

Agency Cost and Long Run Performance of Debt Issuers

Yusnidah Ibrahim¹⁺, Md Mohan Uddin², Kamarun Nisham Taufil Mohd³ and Mohd Sobri Minai⁴

^{1,3,4}Universiti Utara Malaysia, Malaysia

²United International University, Bangladesh

Abstract. This study focuses on the agency cost explanation of long run performance of debt issuers based on debt issuance data in Malaysia during January 2001 to October 2009. Long run performance is measured by buy and hold abnormal return (BHAR) while growth opportunity (GO), ownership concentration (OC) and free cash flow (FCF) are adopted as the proxy for agency costs. Using linear regression method, the study finds that BHAR is positively influenced by GO and OC and negatively influenced by FCF which support the agency cost explanation of capital structure. Increase in the performance of debt issuers is found to be associated with the monitoring role of debt. Debt issuers with more concentrated ownership are found to be benefitted from the issuance through the reduction of agency costs.

Keywords: corporate finance, capital structure, agency theory, ownership concentration, bonds

1. Introduction

One of the explanations for the wealth effect of capital structure change under imperfect capital market is the agency cost arguments. Jensen and Meckling [1] propose the agency theory which argues that the ownership of the firm remains equally concentrated if the firm chooses debt over equity, which helps the firm to avoid higher agency cost of dispersed ownership under the equity financing alternative. Hence, in a highly concentrated ownership context, increase of debt in the capital structure should result in decreasing agency costs of equity and/or increasing agency costs of debt due to the actions of inside agents. Since debt covenants already mitigate the agency cost of debt, increase of debt would likely result in increase in firm value. Jensen [2] then advances the free cash flow hypothesis, which claims that debt issuance results in obligatory payment of interest and principal, which reduces the free cash flow available for the managers to serve their own interest.

Moreover, level of debt and degree of monitoring is evidenced to have impact on the agency costs [3]. In addition, Leuz et al. [4] find that the managers and controlling shareholders enjoy private control benefits in an environment of concentrated ownership, and less developed market with weaker investor protection. According to Campello [5], a large literature supports that capital structure changes have link with the actions of both the inside agents and the outside parties.

Straight debt issues are often associated with capital structure changes. Prior capital structure studies mainly focused on the determinants of capital structure [6] itself, keeping practically more useful question about determinants of value effects of capital structure changes through debt issuances scant and inconclusive [7; 8]. Theoretically, post-announcement price should reflect or capture future implications of a decision, however, this is only true in markets that are efficient, or at least semi-strong efficient. Kim and Shamsuddin [9] shows that many emerging markets such as Korea and Taiwan are weak form efficient while some other markets including Malaysia are inefficient despite continuing financial liberalization in these countries. Thus, the wealth effect of long-term debt issuance decision in these markets may be reflected in the long run performances, instead of short run stock price effect.

⁺Corresponding author. Tel.: +60124125464;
E-mail address: yibrahim@uum.edu.my

Rare, if any, attempts has been taken to explain the long run value effect of debt issuers in terms of agency theory, especially in emerging countries. This study thus focuses on filling this knowledge gap. The study is conducted in Malaysia since Malaysia has an active bond market where her percentage of debt issues per GDP is the highest among the emerging countries [10].

2. Past Related Studies

Much research on long run stock return performance following a particular financing activity focuses more on equity financing, with most of them studied performance of IPOs [e.g., 11; 12], some studied seasoned equity issues [e.g., 13; 14], and a few studied preferred equity issues [e.g., 15].

Some studies have examined the long run performance of straight and convertible bond issuances only in the US context since the 1990s. Jewell and Livingston [16] studied three year long run stock returns of debt issuers during 1980-90. They found strong impact of bond rating.

Using a sample of convertible bond issuers of USA during 1975–90, Lee and Loughran [17] found significant poor stock and operating performance in the years following the offering, which they explain as a result of high free cash flow problem combined with lack of enough investment opportunity. They have used nonparametric simulation test for examining the influence of recent equity issuance and size of the issue but could not completely explain the underperformance by these factors.

For both the straight and convertible debt issuers in USA during 1975-89, Spiess and Affleck-Graves [18] documented substantial long-run post-issue underperformance. Using nonparametric comparisons, they found that the underperformance is more severe for smaller, younger, and for firms issuing speculative grade debt. Based on these results they argue that like equity offerings, debt offering also signal the market that the firm is overvalued. As a result, initial under-reaction of the psychologically biased investors is followed by similar full impact over the long run.

