

Determinants of capital structure: Evidence from the listed firms in the Netherlands

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ABSTRACT: The paper contributes to the capital structure by investigating the determinants of companies from static trade-off theory and pecking order theory through providing the empirical evidence from listed firms in the Netherlands. The study use OLS regression in analysing the factors that influence capital structure decisions. The results suggest that liquidity served as a negative factor in capital structure decisions and pecking order theory prevails in explanation of capital structure determinants in Dutch firms.

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Keywords

Capital structure, trade-off theory, pecking order theory, leverage, Netherlands listed firms.

1. INTRODUCTION

The decision of how the capital structure should be composed is a very common problem in companies. The discussion about the capital structure and how firm-specific factors will affect the capital structure is prevailed in a flood of literature. Theories used for explaining the relationship between those factors and the capital structure are various and widely received. However, Myers (2003) contended that there is no universal theory of capital structure which could be utilized for explaining the correlation, and no reason to expect one as well. Many previous studies employed more than one theory or model to justify their results. The empirical research (Bennett and Donnelly, 1993; Chen, 2004; Jong, Kabir and Nguyen, 2008; Kjellman and Hans  n, 1995; Miguel and Pindado, 2001) is also prevailed in many countries and industries. However, the determinants of the capital structure are still a puzzle to be solved in both theoretical and real world. Jong et al. (2008) found that firm-related determinants of capital structure differ across countries, while past studies potentially assume equal impact of these determinants in their research. The finding from Jong et al. (2008) motivates the conduct of the study of determinants of capital structure in a specific country, and the empirical study can provide some unique findings which offer realistic suggestions to managers. The study is going to catch evidences from the companies in Netherlands to explain how the factor can influence capital structure. The paper is separated into five sections. The

second section presents and synthesizes a series of previous study in relation to the research of capital structure from both perspective of theoretical framework and empirical studies. The third section formulates the hypothesis at first and then introduces the methodology how to test the hypothesis in detail. Besides, the selection of data and the measurement of proxies are presented. In the fourth section, the test result is showed and the discussion about the results is briefly stated. The fifth section, which is the final part of the paper, concludes the whole research and give suggestion to future study.

2. LITERATURE REVIEW

The tax-based theories provide the groundwork for the empirical research, and the empirical research contributes fact evidence to the set of theory research. The theoretical study related to the capital structure start from the seminal paper published by Modigliani and Miller in 1958. Then a vast of theories is developed based on their seminal work. The literature review is presented by the theoretical background and illustrated by some previous empirical studies under each of the theory. At first, the foundation of the capital structure, the theory from Modigliani and Miller, is introduced and served as the modest spurs that induce many excellent researchers to come forward with their valuable contributions. Then, the theory be guided and tested in the study present in the subsection. Figure 1 shows the theoretical framework of the study.

