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Factors Influencing Debt Maturity Structure of Real Estate Companies Listed on the Ho Chi Minh Stock Exchange

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Abstract

The debt maturity structure has a significant impact on a company's financial situation. Any debt maturity structure decisions substantially impact investment decisions due to changes in capital cost and dividend decisions due to cash flow consequences. This study used the system generalized method of moment (Sys-GMM) to investigate the debt maturity structure of real estate companies listed on the Ho Chi Minh Stock Exchange (HOSE) in the duration from 2008 to 20019. It found that the firm size, liquidity, and tangible assets affected the decision on debt maturity structure. The tangible asset had the most significant impact on the possibility for companies to access long-term loans. This finding revealed that the majority of the real estate companies listed on HOSE borrowed money from banks. Such decisions are most likely affected by the collateral. Another finding of the study is that financial institutions had a major impact on loan maturity structure, whereas the effects of the financial market were negligible. Besides, the real estate companies listed on HOSE seemed not to pay attention to changes in inflation, economic growth, and institutional qualities when deciding on the debt maturity structure.

Keywords: Debt Maturity Structure, Financial Development, Financial Institutions, Institutional Quality

JEL Classification Code: C23, G21, G32

1. Introduction

The study by Modigliani and Miller (1958) has provided many insights into the field of corporate finance. Corporate finance includes all decisions related to the financial affairs of the company. After Modigliani and Miller, there have been many studies in this field that focus on investigating and developing policies that maximize the value of companies. Research on corporate finance comprises investment decisions, dividend decisions, and financing decisions. Investment decisions focus on the net present value of companies (NPV) and are related to the risk of projects, cash flows, and capital cost. Dividend decisions focus on the quantity and distribution of dividends. The research on financing decisions includes studies on debt financing, debt ratios, or debt maturity structure. Decisions on the debt maturity structure affect both investment decisions due to changes in the cost of capital and dividend decisions through impacts on the cash flow. Therefore, the debt maturity structure is always a matter of concern for company managers when making decisions on debt financing. Appropriate decisions can help a company avoid liquidity risks by aligning the maturity structure of its assets with the maturity structure of its liabilities. In addition, such decisions can help solve the agency problem, indicate the quality of corporate earnings, increase the flexibility of funding and reduce funding costs and return risks (Cai et al., 2008).

The debt maturity structure of companies is studied in both developed and developing countries. These studies not only used static models to investigate the effects of firm and macroeconomic factors but also utilized the dynamic model to evaluate the rate of adjustment to the debt maturity structure (Barclay & Smith, 1995; Demirgüç-Kunt & Maksimovic, 1999; Ozkan, 2000; Antoniou et al., 2006; Teruel & Solano, 2007; Cai et al., 2008; Deesomsak et al., 2009; Wang et al., 2010; Terra, 2011; Lemma & Negash, 2012; Krich & Terra, 2012; Matues & Terra, 2013;

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Bilgin, 2020). According to these studies, the debt maturity structure of companies is determined by the ratio of long-term debt to total debt that comprises long- and short-term debts. The focus of these studies is to investigate the effects of firm and macroeconomic factors, thereby enabling financial administrators to make sound decisions on the debt maturity structure of companies.

The global financial crisis in 2008 and the COVID-19 pandemic have brought economic hardships to companies in Vietnam, including those in the real estate sector. Many companies have even been forced to close. Real estate companies significantly contribute to economic developments and require business loans to maintain and expand their operation. However, they faced difficulties in making decisions on borrowing money and the duration of loans. This study aims to give insights into how various internal and external factors affect the debt maturity structure of real estate companies listed on the Ho Chi Minh Stock Exchange (HOSE). The study considers the internal factors that represent the characteristics of a firm and the external factors that reflect the economy, especially the financial development and institutional quality.

