

**Determinants of Capital Structure: Evidence from China Public
Listed Industrial Companies**

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Othman Yeop Abdullah
Graduate School of Business

Universiti Utara Malaysia

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ABSTRACT

This paper examines determinants of capital structure of China-Listed companies in Shang Hai Stock Exchange. Profitability, size, growth rate and liquidity are the variables used as the independent variables, while capital structure is proxied by leverage. The capital market of China went through a remarkable growth from 2006 to 2008, but currently it is in deep recession. This study looks at the factors that influence China's industrial companies' capital structure in a ten-year period, from 1998 to 2010. The findings show that size is positively and significantly correlated to leverage, whilst liquidity is negatively but significantly influences leverage. Both profitability and growth rates do not have any effect on capital structure of the 967 industrial companies examined. The findings also demonstrate that neither the pecking order theory nor trade-off theory derived from the western setting could provide convincing explanation for the capital structure choices of the China's companies. The differences in the choices may be attributed to the fundamental institutional assumptions in the western models that are not valid in China.

Keywords: Capital structure, profitability, size, growth, liquidity, pecking order, trade-off.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Nowadays, no matter which industrial area a company is involved in, managing capital structure is important. Companies usually need capital to support funding, such as to buy property and to build or acquire production facilities and equipment to expand their business. The needs for capital would either come from internal funding add/or external funding. A financial manager should plan an optimum capital for company in order to maximize company's profit and market value. The determination of the optimum capital structure is a difficult task and the manager has to perform this task properly, so that the firm could achieve its ultimate objective which is maximization of shareholders' wealth.

There were voluminous of researches tested on companies' choice in the determinants of the debt to equity ratios in various sectors of the economy, such as restaurant industry (Upneja and Dalbor, 2001), bank industries (Amidu, 2007), Portuguse listed company (Serrasqueiro and Rogao, 2009) and Turkish lodging companies (Karadeniz, Kandir, and Onal, 2009). One of the main conclusions of these empirical studies is that industrial classification is an important determinant of capital structure because there are various differences among industries and companies within an industry.

Capital structure is the mix of debt and equity used by a company to finance its assets. Capital structure decision is one of the most significant decisions which is

made by financial management since it is at the centre of other decisions in corporate finance which include dividend policy, project financing, issuance of long-term securities, financing of mergers and buyouts. The most crucial objective in corporate finance is for the corporate financial manager to guarantee the lowest cost of capital and hence maximize the wealth of the shareholders. The capital structure plays the important role for management to manage and control the firms' cost of capital. The optimal capital structure is to minimize the lowest cost of capital, which in turn will maximize shareholders' value

According to an early work of Modigliani and Miller (1958) on capital structure, there are three conflicting theories of capital structure: static trade-off, pecking order, and agency cost theories. The static trade-off theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the advantage of net tax debt financing balances leverage include costs such as financial recession and bankruptcy, holding firm's assets and investment decisions constant (Baxter, 1967 and Altman 1984, 2002). According to this theory, reporting equity means staying away from the appropriate and that ought to so be considered bad news.

Furthermore, there is an absence of a complete theoretical model to explain those factors which affect the capital structure decision in practice. Those factors were indicated in the form of complicated and qualitative manner and do not follow the accepted theory because of the imperfect capital market. Managers need to make decision under imperfect knowledge and risk. The companies need to analyze and balance all the factors which are related to their capital structure decision in order to

have an appropriate capital structure. Omran (2009) states that capital structure is a mainstream theme of corporate finance and that there is insufficient knowledge about capital structure in emerging markets and transitional economies. He also clarifies that the theories of capital structure tends to be valuation-based and the development of stock markets should play a role. Brealey and Myers (1988) also examine the issues capital structure. Although there are many researches that study capital structure, however, the puzzle of how firms make capital structure decision is considered one of the most significant unresolved problems in finance. This study provides evidence on the determinants of capital structure of Chinese companies.

Capital structure is defined as the composition of a firm's liabilities and owners' equity. Debt consists of bond issues or long-term notes payable and equity is made up of common stock, preferred stock or retained earnings. Modigliani and Miller (1958) being the pioneers of this study forms the basis for modern thinking on capital structure. In their study, they show that company's value is not dependent on its financial structure. They conclude that a company's higher or lower value depends on the ability of its assets to generate value, regardless if the assets originate in internal or external capital. In a perfect capital market where there are no transaction or bankruptcy costs and no asymmetry information, the firm's investment decision would not be affected by financing decisions because it can borrow at the same interest rate and exclude taxes.

Capital structure decision shows the magnitudes of liabilities and owners' equity. It is a crucial part for the company because any misjudgments regarding the financing decision that have been made would bring adverse consequences to the company such

as financial distress, liquidation and bankruptcy. Although there have been extensive research in capital structure for long time but they still cannot come out with conclusive guidelines for manager to choose between an optimal debt and equity in financial decision. There are some others reasons that influence capital structure decisions such as bankruptcy costs, agency costs, taxes, and information asymmetry. These factors show that there are some limitations to Modigliani and Miller 1958 approach which assumes that a perfect capital market whereas in the real world capital market is imperfect. However, Modigliani and Miller (1963) find that that companies that have tax-benefits would use debt rather than internal capital to finance their investments because they can get benefit from tax shields.

1.2 AN OVERVIEW OF CHINESE CAPITAL MARKET

China's economy has changed from a centrally planned economy (CPE), which was introduced in 1949, to a more market orientated economy since 1978 and is currently a significant participant in the global economy. There were some inherent shortcomings of the CPE, such as defective functioning of the planning mechanism, monopolistic, non-contestable position of the State Owned Enterprises (SOE's), lack of financial sanctions, lack of adequate incentives, macro-economic, suboptimal allocation of resources, the autarchic isolation, and Mao's disastrous initiatives. This led to economic and financial reforms in the late 1970's, which started with the de-collectivization of agriculture, gradual liberalization of prices, a diversified banking system, more autonomy for SOE's, decentralization of the fiscal

system, development of the stock markets, the growth of the non-state sector and the opening to foreign trade and investment.

In mainland China, the stock market reappeared in the 1980's and has experienced tremendous growth ever since. The number of companies listed increased from a dozen in 1991 to more than 600 in 1997. At the same time, market capitalization increased from less than 10billion RMB to more than 1300billion RMB.

The Chinese market has a number of unique features, like different shares are issued to enterprises, state, and individual share holders, who have different purchasing costs and circulation regulation. Other characteristics are strictly segmented markets for domestic investors and foreign investors, high transfer rates, high P/E ratios and high system risks. The Chinese government has formulated four principles of stock market development, namely: the legal system, standardization to normalize its stock market, supervision and self-discipline. One of the reforms that China gradually has implemented were the refinements in foreign exchange and bond markets and the sale of equity of China's largest state banks to foreign investors in 2005.