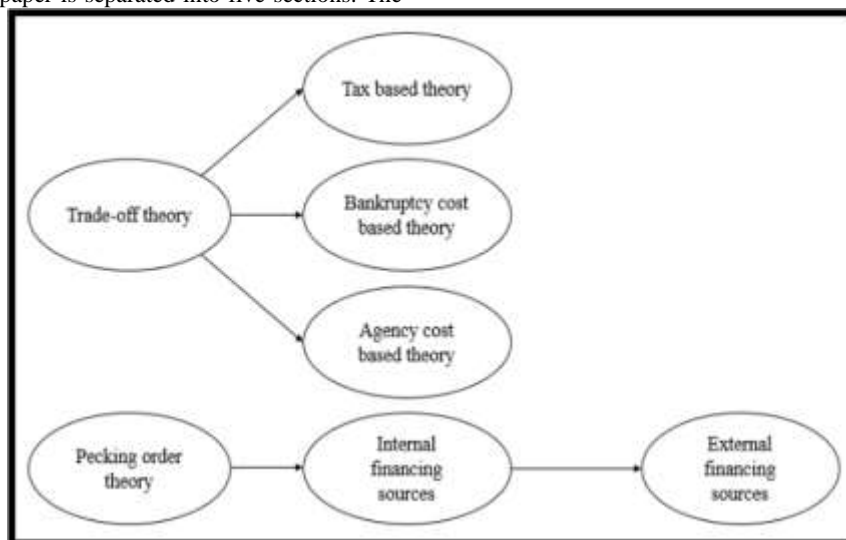


Figure 1 Theory framework

2.1 Theoretical Background and Previous Empirical Studies

2.1.1 Ground Theory from Modigliani and Miller

Modigliani and Miller (1958) contend that the capital structure is independence of the value of a company in the perfect market, which is an efficient market without taxes, bankruptcy costs, agency costs and asymmetric information. Modigliani and Miller theory is the foundation stone of the study of capital structure, but the unrealistic assumption is refuted by the following theories, for instance, trade-off theory (Kraus and Litzenberger, 1973), pecking order theory (Myers and Majluf, 1984) and agency costs theory. The following theory is test through empirical studies, which is also good argument to illustrate the unreality aspects of the Modigliani and Miller theory.

2.1.2 Static Trade-off Theory

The static trade-off models stated that the optimal capital structure exists and companies is deemed as progressively moving towards the target debt level. The optimal capital

structure of the company is a trade-off among the corporate and personal taxes, bankruptcy costs and agency costs, and some researchers formulate the models on the premise of the theory, which are the tax-based, bankruptcy-based and agency-cost-based theory (Bradley, Jarrel, and Kim, 1984; Harris and Raviv 1990; Huang and Song 2006; Jensen and Meckling 1976; Kraus and Litzenberger, 1973). Tax-based theory state that a company can benefit from debt financing, company have less tax to be paid with the increase of debt financing, which is usually be known as the tax shield benefit. According to the tax-based theory, the non-debt tax shield (NDTS) shows negative relationship with the capital structure since it reduces the role of debt in the avoidance of tax. While the assumption is objected by an empirical testing (Miguel and Pindado, 2001), Deesomsak, Paudyal and Pescetto (2004) gained empirical evidence from the Asia Pacific Region through their research and confirmed the relationship. Bankruptcy costs is a noticeable point to the debt level, because the higher the debt level is then the more bankruptcy costs and higher risk the company will possibly bear. Bankruptcy costs is related to the tangibility of the assets, the more tangible the

collateral are, the lower costs the debt will to be paid, then there will be more debt in the portion of capital structure. Deesomsak, Paudyal and Pescetto (2004) also found some empirical support for the tangibility, but the relationship is less important than other factors.

The agency cost theory (Jensen and Meckling, 1976) is fairly arguable, because some researchers think the agency theory is a branch of static trade-off theory, based on the information asymmetry between shareholders and managers. However, other researchers believes that the agency costs theory is a solely theory that can explain the determinants of capital structure. The former arguments think the premise of the theory is that the interest of the agency is not perfectly aligned with the interest of the shareholders. Therefore, the manager would possibly make decisions on the project with significant risk by using the capital of others. To avoid the risk shifting to the shareholder, the debt is increased to create the distress pressure and lessen the non-aligned behaviour from the managers (Armada, Nunes and Serrasqueiro, 2011; Degryse, de Goeij and Kappert, 2012; Mahajan and Tartaroglu, 2008). In this study, we adopt the former view. Debt can reduce the on-hand capital available to the manager, thereby, mitigate the risk of the conflicts. From this point of view, liquidity is predicted to be negatively related to the debt level, as the manager can manipulate the liquid assets in favour of the interest of shareholder against the debt holders, and increase the agency costs of debt. Both Harris and Raviv (1990) and Jong et al. (2008) study provided empirical evidence and showed weak signal that the liquidity is negatively related to the leverage. According the trade-off theory, firm size also has effects on the capital structure. In general, larger firms bear lower bankruptcy risks and less costs of financial distress. Thus, the larger companies are willing to borrow more external debt compared to the small companies. Jong et al. (2008) provide empirical evidence and show significant relationship between firm size and leverage.

2.1.3 Pecking Order Theory

On the contrary, the pecking order hypothesis hold the opposite view from the basic points of trade-off theory, Myers and Majluf (1984) contend that the optimal target debt ratio could not be well-defined by a company. Companies finance their business and investments through using the retained earnings or available on-hand liquid assets in the first place. Then the second sources of financing is the less risky debt, the most risky external equity is seen as the last resort. The preference order of the financing action is caused by the existence of the asymmetric information problem between the internal and external investors of the company (Chen, 2004; Huang and Song, 2006; Jong et al., 2008).

