PREDICTABILITY POWER OF DIVIDEND POLICY AND LEVERAGE POLICY TO MANAGERIAL OWNERSHIP: AN AGENCY THEORY PERSPECTIVE

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ABSTRAK

Penelitian ini merupakan pengembangan dari Mahadwartha (2002b) yang mengguna-kan Logit model untuk mengetahui kemampuan prediksi kebijakan leverage dan dividen terhadap kepemilikan manajerial. Variabel leverage dan dividen sudah memisahkan antara kepentingan manajemen dan inside shareholders dengan outside shareholders. Penelitian ini juga menggunakan logit model, dengan modifikasi utama yaitu variabel kepemilikan manajerial menggunakan lead satu tahun kedepan (t+1), penambahan variabel kontrol aktiva lancar untuk meningkatkan kemampuan prediksi model dan periode sampel dari tahun 1993 sampai dengan 2001.

Penelitian-penelitian sebelumnya hanya menggunakan variabel kepemilikan manajerial tanpa lead *satu tahun kedepan (t+1). Penelitian ini berargumentasi bahwa kebijakan utang dan dividen mempunyai dampak yang lebih besar pada kepemilikan manajerial satu tahun kedepan (t+1) dibandingkan tahun yang berjalan (t_0).*

Hasil penelitian menunjukkan konsistensi kemampuan prediksi kebijakan leverage *serta dividen terhadap kepemilikan manajerial, dan kemampuan prediksi* leverage *dan dividen semakin meningkat dibandingkan penelitian Mahadwartha (2002b) yang hanya mengguna-kan kepemilikan manajerial tanpa* lead *(t_0). Hubungan variabel* leverage *dan dividen dengan kepemilikan manajerial adalah negatif dengan besaran yang semakin meningkat. Hal ini sesuai dengan prediksi oleh teori keagenan bahwa terdapat efek substitusi antara kepemilikan manajerial dengan kebijakan utang dan dividen dalam mekanisme pengawasan (*monitoring*) dan pengikatan (*bonding*). Hasil ini juga menunjukkan bahwa kebijakan utang dan dividen lebih baik dalam menjelaskan program kepemilikan manajerial satu tahun kedepan.*

Kata Kunci: *agency theory; lead; managerial ownership; leverage; dividend.*

BACKGROUND

The agency relationship is one of the eldest and the commonest codified modes of social interaction. Examples of agency are universal. Essentially all contractual arrangements, as between employer and employee or the state and the governed contains important element of agency. Agency theory viewed firm as a set of contracts among factors of production, with each factor motivated by its self-interest. The

self-interest controlled is main issue that tries to explain by agency theory (Jensen and Meckling, 1976). Manager's interest must align with shareholders interest to minimize the agency cost. Managerial ownership is one issue used to control such self-interest behavior (Jensen and Meckling, 1976; Crutchley and Hansen, 1989; Jensen, Solberg and Zorn, 1992; Myers, 1977; Leland and Pyle, 1977; Ross, 1977; Mahadwartha, 2002a;

Mahadwartha, 2002b; Mahadwartha and Hartono, 2002).

Managerial ownership is a remuneration program that is used to reduce the agency conflict between shareholders and managers. Murphy (1985), Brickley, Lease and Smith (1988), and Jensen and Murphy (1990) explained how fixed compensations package and contingent (bonuses share and option-related) proved to be an effective incentive to align shareholders interest with managers. Managerial ownership is a contingent compensation package.

Jensen and Meckling (1976) conclude that agency conflict arise from separation of ownership and control within firm. Outside equityholders will monitor management, to guarantee them from acting self-interest behavior. Shareholders, debtholders and management (managers) are parties that have different interest and perspective regarding value of the firm. Shareholders will tend to maximize their shares, forcing managers to act in their interest despite of debtholders interest. Debtholders on the other side will protect their fund already placed in firm with covenant and strict monitoring policy.