According to International Monetary Fund (Čihák et al., 2012; Sahay et al., 2015), financial development is the combination of (1) the depth of the market, including the size and liquidity; (2) the access to the market, including the ability of individuals and organizations to access financial services; and (3) the efficiency, measured based on the performance of capital markets and the ability of credit institutions to provide low-cost financial services. To accurately assess the financial development of a country, Sahay et al. (2015) developed a set of financial development indices (FD indices), which comprise indices of depth, accessibility, and efficiency of financial institutions (FI) and financial markets (FM) (Figure 1). Financial institutions and financial markets pose different impacts on the financing decisions of companies, in particular, the debt maturity structure. This study, therefore, also aims to examine the role of the financial institution and financial market to uncover the impacts of financial development on the debt maturity structure of the real estate companies in Vietnam (Figure 1).

In addition, the study aims to verify whether the real estate companies adjust their debt maturity structure, thereby providing financial administrators with evidence to support their decision-making in matters related to the debt maturity structure of companies.

2. Theoretical Framework and Literature Review

The debt maturity structure of companies is determined by the ratio of the long-term debt to the total debt and is governed by the Signaling theory (Diamond, 1991, 1984; Flannery, 1986), Agency-cost theory (Barnea et al., 1980; Jensen & Meckling, 1976; Myers, 1977), Tax-based theory (Brick & Ravid, 1985, 1991) and Matching theory (Morris, 1976). According to these theories, the debt maturity structure is resulted from when a company tries to balance costs and benefits by approaching debts having different maturities.

Empirical studies based on the aforementioned theoretical frameworks demonstrate that firm factors have significant impacts on the debt maturity structure of companies. The research of Myers (1977) and Barclay and Smith (1995) agreed with the Agency-cost theory that companies control underinvestment problems by reducing debt maturity. Large companies will issue many long-term debts, and companies possessing asymmetric information will use short-term debt. It found that the Taxed-based theory does not considerably influence the debt maturity structure of companies. Terra (2011) showed similar factors affecting the debt maturity structure of companies in the US and Latin American countries, despite differences in the financial and business environment between countries in the survey. The research found that the firm size, profitability, and tangible asset

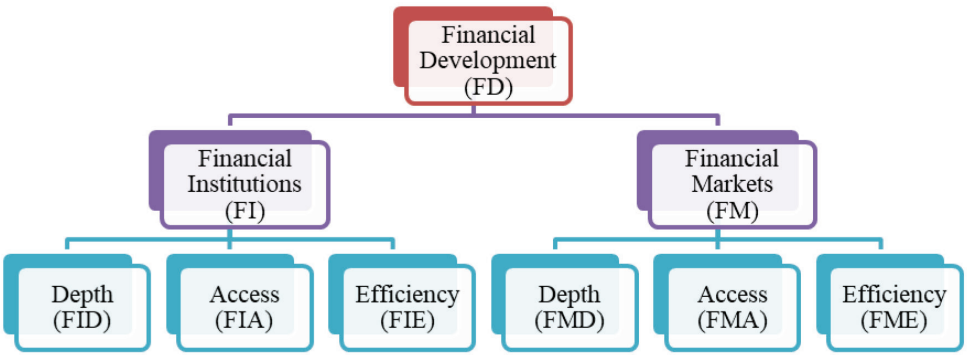

Figure 1: Financial Development Indices

factors do not affect debt maturity. The debt ratio, asset maturity, and liquidity positively affects debt maturity; on the other hand, the tax and growth opportunities pose negative impacts.

Costa et al. (2014) showed that SMEs (small and medium enterprises) in Portugal tend to use many short-term debts if they have low liquidity. The tax rate has weak positive effects on asset maturity. The capital cost has a strong positive influence on long-term debt. Also, it found that the capital cost has opposite effects on the growth opportunity. If companies have more physical assets, they will be less likely to grow and more likely to use such assets as collateral to borrow from banks. This observation agrees with Myers (1977), who found that companies will use short-term debts if they see many opportunities to grow. The study of Vijayakumaran and Vijayakumaran (2019) indicated that the debt maturity structure of listed companies in China is affected by leverage, asset maturity, and firm size. Chung and Phan (2020) showed that leverage, firm size, and lagged debt maturities are the influential factors for listed non-financial companies in Vietnam to decide the debt maturity structure.

