Survey on the Research of Corporate Capital Structure in China

上海財経大学金融学院 副教授  郭 麗虹
開発金融研究所 国際金融グループ 専門調査員 劉 群

要 旨

最近、中国企業の資金調達構造の問題が注目を集めている。学術的な関心に加え、政策的な意義も大きい。現在進行中の有企業民営化を促進するため、また先進諸国による金融市場の自由化を求めるプレッシャーに応えるため、中国は株式市場を拡大させ、金融セクターの市場化改革を進んでいる。こうした中で、金融の発展が中国の経済成長に与える影響は、政策的な関心事項となっている。その影響を発揮するためには、中国企業に特徴的な資金調達パターンと構造に関する系統的な理解が必要である。本稿は、中国で実際に観察されている企業の資金調達パターン、またそれをどの程度理論によって解釈できるのかを取り上げた研究をサーベイしたものである。さらに、企業資金調達構造に影響を与える決定要因を探る研究も対象にサーベイを行っている。

ABSTRACT

Corporate capital structure in China has recently attracted a considerable amount of attention. In addition to its importance from an academic perspective, the issue of corporate capital structure is particularly significant from a policy perspective. In order to facilitate the ongoing privatization of state-owned enterprises as well as to respond to the pressure from advanced countries to liberalize its financial markets, China is now in the process of expanding its stock markets and conducting market-oriented reforms of its financial sector. The central policy concern is the impact of financial development on economic growth in China. An investigation of this impact requires a systematic understanding of the corporate financing patterns and corporate capital structure peculiar to China. This survey summarizes the actual capital structure patterns that are observed in China and the extent to which it is possible to explain these stylized facts through theoretical concepts. Further, it reviews the determinant factors that impact capital structure.

INTRODUCTION

The continued strong economic growth that has taken place for the past 25 years in China has long attracted the interest of researchers, investors, and policy-makers worldwide. Moreover, the sustainability of China’s economic growth has even been considered as the possible driving force for the long-term growth of the world economy. Almost all the issues related to the Chinese economy have recently come to the fore; however, the issue of corporate capital structure in China has been viewed with great
concern in recent times. Addition to its importance from an academic perspective, the issue of corporate capital structure is particularly significant from a policy perspective. In order to facilitate the ongoing privatization of state-owned enterprises as well as to respond to the pressure from advanced countries to liberalize its financial markets, China is in the process of expanding its stock markets and conducting market-oriented reforms in its financial sector. The central policy concern is the impact of financial development on economic growth in China. An investigation of this impact requires a systematic understanding of the corporate financing patterns and corporate capital structure peculiar to China.

Although a few empirical studies have been conducted on the capital structure of corporations in China, these have not been systematic enough to provide empirically established answers to some basic but important factual questions: How do Chinese corporations finance their dramatic growth? Are the financing patterns of Chinese corporations similar to those of corporations in other developing or advanced countries, either at present or at an earlier stage of development? To what extent do Chinese corporations rely on internal sources to finance their investments, as opposed to external sources such as debt and equity? Are there structures of corporate finance that are particularly conducive to economic development and supportive of long-term growth? The difficulty in providing answers to these questions partially arises from the complexity of ownership and the availability of data in China. However, on the basis of existing research, it is necessary to survey what has and what has not been accomplished with regard to this issue.

This study surveys the capital structure patterns that actually exist in China and the extent to which it is possible to explain these stylized facts through theoretical concepts. This will help to clarify what a viable theory of capital structure should be capable of explaining. Further, this will provide us with an objective criterion for judging the usefulness of various theories that have been put forth over the years in order to explain actual corporate behavior. This study also reviews the determinant factors influencing capital structure.

This paper is organized as follows: Section I describes the corporate financing patterns and capital structure in China; Section II analyzes factors that impact corporate capital structure in China; The last section provides some concluding remarks.

I. CORPORATE FINANCING PATTERNS AND CAPITAL STRUCTURE IN CHINA

A. General Views

Following Modigliani and Miller’s seminal work in 1958 (hereafter, M&M model), significant theoretical progress has been made in terms of corporate capital structure and financial economics. The central point of the M&M model is “that the market value of any firm is independent of its capital structure and derives solely from the stream of operating cash flows its assets generate.” This is based on the assumption that the capital market is fully idealized, that is, there are no transactions costs associated with finance, there is perfect competition, and there is no bankruptcy. Finance researchers have made significant improvements to the M&M model since 1958 in order for it to better reflect objective reality. This has been done by progressively incorporating realistic elements into the model, such as bankruptcy costs, agency costs, and asymmetric information. These researchers conducted numerous empirical
analyses; however, these were mainly based on the data of developed countries, such as the United States, the United Kingdom, Japan, Germany, France, and Canada. Compared with the financial systems in developed countries, the Chinese financial markets and institutions are not yet mature due to their short history, and the same problem can be observed with respect to research on the financial system in China. However, researchers have realized the urgency to investigate the financing patterns and the capital structure in China, since Chinese corporations have a growing number of available choices to finance their investments. This is the result of the continuous improvement of the market-oriented regime and the distinct development of reforms associated with the financial system.

Researchers have conducted theoretical and empirical investigations of the financing patterns of corporations in China by focusing on ownership, ownership structure, and financing costs, respectively. They found that the state is the controlling shareholder of most listed firms in China. However, the state is an abstract concept; it cannot function as a concrete controlling shareholder in terms of effectively monitoring and predominating firms. The absence of any real shareholders in these firms results in a serious “insider control” problem. In other words, the operating target of companies is more aligned with managers than with shareholders.

Moreover, the listed firms in China prefer equity to debt financing. This is because, firstly, dividends on common stock are arbitrary, that is, equity financing is not an enforced obligation that has to be repaid by firms. Secondly, the corporate bond market in China is not well developed. Thirdly, managers are risk-averse.

With regard to the factors influencing capital structure, researchers theoretically and empirically analyzed listed firms in China from the viewpoints of macroeconomics, variety of characteristics of corporate management, and corporate governance. However, the results of these analyses were not in consensus.

B. Corporate Financing Patterns and Capital Structure in China

There are two distinct theories on corporate financing patterns. One theory implies that the very strict criteria for proceeding with an initial public offering (IPO) and issuing new shares in China results in an excessive demand for stocks as compared to their supply; this, in turn, reduces the cost of equity financing. In addition, other factors—such as firm size and profitability—being equal, firms with debt financing have to make interest payments and repay the principal, leading to a decrease in their after-tax profits. On the other hand, it is rare for listed firms in China to pay dividends to their shareholders; equity financing can be used to avoid liquid pressure induced by debt financing. Therefore, listed firms may give preference to equity financing over debt financing.

The second theory suggests that corporate debt is primarily financed by banks; further, since the interest rates of banks are universally stipulated by governments, these rates are not sensitive to corporate leverages. This implies that firms in China do not have to pay extra agency costs for debt financing. Raising leverage will not increase the additional debt financing cost, but instead will result in monitoring mechanisms being incorporated in firms.

Consequently, what are the pretences of Chinese corporations when making financing decisions? Are there any differences between listed and unlisted firms in terms of their financing structures? A considerable number of studies have been conducted on this issue. We will summarize the main findings of these previous studies.