The supports for the pecking order theory from empirical studies are hybrid. Some researchers found empirical evidence that the capital structure of companies follow the pecking order theory (Shyam-Sunder and Myers, 1999; De Jong, Verbeek and Verwijmeren 2011; Brounen, de Jong and Koedijk 2006), while some other researchers found no evidence to support the theory (Brounen, de Jong and Koedijk, 2006; Graham and Harvey, 2001). The studies which provide object voice also found that information asymmetry is not the cause of the pecking order theory. The evidence from China (Chen, 2004) even state that they follow the 'new pecking order theory' the retained profit, then equity financed, and lastly debt. In these empirical studies, some researchers use profitability and liquidity as a proxy to test the pecking order theory (Bennett and Donnelly, 1993; Chen, 2004; Deesomsak, Paudyal and Pescetto, 2004; Jong et al., 2008) in their study of companies. The profitability showed negatively effects of the capital structure, because a profitable company tend to use internal financing instead of the debt. Meanwhile, liquidity is negatively influence on the capital structure. When the

company can use on-hands capital, there is less possibility for them to use external debt.

Static trade-off theory and pecking order theory is contradictory to each other, to what degree the two conventional capital structure theories can explain the capital structure decision in the Netherland. It is worthwhile to research on Dutch companies since large portion of them are internationally-oriented and the economic environment in the Netherlands is fairly open. As to the reasons why these two theories are relevant to the research of capital structure in Dutch companies, the institutional environment setting and the similar phenomenon in other industrialized countries provide some insights that the testing of these two theories is rational. First, the Dutch bankruptcy law gives more weight to the creditors' protection against the restructuring when companies facing the risk of bankruptcy. It is more likely that the company enter into liquidation due to the higher cost of bankruptcy. The bankruptcy law may bring special effects on capital structure decision. The NDTs which captured empirical evidence in the other European countries is ignored by previous researchers in the study of the Dutch companies, the test of the relationship between NDTs and leverage thus is worthy of consideration.

2.2 Hypothesis

According to the literature above, we can formulate the hypothesis as to how the firm-specific factors are influence on the capital structure based on trade-off theory and pecking order theory separately. The explanation related to how the hypothesis is postulated will be presented after each hypothesis. In both theoretical and empirical studies (Cassar and Holmes, 2003; Deesomsak et al., 2004; Huang and Song, 2006; Jong et al., 2008), the leverage, which is also acknowledged as the debt-to-equity ratio, is widely-used proxy for the capital structure.

2.2.1 Hypotheses Based on Static Trade-off Theory

H1 Profitability has a positive effect on leverage.

The trade-off theory contends that the company can benefit from the debt, for instance, the interest of debt is a tax-deductible expense. The company pay a type of tax according to the yearly sales, and the more tax will be paid with the increase of the revenue. Thus, it is inferred that the more profitability a company is and then the higher level of debt the company are going to have. (Deesomsak et al., 2004). Ultimately, the profitability is expected to be positively influence on leverage.

H2 Non-debt tax shield (NDTS) has a negative effect on leverage.

Debt is regarded as a tax-deductible factor, so the other non-debt tax shield is expected to be inversely related to the debt. Therefore, in this research, it is postulated that the NDTS is negatively influence on the leverage. An analytical formula for calculation of the NDTS is proposed by Titman and Wessels (1998), which is also used by the later researchers. In this study, the calculation of NDTS will adopt a brief version. Depreciation is an example of non-debt tax shield in accounting, and it will be employed in the calculation, the specific method of NDTS will be presented in methodology part.

H3 Tangibility has a positive effect on leverage.

Tangibility is recognized as asset tangibility in this research. Higher tangibility of assets suggests lower risk for the lender as well as reduced the risks of financial distress and direct costs of bankruptcy. The more tangible the asset is, the less management and evaluation costs will be spent on the debt collateral. Hence, the tangibility positively affects the leverage.

H4 Liquidity has negative effect on leverage.

Agency costs of debt increase when the company have higher level of liquidity, because the more liquid of assets will lead to more possibility that the managers manipulate the liquidity ratio in favour of shareholders against the debt holders. Accordingly, the liquidity should negatively affects the debt level, thus higher liquidity will decrease the leverage.