Dichev and Piotroski [19] found no abnormal returns for the straight debt issuers and a high degree of underperformance for the convertible bond issuers in the five years following the debt issuance. Using nonparametric bootstrapping method, they also find higher degree of underperformance for larger convertible debt issues. They argue that the news of issuing convertible debt rather than straight debt is a bad news according to the pecking order theory.

In response to weaknesses of previous studies such as biased inference of standard parametric test, Datta, Iskandar-Datta, and Raman [20] used a more comprehensive 24-year sample in USA. They found substantial long run underperformance which is attributed to market timing of the issuance as well as significant reduction of growth opportunities following the issuance. They have also conducted a multivariate regression of long run abnormal return against firm size, maturity of the debt issue, degree of bank monitoring, issuer's growth opportunity, degree of information asymmetry associated with the issuer, pre-issue stock return, exchange-listing, and bond rating. They found significant negative influence of debt maturity and exchange listing, and significant positive influence from the degree of bank monitoring, the interaction of investment opportunity and bank monitoring, the age, pre-issue stock return, and bond rating.

Chou, Wang, Chen, and Tsai [21] also find stock return underperformance of convertible bond issuers involved in earning management during the five year post issue period. This study used US sample during the period 1981-1998. They find that the temporary overvaluation of the stock is corrected in the long run when investors correct their valuation error.

Taken as a whole, although the empirical evidences could show overall agreement for the long run underperformance of convertible bonds, it was not possible to reach into conclusion about the long-run performance of straight debt issues and the underlying reasons. Moreover, the underlying reasons considered in these studies do not extensively cover the variables related to agency environment of the firm despite the theoretical support for it.

3. Theoretical Framework

One, two, and three year buy and hold abnormal returns (BHAR) are used as the dependent variable in this study based on the previous literature. The explanatory variables comprises of agency costs proxies, but

given that the agency cost effect theoretically takes place in the context of capital structure change, and all debt issuances do not result in equivalent capital structure changes, the hypothesised relationships between these variables and long run performance are moderated by capital structure changes.

3.1. Growth opportunity

According to Myers [22], growth opportunity can be considered as the ‘real option’, value of which depends on the firm’s discretionary future investments. He also argues that firms with real option that issue risky debts would experience decrease in value due to increase in agency cost of debt. His argument is later supported by Titman and Wessels [23] who argue that flexibility of future investments makes the growing industry firms to expropriate wealth from the bond holders to the equity holders who ultimately control the firm. On the other hand, Jensen [2] associates high growth firms with high free cash flow but suggests that the source of value in more debt financing by disciplining the management from discretionary use of free cash flow is not much applicable for high growth firms because they use up the free cash flow for exploiting the growth opportunities even without debt.

Recently, Frank and Goyal [24] empirically prove growth opportunity to be one of the six ‘core factors’ determining leverage. They argue that growth reduces free cash flow problem, but intensifies agency problems related to debt. Based on the above theoretical and empirical findings, debt issuers with higher growth opportunity are expected to experience lower performance in the long run.

3.2. Managerial ownership

Based on Jensen and Meckling [1], arguably the agency problem of equity is less severe when managers hold a large fraction of the outstanding shares in the company. If managers hold a small fraction, they work less vigorously or consume excessive perquisites because they bear a relatively small portion of the resulting costs. Issuance of debt can reduce the free cash flow for discretionary use by them and thereby reduce the agency cost of equity to a large extent.

Douglas [25] argues that more debt can mitigate the possibility that manager will expropriate wealth from shareholders by making investments with highly volatile outcome and higher information asymmetry. This benefit of debt issuance is possible only to the firms with low managerial ownership. As the level of managerial ownership increases, the degree of this benefit reduces.

3.3. Ownership concentration

Concentrated ownership can increase the conflict of interest between minority shareholders and inside large shareholders [26; 27]. The large shareholders who enjoy the control of firm may force the management for unrelated and non-value-maximizing investments for their private benefits [28]. This type of agency cost can be mitigated by issuing more debt. Thus, the benefit of debt issuance in the form of reducing agency cost is more for firms with highly concentrated ownership.

3.4. Free cash flow

Issuance of more debt creates fixed financial obligations which can limit manager’s scope for discretionary use of free cash flow [2; 29]. The recent study of Gangopadhyay and Yook [30] provides recent support for this argument by showing that the stock repurchase, which also increase leverage ratio of the firm, result in superior abnormal performance if the firm has high amount of free cash flow.