China's stock market is facing a major turning point. Recently, the stock prices have been increasing because of recoverable growth. Therefore, market-oriented adjustments are needed. China's stock market went from a sustained slump to a stable development, but now, it has reached a major turning point. China's capital market has been stagnant since June 2001, which is not quite normal. Zhou [2001]

claims that there are multiple reasons explaining this situation. One is a misunderstanding of the capital market's development caused by flawed thinking. This type of thinking has had a negative impact on the capital market because people generally rejected China's capital market and have been arguing and advocating a "new start".

The rise of the stock prices of last year was actually recoverable growth. The Shanghai Stock Index reached 2,600 points at the end of 2006. However, the real level was just 2,200 points, because the calculation formula produced an inflation growth of 400 points, which had to be deducted. So ultimately, the level was basically the same as it was in June 2001. Nevertheless, the stock index did increase rather quickly in the period of December 2006 to January 2007. However, suppressing excessive growth by implementing administrative changes and regulations is not desirable. Instead, economic mechanisms and market-orientated adjustments should be used to address the problem. Until the October 2011, the composite index of Shang Hai stock exchange had dropped under 2200 points, which was the historical bottom in last decade.

In general, the development of China's stock market is healthy. It is not moving too slow, which would be an enormous risk to the entire economy and financial system on the long run. The turning point quickened the speed of the capital market development. Naturally, there is always some instability in sustainable development, which is determined by market mechanisms.

The Government has stated that China has to promote the development of a multi-layer capital market system. In addition, it should expand the size and proportion of direct financing, speed up developments of the bond market, steadily develop the stock -and futures market and strengthen the infrastructure of the market, improve the listed companies' quality, increase supervision of the market and promote the market-oriented reform of the stock and bond issuing system. Zhou emphasized that supervision is particularly critical during periods of rapid growth. Fraud, inside knowledge and black market banking should be severely punished.

Comparing the Chinese securities market with mature markets, one will notice that China's market is still in its "childhood". The quality of investors is not good enough and the regulatory system not matured enough. Zhou stresses that new investors should have an adequate risk education in order to give them a clear understanding of the risks that are lying ahead. Furthermore, China should give more priority to developing a multi-level market system and should attempt to increase direct financing and to speed up the development of the bond market. The desirable result would be that the process of bond issuance should be open, market-orientated and transparent. China should be able to maintain the sustained and healthy development of the capital market during this 11th Five Year Plan period, through cooperation, implementing the right policies and governing the stock market according to the legal system.

1.3 PROBLEM STATEMENT

Although much research in capital structure has been completed, the puzzle on how business made capital structure decisions is considered one of the most significant unresolved problems in finance (Brealey and Myers, 1988). For instance, Fama and French (2002) in analyzing financing decisions of US companies over the years from 1965-1999 find that companies adjust their capital structures at a rate of 7-18 per cent per year depending on whether a company pays dividends or not. Besides, Leary and Roberts (2005) who do not primarily focus on how fast companies adjust their capital structures towards their desired target level, provide some evidence for the notion that companies actively rebalance their capital structures, which they interpret as being consistent with the existence of a "target range of leverage" (Leary and Roberts, 2005, p. 2577).

A company's proportion of short and long-term debt is considered when analyzing capital structure. When people refer to capital structure they are most likely to refer to a firm's debt-to-equity ratio, which provides insight into how risky a company is. Usually a company that is more heavily financed by debt poses greater risk, as this firm is relatively highly levered. The finance manager has to know that the capital structure policy is relevant to shareholders' wealth in order to maximize their wealth.

Dalbor and Upneja (2002) reported that the long-term debt usage positively relates to risk and firm size in publicly traded US restaurant firms. Furthermore, firm quality and growth opportunities are found to be related negatively with long-term debt usage. Phillips and Sipahiog˘lu (2004) presents evidence on the independence of financial performance and capital structure for publicly traded British lodging

companies. Lodging companies appeared to prefer external sources, since capital return is at a low level. Tang and Jang (2007) find that long-term debt level is positively related to fixed-assets level and growth opportunities for US lodging companies. However, they fail to find evidence on the relationship of leverage ratio to volatility of earnings, firm size, profitability, and free cash flow. This once again shows the absence of a standard guideline for managers to make decision.

These listed companies are capital intensive, as they require huge capital at both investment and operating stages. Since assets of companies mostly consist of fixed assets, long-term debt and owners' equity becomes rather high. Furthermore, the structure of the industry, industrial companies are highly sensitive to systematic risks (i.e. government rules and regulations). Therefore, industrial companies face high operating and financial risks. All these make it important to determine the composition of capital structure and the factors affecting leverage decisions and debt ratio. Here, the finance manager has to decide which capital structure policy he should choose in order to remain competitive in the market and maximize shareholder's wealth.

1.4 RESEARCH QUESTION

In this study, the researcher raises two questions relating to the determinants of capital structure based on China Industrial Corporations. Below are the research questions:

1. Which of the factors (size, profitability, size and growth rate) correlated to one another.

2. What is the impact of size, profitability, size and growth rate on capital structure of china industrial companies?

1.5 RESEARCH OBJECTIVE

The objective of this research is to examine factors that might have an influence in the capital structure of Chinese listed industrial companies through determining the relationship between size, profitability, growth rate and liquidity, and leverage ratio of these companies.

1.6 SIGNIFICANCE OF THE STUDY

This study is relevant and of much interest to financial controllers, finance managers, and managing directors particularly those working in different industries to get to know about the capital structure of the listed firms in China. In addition, practitioners would get an idea as to whether capital structure has an effect on a firm's size, profitability, growth rate, liquidity and the leverage ratio of China listed companies.

This finding is also useful for those companies in order to decide on the capital structure policy. The finance manager and the managing directors could choose the correct decision whether to use more debt or equity in order to be more competitive in the market, while at the same time maintaining shareholder's wealth.

By summarizing, there are two specific significances:

1. To examine the correlation between size, profitability, growth rate, liquidity and leverage.

2. To investigate the impact of profitability, size, growth and liquidity on the capital structure of China industrial companies.

1.7 LIMITATIONS OF THE STUDY

1. There are various types of businesses listed in the industrial sector in China but are not included in this study as the sample industrial companies is randomly chosen.
2. Because of the limited time in carrying out this study, there are some variables (such as bankruptcy cost, agency costs and taxes that were not able to be tested.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter two reviews the literature that provides the theoretical and empirical information to study China's firm capital structure. It is also used as a foundation for formulating the hypotheses, interpreting the results and analyzing the findings of the study.