Wen, Hong (1999) investigated the financing
patterns of listed firms listed on both the Shanghai and Shenzhen Stock Exchange markets. He found that equity financing, particularly rights issue that is restricted to existing shareholders, is the most common method for raising capital. The study points out that the income of managers of listed firms comprises monetary and non-monetary constituents, in other words, the perks associated with having controlling power. With regard to the monetary income of managers, this amount is limited and not directly linked to corporate performance. Since non-monetary income forms a key component of a manager’s earnings, the loss of this form of income in case of a firm’s bankruptcy, provides managers with the incentive to avoid failure. As a result, managers prefer equity financing over debt financing since the former does not require the payback of principal and interest.

Shi, Donghui (2000) studied the capital structure and financial resources of firms listed on the Shanghai Stock Exchange using data from 1996 to 1999; it was found that the debt to asset ratio (i.e., the ratio of total liabilities to total assets) of these firms on average was lower than the nationwide average and that it exhibits a decreasing trend during the sample period. However, the average ratio of current liabilities to total liabilities for these listed firms was in excess of 78%, 12% higher than that of firms located across the country. The ratio of total liabilities to total assets for these listed firms was almost on par with the national average. This suggests that the insufficiency of liquidity for listed firms in China forces them to rely excessively on short-term liabilities in order to continue operating. Long-term liabilities merely account for 6.2% of the total long-term capital sources of these listed firms and primarily consist of long-term loans payable. Equity financing is the most important element in financing and accounts for 52.6% of the total long-term capital sources. This study suggests that compared to the “hard constraint” of debt financing, where firms have to pay back the principal and interest, equity financing is characterized by a “soft constraint” and is regarded as a low-cost source of capital that does not have any claims toward principal and interest. However, in the context of “insider control,” equity financing does not help exercise governance over management. In addition to this factor, the underdevelopment of the corporate bond market and the imperfect functioning of commercial banks also contribute to the heavy reliance of listed firms in China on equity financing and the decline in the debt to asset ratio.

Huang, Shaoan and Gang Zhang (2001) examined the nationwide financing patterns of listed firms from 1992 to 2000. They found that from 1993 to 1997, the proportion of equity financing to financial sources remained high, and in particular, it increased to as high as 73% in 1997. On the other hand, the years 1998 and 1999 witnessed high debt financing as compared to earlier; this source accounted for 73% and 76% of all financial sources in these years, respectively. The reason for this sudden change was that before 1997, all listed firms were free to raise as much capital as necessary through rights issue; however, after 1997, the government implemented a policy aimed at ending this enclosure of money. According to the new policy, firms that could raise capital through rights issues had to meet three conditions. (1) Their return on equity (ROE) had to be maintained at over 10% for a period of three years continuously. (2) There must be a gap of at least one year between every rights issue. (3) A new rights issue must be less than 30% of the existing equity capital. These regulations were relaxed and modified in 1999; the average ROE for a three year period had to be above 10% or not less
than 6%. Subsequently, in 2001, the average ROE for a three year period had to be no less than 6%. Hence, since 1997, there was a dramatic decrease in the number of listed firms that could meet the criteria for new rights issues; therefore, the ratio of rights issues to total capital sources decreased. However, after 2000, a larger number of listed firms issued new shares to raise capital. Since there is no limitation imposed on the issuing of new shares, firms can determine the extent of the issue based on their financial requirements. In terms of progress, equity financing becomes the first priority for listed firms to raise capital, and the ratio of equity financing increases accordingly.

Their research shows that a considerable number of listed firms pay a very small amount of dividend or no dividend at all. Only 30% of the total listed firms declared their dividend payments from 1996 to 1999. In 1999, the number of listed firms that paid dividends was 239; this number increased by more than double in 2000 – 605 firms. However, the average dividends paid decreased 19%. Given that the ratio of share price to earnings per share (P/E ratio) is 60, the real cost (the rate of processing fee + the rate of dividends) of equity financing is merely 2.42%, which is much lower than that of debt financing. On the other hand, since the state and state-owned corporations own a majority of shares, this creates the problem of insider control. Adding to this problem, ambiguous responsibilities among the board of directors, the communist party of committee and the management of listed firms, the predominance of inside directors on the board, and the scarcity of an entrepreneur market mechanism lead to insiders (managers) being beyond the scope of control of shareholders and the market. Generally, insiders are single-handedly capable of dominating a firm, choosing the financing method, and determining the capital structure according to their needs. These managers can secure a large number of low-cost funds from shareholders without any constraints from the latter and the market; however, insiders do not necessarily utilize this money efficiently. These authors suggest that this is the reason for listed firms’ preference for equity financing over debt financing.

Yang, Xinquan (2002) analyzed the impact of capital structure on governance and indicated that the signaling effect of capital structure does not exist in China, that is, equity financing is a kind of cheap capital resource. Therefore, equity financing will not only not influence the control of management over the firm but will also reinforce the control of the management. As a large shareholder, the state is an abstract entity; it cannot monitor a firm. However, other shareholders are essentially small and spread across the market. Due to the free-rider problem, small shareholders are not motivated to monitor the firm actively. This results in insider control of the management which, in turn, intensifies the preference for equity financing.

Liu, Zhibiao (2004) indicated that a low ratio of shares owned by the management to the total number of shares can also result in a low debt to asset ratio. Using the Wireless Nodes Database (WiND database), this study investigates the shareholdings of the management from 2001 to 2005; it was found that the ratio of their shareholdings was relatively low – an average of only 0.16%. In particular, the ratio is very low for state-owned listed firms (only 0.05%) compared to that for privately owned listed-firms (0.43%). Moreover, during the sample period, the ratio for all listed firms showed a decline. The author suggests that a lesser stake in the shareholding by the management induces the preference for equity financing among listed firms. The author also highlighted that the income of the managers of listed firms consists of monetary and non-monetary components. Due to the low proportion of shareholdings by the
management and the shortage of sound incentive mechanisms in listed firms, the monetary income of managers remains low. A greater proportion of a manager’s income is non-monetary, and constitutes perks associated with having controlling power. Managers are averse to debt financing as this could increase the possibility of bankruptcy and liquidation of firms. Consequently, equity financing without mandatory claims on principal and interest becomes the optimal choice for managers to meet financial needs.

Wu, Xiaoqiu (2003) investigated the capital structure of unlisted firms in China and found that among the financial sources of unlisted state-owned firms, approximately 70% of financing was derived from bank loans, 29% from retained earnings, and only 1% from direct financing through the capital market. Unlisted state-owned firms cannot use equity financing, and it is quite difficult for them to issue bonds. Therefore, they have to resort to internal sources and bank loans to raise funds. The author suggests the following reasons for unlisted state-owned firms borrowing that much: first, these firms have very low profit margins; second, these firms bear heavy social responsibilities in terms of welfare expenditure meant for retirees and compliance with the governmental regulations associated with investing in particular projects; third, and most importantly, is the implementation of the policy that advocated a “change from allocation to loan-out” in 1983. According to this policy, the conversion of the corporate finance mechanism of unlisted state-owned firms did not significantly alter the internal corporate governance structure of firms (e.g., appointment of the CEO by the government and the incentive mechanism of employees). Further, the capital accumulation mechanism of unlisted state-owned firms is itself seriously flawed and results in these firms not being able to save sufficient internal funds. To continue operating, these firms have to rely heavily on bank loans.

