Capital Structure and Foreign Ownership: Evidence from China

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Abstract

This study provides fresh evidence on how sensitive long and short-term debts are to their financial determinants, looking at firms with different degrees of foreign ownership. Specifically, the study divides ownership into three groups, Purely Domestic, Joint Ventures and Wholly Foreign Firms and compares how their respective long-term debt and short-term debts respond to changes in their financial determinants. Wholly Foreign Firms and Joint Ventures are presumed to be more efficient and have a larger pool of cash flow compared to Purely Domestic Firms. In addition, firms with some degree of foreign ownership are presumed to be more endowed with tangible assets than firms without any degree of foreign ownership. Differences in these endowments are expected to reflect in the debt maturity choices of the different types of firms. Using ORIANA Dataset covering the period 2000-2008 on over 20,000 Chinese firms and the GMM technique, this study finds that while wholly-foreign firms and joint ventures' short-term debt respond less to changes in cash flow compared to domestic firms', there is no difference between how wholly-foreign firms and joint ventures long-term debt respond to changes in cash flow. Contrary to our expectations, we find that an increase in collateral will allow foreign firms to increase their long-term debt much more than Joint Ventures and Purely Domestic Firms. The implication of these results is that China's attempt to improve its financial system has not fully gained grounds.

1. Introduction

China's success in economic growth has been most remarkable in the world economy in recent years. Having a GDP per capita of about $186.44 at constant year 2000 prices just about some three decades ago, China has successfully become a thriving economy with a GDP per capita of about $1791.26 at constant year 2000 prices[1], and an average annual growth rate of about 9% in recent times[2]. Despite many studies citing financial constraints as a major obstacle to firm growth in developing countries especially[3], this rapid growth in the Chinese economy has been fostered by many things among which foreign investment has played a significant role. Foreign Direct Investment (FDI) stock, for instance increased about 30 times from the early 1980s to 2005.

Demirgüç-Kunt and Maksimovic (1998), Rajan and Zingales (1995) and many others for instance, demonstrate a link between credit market development and economic growth. Even within the Chinese context, Cull and Xu (2005) posit that access to external finance in the form of bank loans is associated with more profit reinvestment among Chinese firms, which ultimately leads to growth. Thus, one way to understand how FDIs have been able to contribute massively to the Chinese economy in spite of the challenges seen in many developing and transitional countries is by looking at the financing behavior of these firms. This, we do by observing foreign firm financing behavior in China.

The bulk of the literature has focused on the tradeoff between interest tax shields and expected bankruptcy costs to explain firm debt financing decisions. Myers and Majluf (1984) and Jensen (1986) however suggest that capital structure also depends on the existence of asymmetric information and agency costs. Most of these studies have focused on the western world. Indeed, relatively few studies have looked at the financing behavior of firms in China. Among this few is the study by Chen (2004) that examines the determinants of capital structure focusing on listed firms. His results suggest that the variables that explain the capital structure decisions in the western world are also relevant in explaining the capital structure of firms in China. In addition, his results bring forth an important revelation. He finds that neither the Trade–Off Theory (TOT) nor the Pecking Order Theory (POT) is sufficient in explaining capital structure decisions in China.

In recent times, however, most finance authors have diverted their attention from how capital structure affects firm value and rather emphasize how the capital structure of a firm can be influenced by ownership or governance structure which will in turn influence the strategic decision of top management (Hitt, Hoskisson & Harrison, 1991). These decisions they believe, will then have an impact on the general performance of the firm (Jensen, 1986). To examine this, Huang and Song (2006) use a dataset containing 1000 Chinese listed companies from 1994 to 2000. They report that ownership affects leverage. In particular, they find that state ownership is positively associated with leverage and firms' access to long-term debt, while firm foreign ownership is negatively associated with all of our measures of leverage. These results in the Chinese setting are general as they do not distinguish between the debt maturity choices of firms. For as Myers (1977) argues, firms with risky debt may use short-term debt instruments to minimize underinvestment problems as short-term debts are renegotiated often. This renegotiation process allows debt to be revalued so that gains from new projects do not accrue to debtholders. Barclay and Smith Jr. (1995) and Guedes and Opler (1996) find results consistent with this view. In particular, they find a negative relationship between growth opportunities and debt maturity, and a positive relationship between size and debt maturity. Myers (1977)'s position therefore establishes a link between firm

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[1] World Development Indicators (various years).

[2] Source: China Compendium of Statistics 1949-2004.

[3] See for example Harrison and McMillan (2003).

heterogeneity and debt maturity choices. Linking these findings to foreign firms and domestic firms, one would expect foreign firms to use more short-term debt than domestic firms. This is because they generally have a longer time record, low bankruptcy risk and are relatively more efficient compared to their counterparts' domestic firms. These findings motivated Li, Yue and Zhao (2009) to go a step further than Chen (2004) to study the debt maturity choices of SOEs, private firms and foreign firms in China from 2000-2003. They however present evidence suggesting that state ownership is positively associated with leverage and firm's access to long-term debt while firm foreign ownership is negatively associated with all their measures of leverage.

One important point emphasized by Li *et al*. (2009) in their study is that the extent to which asymmetric information and agency costs can be mitigated by ownership structures and financial contracts depends on firm characteristics. This makes the results established in their work quite general as it does not take into account the debt maturity choices of firms with different ownership groups looking at the specific determinants of capital structure.

This paper therefore examines for the first time the choice of debt maturities for firms with different degrees of foreign ownership. Specifically, we examine how firms with different degrees of foreign ownership's choice of debt will vary when their financial determinants change. We split firms into purely domestic (*PD*), joint ventures (*JV*) and wholly-foreign (*WF*) owned. As much as this classification enables us to consider the financial decision-making of firms with different ownership groups, it also gives us the opportunity to look at how the different financial determinants of capital structure distinctively vary across firms with different degrees of foreign ownership. To the extent that foreign firms are becoming a predominant part of the Chinese economy, it has become very necessary to pay particular attention to how they are being financed. One cannot do that by lumping them together and comparing them to other firms. We therefore divide them into smaller groups to effectively study their financial pattern and direct specific policies towards them. Our results, we believe, will judge the success of the on-going reforms in the Chinese financial sector. We do not argue in this paper that the other determinants do not vary with ownership but for the sake of simplicity we focus on only the financial variables.

We establish two things in this paper. First, if short-term debt is typically used for financing operational needs (which is relatively inexpensive); and long- term debt for assets and projects (which is relatively more expensive), then one would expect the firm's cash flow to matter more for short-term debt and, collateral, for long-term debt. Second, we argue that because foreign firms are generally bigger, possess less risky debt and have low growth opportunities compared to their counterparts domestic firms, wholly- foreign owned firms will have their long-term debt being less sensitive to cash flow than purely domestic firms, and their short-term debt being more sensitive to cash flow than purely domestic firms. As for collateral, although all firms may require collateral to secure short and long-term debts, foreign firms will need less collateral than *PD* firms because purely domestic firms are generally more risky and have shorter track record. We will normally expect both short-term debt and long-term debt for *WF* firms to be less sensitive to collateral compared to domestic firms.

