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The Relationship between earning management and capital structure

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ABSTRACT

This paper analyzes the relationship between capital structure and earning management. For analysing we used 119 non-financial companies that listed in Tehran Stock Exchange from 2000 to 2008. The researchers will focus on comparing the Jones Model and the Modified Jones Model, which are the two most frequently used model in empirical analysis nowadays. Earnings management is a kind of management which uses accounting techniques to meet the executives. Researchers in this area found many approaches to detect the earnings management; within these approaches are the discretionary accrual models which include the modified. Our findings suggested a positive relationship between debt ratio and discretionary accruals is (0.000). Also there is a negative association between return on assets (ROA) and debt ratio. Finally return on equity and total assets related positively with debt ratio.

Keywords:

Earning management, capital structure, debt ratio, return on assets, return on equity, total assets.

1. Introduction

The relation between the cost of capital and earnings management is important. There are various incentives for firms to manage earnings. The cost of capital is one of these, but not the most important. Researches prove that a much stronger relation can be found between earnings management and incentive packages offered to managers. However, investors should be conscious of intentions of firms. The impact between the cost of equity (dividend payout) and the cost of debt (interest expenses) are different. Equity has generally a lower impact on the earnings management. This could be due to the initiators of the dividend payout. Returns from debt are contractually fixed but the dividend payout is determined by the equity holders. However the firm establishes the amount it is willing to pay.

Debt agreements often use accounting information to control firms' performance and included dividend limits in them. Due to higher earnings, firms could seem more profitable than in reality. The main objection of using earnings management to influence debt agreements is that it is not clear if these actions postpone the inevitable. Do firms that use earning management to avoid defaults, finally default? Although some firms may not default on their loans, they profit from a relatively cheap form of capital.

Consequently, studies that have been performed concerning earnings management often focus on either the political cost or the cost of the managers. This research will investigate whether or not firms manage earnings to profit from a lower cost of capital.

2. Literature Review

The one of the most important challenge faced by researchers as well as academician is that they are unable to fine study the component of earnings management accruals (Beneish, 2001). It can be very difficult to find out and then distinguish between the fraudulent and aggressive but acceptable choice of manipulation exercise that the managers will do in their accounting decisions (Beneish, 2001). According to Watt and Zimmerman (1986), there are so many factors like constraint of debt covenant, provision compensation plan and political cost that is require to issue equity, insider trading etc that motivate the management involve in earnings management. Most of the studies suggest that management engage in earnings management to setback the onset default (Sweeny, 1994). Razzaque, Rahman and Salat (2006) investigated earnings management in textile sector of Bangladesh. They found that discretionary accruals are significant in most of the firms. Early research (e.g. Jones, 1991) suggests that managers may rely on cost allocations rather than accruals to manage earnings. DeFond and Jiambalvo (1994) provide evidence that debt covenant restrictions influence accounting choices and mangers engage in accruals manipulation in the period preceding and the period of the violation. Their conclusions are however limited to a sample of 94 firms. Managers also have incentives to manipulate real activities during the period to meet certain covenant thresholds. Real activities manipulation affects cash flows and, in some cases, accruals. Earlier studies on earning management through real activities manipulation have focused mainly on investment activities, such as reductions in expenditures on research and development (Baber et al, 1991; Bushee, 1998; Bens et al, 2003). Zhaoguo and Liu.X (2009) examined the relationship between capital structure and earnings management with reference to the Chinese capital market. They measured the impacts of debts, the proportion of controlling shareholders', executives and external large shareholders. Analyzing Chinese companies listed from 2003 to 2007, they established a link between capital structure and earnings management practices by providing evidence that the equity proportion of controlling shareholders had an inverted U shaped relationship with earnings management, and the debt ratio had a strong positive relationship with earnings management. According to Jelinek (2007) there is negative relationship between leverage and opportunistic behaviour, when leverage increases opportunistic behaviour decreases and earnings management that is related in this function. Primarily it is opportunity behaviour that motivates the earnings management. Opportunistic managers involve in manipulation of earnings to cover their opportunistic or non value maximizing behaviour (Christie and Zimmerman, 1994). Christie and Zimmerman(1994) found take over firms engaged in increased income accounting method from last 11 years for takeover. Over the years, to detect the use of earnings

management, a number of methods have been developed. Healy (1985) and DeAngelo (1986) developed methods that were very dependent on years where no earnings management was suspected. That was the biggest weakness in these models. They would expect discretionary accruals to be revealed in the difference between accruals in a year where earnings had been managed and a year where no earnings management had been suspected. The Jones model (Jones, 1991) and the modified Jones model (Dechow, Sloan, & Sweeney, 1995) were created to try eliminate the discretionary element of the accruals, by taking into consideration changes in the economic environment (Beneish, 2001).

Mashayekhi et al (2006) expressed because operating cash flow is difficult to manage unless firms intentionally front load or defer the recognition of cash accompanying revenue or expense, therefore operating cash flow should be a good measurement of the firm's operating performance. Therefore, they are expected that operating cash flow and discretionary accruals (as surrogate to earning management) represent a significant adverse relationship. For estimating of discretionary accrual Modified Jones Model was used and event period for this purpose was 1998-2003. The results showed that TSE firms use earning management when operating performance is poor and they tend to choose income increasing accounting strategies.

Naz et al (2011) investigated the impact of firm size and capital structure on earnings management for five years (from 2006-2010) for seventy five companies from Cement, Sugar and Chemical sectors of Pakistan by using Jones Model. Their results indicate a significant negative impact of capital structure on earning management. They concluded that firms with debt based capital structure have creditors acting as watchdog on its earning management practices, however results firm size were not significant.