Wu, Xiaoqiu (2003) also suggested that in China, the capital structure of unlisted privately owned firms is more practically sound compared to unlisted state-owned firms. Among the financial sources of unlisted privately owned firms, the so-called internal funds such as inherited wealth, savings, and joint capital investment account for 65.2%, whereas external funds such as bank loans account for only 10.7%. There are several possible reasons for this structure. First, bank loans to unlisted privately owned firms are generally on a short-term basis; second, in China, the listing requirements to be met by firms with respect to an IPO are extremely rigid – privately owned firms, particularly small and medium-sized enterprises (SMEs), find it difficult to meet the criteria to gain access to the capital market, that is, they are excluded from the capital market on the grounds of policy.

Guo, Lihong (2005) analyzed the capital structure of Chinese firms and found that bank loans and direct financing account for 90% and 10%, respectively, of the external funds raised by firms. However, corporate bonds, as part of direct financing, rose from 0.5% to 1% in 2001, while equity financing remained, for the most part, below the 10% level, except in 1997 and 2000. This study suggests that although the Chinese financial system that featured the allocation of public finance through a bank mechanism has converted to a market-oriented mechanism, the latter mechanism is still subject to the constraints pertaining to the former. Moreover, serious design flaws can be observed in the market-oriented mechanism, for instance, discrimination in terms of ownership with respect to market access, extraordinarily severe criteria for issuing IPOs and corporate bonds, and an unsound system for issuing securities. These flaws restrict access to direct financing,
forcing firms to rely increasingly on loans from financial institutions.

This research also found that equity financing, as part of direct financing, has a higher proportion than bond financing. This implies that, in the context of direct financing, Chinese firms have a preference for equity financing. In China, although the issuing of corporate bonds was a phenomenon that preceded equity financing, and was granted more benefits, the corporate bond market developed fairly slowly—much slower than the stock market. There are two reasons for this. First, the government maintains strict control over the corporate bond market. Compared to the issuing of stock, the issuing of bonds is more complicated in terms of application procedure, more severe in terms of criteria to be met, and more inadequate with respect to the organization of the market. Second, the function of equity financing in the Chinese capital market is distorted. Most listed firms were originally state-owned firms; due to the many defects in their corporate governance structures and imperfections in the incentive mechanism design meant for management, it is hard for managers to regard the maximization of profit for shareholders as their operational target. Since equity financing imposes the least amount of constraints on managers, they generally regard it as “free capital” and tend to prefer equity financing.

Lin, Ping et al. (2005) conducted a questionnaire survey on the capital structure of privately owned firms in Guangdong province and found that for these firms, obstacles in borrowing coexist with high debt to asset ratios. They explained that one of the reasons for this paradoxical situation is the high proportion of trade credit to debt financing in these firms. For some small and medium-sized privately owned firms, the proportion of trade credit exceeds that of bank loans. Some of these firms invest their bank loans in other affiliated firms. This kind of investment contributes to a high debt to asset ratio. The other reason for this paradox is that some privately owned firms are unable to obtain sufficient loans from official banks; therefore, they are forced to borrow through unofficial channels. Additionally, privately owned firms find it more difficult to access direct finance as compared to indirect finance. In May 2004, the Small and Medium Enterprise Board (SMEB) was launched on the Shenzhen Stock Exchange in order to provide SMEs with further access to the market in terms of their capital requirements. However, compared to the large number of privately owned firms, the SMEB has thus far proved incapable of meeting the enormous financial needs of the SMEs.

Lin, Ping et al. (2005) also conducted an investigation on privately owned firms on the basis of different industries and sizes. The findings show that capital structures differ according to size. Internal sources and equity finance are primary sources of funds for small enterprises while external sources, particularly debt finance, are the primary sources of funds for large enterprises. In addition, different industries have distinct capital structures. In the case of manufacturing and real estate industries, the proportion of internal finance is relatively low, while that of external finance, particularly bank loans, is high. These types of industries have a stable cash flow and can provide fixed assets as collateral for securing bank loans. Conversely, for the agriculture, mining, catering, and trade industries, internal funds are the most important financial source, and the proportion of bank loans is very low. Ping et al. point out that agriculture has strong seasonality, and takes a long period of time to effect a payback; therefore, it is more prone to the high risks associated with lending. Financial institutions have shut down many branches in rural areas, and this has resulted in an extraordinary shortage of credit that is available for agricul-
ture. The mining, catering, and trade industries are highly competitive businesses and enjoy low profit margins. Therefore, they find it difficult to secure loans from banks.

II. Analyses of the Determinants of Corporate Capital Structure in China

Thus far, this paper has examined a large number of recent studies that have discussed the determinants of the capital structure of listed firms. In this section, on the basis of their arguments, we systematically review the following factors.

A. Macro Factors

The rapid growth of the Chinese economy and the reform of its financial system stimulated the development of the capital market; the securities market is representative of this. Moreover, the progress in the securities market brought about historical changes to the methods used and the intermediaries involved in corporate financing. Improvements in the external financing environment provided enterprises with increased access to sources of funds and a means of raising them and, at the same time, imposed greater restrictions on corporate financing decisions. Consequently, it was necessary to take into account macroeconomic factors when making decisions related to the corporate capital structure. Theories related to corporate capital structure also postulate that financing decisions are influenced by many external factors such as the level of economic development, the fluctuations in the economic cycle, the cost of capital, and financing devices.

1. Level of Economic Development

The economic growth rate not only reflects the overall situation of a country’s macroeconomic conditions but also the fluctuations that take place in the economic cycle. When the growth rate is high, macroeconomic conditions reflect a period of prosperity during which market demand is active, corporate profitability is high, and there are optimistic expectations. The trade-off theory asserts that enterprises with high profitability are capable of withstanding greater pressure in terms of meeting claims of principal and interest, and are less likely to go bankrupt; therefore, they can benefit from a tax-shield gain by raising the debt-assets ratio to a sufficient level. Under these circumstances, enterprises are prone to resorting to debt financing in order to boost the leverage effect. Conversely, when the economic growth rate declines, both the actual and expected corporate profitability decline, and debt financing loses its superiority. Enterprises will have a preference for equity finance over debt in order to minimize possible loss or the risk of bankruptcy. Therefore, the leverage effect will break down.

Wu, Xiaoqiu (2003) indicated that because China is such a large country, there are large disparities in economic development and economic growth rates among regions. Based on this, the author highlights the correlation between the regional development level and the corporate capital structure of listed firms whose headquarters are located within the region. The finding reveals that listed firms located in developed regions have a high leverage ratio. In areas such as Neimenggu province and Jiangxi province, listed firms tend to have the lowest debt-asset ratios, 31.1% and 33.4%, respectively; in Shenzhen and Shanghai, the debt-asset ratios of listed firms are 57.6% and 52.6%, respectively – the highest among all the regions.
This evidence confirms that corporate capital structure is correlated with the economic development level.

Yuan, Yijun and Xiaohua Sun (2006) studied corporate capital structure as a function of the GDP growth rate, inflation rate, real lending interest, the size of the stock exchange markets etc., using the data of 221 firms listed on the Shanghai and Shenzhen Stock Exchange markets from 1995-2004. They found that the debt-asset ratio is positively related to the GDP growth rate but negatively related to the inflation rate. This suggests that the faster the economic growth, the more optimistic are enterprises about their future operations, thus leading to higher debt-asset ratios. However, the size of the stock exchange market has a small impact on the debt-asset ratio. Their findings also showed a close correlation between macroeconomic factors and corporate capital structure, and that a change in macroeconomic circumstance will influence the target design of the capital structure. For these reasons, managers who pursue the maximization of their firm’s market value should adjust their financial policies such that they are in line with macroeconomic circumstance in order to constantly optimize their corporate capital structures.

