

Relation of executives inside debt on risk management and investment decision



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Abstract

The aim of this paper is to study the relationship between executives inside debt (CEO and CFO) with hedging as representative for risk management and R&D expenditure as representative for investment decision. Limited studies in past literature has been conducted to understand the inside debt effect to firm risk management and firm investing strategy. The sample of US industries from 2006 to 2016 due to availability of inside debt data start from 2006, bring this into fixed effect panel regression model, I expect to find that CEO and CFO with higher inside debt over equity compensation divided by debt to equity ratio are more likely to hedge with derivatives but invest less in research and development(R&D). The reason behind this is this executive inside debt could reduce agency cost between to debtholder, as CEO and CFO being one of the debtholders. However, this inside debt results in this executive being more risk averse and conservative to mitigate risk and avoid taking risk in high risk project such as R&D which could potentially lead to long term profitability for firm. I will extend my study to check and expect to find that CFO and CEO inside debt effect the firm decision differently. Also, different type of inside debt depend on its nature such as pension and deferred compensation or secured and unsecured would effect the result differently.

Introduction

When managers involve in risky activities that benefit shareholders but exploit from debt holders at their expense, the agency conflict of interest arises between managers and debtholders.

Jensen and Meckling (1976) showed that there will be an optimal combination of similar to equity nature and similar to debt nature compensations to solve conflict of interest within the firm.

Incentive of management level has large implication toward a firm's risk management and investing decisions. To reduce the conflicts of interest among counterparties (managers and shareholders), previous paper has studied the effect of using firm's equity as the compensations such as providing stocks and stock options (Coles, Daniel, & Naveen, 2006; Amstrong, Gow, & Larcker, 2013).

An executive compensation generally consists of base salary, yearly bonus, provided stocks, stock options, deferred compensations and pensions fund (Han and Pan, 2016). Inside debt is the benefit that postpone receiving to the future after retiring from firms which consists of deferred compensations and pensions and it becomes broadly available in compensation for top management. This reimbursement signifies as unreceived and unsecured debt that firms has obligation to executives, inferring these top executives to the risk of default in the same way with what confronted by debtholder from outside (Edmans and Liu, 2011; Sundaram and Yermack, 2007).

Extensive theoretical literatures research on top management compensation role and the suggestion of these researches originates the conflict of interests between principle and agent that could explains from agency cost theory. In the corporation, agent problems happen from different in objective of principle such as shareholders and debtholders and agent such as managements. According to this, executive compensations are considered to

mitigate the agency cost existing because of misbehave such as management personal interest.

Previous researches on executive compensation mostly pay attention to base on equity compensation that primarily focus on using provided stock and stock option. Lately, the study of Sundaram and Yermack (2007) start to investigate CEO debt-based compensation (Inside debt) role and up until now stream of literatures in this area is still small but continue to grow deeper and wider.

The executive debt-like compensation states as the inside debt that is frequently used to include CEO incentives within debtholders characteristic. Childs, Mauer, and Ott (2005) propose that the overinvestment possibly will potentially shift wealth from debtholder to equity holders.

Both regulators and academics gain more attention to Chief Financial Officers (CFO) roles in firm as their roles being more important and came with high responsibility. Over the recent of decades CFOs have turned out to be main role and crucial in corporate decision making such future strategic plan and risk management. In the paper, I will test how different CEO and CFO inside debt incentive relate to firm value in term of firm hedging and R&D decision. Level of different in both position inside debt could affect corporate action differently. I expected that executive who hold higher inside debt tend to make decision that likely to use derivative tool in higher level for hedging as they turn out to be more risk averse from their payable roles. On the other hand, they will invest less in R&D which the result is in long term profitability and seem to be high risk decision, even it can possibly

create extreme positive wealth and cash flow for the firm. Other conflict of interest may arise.

Research question

The main research question that this paper will address is whether CFO and CEO inside debt related to risk management (hedging decision) and investment decision (R&D)

Motivation

Motivation for this paper is very few literatures examine the debt role in executive compensation. In previous papers on compensation for executive primarily pay attention on the usage of cash and equity in order to maximize value of shareholder. Also, based on my knowledge, even in the topic of inside debt for executive, the studies are very limited. In this paper, I will study whether CEO and CFO inside debt relate to the misbehave of strategic decisions in firm. According to this, it could avoid the prosperity shift from debtholders to equity holders.

Therefore, I expect that my paper could fill in the gap in the papers by examining the relationship between CEO inside debt and risk management test with hedging decision and investment decision measured by R&D investment decision.

Literature and contribution

Literature emphasis on the compensation for executive that come with nature of debt which is called " Inside debt" is very new topic in finance.

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Jensen and Meckling(1976) claim that agency cost could be potential mitigate by inside debt. This inside debt is obligation liability to executive management to hold a slice of the debt within firm, so as manager motivation to transfer the wealth between debtholder and shareholder will reduce.

Edmans and Liu (2011) demonstrate that inside debt is could solve agency issue better when compare with salary and bonus since debt-like compensation is sensitive to likelihood of default and the liquidation cost.