External factors that reflect the characteristics of the market and economy were also found to affect the debt maturity structure of companies. Krich and Terra (2012) showed that the debt maturity structure of companies in Argentina, Brazil, Chile, Peru, and Venezuela is significantly influenced by the national institutional quality; on the other hand, the financial development only has a minor impact. Lemma and Negash (2012) concluded that companies in low-income countries in Africa tend to use less long-term debt. Taxes, economic growth, and development in the banking sector have negative influences on the debt maturity structure of companies. Deesomsak et al. (2009) found that the debt maturity structure of companies in Thailand, Malaysia, Singapore, and Australia is strongly related to the characteristics of the economy, of which the most influential factors are the economic growth, inflation, level of market capitalization, bank size and maturity structure of interests.

In China, Cai et al. (2008) showed that the debt maturity structure depends on the maturity structure of interest and the volatility of stock markets and interests. Later, Wang et al. (2010) found that taxes and growth opportunities have positive effects on debt maturity and inflation and money supply have negative impacts on the debt maturity of companies. Bilgin (2020) concluded that in addition to firm factors such as debt ratio, firm size, and growth opportunities, the debt maturity structure of companies in 30 selected developing countries is influenced by the stock market development and bank concentration. Using the Generalized Least Square (GLS) method, Phan (2020) concluded that, besides the capital structure, the asset structure and firm size that have a strong influence on debt maturity, state-owner and non-state-owner enterprises in Vietnam need to consider inflation when making decisions about the debt maturity of firms. The study of Ngo and Le (2021) later indicated that the debt maturity structure of non-financial companies listed in Vietnam is affected not only by firm factors such as firm size, firm quality, liquidity, leverage, asset maturity, and tax impact but also external factors representing the bank section and stock markets.

In addition, the studies of Antoniou et al. (2006), Deesomsak et al. (2009), Krich and Terra (2012), Ozkan (2000), Terra (2011), Matues and Terra (2013), and Vijayakumaran and Vijayakumaran (2019) showed that companies in the United Kingdom, America, Eastern Europe, South America, and China adjust the debt maturity structure towards their targets to reduce the incurred cost of borrowing. The rate of varying the debt maturity is different between countries and depends on the economic context.

3. Research Method

3.1. Data Collection and Processing

The sample used in this study includes 48 real estate companies categorized based on GICS and listed on HOSE the duration from 2008 to 2019. The data was collected from the companies' audited financial statements archived in the electronic database of VietStock (2020) and BaoViet Securities (2020). Since the archived data was structured as panel data, the regression modeling was conducted using specialized methods.

3.2. Variables

The regression model of the debt maturity structure of companies is based on the Agency-cost, Signaling, Matching, and Tax-based theories. The dependent variable of the model is the debt maturity variable, which is the ratio of the long-term debt to the total debt (Barclay & Smith, 1995; Cai et al., 2008; Deesomsak et al., 2009; Wang et al., 2010; Krich & Terra, 2012; Lemma & Negash, 2012; Costa et al., 2014; Bilgin, 2020).

The independent variables of the model are listed in Table 1 and represent factors affecting the debt maturity structure of companies. In addition, the model includes the first-order lagged debt maturity variable to study the dynamic debt maturity structure (Ozkan, 2000; Antoniou et al., 2006; Deesomsak et al., 2009; Terra, 2011; Krich & Terra, 2012; Mateurs & Terra, 2013).

