CAPITAL STRUCTURE IN THE CONTEXT OF CEO'S RENT EXTRACTION

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Abstract

This paper investigates the impact of earnings management on market return (by the proxies of discretionary accruals and earnings response coefficient/CAR regarded as accounting and market based earnings quality, respectively) along with a number of moderating (both governance and financial) variables in an emerging market context. Indonesia. Building on extant literature and using panel data approach, it examines 52 manufacturing firms listed on the Indonesia stock exchange during 2007 to 2010 periods. Applying Modified Jones Model to measure earnings management, our regression analysis reveals that earnings management has significant negative influence of market return. Of the moderating variables, board size, leverage and firm size are showing significant effects on market return, but not the institutional ownership. Again, observing the use of moderator effects on earnings management, our findings confirm that board size has more predictive power than institutional ownership in deterring earnings management and weaken the association between earnings management and market return. Similarly, leverage has strengthened the relation between earnings management and market return showing more exposure to earnings management while firm size showing a tendency to weakening earnings management, on the contrary. These results have enormous implications for Indonesian corporate sector and policy makers in adopting appropriate governance measures to constrain earnings management and improve quality of earnings.

Keywords: Cost of Capital, Financial Leverage, CEO's Power

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1. Introduction

Since Modigliani and Miller's (1958) debt irrelevance proposition in a world of no taxes and no other market imperfections, enormous work has been done on the choice of corporate capital structure. Modigliani and Miller (1963) show that with corporate tax and the tax deductibility provision of interest, the firm's valuation rises with more debt, suggesting optimal financial leverage of 100%. The trade-off theory (see Leland and Toft (1996), among others) introduces the probability of costly bankruptcy and shows a finite financial leverage which minimizes the weighted average cost of capital. The pecking order theory (see Myers (1984)) proposes that due to an adverse signalling of external equity financing, firms prefer retained earnings as the main source of funds, followed by debt and then finally the issuance of new shares. This theory, unlike the trade-off theory, does not suggest an optimal financial leverage. The agency cost theory (see Jensen and Meckling (1976)) proposes an optimal level of debt by trading off the agency costs of equity with the agency costs of debt. The signalling theory (see Myers and Majluf (1984) and Harris and Raviv (1990)) argues that capital structure is affected by financing decision acting as a signal for firm's investment prospects. These theories have been extensively empirically tested with mixed results although studies showing the validity of the trade-off theory have been more frequent (for example, see Jalilvand and Harris (1984) and Frank and Goyal (2003), among others). In this paper, we assume the trade-off theory and also incorporate the agency costs of debt. In addition, we introduce another factor in the choice of financial leverage from the executive compensation literature, and that factor is the CEO's bargaining power in his/her rent extraction behavior.

The topic of CEO compensation has attracted investigation from several inter-disciplinary scholars (for example, a very limited sample is: Jensen and Meckling (1976) and Murphy and Zábojník (2004) from finance and economics; Bebchuk and Fried (2004), Van Essen et al. (2012) and Braendle and Katsos (2013) from management; O'Reilly and Main (2010) from psychology; DiPrete et al. (2010) from sociology). In this paper, following Bebchuk and Fried (2004) who contend that CEO pay levels

represent successful rent seeking made possible by increased CEO power over the board and the pay setting practices, we postulate CEO's rent seeking behavior. The issue of whether CEO's rent extraction has a market-based explanation or is beyond market determined pay is not relevant for this paper. What is relevant here is that there is rent extraction by the CEO.

Some corporate CEOs act like hegemons (Sharma et al., 2013). Sources of their hegemonic power include share ownership, ability to manipulate membership composition of the board of directors, exchange of favors through participation in interlocking directorship and power to reward supporters and punish detractors. Once a hegemonic power base is created, CEOs perpetuate it by having weak corporate governance with fewer independent outside directors. This will allow CEOs to manipulate choice of nominating and compensation committees members (Hermanson et al., 2012; Graham et al., 2013), and thereby to extract rent in the form of excess compensation.

