Indian Journal of Economics and Business
Vol. 20 No. 3 (December, 2021)
Copyright@ Ashwin Anokha Publications & Distributions
http://www.ashwinanokha.com/IJEB.php

On the Relevance of Debt Maturity Structure in Firm Investment Behavior: Empirical Evidence from Pakistan

Dr. Adnan Ahmad[1]Mr. Asad Sarfaraz[2], Dr. Samra Kiran[3], Dr. Syed Naveed Hussain Shah[4] & Ubaid Ur Rehman[5]

Received: 07th August 2021
Revised: 06st September 2021
Accepted: 25th October 2021

Abstract: Based on the agency theory of debt financing, this study investigates the relevance of the debt-maturity structure in the investment behavior of Pakistani listed firms. Panel data are used for the period 2014-2020. Using a multiple regression model with fixed-effect specification, this study finds a negative effect of debt-maturity structure on the investment decisions of the selected firms. However, this effect is statistically insignificant, suggesting that debt-maturity is not an effective factor of corporate investment behavior. Thus, this study concludes an overall insignificant effect of the debt-maturity structure on investment behavior of Pakistani listed firms.

Keywords: Relevance, Debt-Maturity Structure, Investment Behavior, Growth Opportunities.

1. Introduction

Corporate debt-maturity impacts investment decision is one of the core issues in corporate finance. It is essential to be considered for the reason that financing options including short-term and long-term debts level influence firm's financial performance and its monetary risk (Aygun, Ic&Sayim, 2014). Modigliani and Miller (1958) contend that financing mix is irrelevant to both investment policy and firm-value in a system where the capital market is perfect. The reason is that the cost of internal financing is equal to the cost of external financing and they are best alternatives to each other. This implies that the "cost" of financing capital is constant and the single factor that may influence investment decisions is the net-present-value of expected cash flow of the future investment options (Okuda & Nhung, 2012; Pawlina & Renneboog, 2005). However, in the existence of distinctive market imperfections and agency costs, debt-financing may have a varied and significant influence on investment policy (Myers & Majluf, l984).Recent developments indicate that the ideal capital structure choice is not constrained just to pick what ratio of debt and equity has to be utilized, yet the choice additionally needs to include the decision of short-term and long-term debt level (Leland & Toft,

[1]Corresponding Author: Associate Professor, Institute of Business Studies and Leadership, Abdul Wali Khan University Mardanadnankhattak@awkum.edu.pk
[2]Lecturer National University of Modern Languages Peshawar Campus. Asad.khan@numl.edu.pk
[3] Assistant Professor Shaheed Benazir Bhutto Women University Peshawar: samra.kiran@sbwwu.edu.pk
[4] Assistant Professor Department of Management Science, University of Swabi. dr.naveedshah@uoswabi.edu.pk
[5]MS Student, IBL, Abdul Wali Khan University Mardan

1996;Myers, 1977; Yi, 2005). Debt-maturity impacts corporate investment is theoretically exhibited by Myers (1977). However, empirically the association between investment and debt-maturity is investigated by Aivazian, Ge and Qui (2005b) for US and Canadian firms. Supporting Myers (1977), they also confirm a significant inverse effect of corporate debt-maturity on investment that longer debt-maturity is correlated with less investment, particularly for high growth firms. However, Aivazian, et al. (2005b) have used data from developed economies like US and Canada having developed stock and public debt-markets. In such capital markets, lenders oversee and regulate the firms they finance (Jiming, Chengqin,& Hua, 2010). Moreover, in such capital markets, firms can easily settle the option of short-term and long-term debts for their optimum debt-maturity structure (Sha & Khan, 2009). Subsequently, results from advanced economy setting may not essentially conclude to developing economies having immature capital markets, lack of public debt-markets (or merely nascent open debt-markets), and a dependence on bank-acquiring (Jiming, et al., 2010). Thus, institutional variances across the economies may supplement to the effects of variables and may generate different results (Wald, 1999). Accordingly, debt-maturity affects investment in the context of a developing economy is still an unsettled empirical problem. Hence, this study explores the relevance of debt-maturity structure to investment decision of listed firms in a developing economy like Pakistan. Specifically, whether and/or to what extent debt-maturity structure influences firm investment decision in Pakistan, this study purposes to find the answer. The study fills the existing research gap about the relation of debt-maturity and investment because this study is underexplored in Pakistani setting. Contributing to the existing literature, this study provides empirical evidence on how Pakistani firms settle on a decision between short-term and long-term debts while prospecting investment and growth. The findings of this study may assist the management and decision-makers to adopt superior investment policies in the presence of optimal-debt-maturity structure.