Identifying the factors that affect the debt financing behavior of unlisted Chinese firms is relevant because China is considered the largest developing and transitional economy with institutional features that are likely to be unique. This makes it an interesting case to study. Its financial sector is characterized mainly by a bank-based system, where State-Owned Banks play an important role in it. These state-owned banks are usually directed by the government to divert resources from the most efficient firms (private firms; domestic and foreign alike) to SOEs which are generally considered less efficient. China has gradually been changing into a market-oriented economy over the past two decades, and there's now a growing recognition of private firms, especially the foreign ones. Consequently, the government has instituted many policies to support this important reformation. However, there is a growing concern that private firms in China still

face problems with finance. Therefore, even without any thorough investigations, we can immediately tell that heterogeneity exists in the financing behavior of firms in China. Yet, based on the arguments presented above, it is indeed difficult to tell which type of firm will have a higher debt ratio. This argument justifies our inclusion for *JVs*. This group, by having both the domestic and foreign component may allow them to benefit from both the government support given to domestic firms and the benefits from their international operations. Thus, they may either end up having a higher debt ratio than *PD* and *WF* firms, or towing the lines of one the firms (that is, *PD* or *WF*) depending on which firm's effect is greater. Particularly, China's corporate bond market is underdeveloped; Chinese firms encounter high agency cost, low bankruptcy risk (probably due to the fact that most of the firms are state-owned) and have low income tax rate. All these features imply that the trade-off theory cannot apply to Chinese firms. Our results, we believe, will judge the success of the on-going reforms in the Chinese financial sector. The remainder of the paper is structured as follows: Section 2 describes the dataset used in this study. In section 3, we discuss we show how we measure our variables. Sections 4 and 5 discuss the econometric technique and our results. In section 6, we conclude and draw out implications from our findings.

2. Dataset

Our principal source of information for this study is constructed from the ORIANA Database published by Bureau Van Dijk. It contains profit and loss and balance sheet information on over 20,000 firms, covering over 598,956 observations from 2000-2008. These firms operate in different industries and cover 30 provinces in China. In this study, we focus on the manufacturing sector only.

Finally, in order to deal with potential outliers, we drop all observations that fall within the 1% tails of the distribution of all variables used in the regression analyses. This leaves us with a final panel of about 16,181 firms covering annual observations for a period of 9 years. With the final dataset, firms appear 5 years on average, making the dataset unbalanced. The use of unbalanced data partially frees firms from survivor and potential selection bias as it allows firms to enter and exit the panel. All the firms in the dataset are unlisted.

We identify five different types of ownership in our dataset: state, collectives, private, domestic and foreign. From these ownership groups, we classify firms into three; according to the degree of foreign capital invested in it. Therefore, if a firm has no foreign capital, it is considered *PD (PD)*; if it has between 0 and less than 1 it is considered a Joint Venture *(JV)*[4]; and if it has foreign capital of 1, it is *Wholly-Foreign (WF)*. The sample appears to over represent *PD* firms: Nearly 82.13% of the total number of firms in the sample is *PD*, while the rest of the firms are almost equivalently shared between Wholly-Foreign firms and *JVs* (9.03% and 8.81% respectively). Out of the total number of state-owned enterprises in the dataset, about 95.6% of them are *PD* while the remaining 4.4% of them have formed collaboration with wholly-foreign firms.

More of the foreign firms appear to have established themselves in the coast: About 97.06% of the total number of wholly-foreign firms in China are located in the coast, 87.51% of *JVs* are also located in the coast while about 63% of *PD* firms are located in the coast. Conversely more *PD* firms are located in the non-coastal region than the other types of firms. While about 37% of *PD* firms are located in the non-coastal region, about 12.5% of *JVs* are located in the non-coastal region and only about 3% of wholly-foreign firms are located there. The gradualist approach adopted for opening up, together with the good geographical nature of China's coastal region explains the uneven distribution of firms, especially foreign firms in China.

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[4] This classification is in accordance with the how Joint Ventures are classified in the Chinese setting.

3. Model Specification, Methodology, and Econometric Technique

3.1. Model Specification and Methodology

Dynamic adjustments of actual capital structures should be included into an empirical model, when adjustment costs keep firms away from their desired debt ratio, at least in the short-run (Leary & Roberts, 2005).

As discussed earlier, at any time t, there exists a gap between the target debt level and the actual debt level. This is because firms face some adjustment costs if they have to adjust to the target level. Hence, if we carry out the estimation with just the determinants of capital structure and leave out the effect of adjustment cost, then, our model will not be specified appropriately. To avoid this, we follow De Miguel and Pindado (2001) and build up a model to include firms' transaction cost. According to this model, firms follow a target adjustment model for which

$$Y_{it} - Y_{it-1} = \alpha(Y_{it}^* - Y_{it-1}), 0 < \alpha < 1 \tag{1}$$

where Y_{it} and Y_{it-1} are the actual debt levels in the current and previous periods respectively, and Y_{it}^* is the firm's target debt if we assume no transaction cost when moving to a new debt level. We measure the transaction cost by the coefficient α. Hence, if transaction costs are zero, that is $\alpha=1$, then, $Y_{it} = Y_{it}^*$ and the firms automatically adjust their debt level to the target debt level.

On the other hand, if $\alpha=0$, then $Y_{it}=Y_{it-1}$, and this implies that firms remain in the previous year's debt levels because transaction costs are so high. Where values of α are between 0 and 1, the higher the value of α, the easier it is for firms to adjust to their target debt levels. Expanding Equation (1), the actual debt level becomes:

$$Y_{it} = \alpha Y_{it}^* + (1 - \alpha)Y_{it-1} \tag{2}$$

In section 3, we outlined the determinants of the target debt level, D_{it}, of a firm. Putting this in the form of an equation, we have,

$$Y_{it}^* = \delta_1 + \delta_2 \left(\frac{CF}{A}\right)_{it} + \delta_3 \, COLL_{it} + \delta_4 \, SIZE_{it} + \delta_5 \, GROWTH_{it} + \delta_6 \, TAX \, SHIELD_{it} +$$

$$\vartheta_i + \lambda_t + u_{it} \tag{3}$$

Where Y_{it}^* = can either be target current liabilities/assets, long term liabilities/assets, CF/A= cash flow/assets for firm I at time t, $coll$= collateral, $growth$=growth opportunities, i=firm and t=time.

