

**DOES SOCIAL CAPITAL INFLUENCE THE FINANCING OF CHINESE PRIVATE  
SMALL AND MEDIUM-SIZED ENTERPRISES?**

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## **DOES SOCIAL CAPITAL INFLUENCE THE FINANCING OF CHINESE PRIVATE SMALL AND MEDIUM-SIZED ENTERPRISES?**

### **ABSTRACT**

We use a panel of 65,485 firms over the period 2000-2006 to study the financing decisions of Chinese private SMEs. Motivated by the fact that traditional capital structure theories are not fully supported by the findings of previous research in emerging economies characterized by weak institutional frameworks and underdeveloped financial systems, we propose a modified pecking-order in which financing mechanisms based on social capital supplant those based on more traditional forms of collateral, especially in the short-term. Our findings underline the importance of social capital to the financing decisions of SMEs.

### **INTRODUCTION**

Given the significant contribution made by small and medium-sized enterprises (SMEs) to economic growth in mature and transition economies, understanding what determines their capital structure decisions is an important question in entrepreneurship research (Wu, Chua, & Chrisman, 2007). The ability of SMEs to acquire adequate financial capital is a critical factor which influences their performance, growth, and subsequent survival (Coleman, 2000; Gaskill, Van Auken, & Manning, 1993; Van Auken & Neeley, 1996). This is especially the case in transition economies, such as China, where their financial resources are severely constrained as a result of institutional biases against the private sector (Allen, Qian, & Qian, 2005; Bai, Lu, & Tao, 2006; Newman, Gunessee, & Hilton, 2011).

A vast body of literature has tested the capital structure determinants of SMEs as proposed by financial theories of capital structure in the context of mature economies (Cassar & Holmes, 2003; Degryse, de Goeij, & Kappert, 2011; Hall, Hutchinson, & Michaelas, 2000; Johnsen & McMahon, 2005; Michaelas, Chittenden, & Poutziouris, 1999; Romano, Tanewski, & Kosmas, 2000; Sorgorb-Mira, 2005). However, only in the course of the last decade have researchers started to examine these issues in transition economies (Klapper, Sarria-Allende, &

Zaidi, 2006; Newman et al., 2011; Nguyen & Ramachandran, 2006). Two of the most widely tested theories in the SME financing literature are the static trade-off theory (TOT) and pecking order theory (POT). The TOT proposes that firms trade-off the tax shield benefits of debt and the agency and financial distress costs of maintaining high debt levels. In contrast, the POT suggests that firms order their financing choices in a hierarchical pecking-order to mitigate the inefficiencies arising as a result of asymmetric information. In general, the evidence regarding the ability of the TOT to predict the financing behavior of SMEs in both mature and transition economies is weak (Klapper et al., 2006; Norton, 1991; Watson & Wilson, 2002). In addition, whilst there is some evidence to show that the POT might contribute to our knowledge of how SMEs are financed, there is growing agreement that it might not fully explain how capital structure decisions are made in the context of transition economies, due to institutional differences (Newman et al., 2011).

In this study we seek to provide a more complete understanding of what determines the capital structure decisions of SMEs in transition economies using an extensive dataset containing observations on 65,485 private SMEs across China during the period 2000-2006. Over the last 20 years, Chinese SMEs have made an important contribution to aggregate economic growth, accounting for over 55 per cent of China's GDP and 75 per cent of employment (Chen, 2006; Dougherty & Herd, 2005). Given their role in the Chinese economy, understanding how they make their financing decisions is important. The findings of this paper will be useful to the managers of these firms, as they will give them guidance on ways to gain access to finance, which is fundamental for survival and growth. They will also be useful to policy makers looking to support the development of SMEs in transition economies.