2. Industry Factors

Different industries may have idiosyncratic factors that affect the corporate capital structure. These factors are as follows: (1) Industry cycle: Different industries may simultaneously undergo a distinct phase of their industry cycles, and therefore, they face differing risks. Due to potential financial distress and agency costs, firms with higher default risks are unable to raise sufficient debt financing. (2) Entry threshold: The threshold to enter the industry differs according to the industry, and thus, according to the degree of concentration. The higher the degree of concentration, the weaker is the possible competitiveness and, therefore, the greater are the sources of funds that a firm can access.

In monopolistic industries like the public utilities industry, since the price of products or services is relatively stable, there is a relatively low degree of fluctuation in profits. Further, since the initial investment requires an enormous amount of capital and the incremental investment can be small, these industries have relatively high debt-asset ratios and a greater proportion of long-term liabilities. For industries that enjoy high competitiveness, like the electrical appliance industry, a high leverage ratio can have a negative impact on the capacity of sustainable investment and tolerance in the event of a price-cutting war. However, operating efficiency alone cannot guarantee the firm’s survival; only those firms exhibiting both efficiency and low leverage can sustain their business. Therefore, firms in these kinds of industries tend to rely less on debt finance. Industries such as the cement industry, that have cyclic variations in price, also tend to adopt a low debt finance policy because the operating income of these industries is subject to fluctuations in the macroeconomic cycle.

Using statistical analysis, Lu, Zhengfei and Yu Xin (1998) found there to be an evident difference in corporate capital structure according to the type of industry. With respect to the debt-asset ratio, in terms of maximum values, the commerce trade industry assumes the highest value, and the hi-tech industry, the lowest value – the difference between the two extreme values is 0.3032; in terms of minimum values, the transportation equipment industry assumes the highest value and the mining industry assumes the lowest value – the difference between these two extreme values is 0.2390; in terms of average values, the electronic equipment industry assumes the highest value and transportation industry assumes the lowest val-
ue: the difference between these two extreme values is 0.1796. This suggests that the differences in capital structure, operating cycle, degree of capital concentration, prospect of development, and competition environment of industries have a definite correlation with the financial leverage of firms in different industries. Therefore, the industry factor significantly impacts the corporate capital structure.

Guo, Pengfei and Peiyuan Sun (2003) divided sample firms into 13 categories and 91 subcategories based on the standard industrial classification codes of listed firms enacted by the China Securities Regulatory Commission. As sample firms, they consider 554 firms that belong to 12 categories and 329 firms that belong to 14 subcategories in order to investigate the characteristics of corporate capital structure among different categories, among different subcategories, and among different subcategories in the same category. Their research is an overall study about the industrial features of the corporate capital structure of listed firms in China.

Their study finds that the finance and insurance industries have the highest debt-asset ratios; this is followed by the real estate industry, construction industry, information technology industry, and wholesaling and retailing industries, all of which have debt-asset ratios of about 50%. The information technology industry requires a large amount of funds during its period of high growth, and therefore, has a high debt-asset ratio. Communication media; social services; utilities; agriculture, forestry, fishing and hunting; mining; and the transportation and warehousing industries have low debt-asset ratios – between 30% and 40%. The reasons for this are that there are fewer projects available for the former two industries, communication media and social services, and greater requirements in terms of fixed assets and stable performance on the part of the remaining industries. Consequently, the level of debt finance correlates with industrial characteristics. It is surprising to note that the low debt-asset ratio for the utilities industry is also the result of it being subject to fewer government restrictions and the fact that it enjoys stable profitability.

Their research demonstrates that the corporate capital structure of listed firms differs systematically on the basis of the type of industry. The corporate capital structures of listed firms from the same industry, classified both by categories and subcategories, shows high stability, as do the differences between industries. On the other hand, the differences in corporate capital structures between industries that are classified by category are much more conspicuous than those between industries classified by subcategory.

Wu, Xiaoqiu (2003) investigated the industry factor on capital structure using a covariance analysis. He found that in 2000, the industry factor did not have an evident impact on the debt-asset ratio. However, it did have a statistically significant effect on the debt-asset ratio in 2001. He points out that there is a difference in the capital structure according to the type of industry; however, this discrepancy is not consistent in terms of the competition faced by and the profitability of that particular industry. The utilities industry has a lower debt-asset ratio than do the appliance, cement, food and beverage, and steel industries. However, the discrepancy between the capital structures of these industries is smaller than the discrepancy that exists between firms in the same industry.

3. Financing Cost

When making financing decisions, financing costs are, undoubtedly, taken into account first. Given that the efficiency of capital can be predetermined, the variation in financing costs directly results in the firm’s ultimate profit. As two different financing instruments, the key
cost component of debt finance is interest payout and the repayment of the principal amount prior to due date, while the main cost associated with equity finance is dividend payment and issuing expense. In general, the issuing expense of equity is higher than that of corporate bonds.

Chen, Xiao and Xin Shan (1999) investigated the effect of leverage ratio on the cost of capital using cross-sectional data from 1997; the data includes 81 listed firms going for IPOs prior to September 1995 in the Shanghai and Shenzhen Stock Exchange markets. Their study revealed that the long-term leverage ratio is negatively correlated with the weighted average capital costs of the firms and the equity capital costs. However, the short-term leverage ratio has little apparent impact on the cost of capital. This shows that the short-term debt is not a virtual long-term debt, when taking into consideration the entire context (or at least that short-term debt is not considered as long-term debt in the market); this also implies that the level of short-term debts of listed firms has not yet reached a critical point in China.

Shen, Yifeng and Jing Tian (1999) studied the changes in the cost of capital using a time-series analysis. They focused on 30 listed firms affiliated with the department store business from 1995 to 1997. They found that the weighted average capital costs and equity capital costs of the listed firms tended to decline, while their equity capital costs were apparently higher than their debt capital costs. Therefore, these researchers suggest that firms should conduct a cost-profit analysis when making financing decisions, have a subjective perception of the pros and cons of equity finance, and choose the optimal financing method on the basis of their present situations, instead of blindly opting for equity finance as their optimal financing vehicle.

Wang, Juan and Fenglin Yang (2002) highlighted the non-financial listed firms in the Shanghai and Shenzhen Stock Exchange markets and conducted a cross-sectional analysis on 845 firms using financial data for 1999-2000. They found that the weighted average capital cost has the most apparent effect on the debt-asset ratio and that this effect is negative. Their finding is partially consistent with the trade-off theory. This theory suggests that a negative correlation between capital cost and capital structure is indicative of an evident tax-shield effect of debt; a positive correlation shows that the cost of financial distress exceeds the tax-shield effect.

Their finding proves that the tax-shield effect is apparent in China. The reasons for this phenomenon are as follows: (1) the debt levels of listed firms in China are not high enough to result in financial distress and this is, therefore, not a threat to the survival of these firms; (2) the lending interest rates of Chinese banks do not increase with an elevation in a firm’s leverage ratio; consequently, listed firms do not necessarily have to incur an extraordinary cost when increasing their borrowings from banks.

Wu, Xiaoqiu (2003) indicated that due to a large discrepancy between the small scale of the securities market and the numerous demands of investors, large quantities of non-circulation stock in the market and insignificant amount of dividends compared to the high level of P/E ratio and stock prices over a sustained period of time, investors do not expect to earn dividend as return on their investment but expect to earn capital gains through speculation. Consequently, compared to debt financing, which has mandatory claims on principal and interest, equity financing is regarded as a low-cost source of funds by listed firms in China.