By nesting Equation (6.1) into Equation (6.3), we have

$$Y_{it}^* = \alpha\delta_1 + (1 - \alpha)Y_{it-1} + \delta_2 \left(\frac{CF}{A}\right)_{it} + \delta_3 \, COLL_{it} + \delta_4 \, SIZE_{it} + \delta_5 \, GROWTH_{it} + \vartheta_i +$$

$$\lambda_t + u_{it} \tag{4}$$

Where λ_t= time specific component accounted for by time dummies, δ_1= firm specific component of the error term and u_{it}= idiosyncratic term[5]. Equation (4) represents the basic equation we use for this study. An important arguments raised in Myers (2002) is that different types of firms are affected by different factors in different ways, implying that a reduction in each of the determinants is likely to affect the leverage measures of different firms in different ways. If this argument is valid, fitting a single model for firms with different ownership degrees will cause aggregation problems. For this reason, we follow the ideas expressed in Li *et al*. (2009) and Cull, Xu and Zhu

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[5] It is very necessary to include firm specific components in all specifications, given that levels of leverage may vary across firms. As put by Qian, Tian, and Wirjanto (2009) for instance, capital intensive manufacturing firms may have high debt while mining companies are generally seen to have low debt.

(2009)[6] and include dummies representing *JV* and *WF*, but in our case we interact these dummies with the financial variables, collateral and cash flow[7]. Our reference category is *PD firms*. The purpose of this exercise is to examine whether differences exist in the way the factors of firms with different degrees of foreign ownership affect access to debt. Nesting this idea into the model expressed in Equation (4) leaves us with

$$Y_{it}^* = \alpha\delta_1 + (1-\alpha)Y_{it-1} + \delta_2 \left(\frac{CF}{A}\right)_{it} + \alpha\delta_3 \left(\frac{CF}{A}\right)_{it} * JV + \alpha\delta_4 \left(\frac{CF}{A}\right)_{it} * WF +$$

$$\alpha\delta_5 \, COLL_{it} + \alpha\delta_6 COLL_{it} * JV + \alpha\delta_7 COLL_{it} * WF + \alpha\delta_8 \, SIZE_{it} + \alpha\delta_9 GROWTH_{it} + \vartheta_i +$$

$$\alpha\delta_{10}JV_{it} + \alpha\delta_{11}WF_{it} + \lambda_t + u_{it} \tag{5}$$

For firm i in year t, Y_{it}^* can be short-term debt ratio or long-term debt.

Indeed, the use of interaction terms prevents us from running separate regressions on sub-samples for firms with different degrees of foreign ownership. Thus, we are able to gain degrees of freedom and avoid problems of endogenous sample selection (Guariglia, 2008).

3.2. Dependent Variable Measurement

To establish the empirical design of our research, we explain the indicators of financing decisions and, subsequently their expected relationship with their determinants. Various alternative definitions of leverage have been employed by many studies. In most studies, they are usually in some form of debt ratio. They differ according to whether book measures or market values are used or whether total debt, short-term debt or long-term debt is considered (Frank & Goyal, 2009). Some authors (see Welch, 2004) have even used interest coverage ratio. Most studies have used a single measure of leverage, the most widely used measure being total debt to assets. To meet our objective, we employ both short-term debt ratio and long-term debt ratio. We measure a firm's short-term debt ratio as its short-term liabilities including trade credits divided by its total assets, and long-term debt ratio as the ratio of its long-term liabilities to total assets. The ratio of liabilities (debt-to-equity ratio) to assets is equivalent to the traditional measure leverage, which has been the main way of measuring leverage ratio in most textbooks. Below, we discuss a brief overview of short term and long-term debt on the Chinese market.

3.2.1 Short-Term Debt versus Long-Term Debt Financing in China

Even though the debt market is experiencing rapid growth in China, it is still difficult for companies to have access to long-term financing from the relatively undeveloped corporate bond market. This situation suggests that while short-term debt from banks represents the most dominant source of financing for firms in China, the role of long-term debt in financing firms has been limited. Linking this to our data, while all the firms in the dataset have some amount of short-term debt, just about 60% of the firms in the dataset have some amount of long-term debt. Being specific, the firm with the smallest amount of short-term debt has a debt of about 912.7 yuan while the firm with the largest amount of long–term debt has a debt of about 117641.4 yuan.

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[6] Li *et al*. (2009) and Cull *et al*. (2009), classify firms into private, state-owned and foreign.

[7] As a passing note, we are not arguing that the impacts of the other explanatory variables do not vary with ownership, export status or region. However, our study is interested in what happens when the financial variables are interacted are allowed to vary according to groups. It is worthy of mentioning that, we carry out another estimation which is not included in this study with all the explanatory variables interacted with the various groups, but our main results do not change.

Further, 25% of the values of short-term debt are equal to or less than 35314.13 yuan, and about 75% of the values of short-term debt are equal to 66673.98 yuan. For long-term debt, the firm-year with the largest amount of long-term debt has a debt of about 60595.8 yuan. 25% of the values of long-term debt are less than or equal to 0 and about 75% of the values of debt are less than or equal to 9618.86 yuan. Firms in China use more short-term debt because they cannot afford the high issue cost of long-term debt. This situation is especially worse for unquoted firms, as they find it easier to issue short-term debt due to informational asymmetries[8]. Also as Chen (2004) explains firms in China have less long-term debt because first, the bond market is underdeveloped, second, firms prefer equity finance due to substantial capital gain, and third, due to problems in corporate governance and lack of enforcement of company laws, individual shareholders are not protected. As Chen (2004) puts it, share capital has become a 'free' source of finance. Therefore, managers prefer to use equity rather than debt because the former is not binding.

3.3. Determinants of Capital Structure[9]

Further, based on previous work (Harris & Raviv, 1991; Rajan & Zingales, 1995; Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001), we examine the major firm characteristics that determine capital structure in order to establish a theoretical framework.

Firm size, measured by log of real sales or assets has been seen as a major determinant of capital structure. The relationship between size and leverage is mixed. Size may be positively (Marsh, 1982; Friend & Lang, 1988) or negatively (Rajan & Zingales, 1995) related to leverage depending on whether the Trade-Of Theory (TOT) or the Pecking Order Theory (POT) is considered. As pointed by Jensen (1986) for instance, professional managers (who are not owners) may have objectives other than maximizing profits, such as the desire to have power and improve their status. This leads them to deriving personal benefits from expanding beyond the optimal firm size, thereby, increasing leverage. This idea supports the TOT theory. On the other hand, the POT predicts a negative relationship between leverage and size of firms. As well known, larger firms tend to be more profitable and hence have more retained earnings. Firms that tend to have higher retained earnings will prefer to use more of it than debt because using retained earnings is relatively cheaper. Therefore, we expect lower leverage use as a firm a gets larger. Titman and Wessels (1988) and Benito (2003) for instance, find a negative link between debt and firm size.

Cash flow/Total Assets represents a firm's profitability. The TOT predicts a positive relationship between profitability and leverage. The more profitable a firm is, the more likely it is for it to have access to debt because it is less likely that, that firm will not default payment. Also profitable firms can avoid taxes when they use more debt. Petersen and Rajan (1994) for instance find a positive relationship between profitability and debt ratio. On the other hand, the POT predicts that a firm with a higher profitability will use less leverage as it is relatively cheaper for the firm to use its greater available internal funds to finance its investment. Titman and Wessels (1988) and Barton, Hill and Sundaram (1989) find that firms with higher profits use relatively lower debt ratios. Focusing on specific leverage ratio measures, Cassar and Holmes (2003) and Hall, Hutchinson, and Michaelas (2004) all find negative relationship between profitability and both short-term and long-term debts. We examine these two conflicting predictions by looking at the relationship between cash flow and leverage.