Our study makes three main contributions to the existing body of literature. First, it sets out to assess the extent to which existing financial theories of capital structure provide an explanation as to how private SMEs in China are financed. These theories, developed to explain the financing of firms in advanced Western economies, do not take into account the institutional biases that SMEs in transition economies face in accessing the formal financial sector<sup>1</sup>. Chinese SMEs face significant difficulties in accessing external financing compared to their counterparts in mature economies as a result of limited access to equity markets and a lending bias from the state-owned banking sector towards larger state-owned enterprises and private firms (Allen et al., 2005; Ayyagari, Demirgüç-Kunt, & Maksimovic, 2010; Bai et al., 2006). Recent figures indicate that although private SMEs in China account for more than 55 per cent of GDP, they receive less than 20 per cent of all bank lending (Fagan & Zhao, 2009). These facts suggest that the predictions of the traditional theories of capital structure may not necessarily hold for Chinese SMEs.

Second, our study highlights how existing theories of capital structure might be extended to take into account the institutional factors that are present in transition economies. Specifically, a modified pecking-order is proposed in which financing mechanisms based on social capital supplant those based on more traditional forms of collateral. Despite a growing focus on the impact of social capital on SME performance in China (Fung, Xu, & Zhang, 2007; Zhang & Fung, 2006), limited work has been conducted on whether it helps improve the ability of firms to access external financing. In order to investigate the importance of alternative financing

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<sup>1</sup> It is noteworthy that existing financial theories developed to explain the financing behavior of Western firm have been found not to fully explain the capital structure of large, publicly-listed firms in China (Chen, 2004; Chen & Strange, 2005). This may be due to the peculiarities of the Chinese legal system, such as the fact that collateral is hardly executable. Another aspect which makes the Chinese context different from the Western one is the very limited use of long-term debt. The debt market in China consists in fact almost exclusively of informed bank debt. Traditional dominant long-term lenders, such as pension funds and insurance companies are very limited (Bhabra, Liu, & Tirtiroglu, 2008).

mechanisms based on social capital to private SMEs in China, and assist us in explaining their capital structure decisions, we augment the traditional theories of capital structure with variables aimed at measuring firms' short-term investments in building social capital (entertainment and gift-giving expenditure) and stock of social capital (political affiliation).

Finally, this study makes an important methodological contribution to the entrepreneurship literature by adopting a dynamic approach to estimate the capital structure determinants of SMEs. This is in line with recent work on larger firms (Flannery & Rangan, 2006; Qian, Tian, & Wirjanto 2009), and takes into account the evolving nature of a firm's financing decisions over time.

The remainder of the paper is organized as follows. In the next section, we review the theoretical and empirical literature on capital structure and social capital, before developing a set of hypotheses which examine the impact of social capital on the capital structure of Chinese private SMEs. We then describe our empirical specification, estimation methodology, and data, and present our empirical results. Finally, the implications and limitations of our findings are discussed and future research opportunities are highlighted.

## **LITERATURE REVIEW**

### **Theoretical Background**

Financing choices are among the most challenging and problematic decisions faced by SMEs. Compared to large firms, SMEs exhibit higher levels of asymmetric information, which result in higher agency costs for financiers (Norton, 1991). This can be a major hindrance to them when seeking external capital, and may result in them being unable to fund their business operations and pursue market opportunities effectively. Inadequate access to financing has been shown to

increase the likelihood of small business failure in the venture financing literature (Carter & Van Auken, 2005; Cassar, 2004; Coleman, 2000; Gaskill et al., 1993). The lack of sufficient capital also affects the growth potential of new firms, with under-capitalized firms experiencing significantly lower levels of growth (Alsos, Isaksen, & Ljunggren, 2006; Chandler & Hanks, 1998). For these reasons it is important to understand the determinants of SMEs' capital structure.

Since the publication of Modigliani and Miller's seminal work in 1958, a number of theoretical explanations have been advanced to explain the capital structures adopted by firms. The two theories which have gained the most attention in the literature are the static trade-off theory (TOT) and pecking-order theory (POT).

***The static trade-off theory.*** The TOT takes into account the effect of taxes, agency costs and the costs of financial distress on the capital structure decisions of the firm. According to this theory, the firm's management is assumed to maintain an optimal debt/equity ratio in order to minimize the cost of prevailing market imperfections, trading off the tax shield benefits of debt finance and the agency and financial distress costs of maintaining high debt levels (Kim, 1978; Kraus & Litzenberger, 1973; Scott, 1972).