B. Micro Factors

A number of micro factors influence corporate capital structure. Most studies related to listed firms in China employ the debt-asset ra-
ratio (including both the ratio of debt to total asset and the ratio of long-term debt to total assets) as an independent variable, and link it with profitability, scale, growth potential, etc.

1. Profitability

There is no consensus with regard to the effect of profitability on capital structure. The trade-off theory predicts a positive relationship between profitability and leverage ratio, because firms with high profitability are capable of paying interests and are therefore likely to increase debt so as to benefit from tax shields. Ross’s signal model (1977) also supports this prediction: managers can use a high leverage ratio to signal to the market that their firms have a bright future.

However, the pecking order theory predicts a negative relationship between profitability and leverage ratio, because firms can choose to raise capital using internal funds rather than debt.

Thus far, there are the two empirical conclusions with regard to the relationship between profitability and the debt-asset ratio of listed firms in China.

a) Negative relationship

Lu, Zhengfei and Yu Xin (1998) analyzed the effect of profitability on capital structure, using 35 listed firms from the machinery and transportation equipment industries. They used the ratio of net income to sales as a measure of firm profitability. It was found that a negative relationship exists between profitability and the debt-asset ratio, which is consistent with the pecking order theory. However, profitability has little effect on the long-term debt to asset ratio. According to them, one of the causes of this result is inaccurate long-term debt data reported in the financial statements of listed firms. Many listed firms count current liabilities as long-term debts, that is, they accrue long-term debt funds through the rollover of current liabilities.

Feng, Genfu et al. (2000) focused on listed firms between 1996 and 1999, using a multivariate regression analysis. For comparability, they only analyzed 234 firms that had gone in for IPOs prior to 1995 and merely issued A-shares. Their findings indicate a negative relationship between profitability and the debt-asset ratio and between profitability and short-term debt to asset ratio. This suggests that internal funds are the first preference for enterprises wanting to raise capital; on the other hand, enterprises have to resort to a great deal of short-term debts as they are unable to obtain long-term loans. However, Feng, Genfu et al. did not find any correlation between profitability and the market ratio of leverage, which implies that price is not sensitive to profitability in the secondary stock market.

Lv, Changjiang and Huibo Han (2001) used a stepwise regression analysis of Software Packet of Statistical Standard-Software (SPSS) to analyze 433 listed firms from the manufacturing industry. They found that an increase in the debt-asset ratio lowers profitability and earnings per share. They suggest that enterprises in this industry will use less equity and debt financing if they enjoy high profitability and have the capability of accumulation. Additionally, a 10% return on net assets is a prerequisite for a rights issue; therefore, enterprises with high profitability find it easier to make a rights issue and meet their financial needs; this reduces the debt finance.

Chen, Weiyun and Zongyi Zhang (2002) also supported the assertion that corporate capital structure is negatively correlated with profitability by using return on assets and the ratio of profits to sales as the measures of profitability. When profitability is low, these enterprises can utilize their lesser retained earnings, and thus, they have to resort to debt as a source of funds. It becomes a fairly common phenomenon that
enterprises with low profitability have a high proportion of debt.

Using cross-sectional data of firms listed on the Shanghai and Shenzhen Stock Exchange market between 1998 and 2000, Hu, Yuancheng (2002) investigated the correlation of corporate capital structure and profitability that is measured by return on assets, return on net assets, and the ratio of profits before interests and tax to total assets. He found that in the manufacturing industry sector, corporate capital structure and profitability have a strong negative correlation. The higher the profitability, the more remarkably does corporate capital structure correlate with profitability.

Combined, their findings indicate that in addition to institutional reasons, low profitability also contributes to the high debt-asset ratio observed in Chinese enterprises. Hu, Yuancheng (2002) showed that in 1998-2000, the average return on assets and the average return on net assets were merely 3.55% and 3.6%, respectively, for listed firms, even though during the same period, the interest rate on a bank loan for one year touched 6.5%. He stresses that seeking expansion in terms of scale and ignoring the development of efficiency result in the high debt-asset ratio of firms in China.

Shen, Weitao and Xiaoming Ye (2004) investigated the relationship between corporate capital structure and profitability using the economic value added (EVA) measure; compared to the traditional financial indicators, they considered this to be an accurate indicator of the profitability of firms. Using the panel data for 221 listed firms for the period of 1998-2002, they demonstrated the existence of a negative correlation between EVA and the debt-asset ratio. Their finding proved that the lower the profitability and growth rate, the greater is the likelihood of listed firms raising debt finance.

Xiao, Zuoping and Shinong Wu (2002) also testified about the negative relationship between profitability and the debt-asset ratio, using 117 non-financial listed firms that made IPOs prior to January 1, 1996 on the Shenzhen Stock Exchange. They employed a multivariate regression analysis, focusing on capital structure as on December 31, 1998.

Yan, Yanyang and Jing Li (2002) analyzed the determinants of the capital structures of listed firms using cross-sectional data from 1997, 1998, and 2000. They found that the relationship between profitability and the debt-asset ratio was not monotonous; it was negative in 1997 and 1998 but positive in 2000. The extent to which profitability and the debt-asset ratio are correlated demonstrates a degressive trend during these three years. They emphasized that listed firms in China were more concerned with whether or not they could obtain capital, and not with whether they were doing so in a reasonable manner.

Most researches employ static models to analyze corporate capital structure; these researchers are limited in the sense that they do not deal with time effect and unobservable factors of the enterprises’ characteristics, such as management capability, motivation, and attitude to risk. To resolve this problem, using a panel data set of financial data for publicly listed firms in China for the period 1995-2001, Xiao, Zuoping (2004) examined the determinants of capital structure based on a dynamic model of bi-directional effects, which is estimated using the generalized method of moments. He proved a negative correlation between profitability and the debt-asset ratio.

Wang, Yurong (2005) also demonstrated the trade-off relationship between the debt-asset ratio and profitability measured by the return on total assets, return on net assets, ratio of net income to sales, and retained earnings, by focusing on the non-financial enterprises listed on the Shanghai and Shenzhen Stock Exchanges prior to December 31, 1997.
Xiao, Zuoping (2005) analyzed the correlation between corporate performance and capital structure based on the simultaneous equation model using a three-stage least square method; this study focused on all the non-financial listed firms between 1995 and 2002. Further, he found a negative relationship between corporate performance and capital structure. His findings suggest that enterprises with sufficient internal funds use less debt finance to meet their needs, which is partially consistent with the pecking order theory; even though he agrees that the signal model of capital structure is not applicable to China. Ever since the China Securities Regulatory Commission determined that the return on net assets was an important criteria for listed firms to make rights issues, profitable companies are finding it easier to meet the criteria; therefore, these companies are likely to raise funds from external sources through rights issues. On the other hand, unprofitable companies have to resort to debt finance in order to raise funds from external sources.

Huang, Samuel G.H. and Frank M. Song (2002) employed return on assets and Qian et al. (2007) used profits before interests and tax as explanatory variables to investigate the impact of profitability on capital structure. They found the existence of a trade-off relationship that is consistent with the pecking order theory.