2.2 EMPIRICAL EVIDENCE

The decision on capital structure is a crucial task for managers. There are no standard guidelines for firm managers to determine that their decision is close to their firm's value. There are plenty of researches on capital structure that are explained by different theories. Harris and Raviv (1991) find that the research models have identified a various number of potential factors of capital structure but they still are not able to decide which of these are important in various contexts. There is no universal theory of debt to equity choice and there is no reason to expect one theory to explain all Myers (2001). Rajan and Zingales (1995) also state that understanding the Modigliani and Miller assumptions would make capital structure relevant to a firm's value but there is little that is known about the empirical studies of the different theories. Therefore, our research would refer to those empirical studies which using same determinants to test on capital structure and it will divide into two parts: international evidence and China evidence.

The first research paper on capital structure was written by Miller and Modigliani in 1958. They proved that firm's value is not dependent on the capital structure thinking given conditions that are certainly met. Due to the unrealistic assumptions in MM theory, research on capital structure has brought other theories. The trade-off theory states that adjustment of a firm toward the best leverage is affected by three factors: taxes, costs of financial distress and agency costs. Baxter (1967) states that the wide use of debt would increase the chances of bankruptcy as creditors demand additional risk premium. He said that firms could not use debt as a major financing tool when the debt cost becomes bigger than the advantage of tax.

Kraus and Litzenberger (1973) argue that if a company's debt obligations are larger than its earnings, the company's market value is thus essentially a concave function of its liability obligations. DeAngelo and Masulis (1980) work further on Miller's differential tax model by including other non-debt shields such as depreciation charges and investment tax credits. They put forward that each firm has an internal best capital structure that expanded its value. The capital structure is provided only by the interactions of personal and corporate taxes as well as positive unwilling costs. Accordingly, Altman (1984) was the first to identify direct and indirect costs of bankruptcy. By studying 12 retail and 7 industrial companies, he found find that firms in the sample faced 12.2% of indirect bankruptcy costs at time $t-1$ and 16.7% at time t . He concludes that capital structure should be such that the present value of marginal tax benefits is equal to marginal present value of bankruptcy costs. Bradley, Jarrell and Kim (1984) use a model that combined the

modern balancing theory of the best capital structure. They find a strong and direct relationship between non-tax shields and firm's debt level.

2.2.1 International evidence

Upneja and Dalbor (1999) analyze the capital structure on US restaurant firms during 1991 to 1998. The determinants use in the studies is Ohlson's O-score (that measures the probability of bankruptcy), operating cash flow and age. They find that firms face difficulty to obtain short-term financing debt because the risky nature of restaurant business. Besides, firms that use more short term debt than long term debt to finance their business have high probability of bankruptcy. The research also indicates that older firms would use more long term debt to finance their business because they have large capital expenditure programs. However, profitable firms do not need long term debt to finance their business since they have more cash inflow.

Mukherjee and Mahakud (2010) investigate the dynamics of capital structure of Indian manufacturing companies in a partial-adjustment framework during the period 1993-1994 to 2007-2008. The independent variables used in the study are size, tangibility, non-debt tax shields, profitability, market-to-book ratio, research and development intensity (measured by research and development expenditure), and industry median (to capture industry characteristic). The variables like size, tangibility, profitability and market-to-book ratio are important to determine the target capital structure across the book and market leverage. Meanwhile, the determinants of size, growth opportunity and distance influence the speed of adjustment through the varying adjustment costs. The study also shows that larger

companies do the adjustment more frequently than smaller companies because the issuance costs for large company is low.

Zhang and Kanazaki (2007) studied the capital structure in Japanese firms. They use a sample of 1,325 non-financial Japanese firms between 2002 and 2006. The determinants of capital structure investigated are profitability, tangibility, size, non-debt tax shields, and growth opportunity. The result shows that pecking order and trade-off theories could explain some part of capital structure. Profitability and growth opportunities are positively correlated to leverage which follow the pecking order theory, where as tangibility, size and non-debt tax shields follow the trade-off theory. They find that the pecking order model displays same movements between net debt retired and financial surplus. However, there are some weaknesses for both models because they fail to explain some of the determinants.

2.3 THEORITICAL LITERATURE

In this study, we focus on two (2) theories that are Pecking Order Theory and Trade-Off Theory to explain capital structure.

2.3.1 Pecking Order Theory

Pecking order theory is considered one of the most influential theories of capital structure. The pioneering theory was suggested by Donaldson in 1961. Developed Myers and Majluf (1984), further developed the theory, stating that there are two factors that affect the choices of finance: the degree of information asymmetry and agency costs. In the pecking order theory, internal financing is cheapest, followed by

the most expensive external financing but because of the difficult influence of information asymmetry, the firm would consider using retained earnings. Secondly, the firm would consider debt while there is low information asymmetry due to fixed obligations acting as an effective monitoring device. Lastly, external equity is used only as a last resort as it brings negative signaling effect.

Seppa (2008) who analyzes Estonian non-financial companies and Serrasqueiro and Ragao (2009) who study capital structure of Portuguese companies find the existence of pecking order theory of financial hierarchy which is internal funds would be considered first then external funds.

Firms in China are an ideal sample to test this theory because it is one of the countries that suffers from weak transparency and disclosure requirements and poor accounting standards, which increase the information asymmetries.

2.3.2 Trade-off Theory

Trade-off Theory states that the companies refer to finance their capital externally (i.e. debt) in order to make profit in the end. This theory refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Mohammed Amidu (2007) states that the static trade-off choice encompasses several aspects, including the exposure of the firm to bankruptcy and agency cost against tax benefits associated with debt use. Furthermore, according to Cassar and Holmes (2003), bankruptcy cost is a cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. One of the bankruptcy costs is liquidation costs, which represents the loss of value as a result of liquidating the net assets of the firm. This

liquidation cost reduces the proceeds to the lender, should the firm default on finance payments and become insolvent. Given the reduced proceeds, financiers will adjust their cost of finance to firms in order to incorporate this potential loss of value. Firms will, therefore, incur higher finance costs due to the potential liquidation costs.

The important purpose of this theory is to explain the fact that the companies usually are financed partly with debt and partly with equity. By using debt, the companies enjoy advantage on tax benefits on debt. Graham (2003) provides a useful review of the literature on the tax effects. Murray Z. Franky and Vidhan K. Goya (2007) state that dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein et al. (2001) observe that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. Strebulaev (2007) analyzes a model quite similar to that of Fischer et al. (1989) and Goldstein et al. (2001).

By testing the trade-off theory, the managers in industries in China can decide how much debt and how much equity to use by balancing the costs and benefits. With a good decision, the managers can maintain the shareholders wealth and company performance can be evaluated through the profit generated.

2.4 DEPENDENT VARIABLE

The dependent variable is the observed result of the independent variables being manipulated.

