

อิทธิพลของโอกาสการเจริญเติบโตที่มีต่อตัวแปรขอบ
การตัดสินใจระดมเงินทุน : หลักฐานจากบริษัทจดทะเบียน
ในตลาดหลักทรัพย์แห่งประเทศไทย

The influence of growth opportunities on the
determinants of financing decisions :
Evidence from Thai listed firms

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บทคัดย่อ

การศึกษานี้ทดสอบว่า ตัวแปรของการตัดสินใจระดมเงินทุน แปรเปลี่ยนด้วยอิทธิพลของโอกาสการเจริญเติบโตหรือไม่ มันถูกตั้งสมมติฐานว่า บริษัทที่มีโอกาสของการเจริญเติบโตแตกต่างกัน อาจจะมีตัวแปรของการตัดสินใจระดมเงินทุนแตกต่างกัน โดยอันดับแรก การศึกษานี้ได้ตรวจสอบตัวแปรของการตัดสินใจระดมเงินทุนตามคำพยากรณ์ของทฤษฎีแพคกิ้งออเดอร์ และพบว่า คุณลักษณะธุรกิจ 6 ลักษณะ ซึ่งประกอบด้วย ขนาดของธุรกิจ สภาพคล่อง ความเสี่ยงทางการเงิน สินทรัพย์ถาวร ความสามารถทำกำไร และนโยบายเงินปันผล คือ ตัวแปรที่มีนัยสำคัญของการตัดสินใจระดมเงินทุนของกลุ่มตัวอย่างบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย จำนวน 220 บริษัท ที่ทำการศึกษาในระหว่างช่วงปีพ.ศ. 2548 - 2550 ผลลัพธ์ที่ได้แสดงว่า กลุ่มตัวอย่างบริษัทจดทะเบียนของไทยทำการตัดสินใจระดมเงินทุนตามกรอบแนวคิดของทฤษฎีแพคกิ้งออเดอร์ จากนั้นกลุ่มตัวอย่างถูกแบ่งออกเป็น 2 กลุ่ม คือ บริษัทที่มีการเจริญเติบโตเป็นบวก กับบริษัทที่มีการเจริญเติบโตเป็นลบ ตามอัตราการเจริญเติบโตของกำไรหลังหักภาษี เพื่อสำรวจตัวแปรของการตัดสินใจระดมเงินทุนในแต่ละกลุ่มตัวอย่างย่อย ผลลัพธ์จากการวิเคราะห์ชี้ว่า มีความแตกต่างกันในตัวแปรของการตัดสินใจระดมเงินทุนในกลุ่มตัวอย่างที่ถูกแบ่งสองประเภทนี้ กล่าวคือ กลุ่มบริษัทที่มีการเจริญเติบโตเป็นบวก ได้ผลลัพธ์แบบเดียวกันกับผลลัพธ์ของกลุ่มตัวอย่างทั้งหมด ขณะที่กลุ่มบริษัทที่มีการเจริญเติบโตเป็นลบมีผลลัพธ์ที่แตกต่างออกไป สองคุณลักษณะทางธุรกิจคือ ความสามารถทำกำไร และ นโยบายเงินปันผล ถูกพบว่าไม่ได้เป็นตัวแปรที่มีนัยสำคัญของการตัดสินใจระดมเงินทุนในกลุ่มบริษัทที่มีการเจริญเติบโตเป็นลบ เฉพาะขนาดของธุรกิจ สภาพคล่อง ความเสี่ยงทางการเงิน และสินทรัพย์ถาวรเท่านั้น คือตัวแปรที่สำคัญของบริษัทกลุ่มนี้ การค้นพบนี้สนับสนุนสมมติฐานของการศึกษาและชี้ว่าตัวแปรของการตัดสินใจระดมเงินทุนในกลุ่มบริษัทที่มีการเจริญเติบโตเป็นบวกมีความเข้มข้นมากกว่าตัวแปรของการตัดสินใจระดมเงินทุนในกลุ่มบริษัทที่มีการเจริญเติบโตเป็นลบ ดังนั้นผู้จัดการของบริษัทจดทะเบียนของไทย ควรตระหนักถึงประเด็นนี้ เมื่อมีการใช้กลยุทธ์การระดมเงินทุน