The remaining of this study is organized as follows: Section-2 provides an overview of the relevant literature. Section-3 is about the methodology while regression results and conclusion are given in section-4 and section-5 respectively.

2. Literature Review

Regarding the relevance of corporate debt-maturity and investment, the existent literature is exceptionally limited. In this area, a prominent study is initiated by Aivazian, Ge and Qui (2005b). They specifically look at the association of debt-maturity with corporate investment choice of US firms for the time of 1982 to 2002. They find a significant impact of debt-maturity on investment that longer debt-maturity discourages investment. This negative effect is considerably effective only for firms having high growth options. Conversely, the relevance is not essentially identified with investment for firms having few growth options. These outcomes reinforce the forecast of Myers (1977) that debt developing after the termination of the investment choice creates the under-investment issue. In contrast, debt-maturity is not significantly related to investment for firms with low-growth opportunities.

Another relevant study is carried out by Dang (2011). He explores the joint effects of debt and its maturity on investment as well as the effects of investment on debt and debt-maturity using a panel data of UK listed firms for the period 1996-2003. He documents that firms having high growth options reduce their debt-level, supportive with Myers' (1977) hypothesis regarding the role of a low debt policy in curbing under-investment incentives. His results, however, do not underline the forecast that firms also aggressively reduce the maturity of their debt to lessen under-investment. This implies that liquidity

risk limits the procedure of a short debt-maturity policy. Moreover, investment is not directly affected by debt-maturity, as firms having more debt of short maturity are capable to adventure more profitable growth options consequently create more investments.Tekce (2011) finds a positive relation of debt maturity with investment level of Turkish firms during 1998-2008. However, the significance is identified only for firms with low leverage level. This implies that firms prefer to reduce the level of debt instead of shortening its maturity to cope with under-investment or it may be due to the liquidity risk which compels firms to use debt of longer maturity (Tekce, 2011).

Recently, Aygun, Ic and Sayim (2014) observe the relation of debt-maturity structure with investment activities of Turkish listed firms during 1992 to 2007. They find that corporate debt structure has a significant positive effect on investment. The positive effect is stronger for companies with high growth-opportunities than companies with low growth-opportunities. Inconsistent with the existent literature these findings deny the prediction of Myers (1977) that more debt of longer maturity in total debt arrangement diminishes investments for firms with more growth options.

The previously stated studies check the effect of debt obligation on companies' investment choice as well as the effect of the debt-maturity structure in controlling over-investment and encouraging under-investment. Further, as a result of the agency issue, the connection between obligation maturity and investment is altogether negative. Then again, known the differentiating hypothetical and empirical perspectives on the connection between corporate obligation structure and investment, it is difficult to anticipate the behavior of the association. Also, the current exploration literature demonstrates that the importance of debt-maturity structure for the investment conduct would not be summed up to any economy set up, but rather vary per economy set up, that may mark the exact results for the same pertinence not generalizable in the context of Pakistan as well.