Talebniya and Ravanshad (2011) examined the relationship between earning management and capital structure in the companies that accepted in Tehran security exchange from 1993 to the end of 2007. The results of their research revealed that discretionary accruals and ROE has negative except relationship whit capital structure and ROA has positive except relationship whit capital structure in Tehran security exchange.

Khajavi and Nazemi (2006) investigated the role of accrual accounting on the "quality of earnings" for 96 companies listed in Tehran Stock Exchange between 1998-2003. Their results indicated that accrual accounting (the difference between earnings and cash flows) does not affect the average stock returns. In addition, there is no significant difference between average returns of the firms with high and low accrual accounting. Components of accruals (which are changes in inventory, accounts receivable, other non-cash current assets, accounts payable and other current liabilities) were also examined and similar results were found.

3. Methodology

This study included 119 non-financial companies that listed during the period 2000 – 2008 in Tehran Stock Exchange.

There are some models created to measure vital figures that contribute to detecting the use of earnings management. Models by Healy (1985) and DeAngelo (1986) make a relatively straightforward view on detecting earnings management. These models further refined by Jones (1991) and Dechow et al. (1995) create a more direct method in detecting earnings management. Healy and DeAngelo measure the size of the accrual and the maturity of time. However due to insufficient information, assumptions are used that do not reflect business reality.

For analysing we use Tahir (2011) model to investigate the relationship between earnings management and capital structure. Our variables show under any regression models. The general model is as follows:

$$\text{Debt Ratio} = \alpha + \beta_1 DA_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 TA_{it} + \acute{\varepsilon}$$

Where as

DA_{it} = Absolute discretionary accruals

ROA_{it} = Return on total assets

ROE_{it} = Return on total Equity (ROE)

TA_{it} = Total Assets

$$\text{Discretionary Accruals} = \Delta K_{it} - \text{Non } DA_{it}$$

$$\text{Non } DA_{it} = \hat{a}_1 (1/\text{Total } A_{it-1}) + \hat{a}_2 (\Delta \text{ Sales}_{it} - \Delta \text{ Acctt } R_{it}) + \hat{a}_3 PPE_{it}$$

$$\Delta K_{it} = (\Delta M_{it} - \Delta L_{it} - \Delta O_{it} - \Delta P_{it} - D_{it})$$

Where as

ΔK_{it} = Change in ith firm's total accruals (working capital) in year t

ΔM_{it} = Change in ith firm's total current assets between year t-1 and year t.

ΔL_{it} = Change in ith firm's total current liabilities between year t-1 and year t.

ΔO_{it} = Change in ith firm's cash between year t-1 and year t.

ΔP_{it} = Change in ith firm's debt in current liabilities between year t-1 and year t.

D_{it} = ith firm's depreciation in year t.

$\Delta K_{it} = \hat{a}_1 (1/A_{it-1}) + \hat{a}_2 (\Delta S_{it}) + \hat{a}_3 (F_{it}) + \mu$

A_{it-1} = ith firm's total assets at the beginning of year t.

ΔS_{it} = Change in ith firm's sales between year t-1 and year t

F_{it} = ith firm's gross value of property, plant and equipment in year t.

μ = Error term

Now we introduce the development of the hypothesis. These hypotheses will be the foundation for the next stage of the research that will follow.

Premature foreclosure restricts future expected cash flows. Also, invested funds are not assured to be paid back. Therefore, debt holders are facing the risk of losing their initial investment as well as their expected profits. Debt holders estimate the risk taken and returns required based on the current information. If earnings are managed to provide positively biased information, debt holders are mislead. Bases on discretionary accruals being a proxy for earnings management, and high earning seen as a sign of low risk, the following hypothesis is derived:

H1: Discretionary accruals have relationship with firm's debt ratio.

H2: Total assets would have impact on firm's debt ratio.

H3: Return on assets has positive relationship with firm's debt ratio.

H4: Return on Equity has positive relationship with firm's debt ratio. (Tahir, 2011)

4. Result

The outcome for the model is presented in the following table. The F value is 88.257 with probability of 0.000. This shows the significance of the model. R squared value of 0.756 shows that 75.6% variation in Debt Ratio (Dependant Variable) is explained by Independent Variables.

Depended Variable - Debt Ratio	
Variable	**Coefficient**
Constant	-0.573
Sig	
Discretionary Accruals	0.000
Sig	
ROA	-1.161
Sig	
ROE	0.482
Sig	
Total Assets	0.000
Sig	
F – Value	88.257
	0.000
R	0.756

5. Conclusion

In order to the prior studies, managers tend to mask their true underlying value by engaging in earnings management. This study investigates the extent to which the positive associations between alternative discretionary accrual measures and earnings management. Our finding from the table shows that the coefficient sign of discretionary accruals is (0.000) that support the first hypothesis. But this result doesn't support findings by Tahir (2011).The coefficient sign of ROA is (-1.161).This result doesn't support our second hypothesis. Also

our research shows the positive effect of ROE (0.482) on debt ratio. And this result proof H3. Also based on our findings, there is a positive association between total assets and debt ratio (0.000). So our findings don't reject the hypothesis 4.

Our findings suggest the tentative facts of earning management since we have applied the Tahir (2011) model in measuring the discretionary accruals, debt ratio to measure the capital structure and to measure the size of firm we take figure of total assets of firms. The negative impact of capital structure on earning management as suggested by our results implicates the use of debt in capital structure as a tool to encounter the problem of earning management. There are limitations and caveats to this study. The limited sample size and time period inhibits generalizing the results to other samples and time periods.

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