Sundaram and Yermack (2007) suggest that to reduce chance debt to default, managers with great pension holdings seem to be more conservative in management.

As more papers and literature on inside debt have been conduct, to my understanding, no study been published on investigate relationship of executive inside debt both CEO compare with CFO together in one paper as most literature focus on mostly CEO and either one of them. Hoyt and Lee (1999) found that rather than CEOs, most risk managers direct service to CFOs. When CFO is main person involved in financial decision, I would expect that CFO of higher inside debt has more motivation to make decision in risk averse ways. This paper will examine how these two executives (CEO and CFO) act differently in these making decision such as they are potentially more likely to use derivatives instrument to hedge.

This proposed paper should contribute to previous papers in following ways. First, this will create novel vision regarding inside debt topic which is part of

executive compensations which has gain limited attention and scarce study while most research focus on equity holding components.

This paper will contribute to the agency cost theory which will be the beginning of this paper's hypothesis development. Importantly, high level executive inside debt holdings persuade CEO to behave as representative for both counterparties (shareholder and debtholder).

My study could provide evidence that this component of executive compensation "inside debt" could affect to firm performance and value maximization significantly though the activities such as level of hedging and investing decision. Although there are growing number of paper on CEO inside debt, previous papers mostly study on relation of CEO inside debt and performance of a firm (Wei and Yermack, 2011). Moreover, due to availability of the data, the reliability of executive compensation number report is limited which result in reliability of the result.

Hypothesis Development

According to the research question and prior literature reviews supports the idea that executive compensation inside debt tend to make more value-destroying decision. I expect that CEO inside debt and CFO inside debt with relate to higher risk management level but underinvesting decision as they will being more conservative and risk averse. Also, these two position CEO and CFO will act differently. Given this, the main hypotheses are as follows:

H_A : CFOs and CEO with higher level of inside debt holdings tend to use to hedge risks more.

H_B : CFOs and CEO with higher level of inside debt holdings likely to invest in R&D less.

Above hypotheses are under assumption that CFO and CEO with higher inside debt holding positively correlate with higher hedging level but negatively correlate with R&D investment

To extent the study, another test will be conduct under assumption that both executive (CFO and CEO) will act differently toward the firm differently according to their knowledge and experience.

H_C : CFO are more risk averse than CFO as they have more knowledge of financial result of company.

Data and Sample Selection

Main data in my paper include U. S. S&P1000 Firms for the period 2006-2016. Our first data for sample starts from 2006 because numbers of deferred compensation and pension available just from this year onward. This is the result from the Securities exchange commission (SEC) had announced that they put requirement for firm to disclose executive compensation in proxy statements, this rule solved to unavailable data issue on this topic area. I obtained data from Wharton on Computstat for executive compensation database (Annual Compensation Table), hedging data, R&D expenditure data and other necessary financial data information.

To cleaned data, I will remove firm with no derivatives instrument hedging, low R&D industry or no inside debt record.

For hedging level, I obtain data on derivative instrument usage from 2006 to 2016. I will collect how many times the firms use derivatives tool for hedging such as look for the words Interest rate swap (IRS), Cross currency swap (CCS), Commodity hedging, and other exotic derivative hedging product. This will show the likelihood and percentage of hedging.

For R&D: I will use ratio of R&D expenditures over total assets.

Empirical Method

I will use balanced panel of sample S&P1000 companies in US period between 2006 and 2016. I will conduct fixed-effects panel regression model to test the hypotheses:

$$\text{Hedging level } i, t = \alpha_i + \beta_1 \text{ CFO / CEO inside debt } i, t + \sum \beta_j \text{ Control } i, t + \epsilon_{i, t} \quad [1]$$
$$\text{R D expense } i, t = \alpha_i + \beta_1 \text{ CFO / CEO inside debt } i, t + \sum \beta_j \text{ Control } i, t + \epsilon_{i, t} \quad [2]$$

There is an advantage of using panel structure data analysis on fixed-effects panel regression model. This will provide benefit of analysis when data consist of both cross-sectional and time series mixed. I will mitigate extreme values the influence of extreme value in the same way as other previous research by winsorized all variables at the 1% and 99%. Statistically significant will derive by using robust standard errors technique.

Control variable

There are some control variables that I will enter into equation in order to remove their effects from the regression analysis. These factors are found to be highly associated with Hedging level and R&D expenditure.

First, leverage has many effects toward investment decision of firm in future. Jensen and Meckling (1976) suggest that firm investing strategy might adjust according to risk of leverage and debt in firm. Furthermore, in order to reduce the default risk, debtholders prefer company to invest in less risky investment. Singh and Faircloth (2005) showed that high level of leverage is the cause that effect lower R&D expenditure. I will use ratio of debt that consist of current liabilities and long term debt and divided by equity (share multiplied share price) to represent the leverage.