3. Research Methodology

This research study uses secondary data, moreover used data are panel in nature. The data for this study is mostly based on the State-Bank-Pakistan (SBP) periodical publication. However, some of the data has also been taken from the selected firms' published annual reports and from the website of the Pakistan Stock Exchange (formerly named as Karachi-Stock-Exchange) as well. The sample period (2014-2020) is ideal to be considered for the reason that during this time the economy of Pakistan went under an economic trouble and recovered since 2009. Hence, the sample period is capable to control for different macro-economic situations and provides data representing a neutral environment. However, for this study just those listed firms are chosen for which data is accessible in the period of consideration (2014-2020). Likewise, firms with negative equity as well as firms that have aggregated losses in the pre-defined period are also avoided because in these firms' capital structure choices are affected by their financial limitations (Shah & Khan, 2009). Moreover, some variables' constructs involve calculation of yearly-change (lagged values), therefore the year (2014) is excluded from the sample period, leaving the period with 6-years (2015-2020). The total number of recorded firms (non-financial) to the KSE in the period under consideration is about 397. Following the above criteria, however, the sample shrinks to a panel of 128 firms, resulting 768 firm-year observations.

3.1 Regression Model

This study is descriptive in nature as this study examines the impact of debt-maturity structure on firm's investment-decision. For this purpose, the following regression modellike Aivazian, et al. (2005b) is used:

$$INVST_{i,t} / FA_{i,t-1} = \alpha + \beta_1 DMAT_{i,t-1} + \beta_2 LEVG_{i,t-1} + \beta_3 CF_{i,t} / FA_{i,t-1} + \beta_4 TQ_{i,t-1} + \beta_5 INVST_{i,t-1} / FA_{i,t-2} + I_i + Tt + \varepsilon_{it}$$

Where:

$INVST_{i,t}$= The investment scale of firm i in period t.
$FA_{i,t-1}$= Net-fixed assets of firm i in period t-1
$DMAT_{i,t-1}$ = Debt-maturity of firm i in period t-1
$LEVG_{i,t-1}$= Leverage level of firm i in period t-1,
$CF_{i,t}$ = Cash flow of firm i at time t.
$TQ_{i,t-1}$ = Tobin's Q (a proxy for growth-opportunities).
I_i=A dummy for individual firm (industry) fixed-effect
T_t =A dummy-variable indicating time fixed-effect and
ε_{it} is the error-term.

3.2 Variables Description

3.2.1 Investment

Investment is the dependent variable of this study while investigating the effect of debt-maturity on investment. Various proxies for investment are mentioned in finance literature. Following Aivazian, et al. (2005a & 2005b), this study considers investment as the total capital outlay less depreciation and standardized by net-fixed assets at the year beginning. The investment variable (total capital outlay) incorporates fixed assets, long-term investments and capital exertion in progress. The value of investment variable is standardized (normalized) by the value of net-fixed assets of the previous year (t-1) for the purpose of making the variable relative, comparable and appropriate for the statistical investigation (Aivazian, et al., 2005b; Jiming, et al., 2010). Accordingly, the investment construct of this study is set as:

Investment (INVST) = *Fixed assets + Long-term investment + Capital exertion in progress - (less) Depreciation/ Net-fixed-assets (previous year).*

3.2.2 Debt-maturity

Debt-maturity is the independent variable of the study. In the research literature there is no single compromised description of debt-maturity still now, however, various studies have utilized diverse measures of debt-maturity construct. Taking after Shah and Khan (2009) and Gul, Sajid, Mumtaz and Murtaza (2012), however, this study uses the debt-maturity construct as, the proportion of total-debt that matures in over 1-year to total debt as a proxy for debt-maturity, on the ground that the data source does not give information on other options of debt maturities. Assuming this restriction, for this study the debt-maturity construct, represented as *DMAT* is;

DMAT = Proportion of Total debt matures after 1-year /Total-debt

3.2.3 Control Variables

In spite of the fact that this study concentrates on the relevance of debt-maturity structure effect to investment, on the other hand, as per the theory of corporate investment, there are additionally some other variables adding to the investment decision. Taking after Aivazian, et al. (2005b), the study controls for the following variables;

a. Leverage: Controlling for the corporate financing influence on investment level, leverage is incorporated as a control variable (Aivazian et al., 2005a & b; Dang, 2011). In finance literature various proxies are used for leverage construct. This study makes the use of total debt by book-value of total assets as a measure of leverage.