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[8] See Mitchell (1991).

[9] Most studies (for eg. De Miguel & Pindado, 2001) have included non-debt tax shield as a determinant of capital structure. This variable, although an important determinant, was not statistically significant in any of our estimations. We therefore excluded it from our analyses.

Collateral, measured as the ratio of a firm's tangible assets to its total assets show the level of tangible assets that can be used by the firm when it decides to borrow, has an impact on debt maturity. As collateral captures the proportion of tangible assets to total assets it suffers minimal percentage losses in liquidation. It is able to reduce information asymmetries and agency problems because it secures the interests of lenders when problems arise either from lack of information or conflicts of interests between the internal and external parties. According to Bradley, Jarrell, and Kim (1984), firms that invest greatly in tangible assets are able to present these assets as collateral, making it easier for them to secure more debt at a relatively cheaper cost. Likewise, the P.O.T predicts a positive relationship between collateral and leverage. Harris and Raviv (1991) posit that the problem of information asymmetry will be minimized if borrowers are able to produce collateral which can be valued. Firms with more collateral can have access to more debt as that may cover up for the asymmetric information and moral hazard problems. Other studies specifically provide evidence of a positive relationship between asset structure and long-term debt and a negative relationship between asset structure and short-term debt (see Van der Wijst & Thurik, 1993; Jordan, Lowe, & Taylor, 1998; Hall *et al*., 2004). But Chen (2004) argues that the relationship between collateral and leverage can be negative if the firms have closer relationships with their lenders.

We measure *growth opportunities* as either the change in the log of real sales or the change in the log of real assets. Myers (1977) posits that firms with higher growth opportunities will have low debt ratios. According to him, higher growth opportunities can intensify moral hazard problems due to agency costs and further lead to the problem of asymmetric information. The reason is that the benefits which will be realized by the firms from the higher growth opportunities will be enjoyed by the shareholders and not the lenders. In addition, firms with higher growth opportunities will have less debt as they will prefer retaining their debt capacity because they might need to borrow more in future (Titman & Wessels, 1988). On the other hand, the P.O.T predicts that if a firm requires meeting its higher growth opportunities, it needs to borrow more to supplement its internal finance. Therefore, firms with higher growth opportunities will be characterized by higher debt ratios. Marsh (1982) provide evidence to show that firms characterized by higher growth opportunities display relatively higher debt ratios.

3.4. Econometric Technique

To estimate the equations above, we consider different estimation techniques and select the most appropriate one for the study. Further, researchers are interested in the speed of adjustment, which is given by one minus the estimated coefficient on the lagged dependent variable in the partial adjustment model. Panel data offers us the opportunity to observe the dynamic behavior of the capital structure decisions of firms. Therefore, in a dynamic panel model as presented in Equation (3), using static panel-data methods (For e.g. OLS and Fixed Effects) will produce estimates that are inconsistent and bias because the lagged measures of leverage are likely to be correlated with the error term. While OLS will underestimate the speed of adjustment, Fixed Effects methods will provide overestimated coefficients of the speed of adjustment. Another estimation problem, not necessarily specific to the dynamic specification, arises because the shocks that affect the leverage of firms are also likely to affect some of the explanatory variables, such as cash flow and firm size (bi-causality problems). Furthermore, it is likely that some of the explanatory variables are correlated with past and current values of the idiosyncratic component of disturbances.

The problems described above require an instrumental variables (IV) estimation method, where the lagged dependent variable and endogenous regressors are instrumented for. Therefore, we apply the dynamic panel data estimator suggested by Arellano and Bond (1991). They prove that Generalized Method of Moments (GMM) estimation provides consistent parameter estimates by utilizing instruments that can be obtained from orthogonality conditions that exist between the lagged values of the variables and the disturbances. Specifically, Equation (3) is estimated in first differences using GMM, whereby the levels of all right-hand side variables at the second lag are

used as instruments. Using instrumental variables also accounts for the problem that, delays may arise between the decision to change the capital structure and the actual execution. We rely on Arellano and Bond (1991) and Arellano and Bover (1995)'s Forward Orthogonal GMM Technique. We use the forward orthogonal method because it prevents magnification of gaps in the dataset. That is, if a firm has an observation missing, the forward mean does not also become missing. We make use of the two-step variant of the GMM. The one-step variant makes a strong assumption about the error term. It assumes no autocorrelation and heteroscedasticity. Thus, its test statistics and the parameter estimates may be subject to heteroskedastic problems. To correct this, the two-step variant constructs a consistent estimate of the variance-covariance matrix of the moments conditions based on the first-step residuals and then re-estimate the regression. The two-step method however does not go without a problem. Its standard errors tend to be downward biased in small samples (Blundell & Bond, 1998). We use the Windmeijer (2000) method to correct the standard errors of the two- step GMM. All coefficients are adjusted for heteroscedasticity.

The GMM technique in general makes use of instrumental variables that are correlated with the explanatory variables but independent of the error term. The two-step GMM Technique is consistent if there is no second or higher order serial correlation between the error terms. To check this, Arellano and Bover (1995) propose a test, m_2 (or m_n, where n is a number greater than 2) for the lack of second or higher order serial correlation. These tests are asymptotically distributed as a standard normal under the null of no second or n- order serial correlation of the residuals[10]. In our case, we make use of the m_3 tests because our instruments are dated t-3 in our all our specifications. This means that the m_3 tests will be used to check the specification of the model and the legitimacy of the variables. By using instrumental variables, we are able to by-pass certain basic problems such as simultaneity bias and measurement error problems. To check whether the instruments used are valid, Sargan (1958) proposes a test of over-identifying restrictions under the null that the instruments are valid. However, Sargan (1958)'s test may give misleading results if the sample size is very large, implying that we cannot rely completely on it. This is similar to what Benito (2003) describes in their study. According to him, when samples with very large cross-sectional dimension are used in estimation, this test tends to over-reject the null hypothesis of instrument validity (see also Blundell, Bond, & Windmeijer, 2000).

Next, a careful look at the data reveals that much of the observations of long-term debt are zero, suggesting a censored distribution. This means that all the values within a certain range are given a fixed value, in this case zero. Following Bhabra, Liu, and Tirtiroglu (2008), we proceed to assess the relationship between capital structure and the interaction of the different degrees of ownership and all the explanatory variables in accordance with the Random Effect Tobit Model. We impose a lower limit on the recorded long-term debts. To be able to interpret our coefficients, we obtain the marginal effects after estimation. Because we have included the lag of our dependent variable as an explanatory variable, there is bound to be endogeneity. We therefore carry out an Instrumental Variable Tobit regression model. We compare the two to see if there are any differences. We use the second lag of the dependent variable as an instrument for the Tobit Model.