Abstract

This study tests whether the determinants of financing decisions vary with the influence of growth opportunities. It is hypothesized that firms with different growth opportunities may have different financing decisions determinants. The study first investigates the determinants of financing decisions according to the pecking order theory's predictions and finds that six firm characteristics including firm size, liquidity, financial risk, fixed assets, profitability, and dividend policy are the significant determinants of financing decisions in the sample of 220 Thai listed firms during the period 2005-2007. The results show that Thai listed firms in the sample make financing decisions following the conceptual framework of the pecking order theory. Then, the sample is partitioned into positive- and negative-growth firms by the growth rate of earnings after tax to examine the determinants of financing decisions in each sub-sample. The results from analysis show that there are some differences as to the determinants of financing decisions in the two types of firms. The results for positive-growth firms are in line with the results of the whole sample while the results for negative-growth firms are different. Two firm characteristics - profitability and dividend policy are not included in the significant financing decisions determinants of negative-growth firms, only firm size, liquidity, financial risk, and fixed assets are the significant determinants of financing decisions for negative-growth firms. This discovery supports hypotheses of the study, indicating that the determinants of financing decisions in positive-growth firms are stronger than those of negative-growth firms. Thus, managers of Thai listed firms should take this into account when implementing financing strategies.

คำสำคัญ : ทฤษฎีแพคกิ้งออเดอร์ คุณลักษณะธุรกิจ การตัดสินใจระดมเงินทุน
โอกาสการเจริญเติบโต

Keywords : The Pecking Order Theory, Firm Characteristics,
Financing Decisions, Growth Opportunities

1. Introduction

The pecking order theory is well known as the financial theory that explains corporate financing (Donaldson, 1961). It assumes hierarchical financing decisions that if firms are profitable enough, they will use internal funds from their retained earnings rather than external funds from debt and equity. When the internal sources run out and the additional funds are needed, they will move to external financing from debt first and choose equity financing as a last resort if they have no more debt capacity (Myers, 1984; Myers and Majluf, 1984). According to the theory (Brealey, Myers and Marcus, 2004; Ross, Westerfield and Jaffe, 2005), there is no target debt of financing decisions, firms prefer debt to equity financing to avoid asymmetric information problems between insiders (managers) and outside investors. Investors are aware that managers know more about firm performance, risk and value than them and will avoid issuing equity when a share price is undervalued. Thus, when a new equity issue is announced investors will interpret this as a negative signal. Then, they will wait until the equity price declines. Consequently, the cost of equity increases. This is the reason why managers are unwilling to

issue equity and tend to use equity financing as a last choice following the pecking order theory.

The results from previous research suggested that there is no specific theory (including the pecking order theory) to determine the appropriate level of debt to achieve the optimal capital structure (Eriotis, 2007). Corporate financing depends on a firm's business conditions (Eldomiaty, 2007). Different conditions may affect factors of financing strategies in different ways (Cassar and Holmes, 2003; Mazur, 2007; Myers, 2003). For example, firms which have the growth opportunities may need more funds to invest in positive net present value projects and this can be expected that they finance more in debt if their internal sources are insufficient. For negative-growth firms, they may demand more funds to improve their business operations and need debt financing as well, but with the different reason. They use debt because their internal funds are not available for financing. This implies that firms with different business conditions may have different determinants of financing decisions.

Building on this conceptual framework, the present study uses the growth opportunities as a proxy of business conditions to test whether and

how the growth opportunities influence the determinants of financing decisions. First, the study examines the determinants of financing decisions in the whole sample of 220 Thai listed firms during the period 2005-2007. It is expected that based on the pecking order theory, firm characteristics of total sample firms including firm size, liquidity, financial risk, growth, fixed assets, profitability, and dividend policy are likely to be significant determinants of financing decisions. Then, the sample is subclassified as positive- and negative-growth firms by the growth rate of earnings after tax to investigate whether there are differences as to the determinants of financing decisions in the two types of firms. It is hypothesized that some firm characteristics, particularly, profitability and dividend policy are unlikely to be important determinants of financing decisions in negative-growth firms because these firms may lack internal sources for paying dividend and be unable to make high profits. Thus, this study provides a unique contribution to this investigation of the determinants of financing decisions with the magnitude of the growth opportunities by using the sample of Thai listed firms. Thereby, the empirical results of the study will extent and supplement prior research in this

area.

The remaining sections of the article are organized as follows. Section 2 reviews related previous research on the pecking order theory and describes hypotheses development. Section 3 presents the sample, data sources, research design and variable measurement. Section 4 discusses the results of the statistical analyses. Section 5 summarizes the main conclusions of the study and offers a suggestion for future research.

