PAPER

The Effect of Foreign Ownership on Corporate Debt Maturity: Evidence from the Companies Listed in Amman Stock Exchange

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Abstract This study investigates the effect of foreign ownership on corporate debt maturity of the industrial companies listed in Amman Stock Exchange (ASE). Annual data of 42 firms is used over the period (2010-2017) and panel data regression analysis is applied. Moreover, mean and median equality tests are utilized to investigate whether the debt maturity differs according to different foreign ownership percentages. The study documents an average debt maturity of Jordanian industrial companies listed in ASE of 1.6 years which indicates that these companies use short-term debt more than using long-term debt. The average foreign ownership percentage of sample companies is 20%. Results show that there is a statistically significant positive effect of foreign ownership on debt maturity for Jordanian industrial companies listed in ASE. Also, there are statistically significant differences in debt maturity of Jordanian industrial companies categorized by foreign ownership.

Keywords: Debt maturity; Foreign ownership; Industrial companies; ASE

JEL Classification: G11; G12; G15; C32; F30

1. Introduction

In recent years, the importance of foreign institutional investors around the world has drawn considerable attention from researchers. Especially, foreign institutional investors as share holders of the invested firms affect the quality of corporate governance. For example, they promote better governance practice, and themselves function as disciplinary mechanisms (e.g., Ferreira and Matos, 2008; Ferreira *et al.*, 2010; Aggarwal *et al.*, 2011).

Despite the increasing presence of foreign investors around the world, the evaluation of foreign investors as shareholders in corporate bond markets has so far remained unclear. Existing theories on foreign investors and debt maturity structure propose different views on the relation between foreign ownership and maturity

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structure of corporate public debt. On the one hand, as Myers (1977) argues, conflict of interests between shareholders and bondholders over the firm's future investment opportunities is severe in the issue of risky debt (underinvestment problem). Especially, firm value that derives from investment opportunities is sensitive to the degree of managerial discretion. However, when foreign investors are active monitors over the managers on the behalf of creditors, creditors benefit from the monitoring activities through a decrease in managerial discretion. Overall, when monitoring activities by foreign investors discipline managers, thereby reducing agency problems of debt, firms could issue public debt with longer maturities.

In addition to the arguments above, in traditional agency theory, it is well recognized that managers have incentive to entrench themselves to enjoy the private benefits of control. This includes job retention. Such entrenchment activities are often determinately to creditors. When perceiving such manager's incentives, creditors require the managers to be under monitoring by shortening maturity of debt. If outside shareholders monitor the managers, thereby leading to decline in managerial discretion, creditors have less incentive to oversee the mangers by using short-term debt. This, managerial discipline by outside shareholders allows the firms to issue debt with longer-maturity (Jensen and Meckling, 1976).

On the other hand, Foreign investors exert influential power over the managers to increase risk-taking behavior that create higher firm value (Nguyen, 2012). If bondholders are concerned about the foreign investor's incentive to increase risk, they could reduce the incentive by providing short-term debt to the firms. Thus, firms with higher equity ownership by foreign investors issue bond with short-term maturity (Tanaka, 2014).

The operating firms in Jordan are small comparative with firms operating in developed markets. Small firms are confronted to large information and agency problems which motivate it to use short-term debt to decrease costs that are associated with these problems. However, most debt in these firms is sourced from banks that employ multiple screening and monitoring technologies alongside debt maturity to resolve the agency and information problems. Jordanian banks make sure to use of collateral which may mitigate the impact of information asymmetry and agency conflicts on debt maturity. In other words, the use of collateralized bank debt reduces the agency and information costs and causes fewer clear predictions about the impact of agency and information costs on debt maturity. In addition, Jordanian firms employ small leverage in comparison to developed countries. Firms with low leverage have less debt agency costs and therefore, have less incentive to use other control mechanisms including debt maturity. In addition, firms operating in Jordanian market are characterized by concentrated ownership. A disciplinary pressure is exerting by short-term debt on controlling shareholders of these firms. Hence, to avoid bank monitoring, these firms could choose long-term debt maturity. The cost of short-term debt is substantially lower than that of long-term both on price and non-price terms and hence firms with concentrated ownership may find short-term debt more preferable. Thus, the key question of this study is: How foreign ownership affects corporate debt