4. Result

4.1. Summary Statistics

Next, in this section, we carry out summary statistics on the variables used in the study. In this study, we make use of four financial variables; Current Liabilities/Total Assets, Non-Current Liabilities/

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[10] If the un-differenced error terms are *i.i.d.,* then the differenced residuals should show first-order but not second or higher-order serial correlation. It is important to note that the *m2* and the *m3* tests do not allow us to distinguish between bad instruments and model specification.

Total Assets, Cash flow/Total Assets and Collateral. As indicated earlier, the first two variables are indicators of a firm's general indebtedness, cash flow/total assets can be interpreted as an indicator of the availability of internal finance, or as a measure of a firm's profitability and collateral, the firm's ability to repay its loans. Whereas current liabilities/total assets takes into account all the firm's short-term debts including trade credits, non-current liabilities accounts for all the firm's long-term debts. Both measures indicate the proportion of firms' asset financed through short and long-term debts respectively. On one hand, a high leverage suggests that firms are indebted because they have been incapable of making repayments, thereby accumulating their debts.

On the other hand, a high leverage could signify firms' ability to attract external finance as firms in good financial standing can easily receive external finance because they are believed to be more credible. Table 1 below reports sample means of the variables used in the analysis for different ownership categories.

Table 1. Comparison of the mean values of variables among different types of firms

Variable	P.D	J.V	W.F	M.D T ratio PD and JV		M.D T ratio PD and WF		M.D T ratio JV and WF	
	(1)	(2)	(3)	(4)		(5)		(6)	
Current Liabilities / Total Assets	0.54	0.50	0.48	0.03	17.39	0.06	29.86	-0.02	10.11
Non-Current Liabilities / Total Assets	0.09	0.05	0.03	0.03	32.83	0.06	56.28	-0.02	-21.32
Real Assets	1355	1650.83	973.16	-297.35	-12.82	380.32	18.75	-677.67	-28.38
Cash Flow / Total Assets	0.07	0.09	0.09	-0.02	-33.23	-0.02	-26.95	0.005	-4.61
Collateral	0.37	0.34	0.36	0.03	19.11	0.01	7.60	-0.2	9.47
Growth Opportunities	0.12	0.10	0.11	0.02	4.98	0.01	1.51	0.01	2.91
No. of Observations	45431	16722	17848						

Notes: Purely Domestic refers to PD, JV, Joint Ventures, and WF, Wholly-Foreign. Current Liabilities/Total Assets represents Short-Term Debt Ratio; Non-Current Liabilities/Total Assets represents Long-Term Debt Ratio. M.D represents Mean Difference. Columns 4, 5 and 6 show the mean differences and the t statistics of PD and JV firms, PD and WF firm years and JV and WF firms respectively.

As far as the debt measures are concerned, PD firms represent the category with the highest average debt (current liabilities/total assets and non-current liabilities/assets). In fact, the average debt seems to be decreasing with increase in foreign ownership, though the difference does not appear significant. That notwithstanding, these same firms (that is, PD firms) appear to have the lowest average *cash flow/capital stock*. Their high level of indebtedness might be attributed to the ease with which they are able to secure loans from banks and the lending bias that has historically favored them[11], while their low level of cash flow on average signifies their inability to manage funds and generate internal funds. Not surprisingly, firms with foreign ownership have higher average cash flow and lower leverage measures, implying that they mostly follow the pecking order theory: They use less debt because their internal finance base is larger.

Collateral is also highest on average for PD firms, followed by WF firms, and then JVs. In reality, this does not often happen unless some kind of intervention exists. Perhaps this may throw

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[11] Compared to the percentage of joint ventures that are state-owned (2%) more Purely Domestic firms are state-owned (about 17%), therefore, we conclude that Purely Domestic Firms are to be more influenced mainly by what goes on with the state-owned enterprises.

more light on the support given to PD firms and further explain why *PD Firms* are highly indebted on average. JVs are the largest in terms of average real assets. *PD firms* follow when real assets are used to measure firm size: At first glance, the results for firm size may appear strange, but in the context of China, this is expected as PD firms are larger than WF firms again due to the backing they receive from the state. Looking at growth opportunities from table 1 above, it is evident that all the different types of firms with different degrees of foreign ownership have almost similar growth opportunities on average: Differences in these average growth opportunities between these types of firms are negligible.

4.2. Empirical Results

To be able to attain full understanding of our research question, we start our investigations by considering short-term leverage behavior of firms in the entire manufacturing sector. Table 2 column 1 below shows the GMM estimates for all firms in the manufacturing sector using short-term debt. In this estimation, we use 3 lags of all the variables used in the estimation as instruments. From column 1, we find that cash flow is negatively significant at 1%. Specifically, a manufacturing firm's short-term debt level will decline by about 13.6 units when its cash flow increases by about 1 unit. This means that all manufacturing firms substitute short-term debt for internal finance. In other words, they find it relatively cheaper to use cash flow than short-term debt and therefore will only use short-term debt after cash flow has been fully exhausted. This follows the idea proposed by the POT. For this reason, with regards to cash flow, all firms follow the POT.

Unlike cash flow, collateral is statistically insignificant in explaining the short-term debt behavior of manufacturing firms in China. The reason may stem from loan supply rather than demand. For as Jensen and Meckling (1976) suggest, long term loans give opportunity to debtors to engage in risky ventures. Hence, if they have to pledge any collateral this will serve as a check to them as the risk of losing their collateral will prevent them from moving to more risky projects. Hence collateral pledging is expected to increase the supply of longer term debt and not shorter term loans. Considering size, its coefficient is statistically insignificant while that of growth opportunities is significant and positive. This implies that firms with higher growth opportunities can access more debt. Lagged short-term debt from our results in table 2 is also significant and positive at 1%. This justifies the use of the dynamic model as the static model which has been used by many Chinese studies would have hidden this information. The significant results obtained for this coefficient implies that manufacturing firms in China bear some level of transaction costs when they decide to adjust their short-term debt level in the previous period to the target level in the current period. The transaction cost which equals about 83% is even higher than that of the US. This means that firms adjust at a rate of about 17% (given by 1 minus the coefficient of the lagged dependent variable) to their short-term debt target level. Following this, we can conclude that firms in China take about five and a half years to adjust to their target debt levels. Comparing this transaction cost to that of other countries in Europe, the result for China is higher. For instance, in a Spanish study conducted by De Miguel and Pindado (2001), they find a transaction cost equivalent to about 20%, a percentage inferior to that found in this study. The transaction cost found for the Chinese manufacturing firms can be said to be higher than that of the US which ranges between 30% and 40%[12].

This result has two important implications. First, it shows that the public debt of the Chinese economy is now increasing, giving good indications that the bond market is experiencing a certain level of development. This implies that the ongoing financial reform is in a way becoming successful. Second, the high transaction cost also re-enforces the existence of high informational asymmetries in the Chinese economy compared to other economies.