**b) Positive relationship**

By conducting a principal components analysis and a multivariate regression analysis focusing on 180 listed firms in 1995, Shen, Genxiang and Pingfang Zhu (1999) found that the debt-asset ratio is positively related with profitability. They explained that banks also like to give preference to profitable companies, and this enables them to avail of debt finance more easily and cheaply.

Hong, Xixi and Yifeng Shen (2000) also proved this positive relationship by using the ratio of net income to sales as an explanatory variable; they focused on the listed firms of the industry section from 1995 to 1997.

Wang, Juan and Fenglin Yang (2002) suggested that profitability is the second largest factor impacting capital structure. However, retained earnings and return on net assets, which are two profitability measures, have contradictory effects on capital structure; the former has a negative effect, which is consistent with the prediction of the pecking order theory, and the latter has a positive effect, which is consistent with the trade-off theory. Further, they found that the ratio of net income to sales, another measure of profitability, has only a small impact on capital structure; this implies that the capital structure decision is not based on constant profits but on nominal ones.

### 2. Firm Size

A large amount of research emphasizes the key role of firm size on capital structure decisions. From the perspective of bankruptcy cost, large firms tend to diversify or vertically integrate their business. Diversification may not increase the profitability level of companies, but it can diversify their business risks. Vertical integration can achieve more efficient management through internal trading. Further, conglomerates can allocate capital efficiently through the internal market. Consequently, conglomerates are less likely to suffer financial distress than small firms, and are more likely to incur lower bankruptcy costs. Warner (1977) found that financial distress is negatively related to firm size. Rajan and Zingales (1995) suggest that the probability of bankruptcy for large firms is less than that for small firms, ceteris paribus; therefore, size should be positively related with leverage.

On the other hand, from the point of view of information asymmetry, investors perceive that large firms provide more information than do
small firms; therefore, the extent of asymmetry is alleviated. Fama and Jensen (1983) suggested that large firms tend to provide more information than small ones. According to the signal theory, large firms prefer equity finance and, hence, have lower leverages.

Research findings about firm size and the debt-asset ratio can be summarized as follows:

a) **Negative correlation**

Wang, Juan and Fenglin Yang (2002) analyzed the effect of firm size on capital structure using the logarithm of total assets and that of sales as explanatory variables. They found a negative correlation between these two variables and the debt-asset ratio. Large companies tend to utilize equity finance rather than debt finance, which was characteristic of corporate financing during the transition period in China. Prior to March 17, 2001, companies had to obtain government approval to be listed on domestic stock exchanges; however, later, companies that were able to achieve the quota could be listed on domestic stock exchanges. Since the aim of the securities market, as set by the central government, is to facilitate the reform of the share holding system of state-owned firms and optimize the allocation of resources, large state-owned firms find themselves at the center of reform; therefore, it is easier for them to achieve the quota and be listed on the stock exchange. This promotes the formation of a negative correlation between firm size and the debt-asset ratio.

b) **Positive correlation**

Shen, Genxiang and Pingfang Zhu (1999) suggested that large firms tend to diversify their businesses, therefore making it easier to raise capital from financial institutions.

Feng, Genfu et al. (2000) used total assets and sales as explanatory variables to prove a positive correlation. They suggested that the goodwill and low business risk of large firms contribute toward their higher ability to obtain funds from financial sources. In addition to these reasons, the government also adopts preferential policies to facilitate their financing.

Using the logarithm of total assets as an explanatory variable, Hong, Xixi and Yifeng Shen (2000); Lv, Changjiang and Huibo Han (2001); Chen, Weiyun and Zhang, Zongyi (2002); Xiao, Zuonong and Shinong Wu (2002); Wang, Yurong (2005); and Xiao, Zuonong (2005) all indicated a positive correlation between firm size and debt proportion. Size is representative of the development potential and ranks of firms in the same industry. Generally, large firms have a lesser probability of going bankrupt and, therefore, a higher probability of obtaining debt finance. In addition, the policies of the Chinese government encourage banks to lend money to large firms. Moreover, the internal capital market is less developed for Chinese firms, and they are forced to rely on the external market to a great extent.

Huang, Samuel G.H. and Frank M. Song (2002) and Qian et al. (2007), demonstrated that firm size is positively correlated with the debt-asset ratio. They suggested that listed firms are generally presumed to be companies in good standing and, therefore, they find it easier to receive bank loans even if they are facing high business risks. In most cases, the controlling shareholders of these listed firms continue to be government or state-owned corporations. In order to maintain stability and order, they are not allowed to declare bankruptcy. For these reasons, listed firms are able to raise greater amounts of debt finance.

c) **Little correlation**

Using the logarithm of sales as an explanatory variable in the regression analysis, Lu, Zhengfei and Yu Xin (1998) found a small correlation between firm size and debt proportion.
Yan, Yanyang and Jing Li (2002) were unable to find any evident correlation between firm size and debt-asset ratio. They suggested that most listed firms in China comprise firms that were once state-owned enterprises. Although these are large firms, they are not necessarily able to achieve risk aversion through diversification. Consequently, listed firms may not regard size as a determining factor when making financing decisions.

3. Growth Potential

With regard to capital structure, the signal model predicts a positive correlation between growth potential and debt-asset ratio, because this model presumes that companies with a high growth potential are generally small scale start-ups. In this case, asymmetric information between investors and managers could have serious implications, and stock prices of these companies are typically underestimated in the market. Therefore, these types of firms should resort to debt finance. On the other hand, the agency theory states that growth potential is negatively correlated with debt-asset ratio. This theory assumes that firms with a high growth potential are more flexible with regard to their options for future investment projects. In the case of a large number of debt obligations, these firms may have to relinquish potentially beneficial projects that in turn may lead to insufficient investments. Given that creditors are aware of this problem, they might demand higher interest as compensation; this will raise the cost of debt finance.

In China, the results of this strand of research can be summarized into three categories.

a) Negative correlation

Using sales growth rate and net income growth rate as explanatory variables, Shen, Genxiang and Pingfang Zhu (1999) demonstrated a trade-off relationship between growth potential and debt-asset ratio. Their research suggests that high growth enterprises are generally start-ups that have little managerial and operational know-how; moreover, although these companies have a large proportion of intangible assets such as patents and technology, they do not possess sufficient fixed assets. These conditions limit these firms from raising debt finance.

Wang, Juan and Fenglin Yang (2002) proved this conclusion using Tobin’s Q as an explanatory variable, but the coefficient of this variable is much smaller than the other variables involved in the analysis. This implies that growth potential does not have a significant effect on the capital structure decisions of listed firms in China.

Xiao, Zuoping and Shinong Wu (2002) confirmed this trade-off relationship, using assets growth rate as an explanatory variable. According to them, enterprises with high growth potential usually comprise start-ups and privately owned enterprises that face greater business risks and are unable to obtain policy support.

b) Positive correlation

Using sales growth rate as an explanatory variable, Lv, Changjiang and Huibo Han (2001) found a positive correlation between growth potential and debt-asset ratio. Their reason was that the faster a firm grows, the increasingly urgent becomes its need for capital; however, the procedure to be followed in order to obtain approval and get listed on the stock exchange takes a long time. Firms are forced to rely on increasing their debt finance in order to meet their financial needs.

Chen, Weiyun and Zongyi Zhang (2002) found that the debt-asset ratio is positively related to earning before interest and tax (EBIT) growth rate and the total assets growth rate. They pointed out that companies with high growth
rates require a large amount of capital; however, since there are many restrictions associated with equity finance in the domestic market, these companies tend to employ debt finance, which is more easily accessible.