Leverage (LEVG) = Total debt (Book-value) / Total assets (Book-value)

b. Cash Flow: The cash flow is incorporated as a control variable to address the cash-related restrictions of firms (Fazzari, Hubbard and Petersen, 1988; Dang, 2011). Following, Aivazian et al. (2005b), this study takes cash flow variable as the ratio of the operating income and depreciation divided by net-fixed-assets (at the start of the year):

Cash Flow (CF) = Operating Income + Depreciation / Net-fixed-assets

c. Growth Opportunities: Growth opportunities is another control variable represented by Tobin's Q (TQ). It is included in the regression model as it has a critical and beneficial influence on the investment level of the current year (Aivazian, et al., 2005b; Dang, 2011). Tobin's Q is used as a proxy for growth opportunities and is measured as the market-value of total assets divided by the book-value of total assets.

Tobin's Q (TQ) = Market-value of Total Assets / Book-value of Total assets

d. Lagged-Investment: Lagged-investment is incorporated to control the accelerating (fast-tracking) effect of investment, according to which current period investment at time (*t*) is effected by preceding investment at time *(t-1)* (Aivazian, et al., 2005b; Dang, 2011).

$$\text{Lagged-Investment} = \text{Total Capital Outlay}_{(t-1)} - \text{Depreciation}_{(t-1)} / \text{Net-fixed assets}_{(t-2)}$$

e. Industry-Fixed-Effect (I_i) and Time-Fixed Effect (T_t): To control for individual company's heterogeneity, firm/industry fixed (invariant) variable is included in the model, demonstrating the specific influence of individual firm (*i*) (Aivazian, et al. 2005; Dang, 2011; Lang, et al. 1996). Likewise, Time-Fixed Effect (Tt), a dummy variable demonstrating year fixed (time-invariant) effect is incorporated to control for macro-economic changes during study period.

3.3 Correlation-Examination

The correlation-matrix is displayed in Table 3, which depicts the correlation level amongst dependent and independent variables. *DMAT* (Debt-Maturity) is negatively correlated with *INVST* (investment), while *LEVG* (Leverage) shows a positive correlation with (Investment). Further, the correlation of *DMAT* and *LEVG* with investment is statistically not significant. *INVSTt-1* (lagged investment) is insignificantly correlated, while *CF* (cashflow) and *TQ* (Tobin's Q) are significantly correlated with *INVST* as expected.

Table 3: Correlation-Matrix

	INVST	*DMAT*	*LEVG*	*CF*	*TQ*	*INVSTt-1*
INVST	1.00					
DMAT	-0.09	1.00				
LEVG	0.01	0.13	1.00			
CF	0.23	-0.28	-0.07	1.00		
TQ	0.29	-0.16	0.23	0.28	1.00	
INVSTt-1	0.02	-0.01	-0.05	0.00	0.08	1.00

*Where investment **INVST** is the independent variable while **DMAT, LEVG, CF, TQ** and **INVST**$_{t-1}$ are independent variables, representing debt-maturity, leverage, cash flow, Tobin's Q and lagged investment respectively.*