Previous empirical work questions the applicability of the TOT to SMEs, suggesting that the explanatory power of the theory is low and the empirical results inconclusive (Norton, 1991; Watson & Wilson, 2002). This might be due to the fact that managers of SMEs find it difficult to trade-off the benefits of debt and equity as predicted by the TOT, as a result of limited access to external sources of finance. In China, we expect a further attenuation in the TOT's explicative power given the institutional biases faced by SMEs in accessing formal markets for debt and equity.

*The pecking-order theory.* An alternative explanation in the literature as to how firms make their capital structure decisions is the POT (Myers, 1984). The POT suggests that firms order their financing choices in a hierarchical pecking-order, using internal sources of finance initially, before seeking debt financing, and introducing new equity as the last resort. Under the POT, capital structure decisions are made to mitigate the inefficiencies arising as a result of asymmetric information. Initially, it is assumed that firms will prefer to use internal sources of financing as they are less likely to suffer from asymmetric information problems, and therefore cheaper than debt or equity. When firms need external financing, they will first make use of debt, which is less susceptible to undervaluation than new equity, which will be issued as a last resort. One of the key predictions of the POT is that leverage is positively related to the firm's ratio of tangible fixed assets to total assets. This prediction assumes that collateral acts as a mechanism to resolve information asymmetries between lenders and borrowers, reducing financial risk for lenders (Berger & Udell, 1998).

In recent years, a growing number of studies have examined the applicability of the POT to the financing of SMEs (López-Gracia & Sánchez-Andújar, 2007; Sorgorb-Mira, 2005; Watson & Wilson, 2002). There is a general consensus that the POT provides a much sounder theoretical explanation than the TOT for the capital structure that SMEs adopt (Sorgorb-Mira, 2005). However, Myer's (1984) version of the POT might not provide an adequate explanation for the capital structures adopted by Chinese SMEs for two main reasons. First, equity markets are still immature in China: Allen, Qian, Qian, & Zhao (2009) document that the scale and importance of both the Shanghai and Shenzhen Stock Exchanges is not comparable to the banking sector, and that they have not been effective in allocating resources in the economy. This limits the range of

external financing sources available to SMEs. Second, Chinese SMEs face great difficulty in moving up the pecking order of financing sources than their counterparts in mature economies due to significant constraints in accessing external debt financing (Allen et al., 2005; Ayyagari et al., 2010). These constraints can be explained by high levels of asymmetric information between SMEs and their lenders as a result of loose accounting procedures, and a lending bias on the part of the state-owned banking sector against private firms (Bai et al., 2006). As a result, China is characterized by a more limited use of those asset-based forms of financing presupposed by the POT, than mature economies (Newman et al., 2011). These factors suggest that the pecking-order of financing sources used by Chinese SMEs might be different from those used by SMEs in mature economies. Specifically, we conjecture that, in the Chinese context, financing mechanisms based on social capital are likely to supplant those based on more traditional forms of collateral. In the following section, we first define what is meant by social capital both in general and in the Chinese context. We then discuss how social capital may affect SMEs' financing decisions.

### **Social Capital**

Over the last two decades, the concept of social capital, defined as the resources embedded in social networks and relationships that enhance the competitiveness of the firm (Burt, 1992a; Burt, 1992b; Coleman, 1988; Nahapiet & Ghoshal, 1998), has attracted increasing attention in the entrepreneurship literature (Cope, Jack, & Rose, 2007). In this study, we focus on relational social capital, which is concerned with the nature of relationships that an organization has developed externally through a series of connections and interactions (Granovetter, 1992). It has been defined as the extent to which “an entrepreneur is able to receive informational, physical,



and emotional support in the venture creation process” (Liao & Welsch, 2005, p. 350). The development of relational capital contributes to venture success through fostering trust and understanding, and establishing common interests between members of the social network (Jack, 2005).

