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Determinant Factors of Capital Structure of Firms—An Empirical Analysis Based on Evidence From Chinese Listed Retail Companies

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This paper investigates the effectiveness of various factors upon the capital structure decisions of Chinese firms by conducting an empirical analysis of Chinese-listed retail companies. An unbalanced panel dataset was formed with a sample of 110 companies observed for 12 years (2010~2021). Each observation is measured quarterly. Traditional explanatory variables are adopted in the study, including profitability, company size, tangibility of assets, internal financing ability, tax ratio, growth opportunities, and volatility. By employing the Fama-Macbeth approach, the regression results are interpreted to determine the impact of independent variables upon the leverage a company takes on. To solve the reverse causality problem, we include the lag term (last quarter's data) of the debt-to-equity ratio as control variables. Consistent with previous theoretical and empirical studies, firms' leverage ratio is positively related to size, tangibility, tax ratio, and last quarter's debt level. Companies' profitability and internal financing ability are negatively correlated with their debt-to-equity ratio. Firms' earning volatility and growth opportunities do not show significant relationship with the debt-to-equity ratio. The study has provided more empirical evidence on capital structure theories regarding emerging financial markets.

Keywords: capital structure theories, Chinese-listed retail companies, unbalanced panel data set, leverage ratio, emerging financial markets

Introduction

Financing accessibility and cost represent important dimensions of the competition between enterprises, and the decisions on the optimal capital structure choice are essential in maximizing the firm value thus generating a higher return for the existing shareholders (Serghiescu & Vaidean, 2014).

Serghiescu and Vaidean (2014) also classified factors that affect the capital structure of a company into two categories: (a) the external factors reflecting country-wise macroeconomic conditions (for instance, the inflation rate, interest rate, and GDP level) and (b) the internal factors reflecting firm or industry-specific, such as profitability, company size, tangibility of its assets, tax ratio, growth opportunities, etc. As the external features are shared by all companies operating in the same sector of a specific country, we focus on the internal ones to examine their impact on the financing decisions of Chinese-listed retail firms.

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Being one of the engines of the Chinese economy, the retail sector has shown a growing trend in transaction volume and has achieved a turnover of 13.1 trillion yuan in 2020. Wholesale and retail trade accounted for 9.4% of total GDP in China (seen in Figures 1 and 2). For 2021, it is expected that the post-pandemic retail sales growth rate will exceed 12%, following a trend of recovering growth based on the 4-trillion-yuan stimulus package, tax exemptions for businesses, lowered bank interest rates, contributions to social welfare funds, and driven by the need for boosting consumption thus facilitating the economic recovery process (National Bureau of Statistics of China, 2021).