H5 Firm size has positive effect on leverage.

The bankruptcy cost of a company is an important concern in the trade-off theory, the trade-off between the bankruptcy costs and agency costs is also highly correlated with the capital structure decision. Large companies tend to have higher level of debt, as the degree of bankruptcy risk decrease at the time when the firm grow larger (Deesomsak, et al., 2004). On the premise of the decline possibility of financial distress, the debt can be gained with lower cost. Therefore, the firm size is expected to be positively influence on leverage.

2.2.2 Hypotheses Based on Pecking Order Theory:

H6 Profitability has a negative effect on leverage.

The information about companies is asymmetric between the inside owners and outside investors, information asymmetry leads to the decision-makers prefer internal sources rather than the external sources in terms of the financing. According to the pecking order theory (Myers and Majluf, 1984), the firm will choose the internal financing first. Only if the internal source is scarce, the firm will finance through the external debt, and finally the equity shall be taken into consideration. The company gain more profit on their own, then the less debt they will borrow from the outside. Therefore, the relationship between profitability and leverage is negative in view of the pecking order theory.

H7 Liquidity has negative effect on leverage.

In the pecking order theory, the use of internal sources is seen as preference in terms of financing. The liquidity is acknowledged as the ability to convert an asset to cash quickly. The specific liquidity formula is used in the research from Deesomsak, et al. (2004) and Jong (2008), which is represented by the ratio of the current assets to current liabilities. Thus, the more capable the company can transform their assets to the cash, the less external capital they needed for their business activities.

3. METHODOLOGY AND DATA

3.1 Methodology

In this section, the methodology will be introduced. First of all, the methodology and technique of the way to test the hypothesis will be described. Then, the variables use for testing is presenting. Last, the observation and datasets are introduced. Much of the literature showed that financial leverage of a company is dependent of lots of other factors (Chen, 2004; Deesomsak, Paudyal and Pescetto, 2004; Graham and Harvey, 2001). In this research, it contains quantitative analysis, which refer to the systematic empirical research survey by use of mathematic or numerical data. According to previous literature, most common technique used in testing the determinants of the capital structure is ordinary least squares (OLS) regression analysis (Jong et al., 2008; Deesomsak et al., 2004). OLS regression could be used for estimating the linear relationship between the dependent variables and independent variables which postulated by the hypothesis. The premise of the linear regression analysis is that the independent variables are causally correlated with the dependent variables, which independent variables is the cause of the dependent variables.

For analysing the firm-specific determinants of leverage we test the conventional theoretical framework on capital structure choice of firms. We run firm-level OLS regressions with

leverage as the dependent variable and firm-specific factors as explanatory variables in our data set as follows:

$$LEV_i = \beta_{0i} + \beta_1 PROF_i + \beta_2 NDTs_i + \beta_3 TANG_i + \beta_4 LIQ_i + \beta_5 SIZE_i + \varepsilon_i$$

Where i denotes an individual company. This formula is used for testing trading-off theory.

LEV_i represent the average financial leverage of the company i over the three years from 2011 to 2013. β_1 is the coefficient that test the hypotheses H1, β_2 is the coefficient that test hypothesis H2, β_3 is the coefficient that test hypothesis H3, β_4 is the coefficient that test H4, β_5 is the coefficient that test H5. β_{0i} is the constant of the formula. ε_i is the standard error. The size of the company is used as the control variables in this research.

$$LEV_i = \beta_{8i} + \beta_6 PROF_i + \beta_7 LIQ_i + \varepsilon_{0i}$$

Where i denotes an individual company. This formula is used for testing pecking order theory.

β_6 and β_7 are the coefficient that test corresponding hypotheses H6 and H7 separately. β_{8i} is the constant of the formula. ε_{0i} is the standard error.

3.2 Variables

The data covered the year from 2011 to 2013 of 54 companies. Capital structure is measured by leverage in most of the literature (Deesomsak, Paudyal and Pescetto, 2004; De Jong, Verbeek and Verwijmeren, 2011) and are widely used in the financial report of many companies. In this study, the leverage is also employed as the proxy of capital structure for the test.