2.4.1 Leverage ratio

Leverage ratio is a general term to describe a financial ratio which able compares owner's equity to borrowed funds. Besides, it also gives an idea about how the companies finance its activities and measure the company's ability to meet financial obligations. According to Murray, Frank and K. Goyal (2003) there are several alternative definitions of leverage that have been used in the literature. Most studies consider some form of a debt ratio. These differ according to whether book measures or market values are used. They also differ in whether all debt or only long term debt is considered. Welch (2002) focuses on interest coverage ratio instead of looking at debt ratios. MacKay and Philips (2005) find that in their sample of North-American companies, firm's debt is higher in more concentrated industries. Eduardo K. Kayo and Herbert Kimura (2010) find that for a global sample the industrial organization may affect firm leverage in different ways depending on the country perspective.

2.5 INDEPENDENT VARIABLE

The independent variable is the variable representing the value being manipulated by the researcher and determines the change of the dependent variable. The independent variables in this present study are profitability, liquidity, size and growth. According to Eduardo K. Kayo and Herbert Kimura (2010), the

preponderance (important) of the studies on capital structure mainly focuses on the analysis of certain firm characteristics – e.g., profitability, tangibility, size, etc. – as determinants of leverage. This section would explain how the independent variables affect the capital structure of a firm with reference to the previous capital structure theories that have been stated.

2.5.1 Profitability

Profit is an important element for a company. The shareholder would expect high return in future since they do invest huge capital into the company. Managers need to make wise decision in order to maximize shareholder wealth. Bauer (2004) finds that there is no consistent prediction regarding the relationship between profitability on leverage. However, majority of researchers find a negative relationship leverage ratio between profitability.

Chen's (2003) result shows a negative relationship between leverage ratio and profitability. He conducts a study to explore the determinants of capital structure of Chinese-listed companies using firm-level panel data for the period 1995–2000. The reason for the result was that the bond market in China is still underdeveloped. The government-directed credit policy was limited to give long-term loan for listed companies. Furthermore, due to corporate governance problems and the lack of enforcement of company laws, individual shareholders do not have enough investment protection. Managers would therefore prefer equity financing than debt financing.

Financial companies also show the same result. Amidu (2007) use panel regression models to analyze capital structure of 19 qualified banks in Ghana during the period 1998 to 2003. The study indicates a negative relationship between profitability and leverage. Profitable banks have more internal reserve in order for them to depend less on external funds. They have the potential ability to use accumulated reserves for new investment. Amidu also highlights the importance to distinguish between short-term and long-term debt because short-term debt is negatively related to bank's profitability and long-term debt is positively related to bank's profitability.

On the other hand, Viviani, J.L. (2008) obtained a negative relationship between leverage ratio and profitability. She uses classical and panel techniques to test leverage of 410 French wine companies in the wine industry during the period 2000-2004. The result suggests that Pecking Order Theory seems to better explain the relationship between leverage ratio and profitability. Profitable firms can use their profit to finance their firm rather than accessing outside sources.

Karadeniz, Kandir, & Balçilar, and Onal, (2009) investigate factors affecting capital structure decisions of Istanbul Stock Exchange (ISE) lodging companies and use a dynamic panel data approach for five ISE companies from 1994 to 2006. They find a negative relationship between leverage ratio and profitability which is the lack of fund supply due to underdeveloped capital markets in Turkey. This limitations influence lodging companies to obtaining external financial sources. Lodging companies tend to use internal sources because of this limitation.

Serrasqueiro and Ragao (2009) studied capital structure of 428 listed Portuguese companies during the period of 1991 to 2004 by using panel estimators.

The sample did not include financial listed companies. They find that in Portugal, the listed companies prefer internal financing. This causes companies to contribute small supply of equity in Portuguese stock market. Portugal's bank-based systems have less available information about companies. This causes information asymmetry between companies' insiders and outsiders. These circumstances force the companies to rely on internal funds thus resulting in negative relationship between leverage ratio and profitability.

Although most of the empirical studies show negative relationship profitability and leverage but there are some studies that show positive relationship. For instance, Ooi (1999) using panel data studied the capital structure of 83 UK properties companies during the period of 1989 to 1996. He measures profitability as the firm's earnings before interest and taxes (EBIT) with total assets. He uses the preceding year's EBIT to measure profitability because he expects the retained earnings of the companies to be highly correlated with past profits. In his study, he finds that profitability and leverage ratio has a positive relationship, implying the trade-off theory concept. He also finds that the property trading and property development has high risk. Hence, the companies would prefer external funds in order to compensate for the higher risk such as bankruptcy risk.

Klapper, Sarria-Allende, and Sulla (2002) use the Amadeus database, which include financial information on over 97,000 private and publicly traded firms in 15 Eastern and Central European countries to examine capital structure of small and medium size enterprises (SMEs). Their result provides evidence of a positive correlation between leverage and profitability. This means that SME sector in Eastern Europe prefer to have external funds to increase their profit compared to large firms.

In other words, SMEs may have easy access to loan to expand their business, but they are only borrowing short-term debt which is the only type of financing they can access. The authors suggest that promoting the development and growth of firms in the SME sector in Eastern Europe may be a way to develop a stronger corporate sector in the future.

Based on theoretical pecking order theory forecast and empirical results, profitable companies have high capacity to self-finance and access less debt compared to less profitable companies. We thus formulate the following hypothesis:

H_{01} : There is a positive relationship between profitability and leverage ratio

H_1 : There is a negative relationship between profitability and leverage ratio

2.5.2 Liquidity

We select liquidity as one of the determinants in this study because it is not much studied by previous researchers. Liquidity ratio has positive and negative relationship on capital structure decision and the effect on capital structure is unknown as stated by Al-Najjar and Taylor (2008). A company which has higher liquidity ratio indicates the company is in a better financial position because the company is able to meet short term obligations. There are some arguments that the high liquidity company would have negative impact on its leverage ratio. For instance, Myers and Rajan (1998) point out that outside creditors would limit the amount of debt to the company because the agency costs of liquidity are high. They probably would have problem in their long term investment decision.

Omran (2009) studied Egypt capital structure and form characteristic across different industries (food, heavy industries, contracting and services). The data are extracted from the *Kompass Egypt Financial Yearbook 1998/99* and 122 companies under study. The researcher uses liquidity as a determinant because the long-term capital structure may be influenced by liquidity and the companies are obligated to meet interest payment. Finding shows a negative relationship between liquidity on leverage, meaning that the companies would use internal funds since they have plenty of cash inflow to finance their companies.

Ramlall (2009) explores capital structure for non-listed, non-financial firms in Mauritius. The data was retrieved from Registrar of Companies in Mauritius for about 450 firms for the period 2005- 2006. The result shows that liquidity has a negative impact on leverage. Managers use internal financing and are reluctant to borrow external funds. Ramlall also finds that the firms use internal funds since they are not expensive compared to external funds and they do not need to bear the higher costs of borrowings.