The social capital developed through the process of networking with other economic actors can have a positive influence on economic outcomes of interest to the firm (Uzzi, 1997), providing benefits in three main areas: information, influence and solidarity (Adler & Kwon, 2002). First, social capital may facilitate timely access to scarce information, which is an important factor influencing the process of resource acquisition (Bourdieu, 1986; De Carolis, Litzky, & Eddleston, 2009). Social networks also enable firms to directly or indirectly transfer information about their capabilities to resource owners such as financiers, which leads to a reduction in asymmetric information between the firm and third parties, giving them greater confidence in the firm’s potential for success (Shane & Cable, 2002). The second major benefit of relational social capital is influence. This concerns the ability of firms to accumulate obligations from other members of their network and leverage these obligations at a later date (De Carolis et al., 2009). Finally, solidarity benefits enhance cohesion within the social group and produce generalized reciprocity (Gabbay, 1997). This enables firms to reduce the transactions costs in resource exchange and conflict resolution (Uzzi, 1997; Zhang, 2010).

Social capital plays a particularly important role in emerging and transition economies, enabling firms to learn appropriate behavior and gain support from external organizations in the absence of effective market institutions (Le & Nguyen, 2009). It can facilitate information exchange, inter-firm collaboration (resource sharing), and knowledge transfer (Florin, Lubatkin,

& Schulze, 2003; Hite, 2005; Uzzi, 1997). As a result it can lead to greater innovation, reduced transaction costs, and have a positive impact on the financial performance of firms.

In China, social relationships known as *guanxi*, permeate all levels of business activity (Fan, 2002; Peng & Luo, 2000; Yeung & Tung, 1996). Such relationships are built on mutual trust, and bind the partners through the exchange of favors and obligations (Yeung & Tung, 1996). The prevalence of *guanxi* in Chinese business culture has been ascribed to a relatively weak and underdeveloped legal and regulatory environment in China (Ahlstrom & Bruton, 2006; Nee, 1992; Xin & Pearce, 1996). Firms utilize social capital in their networks as a means to overcome significant institutional barriers and protect themselves against regulatory changes by the state. Nee (1992) points out that the Chinese economy is characterized by weak capital market structures, limited protection of property rights, and a lack of coherent business laws, which make doing business uncertain and costly. He argues that under these circumstances, it is essential for private SMEs, who have less institutional support than state-owned firms, to build close relationships with other economic actors in order to survive and prosper. Xin and Pearce (1996) argue that managers of collective and private firms work hard to build and maintain relationships with other economic actors to compensate for a lack of formal institutional support in China, i.e. a reliable government and functioning legal system.

In recent years, researchers have begun to examine the influence of relational social capital on the financing of firms in both mature (Uzzi, 1999) and emerging economies (Le & Nguyen, 2009; Nyugen & Ramachandran, 2006). These studies suggest that networking with bank officials, executives at other firms, and government officials, improves the ability of firms to access external financing. For example Uzzi (1999) demonstrates that, when their transactions are embedded in social relationships and networks, US firms are able to gain better access to

bank financing at a more competitive price. Two recent Vietnamese studies find that networking with other firms and government officials increases access to finance for SMEs (Le & Nguyen, 2009; Nguyen & Ramachandran, 2006).

In this study, we extend this growing stream of literature by investigating how relational social capital influences the capital structure of Chinese SMEs. In particular, we investigate whether taking into account social capital can lead to a better understanding of how Chinese SMEs make their financing decisions.

### **HYPOTHESES DEVELOPMENT**

Given the peculiarities of the Chinese financial system, we believe that traditional financial theories of capital structure may not be adequate in explaining Chinese firms' financial decisions. We therefore propose a modified pecking-order in which financing mechanisms based on social capital supplant those based on more traditional forms of collateral. Below, we describe our proxies for social capital and illustrate the hypotheses that characterize the augmented pecking-order theory that we propose.

Considering the difficulties inherent in measuring relational social capital at the organizational level, and given that our data set only contains secondary firm-level financial data, two proxies are utilized in this study to operationalize it. The first, entertainment and gift giving expenditure, measures a firm's short-term investment in building social capital. The second, political affiliation, measures the formalization of a firm's network ties with the government authorities, and thus is a good indicator for its accumulated stock of social capital<sup>2</sup>.

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<sup>2</sup> Details on how exactly these two proxies for social capital are calculated can be found in the "DATA AND SUMMARY STATISTICS" Section.