2. Related research and hypotheses

Much research based on the pecking order theory examined a number of factors that affect corporate financing decisions (e.g., Akhtar, 2005; Cassar and Holmes, 2003; Frank and Goyal, 2003; Gaud, Jani, Hoesli and Bender, 2005; Mazur, 2007; Rajan and Zingales, 1999). They used a set of firm characteristics (e.g., firm size, profitability, and risk) as independent variables to predict financing decisions which were measured by short-term, long-term, and total debt ratios. The review of empirical literature is as follows.

Gaud et al. (2005) analyzed the determinants of the capital structure for Swiss listed companies in the period 1991-2000 and found the evidence that the pecking order theory was at work in

explaining the capital structure and financing of Swiss companies. In their results, firm size was positively related to leverage whereas profitability was negatively associated with leverage. These results are consistent with the studies of Harris and Raviv (1991), Rajan and Zingales (1999), Booth, Aivazian, Demircug-Kunt and Maksimovic (2001), and Frank and Goyal (2003), in that, large firms easily access to the financial markets and can borrow from external sources at better conditions but profitable firms prefer using internal financing rather than external financing.

Cassar and Holmes (2003) investigated the determinants of the capital structure and use of financing for Australian small and medium sized enterprises (SMEs) in years 1995-1998. They also found the relevance of the pecking order theory in applying to Australian SMEs. The coefficient for return on assets (ROA) as a proxy of profitability was negative and significant for leverage. They confirmed that profitable firms preferred inside funds to finance their operations and investments rather than outside sources. Their results were similar to prior studies that examined the relationship between profitability and the debt ratios of SMEs and found the debt ratios being negatively related to profitability

(Coleman and Cohn, 1999; Michaelas, Chittenden and Poutziuris, 1999; Mishra and McConaughy, 1999). In addition, they found the growth variable in their model positive and significant, consistent with the pecking order theory and research by Michaelas et al. (1999) which suggested that growing firms used outside financing to support their growth.

Akhtar (2005) considered the significance of the corporate financing determinants on a sample of Australian multinational and domestic companies (MCs and DCs) from 1992 to 2001. His results provided strong support for the pecking order theory with a negative and highly significant coefficient on the profitability variable and a positive and significant coefficient on the size variable for Australian MCs and DCs in the sample. These findings were in line with the evidence from the studies by Cassar and Holmes (2003) that Australian companies preferred to avoid costly external financing and would rather take the opportunity to use internal financing, however, larger firms preferred to have higher leverage.

Delcours (2007) examined whether the capital structure determinants in emerging Central and Eastern European (CEE) countries support the capital structure theory. The

empirical evidence suggested that companies in the CEE countries such as Poland, Russian Federation and Czech Republic followed the modified pecking order theory in explaining financing choices which include retained earnings, equity, bank and possibly market debt, respectively. Nevertheless, some of factors (i.e. firm size, risk, fixed assets, growth and profitability) that influence firms' leverage were found to be different in some countries.

Eriotis (2007) studied how firm characteristics affect capital structure, using data from a sample of Greek listed companies during 1997-2001. He found the negative relationship between the total debt ratio and liquidity and financial risk including the positive relationship between the total debt ratio and firm size. These results suggested that larger firms in the sample preferred to employ more debt whereas firms with high liquidity and financial risk tended to use less debt. The results confirmed an implication of the pecking order financing as well as the results of research by Bennett and Donnelly (1993) and Harris and Raviv (1990).

Mazur (2007) also discovered the evidence supporting the predictors based on the pecking order theory. It was found that liquidity, profitability, fixed assets and firm size were significant

factors of financing decisions. The negative relation between liquidity and profitability and the debt ratio indicated that only firms lacking internal funds use more debt financing. The inverse relation between fixed assets and firm size and the debt ratio proved that large firms with a high proportion of fixed assets in total assets will lower asymmetric information problems and result in lower the debt ratio. In addition, dividend policy in his study was also significantly and positively related with the debt ratio, suggesting that dividend payments decrease the amount of internal sources and then increase the need for external financing. These findings were also in line with the results of other studies (e.g., Bevan and Danbolt, 2002 and Frank and Goyal, 2004).