Table 1

Variables	Symbol	Definition	Expected Sign	Theories and Empirical Studies
Debt maturity	MR	$\frac{\text{Long term debt}}{\text{Total debt}}$		Barclay and Smith (1995), Demirgüç-Kunt and Maksimovic (1999), Ozkan (2000), Antoniou et al. (2006), Teruel and Solano (2007), Cai et al. (2008), Deesomsak et al. (2009), Terra (2011), Krich and Terra (2012), Lemma and Negash (2012), Matues and Terra (2013), Costa et al. (2014), Chung and Phan (2020), Bilgin (2020)
Leverage	LEV	$\frac{\text{Total debt}}{\text{Book Assets}}$	Positive	Signaling theory; Costa et al. (2014), Krich and Terra (2012), Cai et al. (2008), Teruel and Solano (2007), Antoniou et al. (2006), Barclay and Smith (1995), Deesomsak et al. (2009), Lemma and Negash (2012), Vijayakumaran and Vijayakumaran (2019), Ngo and Le (2021)
Profitability	PROF	$\frac{\text{EBIT}}{\text{Book assets}}$	Negative	Signaling theory; Lemma and Negash (2012), Antoniou et al. (2006), Deesomsak et al. (2009), Cai et al. (2008)
Earnings volatility	VOL	The standard deviation of Earnings	Positive	Signaling theory; Antoniou et al. (2006), Cai et al. (2008), Deesomsak et al. (2009), Lemma and Negash (2012)
Liquidity	LIQ	$\frac{\text{Short term asset}}{\text{Short term liability}}$	Positive	Signaling theory; Antoniou et al. (2006); Teruel and Solano (2007); Cai et al. (2008); Deesomsak et al. (2009); Matues and Terra (2013), Costa et al. (2014), Ngo and Le (2021)
Tangibility	TAN	$\frac{\text{Net Fixed Assets}}{\text{Book Assets}}$	Positive	Matching theory; Krich and Terra (2012), Matues and Terra (2013), Costa et al. (2014), Phan (2020)
Asset maturity	AM	$\left(\frac{\text{Current Assets}}{\text{Current Assets + Net Fixed Assets}} \times \frac{\text{Current Assets}}{\text{Cost of Goods Sold}}\right)$ $\left(\frac{\text{Net Fixed Assets}}{\text{Current Assets + Net Fixed Assets}} \times \frac{\text{Net Fixed Assets}}{\text{Depreciation}}\right)$	Positive	Matching theory; Demirgüç-Kunt and Maksimovic (1999), Ozkan (2000), Cai et al. (2008); Wang et al. (2010); Lemma and Negash (2012), Vijayakumaran and Vijayakumaran (2019), Ngo and Le (2021)
Firm size	SIZE	Logarithmic of Book assets	Positive	Agency theory; Barclay and Smith (1995); Ozkan (2000); Antoniou et al. (2006); Cai et al. (2008); Deesomsak et al. (2009), Wang et al. (2010); Krich and Terra (2012), Costa et al. (2014), Vijayakumaran and Vijayakumaran (2019), Phan (2020), Ngo and Le (2021)
Grow opportunity	GROW	$\frac{\text{Liablility + Capitalisation}}{\text{Book assets}}$	Negative	Agency theory, Barclay and Smith (1995), Ozkan (2000), Wang et al. (2010); Teruel and Solano (2007), Cai et al. (2008), Lemma and Negash (2012), Krich and Terra (2012)

Table 1: (*Continued*)

Variables	Symbol	Definition	Expected Sign	Theories and Empirical Studies
Tax shield	TAX	$\frac{\text{The firm's total tax charge}}{\text{Total taxable income}}$	Negative	Tax-based theory; Ozkan (2000); Matues and Terra (2013), Costa et a. (2014), Cai et al. (2008), Krich and Terra (2012), Ngo and Le (2021)
Inflation rate	INT	Consumer price index (CPI)	Negative	Demirgüç-Kunt and Maksimovic (1999), Wang et al. (2010), Deesomsak et al. (2009)
GDP growth	GDP	GDP growth rate	Positive	Demirgüç-Kunt and Maksimovic (1999), Deesomsak et al. (2009), Wang et al. (2010), Lemma and Negash (2012)
Financial Institution	FI	Financial Institution index	Negative	Krich and Terra (2012)
Financial Markets	FM	Financial Markets index	Positive	Krich and Terra (2012)
Institutional Quality	IQ	Governance Indicators	Positive	Demirgüç-Kunt and Maksimovic (1999), Krich and Terra (2012)
Lagged debt maturity	MR_{t-1}	The First-order lagged variable of the debt maturity		Ozkan (2000); Antoniou et al. (2006), Deesomsak et al. (2009); Terra (2011); Krich and Terra (2012); Mateurs and Terra (2013)