Leverage (LEV): This is calculated as the ratio between the total liabilities and debts to total shareholders' equity, which is also known as D/E ratio (Deesomsak, et al., 2004; De Jong et al., 2011; Jong et al., 2008).

Profitability (PROF): This is calculated as the ratio between operating revenue (turnover) and the total assets (Deesomsak et al., 2004; Jong et al., 2008). The operating revenue (which is also known as turnover) is the earnings before interest, tax, and depreciation.

Non-debt tax shield (NDTS): This is calculated as the ratio between the absolute value of book value of depreciation and the total assets (Deesomsak et al., 2004; Wald, 1999).

Tangibility (TANG): This is calculated as the ratio between fixed assets and the total assets (Huang and Song, 2006; Jong et al., 2008).

Liquidity (LIQ): This is calculated as the ratio between total current assets and the total current liability (Deesomsak et al., 2004; Jong et al., 2008).

Firm size (SIZE): This is defined as the natural logarithm of the total assets (Deesomsak et al., 2004; Chen, 2004).

The D/E ratio is selected as the proxy for the dependent variables, and then the independent variables and how they will be measured are presented in the table 1:

Proxy Factor	Calculation	Expected relationship	Testing theory
Dependent variable			
Leverage (LEV)	Total liabilities and debt /Total shareholders' equity		
Independent variables			
Profitability (PROF)	Operating revenue (Turnover)/Total assets	+	Trading-off theory
Non-debt tax shield (NDTS)	Absolute value of Depreciation/Total assets	-	Pecking order theory Trading-off theory
Tangibility (TANG)	fixed assets/Total assets	+	Trading-off theory
Liquidity (LIQ)	Total current assets/Total current liabilities	-	Trading-off theory
		-	Pecking order theory
Firm size (SIZE)	$\ln(\text{total assets})$	+	Trading-off theory

Table 1 Proxy for independent variables and the corresponding theory

3.3 Datasets

Sample companies are identified from the Orbis database and cover the 3-year period from 2011-2013. All the selected companies are incorporated in the Netherlands and are listed on the stock exchange market. The search strategy of Orbis for the study is presented in the table 3, each search criteria include the condition: all companies with a known value in 2011, 2012 and 2013, for all the selected periods. The financial crisis have impact on the capital structure decision, while it happened during the 2008 to 2010. The selected years from 2011 to 2013 could be regarded as economic recovery years. To see how capital structure is determined in the moderate economic recovery, the period of 2011-2013 is selected. The prior literature has not researched in the periods and the latest paper went to public in this area for Dutch listed companies was contributed from Bie and Haan (2007) in 2007. Majority of the literature concentrate on one industry and this paper studied general effects among various industry. Table 3 illustrated the filter criteria of the data. To calculate the represented factors above which showed in table 1, the corresponding values (such as the depreciation, total assets etc.) should be obtained. Each search criteria requires a set of data that have the corresponding value. If the value of the search criteria is missing, the company will be excluded. After the selection and filter of the data in the Orbis and Excel, there are data from 54 companies are available for the testing of these hypotheses. Each company include the annual data from 2011 to 2013. Therefore, the total amount of variables is 162. The test is not targeted at any specific industry for the sake of the amount of data is very small and it already include various industry. Therefore, the testing will be general for many industries. The value of firm specific determinants (profitability, liquidity, tangibility and leverage) could also be found directly in Orbis. However, the value of firm specific determinants is still calculated by the method of table 1. As the definition and method of calculation of profitability, liquidity, tangibility and leverage in Orbis is not definite, the calculation by using raw data is necessary.

	The search criteria	Number of step result	Number of search result
1	All active companies	1,509,311	1,509,311
2	Country: Netherlands	38,130	28,397
3	Current liabilities	78,221	1,402
4	Current assets	78,100	1,402
5	Fixed assets	78,022	1,402
6	Depreciation	18,455	56
7	Operating revenue (Turnover)	118,692	55
8	Total assets	91,719	55
9	Total Shareholders' Equity	19,239	55
10	Total Liabilities and Debt	19,206	54
	Total		54

Table 1 the search criteria of the data from Orbis

4. ANALYSIS AND RESULTS

The sample is composed of 54 different Dutch listed companies, which are including various industry and have been listed during the period from 2011 to 2013. The reason for choosing Dutch companies for investigating the empirical evidence is Dutch companies have been less studied and which factors among the tested variables are able to better determined the capital structure as well as which theory could be a better explanation for the capital structure decision in the Netherlands. First, the summary of the major statistic is presented in table 2. Each variables are calculated as the method showed in table 1. Second, the results of bivariate analysis, which is employed to investigate the relationship between all the variables included in the research, will be showed in table 3. The end of the analysis part is the results and explanation of OLS regression for both static trading off model and pecking order model. The results are presented in table 4 and table 5.