Agency theory derives from the conflict of interest between corporate managers, outside shareholders and bondholders. Managerial ownership, leverage and dividend policies might be related directly through agency theories. Jensen and Meckling (1976) provide an analysis of the effect of agency conflicts among the three groups. Their analysis suggests that the proportion of equity controlled by insiders should influence the firm's policies.

Leverage is relevant because using debt reduces the conflict of having outside equity. Managerial ownership and dividend are relevant because they reduce the conflict of interest between managers and outside shareholders (Jensen and Meckling, 1976; Crutchley and Hansen, 1989; Jensen, Solberg and Zorn, 1992; Myers, 1977). Leland and

Pyle (1977), and Ross (1977) present hypotheses that managerial ownership and financial policies help resolve informational asymmetry between managers and external investors (outside shareholders).

Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002) investigate interdependency of leverage and dividend policy with managerial ownership, and find significant result that support agency theory. The three previous papers used different approach but came with the same conclusion about managerial ownership. This paper inversely tries to investigate the relationship between managerial ownership with dividend and leverage policy without any interdependency relationship between those two policies. The result hopefully supports the last three papers that managerial ownership does matter controlling agency problem in Indonesia.

Financial policies such as dividend and leverage will affect managerial policy and decision of managers to join as owner of the firm. Mahadwartha (2002); Mahadwartha (2002b), Mahadwartha and Hartono (2002), Crutchley and Hansen (1989), and Jensen, Solberg and Zorn (1992) tested the issue with different perspectives and variables.

Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002) used Indonesian data and find a significant result and support of managerial ownership to control agency cost of equity and agency cost of debt. The main differences between these two studies are in firm specific variables, observation and period of analysis. Mahadwatha (2002b) used the same method as this paper but shorter time horizon, exclude current asset as control variable and without explanation of predictability power of leverage and dividend to managerial ownership one-year later.

Crutchley and Hansen (1989) found strong support that managerial ownership would tend to influence firm specifics variables and on the

long run suggest that it will influence dividend and leverage policy. Jensen, Solberg and Zorn (1992) directly tested relationship between managerial ownership and financial policies (dividend and leverage). They found that managerial ownership influenced financial policies but financial policies did not influence managerial ownership. Conclusion of four previous study is high managerial ownership will derive firms to lower debt and dividend. The study conduct here will test inversely about the relationship between policies (dividend and leverage) influenced managerial ownership.

Dividend and leverage policy variables used in the study is the same as Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002). Dividend and leverage variables already separate the effect of inside shareholders wealth and agent's wealth with outside shareholders wealth. The main difference from other studies is one-year lead for managerial ownership, because change in leverage and dividend policy will have bigger effect on managerial ownership in latter year not in current year. The measurement suggests increasing predictability power of leverage and dividend policy to managerial ownership.

The paper proceeds as follows; Section 2 reviews the relevant issues and empirical findings of managerial ownership. Section 3 describes hypothesis development and a brief literature review. Section 4 describes methodology used in the study. Section 5 describes the results from statistical analysis. Summary and discussion are presented in Section 6.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Ross (1973) noted than an agency relationship has arisen between two (or more) parties when one, designated as the agents, acts for, on behalf of, or as representative for the other, designated the principal, in a particular domain of decision problems. Fama (1980) and Eisenhardt (1989) defined that agency theory concerned with resolving two problems that can occur in agency relationship. The first is the agency problem that arises when the interests or goals of the principal and agent conflicted and it is difficult or expensive for principal to verify what the agent is actually doing. The second is the problem of risk sharing that arises when the principal and agent have different attitudes toward risk. Difference in risk preferences leads to different policy decisions and disregard the value maximizing activity as the economics pursued.

Separation between ownership and control arise agency problem. Managerial ownership on the other side, try to decrease agency problem by pooling back the ownership structure and control mechanism of the firm. Agrawal and Knoeber (1996) describe the importance of ownership structure as control mechanism in agency problem. The use of debt financing can improve performance by inducing monitoring by lenders. Agrawal and Knoeber (1996) also investigated firm performance and mechanism to control agency problems. The findings support managerial ownership as mechanism of control and affect firm performance.