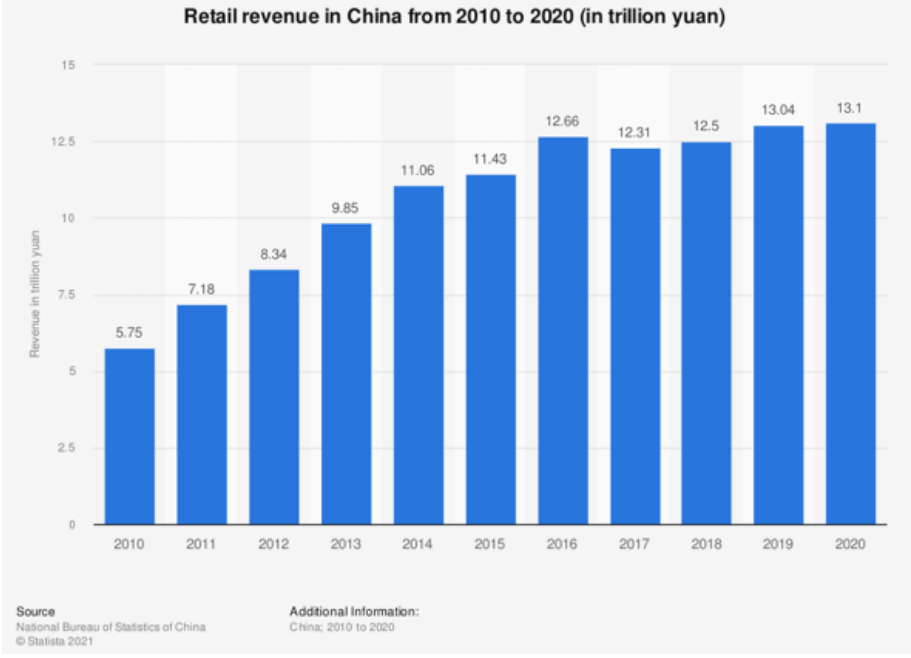

Figure 1. Retail revenue in China, 2010-2020. (Source: Statista).

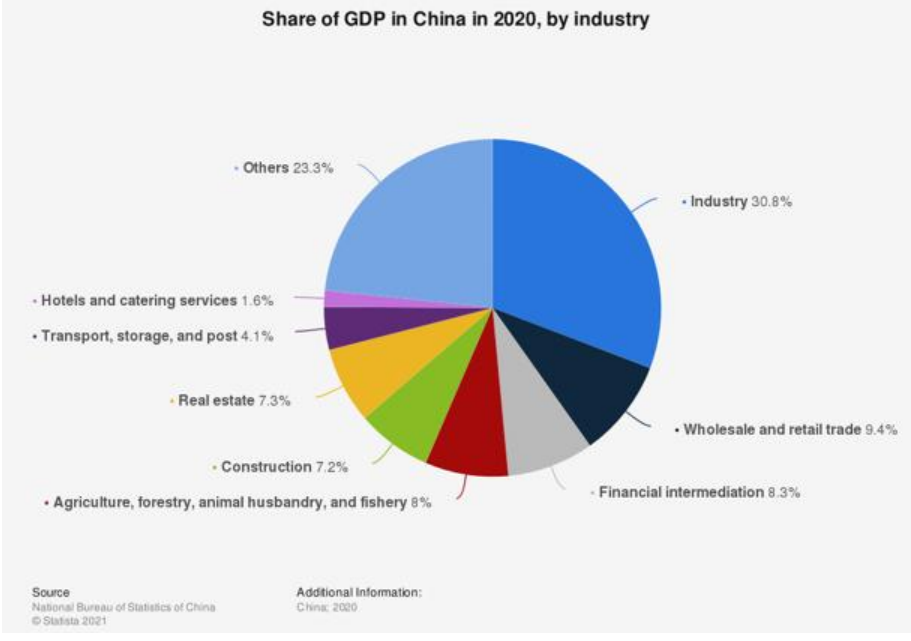

Figure 2. GDP composition by industry (Source: Statista).

The purpose of this study is to examine the validity of traditional and modern capital structure theories in China, to identify the factors that have critical impacts on Chinese retail firms' financing decisions, and to conduct empirical analysis with quarterly financial data extracted from the CSMAR database. Most empirical studies of capital structure employed data from developed countries (mainly the U.S.) to document the determinants of capital structure. Studies on emerging markets only appeared in recent years, with an inadequate contribution to the Chinese retail sector. The study aims to solve two questions: (1) do the factors that affect cross-sectional variability of capital structure in western countries have similar effects on Chinese retail firms? (2) do western capital structure theories have explanatory power over Chinese-listed firms? The second section explores the theoretical frameworks, the third section presents the methodology adopted, the fourth section summarizes the research results and their interpretation, and the final section is devoted to conclusions.

Capital Structure Theories

The topic of capital structure has received much concern since Modigliani and Miller (1958) proposed the optimal capital structure theorem. According to Huang and Song (2006), there are several widely acknowledged theorems: the Modigliani-Miller's theorem, the Trade-off theory, and the Pecking order theory.