3.3. Regression Model

In this study, a dynamic model was adopted to examine the effects of internal and external factors on the debt maturity structure of real estate companies listed on HOSE, thereby providing evidence that the companies adjusted their debt maturity structure (Ozkan, 2000; Antoniou et al., 2006; Deesomsak et al., 2009; Terra, 2011; Krich & Terra, 2012; Matuers & Terra, 2013).

Assumed that the target debt maturity structure can be represented by a linear equation of k variables as follows:

$$MR^*_{i,t} = \sum_{k=1} \omega_k X_{k,i,t} + \varepsilon_{i,t} \quad (1a)$$

where: $MR^*_{i,t}$ target debt maturity of the company i in the year t;
$X_{k,i,t}$ k-th factor affecting the target debt maturity structure;
$\varepsilon_{i,t}$ the error of the regression model.

Assumed the company adjusts the actual debt maturity with an adjustment coefficient toward the target:

$$\mathrm{MR}_{i,t} - \mathrm{MR}_{i,t-1} = \rho(\mathrm{MR}^*_{i,t} - \mathrm{MR}_{i,t-1}) \quad (1b)$$

where: $\mathrm{MR}_{i,t}$ actual debt maturity of the company i in the year t;
$\mathrm{MR}_{i,t-1}$ actual debt maturity of the company i in the year $t-1$;
$\mathrm{MR}^*_{i,t}$ target debt maturity of the company i in the year t;
$\mathrm{MR}_{i,t} - \mathrm{MR}_{i,t-1}$ change in the actual debt maturity;
$\mathrm{MR}^*_{i,t} - \mathrm{MR}_{i,t-1}$ change in the target debt maturity;
ρ adjustment coefficient.

From Equations 1a and 1b, the partial adjustment to the actual debt maturity is written as follows:

$$\mathrm{MR}_{i,t} = (1-\rho)\,\mathrm{MR}_{i,t-1} + \sum_{k-1} \rho\, \omega_k X_{k,i,t} + \rho\, \varepsilon_{i,t} \quad (1c)$$

Equation 1c indicates $0 \le \rho \le 1$ and

If $\rho = 1$: Change in the actual debt maturity structure equals the change in the target debt maturity structure.

If $\rho = 0$: There is no adjustment to the debt maturity structure because the debt maturity in the year t *probably* equals that in the previous year. Another potential cause is that the cost associated with adjusting the debt maturity structure is higher than the incurred cost due to deviation from the target.

If $0 < \rho < 1$: There is partial adjustment to the debt maturity structure, or the debt maturity structure is dynamic.

If the incurred cost due to deviation from the target debt maturity structure is higher than the cost associated with adjustment, then the adjustment coefficient is expected to be higher. In fact, ρ it is determined as the difference between 1 and the regression coefficient of the first-order lagged variable of the debt maturity.