Relationship of Leverage Policy to Managerial Ownership

One way to control agency cost is for firm to issue debt. Leverage policy serves as a bonding mechanism for managers to convey their good intentions to outside shareholders. Debt validates that managers are willing to risk of losing control of the firm if they fail to pay firm debt. Megginson (1997: 335) mention as bonding mechanism, leverage policy will decrease agency cost of equity but increase the agency cost of debt.

Is leverage policy attracting firm to involve in managerial ownership program one-year later? This question is not answered from previous study (Mahadwartha, 2002a;

Mahadwartha, 2002b; Mahadwartha and Hartono, 2002).

Friend and Lang (1988), Crutchley and Hansen (1989), and Jensen, Solberg and Zorn (1992) find a negative relationship between managerial ownership influenced leverage policies. Firm with managerial ownership program will tend to lower their debt level to reduce agency cost of debt and simultaneously reduce agency cost of equity. The result also support by Mahadwartha (2002a), and Mahadwartha and Hartono (2002).

The relationship between leverage policy and managerial ownership programs will be negative one year afterwards. Mahadwartha (2002b) only answer the predictability power of leverage policy to managerial ownership for current year. Less leverage will increase the probability a firm to engage in managerial ownership program one-year later to multiply the effect of reduced agency cost of debt with the reduction in agency cost of equity.

H_1: The relationship between leverage policy and managerial ownership is negative.

Relationship of Dividend Policy to Managerial Ownership

The more atomistic ownership structure, the fewer investors have the incentive or the ability to monitor and control corporate managers. This condition makes agency problems become more important. Agency cost or contracting model of dividend assumes that dividend payments arise as an attempt to overcome the agency problem that result when there is a separation of corporate ownership and control.

Dividend policy as bonding mechanism, will decrease agency cost of equity because it reduce the opportunity for managers to use firm cash flow for perquisites activities (Megginson, 1997: 377). Other point of view, dividend payment could decrease firm ability to pursue new investment opportunity. Rozeff (1982) used American company data to investigate dividend policy and ownership structure. The findings showed that ownership structure affect dividend policy or how firm disbursed their cash in dividend payment.

Crutchley and Hansen (1989), Jensen, Solberg and Zorn (1992), Rozeff (1982), Mahadwartha (2002a), and Mahadwartha and Hartono (2002) find a negative relationship between managerial ownership influenced dividend policies. Firm with managerial ownership will tend to lower their dividend payment because the purpose of managerial ownership is the same as dividend policy that is to reduce agency cost of equity. It will be ineffective to use two tools at the same time for the same problem.

Is dividend policy attracting firm to involve in managerial ownership program one-year later? Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002) is not answer this question. Mahadwartha (2002b) only answer the predictability power of dividend policy to managerial ownership for current year.

The relationship between dividend policy influence managerial ownership programs one-year later will be negative. Lower dividend will increase the probability firm to engage in managerial ownership program one-year later and still maintain the effectiveness of reducing agency cost of equity. Dividend will act as substitution policy for managerial ownership.

H_2: The relationship between dividend policy and managerial ownership is negative.

Variables dividend and leverage already excluded the portion of managerial, individual, and institutional ownership. Only the portion of public shareholders (outside shareholders) is included in variables calculation. The reasons are to purify variables from the effect of blockholders and managerial shares and maintain the predictability of dividend and leverage to managerial ownership.

RESEARCH METHOD

Data and Sample

Samples are manufacture firms listed on Jakarta Stock Exchange (JSX) with period of observation from 1993 to 2001. Samples are restricted from 1993 trough 2001 up to 80 firms, to sustain the predictability power of lead managerial ownership variable (1993 as base year samples selection). PT Inti Indorayon Tbk was excluded from sample because delisted in 2001. All data are available from Market Directory JSX and Pusat Pengembangan Akuntansi Universitas Gadjah Mada (PPA-UGM). Pooling data result in 640 observations for 9-year observation period.