Modigliani-Miller's Optimal Theorem (Perfect Financial Market)

Modigliani and Miller (1958) proposed three theorems on the cost of capital and the optimal capital structure. The first proposition was developed as: (1) Firms' market value depends on its ability to generate return rather than the capital structure, and (2) the weighted average cost of capital of an enterprise is independent of its capital structure. Under assumptions that there are no taxes, no transaction costs, no bankruptcy costs, no information asymmetry, and no differentiated borrowing costs between companies and investors, it showed that the company's source of financing does not affect its market value as well as the weighted average cost of capital (Brusov, Filatova, Orekhova, & Eskindarov, 2018). The Modigliani and Miller's theorem implies that in the world of a perfect financial market, the extent to which the leverage a firm takes on would not affect its market value, and the firm's value only depends on the risk of its underlying assets and ability to generate future revenue (Chen, 2003). In practice, the market is imperfect due to asymmetric information, transaction costs, and taxes.

Trade-Off Theory

Trade-off theory was developed from the optimal capital structure theorem. Kraus and Litzenberger (1973) stated that the optimal capital structure existed, where firms set a target leverage ratio and gradually moved towards it. Firms' preference on debt-to-equity ratio is jointly determined by the trade-off between the benefits of the tax-shield impact led by the interests deducted from the overall debt before taxes, and the costs of higher risk of issuing debt thus bankruptcy costs. Serghiescu and Vaidean (2014) commented that the market value of a geared firm equals its fully ungeared counterparts plus the present value of tax benefits, and less the present value of bankruptcy costs. Figure 3 visualizes the Trade-off theory.

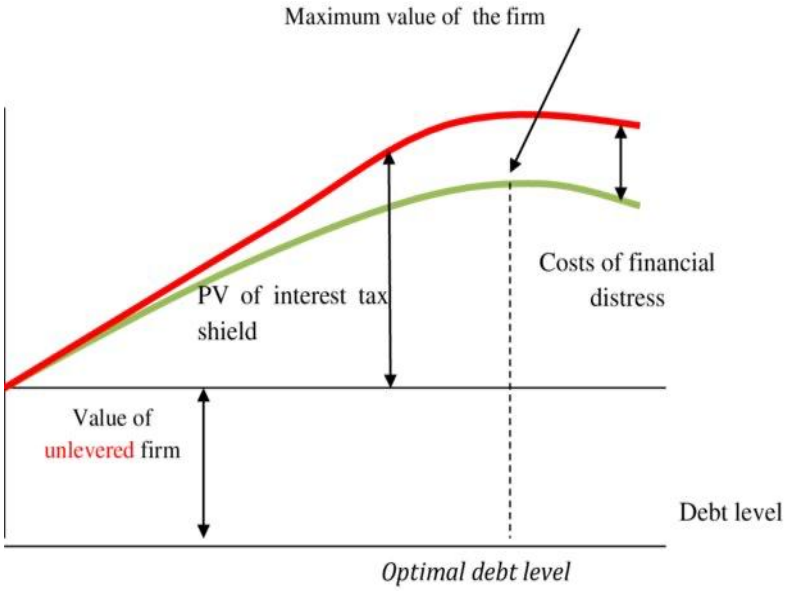

Figure 3. Trade-off theory in the graph (Source: Kraus and Litzenberger, 1973).

Pecking Order Theory

Myers and Majluf (1984) proposed the Pecking Order Theory (POT), which stated that a firm has no well-defined optimal capital structure, and firms have a preference in seeking for financing methods, with first being internal financing, then external financing using debts, and the last being equity financing. The theory implies that firms tend to utilize retained earnings for capital expansion projects, as the internal financing method minimizes an enterprise's information asymmetry problem. Similarly, a firm that uses debt financing for corporate tax shields and additional benefits may turn to shareholders' equity only as the last resort, due to the latter's higher costs and ownership dilution issues (Ghosh & Cai, 1999). To conduct an empirical analysis of whether firms do have an optimal capital structure level that converges towards the industry mean level over time, or follow the POT proposed by Myers (1984), Ghosh and Cai (1999) used 500 large U.S. manufacturing companies' financial data from 1974 to 1992 to construct the two-by-two contingency table with the Fisher Exact Probability Test. The study concluded that both the optimal capital structure hypothesis and the Pecking Order Theory coexisted. Myers' Pecking Order Theory provided an alternative to the traditional optimal capital structure hypothesis.