It can be seen that previous research confirmed the relevance of the pecking order theory in explaining the significant relationship between firm characteristics and financing decisions. A set of firm characteristics which were tested in their studies include firm size, liquidity, financial risk, growth, fixed assets, profitability, and dividend policy. The present study summarizes definitions of firm characteristics used for analysis in this study and their directions on the debt ratio following the theory and related prior research in Table 1. This

leads to the following hypothesis:

H1: Following the pecking order theory, firm characteristics include firm size, liquidity, financial risk, fixed assets, profitability, dividend policy and growth

Table 1 : Firm characteristics as explanatory variables and their directions on the debt ratio based on the pecking order theory

Firm Characteristics	Definition	Expected relationship
Firm size (SIZE)	Natural log of the book value of total assets	+
Liquidity (LIQD)	Current ratio	-
Financial risk (FRSK)	Interest coverage ratio	-
Fixed assets (FASST)	Proportion of fixed assets to total assets	-
Profitability (PROF)	Return on assets (ROA)	-
Dividend policy (DIVD)	Dividend yield	+
Growth (GROW)	Growth rate of earnings after tax	+

Notes: Current ratio is current assets divided by current liabilities. Interest coverage ratio is earnings before interest and tax divided by interest. Proportion of fixed assets to total assets is net tangible assets divided by total assets. Return on assets is earnings after tax divided by total assets. Dividend yield is dividend divided by earnings after tax. Growth rate of earnings after tax is calculated by dividing the difference between earnings after tax of the current year and earnings after tax of the year prior to the current year by earnings after tax of the year prior to the current year.

are associated with financing decisions.

Regarding the influence of different business conditions and factors of financing decisions, limited research was found in this area. Mazur (2007) tried to investigate this point following the concept of Myers (2003) and Frank and Goyal (2004), in that, firms with different situations are likely to have

different factors of financing. He divided sample firms into several classes according to firm size, profitability and dividend policy and found that there were some differences in capital structure determinants between different classes of firms. Financing decisions of small, low profitable and non-dividend-paying firms were driven by the set of

firm characteristics that were different from those of large, high profitable and dividend-paying firms. The signs of coefficients for firm characteristics (i.e. liquidity, profitability and fixed assets) suggested that the pecking order theory was applicable for his sample firms. The findings indicated that firms with different situations tend to have different financing decision determinants. However, the growth opportunities have never been tested whether it influences the relationship between firm characteristics and corporate financing. Thus, this leads to the following hypothesis in this study:

H2: With the influence of growth opportunities, there are some differences between the determinants of financing decisions for positive-growth firms and those of negative-growth firms.

3. Research methodology

3.1 The sample and data source

Non-financial companies listed on

the Stock Exchange of Thailand in years 2005-2007 that have a complete data on the variables are selected to be the sample of the study. They consists of 220 non-financial companies, belonging to 7 industries which include agro & food industry (29), consumer products (19), industrials (42), property & construction (42), resources (14), services (52), and technology (22). To test the influence of growth opportunities, sample firms are divided into two sub-samples; positive- and negative-growth firms based on the growth rate of earnings after tax. The percentage of positive-growth firms, 112 (51%) is a bit higher than the negative-growth firms, 108 (49%). The details of the sample classified by the industry type and growth rate are described in Table 2. The data for analysis are obtained from income statement, balance sheet, and other related information in FM 56-1 of the companies. The study gathers the data from the database of the Stock

Table 2 : Sample firms as classified by the industry type and growth opportunities

A. as classified by the industry type

<u>Industry</u>	<u>Number of firms</u>	<u>Percent</u>
Agro & food industry	29	13%
Consumer products	19	9%
Industrials	42	19%
Property & construction	42	19%
Resources	14	6%
Services	52	24%
Technology	<u>22</u>	<u>10%</u>
Total	<u>220</u>	<u>100%</u>

B. as classified by the growth opportunities*

<u>The growth opportunities</u>	<u>Number of firms</u>	<u>Percent</u>
Positive growth	112	51%
Negative growth	<u>108</u>	<u>49%</u>
Total	<u>220</u>	<u>100%</u>

Notes: * In the present study, the growth rate of earnings after tax is a proxy of the growth opportunities.

Exchange of Thailand.