	N	Minimum	Maximum	Mean	Std. Deviation
PROF	162	0.00	3.58	1.20	0.78
LIQ	162	1.28	37.37	5.05	5.64
NDTS	162	0.00	0.36	0.04	0.04
TANG	162	0.03	1.00	0.56	0.22
SIZE	162	0.00	17.49	13.24	2.58
LEV	162	-13.19	37.75	1.95	4.61

Table 2 Descriptive statistics of the dependent variables and independent variables

The book value of depreciation is negative, and NDTS is the ratio of the depreciation and total assets, for the sake of better data analysis, the absolute value of book value has been employed. The standard deviation of NDTS is 0.04, which is quite small and close to zero. The small value of standard deviation means the data of NDTS are concentration, which is bad for data analysis. Besides, the data of tangibility has the same problem as the data of NDTS.

		Correlations					
	PROF	LIQ	NDTS	TANG	SIZE	LEV	
PROF	1						
LIQ	-.539**	1					
NDTS	.299**	-.212**	1				
TANG	-.521**	.633**	-.106	1			
SIZE	.155*	-.212**	.031	-.035	1		
LEV	-.043	-.125	-.059	-.034	.018	1	
	.590	.112	.457	.663	.822		

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

Table 3 Bivariate analysis: Pearson correlation

The bivariate analysis showed the relationship between each variables. The relationship between liquidity and profitability is significantly negative (-0.539), which could be explained by the reason that a company invest more in current assets, they would gain less returns. The company possess large amount of net working capital for the risk reduction arise from debt default etc. (Assaf Neto, 2003). The relationship between leverage and other factors are all not significant within the 5% level. Except the size, other factors are all fall in negative relationship with leverage.

The following part will introduce the OLS regression results. The results of static trading-off model is showed in table 4. The dependent variable is leverage in this test. According to the test results, the only factor that have valid relationship with leverage is liquidity at 5% significant level, which is a negative relationship (-0.19). Profitability, non-debt tax shield, tangibility and size have no significant relationship with leverage. According to trading-off profitability is positively influence on the leverage ratio. In this empirical evidence, although profitability is negatively related to the financial leverage, but it shows no significant signals with the low significant level (0.23 > 0.05). Thus, the first hypothesis in the research is not acceptable. To investigate the potential problem of invalid results, the collinearity diagnostic was run in SPSS, and the result is presented in table 6. The VIF is 1.639, which is larger than 0 and smaller than 10, therefore the collinear problem is not existing. The reason why the result is not significant could be the data of profitability is not dispersed enough and the amount of sample is limited.

The second hypothesis assumed NDTs has a negative effect on leverage. NDTs is a factor that was ignored by previous empirical studies about the capital determinants in Netherlands. Here, the coefficient of NDTs is negative (-7.07), but the results is not significant (0.46). NDTs is theoretically postulated to be negatively influence on debt level, however, there is no clear evidence provided from practice from both Netherlands and Asia Pacific Region. The invalid results of the relationship between NDTs is caused by the over centralized data of NDTs as stated in the variables section of methodology.

The third hypothesis assumed tangibility has a positive effect on leverage. As the company can borrow more debt with the tangible collateral. The tangibility is positively influenced on the leverage ratio according to the coefficient, however the p-value is insufficient (0.80). The tangibility is found that it had positive impact on leverage in the empirical study of Asia Pacific Region before financial crisis without enough significant level. The insufficient result could be caused by the excessive centralized data. Besides, another explanation could be the findings from

Campello & Giambona (2010) that tangible asset often lose value in liquidation stage. Under the Dutch constitutional environment, firms are prefer enter into the liquidation due to the high cost of bankruptcy. Bankruptcy is a legal proceeding in which people who cannot pay their bills can get a fresh financial start. A company that is unable to pay its debts as they fall due, can be placed into liquidation either voluntarily. Accordingly, company may possess less tangible assets, and then lessen the tangibility ratio. The total degree of tangibility is low, which lead to less leverage as the company are less possible to borrow debt when they have high possibility of bankruptcy.