Agency Costs Theory

Jensen and Meckling (1998) proposed two types of conflicts of interest that could generate agency costs: conflicts between shareholders and managers, and conflicts between shareholders and creditors. Agency costs were defined as the expenses incurred by principals in monitoring firm managers' performance, the costs related to agents fulfilling their obligations, and other residual losses in companies' operation. The principal-agent problem occurs as managers act in their personal interest instead of shareholder's ones, and the conflict between stock and debt holders appears as shareholders' incentive to take on riskier projects for the higher rate of return, which could hurt creditors' benefits as the return on debt is fixed. Moreover, the probability of default increases with riskiness of projects, and bondholders are entitled to share the loss (Friend & Lang, 1988).

Table 1 summarizes different theories' implications on firms' capital structure.

Table 1

Theories and Implications

Modigliani-Miller's theorem (Fundamental concept of capital structure theory)	Assumptions: a perfect financial market with no asymmetric information, no transaction costs, no taxes, and no bankruptcy costs. Firms' market value (as well as capital costs) is independent of its leverage ratio.
Trade-off theory (Optimal leverage ratio exists)	Firms set a target debt level and gradually move towards it. Firms' optimal capital structure involves the tradeoff among the effects of corporate and personal taxes, bankruptcy costs and agency costs, etc.
Pecking order theory (No well-defined optimal leverage ratio)	Internal financing (using retained profits) > External financing (Debt financing > Equity financing).
Agency costs theory (Inefficiency in allocating the optimal ratio)	The principal-agent problem leads to higher agency costs, which result in inefficient corporate management.

Methodology

Proxies for the Determinants of Capital Structure

Empirical and theoretical studies have shown that profitability, tangibility, size, growth opportunity, internal financing ability, and volatility exert impacts on firms' capital structure. Here, we discuss the rationale behind the choice of dependent and explanatory variables and summarize each factor's implication on corporate financing decisions.

Dependent variable: Debt-to-equity ratio.

$$\text{Debt to Equity} = \frac{\text{Total Debt}}{\text{Total Shareholder's Equity}}$$

Rajan and Zingales (1995) used different traditional measures of the capital structure. The broadest definition is the ratio of total liabilities to total assets, which can be viewed as the residual value for creditors in case of insolvency. However, this estimation does not indicate firms' risk of default in the future. Moreover, as the total liabilities also include items which may be used for transaction rather than financing (accounts payable, for instance), it may overstate the debt level. Another appropriate measure of leverage was defined as the ratio of total debt to net assets, where net assets were total assets less accounts payable and other liabilities. This paper will use the debt-to-equity ratio as an approximation of leverage, which measures the degree to which a company is financing its operations using either debt or equity.

Goddard, Tavakoli, and Wilson (2005) adopted the ratio of liabilities to shareholders' funds to assess the firm's ability to repay both short- and long-term loans. *GEAR* was specifically defined as the non-current liabilities plus loans divided by the shareholder's equity. The debt-to-equity ratio is particularly concerned for a company's risk of being unable to meet its interest and principal repaying commitments, as highly geared firms tend to be at higher risk (Stulz, 1990). Moreover, Telser (1966) commented that firms with low gearing are motivated to increase output to drive down the prices, and therefore exert a downward pressure on the competitors' profitability, to the point where the latter may no longer be able to repay their debts. In terms of generating future income, highly geared companies are more likely to be financially constrained, as the limited liquidity will impede their undertaking of valuable investment projects thus hurting their profitability (Benito & Vlieghe, 2000).

Profitability of the enterprise (Prof).

$$\text{Prof} = \frac{\text{EBIT}}{\text{Total Assets}}$$

The relationship between profitability and the leverage ratio has received much theoretical attention since Modigliani and Miller (1958), but consistent predictions have not been reached. The Tax-based theory suggested a positive relationship between profitability and debt ratio, as profitable firms tend to use more debts to create shields against income taxes. However, Pecking Order Theory suggested that firms prefer using retained profits to finance new projects, and then turn to debt and equity when necessary. It is implied that more profitable firms tend to use less debt financing. Agency-based theory gives conflicting predictions. Jensen (1986) and Williamson (1988) commented that debt was used as a discipline facility to reduce the principle-agent problem, as it urged managers to act in the investors' best interests. In this case, firms with free cash flows and higher profitability tend to retain higher debt levels in case of management discretion. On the contrary, Chang (1999) suggested that there is an optimal contract between the corporate insiders and outside investors, and more profitable firms borrow less from creditors. Overall, empirical studies suggested a negative relationship between firms' profitability and leverage ratio. In this paper, we use EBIT (earnings before interest and taxes) scaled by total assets to represent the profitability of a firm.