3.2 Research design

To test the hypothesized relationship (H1) between firm characteristics and financing decisions of the total sample following the pecking order theory, the multiple regression model below is applied.

$$\begin{aligned} \text{TDR} = & \alpha + \beta_1(\text{SIZE}) + \beta_2(\text{LIQD}) + \beta_3(\text{FRSK}) \\ & + \beta_4(\text{FASST}) + \beta_5(\text{PROF}) + \beta_6(\text{DIVD}) \\ & + \beta_7(\text{GROW}) + \beta_8(\text{DUMYDR}) + \varepsilon \end{aligned}$$

Where;

- α = A constant term
- $\beta_1 \dots \beta_8$ = Coefficient of each variable
- TDR = Total debt ratio
- SIZE = Firm size
- LIQD = Liquidity
- FRSK = Financial risk
- FASST = Fixed assets
- PROF = Profitability
- DIVD = Dividend policy
- GROW = Growth rate of earnings

after tax
DUMYDR = A dummy variable for firms which have total debt ratio greater than 50%

ϵ = An error term re other independent variables not in the model

To test hypothesis 2, the relationship between firm characteristics and financing decisions differs in positive- and negative-growth firms, the independent samples t-test is applied. The data of each sub-sample is also tested to estimate the relationship between firm characteristics and financing decisions by using the following model specification.

$$\begin{aligned} \text{TDR} = & \alpha + \beta_1(\text{SIZE}) + \beta_2(\text{LIQD}) + \beta_3(\text{FRSK}) \\ & + \beta_4(\text{FASST}) + \beta_5(\text{PROF}) + \beta_6(\text{DIVD}) \\ & + \beta_7(\text{DUMYDR}) + \epsilon \end{aligned}$$

Variable measurement of the study is in line with previous studies of related research in Section 2 (e.g., Gaud et al., 2005; Cassar and Holmes, 2003; Delcoure, 2007; and Mazur, 2007). The study measures the dependent variable in terms of the total debt ratio calculated by the book value of total liabilities to total assets. The measures of independent variables (which consist of

firm size, liquidity, financial risk, fixed assets, profitability, dividend policy, and growth) and their expected signs based on the pecking order theory are shown in Table 1. These measures are focused on the book value as well as the majority of previous studies in Section 2. Regarding a control variable, Eriotis (2007) suggested that the capital structures of firms which have debt more than equity were different from the market as a whole and this might affect the results of the study. Thus, to control this impact, the study uses a dummy variable (1,0) that equals one if firms have the percentage of the total debt ratio greater than 50%, and zero if firms have the percentage of the total debt ratio less than 50%.

4. The empirical results and discussion

4.1 The results of total sample

Firstly, the study checks assumptions of a multiple regression model which include sample size in regression, normality of the continuous variables, heteroscedasticity, and multicollinearity. As a recommendation by Green (1991), a minimum sample size for 8 independent variables of this study should be 114 (50 + 8K, where K is the number of predictors). Thus, the total sample, 220 in the study (which are bigger than 114) are more sufficient for

testing the model. To test normality, the study uses several tests (i.e. Kolmogorov-Smirnov statistic, normal probability plot, Skewness and Kurtosis) and finds that the continuous variables are not normal. However, after using the natural log transformation, the mean and median of the variables are closer and the values of standard deviation and Skewness are reduced. This shows that the issue is not a serious problem (Coakes, 2005; Field, 2005). For heteroscedasticity, there is no indication of the presence of significant heteroscedasticity in the dependent variable. In addition, multicollinearity does not pose a problem. Panel A. of Table 3 shows that Pearson correlation coefficients of the independent variables are less than 0.80, the biggest one is 0.466. Variance Inflation Factors (VIF) statistics in column (A) of Table 5 also show low intercorrelations between independent variables (less than 10). The regression results of total sample presented in column (A) of Table 5 are as follows.

The coefficient of firm size (+1.839) is significantly positive as expected. This means that larger firms tend to use more debt financing than smaller firms. The result is in line with the studies by Gaud et al. (2005) and Mazur (2007) that larger firms use more debt

financing because they can easily access to the financial markets and get better conditions when borrowing. This finding also confirms the predictions of the pecking order theory. The negative and significant coefficient of liquidity (-10.804) is also consistent with the expectation of the pecking order theory and Eriotis's (2007) research. Eriotis (2007) explained that firms with high liquidity tend to use less debt because these firms have a relatively high amount of current assets, which means that they have high cash inflows, thus, following the theory, they can use cash inflows as internal sources to invest their projects rather than use debt financing.