maturity in industrial Jordanian companies over the period (2010-2017)? This study is one of the few ones in Jordan that investigates the determinants of debt maturity and has focused on the effect of foreign ownership on it. A huge amount of research is conducted on the determinants of capital structure in Jordan but few ones have tackled this topic. Determining debt maturity is very critical to firms as it affects agency costs, bankruptcy costs and information asymmetry costs, thus it indirectly affects firm value. The remainder of this study is organized as follows: Section 2 reviews the literature, Section 3 describes data and methodology, Section 4 presents the results of analysis and Section 5 concludes.

2. Literature Review

Modigliani and Miller (1958) argued that in the absence of a prefect market and in the presence of taxes and floatation costs, the value of the firm would be maximized by using as much debt as possible. Since then an extensive body of theoretical as well as empirical research has identified a number of factors that were believed to influence the capital structure and debt maturity. These factors include "the maturity matching principles" growth opportunities, asset structure, size, age, liquidity, profitability and ownership structure.

Ozkan (2002) find that UK firms match the maturity of their debt to that of their assets. Guney and Ozkan (2005) observe a significant negative effect of managerial ownership on debt maturity for UK firms. Schmukler and Vesperoni (2006) examine the effect of financial globalization on debt structure in emerging economies. They find that by accessing international markets, firms increase their long-term debt and extend their debt maturity. In contrast, with financial liberalization, long-term debt decreases and the maturity structure shifts to the short term for the average firm. Arslan and Karan (2006) investigate the emerging market of Turkey and find that both concentrated ownership structure and presence of a large shareholder is directly but moderately related to corporate debt maturity. They argue that in spite of having a controlling large shareholder or a concentrated ownership structure, firms with growth opportunities still prefer shorter maturities in order to solve the underinvestment problems. Authors also document that it is important for Turkish firms to match maturity of their assets with maturity of their liabilities.

Choi and Choi (2013) predicts that an increase in the foreign ownership is likely to lead to a high level of alignment of interests between managers and external shareholders thereby affecting the debt maturity decisions. Consistent with the prediction, they find a significant positive relation between foreign ownership and the proportion of short-term debt. The finding suggests that foreign ownership is an important determinant of the debt maturity structure.

On the other hand, Hajiha and Akhlaghi (2011) examine the impact of firm ownership structure on the firm debt maturity, the sample of the study consists of the context of (96) Iranian manufacturing firms listed in Tehran Stock Exchange for the period (2002-2009) as an emerging market. Using multivariate regression analysis in a panel data, the results indicate that there is a significant positive relationship between

managerial ownership, institutional shareholders and debt maturity structure. Lee and Chang (2013) show that there is an inverted U-shaped non-linear relationship between control rights and the duration of liabilities in the control structure of ultimate controlling shareholders in Taiwan.

Ruan *et al.* (2014) inspect whether the different ownership control types impact the firms' preference and accessibility to either long- or short-term debts in China. They find that compared to privately controlled firms, state-owned enterprises had greater access to long-term debt and used less short-term debt.

Tanaka (2014) explores the relationship between foreign investors and the maturity structure of corporate public debt in Japan over the period (2005-2009). Results reveal that firms with higher foreign institutional ownership enjoy longer maturity of public debt. Firms with higher foreign institutional ownership also exhibit higher firm performance. These results indicate that bondholders benefit from managerial discipline by foreign investors, thereby allowing for issuing debt with longer maturity. In addition, firms with higher foreign institutional ownership experience lower cost of public debt financing. Bamiatzi *et al*. (2017) show that foreign acquisition reduces both short and long-term debt levels of the target companies in Italy and Spain.