Size of the company.

$$\text{Size} = \text{Ln}(\text{Total Assets})$$

Huang and Song (2006) stated that both theoretical and empirical studies suggest a positive relationship between leverage ratio and company size. Regarding the time to maturity of debt issuance, Marsh (1982) commented that larger firms may be able to lower cost of capital due to economies of scale and stronger bargaining power over creditors, which implied that the cost of external financing is negatively related to firm size. Fama and Jensen (1998) expanded the asymmetric information theory in corporate finance to determine the extent to which the company discloses information to outsiders, by using size as a proxy for the information that outside investors have. Rajan and Zingales (1995) argued that larger firms with less information asymmetry problems tend to have issue equity than debt, which can lead to lower leverage. However, larger companies tend to have more stable cash flow and a lower probability of bankruptcy, which suggests that the firm has higher debt capacity. Wald (1999) found that large firms in Germany tend to have less debt, but the result is country-specific, as, in Germany, a sizable percentage of big industrial firms are controlled by a small number of professionals thus managers are urged to act in the shareholders' interests. Such centralized company structure is responsible for the negative relationship between firm size and the leverage ratio, as managers are encouraged to take on lower risks. Overall, empirical studies suggested a positive relationship between the size and the leverage ratio of the company. In this paper, we use the natural logarithm of total assets to determine the size of a firm.

Tangibility (Tang).

$$\text{Tang} = \frac{\text{Fixed Assets}}{\text{Total Assets}}$$

Theoretical and empirical studies generally stated that leverage ratio is positively correlated with tangibility. Jensen and Meckling (1998) stated that firms with more tangible assets are perceived to be less

risky by investors, as these assets can be used as collateral in case of firms' liquidation. In this paper, tangibility is defined as fixed assets scaled by total assets.

Internal financing ability.

$$\text{Internal Financina Ability} = \frac{\text{Cash and Cash Equivalents}}{\text{Total Assets}}$$

According to the Pecking Order Theory, firms' liquidity is negatively correlated with their leverage ratio. Firms with high liquidity could use free cash flows obtained to finance their investment projects.

Tax.

$$\text{Tax} = \frac{\text{Tax Expenses}}{\text{EBIT}}$$

According to Modigliani-Miller's theorem, taxes are critical to firms' capital structure, as firms with a higher marginal tax rate should use higher debt to obtain a tax-shield gain (Huang & Song, 2006). However, little empirical support has been established. Mackie-Mason (1990) provided evidence of significant tax effects on firms' financing decisions, by (1) clarifying the relationship between tax shields and the effective marginal tax rate, and (2) studying incremental financing decisions using discrete choice analysis. Mackie-Mason's study empirically suggested a positive relationship between debt ratio and the effective marginal tax rate, which was consistent with Modigliani-Miller's theorem. In this paper, we use the effective tax rate to examine the impact of tax on capital structure.

Growth opportunities.

$$\text{Growth Opportunities} = \frac{\text{Market Value}}{\text{Book Value}}$$

Theoretical studies suggested a negative relationship between growth opportunities and leverage ratio. Myers (1984) proposed that high-growth firms tend to hold more real options for future investment than low-growth firms. If more equity is needed to finance the exercise of such options, firms with high debt level may forgo the opportunity as such an investment may effectively transfer wealth from stockholders to creditors. As a result, firms with high-growth opportunities may choose not to issue debt in the first place, thus leverage ratio is expected to be negatively correlated with growth opportunities. As sales growth rate measures the past growth experience, in this study, we use Tobin's q (market-to-book ratio) as a better proxy for future growth opportunities. A higher market-to-book ratio indicates that investors anticipate higher market capitalization value compared to book value of assets thus higher dynamic growth of a company.