Equation 1c can be re-written in more detail by incorporating all variables, to study the effects of firm and macroeconomic factors on the debt maturity structure of the real estate companies listed on HOSE:

$$\begin{aligned} MR_{i,t} = {} & \alpha_0 + \alpha_1 MR_{i,t-1} + \alpha_2 LEV_{i,t} + \alpha_3 PROF_{i,t} \\ & + \alpha_4 VOL_{i,t} + \alpha_5 LIQ_{i,t} + \alpha_6 TAN_{i,t} + \alpha_7 AM_{i,t} \\ & + \alpha_8 SIZE_{i,t} + \alpha_9 GROW_{i,t} + \alpha_{10} TAX_{i,t} \\ & + \alpha_{11} INF_{i,t} + \alpha_{12} GDP_{i,t} + \alpha_{13} FI_{i,t} \\ & + \alpha_{14} FM_{i,t} + \alpha_{15} IQ_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

3.4. Regression Method

In a dynamic model such as the one used in this study, the lagged variable of the dependent variable is indeed an independent variable and can have correlations with other independent variables. Also, there is a concurrent relationship between the debt maturity variable and the leverage variable (Krich & Terra, 2012), which can cause endogeneity and affect the accuracy of regression results. Some regression methods that are appropriate for analyzing panel data, such as Pooled OLS, FEM, REM, and GLS, suffer from this problem. The study of Antoniou et al. (2006) showed that the system generalized method of moment (Sys-GMM) method can resolve this issue. Therefore, this method, together with Sargan and Arellano-Bond tests, was used in this study to estimate and evaluate the regression model.

4. Results and Discussion

The correlation in Table 2 suggests that the effects of all factors on the debt maturity structure are in line with predictions based on theories and previous empirical studies. The results of the regression analysis are in good agreement with Cai et al. (2008), Deesomsak et al. (2009), Costa et al. (2014), and Bilgin (2020), as well as the Agency cost, Signaling and Matching theories. The results suggest that the real estate companies approach loans with longer maturities when the companies grow, improve their liquidity and possess more tangible assets. The results also agree with the study of Phan (2020), showing evidence that the asset structure has a strong impact on corporate debt decisions. While the tangible asset is the firm factor that is the most influential on the debt maturity structure at 10% statistical significance, asset maturity is not significant. This observation shows that the real estate companies in Vietnam listed on HOSE pay less attention to debt maturity and asset maturity when making borrowing decisions. In addition, the study found no evidence to support the tax-based theory.

Financial institutions are the external factor that significantly impacts the borrowing decision of real estate companies. This observation helps clarify the research aim stated in the previous section. Borrowing decisions are greatly affected by financial development, in particular the development of financial institutions. The results of this study are consistent with financing and debt activities in the real estate sector. The development of financial institutions helps reduce agency costs since they are better to monitor borrowers than other creditors. In such an economic environment, short-term debts are preferrable by real estate companies.

A dynamic debt maturity structure benefits the companies by actively adjusting the ratio between long-term debt and short-term debt. The regression analysis of Equation 2 shows that the first-order lagged variable of the debt maturity (MR_1) has a statistical significance of 1% to 5%, regardless of different groups of factors or dependent variables. This observation indicates the model is dynamic or, in other words, the debt maturity structure of the real estate companies is dynamic. The regression coefficient of MR_1 varies from 34.35% to 46.59%, depending on the group of factors. In general, considering the effects of firm factors and external factors, including financial institutions, financial markets, and institutional quality, the regression coefficient of MR_1 is 38.97%. Therefore, the adjustment coefficient ρ is $1 - 0.3897 = 0.6103$, i.e. 61.03%, which indicates the real estate companies significantly adjusted their debt maturity structure because the cost associated with adjustment was lower than the incurred cost due to deviation from the target maturity. Therefore, the real estate companies listed on HOSE from 2008 to 2019 adjusted their debt maturity structure based on specific firm characteristics such as liquidity, tangible assets, and company size.