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[12] The values obtained are: 0.383 (Jalilvand & Harris, 1984), 0.304 (Auerbach, 1985), and 0.410 (Shyam-Sunder & Myers, 1999).

Table 2. GMM estimates for short-term debt of firms with different ownership

Dependent Variable: Short-Term Debt / Total Assets	All Firms (1)	Dynamic model for Different Types of Firms (2)
JV		0.03**
		(0.01)
WF		0.03**
		(0.01)
Lagged(Short-Term Debt / Total Assets)	0.83***	0.82***
	(0.02)	(0.02)
Cash flow / Total Assets	-0.20***	-0.15*
	(0.06)	(0.08)
Cash flow / Total Assets*JV		-0.21***
		(0.08)
Cash flow / Total Assets*WF		-0.21***
		(0.08)
Collateral	-0.00	0.000
	(0.00)	(0.00)
Collateral*JV		-0.001**
		(0.00)
Collateral*WF		-0.001**
		(0.00)
Size	-0.00	0.002
	(0.00)	(0.003)
Growth	0.05*	0.04
	(0.03)	(0.03)
Interest Tax Shield	-0.00	-0.00
	(0.00)	(0.00)
Constant		0.1***
		(0.03)
N	66934	59598
AR (2) p	0.000	0.000
AR (3) p	0.819	0.482
Hansen Test p	0.002	0.018

Notes: Estimation was done using GMM forward orthogonal deviation method. PD, JV and WF represent PD, joint ventures, and wholly foreign firms respectively. We use three lags of all the variables as instruments for our estimation. Reported estimates are the coefficients of each of the variables. The standard errors are reported in parenthesis. *** means significant at 1%, ** significant at 5% and *, significant at 10%. The first and second order serial correlation tests are asymptotically distributed as N (0, 1) under the null of no serial correlation. The Hansen Test is a test of over identifying restrictions, distributed as a chi – square under the null of instrument validity. Time Dummies were included in the estimation as both regressors and instruments.

Next, we move on to our main point of investigation. We control for heterogeneity among different types of firms and compare their leverage behavior. As explained above, we divide the firms into different degrees of foreign ownership; PD, JV and WF, and interact these dummies with the financial variables (cash flow and collateral). Our base group is PD firms, meaning that all our coefficients on the financial variables are relative coefficients. The GMM estimates can be found in column 2 of Table 2 below. With these results, the AR (3) test which is distributed as a chi (2)

under the null that there is no serial correlation is satisfied. From Table 2 column 2, we find that ownership tends to play an important role in the financial decision of firms. Controlling for all the other explanatory variables, it appears that on average, the amount of short-term debt that *WF firms* and *JVs* have (holding all other factors constant) is about 0.03 units higher than that of the *PD firms*. In Flannery's (1986) model, borrowers with private information that they have relatively low risk, choose short maturities to avoid paying a market premium on long-term debt that reflects the probability of future credit problems that exceeds these borrowers' expectations. Conversely, those with private information that they have relatively high risk choose to borrow long term because the market premium reflects a probability of credit problems that is below their expectation. Evidently, because foreign firms generally have a longer track record and have a lower bankruptcy risk foreign firms find it easier to receive assistance from domestic banks (Colombo, 2001; Harrison & McMillan, 2003). This result also applies to JVs, whose foreign component tends to influence their choice of debt maturity. These results are contrary to that provided by Li *et al*. (2009). Consistent with the results in column 1, we find cashflow to be statistically significant and negative at the 10% level of significance, implying again that firms will substitute short-term debt for cash flow. Moreover, short-term debt typically falls more for WF firms and JVs when cash flow increases, vice versa. These results fall in line with our beliefs. As stated earlier in the introduction, short-term debt is useful for financing the operational activities of firms. We rationalize the higher sensitivity of short-term debt to cash flow for WF firms by arguing that because WF firms are generally considered more efficient, and hence more profitable, they would want to use more of their cashflow to finance their short-term assets when cashflow increases. This will imply a greater reduction in short-term debt since cash flow is relatively cheaper to use. As for PD firms, their relative inefficiency will mean that they may require additional financing for running their day-to-day activities, for which reason they may not be able to cut down on their short-term debt by a greater amount. Collateral in column 2 remains insignificant. However, distinguishing among the firms we find that WF firms and JVs will need less collateral than PD firms to increase their short-term debt if they need to produce collateral to have access to financing. Again, these results make sense as firms with some degree of foreign ownership usually have lower bankruptcy risk and longer track record. Sales, interest tax shield and growth opportunities are all insignificant in explaining the short-term debt behavior of the firms. Lagged short-term debt however remains significant at 1% depicting a transaction cost of about 83%. Considering that both the Hansen Test and the AR (3) tests are valid at the 5% and 1% level of significance respectively our model is correctly specified and the instruments used, valid.

We now present and discuss the results obtained for long-term debt. Examining the factors that affect firms' long-term debt provides some interesting insight into our investigations. As discussed in Section 3 of this paper, we believe that the value of long-term debt is censored to the left and so we estimate a tobit regression. Since our model is dynamic, we do not only estimate a simple tobit model, but also an instrumental variable tobit model. Table 3 columns 1 and 2 report the marginal effects from the two different tobit regressions.

As shown in these columns, the results for both versions are almost similar. Both JVs and WF firms appear to receive less long-term debt on average than PD firms. In particular, the results for the simple tobit model shows that while JVs receive 0.02 units less long-term debt than PD firms, WF firms receive 0.03 units less long-term debt than PD firms. For the instrumental variable tobit model results in column 2, we find that while JVs receive 0.03 less long-term debt than PD firms, WF firms receive 0.05 units less long-term debt than PD firms. We argue that, foreign firms have parent companies that are able to supply them with paid-up capital they may not appear to use more long-term debt. Our results also confirm Barclay and Smith Jr. (1995)'s results that suggest that firms with less risky debt (in this case foreign firms) will use less long-term debt. Therefore, we are not surprised by the findings that *PD firms* use more long-term debt than the other firms. For cash flow, our results are similar to what we find for short-term debt. Our results show that cashflow is

significant and negative, depicting that long-term debts are used as substitutes for cashflow. We however find that there is no difference among the different types of firms' long-term financing behavior when cashflow changes. This contradicts our belief as one would have expected foreign firms to for instance reduce their long-term debt by a smaller amount than PD firms when cashflow increases, given what long-term debts are used for.