Volatility.

$$\text{Volatility} = \sigma\left(\frac{\text{EBIT}}{\text{Total Assets}}\right)$$

Volatility is used as a proxy for the probability of financial distress. Empirical studies suggested a negative relationship between leverage and such probability. In this study, we use the standard deviation of earnings before tax and interest scaled by total assets as the measurement of volatility. We summarize the determinants of capital structure, their definitions, predicted signs of both theoretical, and empirical studies in Table 2.

Table 2

Summary of Determinants of Capital Structure

Proxy	Definitions	Theoretically predicted signs	Empirically predicted signs
Profitability (ROA)	Earnings before interest and tax divided by total assets	+/-	-
Size	Natural logarithm of total assets	+/-	+
Tangibility	Fixed assets divided by total assets	+	+
Internal financing ability	Cash and cash equivalents divided by total assets	-	-
Tax	Tax expenses divided by earnings before interest and tax	+	+
Growth opportunities	Tobin's q	-	-
Volatility	The standard deviation of EBIT divided by total assets	+/-	-

Notes. "+" means that debt-to-equity ratio increases with the factor, "-" means that debt-to-equity ratio decreases with the factor, and "+/-" means that both positive and negative relationships between debt-to-equity ratio and the factor are possible.

Applied Econometric Model

The selection and gathering of data. The sample selected in this study comprises 110 companies listed on both Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE), which operate in the Chinese retail sector, and for which financial statement data (quarterly, 2010−2021) were collected from the CSMAR database. A total number of 24 variables with 3,813 observations were analyzed to determine the behavior of the companies regarding their capital structure and financing decisions.

From the period 2010 to 2021, the descriptive statistics of variables are summarized in Table 3. Table 4 presents their correlation matrix.

Table 3

Descriptive Values of Variables Summarized (2010-2021)

Variable	Mean	S.D.	Minimum	Maximum
DE	2.003	13.39	-56.35	500.9
LTD	0.052	0.069	0.000	0.466
STD	0.510	0.265	0.043	4.360
Profitability	0.027	0.064	-2.686	0.613
Size	22.37	1.179	18.596	26.19
Tangibility	0.668	6.448	-38.26	344.2
Internal financing ability	0.205	0.133	0.000	0.770
Tax ratio	0.043	0.311	0.000	12.04
Growth opportunities	0.846	19.08	-1.000	1020
Volatility	0.034	0.048	0.004	0.547

Table 4

Correlation matrix of Debt-to-Equity Ratio and Independent Variable (2010-2021)

	DE	LTD	STD	Profitability	Size	Tangibility	Tax
DE	1.00						
LTD	0.03	1.00					
STD	0.13	-0.08	1.00				
Profitability	-0.18	-0.09	-0.31	1.00			
Size	0.02	0.21	0.19	-0.05	1.00		
Tangibility	0.79	0.01	0.09	-0.05	-0.01	1.00	

Table 4 to be continued

Tax	-0.01	0.04	-0.01	-0.10	0.00	-0.01	1.00
Internal	-0.02	-0.23	-0.12	0.17	0.03	-0.01	-0.11
Financing ability							
Growth	-0.03	0.03	0.00	-0.04	-0.01	-0.02	0.05
opportunities							
Volatility	0.06	-0.06	0.10	-0.11	-0.24	-0.01	0.05

	Internal financing ability	Growth opportunities	Volatility
Internal financing ability	1.00		
Growth opportunities	-0.03	1.00	
Volatility	0.02	0.13	1.00

Notes. LTD represents long-term debt, STD represents short-term debt.

Applied econometric models (Fama-Macbeth approach). To identify the relationship between the selected explanatory variables and the capital structure of a company, we choose the Fama-Macbeth approach to conduct regression analysis on unbalanced panel data, given that the registered observations have a two-dimensional feature: 110 companies observed over a period of 12 years.