In the Jordanian context, Tayem (2018) investigates the determinants of debt maturity structure of nonfinancial firms listed on the ASE over the period (2005-2013) and show that larger firms with longer asset maturity have longer term debt. Also, Firm age is negatively significantly related to debt maturity. The study concludes that firm with high growth opportunities and more volatility do not have significantly different maturity structure in comparison to firms with low growth opportunities and less volatile earning. However, there is no impact of ownership of the largest shareholder on debt maturity.

3. Data and Methodology

3.1 Population and Sample

The population of the study consists of all industrial companies listed in Amman stock exchange during the period (2010-2017). The sample of the study is selected according to the companies that have full set of data which consists of (42) firms, we use annual observations for all the variables of the study over the period (2010-2017).

3.2 Variables of the Study

Dependent Variable
 The dependent variable of the study is the debt maturity (MATURITY D) of the industrial companies listed in ASE over the period (2010-2017) which is calculated as follows, Tanaka (2014):

MATURITY D = (Current liabilities/ Total liabilities * Maturity of current liabilities) + (Non-current liabilities /total liabilities *Maturity of non-current liabilities)   (1)

Independent variable
The major independent variable of the study is the foreign ownership (FOREIGN) of the industrial companies listed in ASE over the period (2010-2017). The percentage is provided by Amman stock exchange.

Control variables
The following control variables are used in the model of the study (Tanaka, 2014):

1. Debt size
Firms with higher liquidity risk have an incentive to avoid the threat of inefficient liquidations by issuing debt with longer maturities (Guedes and Opler, 1996). The debt size (DR) in this study is measured by debt ratio as follows:

$$DR = \frac{Total\ Liabilities}{Total\ Assets} \qquad (2)$$

2. Tobin's Q
Particularly, firms with high growth opportunity options in the investment are more susceptible to face the conflict of interests between bondholders and shareholders. by issuing shorter maturity of debt that problem could be reduced. Thus, firms with more growth opportunity tend to issue shorter-maturity debt. Growth opportunity is measured as Tobin's Q (Tobin) as follows:

$$Tobin = \frac{Number\ of\ Shares * Stock\ Price}{Total\ Assets} \qquad (3)$$

3. Firm Size
Larger firms unlikely experience severe agency conflicts between shareholders and bondholders, and have less incentive to use short-term debt to reduce the conflicts. Thus, larger firms are more likely to issue long-term debt (Stohs and Mauer, 1996). In addition, larger firms are familiar with the market, and asymmetric information problems are less serious. Larger firms are less concerned about the information cost associated with long-term debt, are more likely to issue long-term debt (Flannery, 1986). In this study firm size (Size) is measured by the natural logarithm of total assets.

4. Firm Age
older firms are more likely to issue long-term debt. The firm age (Age) in this study is measured as the natural logarithm of years elapsed since establishment, Tanaka (2014).

5. Term Structure
Firms issuing debt with longer maturity in the positive slope of the term structure due to interest tax shields in order to increase firm value. Conversely, in the negative slope of term structure, firm value decreases for firms issuing debt with shorter maturity (Brick and Ravid, 1985). The term structure (Interest) is calculated by the interest rates on commercial loans.

6. Effective Tax Rate

Kane *et al*. (1985) argue that firms extend the debt maturity when the tax advantage of debt decreases. This suggests a negative association between debt maturity and effective tax rate. So, to measure the effective tax rate (Tax) the study uses the follows:

$$Tax = \frac{Corporate\ Income\ Tax}{Pretax\ Income} \tag{4}$$

7. Abnormal Earnings

Firm insiders are better known about firm quality than outside investors. Insiders of high-quality firms can signal their private information by issuing short-term debt because the cost of rolling over the short-term debt is higher, and is difficult to be afforded by low quality firms (Flannery, 1986). This study used abnormal earnings in order to measure insider's information to test signaling model. The abnormal earnings in this study measured as follows:

$$ABNORMAL = \frac{Next\ Year's\ Earnings - This\ Year\ Earnings}{Stock\ Price\ in\ this\ Year} \tag{5}$$

Earning means earning per share (EPS).