Al-Najjar and Taylor (2008) investigate about 86 Jordanian companies to observe capital structure during a 10 year period from 1994 to 2003 using panel data. The findings show a positive relationship between firm's liquidity and leverage and it can be explained by the trade-off theory. The high liquidity firms with more liquid asset access more debt compared to equity. The result also brings positive sign to investors because it indicates that the firms are able to pay obligations and face lower risk of default.

Valeriy (2007) examines only the effect of asset liquidity on capital structure by using data from a broad sample of U.S. public companies. The researcher finds that asset liquidity is positively correlated to leverage. Moreover, the analysis also shows that the relationship between asset liquidity with secured debt is positive, whereas, the relationship between asset liquidity with unsecured debt is negative. This means that managers with positive liquidity ratio on debt cannot dispose their assets compared to firms with negative liquidity ratio on debt. The findings suggest that costs of managerial discretion increase with asset liquidity because the managers would sell the assets cheaper while the asset liquidity is high and divert value from bondholders. If the liquidity ratio is low and the absence of private benefits, managers would not sell the assets and divert value from bondholder because the asset transformation is costly.

Based on theoretical pecking order theory forecast and empirical results, liquid companies have high capacity to self-finance and thus access less debt compared to less liquid companies. We thus formulate the following hypothesis:

H₀₂: There is a positive relationship between liquidity and leverage ratio

H₂: There is a negative relationship between liquidity and leverage ratio

2.5.3 Size

Size plays an important role in determining the capital structure of a firm. The more diversified the size of the firm, the less risk that will occur. Furthermore, larger companies have better access to credit market compared with small companies. This is because of the high performance of the larger companies with the strong internal funds. The relationship between a firm's value and the debt ratio remains unclear.

Theoretically, it has been argued that larger firms incorporate more debt in their capital structure. This is because larger firms tend to be more diversified and are therefore less prone to bankruptcy (Rajan and Zingales, 1995).

Wan Mursyidah (2005) studying the determinants of capital structure for Chinese listed companies look at the relationship between capital structure (as measured by leverage) and size, profitability, growth opportunities, assets structure, and non-debt tax shield. The data for balance sheet and income statement are taken from the Datastream from 1993 to 2003 covering all Chinese listed companies. Size and growth rate are found to be positively correlated with leverage, and liquidity and profitability are negatively correlate with leverage.

Ozkan (2001) stated that larger companies can diversify their business well. Therefore they face less probability of bankruptcy. On the other Titman and Wessels (1988) find a negative correlation between size and leverage because of the lower information asymmetries between insiders and capital market.

Al-Najjar and Tylor (2008) study the relationship between ownership structure and capital structure in emerging market from Jordan using panel data. The data for this analysis are drawn from the Jordanian Shareholding Companies Guide for the period from 1994 to 2003. 86 of non-financial Jordanian firms are selected. The dependent variable is leverage while the independent variables are dividend per share divided by earning per share, natural logarithm of the number of shares owned by institutional investors, percentage of institutional ownership, return on equity (ROE), tangible asset ratio, liquidity ratio, market-to book ratio, business risk and

size. The results show that there is a strong significant positive relationship between firm size and leverage. Other studies in the financial literature find the same result (Bhaduri, 2002; Booth et al., 2001; Rajan and Zingales, 1995). The significant positive relationship is because large firm can minimize the risk of their stock investment.

After reviewing previous studies, it is found that size is positively and significantly correlated with leverage. Therefore, the third hypothesis is:

H₀₃: There is a negative relationship between size and leverage ratio

H₃: There is a positive relationship between sizes and leverage ratio

2.5.4 Growth Rate

Firms experiencing substantial success and rapid growth require large infusions of capital. According to Titman and Wessels (1988) growth opportunities are capital assets that add value to a firm but cannot be collateralized and do not generate current taxable income. For this reason, the arguments put forth in the previous subsections also suggest a negative relation between debt and growth opportunities.

Jasim, Hameeda and Nadhem (2009) study the leverage of Saudi companies in a Zakat environment with prohibition of riba. Their samples consist of 53 firms obtained from the official website of the Saudi stock market for the period 2003 to 2007. Financial leverage is chosen as the dependent variable while the independent variables are profitability, growth opportunities, firm size, tangibility, ownership

structure, business risk, dividend payment and liability. According to the researchers, in order to maintain high profitability, the pecking order theory predicts that firms with a high proportion of their market value accounted for by growth opportunities should increase their leverage as investment opportunities exceed their retained earnings. The result from the study states that there is a positive relationship between expected growth and leverage. These results are robust regardless of the measure of the leverage used. These results offer further support for the pecking order theory.

Reinhard and Li (2010) investigate whether the existing capital structure target adjustment models are able to identify companies their capital structure adjustment towards an (unobservable) target based on evidence of Indonesia. The data taken from Indonesia listed companies from 1995 until 2007 exclude financial (SIC codes 6000-6999) and utility companies (SIC codes 4900-4999). The study uses four independent variables: tangibility, size, profit and growth, and capital structure as dependent variable. Based on results obtained, the authors state that one cannot be sure whether commonly used capital structure tests are really able to identify whether companies adjust their capital structures towards a certain target or whether economic fluctuations and financial market changes are behind the identified capital structure changes.

As the identification of the underlying reasons for capital structure changes has important implications for the validity of the different capital structure theories, especially the trade-off and pecking order theory, the "horse race" between the last two theories seems still to be open. According to D'Mello and Farhat (2008) the moving average capital structure measures are the best available proxies for a company's target capital structure measure.

Chen (2003) explores the determinants of capital structure of Chinese-listed companies using firm-level panel data for the period 1995–2000. He finds a positive relationship exists between growth opportunities on leverage but trade-off model cannot be applied to explain the relationship. However, there are some reasons to explain the phenomena. The first reason is that the majority of listed firms in China are manufacturing and heavy industry sectors. They possess less intangible assets like goodwill, R&D and advertising and thus have limited growth opportunities. This also shows that Chinese firms have low technology level. The second reason is that the equity market recognizes the value of growth opportunities through the company's share price. China is a high capitalization country. The listed firms that have potential growth opportunities and have been recognized by the capital market are easy to get loan because banks are willing to issue long-term debt for highly levered firm in order to finance their growth opportunity.

Abor & Biekpe (2009) examine the determinants of capital structure decisions of 160 small and medium enterprises (SMEs) in Ghana during 1998 to 2003. The result shows that growth is positively associated with long-term debt and negatively associated with short-term debt. The finding also explains that SME firms would borrow long term debt if there is a growth opportunity for the firms. In other words, Ghanaian SMEs with high growth require more external financing to finance their growth. However, SMEs would borrow short term debt if there is a conflict between the owner-manager and outside lenders.