### **Entertainment and Gift-Giving Expenditure**

In order to build relational social capital, which may assist in their future development, Chinese firms invest significant amounts in developing and strengthening their network ties with other economic actors (Fung et al., 2007; Zhang & Fung, 2006). Entertainment and gift-giving are strategies commonly used by firms looking to seek influence and build relationships with executives at other firms, bank officials, and government officials, especially in the short-term (Fung et al., 2007; Zhang & Fung, 2006)<sup>3</sup>. This is particularly the case for SMEs as they have less economic power, greater asymmetric information, and limited socio-political legitimacy compared to larger firms. The network ties developed by the use of such strategies, which are based on frequent and repeated social interactions, have benefits at both the individual and organizational level (Coleman, 1988). They allow firms to build up trust and establish common interests with other economic actors in their network. This should in turn lead to better access to financial capital through a number of channels.

Strong network ties with executives at other firms may enable a SME to spread knowledge about the firm informally, providing information about its reliability and creditworthiness, thus improving its reputation within business circles (Coleman, 1988; Granovetter, 1985). These ties are especially important when firms apply for bank loans. Due to a lack of publicly-available data on SMEs, financiers often rely on their informal contacts with executives at other firms to assess the creditworthiness of loan applicants and the feasibility of their business proposals (Nguyen & Ramachandran, 2006). Endorsements from other firms assist in creating a positive image of the firm, increasing the likelihood that it will be granted credit.

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<sup>3</sup> For the sake of brevity, we hereafter refer to entertainment expenditure rather than entertainment and gift giving expenditure.

Recent empirical work in Vietnam demonstrates that networking with managers at other firms may improve access to sources of external debt such as trade credit and bank loans, especially in the short-term (Le & Nguyen, 2009; Nyugen & Ramachandran, 2006).

Good relationships with financiers should provide the latter with greater information on the financial and operating situation of the enterprise, reducing asymmetric information between the two parties. This should in turn lead to a greater willingness on the part of financiers to forward short-term credit to SMEs (Le & Nguyen, 2009). Indeed, previous research reveals a positive relationship between the strength of social ties between SMEs and their financiers, and access to credit in both mature and transition economies (Nyugen & Ramachandran, 2006; Uzzi, 1999). For example, Nguyen and Ramachandran (2006) find that Vietnamese SMEs who develop strong business and social relationships with bank officials tend to employ more debt, especially short-term debt, in their capital structure.

In a similar way, strong network ties with government officials may be particularly useful in improving SMEs' access to financing from the banking sector. In the Chinese context, where the state-owned banks, which account for over half of the private lending in China, are still subject to significant state influence (Brandt & Zhu, 2007), government authorities can indirectly assist firms seeking loan capital by vouching for their reliability and creditworthiness (Zhou, 2009). All these factors are likely to improve SMEs' access to financing, especially in the short-term, leading us to the following hypotheses<sup>4</sup>:

***Hypothesis 1a:*** *Entertainment expenditure will be positively related to total leverage*

***Hypothesis 1b:*** *Entertainment expenditure will be positively related to short-term leverage*

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<sup>4</sup> It should be noted that because only 24.4% of the firms in our sample have long-term liabilities, all our hypotheses for total leverage generally mirror those for short-term leverage.

While entertainment expenditure may help SMEs to obtain short-term financing, it may harm firm's ability to obtain long-term leverage. The use of long-term debt by Chinese companies is in fact very limited and only those firms that have sufficient asset-based collateral can gain access to it (Bhabra et al., 2008; Li, Yue, & Zhao, 2009). Spending on entertainment may prevent firms from accumulating sufficient collateral, making it more difficult for them to obtain long-term loans. This leads to the following hypothesis:

*Hypothesis 1c: Entertainment expenditure will be negatively related to long-term leverage*