8. Asset Maturity

Firms can match the maturity of its liabilities to that of its assets, thereby reducing Myers's (1977) underinvestment problems. Thus, firms which have more long-term assets obviously are more likely to issue debt with longer maturities.

The asset maturity is computed as follows:

$$MATURITY\ A = (\frac{Fixed\ Assets}{Depreciation\ Allowance} * \frac{Fixed\ Assets}{Total\ Assets}) + \tag{6}$$
$$(\frac{Current\ Assets}{Cost\ of\ Good\ Sold} * \frac{Current\ Assets}{Total\ Assets})$$

3.3 The Model of the Study

To answer the question of the study, we estimate the following regression model (Tanaka, 2010):

$$MaturityD_{it} = \alpha_0 + \beta_1 Foreign_{it} + \beta_2 DR_{it} + \beta_3 Tobin_{it} + \beta_4 Size_{it}$$
$$+ \beta_5 Age_{it} + \beta_6 Interest_{it} + \beta_7 Tax_{it} + \beta_8 Abnormal_{it} + \beta_9 Maturity\ A_{it} + \varepsilon_{it}$$

Where:
- Maturity D_{it}: is the debt maturity of company i in year t.
- $Foreign_{it}$: is the foreign ownership of company i in year t.
- DR_{it}: is the debt ratio of company i in year t.
- Tobin's Q_{it}: is the growth opportunity of company i in year t.
- $Size_{it}$: is the size of company i in year t.
- Age_{it}: is the age of company i in year t.
- $Intres_{it}$t: is the term structure of company i in year t.
- Tax_{it}: is the effective tax rate of company i in year t.

- Abnormal$_{it}$: is the abnormal earnings of company i in year t.
- Maturity A$_{it}$: is the asset maturity of   company i in year t.
- β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8 and β_9: the coefficients of model.
- ε_{it}: is the random error term.

4. Results of Analysis

4.1 Descriptive statistics of the variables of the study

Table (1) reports the descriptive statistics of the variables of the study, statistics show that debt maturity (Maturity D) has a mean value of (1.6) years for sample companies, a maximum value of (11.3) years, a minimum value of (1) year and the standard deviation of the debt maturity is (1.2934). The foreign ownership (Foreign) has a mean value of 20% of sample companies, a maximum value of 98%, a minimum value of 0% and a standard deviation of (0.2378).

Table 1. Descriptive statistics of the study variable

	MATURITYD	DR	TOBIN	SIZE	AGE	INTEREST
Mean	1.5558	0.3439	0.8447	16.7203	3.2338	0.0865
Median	1.0000	0.3129	0.5166	16.6423	3.2189	0.0867
Maximum	11.3402	0.9412	20.4443	19.3709	4.1897	0.0903
Minimum	1.0000	0.0005	0.0291	12.9023	1.0986	0.0783
Std. Dev.	1.2934	0.2206	1.5722	1.1669	0.5960	0.0040

	TAX	ABNORMAL	MATURI-TYA	FOREIGN		
Mean	0.0561	0.0278	4.9184	0.1971		
Median	0.0191	0.0040	1.2643	0.1001		
Maximum	0.7197	2.0843	228.7018	0.9880		
Minimum	0.0000	-0.9483	0.3642	0.0001		
Std. Dev.	0.0863	0.2407	18.9721	0.2378		

This table reports the descriptive statistics of the variables of the study for industrial companies listed in ASE over the period (2010-2017).MATURITYD denotes debt maturity, DR denotes debt size, TOBIN denotes Tobin's Q, INTREST denotes term structure, TAX denotes effective tax rate, ABNORMAL denotes abnormal earnings, MATURITYA denotes assets maturity, FOREIGN denotes foreign ownership, Size denotes firm size, Age denotes firm age.