In this study, an infinite-period deterministic model of CEO' rent extraction, where rent is measured by economic value added, EVA, of the firm is proposed. EVA was coined and popularized by Stern-Stewart and Co in 1991. Since then, EVA has gained popularity especially in USA, UK and European countries as an internal control technique and an external performance measure (see a literature survey article on EVA by Sharma and Kumar (2010)). Chamberlain and Campbell (1995) show that EVA allows management to know which way the company is heading. Wallace (1998) asserts that EVA's most powerful feature is its relevance to management compensation systems.

The EVA is the difference between the after-tax net operating earnings and the total cost of employed capital. This means EVA provides a true extra value as all the stakeholders in the firm are fully paid their contractually fixed payments or their opportunity cost of funds. Since EVA is a residual profit, it must belong to common stockholders who are the residual claimants. In Pandher and Currie (2013), it is postulated that the residual profit is shared between the CEO and other stakeholders: employees, suppliers, partners and customers, not between the CEO and the equityholders. In their model, like in our model, the shareholders earn the opportunity cost of their funds, but we see no logistics by which sharing of residual earnings can take place between the CEO and other stakeholders. Equityholders are the claimant of residual earnings; therefore, sharing has to be between the CEO and equityholders. However, the CEO attempts to extract EVA and the level of extraction will depend on CEO's bargaining power.

The variables that can affect the CEO's bargaining power include factors such as number of independent directors in the board, the size of the board, relative size of institutional holding of voting common shares and the threat of dismissal or takeover. We postulate in this paper that the financial leverage may also affect CEO's entrenchment, and if this is so, this effect itself becomes a factor in the determination of financial leverage. Berger et al. (1997) show empirically that whenever CEOs entrenchment rose due to a reduced pressure from ownership or compensation incentive or active monitoring of their performance or threat of takeover, financial leverage declined. In this paper, we argue that CEOs' entrenchment may itself be affected by changing financial leverage.

Jiraporn et al. (2012) argue that due to agency conflicts between ownership and control, managers may not select financial leverage which is value-maximizing for equityholders. However, we note here that CEO may select debt level lesser than optimal for several reasons including keeping some debt capacity to take advantage of unexpected profitable projects in the future (Agha (2013) among others), the non-diversifying nature of CEO's human capital tied up with firm (Fama, 1980), a negative effect of interest payments on free cash flows (Grossman and Hart, 1982) and management dislike for performance pressure associated with commitments to pay a large amount of cash to creditors regularly (Jensen, 1986). On the other hand, dominant CEOs may overleverage in order to raise the relative voting power of their equity stake (Harris and Raviv, 1988; Stulz, 1988). Also, as noted by Berger et al. (1997), dominant CEOs may sometimes select excess leverage as a signal to pre-empt takeover attempts by outsiders. Empirical findings on capital structure also indicate the choice of leverage at the optimal point, below it and above it, although more studies find that firms choose their target capital structure (see, for example, Jalilvand and Harris (1984); Opler and Titman (1994); Titman and Wessels (1988); Shyam-Sunder and Myers (1999), among others). In this paper we shall show that CEO will mostly adopt optimal leverage but if CEO's bargaining power is reduced by more debt, CEO may select leverage which is lesser than optimal, and if CEO's bargaining power is raised by more debt, CEO may select leverage which is more than the optimal point.

The rest of the paper is organized as follows: In section 2, an infinite-period deterministic model of CEO's rent extraction is proposed. The theoretical results are derived in section 3. Section 4 provides an elaborate numerical illustration of the results of the model. The summary and conclusions of the paper are provided in section 5.

2. A model of CEO's rent extraction

2.1 Assumptions of the model

The assumptions of the model are the same as of the Modigliani-Miller framework except some assumptions that relate to probability of costly

bankruptcy and the agency costs of debt. Infinite identical periods are assumed. The firm starts at each period with operating capital, C_0, which is raised at the cost of capital, K, and produces the after-tax net operating profit, EBIT (t-1), where EBIT is earnings before interest and tax and t is the corporate tax rate. The investment assets of the firm are assumed to be fixed which means annual capital expenditure is equal to the annual depreciation and firm's plow-back ratio is zero. There is no preferred stock and the par value of debt at issuance is set to be equal to market value.