### **Political Affiliation**

Political affiliation can be viewed as a sign of a firm's strong position within the national, provincial, or local economy (Li & Zhang, 2007). It reflects the formal recognition of the firm's economic contribution by national, provincial, or local government authorities and is therefore a good proxy for a firm's accumulated stock of social capital (Zhou, 2009). Political affiliation brings a whole host of benefits to firms in emerging and transition economies. It enables them to build close relationships with government officials with power over the allocation of scarce resources including financial capital (Feng & Wang, 2010; Li, Meng, Wang, & Zhou, 2008). Government officials can also help firms in the process of registering collateral and obtaining guarantees. Recent work on larger firms in emerging economies demonstrates that politically connected firms have better access to bank loans than those without such connections (Bai et al., 2006; Le & Nguyen, 2009; Li et al., 2008; Zhang, 2008). This leads us to the following hypotheses:

*Hypothesis 2a: Political affiliation will be positively related to total leverage*

*Hypothesis 2b: Political affiliation will be positively related to short-term leverage*

*Hypothesis 2c: Political affiliation will be positively related to long-term leverage*

### **Moderating Effect of Political Affiliation on the Relationship between Entertainment Expenditure and Capital Structure**

As firms with political affiliation typically find it easier to access external financing (Bai et al., 2006; Le & Nguyen, 2009; Li et al., 2008; Zhang, 2008), investment in social capital should be less beneficial for them than for non-affiliated firms. Affiliation also provides SMEs with a whole host of resources that might negate their need to seek external financing (Tsang, 1998; Fan, 2002; Tan, Yang, & Veliyath, 2009; Chen, Sun, Newman, & Xu, 2011a). For example, Chen et al. (2011a) find that Chinese SMEs with political connections are able to obtain greater access to preferential policies from the government (such as research & development support or administrative support in mergers & acquisition activities), more contracts from government authorities, as well as greater assistance in land purchase. Such factors may enhance these firms' performance, reducing their need to seek external financing to support business growth. The relationship between entertainment expenditure and short-term and total leverage should therefore be stronger for non-affiliated firms who have to entertain in order to win trust and influence over key economic actors that may influence their financing decisions. This leads us to posit the following hypothesis:

*Hypothesis 3: Political affiliation will negatively moderate the relationship between entertainment expenditure and total/short-term leverage.*

## EMPIRICAL SPECIFICATION AND ESTIMATION METHODOLOGY

In order to verify the applicability of the extended pecking-order theory that we propose, and to test the hypotheses that characterize it, we estimate the following baseline dynamic model:

$$\begin{aligned}
 \text{Leverage}_{it} = & a_0 + a_1 \text{Leverage}_{i(t-1)} + \\
 & + a_2 \text{Depreciation}_{i(t-1)} + a_3 \text{Asset growth}_{i(t-1)} + a_4 \text{Profitability}_{i(t-1)} + \\
 & + a_5 \text{Asset structure}_{i(t-1)} + a_6 \text{Size}_{i(t-1)} + a_7 \text{Age}_{it} + \\
 & + a_8 \text{Entertainment expenditure}_{i(t-1)} + a_9 \text{Political affiliation}_{i(t-1)} + \\
 & + a_{10} \text{Entertainment expenditure}_{i(t-1)} * \text{Political affiliation}_{i(t-1)} + v_t + v_j + v_p + e_{it}, \quad (1)
 \end{aligned}$$

where  $i$  indexes firms;  $t$ , time;  $j$ , industries; and  $p$ , provinces.

We chose a dynamic specification to take into account the fact that the firm may have a target leverage ratio, which it may take time to reach due to adjustment costs (Flannery & Rangan, 2006). If this is the case,  $a_1$  is expected to be positive, and  $(1-a_1)$  can be seen as the firm's speed of adjustment towards its optimal leverage ratio.

### Dependent Variables

Leverage is measured in turn as total leverage (total debt divided by total assets), short-term leverage (short-term debt divided by total assets), and long-term leverage (long-term debt divided by total assets). Short-term leverage includes bank loans, accounts payable, and other current liabilities that have no more than one-year of maturity. Long-term leverage includes debt and other non-current liabilities that have maturity of over a year. It should be noted that our data



set does not include information on money raised from informal financial institutions, family, friends, and so on.