The significantly negative relation is also found for financial risk (-1.133) and the debt ratio. The result supports the implication of the pecking order theory and research by Bennett and Donnelly (1993), Eriotis (2007), and Harris and Raviv (1990). Firms with high interest coverage ratio (which is a proxy of financial risk — see Table 1) means that they can make high earnings. Thus, this significantly negative relation suggests that they can use their earnings to invest in their operating and there is no need to use much debt financing. Additionally, the coefficient of fixed assets (-7.103) is negative and statistically significant as well. This finding

is similar to Bevan and Danbolt's (2002), Frank and Goyal's (2004) and Mazur's (2007) conclusion, in that, firms with high values of fixed assets will have less the problem of information asymmetric between managers and outside investors and thus, tend to issue equity rather than debt when they need external funds.

Regarding the profitability variable, its coefficient (-0.980) shows the inverse relation with the debt ratio significantly. This result suggests that firms with high profitability will have sufficient internal funds to invest in their activities, thus they will have a small debt ratio. This is consistent with the pecking order theory and related prior research by Cassar and Holmes (2003) and Akhtar (2005). For the dividend policy variable, the positive and significant coefficient of dividend policy (+1.325) is in line with the pecking order theory as well and indicates that dividend-paying firms use internal funds to pay dividend and tend to increase funds for investments from external financing. Thus, these firms are likely to use more debt financing. This is in the same direction with Marzur's (2007) work. However, the coefficient of growth (+0.712) is statistically insignificant, but positively links to the total debt ratio. Although the result is contrary to an expectation of the pecking order

theory, the positive relation between growth and the debt ratio can explain that growing firms are likely to use more debt capital because they have more opportunities to invest in their projects.

The regression model of total sample is significant at $p < 0.10$ level with an F-test value of 206.25. The high adjusted R-square value of the model is 0.882, suggesting that the independent values of the estimate model explain approximately 88.20% of the variation in the dependent variable. The remaining 11.80% is explained by other independent variables not in the model.

It can be concluded that most of the results of total sample are similar to previous studies in Section 2 and support Hypothesis 1, in that, following the pecking order theory, many firm characteristics are associated with financing decisions. The significant firm characteristics that affect financing decisions of Thai listed firms consist of firm size, liquidity, financial risk, fixed assets, profitability, and dividend policy.

4.2 The results of sub-samples

Total sample firms are divided into two sub-samples; positive- and negative-growth firms by the growth rate of earnings after tax and each sub-sample is also checked the basic assumptions of statistical tests. According to Coakes

(2005), Field (2005) and Green (1991), sample size of each sub-sample (112 for positive-growth firms and 108 for negative-growth firms) are appropriate for analysis. There is not a problem relating the distribution of the independent variables in each sub-sample. The presence of significant heteroscedasticity in the dependent variable is absent. Pearson correlation coefficients of the independent variables in Panels B. and C. of Table 3 (less than 0.80) and Variance Inflation Factors (VIF) statistics in columns (B) and (C) of Table 5 (less than 10) show that there is no significant multicollinearity between the independent variables in each

sub-sample.

Next, the study tests hypothesis 2 by using the t-test for comparing means of the independent variables between two sub-samples to determine whether there are some significant differences between means of the independent variables of sub-samples (Coakes, 2005). The multiple regression model of each sub-sample is also tested to discover significant determinants of financing decisions in positive- and negative-growth firms (Field, 2005). These results are presented in Table 4 and columns (B) and (C) in Table 5, respectively.

Table 3: Means, Standard deviations, and Correlation coefficients

Panel A. Means, Standard deviations, Correlation coefficients of total sample (N = 220 companies)

	Mean	S.D.	1	2	3	4	5	6	7	8
CVDR-BV	0.320	0.467	1.000							
SIZE	8.428	1.448	0.264**	1.000						
LIQD	0.610	0.783	-0.462**	-0.281**	1.000					
FRSK	3.993	3.569	-0.406**	-0.310**	0.466**	1.000				
FASST	3.776	0.640	-0.168**	0.175**	-0.292**	0.072	1.000			
PROF	2.256	0.721	-0.200**	-0.031	0.076	0.292**	0.100	1.000		
DIVD	1.512	0.689	-0.180**	-0.219**	0.132*	0.124*	-0.195**	0.034	1.000	
GROW	4.787	0.672	0.075	-0.055	0.020	-0.010	0.106	0.313**	-0.355**	1.000