It is well-known that there are both direct costs of bankruptcy, viz. costs involved with bankruptcy proceedings and value of lost management time; and indirect costs of bankruptcy, viz. the sale of assets at fire sale prices, lost investment opportunities, etc. The present value of expected bankruptcy costs rise at an accelerating rate with increasing level of debt because of rising probability of bankruptcy. We assume that the present value of expected bankruptcy costs, denoted by PVEBC, is given by:

$$PVEBC = \gamma D^2, \gamma > 0 \quad (1)$$

The agency costs of debt, which consist of costs of monitoring devices to prevent moral hazard-based transfer of wealth from creditors to shareholders and costs of writing and enforcing protective covenants, are expected to be higher with higher level of debt. Accordingly, we assume that the present value of these costs, denoted by PVACD, is given by:

$$PVACD = \delta D, \delta > 0 \quad (2)$$

2.2 Specification of the model

Denoting V as the market value of the firm, V_u as the market value of the firm when it has zero debt, E as the market value of firm's equity, D as the market value of firm's debt, K_E as the required rate of return on firm's equity, and K_D as the required rate of return on firm's debt, and using the above assumptions and earlier notation, the following equations specify the model's corporate finance framework:

$$E = (EBIT - K_D D)(1 - t)/K_E \quad (3)$$

$$V = V_u + tD - (\gamma D^2 + \delta D) \quad (4)$$

$$K = \text{EBIT}\,(1 - \text{t})/\text{V} = K_D(1 - t)\frac{D}{V} + K_E\frac{E}{V} \quad (5)$$

$$EVA = EBIT\,(1 - t) - KC_0 = (\rho - K)C_0 \quad (6)$$

Where ρ is the rate of return on invested capital, defined as EBIT (1-t)/C_0. ρ in our model is the same as the rate of return of unlevered equity of the firm.

The CEO's power to extract rent will be represented by symbol θ. θ will take value between zero and one; the value of zero means no rent extraction by the CEO and the value of one means the whole EVA will accrue to the CEO. θ can be termed as the CEO's bargaining power coefficient and is specified as:

$$\theta = \theta(X, l) \quad (7)$$

Where X is the vector of all other determinants of θ, and l = D/V, the financial leverage variable.

About the effect of l on θ, there are three possibilities. One possibility is that the effect of financial leverage on CEO's bargaining power coefficient, θ, is negative, that is $\partial\theta/\partial l < 0$. Jensen (1986) argues that CEOs dislike performance pressure associated with the contractually set-up interest payment. Everything else held constant, the lower (higher) is the level of debt, the lower (higher) will be the performance pressure which should be tantamount to an increase (decrease) in CEO's entrenchment. Secondly, debt involves restrictive covenants which constrain CEO's decision making power (Chava et al., 2010). Therefore, higher (lower) debt must reduce (increase) CEO's bargaining power. Thirdly, since corporate debt relative to corporate equity is predominantly held by financial institutions, they are more likely to monitor firm's performance on a regular basis and this monitoring should reduce CEO's entrenchment. Fourthly, regular rating and revisions of rating of corporate debt by rating agencies is another market-based pressure on the CEO (Kisgen, 2009). As a market-based pressure on CEO's power, changes in rating of debt are much more serious as compared to fluctuations in stock price since revisions of rating are done with a careful analysis of short-term and long-term operating and financial performance of the firm, while changes in stock price may be associated with temporary gyrations in the market place. Finally, leverage acts as an internal governance tool that disciplines managers with respect to their wasteful operating activities such as negative net present value projects, thereby lowering their entrenchment (see for example, Agha (2013), Jiraporn and Gleason (2007)).

The second possibility is that $\partial\theta/\partial l > 0$, that is an increase (decrease) in financial leverage increases (decreases) CEO's bargaining power. The argument in favour of this specification is that an increase (decrease) in financial leverage, everything else held constant, increases (decreases) the voting power of CEO's equity stake in the firm (see for example, Harris and Raviv (1988), Stulz (1988)).