Variables Description

1. Leverage (LEV_t): leverage measurement separates the outside shareholders wealth with inside shareholders wealth and agent's wealth. The measurement will clarify the effect of outside shareholders to managerial ownership program. This proxy is direct measurement of outside financing with regards of outside equity financing (Jensen and Meckling, 1976).

   $MvCso = TotShrso * MpriceCs$

   $TotShrso$ = total common stock outsiders own

   $MpriceCs$ = average price per year with weekly data to reduce the seasonality effects from price changes.

   $$Laverage = \frac{LtDebt_t}{LtDebt_t + MvCso_t}$$

2. Dividend (DIV_t): common stock dividend to market value of common stock (dividend yield)

   $$Dividend_t = \frac{ComDiv_t}{TotShrs_t \times MpriceCs_t}$$

3. Managerial ownership ($DMOWN_{t+1}$): dichotomous behaviors of managerial ownership (binomial data) support the use of *dummy* variable lead managerial ownership. D=1 for firm with managerial ownership and vice versa.

Control Variables

Crutchley and Hansen (1989) used diversification losses as variable that influenced manager's decisions to engage in managerial ownership program. This paper used investment opportunity proxy by book to market value ($IOSBM_t$) as control variable of manager's decision in managerial ownership program. Firm with higher book to market means have lower investment opportunity. Lower investment opportunity will be less attractive for managers than firm with higher investment opportunity. Managers will be reluctant to engage in managerial ownership program if firm have higher book to market ratio.

Crutchley and Hansen (1989), Jensen, Solberg and Zorn (1992), Rozeff (1982), Megginson (1997: 376), Ang, Chua and McConnell (1982), Gaver and Gaver (1993), Mahadwartha (2002a), and Mahadwartha and Hartono (2002) find that size of firm affect the relationship between dividend, leverage and managerial ownership. This study also includes size as control variable that measure as dummy variable ($DSIZE_t$). Size is measure from total assets, ascend and pick 50% upper level with D=0 and 50% lower level with D=1. Pooling data can cause cross sectional biased (Murphy, 1985).

Economic crisis in Indonesia on 1997 also considered as control variable. Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002) find that crisis period significantly effect model. Crisis period is control by dummy variable ($DCRS_t$) with cut off data 1993 – 1996 and 1997 – 2001.

Statistical Analysis

Model equation is:

$$DMOWN_{t+1} = \alpha_1 + \beta_1 LEV_t + \beta_2 DIV_t + \beta_3 IOSBM_t + \beta_4 DSIZE_t + \beta_5 DCRS_t + \varepsilon_{1t}$$

Logit model will be used to solve the equation because dependent dummy variable (Gujarati, 1995: 554). The result will employ in term of probability of dependent variable to happen after independent variables. Linear Probability Model (LPM) is not use because some limitations such as questionable value of R^2 and heteroscedastic variances on disturbances.

Expectation-Prediction (Classification) table are use to estimate the correct prediction from model. It will shows the estimated value of correct predictions for D=1 and D=0 of dummy managerial ownership. The expectation-prediction table is sometimes referred to as the classification table. The fraction of y=1 observations that are correctly predicted is termed the sensitivity, while the fraction of y=0 observations that are correctly predicted is known as specificity.