Panel data can be of two categories: (1) balanced panel data where there are no missing values (each point in time corresponds to its data respectively) and (2) unbalanced panel data which imply that some data points are missing. In our case, it is more effective to adopt the Fama-Macbeth approach to estimate the coefficients of independent variables, as we have unbalanced panel data resulting from (1) the dataset containing relatively long time-series and (2) financial market in China being underdeveloped compared to other market-economy countries (for instance, the U.S., Europe, and Japan), thus some of the retail companies were listed relatively late.

The panel regression model can be specified as follows:

$$\ln DE_{i,t} = \beta_0 + \beta_1 \ln(Prof_{i,t}) + \beta_2 \ln(Size_{i,t}) + \beta_3 \ln(Tang_{i,t}) + \beta_4 \ln(Tax_{i,t}) + \beta_5 \ln(Growth_{i,t}) + \beta_6 \ln(vol_{i,t}) + \beta_7 \ln(DE_{i,t-1}) + \beta_8 \ln(Prof_{i,t-1}) + \mu_{i,t}$$

$i = 1, \ldots, 110$; $t = 1, \ldots, 12$, where i denotes the cross-section dimension and t indicates the time series, $\mu_{i,t} = \mu_i + \nu_{i,t}$, where μ_i denotes the unobservable individual effect and $\nu_{i,t}$ denotes the remainder disturbance.

Reverse causality issue. To solve the reverse causality issue, we include the lag term of profitability and debt-to-equity ratio as control variables. The reverse causality problem could occur as the leverage ratio affects a company's profitability, or the last quarter's leverage indirectly affects the current debt-to-equity ratio, which can lead to the endogeneity problem. In corporate finance practice, it is likely that the current leverage ratio, which is affected by last quarter's one, exerts an impact on the current profitability of a firm. By incorporating control variables, we could mitigate the reverse causality issue, thus having a better estimation of profitability's impact on firms' leverage ratio.

Results and Discussion

In this section, we present the results of empirical analysis on the determinants of capital structure. Table 5 reports the results of the determinant factors of the debt-to-equity ratio.

Table 5

FMB Analysis Results on the Debt-to-Equity Ratio for Chinese-Listed Retail Companies

Dependent variable: DE			
Independent variables	Fama-Macbeth approach	*t*-value	*p*-value
Lag_{Prof}	0.0641*** (0.0163)	3.93	0.000
Lag_{DE}	0.8809*** (0.0316)	27.85	0.000
Prof	-0.0730*** (0.0175)	-4.18	0.000
Size	1.1089*** (0.2462)	4.50	0.000
Tang	0.0404*** (0.0138)	2.93	0.000
FCF	-0.0399*** (0.0118)	-1.79	0.001
Tax	-0.0167* (0.0093)	-1.25	0.080
$Growth_o$	0.0136 (0.0352)	0.06	0.700
vol	0.0205 (0.0176)	0.125	0.250
_cons	-3.4700*** (0.7926)	-4.38	0.000
R^2	0.9412		
Adjusted R^2	0.9220		
F statistic (8, 46)	1,062.6		

Notes. * Significant at 10% level; *** Significant at 1% level; DE is transformed to Log term in regression analysis; All determinant factors are transformed to Log terms to express the percentage change of dependent variable for every 1% increase in independent variables. Lag_{Prof} is the lag term of profitability. Lag_{DE} is the lag term of the debt-to-equity ratio. Prof stands for profitability. Tang stands for tangibility. FCF stands for "free cash flow" and represents the internal financing ability. Tax stands for tax ratio. $Growth_o$ is the growth opportunity. vol is volatility.

Generally, our results are consistent with the predictions of both theoretical and empirical studies. Profitability is negatively correlated with the debt-to-equity ratio. Intuitively, the result is consistent with the Pecking Order Theory, as firms with higher profitability may prefer the internal financing method for capital expansion projects. Moreover, we may provide alternative explanations for this positive relationship, other than reasons such as to avoid underinvestment problems or new projects being mispriced (Chen, 2004). The equity financing method in China is characterized by (1) substantial capital gains in the primary and secondary market, (2) the non-binding nature (not compulsory to pay back), and (3) limited tax effects with the state being the controlling stakeholder of firms thus the main beneficiary of tax. Therefore, equity finance is preferred to debt. Moreover, retained profit is the most favorable way due to lower transaction costs and fewer restrictions (less information asymmetry problem). A Chinese Pecking Order appears as first internal financing, second equity financing, and lastly debt. Furthermore, it is noticeable that the lag term of profitability is negatively correlated with DE. A more detail-oriented analysis is required for interpreting such relationship.