Before examining the regression measurements of variables, the proposed model must be checked for possible econometric problems. One of them is the multi-collinearity that is the correlation amongst regressors. A high degree of multi-collinearity may disturb the efficacy of the predicted measurements (Aivazian et al., 2005b). The maximum value of correlation is recorded between cash flow *(CF)* and Tobin's Q *(TQ)* is (0.28). Accordingly, collinearity is not an attentive concern for this study. Another possible problem that may exists in time-series data is the auto-correlation (correlation among error-terms of different time-periods). To test whether the inline error-terms are correlated, the Durbin Watson (DW) test is used. For this study the DW test value is 1.91433 (near to 2), implies that the error-terms are uncorrelated across the time-periods. Further, there is also a possibility of heteroscedasticity, (the existing of deviation in variances of the error-terms across the objects/firms). According to Aivazian et al (2005b), heteroscedasticity may be resulted due to the possible correlation between the error-term variances and firm size. To eliminate this problem, all variables are standardized by lagged values of net-fixed assets (Aivazian et al., 2005b).

4. Regression Results

The aim of this study is to test the impact of debt-maturity on investment-decision of Pakistani recorded firms. For doing so, the fixed-effect model is used. The outcomes of the regression equation are displayed in the Table 4. It is cleared from the table that all variables such as debt maturity, leverage, cash flow, Tobin's Q and lagged-investment take their expected signs. Cash flow and Tobin's Q (growth opportunity) possess a significant positive effect on investment, suggesting that the more is the cash flow-- the more will be the investment. These findings are consistent with Fazzari et al. (1988) and Aivazian et al. (2005b).

Leverage is negatively related to investment with the estimated coefficient -0.0127 (p-value = 0.592 at 5 % significance level). Though, the direction of the relation of leverage with investment is consistent with the prevailing literature (e.g., Aivazian et al., 2005b; Lang et al., 1996). However, the effect is statistically not significant for the observed sample. Debt maturity (our main variable) is inversely related to the capital investment for firms in the study sample. The estimated coefficient is -0.0133 (p-value = 0.270 at 5% significance level) suggesting a negative effect of long-term debt on capital investment. However, the effect is statistically insignificant at 5 % significance level for the sample firms.

Table 4: Regression-Results

Term	Coefficient	Std. Error	T-value	P-value
Constant	0.0964	0.0377	2.56	0.011
DMAT	-0.0133	0.0120	-1.11	0.270
LEVG	-0.0127	0.0238	-0.54	0.592
CF	0.0334	0.0093	3.59	0.000***
TQ	0.1386	0.0274	5.07	0.000***
$INVST_{t-1}$	-0.0113	0.0262	-0.43	0.667
Year and Industry Dummies				
Observations	768	**Number of Firms**		128
F-Statistics	6.08	**R-Squared (Adjusted)**		13.24 %

All the explanatory variables of Investment model are given in the first column. Which are DMAT (Debt-maturity), LEVG (Leverage), CF (Cash Flow), Tobin's Q and $INVST_{t-1}$ (Lagged-Investment). Dummies for year and industry are also used in the model.

**** Significant at (5 %) level.*

Further, the significance of debt-maturity and leverage association with investment may be due to the extent of growth opportunities (Aivazian et al., 2005b).Accordingly, firms do not confront with underinvestment issue if the growth-opportunities are low, and they may not wish to shorten the maturity of their debts because of the liquidity concern.

To test the argument, firms in the sample are classified in to two groups based on the growth opportunities (Tobin's Q). Firms with Tobin's Q value less than the industry mean-value are termed as low-growth firms, while firms with Tobin's Q greater than or equal to the industry mean-value are nominated as high-growth firms. Both groups of firms are regressed separately. The results are displayed in Table (5), showing different results for each sample group.

Table 5

The table displays empirical results about the impact of Debt-Maturity structure on firm level investment for firms with low-growth and high-growth-opportunities. The explanatory variables are given in the first column. Second column displays results of the whole sample, while third and fourth column present results of firms with low-growth-opportunities and high-growth-opportunities respectively. P-value is given in parenthesis below the coefficient value of each variable.