The third possibility is that there is no effect of changes in financial leverage on CEO's bargaining power, that is $\partial\theta/\partial l = 0$, due to either there is in fact no material effect or the aforementioned negative and positive forces cancel each other exactly.

For CEO's rent extraction, denoted R, we postulate:

$$R = \theta.EVA \quad (8)$$

CEO's pay has many components, viz. basic salary, bonuses, payouts from long-term incentive plans, restricted stock grant, stock options, pension benefits, perks and severance pay. The rent extracted by the CEO will be embodied in one or more these components. Each component of CEO's pay may reflect both optimal contract and rent extraction and the relative size of each of these aspects may differ from component to component of the CEO pay (Frydman and Jenter, 2010). Agha (2013) shows managers' different attitudes towards financial leverage with respect to bonuses and stock incentives on the one hand and stock options on the other hand. The determination of the relative sizes of each of the various components of compensation is extremely difficult and what matters for this paper are not these relative sizes but the fact that there is rent extraction.

It is evident from equation (8) that CEO's rent extraction is zero if EVA = 0 or θ = 0 or both. For 0 < $\theta \leq 1$, for rent, R, to be positive, EVA has to be positive. Secondly, given the definition of EVA in equation (6), if debt is zero, then the cost of capital, K is equal to the required rate of return on unlevered equity which is also equal to the rate of return on operating capital, ρ, and EVA is equal to zero. Finally, given fixed ρ and the initial operating capital, C_0, EVA is maximized when the cost of capital, K, is minimized.

EVA is a function of all the operating and financial variables of the firm, as within EVA, EBIT is affected by capital expenditure and all other operating decisions while the cost of capital K is affected by the required rate of return on equity, K_E, required rate of return on debt, K_D, corporate tax rate, t and financial leverage, *l*. K_E and K_D are themselves positive functions of *l*.

3. Analysis and results

*3.1. Optimal debt-to-value ratio, l**

Differentiating the cost of capital, K, with respect to *l*, we obtain:

$$\frac{\partial K}{\partial l} = K_D(1-t) + \frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l) - K_E \quad (9)$$

According to the trade-off theory, a finite *l* exists that minimizes K. This requires equating the right side of equation (9) to zero, which, after some rearrangements, gives:

$$(K_D(1-t) - K_E) + \left(\frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l)\right) \quad (10)$$

The first term on the right hand side indicates a decline in K when a dollar of equity is replaced by a dollar of debt while the second term represents an increase in K as increased leverage is expected to raise K_D and K_E due to increased probability of costly bankruptcy and agency costs of debt [1]. At optimal *l*, l^*, the absolute value of the first term must be equal to the absolute value of the second term. In initial range of debt, increases in K_D and K_E are expected to be small resulting in declines in K, and beyond l^*, increasing debt will raise K_D and K_E substantially at an increasing rate outweighing the benefits of debt, thereby raising K.

3.2. Optimal CEO's rent extraction behavior and the choice of financial leverage

Differentiating rent extraction, R, from equation (8) with respect to *l*, we obtain:

$$\frac{\partial R}{\partial l} = EVA\frac{\partial \theta}{\partial l} + \theta\frac{\partial EVA}{\partial l} \quad (11)$$

At optimal point, $\frac{\partial R}{\partial l} = 0$, this implies:

$$EVA\frac{\partial \theta}{\partial l} + \theta\frac{\partial EVA}{\partial l} = 0 \quad (12)$$

(i) <u>The case where $\partial\theta/\partial l = 0$</u>

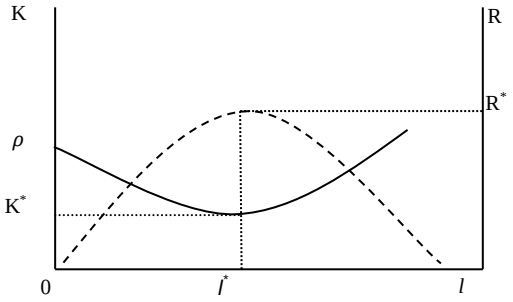
In this case, equation (12) reduces to:

$$\theta\left[0 - \left\{(K_D(1-t) - K_E) + (\frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l))\right\}\right] = 0 \quad (13)$$

This is the same first order condition as given in equation (10) except the sign. This means that rent extraction maximizing leverage is the same as the value-maximizing leverage, l^*. This makes sense as given θ and no change in θ, the CEO's rent must be maximum when the cost of capital, K, is minimum. The result of this case is illustrated in the figure below, where the choice of leverage by the CEO is the same as the value-maximizing leverage.