H₀₄: There is a negative relationship between growth rates and leverage ratio

H₄: There is a positive relationship between growth rates and leverage ratio

2.6 THEORITICAL FRAMEWORK

Voluminous research on capital structure concentrates on size, profitability and others but not much of empirical studies test liquidity and growth rate. Based on this, the framework of tis current study is constructed to identify relationship between capital structure factors (which also include liquidity and growth rate) and leverage ratio.

Figure 1 below shows the capital structure as dependent variable, measured by leverage ratio; while the independent variables are profitability, liquidity, size and growth rate of Chinese industrial companies.

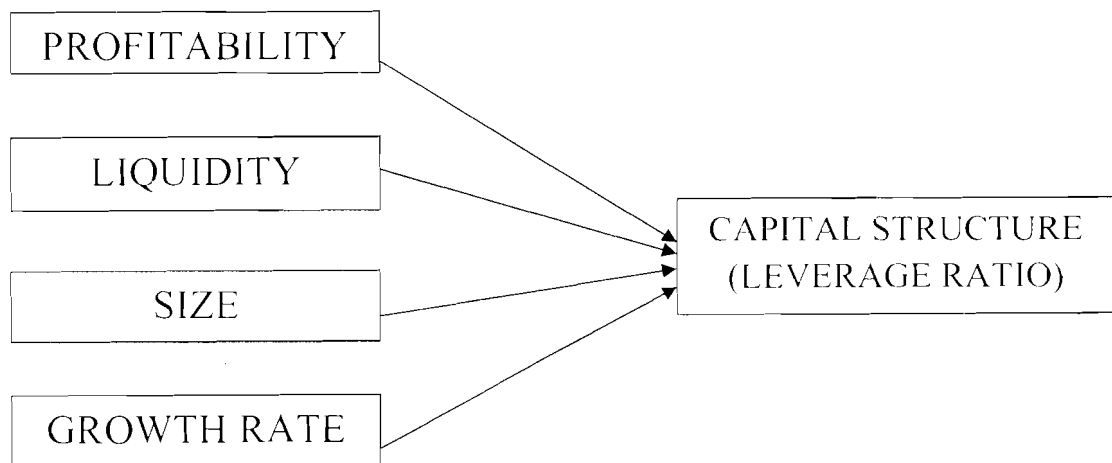


Figure 1: Research Framework

2.7 CONCLUSION

There are two main theories in the literature (pecking order theory and trade-off theory) to test research on capital structure. Based on previous studies, there are different determinants of capital structure that have been tested by researchers, with

different results obtained for some studies in different countries. These results also show the different characteristic of a firm's choice of capital structure.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter presents the methodology and procedure applied in measuring the variables used by the researcher. The chapter provides detailed steps of the way to conduct the analysis of the leverage ratio for 967 China's companies listed in Shang Hai Stock Exchange main board. This chapter covers research problem statement, research framework, research design (population, unit analysis, sampling frame, sampling technique, measurement and data analysis).

3.2 RESEARCH DESIGN

3.2.1 Population

The study consists of all the 967 China's companies from every industry listed in Shang Hai Stock Exchange (SSE) market. SSE indices are the authoritative statistical indices widely followed and used at home and abroad to measure the performance of China's securities market. SSE Index Series consists of 75 indices, including 69 equity indices, 5 bond indices and 1 fund index, covering several series such as market-size, sector, style, strategy and thematic series and is a continuously improved index system.

3.2.2 Unit of analysis

The study tests 967 China companies which are listed on the SSE main market. The sample includes the industrial sectors according to the classification of SSE. The researcher covers all of the industrial categories under consideration.

3.2.3 Sampling frame

There are 967 out of 967 companies which have full data for analysis from 1998 to 2010.

3.2.4 Sampling Techniques

The samples are based on secondary data which selected from the main market at SSE. The technique used in this study is simple random sampling which is every element in the population has a known and equal chance of being selected.

3.2.5 Measurement

In this study, the focus is given on the measurement of the dependent and independent variables examined.

3.2.5.1 Dependent Variable (Leverage Ratio)

In this study, the dependent variable is leverage ratio. The ratio is related to tangibility of assets and volatility of a firm's earnings. The aggregate of leverage was adopted by Suto (2003), Deesomsak (2004) and Dzolkarnaini (2005). The formula of leverage ratio used is:

$$\text{Leverage Ratio} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

3.2.5.2 Independent Variables

In this study, we examine are four (4) independent variables: are profitability, liquidity, size and growth rate.

3.2.5.2.1 Profitability

The trade-off theory states that a profitable company has the ability to pay back the debt, thus it can borrow more. While in pecking order theory, the company with higher profitability prefers internal financing to debt.

$$\text{Profitability} = \frac{\text{EBITA}}{\text{Total Asset}}$$

3.2.5.2.2 Liquidity

Liquidity measures the ability of the company to convert an asset to cash quickly. The higher liquidity ratio indicates the company is in better position to meets its short term obligations. Suhaila, Mat Kila and Wan Mahmood (2008) measurecurrent ratio as:

$$\text{Liquidity} = \frac{\text{Current Asset}}{\text{Current Liability}}$$

3.2.5.2.3 Size

We use total asset in order to measure size because total asset has influence to determine the leverage of the company. Following Abor (2007), size is measured by log of the total assets. This measure is also similar to that used by Kyereboah and Coleman (2007), Gongmeng Chen *et. al* (2008) and Victoria Krivigirsky *et. al* (2009).

$$\text{Size} = \text{Log of Total Asset}$$

3.2.5.2.4 Growth Rate

Growth rate depends on the theory used by the company. If the company used pecking order theory, the increase in demand for new funds increases will also increase s the growth of funds.

$$\text{Growth Rate} = (\text{ROE} (1 - \text{Payout Ratio}))$$

3.2.6 Data Analysis

In order to analyze all the data taken from the main market of Shang Hai Stock Exchange, we use Statistical Package of Social Science (SPSS) software. Furthermore, to investigate the determinants of capital structure, we select specific methods to analyze and interpret the result. The methods are as per below:

3.2.6.1 Descriptive Analysis

The descriptive analysis includes the mean, median and standard deviation from the data taken from 1998 to 2010. An alpha level of 0.05 was used for the entire statistical test.

3.2.6.2 Pearson Correlation

Pearson correlation describes the relationship (positive or negative) between two (2) variables. In this study, the dependent variable is leverage ratio and independent variables are profitability, liquidity, size and growth rate. In this test, we also use a confidence interval of 95% which is considered acceptable for research of this nature. .

3.2.6.3 Multiple Regression Analysis

Regression analysis helps one to understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. The regression model includes all the variables are shown below:

$$LVG = \alpha + \beta_1 \text{PROF} + \beta_2 \text{LIQD} + \beta_3 \text{SIZE} + \beta_4 \text{GROW} + \epsilon_{it}$$

Where:

LVG = Leverage Ratio

α = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients to be estimated

PROF	=	Profitability
LIQD	=	Liquidity
SIZE	=	Size
GRO	=	Growth Rate
ϵ_{it}	=	The error term

$\beta_1, \beta_2, \beta_3, \beta_4$ are the slopes that shows the relationship of leverage ratio to profitability,

liquidity, size and growth rate respectively.