The fourth hypothesis assumed liquidity has negative effect on leverage. The coefficient of liquidity is -0.19 and the significant level is 0.04 which is less than 0.05. Therefore, the relationship between liquidity and leverage is corresponding to the hypothesis. In previous literature, Harris and Raviv (1990) and Jong et al. (2008) provided empirical evidence that the liquidity is negatively related to the leverage. This results confirmed the inverse relationship between liquidity and leverage and trading-off theory through providing empirical evidences.

The fifth hypothesis assumed that size has positive effect on leverage. Firm size also showed no relationship with the leverage, however, the possible reason of the results in this research is the data sample size is limited and the size of firms are insufficiently distinctive. However, an interesting finding from bivariate analysis (Table 3) showed size has negative relationship with liquidity at a high significant level (0.007). The relationship suggest that large firms gain more profit, and they have more fixed assets for collateral, which stated in trading-off theory that large firms possess higher debt level due to more fixed assets.

	Coefficients	t-value	P-value
Intercept	2.57	0.81	0.42
PROF	-0.72	-1.21	0.23
LIQ	-0.19	-2.11	0.04
NDTS	-7.07	0.73	0.46
TANG	0.58	0.25	0.80
SIZE	0.08	0.38	0.70
Adjusted R Square		0.01	

Table 4 Static trading-off model

	Coefficients	t-value	P-value
Intercept	3.91	3.96	0.00
PROF	-0.92	-1.68	0.10
LIQ	-0.17	-2.26	0.03
Adjusted R Square		0.02	

Table 5 Pecking order mode

Collinearity Statistics			
Model		Tolerance	VIF
Trading-off theory	PROF	.610	1.639
	LIQ	.509	1.963
	NDTS	.895	1.117
	TANG	.535	1.870
	SIZE	.929	1.076

a. Dependent Variable: LEV

Table 6 Collinearity diagnostic of trading-off model

The sixth hypothesis assumed that profitability has a negative effect on leverage according to pecking order theory, the p-value is 0.10 and coefficient is negative (-0.92), thus the results confirmed the sixth hypothesis and corresponding pecking order theory. Meanwhile, the value of adjusted r-square in pecking order model is larger compared to trading off model, which means the fitness of data is better in pecking order model. And thus pecking order theory could better explained the relationship.

The seventh hypothesis assumed that liquidity has negative effect on leverage according to pecking order theory, the p-value is 0.03 and coefficient is negative (-0.17), thus the results confirmed the sixth hypothesis and corresponded to pecking order theory. Meanwhile, the fitness of data (0.02>0.01) is better in pecking order model. Pecking order theory explained the relationship between liquidity and leverage better.

The adjusted R-squared compares the explanatory power of regression models that contain different numbers of predictors. It is used in our case because trading-off model and pecking order model have different numbers of predictors. As the pecking order model have a slightly larger value of adjusted r-squared, and profitability and liquidity have more significantly impact in pecking order model, it could be conclude that pecking order theory prevail in the explanation of capital structure decision in Dutch companies.

5. CONCLUSION

Determinants of the capital structure have been researched in many literatures, and only few empirical evidence from Dutch companies is provided to the literature though. This paper is investigating the determinants of capital structure and how these determinants influence on capital structure decisions. However, the results of major determinants are not significant due to the size of sample and the overly-centralized data. The valid results suggest that liquidity and profitability have negative relationship with leverage according to pecking order theory. The negative relationship confirmed the assumption that the internal financing is a preference for Dutch companies. Liquidity could be regarded as a signal of the debt level of a company. The company has a higher liquidity ratio, then they would have less external debt.

A special factors which could be focused on for future research is the Non-debt tax shield that has not been sufficiently investigate in other research related to Dutch firms. The signal of negative relationship between NDTS and leverage is indicated by the coefficient in this study and is expected in future research with a larger sample and data with sufficient dispersion from Dutch firms. The recommendation for the future research is to investigate further about NDTS and how it will influence capital structure of Dutch firms.

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