In this case, the CEO will not increase *l* beyond *l** because R will decline as both terms in equation (12) will be negative. It is plausible to postulate that given the level of θ at *l**, the CEO will compare *l* with *l** and evaluate change in R. At a lower *l*, EVA will necessarily decline as the cost of capital will be higher and the CEO will choose a lower *l* only if his/her share arising from the increase in θ outweighs the adverse effect of decline in EVA on R at the initial level of θ. This situation is most likely if the initial θ will be low and the effect on θ of a decline in financial leverage will be large. Agha (2013) shows empirically using a USA non-financial firms data that in firms with strong corporate governance, managers first increase leverage with respect to total compensations and then decrease it, and choice of leverage by managers stays below the value-maximizing leverage. This result is consistent with our figure 2 as a low θ can be identified with strong corporate governance and figure 2 shows that CEO may choose corporate leverage lesser than the optimal leverage.

Figure 1. Choice of financial leverage by the CEO with no effect of changing financial leverage on CEO's bargaining power



K: cost of capital
R: CEO's rent extraction
l: financial leverage
ρ: rate of return on unlevered equity
R*: optimal CEO's rent extraction
K*: optimal cost of capital
*l**: optimal financial leverage

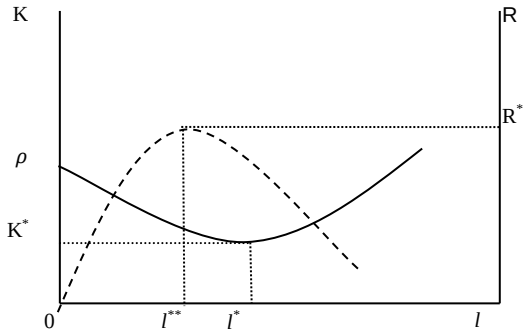
(ii) The case where $\partial\theta/\partial l < 0$

Using equation (12), this will be the case if the relative increase in the CEO's bargaining power coefficient will be larger than the negative of the relative change in the economic value added, that is:

$$EVA\frac{\partial\theta}{\partial l} > -\theta\frac{\partial EVA}{\partial l} \quad (14)$$

In this situation, the financial leverage chosen by the CEO will be lesser than its value-maximizing optimal level. Fama (1980) argues that managers may prefer less financial leverage than optimal because of their risk minimizing strategy as they have undiversified human capital tied up with the firm. Grossman and Hart (1982) argue that managers prefer not to have a higher level of debt because interest payments reduce free cash flows available to them. Titman and Wessels (1988), among others show empirically that financially sophisticated and highly profitable firms do not lever up to the optimal level. Jiraporn et al. (2012) also show empirically that when the CEO has more dominant role in decision making, the firm chooses leverage lesser than the optimal point. Agha (2013) has also shown that manager's target leverage ratio is lesser than the shareholder's value-maximizing leverage. In this paper, we postulate that CEO's selected leverage can be lesser than shareholders' value-maximizing leverage if the CEO's bargaining power can rise significantly with lower financial leverage. In Figure 2 below, this result is illustrated geometrically, where CEO chooses l^{**}, which is lesser than l^{*}, in order to maximize his/her rent.