4. Data and Methods

Initial list of all the bond issuances during January 2001 to October 2009 period are extracted from the Securities Commission Malaysia website. The initial list of bond issues comprises a total of 720 in one year performance sample, 675 in two year performance sample, and 591 in three year performance sample. After exclusions due to convertible issues, non-listed companies, banks and financial institutions, absence of Bursa Malaysia announcement, multiple issues, same-day-issues, and data unavailability, the size of one, two and three year samples become 165, 145, and 126, respectively.

Non-event firms that are very similar to the event firms in the sample based on size and book-to-market are used as benchmark firms. The Euclidean distances is estimated between each of the issuers in the sample

and the benchmark candidates based on the size measured by market capitalization of the firm, and market-to-book ratio. For the estimation of the BHAR, the average return of the two closest available matching firms is considered as benchmark return.

The first step of calculating BHAR is to calculate the holding period return of firm *i* for the analysis period in months, T , $BHR_{iT} = \prod_{t=1}^T (1 + r_{it}) - 1$, where, r_{it} is the monthly raw return of firm *i* in month *t*. Using the same calculation the holding period return for the benchmark *b* is, $BHR_{bT} = \prod_{t=1}^T (1 + r_{bt}) - 1$. The buy-and-hold abnormal return for each firm *i* in month *t* after benchmark adjustment is the difference between the buy-and-hold returns of the firm and the benchmark, $BHAR_{it} = BHR_{it} - BHR_{bt}$, which is used for calculating the mean buy-and-hold abnormal return for month *t* as follows, $\overline{BHAR}_t = \sum_{i=1}^{n_t} \omega_i BHAR_{it}$, where, n_t is the number of securities in the portfolio for month *t*, and $\omega_i = 1/n_t$.

Ordinary least square regression is used to test the relationships in the proposed theoretical framework. Following regression is tested for one, two, and three year analysis periods in this study:

$$BHAR = \alpha + \beta_1 CSCH + \sum_{x=a}^d \beta_{2x} AGENCY_x + \sum_{y=a}^d \beta_{3y} CSCH \times AGENCY_y + \varepsilon$$

where, *AGENCY* = variable related to agency cost, comprises of Growth Opportunity (GO) measured by (Total Assets – Equity Capital + Market Capitalisation) / Total Assets, Managerial Ownership (MO) measured by the percentage of total outstanding shares held by the executive or managing directors of the debt issuing firm during the last year before the issue, Ownership Concentration (OC) measured by Herfindahl Index which is calculated as the sum of the squared percentage of shares held by the five largest shareholders, and Free Cash Flow (FCF) measured by (operating income – current tax + change in deferred tax – interest expense – preferred dividend – ordinary dividend)/net tangible asset; *CSCH* = capital structure change measured by the difference between the year-end debt ratio before and after the issue; and ε = error term.

Three models are tested for each of the one, two, and three year analysis periods. Model 2 is formed by adding the interaction terms with Model 1. Model 3 is the restricted models derived from stepwise omission of insignificant variables from Model 2. For the purpose of comparing the three models, the joint significance of added interaction variables as well as omitted variables are tested based on the F-statistics. In addition, the adjusted R2, Akaike's Information Criteria (AIC), and the Schwarz Bayesian Information Criteria (BIC) are used to decide the best model.

5. Findings

Panel A, B, and C in Table 1 are used to report the regression results of one, two, and three year BHAR, respectively. In all cases, Model 3 is selected as the best model based on the model selection criterions. All the models are tested for heteroscedasticity by White test and multicollinearity by variance inflation factor. Heteroscedasticity robust standard error has been used to correct the problem.

Table 1: Regression results.

Model	1		2		3	
<i>Panel A: Determinants of one year performance</i>						
	<i>Coeff.</i>	<i>t-ratio</i>	<i>Coeff.</i>	<i>t-ratio</i>	<i>Coeff.</i>	<i>t-ratio</i>
const	0.0536	<u>1.13</u>	0.0676	1.52	0.0601	1.35
CSCH	0.2353	<u>0.6</u>	0.5791	1.58		
GO	0.0845	<u>0.96</u>	0.1175	2.36	**	0.0991 2.04 **
MO	0.1343	<u>0.71</u>	0.1476	0.78		
OC	0.38	<u>0.77</u>	0.7573	2.21	**	0.5818 1.75 *
FCF	-0.2403	<u>-0.51</u>	-1.1473	-1.87	*	
CSCH*GO			-0.8861	-2.78	***	-0.6721 -2.22 **
CSCH*MO			-0.7644	-0.46		
CSCH*OC			8.9394	2.87	***	7.5493 2.47 **
CSCH*FCF			2.4553	1.6		
<i>F</i>		0.72		2.42**		3.91***