EMPIRICAL RESULTS

Descriptive result for independent variables:

Table 1. Descriptive for Leverage

LEV_t	Mean	Std. Dev.	Obs.
(0, 0.2)	0.047739	0.059230	263
(0.2, 0.4)	0.297711	0.055023	82
(0.4, 0.6)	0.502611	0.058538	86
(0.6, 0.8)	0.696760	0.059989	101
(0.8, 1)	0.894763	0.055135	108
All	0.386249	0.335090	640

Table 2. Descriptive for Dividend

DIV_t	Mean	Std. Dev.	Obs.
(0, 0.5)	0.047827	0.094597	620
(0.5, 1)	0.682261	0.173836	13
(1, 1.5)	1.090866	0.042248	3
(1.5, 2)	1.803455	0.193305	3
(2, 2.5)	2.393162	NA	1
All	0.077497	0.211783	640

Table 1 and 2 shows descriptive of two main variables, which are leverage and dividend. Level of leverage largely disperses with mean of 0.386. Almost 96% of sample paid small amount of dividend with only 0.047 dividend yield to shareholders. Total observations are 640 (80 firms) with period of analysis from 1993 to 2001.

Table 3-showed leverage and dividend variable significantly affect managerial ownership one-year later (–0.507237 and –2.839046) as predicted earlier. The relationships are negative and significant. McFadden R^2 showed significant increase to 0.060144 compared with 0.058508 from Mahadwartha (2002b).

Leverage policy variable (LEV_t) influenced managerial ownership ($DMOWN_{t+1}$) with significant result (-0.507237) at 0.05. Dividend policy variable (DIV_t) influenced managerial ownership ($DMOWN_{t+1}$) with significant result (-2.839046) at 0.01. The magnitude of dividend policy parameter (-2.839046) is higher than leverage policy (-0.507237). Size ($DSIZE_t$) is negative (-0.593451) significant at 0.01.

Control variables IOSBM, DSIZE and DCRS also significant. Size of the firm is matter when company engages in managerial ownership program. Size, investment opportunity and economic crisis influenced lead managerial ownership by negative sign. Before crisis and within crisis period showed different behavior in financial policy and managerial ownership.

Table 3. Logit Model with compared result from Mahadwartha (2002b)

	Predict	DMOWN$_{t+1}$	DMOWN$_t$ Mahadwartha(2002b)
Constant		−0.507237 (−2.633901)***	−0.396933 (−2.215737)**
LEV$_t$	(−)	−0.874824 (−2.459224)**	−0.738048 (−2.217768)**
DIV$_t$	(−)	−2.839046 (−2.848379)***	−2.438077 (−2.765506)***
DSIZE$_t$		−0.593451 (−2.641227)***	−0.492879 (−2.315441)**
DCRS$_t$		−0.490278 (−2.263945)**	−0.760215 (−3.639324)***
IOSBM$_t$		−0.050146 (−1.679444)**	
McFadden R^2		0.060144	0.058508

() z-*statistic*
*** Significant at 0.01
**   Significant at 0.05
*   Significant at 0.10

Table 4 showed correct classifications obtained when the predicted probability is less than or equal to the cutoff and the observed y=0, or when the predicted probability is greater than the cutoff and the observed y=1. 423.73 of the Dep=0 observations and 26.73 of the Dep=1 observations are correctly classified by the estimated model. As a whole, model correctly estimate 71.79% from total of 640 observations as compared with Mahadwartha (2002b) that only 69.43%. It shows that the predictability power is increase for leverage and dividend to predict managerial ownership one-year later.

Table 4. Compared Expectation-Prediction (Classification) Table with Mahadwartha (2002b)

	DMOWN$_{t+1}$			DMOWN$_t$ Mahadwartha (2002b)		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
E(# of Dep=0)	432.73	90.27	523.00	416.94	99.06	516.00
E(# of Dep=1)	90.27	26.73	117.00	99.06	32.94	132.00
Total	523.00	117.00	640.00	516.00	132.00	648.00
Correct	432.73	26.73	459.46	416.94	32.94	449.88
% Correct	82.74	22.85	71.79	80.80	24.96	69.43
% Incorrect	17.26	77.15	28.21	19.20	75.04	30.57
Total Gain*	1.02	4.57	1.67	1.17	4.59	1.87
Percent Gain**	5.59	5.59	5.59	5.76	5.76	5.76

DISCUSSION

Mahadwartha (2002a), and Mahadwartha and Hartono (2002) investigate interdependency of leverage and dividend policy with managerial ownership, and find significant result that support agency theory. Mahadwartha (2002b) investigate relationship between managerial ownership with dividend and leverage policy without any interdependency relationship between those two policies. This paper also investigates relationship between managerial ownership with dividend and leverage policy without any interdependency relationship between those two policies, but using lead managerial ownership. The paper try to investigate the predictive power of leverage and dividend policies to probability managers engage in managerial ownership one-year later.