Panel B. Means, Standard deviations, Correlation coefficients of positive-growth firms

(N = 112 companies)

	Mean	S.D.	1	2	3	4	5	6	7
CVDR-BV	0.330	0.472	1.000						
SIZE	8.520	1.590	0.211*	1.000					
LIQD	0.560	0.773	-0.412*	-0.224*	1.000				
FRSK	3.693	3.215	-0.379**	-0.270**	0.506**	1.000			
FASST	3.836	0.603	-0.266**	-0.203**	-0.259**	0.051	1.000		
PROF	2.477	0.682	-0.332**	0.044	0.165*	0.398**	0.089	1.000	
DIVD	1.302	0.718	-0.092	-0.106	0.047	0.181*	-0.158*	0.263	1.000

Panel C. Means, Standard deviations, Correlation coefficients of negative-growth firms

(N = 108 companies)

	Mean	S.D.	1	2	3	4	5	6	7
CVDR-BV	0.310	0.463	1.000						
SIZE	8.332	1.283	0.333**	1.000					
LIQD	0.662	0.794	-0.513**	-0.348**	1.000				
FRSK	4.303	3.893	-0.433**	-0.357**	0.430**	1.000			
FASST	3.713	0.674	-0.083	0.136	-0.314**	0.105	1.000		
PROF	2.026	0.689	-0.101	-0.180*	0.039	0.289**	0.059	1.000	
DIVD	1.729	0.584	-0.298**	-0.375**	0.205*	0.026	-0.198*	0.000	1.000

Notes: ** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

Table 4 : T-test results for comparing means of the independent variables between the two sub-samples

	<u>Positive-growth firms</u>	<u>Negative-growth firms</u>	Mean Difference
	N = 112 Mean	N = 108 Mean	
SIZE	8.5199	8.3324	0.1874
LIQD	0.5595	0.6629	-0.1034
FRSK	3.6933	4.3038	-0.6105
FASST	3.8368	3.7136	0.1232
PROF	2.4776	2.0264	0.4512*
DIVD	1.3020	1.7291	-0.4271*
GROW	5.1896	4.3693	0.8203*

Notes: * is percent significance level <.05 (2-tailed)

The results of Table 4 show that the differences in growth means (+0.8203) between two sub-samples are statistically significant. Surprisingly, the growth variable in the model of total sample (in column (A) of Table 5) shows an insignificant relation with the total debt ratio, but when dividing the sample into sub-samples, the t-test results indicate that the growth mean is significantly higher for positive-growth firms. There are also significant differences in means of profitability

(+0.4512) and dividend policy (-0.4271) between positive- and negative-growth firms although means of firm size, liquidity, financial risk, and fixed assets are insignificant different. The results support hypothesis 2, in that, with the influence of growth opportunities, there are some differences between the determinants of financing decisions for positive-growth firms and those of negative-growth firms. This is consistent with the study by Mazur (2007) who found that there are some differences in financing decisions determinants

between different classes of firms.

Table 5: Regression results of determinants of financing decisions of total, positive- and negative-growth firms

Independent		(A) Total sample firms		(B) Positive-growth firms		(C) Negative-growth firms	
Variables	Expected sign	N = 220		N = 112		N = 108	
		Result	VIF	Result	VIF	Result	VIF
SIZE	+	1.839*	1.277	2.183*	1.249	1.215*	1.421
		(5.324)		(5.139)		(2.005)	
LIQD	-	-10.804*	1.862	-10.351*	1.857	-11.057*	1.878
		(-14.014)		(-9.705)		(-9.820)	
FRSK	-	-1.133*	1.612	-1.213*	1.758	-1.133*	1.616
		(-7.201)		(-4.865)		(-5.320)	
FASST	-	-7.103*	1.429	-7.008*	1.499	-7.082*	1.342
		(-8.601)		(-5.709)		(-6.316)	
PROF	-	-0.980*	1.308	-2.132*	1.362	-0.021	1.117
		(-1.395)		(-2.062)		(-0.021)	
DIVD	+	1.325*	1.308	1.767*	1.159	0.600	1.309
		(1.804)		(1.948)		(0.470)	
GROW	+	0.712	1.385				
		(0.919)					
CVDR-BV		17.471	1.638	18.016	1.648	16.606	1.722
Intercept		52.425		55.122		60.235	
F-value		206.253*		130.915*		105.700*	
Adjusted R-square		0.882		0.891		0.873	

Notes: The dependent variable is total debt ratio (TDR). The results show regression coefficient values and t-values are in parentheses. * is percent significance level < 0.10 (1-tailed). VIF is Variance Inflation Factors.

