

The mean estimate of the speed of adjustment from 1994 through 1999 implied by the results in Table 3 is approximately 0.36. This is somewhat higher than those reported in Table 1 for other countries except that reported for Australia by Shelvin (1982) and the previous research conducted in Indonesia by Sutojo and Irianto (1990, 1995) and Selvi (1999). This means that companies listed on the Jakarta Stock Exchange have been slower in adjusting their dividend payment to the target dividend when they have stable target earnings compared to the previous studies in Indonesia conducted by Sutojo and Irianto (1990, 1995) and Selvi (1999).

The mean estimate of the target dividend payout ratio from 1994 through 1999 is about 0.53. It shows that Indonesian firms that have gone public will share 0.53 of earnings as dividends. These results are lower than those of the previous studies conducted by Sutojo and

Irianto (1990, 1995) and Selvi (1999), which are 0.78, 0.66 and 0.56, respectively. However, the results are much higher than the estimated target dividend payout ratio reported in some studies in table 1. The results are also much higher than the results of Ariff and Johnson's study in Singapore, which were only about 0.12.

The decline of the target dividend payout ratio from 1994 through 1999 compared to the previous study in Indonesia can possibly be explained by several factors. The first possible explanation for such a high estimated target dividend payout ratio may be that investors have been more capital gain oriented (Kester, et. al, 1996). During the period of 1994 to 1999, investors had more speculative motives. The primary expected return from stock purchases is more from capital gain than dividends. Because of that, the estimated target dividend payout ratio is relatively lower than

the previous studies. Another aspect which caused the estimated target dividend payout ratio to decline during 1994 to 1999 may be that companies used more earnings as internal financing for expansion, and therefore retained relatively larger earnings. Economic growth gives many opportunities for firms to invest or expand, so they need investment of funds. Firms cannot obtain funds through loans continuously because this will influence their liquidity. The other alternative to get funds is for companies to use internal financing from retained earnings.

### CONCLUSION

Based on results obtained by Lintner's Lagged Partial Adjustment Model using regression Indonesia data set, conclusions can be drawn from this research are: *First*, during the monetary crisis in Indonesia, number of companies that announced earnings and dividends decreased significantly. From 238 companies which reported cash dividends in 1997, there were only 82 companies which announced the cash dividends in 1998 and even only 55 companies that paid cash dividends in 1999.

*Second*, that Indonesian firms during 1994 through 1999 slowly adjusted their dividend payment to the target dividend, about 0.36, compared to the previous studies conducted by Sutojo and Irianto (1990, 1995) during 1983 to 1988 and 1986 to 1993 and Selvi (1999) during 1991 to 1996.

*Third*, that Indonesian firms during 1994 through 1999 paid 0.53 of earnings to stockholders as dividends. These results are lower than those of the previous studies conducted by Sutojo and Irianto (1990, 1995) and Selvi (1999).

*Fourth*, during 1994 through 1999, investors were more capital gain oriented. This is also consistent with previous studies conducted by Sutojo and Irianto (1990, 1995) and Selvi (1999).

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