		Growth-Opportunities	
Term	**Whole Sample**	**Low**	**High**
Constant	0.0964 *(0.011)*	0.1902 *(0.002)*	0.0549 *(0.183)*
DMAT	-0.0133 *(0.270)*	-0.0235 *(0.141)*	0.0104 *(0.537)*
LEVG	-0.0127 *(0.592)*	0.0059 *(0.865)*	-0.0594 *(0.106)*
CF	0.0334 *(0.000)****	0.0371 *(0.004)****	0.0191 *(0.161)*
TQ	0.1386 *(0.000)****	0.3456 *(0.000)****	0.1296 *(0.002)* ***
$INVST_{t-1}$	-0.0113 *(0.667)*	-0.0032 *(0.918)*	-0.0609 *(0.205)*
Year-Dummies and Industry-Dummies	Yes	Yes	Yes
Observations (Firms)	640 (128)	405 (81)	235 (47)
****** Significant at (5 %) level.***			

In case of high growth firms, the debt maturity is positively related (coefficient = 0.0104) while leverage is inversely related to the firm capital investment (coefficient = -0.0594). In case of low growth firms, the debt maturity is negatively related (coefficient = -0.0235) while leverage is positively related to the capital investment (coefficient = 0.0059). However, both these results are statistically not significant at p-value ≤ 0.05. Here in case of high growth firms, the positive relation between debt maturity and capital investment can be justified on the basis of low-leverage strategy that firms do not prefer shortening the maturity of their debt level instead reduce the level of total debt to deal with underinvestment problem (Dang, 2011). The adoption of low leverage strategy instead of shortening debt maturity may be due to the possible liquidation problem (Dang, 2011).

As the costs of sub-optimal liquidation exceeds the agency costs, which restrict firms from shortening the maturity of their debt (Childs, Mauer,& Ott, 2005). This contention is more significant in the context of Pakistan, where firms are reserved to use more short-term debt in their debt structure as shown in this study sample short-term debt level is 70 % in the total debt level. In case of low growth firms, the debt maturity has negative effect on capital investment while leverage shows a positive effect suggesting that firms with limited growth options do not curtail their debt level but shortening the maturity of their outstanding debt to deal with underinvestment. However, these results are inconsistent with Aivazian et al. (2005b) findings that debt maturity affects investment of high growth firms more adversely than low growth firms and partly in line with Myers (1977) argument that debt level and its maturity always negatively related to investment option. Over all the significance level of results is not up to the mark that justify the relevance of debt maturity in investment decisions of Pakistani selected firms during the study period.

5. Conclusion

This research tests the relevance of debt-maturity structure for firm level investment decision of Pakistani listed-firms during 2014-2020. For doing the analysis, a multiple regression model with fixed-effect specifications is used. Investment, which is the dependent variable of the study, is taken as the net value of the total capital-outlay standardized by value of the net fixed-assets recorded at the start of each year. While debt-maturity is the independent variable, calculated as the proportion of the total debt that has maturity more than one-year.This study shows a negative relation of debt-maturity with the investment decision of Pakistani listed firms, implying that long-term debt discourages investment decisions of firms. This result is consistent with Aivazian et al (2005b), however, statistically insignificant for the whole sample, showing a very weak relation. As the significance of the debt-maturity relation with investment may be due to the extent of growth opportunities (Aivazian et al., 2005b). Accordingly, the relation is tested for firms with high and low growth opportunities separately. The results show that the direction of relation between debt-maturity and investment changes with the extent of growth opportunities available to the firms. In the presence of more growth opportunities, the relation between debt-maturity and capital investment becomes positive. This may imply that high growth firms mitigate underinvestment not by shortening the debt-maturity instead by reducing the leverage as a whole. This finding is inconsistent with Aivazian et al. (2005b) but in line with Dang (2011). In case of limited growth opportunities, the relation between debt-maturity and capital investment becomes negative, suggesting that longer debt-maturity discourages capital investment. However, these results are statistically and economically insignificant, indicating a very weak relation between debt-maturity and capital investment of the sample firms. Thus, this study concludes an overall insignificant effect of the debt-maturity structure on investment behavior of Pakistani listed firms.