Firm size is positively related to the debt-to-equity ratio. The result is consistent with the trade-off theory, which stated that larger firms with more diversified activities are exposed to a lower risk of bankruptcy, thus are expected to have a higher debt capacity (Kraus & Litzenberger, 1973). Friend and Lang (1988) suggested another possibility that larger firms with more diluted ownership have less control over managers' behavior, thus managers favor issuing debt to lower the cost of capital (lower risk and required rate return for debt

securities) and to obtain more tax-shield effect, which can lead to a higher return for the company. Pecking Order Theory serves as a competitive stance here, as POT states that larger firms have less information asymmetry issues, which enable them to issue more informationally sensitive securities like stocks (Kester, 1986).

Tangibility is positively correlated with the debt-to-equity ratio. With a better developed capital market legal system and less state intervention in the economy, the bankruptcy costs for firms have been gradually increasing in recent years. Regarding Chinese-listed firms' financial statements, the ratio of tangible assets to total assets has gained credibility in guaranteeing the payback to debt holders in case of firms' insolvency. Therefore, a higher tangibility ratio enables firms to raise their debt capacity.

Firms' internal financing ability is negatively related to DE. Intuitively, a firm with higher free cash flow could take advantage of its liquidity to finance investment projects. The negative relationship is also consistent with the Pecking Order Theory, which states that firms prioritize internal financing over external borrowing.

Tax ratio is negatively correlated with DE. The result indicates that Chinese firms are likely to adopt debt financing for higher tax-deductible income.

Growth opportunities and volatility both show a positive relationship with DE, but the results are insignificant. Main empirical studies suggested that firms with higher Tobin's q tend to have lower leverage, as companies with a high debt burden may forgo the profitable investment opportunities because of wealth transfer from shareholders to creditors. Firms with higher income volatility tend to adopt less debt financing, as high volatility implies a higher probability of financial distress, which could impair firms' debt capacity. Hence, our results are not consistent with empirical evidence. It can be argued that Chinese financial market is still in the transitional stage from the centrally planned to the market economy, thus the costs of financial distress (earning volatility, bankruptcy costs) are lower comparing to other developed economies.

Last quarter's debt-to-equity ratio shows a strong positive effect on current ones, as firms' financing decisions are not discrete choices. By incorporating the lag term of DE, we also reduce the reverse causality issue by separating the effect of lag DE and profitability.

Conclusions

The results of our empirical study are generally consistent with primary capital structure theories, and firm-specific factors which have explanatory power in western countries' corporate financing decisions are also relevant in China. Firms' debt-to-equity ratio decreases with profitability, tangibility, internal financing ability, and increases with size, tangibility, and effective marginal tax ratio. While the findings in the developed market economy are portable to Chinese companies, the capital structure of Chinese-listed firms owns some different features. First, Chinese firms tend to rely on higher levels of equity financing. Chen (2004) suggested a new Pecking Order Theory for the Chinese financial market, where firms prefer issuing equity over debt, as the former is not binding. Chinese firms also feature higher Tobin's q, which implies a higher market value over book value. Second, Chinese companies prefer short-term financing and have substantially lower amounts of long-term debt. Third, the above findings reflect that the Chinese financial market is still in the transitional stage, as the costs of financial distress are relatively insignificant. The state has effective power over corporate governance. Therefore, the costs of financial distress are likely to have less impact on firms' capital structure.

This paper has expanded the empirical results on corporate financing decisions, with the effort to explore the determinants of capital structure of Chinese-listed retail companies. Further work is needed to develop new

hypotheses for Chinese firms' financing decisions, and to design new factors to reflect the institutional feature of the Chinese financial market.

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