4.2 Correlation Matrix

Table (2) reports the correlation coefficients between the variables of the study. Overall, the explanatory variables should not be highly correlated in order to avoid any multicollinearity problem when estimating the model of the study (Gujarati,2004). The correlation coefficient values between all factors are relatively low. Results show that all the correlation values are less than 70% which indicates no multicollinearity problem.

Table 2. Correlation coefficients between the explanatory variables

	DR	TOBIN	SIZE	AGE	INTEREST	TAX	ABNORMAL	MATURITYA	FOREIGN
DR	1.0000	0.0255	0.2345	-0.0266	-0.0006	-0.1143	0.1483	-0.2030	-0.1076
TOBIN	0.0255	1.0000	-0.2060	0.0558	0.0426	0.0913	-0.0595	0.0534	0.0443
SIZE	0.2345	-0.2060	1.0000	-0.2316	-0.0285	-0.0544	-0.0093	0.0298	0.1276
AGE	-0.0266	0.0558	-0.2316	1.0000	-0.1168	0.1495	0.0393	-0.0669	0.0858
INTEREST	-0.0006	0.0426	-0.0285	-0.1168	1.0000	0.0387	0.0130	0.0395	-0.0060
TAX	-0.1143	0.0913	-0.0544	0.1495	0.0387	1.0000	-0.1187	-0.0785	0.1810
ABNORMAL	0.1483	-0.0595	-0.0093	0.0393	0.0130	-0.1187	1.0000	-0.0103	-0.0088
MATURITYA	-0.2030	0.0534	0.0298	-0.0669	0.0395	-0.0785	-0.0103	1.0000	-0.1212
FOREIGN	-0.1076	0.0443	0.1276	0.0858	-0.0060	0.1810	-0.0088	-0.1212	1.0000

This table reports the correlation coefficients between the explanatory variables of the study for industrial companies listed in ASE over the period (2010-2017). DR denotes debt size, TOBIN denotes Tobin's Q, INTREST denotes term structure, TAX denotes effective tax rate, ABNORMAL denotes abnormal earnings, MATURITYA denotes assets maturity, FOREIGN denotes foreign ownership, Size denotes firm size, Age denotes firm age.

4.3 Results of Estimation

Table (3) reports the estimation results of the model of the study. Results show that the langrage multiplier (LM) test is statistically significant while Hausman is not statistically significant, this is why we use random effect model for estimation. Results show that there is a statistically significant positive effect of foreign ownership on debt maturity for sample companies, the coefficient of foreign ownership is 60%. This result is consistent with the results of Hajiha and Akhlaghi, (2011) and Tanaka, (2014). There is a statistically significant positive effect of debt size on debt maturity for sample companies; the coefficient of debt size is 1.2. There is no statistically significant effect of firm size on debt maturity for sample companies. There is a statistically significant positive effect of firm age on debt maturity for sample companies; the coefficient of firm age is 29%. There is a statistically significant negative effect of term structure on debt maturity for sample companies; the coefficient of term structure is -25. There is no statistically significant effect of abnormal earnings on debt maturity for sample companies. There is a statistically significant positive effect of assets maturity on debt maturity for sample companies at ($p=10\%$), the coefficient of assets maturity is 1%. There is a statistically significant negative effect of tax rate on debt maturity for sample

companies; the coefficient of tax rate is -1.8. There is a statistically significant negative effect of Tobin's Q on debt maturity for sample companies, the coefficient of Tobin's Q is -13%. The adjusted is 8.19% which means that the independent variables explain 8.19% of the variations in the dependent variable.