Columns (B) and (C) in Table 5 which report the regression results of financing decisions determinants of positive- and negative-growth firms also show that the determinants of financing

decisions vary with the magnitude of the growth opportunities as expected in hypothesis 2. As can be seen, there are some differences as to the determinants of financing decisions in positive- and

negative-growth firms. The results in Column (B) of Table 5 indicate that six firm characteristics in the model, namely firm size (SIZE), liquidity (LIQD), financial risk (FRSK), fixed assets (FASST), profitability (PROF), and dividend policy (DIVD) are the significant determinants of financing decisions for positive-growth firms. This means that the results for positive-growth firms follow the rules of the pecking order theory in explaining financing alternatives as well as the results of total sample discussed in Section 4.1. This can be interpreted that positive-growth firms tend to use internal funds for financing, if they have high profitability, high liquidity or high interest coverage ratio (Cassar and Holmes, 2003; Gaud et al., 2005). However, when they need additional funds, dividend-paying firms tend to use external financing, larger firms tend to use more debt and firms with a high proportion of fixed assets tend to issue equity (Eriotis, 2007; Mazur, 2007). The regression model of positive-growth firms is significant at $p < 0.10$ level with an F-test value of 130.91. The high adjusted R-square value of the model is 0.891, suggesting that the independent values of the estimate model explain approximately 89.10% of the variation in the total debt ratio variable. There is only 10.90% of the variation in the total debt ratio variable

explained by other independent variables not in the model.

For the model of negative-growth firms (in Column (C) of Table 5), the findings indicate that the influence of growth opportunities make the coefficients of profitability (PROF) and dividend policy (DIVD) insignificant to explain the variation in leverage as suggested by the theory. There are only four firm characteristics (firm size (SIZE), liquidity (LIQD), financial risk (FRSK), and fixed assets (FASST)) being the significant determinants of financing decisions. This can be interpreted that negative-growth firms tend to use external financing (Akhtar, 2005; Eriotis, 2007; Mazur, 2007). If they are large firms, they are likely to use more debt financing. In the case of firms having low financial risk, they tend to increase funds from debt, particularly low risk debt. In addition, firms with a high amount of fixed assets tend to issue equity. However, firms having high liquidity may have a high amount of current assets and cash, thus, they are likely to use internal financing (Mazur, 2007). The regression model of negative-growth firms is also significant at $p < 0.10$ level with an F-test value of 105.70. The high adjusted R-square value of the model is 0.873, indicating that the independent values of the estimate model explain approximately 87.30%

of the variation in the total debt ratio variable. There is only 12.70% of the variation in the total debt ratio variable explained by other independent variables not in the model.

5. Conclusions

The main objective of the study is to investigate the influence of growth opportunities on the relationship between a set of firm characteristics and financing decisions as measured by the total debt ratio. First, the pecking order theory is employed to explore the financing decisions determinants of 220 Thai listed firms traded on the Stock Exchange of Thailand during the period 2005-2007. After that, the sample is divided into positive- and negative-growth firms by the growth rate of earnings after tax to reinvestigate the determinants of financing decisions in each sub-sample.

The findings of total sample reveal that a set of firm characteristics, namely firm size, liquidity, financial risk, fixed assets, profitability, and dividend policy are the significant determinants affecting financing decisions of Thai listed firms. For the results of sub-samples, it is found that there are some differences in the financing decisions determinants between positive- and negative-growth firms. Positive-growth firms have six

significant financing decisions determinants as well as the results of the whole sample whereas negative-growth firms have only four significant financing decisions determinants. Two firm characteristics - profitability and dividend policy are not included in the significant financing decisions determinants of negative-growth firms. This evidence indicates that the significant financing decisions determinants of positive-growth firms are stronger than those of negative-growth firms. Thus, managers of these firms should take this into account when implementing financing strategies.

To conclude, the empirical results are consistent with the research hypotheses. Thai listed firms make financing decisions following the pecking order theory and the extent of growth opportunities have an influence on the relationship between firm characteristics and financing decisions of positive- and negative-growth firms. This study suggests that future research would try to develop a study of financing decisions determinants in Thai small and medium enterprises.

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