Model	1	2	3
<i>Adj. R²</i>	0.003	0.072	0.066
<i>AIC</i>	299.8	291.7	288
<i>BIC</i>	318.4	322.7	303.5

Panel B: Determinants of two year performance

	<i>Coeff.</i>	<i>t-ratio</i>		<i>Coeff.</i>	<i>t-ratio</i>		<i>Coeff.</i>	<i>t-ratio</i>
const	0.0103	0.15		0.0153	0.22		0.0103	0.15
CSCH	0.6782	1.27		0.8693	1.51			
GO	0.0756	1.09		0.0807	1.05			
MO	-0.0113	-0.04		-0.0193	-0.07			
OC	1.0494	1.87 *		1.2158	2.09 **		1.0699	1.92 *
FCF	-0.0876	-0.11		-0.0267	-0.03			
CSCH*GO				-0.3886	-0.79			
CSCH*MO				-0.4273	-0.16			
CSCH*OC				7.2422	1.23			
CSCH*FCF				0.3241	0.14			
<i>F</i>		1.36			1			3.69*
<i>Adj. R²</i>		0.012			0			0.018
<i>AIC</i>		359.3			364.9			354.5
<i>BIC</i>		377.2			394.6			360.5

Panel C: Determinants of three year performance

	<i>Coeff.</i>	<i>t-ratio</i>		<i>Coeff.</i>	<i>t-ratio</i>		<i>Coeff.</i>	<i>t-ratio</i>
const	-0.0804	-0.82		-0.0943	-0.96		-0.0963	-1
CSCH	0.8833	1.11		1.0935	1.32			
GO	0.1088	1.14		0.0685	0.63			
MO	-0.5062	-1.24		-0.3435	-0.81			
OC	1.5244	1.83 *		1.4632	1.74 *		1.4639	1.8 *
FCF	0.6211	0.39		0.1725	0.1			
CSCH*GO				-0.183	-0.27			
CSCH*MO				1.62	0.4			
CSCH*OC				0.5001	0.06			
CSCH*FCF				-34.9274	-2.15 **		-36.1127	-2.68 ***
<i>F</i>		1.66			1.59			5.59***
<i>Adj. R²</i>		0.026			0.041			0.068
<i>AIC</i>		389			390.7			380.4
<i>BIC</i>		406			419.1			388.9

*, **, and *** indicate 10%, 5%, and 1% level of significance, respectively. Underlined *t-ratio* is based on heteroscedasticity robust standard error.

As the results indicate, GO is found to affect only one year performance whereas OC is found to affect the long run performance over one, two, and three year period. In addition, the interaction variables, CSCH*OC, and CSCH*GO are shown to have effect on long run performance over the one year period only. The effect of CSCH*FCF is found only for three year performance.

6. Conclusion

Debt issuers with high growth opportunity are found to create more wealth in one year period, which is contradictory with the expected relationship. Nevertheless, the opposite relationship is observed when the interaction between capital structure change and growth opportunity is considered. The one year results of this study, in fact, strongly support that the negative impact of growth opportunity becomes important only when there is increase in the financial leverage. If the capital structure change is zero, growth opportunity rather positively influence the performance because the firm can utilize the growth opportunities without any adverse effects associated with financial distress costs and/or agency costs.

The results of ownership concentration of this study support the argument that if the ownership is concentrated to a few large shareholders, issue of debt will improve long run performance by controlling the free cash flow from non-value-maximizing investments for private benefits.

Debt issuing firms with higher free cash flow and increased leverage experience low performance in three years. However, this relationship is not evident for one or two year analysis periods. Therefore, this study suggests that Malaysia debt issuances do not induce performance by means of limiting management's discretionary use of free cash flow. Arguably, the benefit of higher financial leverage at the presence of high free cash flows should be observable if no substitute measures of reducing the agency costs are undertaken. However, Zhang [31] provides evidence that debt and executive stock options (ESOS) are substitutes in attenuating the free cash flow problem of a firm. This study thus provides indication that the free cash flow hypothesis may not be applicable at the presence of alternative controlling schemes for agency conflicts.

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8. References

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