The magnitude coefficient of regression model is increase if leverage and dividend predict managerial ownership one-year later. Comparing with Mahadwartha (2002b) result. Management will engage in managerial ownership program after they signaled about dividend increase and leverage increase, definitely improved the performance of the firm. Other point of view, is an increase in dividend will lower firm specific risk because its motivate manager to own the company's shares.

The lower leverage level will leads to higher probability firms engage in managerial ownership program at t+1 and the higher probability managers to fill the program. Less leverage will increase the probability a firm to engage in managerial ownership program to multiply the effect of reduced agency cost of debt with the reduction in agency cost of equity.

The lower dividend level will leads to higher probability firms engage in managerial ownership program at t+1 and the higher probability managers to fill the program. Lower dividend will increase the probability a firm to engage in managerial ownership

program to maintain the effectiveness of reducing agency cost of equity. Since there is a managerial ownership, the usefulness of dividend policy to control agency cost of equity will lower.

The magnitude of dividend policy parameter is higher than leverage policy. The result proved dividend policy as substitution policy for managerial ownership to control agency cost of equity. Partially this result also support substitution hypothesis. Dividend as bonding mechanism for manager prevents the use of firm free cash flow for perquisites act.

Size negatively and significant related to managerial ownership. The result supported previous empirical studies that include size as firm specific variable for decision-making in financial policy of the firm. Lower level of size will increase the probability firm engage in managerial ownership because management only needs a small portion of their wealth to capture a significant portion of firm shares. Thus managerial ownership program will be more effective for small firm.

Period of crisis ($DCRS_t$) as control variables are significant. Crisis dummy variable showed differences in behavior of the firm before and while crisis. Managers less attracts for managerial ownership programs during crisis because higher risk and lower return on firm performance. Managers know better about firm's business risk, thus the behavior in managerial ownership (whether they engage or not) can be signaled for internal conditions of the firm.

Investment opportunity ($IOSBM_t$) is negative significant. The result showed that the lower book to market or higher investment opportunity would increase manager's willingness to fill managerial ownership program one-year later. It is consistent with rational behavior of economics, that human will maximize his/her utility, or wealth in investment point of view. This paper also run the regression of no-lead managerial ownership ($DMOWN_t$) with $IOSBM_t$ as

dependent variable, and found no significant result regarding the relationship of investment opportunity to managerial ownership in current year. It strengthens the result that investment opportunity only effecting managerial ownership in latter year/period.

CONCLUSION

The result significantly supports Mahadwartha (2002b) that leverage and dividend policies can be used to predict probability of managers to engage in managerial ownership program one-year later. Research in managerial ownership will lead to broad conclusion that managerial ownership is important in controlling agency problems, beside the use of debt and dividend. The robustness of model also supported by previous empirical study conducted by Mahadwartha (2002a), Mahadwartha (2002b), and Mahadwartha and Hartono (2002) for Indonesian capital market.

The result also showed negative signs and an increased magnitude of dividend and leverage policy to managerial ownership. It showed a substitution relationship of managerial ownership to dividend and leverage policy, as predicted by agency theory.

Future research should expand sample size, not only manufacture firms but also include other industries covered by Jakarta Stock Exchange and Surabaya Stock Exchange. Other firm specific variables such as diversification losses, internal cash flow, etc should also include as variables that influenced managerial ownership program.

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