5. Conclusion

The study found that the real estate companies listed on HOSE have dynamic debt maturity structures and make relatively large adjustments to their target maturity. It indicates high incurred costs due to deviation from the target debt maturity. The study also showed that financial development, particularly the development of financial institutions, posed significant impacts on decisions on long-term borrowing. In addition, the study identified the factors that affect the debt

Table 2: Regression Results (Source: the author)

Variables	Predicted correlation	(1)	(2)	(3)	(4)	(5)
MR_1		0.4659***	0.4006***	0.3435**	0.4119***	0.3897***
		(0.0020)	(0.0050)	(0.0220)	(0.0020)	(0.0030)
LEV	+	0.4613**	0.3083	0.2411	0.3590	0.2603
		(0.0380)	(0.1980)	(0.3040)	(0.1400)	(0.2730)
PROF	–	–0.0118	–0.0509	–0.1008	–0.0504	–0.0916
		(0.9320)	(0.6980)	(0.4520)	(0.6890)	(0.4690)
VOL	+	–0.0005	–0.0006	–0.0006	–0.0007	–0.0007
		(0.1990)	(0.1610)	(0.1770)	(0.1040)	(0.1330)
LIQ	+	0.0165***	0.0180***	0.0190***	0.0175***	0.0182***
		(0.0090)	(0.0030)	(0.0010)	(0.0020)	(0.0010)
TAN	+	0.2165*	0.1827*	0.1622	0.1805*	0.1643*
		(0.0540)	(0.0680)	(0.1010)	(0.0790)	(0.0890)
AM	+	0.0000	–0.0001	–0.0001	0.0000	–0.0001
		(0.9730)	(0.7680)	(0.6750)	(0.8290)	(0.7190)
SIZE	+	0.0542***	0.0585***	0.0640***	0.0591***	0.0609***
		(0.0010)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
GROW	–	–0.1927*	–0.1246	–0.0950	–0.1471	–0.1041
		(0.0500)	(0.2400)	(0.3570)	(0.1720)	(0.3160)
TAX	–	0.0010	0.0010	0.0004	0.0006	0.0004
		(0.8090)	(0.7870)	(0.9240)	(0.8650)	(0.9200)
INF	+		–0.0018	–0.0055*	–0.0045	–0.0049
			(0.4320)	(0.0610)	(0.1720)	(0.1790)
GDP	+		–0.0511**	0.0184	–0.0297	0.0114
			(0.0430)	(0.6400)	(0.3180)	(0.7860)
FI	–			–2.3766*		–2.2292*
				(0.0760)		(0.0880)
FM	+			0.1530		0.1913
				(0.4900)		(0.3990)
IQ	+				–0.0144	0.0043
					(0.2890)	(0.7520)
No. obs		396	396	396	396	396
Prob > *F*		0.0000	0.0000	0.0000	0.0000	0.0000
Sargan test		0.0340	0.0270	0.0230	0.0410	0.0300
Arellano-Bond test		0.4680	0.3740	0.4670	0.4020	0.5070
Sargan test		0.0340	0.0270	0.0230	0.0410	0.0300
Arellano-Bond test		0.4680	0.3740	0.4670	0.4020	0.5070

Note: The Sys-GMM method was applied to conduct the regression analysis for Equation 2 using five different groups of variables:
(1) firm factors; (2) firm and macroeconomic factors; (3) firms and macroeconomic factors, and those representing the financial development (including financial institutions and financial markets); (4) firms and macroeconomic factors, and those representing the institutional quality; (5) all factors. *, ** and *** represent the statistical significance of 10%, 5% and 1%, respectively.

maturity structure of the companies and provided evidence to support the agency-cost, signaling, and matching theories. Unlike other countries, the tangible asset is the firm factor affecting the borrowing decision the most. This observation proves that the real estate companies listed on HOSE tend to borrow through banks, and collateral enables them to access long-term debt. The results of this study strongly suggest that the development of financial institutions has a considerable influence on the debt maturity of real estate companies. On the other hand, inflation, economic growth, financial market, and institutional quality had an insignificant impact.

The study presented in this paper only focused on investigating the influence of firm and external factors, especially the financial development, financial market, and institutional quality, on the debt maturity structure of the real estate companies in Vietnam listed on HOSE. This research will pave the way for future studies, using large samples to provide more insights into this topic in a Vietnamese context.

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