Wang, Yurong (2005) analyzed the impact of the growth rates of total assets and sales on the ratio of debt to total assets, the ratio of long-term debt to total assets, and the ratio of short-term debt to total assets. The findings indicate that all growth potential measures are positively correlated with debt ratios, except from the perspective of the trade-off relationship between the growth rate of total assets and the ratio of short-term debt to total assets. The study suggests the following two reasons that companies with growth potential have high debt: (1) Companies with high growth potential require more capital with which to expand their business; however, since equity finance takes a relatively long time to materialize, they have to rely on debt finance. (2) Companies with high growth potential generally have better growth prospects; therefore, they find it easier to obtain bank loans.

Xiao, Zuoping (2005) also confirmed the positive relationship between growth potential and debt level.

c）Little correlation between growth potential and debt ratio

Lu, Zhengfei and Yu Xin (1998) indicated that there is little correlation between growth potential and debt ratio. Feng, Genfu et al. (2000) supported their claim and further pointed out that growth potential can simultaneously influence debt ratio positively and negatively. Although high growth companies may require more capital, long-term debt is subject to stringent restrictions; therefore, these companies may increasingly resort to short-term debt finance. On the other hand, high growth companies are generally start-ups and privately owned enterprises that are immature in terms of management and technological know-how and can hardly look forward to policy support from the government; thus, they are unable to raise debt finance easily. Consequently, these two underlying effects can be offset. Xiao, Zuoping (2003) also confirmed this offset. However, Huang, Samuel G.H. and Frank M. Song (2002) found that the sales growth rate—indicative of a company's past growth—is positively correlated with the debt ratio, while Tobin's Q—the proxy variable of company's future growth—is negatively correlated with the debt ratio. Their findings imply that enterprises experiencing high growth employ a greater proportion of debt finance on the basis of good investments in the past; however, enterprises with a strong growth potential tend to maintain a low debt ratio due to concerns about the possible relinquishment of profitable investments.

4. Collateral Value of Assets

Jensen and Meckling (1976) indicated that in the case of large debts, shareholders have greater incentives to invest in high-risk projects so that they can transfer wealth from creditors; this is called the asset substitution issue. However, creditors are likely to protect their own interests against this by increasing the cost of debt or adding additional restrictive clauses in their contacts. However, if fixed assets account for a large percentage of the total assets, the value of assets as collateral will rise and the agency cost will decrease. Thus, they predict a positive correlation between fixed assets and debt ratio.

Based on the theory of asymmetric information, Myers and Majluf (1984) also supported the above view. Fixed assets can mitigate credit risk resulting from asymmetric information, therefore decreasing the cost of financing. Further, they also pointed out that intangible assets such as patents and reputations cannot be re-
garded as collateral assets. However, for enterprises with high technological value, an increase in intangible assets implies higher competitiveness and profitability; in this case, intangible assets are positively correlated with the debt ratio.

Using the ratio of fixed assets and stock to total assets as an explanatory variable, Shen, Genxiang and Pingfang Zhu (1999) also found a positive correlation between fixed assets and debt ratio. They indicated that the higher the value of collateral assets, the less will be the loss when the assets are revalued during liquidation; this will decrease the bankruptcy cost. In addition, when raising funds against collateral, enterprises with collateral assets having a larger value will find it easier to obtain debt finance at lower costs.

Xiao, Zuoping and Shinong Wu (2002); Xiao, Zuoping (2003, 2005); and Huang, Samuel G.H. and Frank M. Song (2002) also showed a positive correlation between the collateral value of assets and debt ratio.

However, Lu, Zhengfei and Yu Xin (1998); Feng, Genfu (2000); and Chen, Weiyun and Zongyi Zhang (2002) indicated that there is little correlation between the collateral value of assets and the debt ratio. The lending rates of banks in China are not determined by the market but the government; therefore, they are not sensitive to changes in the financial situation of firms and the collateral value of assets. China does not have a bankruptcy mechanism in place as yet, and companies obtain debt finance owing to factors other than their financial situation. Moreover, the mechanism of lending through mortgages is not virtually implemented. For these reasons, the debt ratio is not correlated with the collateral value of assets.

Lv, Changjiang and Huibo Han (2001) found a trade-off relationship between fixed assets and debt ratio. However, they found a positive correlation when they focused on the relationship between the proportion of fixed assets and the long-term debt ratio. This implies that an accession in fixed assets will increase the long-term debt finance. However, due to the lack of liquidity of fixed assets, banks will not only increase short-term loans to companies when they have a high proportion of fixed assets, but also decrease them. They indicate that the risk of bankruptcy still has a certain effect on corporate capital structure.

Using liquidity ratio as an indicator, Wang, Juan and Fenglin Yang (2002) confirmed a trade-off relationship between the collateral value of assets and debt ratio. Their finding is almost contrary to the pecking order pattern of financing. They argued that even if listed-firms in China are capable of repaying their debts, they would still prefer to employ equity finance.

Yan, Yanyang and Jing Li (2002) found that the collateral value of assets had a small impact on debt ratio in 1997; however, a negative impact was observed in 1998 and 2000. They argued that since the liquidity of fixed assets is very limited due to the underdevelopment of the secondary market, collateral in the form of fixed assets cannot really reduce the risk being borne by creditors.

Wang, Yurong (2005) found that the collateral value of assets has little impact on the ratio of total liabilities to total assets, while it has a positive impact on short-term and long-term debt ratios. The results suggest that tangible assets can decrease the creditors’ risk to some extent, such that banks are willing to lend money to firms that have a larger proportion of fixed assets. However, total liabilities also include non-interest-bearing liability items that are not influenced by collateral value; therefore, a minimal relationship can be observed between the collateral value of assets and the ratio of total liabilities to total assets.
5. Taxation Factor

Other things being equal, debt has a tax-shield effect, and a high tax rate will increase this effect. However, the government adopts various preferential policies with respect to tax; therefore, the actual tax rate of corporate income is generally low in China, and the tax-shield effect of debt is not clear in this case. Apart from debt, non-debt items such as investment tax credit and tax-loss carry forward can also have a tax-shield effect, and at the same time, they do not augment financial risk. Therefore, firms with larger investment tax credit and tax-loss carry forward will use a lesser proportion of debt finance.

Shen, Genxiang and Pingfang Zhu (1999); Xiao, Zuoping and Shinong Wu (2002); Xiao, Zuoping (2003); Huang, Samuel G.H. and Frank M. Song (2002); and Qian et al. (2007) used depreciation rate as an indicator for measuring the tax-shield effect of non-debt items; they concluded that this effect is negatively correlated with debt ratio. Feng, Genfu et al. (2000) also confirmed the above conclusion.

Wang, Juan and Fenglin Yang (2002) suggested that the tax-shield effect is one of the most important factors influencing the capital structure of listed firms in China. In 2002, the "tax first and return later" policy was finally abrogated. This meant that listed firms would face higher income tax rates, and the resultant tax-shield effect would be more evident in impacting the capital structure of firms.

Wang, Yurong (2005) indicated that non-debt items having a tax-shields effect are negatively correlated with the debt-asset ratio and short-term debt ratio; however, they have little impact on the long-term debt ratio.