### **Control Variables**

In addition to the lagged dependent variable, six variables that appear in the previous literature, but are not the object of our hypotheses, are also included in our model as control variables. These are the depreciation to total assets ratio; fixed assets growth; profitability (measured as operating profit divided by total assets, as in Cassar & Holmes, 2003; Johnsen & McMahon, 2005; and Michaelas et al., 1999); firm size (measured as the natural logarithm of total revenue, as in Titman & Wessels, 1988); firm age (measured as number of years since the firm was initially registered, as in Michaelas et al., 1999); and asset structure (measured as the ratio of net fixed assets to total assets, as in Hall et al., 2000; Johnsen & McMahon, 2005; and Nguyen & Ramachandran, 2006). As the objective of this paper is to extend the TOT and POT theories of financial structure to include social capital, our model needs to contain those variables which were considered to be important determinants of leverage by those theories. Specific motivation for the introduction of each of the six variables and a discussion of their expected signs is provided below.

Depreciation captures the non-debt tax shields that may act as a substitute to the role of debt in reducing the tax liability of a firm (Sorgorb-Mira, 2005). Empirical work on Spanish SMEs and larger Chinese firms finds a negative relationship between such tax shields and leverage (Huang & Song, 2006; Sorgorb-Mira, 2005). This is in line with the predictions of the TOT. We expect to observe a similar relationship for Chinese SMEs, as there is no reason to

believe why depreciation could not act as a substitute to debt in reducing these firms' tax liabilities.

Fixed asset growth is utilized as a proxy for the firm's growth potential. Consistent with existing work and with the predictions of both the POT and the TOT, we expect firms with faster asset growth to have more resources at hand, and hence to be able to afford higher leverage.

In accordance with the predictions of the POT, and the findings of empirical work on SMEs (Cassar & Holmes, 2003; Chittenden, Hall, & Hutchinson, 1996; Michaelas et al., 1999; Sorgorb-Mira, 2005) and larger Chinese firms (Chen & Strange, 2005, Huang & Song, 2006), we expect a negative relationship between profitability and leverage due to the fact that firms tend to finance investment through retained earnings first, raising more expensive external finance only when it is essential<sup>5</sup>.

The POT predicts a positive relationship between the asset structure of the firm and its leverage, due to the fact that fixed assets can be used as a mechanism to resolve information asymmetries between lenders and borrowers, reducing financial risk for lenders (Berger & Udell, 1998). Under the TOT, we might also expect such a relationship as firms with greater fixed assets should have lower agency and financial distress costs in the maintenance of debt, making them more attractive to financiers. Yet, despite these theoretical assertions, empirical research on SME financing indicates a positive relationship between asset structure and long-term leverage, but a negative relationship between asset structure and short-term leverage (Cassar and Holmes, 2003; Chittenden et al., 1996; Hall et al., 2000; Ortqvist, Masli, Rahman, & Selvarajah, 2006; Sorgorb-Mira, 2005). Furthermore, most empirical studies investigating this relationship on SMEs in the emerging economy context find no or a negative relationship, between asset

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<sup>5</sup> It is noteworthy that, contrary to the POT, the TOT predicts a positive relationship between profitability and leverage. Firms characterized by a high profitability are in fact less likely to suffer from financial distress, and can therefore afford higher leverage.

structure and leverage (Klapper et al., 2006). This can be explained by the reliance of firms in emerging economies on financing mechanisms such as trade credit, and lending via familial and social networks which do not require fixed assets to be pledged as collateral (Allen et al., 2005; Ayyagari et al., 2010; Ge & Qiu, 2007; Newman et al., 2011). The matching of the duration of firms' assets and liabilities could be an alternative explanation (Cassar & Holmes, 2003). In China, as a result of a lending bias in favor of state-owned firms, SMEs face difficulties in accessing asset-based financing and, especially in the short-run, continue to rely on financing mechanisms based on social capital. Consequently, in line with the literature, we expect to observe a negative relationship between asset structure and short-term and total leverage, and a positive relationship between asset structure and long-term financing, which is mostly obtained using fixed assets as collateral.