Next, I will control for tax which will also have multidimension effect to the dependent variables. There is the different in taxation when compare high level of R&D company with low level of R&D company. When comparing firm age, younger firm tend to make investment in R&D at high level but in contrast, firm with lower R&D expenditure tend to be more mature (Scholes and Wolfson, 1990). Tax implication and firms tax status will have an effect R&D decision. Therefore, I will control for tax in this study.

There are other control variables that could consider regarding the effect to firm risk management and investing decision. I will control liquidity constraint, firm size (total asset), firm age (number of years) or firm growth (firm market value/firm book value) which controlling for all of these above could lead to improve the result in regression panel analysis.

Univariate Analysis

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Comparing the mean and median: In this univariate analysis test, I will check the mean and the median difference of each variables: dependent, independent and control variables. First, I will compare between high hedging level firm and Low hedging level firm and then I will compare high level of R&D company and low level of R&D company. It is expected that the mean and the median of executive inside debt of higher hedging level firm will be higher and the inside debt should be lower for lower R&D firm.

Multivariate Analysis

By looking at the fixed effect regressions panel from the nominated testing model which will provide the table for both independent and control variables and come up with the main result to check the following effect:

- 1) CEO inside debt and hedging level.
- 2) CEO inside debt and R&D expenditure level
- 3) CFO inside debt to the hedging level.
- 4) CFO inside debt to the R&D expenditure level

Note: testing at 5% and 10% significant level and conclude the result to check the consistency with proposed hypothesis.

Additional analysis and robustness tests

In general, CFO has main responsibility for firm's finance including financial planning, risk management, reporting and analysis which CFO will directly report to CEO who is the top executive in the firm. However, as these two

executives are play most important roles in company and to extent to the past literature, another test will be conduct under assumption that both executive (CFO and CEO) will act differently toward the firm differently according to their knowledge and experience. It is expected that CFO are more risk averse than CEO as they have more knowledge of financial result of company.

Two side sample T-test

The two-sample t-test (Snedecor and Cochran, 1989) will be conducted to check whether sample means of two group are equal. I will separate level of risk management and investing decision nominated by hedging decision and R&D expenditure accordingly into the 3 level groups tranches, and check test the hypotheses whether mean for CEO and CFO are the same.

Robustness test

A limitation to our study is that although inside debt tend to make executive become risk averse at higher level, this is hard to claim that this positive relation may cause by executive with higher level inside debt have higher likelihood to push company at risk in speculative strategy and separately manage to diversify their individual portfolios.

Inside the inside debt consists of two main parts, pension and deferred compensation, so I would like to further check the effect which one is more influence to explain the dependent variable in above hypothesis test (hedging level and R&D decision)

Next, the inside debt of executive also could be separate in other ways such as into secured and unsecured portion. Different natures of the inside debt are expected to have an effect on the result in different way. In my opinion, I believed unsecured inside debt will make executive become more risk averse. This variable will be include in the model for further investigation.

Further study

Further study could be helpful to mitigate endogeneity issue of inside debt effect to risk management and investing decision such as using two stage least square method to check effect to model. From our main analysis we made assumption that inside debt is exogenous, this proposed method will provide the results that expect to be consistent with our main result.

References

- Armstrong, C. S., Gow, I. D. and Larcker, D. F. (2013), The Efficacy of Shareholder Voting: Evidence from Equity Compensation Plans. *Journal of Accounting Research* , 51: 909-950.
- Cassell, C. A., Huang, S. X., Manuel Sanchez, J., & Stuart, M. D. (2012). Seeking safety: The relation between CEO inside debt holdings and the riskiness of firm investment and financial policies. *Journal of Financial Economics* , 103 (3), 588-610.
- Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics* , 79 (2), 431-468.
- Edmans A, Liu Q. Inside debt [J]. *Review of Finance*, 2011, 15(1): 75-102.

- Han, J. and Pan, Z. (2016), CEO inside debt and investment-cash flow sensitivity. *Account Finance* , 56: 423-443.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics* , 3 (4), 305-360.
- L. Lee Colquitt, Robert E. Hoyt and Ryan B . Lee(1999). Integrated Risk Management and the Role of the Risk Manager. *Risk Management and Insurance Review* , 2(3), 43-61.
- Paul D. Childs, David C. Mauer and Steven H. Ott (2005). Interactions of corporate financing and investment decisions: The effects of agency conflicts. *Journal of Financial Economics* , 76(3), 667-690.
- Singh, M., & Faircloth, S. (2005). The impact of corporate debt on long term investment and firm performance. *Applied Economics* , 37 (8), 875-883.
- Scholes, M. and M. Wolfson (1990), “ The Effects of Changes in Tax Laws on Corporate Reorganization Activity,” *Journal of Business* 63 , 141-164.
- Snedecor, George W. and Cochran, William G. (1989), *Statistical Methods*, Eighth Edition, Iowa State University Press.
- Sundaram, R. K., & Yermack, D. L. (2007). Pay me later: Inside debt and its role in managerial compensation. *The Journal of Finance* , 62 (4), 1551-1588.
- Wei, C., & Yermack, D. (2011). Investor reactions to CEOs' inside debt incentives. *Review of Financial Studies* , 24 (11), 3813-3840.