Table 3. Marginal effects for the tobit regression for firms
with different degrees of foreign ownership

Dependent variable: (Long-Term Debt / Assets)	Using a Dynamic Instrumental Tobit Model (1)	Dynamic Tobit Model (2)
JV	-0.02***	-0.034 ***
	(0.004)	(0.005)
WF	-0.03***	-0.05***
	(0.005)	(0.006)
(Cash Flow / Assets) * JV	-0.03	0.002
	(0.02)	(0.024)
(Cash Flow / Assets) * WF	0.001	0.009
	(0.02)	(0.025)
Cash Flow / Assets	-0.09***	-0.12***
	(0.01)	(0.008)
Collateral	0.0003***	0.001***
	(0.000)	(0.000)
Collateral * JV	0.000	0.000
	(0.000)	(0.000)
Collateral * WF	0.0004***	0.000*
	(0.000)	(0.000)
Size	0.007***	0.01***
	(0.001)	(0.001)
Growth	-0.005***	-0.006***
	(0.002)	(0.002)
Lagged (Long-Term Debt / Assets)	1.13***	0.55***
	(0.01)	(0.007)
Tax Shield	0.000	0.000
	(0.000)	(0.000)
Constant	-0.12***	-0.137***
	(0.003)	(0.004)
sigma_u		0.071***
		(0.000)
sigma_e		0.089***
		(0.000)
Wald Test	Prob > chi2=0.0000	
N	43194	59598

Notes: Estimation was done using the Random Effect Tobit regression model. PD, JV and WF represent PD, joint ventures and wholly foreign firms respectively. Reported estimates are the coefficients of each of the variables. The standard errors are reported in parenthesis. *** means significant at 1%, ** significant at 5% and *, significant at 10%. Time Dummies were included in the estimation as regressors.

However, this result is not surprising. Domestic Firms in China enjoy support from the government. Therefore although their long-term debt is expected to go down by a greater margin than that of foreign firms, they are still able to increase their long-term debt in a way which is not different from that of foreign firms. Moving on to the long-term debt financing behavior of the different types of firms and how that responds to changes in collateral, we find the long-term debt of *WF firms* to be more sensitive to collateral relative to *PD firms*. This contradicts our initial thoughts. However, it provides an indication that collateral is more relevant for WF firms in accessing long-term debt than PD firms. Again, we attribute this to the governmental support in the form of guarantee that PD firms receive. Interestingly, *JVs* long-term debt sensitivity to collateral appears not to be different from that of PD firms. We argue that their domestic component allows them to benefit from government support. This shows that a lot more work needs to be done to improve the ongoing reforms.

5. Summary

In this study, we have first shown that some of the firm characteristics that are relevant in explaining capital structure in the western world are also relevant in explaining the financing behavior of Chinese firms. We have also clearly shown the importance of distinguishing between different forms of leverage as far as ownership is concerned as the respective results differ. Purely Domestic Firms use more long-term debt than Wholly Foreign Owned Firms and Joint Ventures while, Wholly Foreign Owned Firms and Joint Ventures use more short-term debt. This suggests that to some extent the ongoing banking reforms have been successful. Further, we have provided fresh evidence on the sensitivity of long-term debt and short-term debt to the financial determinants of firms with different degrees of foreign ownership. Our results have shown that foreign firms' (WF Firms and JVs) short-term debt are less sensitive to cashflow than that of Purely Domestic Firms. As for collateral, we have found that foreign firms need less collateral than purely domestic firms for short-term debt. Quite surprisingly, we have found that when collateral increases, wholly foreign firms will be able to access more long-term debt than domestic firms. The above findings have revealed the state of the transitional nature of the Chinese financial environment. In particular, the results for long-term debt have proven that a lot more work needs to be done in reforming the financial environment of the Chinese economy. This is because domestic firms that are generally inefficient are still being shielded by the government. This study therefore calls for government to reduce its control in the long-term financial market and allow it to be more market-driven. This will make domestic firms more competitive.

References

[1] Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and application to employment equations. *Review of Economic Studies*, *58*(2), 277-297. https://doi.org/10.2307/2297968

[2] Arellano, M., & Bover, O. (1995). Another look at the instrumental variables estimation of error-components models. *Journal of Econometrics*, *68*(1), 29-51. https://doi.org/10.1016/0304-4076(94)01642-D

[3] Auerbach, A. J. (1985). Real determinants of corporate leverage. In B.M. Friedman (Ed.), *Corporate capital structures in the United States* (pp. 301-324). Chicago: University of Chicago Press.

[4] Barclay, M. J., & Smith Jr., C. W. (1995). The maturity structure of corporate debt. *The Journal of Finance*, *50*(2), 609-631. https://doi.org/10.2307/2329421

[5] Barton, S. L., Hill, N. C., & Sundaram, S. (1989). An empirical test of stakeholder theory predictions of capital structure. *Financial Management*, *18*(1), 36-44.

[6] Benito, A. (2003). *The capital structure decisions of firms: is there a pecking order?* (Banco de España, Working Papers No. 0310). Spain: Banco de España.

[7] Bhabra, H. S., Liu, T., & Tirtiroglu, D. (2008). Capital structure choice in a nascent market: Evidence from listed firms in China. *Financial Management*, *37*(2), 341-364. https://doi.org/10.1111/j.1755-053X.2008.00015.x

[8] Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*(1), 115-143. https://doi.org/10.1016/S0304-4076(98)00009-8

[9] Blundell, R., Bond, S., & Windmeijer, F. (2000). *Estimation in dynamic panel data models: improving on the performance of the standard GMM estimator* (IFS Working Papers W00/12). London, UK.: Institute for Fiscal Studies.

[10] Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital Structures in Developing Countries. *The Journal of Finance*, *56*(1), 87-130. https://doi.org/10.1111/0022-1082.00320

[11] Bradley, M., Jarrell, G. A., & Kim, E. H. (1984). On the Existence of an Optimal Capital Structure: Theory and Evidence. *The Journal of Finance*, *39*(3), 857-878. https://doi.org/10.1111/j.1540-6261.1984.tb03680.x

[12] Cassar, G., & Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. *Accounting and Finance*, *43*(2), 123-147. https://doi.org/10.1111/1467-629X.t01-1-00085

[13] Chen, J. J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business Research*, *57*(12), 1341-1351. https://doi.org/10.1016/S0148-2963(03)00070-5

[14] Colombo, E. (2001). Determinants of corporate capital structure: Evidence from Hungarian firms. *Applied Economics*, *33*(13), 1689-1701. https://doi.org/10.1080/00036840010015057

[15] Cull, R., & Xu, L. C. (2005). Institutions, ownership, and finance: The determinants of profit reinvestment among Chinese firms. *Journal of Financial Economics*, *77*(1), 117-146. https://doi.org/10.1016/j.jfineco.2004.05.010

[16] Cull, R., Xu, L. C., & Zhu, T. (2009). Formal finance and trade credit during China's transition. *Journal of Financial Intermediation*, *18*(2), 173-192. https://doi.org/10.1016/j.jfi.2008.08.004

[17] De Miguel, A., & Pindado, J. (2001). Determinants of capital structure: New evidence from Spanish panel data. *Journal of Corporate Finance*, *7*(1), 77-99. https://doi.org/10.1016/S0929-1199(00)00020-1

[18] Demirgüç-Kunt, A., & Maksimovic, V. (1998). Law, finance and firm growth. *The Journal of Finance*, *53*(6), 2107-2137. https://doi.org/10.1111/0022-1082.00084