Table (3): Estimation results of the model of the study

Dependent Variable: MATURITYD

White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.2249	0.9151	2.4312	0.0156
FOREIGN	0.5944	0.1485	4.0015	0.0001
DR	1.1986	0.4263	2.8119	0.0052
SIZE	0.0125	0.0176	0.7116	0.4773
AGE	0.2871	0.0676	4.2449	0.0000
INTEREST	-25.0361	7.7221	-3.2421	0.0013
ABNORMAL	0.1669	0.2848	0.5862	0.5582
MATURITYA	0.0074	0.0039	1.9169	0.0562
TAX	-1.7968	0.4975	-3.6113	0.0004
TOBIN	-0.1314	0.0447	-2.9365	0.0036
R-squared	0.1074			
Adjusted R-squared	0.0819			
	Statistic	Prob.		
LM test	9.2418	0.0000		
Hausman test	4.9426	0.8393		

4.4 Analysis of differences in debt maturity according to foreign ownership classification

In order to examine the differences of corporate debt maturity in companies listed in Amman Stock Exchange over the period (2008-2017) in terms of foreign ownership. Table (4) shows the debt maturity values of sample companies classified by their foreign ownership percentages, results show that companies which have a foreign ownership between (0-20%) have a mean debt maturity value of 1.6 years of30 companies, the companies that have a foreign ownership between (20-40%) have a mean debt maturity value of 2.3 years of 3 companies, companies which have a foreign ownership between (40-60%) have a mean debt maturity value of 1.8 years of 5 companies, companies that have a foreign ownership between (60-80%) have a mean debt maturity value of 1.6 years of 3 companies, companies which have a foreign

ownership between (80-100%) have a mean debt maturity value of 1.2 years of one company.

Table 4. Descriptive statistics for debt maturity categorized by values of foreign ownership

Descriptive Statistics for MATURITYD

Categorized by values of FOREIGN

FOREIGN	Mean	Std. Dev.	Number of companies
[0, 0.2)	1.4554	0.9664	30
[0.2, 0.4)	2.2773	3.2341	3
[0.4, 0.6)	1.8225	1.5729	5
[0.6, 0.8)	1.6125	0.5151	3
[0.8, 1)	1.1573	0.4719	1
All	1.5562	1.2882	42

Table (5) shows the tests for equality of means of debt maturity categorized by values of foreign ownership; results show that there are statistically significant differences in debt maturity of sample companies categorized by foreign ownership.

Table 5. Test for equality of means of debt maturity categorized by values of foreign ownership

Test for Equality of Means of MATURITYD

Categorized by values of FOREIGN

Method	Value	Probability
Anova F-test	2.7311	0.0291
Welch F-test*	2.2306	0.0825

Table (6) shows the test of medians of debt maturity categorized by values of foreign ownership; results show that there is a statistically significant difference in debt maturity of sample companies categorized by foreign ownership.

Table 6. Test for equalities of medians of debt maturity categorized by values of foreign ownership

Test for Equality of Medians of MATURITYD

Categorized by values of FOREIGN

Method	Value	Probability
Med. Chi-square	25.0013	0.0001
Adj. Med. Chi-square	21.2073	0.0003
Kruskal-Wallis	17.8490	0.0013

Kruskal-Wallis (tie-adj.)	21.7134	0.0002
van der Waerden	16.7509	0.0022

5. Conclusions

The main purpose of this study is to investigate the effect of foreign ownership on debt maturity using yearly data over the period (2010-2017) for a sample consisting of 42 industrial firms listed in Amman Stock Exchange. The study documents an average debt maturity of Jordanian industrial companies listed in ASE of 1.6 years which indicates that Jordanian companies use short-term debt more than using long-term debt. The average foreign ownership percentage of sample companies is 20%. There is a statistically significant positive effect of foreign ownership on debt maturity and there are statistically significant differences in debt maturity of Jordanian industrial companies categorized by foreign ownership.

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