Figure 2. Choice of financial leverage by the CEO with a negative effect of changing financial leverage on CEO's bargaining power

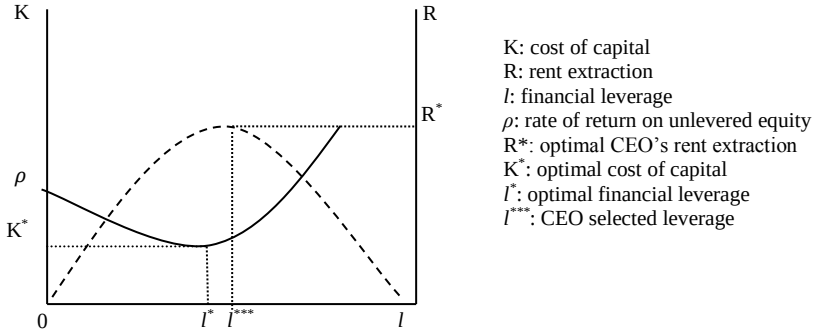


K: cost of capital
R: CEO's rent extraction
l: financial leverage
ρ: rate of return on unlevered equity
R*: optimal CEO's rent extraction
K*: optimal cost of capital
*l**: optimal financial leverage
*l***: CEO selected leverage

(iii) The case where $\partial\theta/\partial l > 0$

In this case, given the level of θ at l^{*}, the CEO will consider *l* greater than l^{*} and evaluate the resulting change in R. With $\partial\theta/\partial l > 0$, the CEO will not decrease *l* below *l** because R will necessarily decline in this situation as both terms in equation (12) will be negative. However, given $\partial\theta/\partial l > 0$, a higher *l* will lead to greater CEO's bargaining power and it is possible that increase arising from the first term of equation (12) outweighs the decline arising from the second term. If so, the CEO will select *l* greater than l^{*}. Berger et al. (1997) report that entrenched managers sometimes select excess leverage as a signal to sell assets or otherwise restructure in order to preempt takeover attempts by outsiders. Figure 3 below illustrates CEO's choice of financial leverage in this case.

Figure 3. Choice of financial leverage by the CEO with a positive effect of changing financial leverage on CEO's bargaining power



4. A numerical illustration

For numerical illustration of the results of the model, given by equations (1)-(8), we assume numerical values of the parameters and variables as follows:

$\gamma = 0.0001$, $\delta = 0.01$, EBIT = \$1,000 per period, t = 40%, $\rho = 10\%$, C_0= \$5,000, number of common shares, when D = 0, is 500, and the following assumed levels of D and K_D:

Table 1: Assumed levels of debt (D) and rate of return on firm's debt (K_D)

D	K_D
0	-
500	0.06
1000	0.06
1500	0.06
1950	0.061
2250	0.062
2500	0.063
3000	0.066
500	0.07

With these assumptions, the value of unlevered firm, V_u, the value of leveraged firm, V, the value of equity, E, the stock price per share, P, and the required rate on equity, K_E, are:

$V_u = 1000 \times (1 - 0.4)/0.1 = \$\ 6{,}000$,

$V = 6{,}000 + 0.4\ D - (0.0001\ D^2 + 0.01D)$,

$E = V - D$,

$P = V/500$, and

$K_E = (1000 - K_D)\ (1 - 0.4)/\ E$

Finally, we assume that when financial leverage negatively affects CEO's bargaining, we have:

$\theta = 0.05 - 0.06\ l$,

And when l affects θ positively, we assume:

$\theta = 0.05 + 0.06\ l$,

With all above numerical specifications and the consequent equations, the following table provides the numerical illustrations of the results of the paper. With $\frac{\partial \theta}{\partial l} = 0$, it is obvious that R will be maximum when financial leverage is value-maximizing. In addition, it has to be noted that even with $\partial\theta/\partial l < or > 0$, CEO may still choose l^* if θ is large and $|\partial\theta/\partial l|$ is smaller.