[19] Flannery, M. J. (1986). Asymmetric information and risky debt maturity choice. *The Journal of Finance*, *41*(1), 19-37. https://doi.org/10.1111/j.1540-6261.1986.tb04489.x

[20] Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, *38*(1), 1-37. https://doi.org/10.1111/j.1755-053X.2009.01026.x

[21] Friend, I., & Lang, L. H. P. (1988). An empirical test of the impact of managerial self‐interest on corporate capital structure. *The Journal of Finance*, *43*(2), 271-281. https://doi.org/10.1111/j.1540-6261.1988.tb03938.x

[22] Guariglia, A. (2008). Internal financial constraints, external financial constraints, and investment choice: Evidence from a panel of UK firms. *Journal of Banking & Finance*, *32*(9), 1795-1809. https://doi.org/10.1016/j.jbankfin.2007.12.008

[23] Guedes, J., & Opler, T. (1996). The determinants of the maturity of corporate debt issues. *The Journal of Finance*, *51*(5), 1809-1833. https://doi.org/10.1111/j.1540-6261.1996.tb05227.x

[24] Hall, G. C., Hutchinson, P. J., & Michaelas, N. (2004). Determinants of the capital structures of European SMEs. *Journal of Business Finance & Accounting*, *31*(5-6). 711-728. https://doi.org/10.1111/j.0306-686X.2004.00554.x

[25] Harris, M., & Raviv, A. (1991). The theory of capital structure. *The Journal of Finance*, *46*(1), 297-355. https://doi.org/10.1111/j.1540-6261.1991.tb03753.x

[26] Harrison, A. E., & McMillan, M. S. (2003). Does direct foreign investment affect domestic credit constraints? *Journal of International Economics*, *61*(1), 73-100. https://doi.org/10.1016/S0022-1996(02)00078-8

[27] Hitt, M. A., Hoskisson, R. E., & Harrison, J. S. (1991). Strategic competitiveness in the 1990s: Challenges and opportunities for U.S executives. *Academy of Management Perspectives*, 5(2), 7-22. https://doi.org/10.5465/AME.1991.4274663

[28] Huang, G., & Song, F. M. (2006). The determinants of capital structure: Evidence from China. *China Economic Review*, *17*(1), 14-36. https://doi.org/10.1016/j.chieco.2005.02.007

[29] Jalilvand, A., & Harris, R. S. (1984). Corporate behavior in adjusting to capital structure and dividend targets: An econometric study. *The Journal of Finance*, *39*(1), 127-145. https://doi.org/10.1111/j.1540-6261.1984.tb03864.x

[30] Jensen, M.C. (1986). Agency costs of free cash flow, corporate finance and takeovers. *The American Economic Review, 76*(2), 323-329.

[31] Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

[32] Jordan, J., Lowe, J., & Taylor, P. (1998). Strategy and financial policy in U.K. small firms. *Journal of Business Finance and Accounting*, *25*(1-2), 1-27. https://doi.org/10.1111/1468-5957.00176

[33] Leary, M. T., & Roberts, M. R. (2005). Do firms rebalance their capital structures? *The Journal of Finance*, *60*(6), 2575-2619. https://doi.org/10.1111/j.1540-6261.2005.00811.x

[34] Li, K., Yue, H., & Zhao, L. (2009). Ownership, Institutions, and Capital Structure: Evidence from China. *Journal of Comparative Economics, 37*(3), 417-490. https://doi.org/10.1016/j.jce.2009.07.001

[35] Marsh, P. (1982). The choice between equity and debt: An empirical study. *The Journal of Finance*, *37*(1), 121-144. https://doi.org/10.1111/j.1540-6261.1982.tb01099.x

[36] Mitchell, K. (1991). The call, sinking fund and term-to-maturity features of corporate bonds: An empirical investigation. *Journal of Financial and Quantitative Analysis*, *26*(2), 201-222. https://doi.org/10.2307/2331265

[37] Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, *5*(2), 147-175. https://doi.org/10.1016/0304-405X(77)90015-0

[38] Myers, S. C. (2002). Financing of corporations. In G. M. Constantinides, M. Harris, & R. M. Stulz (Eds.), *Handbook of the economics of finance: Corporate finance* (p.215-254). Amsterdam, The Netherlands: Elsevier.

[39] Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187-221. https://doi.org/10.1016/0304-405X(84)90023-0

[40] Petersen, M. A., & Rajan, R. G. (1994). The benefits of lending relationships: Evidence from small business data. *The Journal of Finance*, *49*(1), 3-37. https://doi.org/10.1111/j.1540-6261.1994.tb04418.x

[41] Qian, Y. M., Tian, Y., & Wirjanto, T. S. (2009). Do Chinese publicly listed companies adjust their capital structure toward a target level? *China Economic Review*, *20*(4), 662-676. https://doi.org/10.1016/j.chieco.2009.06.001

[42] Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance*, *50*(5), 1421-1460. https://doi.org/10.1111/j.1540-6261.1995.tb05184.x

[43] Sargan, J. D. (1958). The estimation of economic relationships using instrumental variables. *Econometrica*, *26*(3), 393-415. https://doi.org/10.2307/1907619

[44] Shyam-Sunder, L., & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, *51*(2), 219-244. https://doi.org/10.1016/S0304-405X(98)00051-8

[45] Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance*, *43*(1), 1-19. https://doi.org/10.1111/j.1540-6261.1988.tb02585.x

[46] Van der Wijst, N., & Thurik, R. (1993). Determinants of small firm debt ratios: An analysis of retail panel data. *Small Business Economics*, *5*(1), 55-65. https://doi.org/10.1007/BF01539318

[47] Welch, I. (2004). Capital structure and stock returns. *Journal of Political Economy*, *112*(1), 106-132. https://doi.org/10.1086/379933

[48] Windmeijer, F. (2000). *A finite sample correction for the variance of the linear two-step GMM estimators* (IFS working paper series No. WP00/19). London: The Institute for Fiscal Studies. Retrieved from http://www.ifs.org.uk/wps/wp0019.pdf.

[49] *World Development Indicators* (various years). Washington, DC.: The World Bank.

Appendix

Definitions of Variables

Ownership Variables

PD: dummy variable equal to 1 if the share of the firm's total capital owned by foreign investors is 0, and 0 otherwise.

JV: dummy variable equal to 1 if the share of the firm's total capital owned by foreign investors is greater than 0 but less than 100%, and 0 otherwise.

WF: dummy variable equal to 1 if the share of the firm's total capital owned by foreign investors is 100%, and 0 otherwise.

Other Variables

Short-Term Debt Ratio: The sum of all current liabilities (debt incurred by the firms for less than one year) including trade credits.

Long-Term Debt Ratio: The sum of all non-current liabilities (debt incurred by firms which is more than one year).

Collateral: The ratio of tangible assets to total assets.

Cash flow: The Ratio Net Income plus depreciation/ Assets.

Real Assets: The ratio of Total Assets to the price deflator of goods on the market

Growth Opportunities: Change in the log of real assets