6. Financial Distress Cost

Bradley et al. (1984) and Titman, Wessels (1988) indicated that firms with higher operating income volatility should face increased business risks. With respect to financing aspects, firms facing high risks are able to raise venture capital but find it difficult to obtain bank loans, since creditors are generally risk-averse. Moreover, income volatility also influences the firm’s solvency, thereby increasing the possibility of financial distress for the firm. For these reasons, the greater the volatility of the operating income, the greater is the possibility that firms will be financially distressed, and lower will be the debt ratio.

Using the volatility of earning before interest and tax and the volatility of sales as the proxy variables of financial distress cost, Chen, Weiyun and Zongyi Zhang (2002) found a trade-off relationship between financial distress cost and debt ratio. They pointed out that firms with greater volatility of income find it more difficult to avail of debt finance.

Using the ratio of sum of sales and intangible assets to total assets as an explanatory variable, Xiao, Zuoping and Shinong Wu (2002); Xiao, Zuoping (2003) indicated a positive relationship between financial distress cost and debt ratio. They determined that the main creditors of listed firms in China are state-owned banks that are dominated by the government. To some extent, these types of banks play a role in keeping financially distressed firms going through credit allocation and interest rate controls. Therefore, the financing cost of debt is hardly influenced by a firm’s financial situation. In addition to this,

* It refers to the tax reduction policy for listed enterprises adopted by government on January 1, 2002. According to this policy, a part of the tax payment of these companies can be returned to them. On an average, the real tax rate of corporate income accounts for only 15%. However, the tax rate of corporate income was raised to 33% for all listed enterprises after the removal of this policy.
firms with greater volatility of income cannot meet the requirements for a rights issue, and thus, they have to rely on debt, particularly short-term debt, to satisfy their financial needs.

However, Chen, Dan and Xin Shan (1999) suggested that the debt ratio is not high enough to threaten the sustainable operation of firms in China; thus, bankruptcy cost cannot impact the corporate capital structure.

7. Ownership Structure

Jensen and Meckling (1976) suggest that the corporate capital structure can transfer the agency costs of equity and debt. The concentration of negotiable outstanding shares is quite low in the case of listed firms in China; therefore, shareholders of negotiable outstanding shares are unable to influence the operations of firms. Generally, listed firms are under the control of the state and legal entities whose shares cannot be traded in the stock market. These state-controlled listed firms, to a large extent, face interference from the government through its policies and are likely to have a relatively high debt ratio, similar to state-owned firms. Therefore, the ratio of state-controlled shares is presumed to be positively correlated with debt ratio. Most listed firms were once state-owned firms that had legal entities, such as local governments, as their shareholders. They find it easier to obtain benefits from these governments; therefore, the ratio of shares held by legal entities is also presumed to be positively correlated with debt ratio.

Feng, Genfu et al. (2000) suggested that a combination of state-held shares, shares held by legal entities, and publicly held shares can have an impact on the corporate capital structure. For example, in a case where the controlling shareholder is the state, listed firms may have stronger connections with the government and may therefore operate in accordance with governmental interests.

Shi, Donghui (2000) argued that the state's majority ownership of listed firms has undermined the monitoring of managers, which is supposed to be conducted through hostile takeover and proxy contest. On the other hand, the state's ownership entity has not yet been identified. All these factors result in a serious problem of insider control. Therefore, equity finance cannot strengthen the governance of listed firms. Conversely, bank loans are based on strict criteria such as the expected rate of return of specific projects; therefore, they place more rigid constraints on firms. For these reasons, the management of listed firms prefer using equity finance over debt finance.

Wang, Juan and Fenglin Yang (2002) found that the ratio of shareholding of the largest shareholder has a minimal impact on the corporate capital structure. This implies that the agency cost is not a determinant of capital structure; this is perhaps due to the absence of owners of listed firms in China. Most listed firms were once state-owned firms, and therefore, they are not only publicly traded but also state-owned companies. The individual shareholders of these companies are widely dispersed, and cannot enforce any sort of monitoring regulations on these companies. On the other hand, the state-owned shareholders consist of multi-level governments and state-owned companies. However, it can be stated that there is no single entity in charge of management at the same time.

Xiao, Zuoping and Shinong Wu (2002) found a positive correlation between state shareholding and debt ratio. Most listed firms have been converted from state-owned companies, and the state remains the controlling shareholders even though these companies have gone public. Therefore, the government actually interferes with their operations to a large extent. There has existed an implicit contract between the government and these types of companies, ac-
cording to which the government assumes full responsibility for unprofitable companies, and perpetuates their existence through subsidiary schemes. Going public does not essentially negate this implicit contract. State-controlled listed firms can better benefit from the government's preferential lending policy. Therefore, companies that have a higher proportion of state shareholding are assumed to have a higher debt ratio.

Yan, Yanyang and Jing Li (2002) indicated that state shareholdings and those held by legal entities have little impact on debt-asset ratios; however, there is a significantly positive correlation between publicly held A-shares and debt-asset ratio. They argued that companies with higher public shareholdings tend to raise more debt finance.

Liu, Zhibiao (2004) analyzed the relationship between ownership and capital structure, using unbalanced panel data of listed firms from 1997 to 2002. The study indicated that the ratio of shareholdings by the state and legal entities is positively correlated with the debt-asset ratio. In addition, they found that the ratio of public shareholding is negatively correlated with the debt-asset ratio. The author argued that most Chinese banks belong to the government, which is also the controlling shareholders of many listed firms; thus, these firms find it easy to obtain loans from banks.

By focusing on 756 listed firms that went public by December 30, 2003, Xie, Jun (2006) investigated the impact of the ratio of shareholding by the state and legal entities, and public shareholding on debt ratio. The results show that the ratio of state shareholding is positively correlated with the long-term debt ratio and negatively correlated with short-term and total debt ratios; the ratio of the shareholding of legal entities is positively correlated with the short-term debt ratio and negatively correlated with the long-term debt ratio; moreover, the ratio of public shareholding is positively correlated with the short-term and total debt ratios and negatively correlated with the long-term debt ratio, however, this correlation is not evident. It is argued that state shareholding can enhance the ability of a company to raise its long-term debt.

Huang, Samuel G.H. and Frank M. Song (2002) indicated a positive correlation between institutional shareholdings and debt ratio. The ratio of nonnegotiable shares is positively correlated with debt-asset ratio. Further, they argued that this is due to the fact that the government is a controlling shareholder of some listed firms, and at the same time, the owner of most banks in China.

### Conclusions

Academic researches on factors impacting the corporate capital structure in China have been conducted from various perspectives, and empirical examination has been the focus of these researches. The studies cover listed firms, unlisted state-owned firms, and unlisted privately owned firms. However, theoretically, little progress has been made in this strand of research. Most researchers draw on the models used to analyze developed countries, despite the fact that there are significant differences in the economics and institutional environments of China and Western countries. In most cases, this results in a scenario where it is not plausible to explain research conclusions with respect to the situation in China. For example, existing researches argue that firms prefer to raise rights issues and new shares issues because it is less costly to do so when compared with debt finance, despite the fact that the cost of equity finance has been substantially increasing after 2001. This raises a concern about whether the
corporate capital structure will change as a result of the variations in financing costs.

Apart from firm-specific factors, these existing researches do not take into account the competition in the product market and the condition of the capital market when analyzing corporate financing patterns in China. Moreover, since 2005, China has implemented a new policy aimed at the full circulation of all outstanding shares; this makes it more complicated to analyze the determinants of corporate financing patterns in China. Therefore, it is necessary to conduct further research in order to gain a comprehensive and better understanding of corporate capital choices in China.

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