ϵ_{it} is the random error term which is the part of dependent variable that changes randomly.

3.2.6.4 Analysis of Variance (ANOVA)

Analysis of variance (ANOVA) is a collection of statistical models which the observed variance in a particular variable that is partitioned into components attributable to different sources of variation. In its simplest form ANOVA provides a statistical test of whether or not the means of several groups are all equal, and therefore generalizes *t*-test to more than two groups.

3.3 CONCLUSION

In this study, a sample of 967 companies selected for all the industrial sectors is analyzed. The time frame of the study is twelve years which is from 1998 to 2010

taken from the main board of SSE. The data is obtained from DATASTREAM and analyzed using the SPSS.

CHAPTER 4

ANALYSIS OF FINDINGS

4.1 INTRODUCTION

This chapter provides the findings and the analysis of the factors affecting stock returns of 967 industrial China companies listed on the main board of Shanghai Stock Exchange. The relationships between the independent and dependent variables are explained in this chapter. Based on the previous chapter, the multiple regressions technique is used to analyze the determinants of capital structure. We examine the correlation analysis, coefficient of determination, standard error of coefficient (t-test), analysis of variance (f-test), and Durbin Watson test.

4.1 Regression Diagnostics

In regression analysis, there is a multicollinearity, which always causes the standard errors of parameter estimates to be large. In addition, estimated parameters are not stable: a small change in data will result in dramatic change in the estimated parameters. So we need to do the diagnostics for the independent variables in my regression model.

Table 4.1 MultiCollinearity

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.018	.007		2.451	.014		
	Profitability	-3.62E-005	.000	-.002	-.261	.794	0.543	1.213
	Liquidity	-.008	.001	-.100	-10.736	.000	0.606	1.073
	Size	.019	.001	.273	29.317	.000	0.765	1.446
	Growth	-6.32E-008	.000	-.005	-.580	.562	0.366	1.678

a Dependent Variable: Leverage

The VIF here means variance inflation factors. As the table shows, the VIF of all independent variables are between 1 and 2, which is much smaller than 10. In the other words, the standard errors are as little as if there's no collinearity. After the diagnostic, I can release my concern and continue to do the following works.

4.3 DESCRIPTIVE STATISTIC

The sample represents all the 967 industrial companies listed on SSE from 1998 to 2010. All these companies have complete data needed for this study's analysis. Table 4.1 shows the summary statistics for the variables used in our analysis. Descriptive statistics contains the mean, median, and standard deviation from year 1998 to 2010.

Table 4.2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Leverage	11024	.00	23.22	.1856	.40185
Profitability	11024	-7.9162	2786.8750	.319573	26.5570761
Liquidity	11024	.0000	252.7381	1.790531	5.0154197
Size	11024	.0000	19.6300	9.547028	5.7373897
Growth Rate	11024	-2940308.4390	1292924.3620	75.099676	33766.4695695
Valid N (listwise)	11024				

Table 4.1 shows that the Chinese industrial companies' means for profitability, liquidity, size and growth rate are 0.3196, 1.7905 and 9.5470 and 75.0997 respectively. The highest mean obtained is for growth rate and the lowest mean is profitability. Standard deviation indicates the wide variability and diversity of the data. A low standard deviations mean the data is close to mean, whereas high standard deviations mean that the data are spread out over a large range of values. Profitability and growth rate show high standard deviations while liquidity and size have the lowest standard deviations.

4.4 PEARSON CORRELATION

Table 4.3: Correlations

		Leverage	Profitability	Liquidity	Size	Growth
Leverage	Pearson Correlation	1	-.005	-.052(**)	.255(**)	-.005
	Sig. (2-tailed)		.567	.000	.000	.567
	N	11024	11024	11024	11024	11024
Profitability	Pearson Correlation	-.005	1	.000	-.011	.000
	Sig. (2-tailed)	.567		.964	.232	1.000
	N	11024	11024	11024	11024	11024
Liquidity	Pearson Correlation	-.052(**)	.000	1	.175(**)	.003
	Sig. (2-tailed)	.000	.964		.000	.727
	N	11024	11024	11024	11024	11024
Size	Pearson Correlation	.255(**)	-.011	.175(**)	1	.001
	Sig. (2-tailed)	.000	.232	.000		.941
	N	11024	11024	11024	11024	11024
Growth Rate	Pearson Correlation	-.005	.000	.003	.001	1
	Sig. (2-tailed)	.567	1.000	.727	.941	
	N	11024	11024	11024	11024	11024

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

Pearson correlation can determine the correlation between each of the predictor variable. The range value of correlation is from -1 to +1. A value of -1 indicates a perfect negative relationship between the two variables whereas a value of +1 indicates that there is a perfect positive correlation between the variables. A close value to -1 or +1 indicates a strong correlation between the variables. The closer the value to 0, the weaker is the correlation. Meanwhile, a value of 0 indicates that there is no correlation that exists between the variables. Based on table 4.2 each hypothesis tested in this study can be explained as below:

4.5 MODEL SUMMARY

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.274(a)	.075	.075	.38657

a Predictors: (Constant), Growth, Profitability, Liquidity, Size

Based on Table 4.3, we examined that the adjusted R^2 (coefficient of determination) value for the model developed in this study is 0.075. The value indicates that only 7.5% percent of the variation in capital structure can be explained by the changes in all the independent variables in the model.

The low value of adjusted R^2 might indicate the low explanatory power which may be attributable to the only four variables (growth, profitability, liquidity and size) applied in this study in explaining China listed companies' capital structure. But as James A. Colton and Keith M. Bower (2002) found that Small R^2 doesn't indicate the

relationship between data is no meaningful. From the points of their research, large R^2 doesn't make sense if there's no significant effect between variables, and small R^2 make sense if there's significant effect between variable. So in my research, even the R^2 is small, but there're still two independent variables are significantly correlated with the dependent variable, so these two variables are still convincing.

4.6 ANALYSIS OF VARIANCE (ANOVA)

Table 4.5: ANOVA(b)

Mode		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	133.394	4	33.348	223.162	.000(a)
	Residual	1646.632	11019	.149		
	Total	1780.026	11023			

a Predictors: (Constant), Growth, Profitability, Liquidity, Size

b Dependent Variable: Leverage

Analysis of variance is used to test the hypothesis that the variations in the independent variables explain a significant proportion of the variation in the dependent variable. Table 4.4 shows that the F value of 223.162 is significant at the 0.000 level. This means that the 0.075 of the variance (R-square) in China's industrial companies' leverage has been significantly explained by the four independent variables.