As, the relative smaller sample (size) might disturb the rationality of the statistical conclusions. Thus, it is recommended to expand the sample size and sampling period for the research study in the future.The purpose of this study was not to make a theory generalizable to every population. Hence, future study should be made in different country settings to test the generalizability of the results.

References

Ahn, S., Denis, D. J. & Denis, D. K. (2006. Leverage and investment in diversified firms. *Journal of Financial Economics, 79*, 317–337.

Aivazian, V. A., Ge, Y., &Qiu, J. (2005a). The impact of leverage on firm investment: Canadian evidence. *Journal of Corporate Finance, 11*, 277–291.

Aivazian, V. A., Ge, Y., &Qiu, J. (2005b). Debt maturity structure and firm investment. *Financial Management*, *34*, 107-119.

Aygun, M., Ic, S., &Sayim, M. (2014). The impact of debt structure on firm investments: Empirical evidence from Turkey. *Archives of Business Research, 2(2)*, 24-30.

Dang, V. A. (2011). Leverage, debt maturity and firm investment: An Empirical analysis. *Journal of Business Finance and Accounting, 38*, 225-258.

Fazzari, S., Hubbard, R.G., & Petersen, B. (1988). Financial constraints and corporate investment.*Brookings Papers on Economic Activity, 1,* 144-95.

Gul, S., Sajid, M., Mumtaz, R., & Murtaza, G. (2012). The Determinants of corporate debt maturity structure: A case study of Pakistan. *African Journal of Business Management, 6(14), 4998-5003.*

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance and takeovers, *American Economic review*, 76(2), 323-329.

Jiming, L., Chengqin, S. & Hua, W. Z., (2010). The impact of debt financing on firm investment behaviour: Evidence from China. *International Journal of Digital Content Technology and its Applications,4*, 17-26.

Khan, S. & Khan, M. A. (2007). What determines the private investment? The case of Pakistan. *PIDE Working papers,36*, 2-17.

Lang, L. E., Ofek, E. &Stulz, R. (1996). Leverage, investment and firm growth. *Journal of Financial Economics, 40*, 3-29.

Leland, H. E. & Toft, K. B. (1996). Optimal capital structure, endogenous bankruptcy, and the term structure of credit spreads. *Journal of Finance*, *51*, 987-1019.

Modigliani, M. & Miller, M. (1958). The cost of capital, corporation finance and the theory of investment, American *Economic Review*, 48, 261-297.

Myers S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, *5*, 147-175.

Myers, S. C. &Majluf, N. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics, 13*, 187-222.

Okuda, H. & Nhung, L. (2012). Capital structure and investment behaviour of listed companies in Vietnam. *International Journal of Business and Information, 7-2*, 137-164

Ozkan, A. (2000). An empirical analysis of corporate debt maturity structure. *European Financial Management*, *6*, 197-212.

Pawlina, G., &Renneboog, L. (2005). Is investment-cash flow sensitivity caused by agency costs or asymmetric information? Evidence from the UK. *European Financial Management. 11, 4*, 483-513.

Richardson, S. (2006). Over investment of free cash flow. *Review of Accounting Studies,* 11, 89-159.

Shah, A.,& Khan, S. A. (2009). Empirical investigation of debt- maturity structure: Evidence from Pakistan. *The Pakistan Development Review. 48*, 565-578.

Stulz, R.M. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics*, *26*, 3-27.

Tekce, B., (2011). Investment and debt maturity: An empirical analysis from Turkey. Working paper series-16. (http://www.unicreditanduniversities.eu)

Wald, J. K. (1999). How firm characteristics affect capital structure: An international comparison. *Journal of Financial Research, 22(2),* 88-161.

Yi, J. (2005). A Study on debt maturity structure. *The Journal of American Academy of Business*, *7(2)*, 277–285.