Table 2. CEO's choice of financial leverage with different effects of changing leverage on CEO's bargaining power

D	K_D	V	*l*	K_E	P	K	EVA	R_1	R_2
$0	-	$6,000	0.0	0.1	$12	0.1	$0.0	$0.0	$0.0
500	0.06	6,170	0.081	0.1026	12.34	0.0972	13.80	0.6229	0.7571
1,000	0.06	6,290	0.159	0.1066	12.58	0.0953	23.05	0.9326	1.3724
1,500	0.06	6,360	0.2358**	0.1123	12.72	0.0943	28.35	1.0164	1.8186
1,950	0.061	6,380.25	0.306*	0.1193	12.761	0.0940	29.80	0.9429	2.0371
2,250	0.062	6371.25	0.353***	0.1253	12.743	0.0941	29.15	0.8401	2.0749
2,500	0.063	6,350	0.3937	0.1313	12.70	0.0944	27.55	0.7267	2.0283
3,000	0.066	6,270	0.4785	0.1472	12.54	0.0956	21.55	0.4588	1.6962
3,500	0.07	6,140	0.57	0.1716	12.28	0.0977	11.50	0.1817	0.9683

1. Variable definitions:

D: debt (Table 1);

K_D: rate of return on firm's debt (Table 1);

V: value of leveraged firm = 6,000 + 0.4 D – (0.0001 D^2 + 0.01D);

l: financial leverage = D/V;

K_E: required rate on equity = (1000 – K_D) (1 - 0.4)/ E;

P: stock price per share = V/500;

K: cost of capital = K_D(1 - 0.4) x *l* + K_E(1 - *l*);

EVA = (ρ - K) x 5,000;

R_1: CEO's rent extraction = θ x EVA, with $\theta = 0.05 - 0.06$ x *l*;

R_2: CEO's rent extraction = θ x EVA, with $\theta = 0.05 + 0.06$ x *l*.

2. * *l* = 0.306 is the level of leverage that maximizes V or maximizes P or minimizes K.

** *l* = 0.2358 provides the highest rent extraction by the CEO when his/her bargaining power declines with *l*.

*** *l* = 0.353 provides the highest rent extraction by the CEO when his/her bargaining power rises with *l*.

With $\frac{\partial\theta}{\partial l} = 0$, it is obvious that R will be maximum when financial leverage is value-maximizing at l^* = 0.306. At this optimal point, EVA of $29.8 is the highest and CEO's rent at a given θ (which is 5%) is the highest.

With $\frac{\partial\theta}{\partial l} < 0$, next to last column in Table 2, R is maximized at a leverage l^{**} = 0.2358. At this leverage, although EVA is lowered to $28.35, R is the highest at $1.0164 as the positive effect on R of increase in CEO's bargaining coefficient, θ, outweighs the negative effect on R of decline in EVA.

Finally, with $\frac{\partial\theta}{\partial l} > 0$, the last column of Table 2, we see that CEO selects higher leverage than the optimal point, at l^{***} = 0.353 as his/her R is maximized despite a decline in EVA relative to its size at the value-maximizing leverage. Again, the reason is that at higher leverage, θ rises significantly.

5. Conclusion

The existing theories of corporate capital suggest a host of operating and financial variables in the determination of corporate capital structure. This paper has proposed that the effect of changes in leverage on CEO's bargaining power to extract rent can be another factor. It has been argued why the CEO power to extract rent can be negatively affected by financial leverage or positively or there may be sometimes no effect.

Following Bebchuk and Fried (2004), the paper focused on rent extraction behavior in the executive pay setting. For leverage, the trade-off theory with costly bankruptcy and the agency costs of debt was assumed. The model of the paper proposed the following three results: (i) CEO selects the value-maximizing leverage if (a) variations in financial leverage do not affect the CEO power to extract rent or (b) the initial CEO power coefficient is relatively high and the effect of changes in financial leverage on CEO power is low; (ii) with a negative effect of changes of leverage on CEO power, CEO will never raise financial leverage beyond the optimal level, although there is a likelihood of choosing financial leverage lesser than its optimal level; (iii) with a positive effect of changes in financial leverage on CEO power, CEO will never reduce financial leverage from its optimal level, although there is a likelihood that CEO chooses a financial leverage above its optimal level. The paper has also shown the three results numerically with a simulated example.

Endnotes

According to the Modigliani and Miller theory with corporate tax, it is well known that K_E is :

$$K_E = \rho + (\rho - K_D)(1 - t)\frac{l}{1 - l}$$

Extending this to incorporate probability of costly bankruptcy and the agency costs of debt appears to be intractable in the normal range of *l* due to possible kinks of the function at higher levels of *l*.

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