4.7 MULTIPLE REGRESSIONS EQUATION

Table 4.6: Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.018	.007		2.451	.014
	Profitability	-3.62E-005	.000	-.002	-.261	.794
	Liquidity	-.008	.001	-.100	-10.736	.000
	Size	.019	.001	.273	29.317	.000
	Growth	-6.32E-008	.000	-.005	-.580	.562

a. Dependent Variable: Leverage

1) Hypothesis 1

There is a negative relationship between leverage and profitability with an insignificant value of 0.567. Hence we accept the alternative hypothesis H_1 and reject the null hypothesis H_{01} . This finding clearly shows that profitability has no influence on China listed industrial companies' structure.

2) Hypothesis 2

There is a negative relationship between leverage and liquidity with a significant value of 0.000. Hence we accept the alternative hypothesis H_2 and reject the null hypothesis H_{02} . In other words, leverage and liquidity is negatively but significantly related with a weak relationship ($r = -0.052$).

3) Hypothesis 3

There is a positive relationship between leverage and size with a significant value of 0.000. Hence we accept the alternative hypothesis H_3 and reject the null hypothesis H_{03} , meaning that, leverage is positively and significantly related to size with a weak relationship ($r = 0.255$).

4) Hypothesis 4

There is a negative relationship between leverage and growth rate with an insignificant value of 0.567. Hence we accept the null hypothesis H_{04} and reject the alternative hypothesis H_4 . This finding clearly shows that growth rate has no influence on China industrial listed companies' structure.

The coefficient would help us to see which variables are important in explaining the variance in the company's leverage. Looking at the column Beta under Standardized coefficient, we see that the highest number in beta is size which is significant at the level 0.000 and the lowest beta is liquidity which is significant at the level 0.000. It also shows that the other two independent variables (profitability and growth rate) are insignificant. Size is showed to have a positive beta t indicating that when there is a 1 percent increase in size, there is a 0.273 increase in the company's leverage provided that other predictors are held constant. Liquidity, it is shows a negative beta that indicates that when liquidity increase by 1 percent, the company's leverage decreases by 0.1 percent. The following multiple regression equation is thus obtained from the SPSS output:

$$LVG = a - 0.002PROF - 0.1LIQD + 0.273SIZE - 0.005GROW + \epsilon_{it}$$

4.8 CONCLUSION

Empirical results provide explanation on the sample descriptive statistics and mean comparison between leverage ratio and independent variables, while the Pearson correlation analysis determines the relationship between leverage ratio with

profitability, liquidity, size and growth. Our results show that liquidity and size are negatively and positively significantly influence capital structure of China industrial companies.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This paper examines the determinants of capital structure for all industrial firms listed in Shang Hai Stock Exchange during a twelve year period from 1998-2010. The data is derived from financial statements of all the 967 companies from the industry sector. The dependent variable is leverage ratio and the independent variables are profitability, liquidity, size and growth.

Based on the result, size, as measured by the log of total asset is positively related to total debt, a finding which is consistent with Bhaduri, (2002); Booth et al., (2001); and Rajan and Zingales,(1995). The result imply the adoption of the trade-off theory by the Chinese companies which indicating that larger firms are dependent on debt financing compared to smaller firms. The reason could be that larger firms need more debt financing in its capital structure to expand their business. Ozkan (2001) finds that larger companies can diversify their business and face less probability of bankruptcy. Therefore, bank would give financing to larger firms which have lower default risk.

Secondly, the results between liquidity of the firms and its leverage ratio show a significant negative relationship which is also consistent with the results of Omran (2009), Ramlall (2009), and and Kila and Mahmood (2008). Firms with high liquidity tend to use internal financing (equity) first and it explains that firms generally finance their activities by following the pecking order theory. Firm with high liquidity is able to generate high cash inflows and in turn, can employ the excess cash inflow to finance their operations and investment activities. Therefore, they use less debt

compared to those firms that have low liquidity. Low liquidity firms tend to go for debt in financing their activities.

Although profitability is very important to a company, but our result shows that profitability has no significant relationship with how much debt the company uses. Our result is similar to the study of Ohlson [2002] (Who measures the probability of bankruptcy, operating cash flow and age). Ohlson finds that firms that use more short-term debt than long-term debt to finance their business have higher probability of bankruptcy. Ohlson also indicates that older firms would use more long term debt to finance their business because they have large capital expenditure programs. However, profitable firms do not need long term debt to finance their business since they have more cash inflow. Moreover, the relationship between profitability and debt ratio is also influenced by the type of industry the firms are in..

The last variable is growth rate. As our finding shows, growth rate is not significant with those Chinese companies tested. Our result is in line to the discussion in Titman and Wessel (1988) The authors state that growth opportunities are capital assets that add value to a firm but cannot be collateralized and do not generate current taxable income. By considering the acquisitions of new fixed assets to increase growth rate, companies would probably choose to finance their investments with a lower cost of capital. For this reason, our research suggests that there is no clear evidence to prove an exact relationship between debt and growth opportunities in Chinese listed companies.

Our results do not provide support for an effect on leverage ratio arising from profitability and growth. However, our model does not support the suggested theories

because the indicators used in this study do not adequately reflect the nature of the attributes suggested by theory. If a stronger relationship between dependent variable and independent variables can be developed, then the methods suggested in this paper can be used to test more precisely the extent of the theories of optimal capital structure.

Our study also implies that Chinese firms are not too concerned with the tax-shield benefits derived from both debt and non-debt tax-shields. Liquidity is found to be significant and negatively relationship to leverage ratio. The Chinese managers would issue equity than debt if their liquidity is high to raise their fund consistent with findings of Lipson and Mortal (2006) who do not account for the effect that leverage has on liquidity.

According to the senior work of Modigliani and Miller (1958) on capital structure, there are three conflicting theories of capital structure: static trade-off, pecking order, and agency cost theories. The static trade-off theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the advantage of net tax debt financing balances leverage include costs such as financial recession and bankruptcy, holding firm's assets and investment decisions constant (e.g., Baxter, 1967 and Altman 1984, 2002). According to this theory, reporting equity means staying away from the appropriate and that ought to so be considered bad news.

According to Myers (1984), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to achieve it. Myers (1984), states that managers would be unwilling to issue equity if they feel that it is going to

lower the company's value in the market. Finally investors may react negatively to an equity issue and to management who is unwilling to issue equity.

The findings of this current study show that there is a need for better understanding of financing behavior in China Listed Companies. Future research should include more variables, more samples, longer period of observation and differentiate between long and short term debts.

Based on the finding, less liquid companies tend to have higher leverage as indicated by the negative relationship between liquidity and leverage.

Since this study only has four independent variables, the results are only indicative and cannot be used as wholly representative of the determinants of capital structure of industrial companies in China. Hence, in the future research, more variables will be chosen to determinate the capital structure.

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