The POT surmises that smaller firms make less use of debt in their capital structures due to greater asymmetric information than larger firms, which makes it relatively more difficult and costly for them to access external financing. This means it is far more efficient for smaller firms to use internal sources of finance before seeking external financing (Myers, 1984). The TOT predicts a similar relationship on the basis that larger firms are better able to access external debt as they have lower costs of bankruptcy due to more diverse streams of revenue and established operations (Ortqvist et al., 2006). Previous empirical research on SMEs (Cassar, 2004; Klapper et al., 2006; Nguyen & Ramachandran, 2006; Sorgorb-Mira, 2005) and on Chinese enterprises (Huang & Song, 2006; Newman et al., 2011) typically confirms a positive relationship between firm size and leverage. We therefore also expect firm size to be positively related to leverage given that smaller firms generally suffer from higher levels of asymmetric information.

Both the POT and the TOT are silent as regards the relationship between age and leverage. Berger and Udell (1998) hypothesize that older firms will find it easier to access debt financing as asymmetric information problems with lenders are resolved through improvements in the firm's public reputation. Empirical studies on SMEs in developing economies and larger Chinese firms indicate that older firms tend to have higher leverage and better access to bank financing (Li, Yue, & Zhao et al., 2009; Newman et al., 2011). We therefore expect firm age to be positively related to leverage.

### **Independent Variables**

Our independent variables include our two proxies for social capital. We initially follow previous work by utilizing entertainment expenditure as a proxy for investment in relationship building (Fung et al., 2007; Zhang & Fung, 2006). Entertainment expenditure includes the costs of meals, gifts and other related expenses, and therefore represents the investment in social capital made by an enterprise at an individual and organizational level. It is calculated as total management fee net of other major sub-accounts of the management fee (e.g. fees paid for training, insurance, and travel purposes, as well as fees paid to trade unions and environmental agencies).

We next introduce a second proxy for social capital, namely political affiliation, which is measured using a dummy variable to indicate whether the firm is affiliated (has a *lishu* relationship) with the central, provincial, city/district, county, town/township/street, community/village governments (Li, 2004; Tan, Li, & Xia, 2007; Xia, Li, & Long, 2009). Within this type of relationship, the firm is not owned by any of these governments, it is simply controlled by or subordinated to them: as Tan et al. (2007) put it, "*lishu* represents an administrative control" (p. 788). A *lishu* relationship is associated with government supports and

subsidies. In particular, governments can grant firms affiliated with them benefits such as bank loans at better conditions, waivers of import tariffs, tax reductions and so on<sup>6</sup>. Political affiliation captures therefore the social capital inherent in a firm's relationships with government officials, and thus is a good indicator for its accumulated stock of social capital. It should be noted that this particular measure of social capital is unique to the Chinese context: it stems from the traditional "iron hand" of central state control not having been entirely relinquished, but having been replaced by a less controlling "visible hand" at most levels of government, and an "invisible hand" of mainly market control at the furthest edges of local government (Tan et al., 2007)<sup>7</sup>.

### **Interaction Term**

Coming to the interaction term, as predicted by Hypotheses 3, we expect short-term investment in social capital building through entertainment expenditure to have a more positive impact on the total and short-term leverage of non-affiliated firms, due to the fact that they have relatively weaker network ties than their politically affiliated counterparts. In order to test whether this is the case, when focusing on total and short-term leverage, we include in Equation (1) the interaction of entertainment expenditure with political affiliation. We expect the coefficient associated with this interaction term to be negative and precisely determined.

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<sup>6</sup> As *lishu* relationships inevitably involve interferences from government authorities in firms' activities (in the form of regulating their structures, reviewing their business plans and so on), a number of firms opt not to have any such relationships with national, provincial, or local governments (Li, 2004; Xia et al., 2009).

<sup>7</sup> Although this particular type of political affiliation (the *lishu* relationship) is unique to the relationship-based Chinese context, other types of political affiliation are important (and have been analyzed) in Western countries as well. For instance, Faccio (2010) defines a politically connected firm as a firm such that "at least one of its large shareholders (anyone controlling at least 10 percent of voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister, or is closely related to a top politician or party" (p. 369). She finds that, on average, politically connected and unconnected firms differ in their leverage, taxation, return on assets, market valuation, and market power. Variables similar to those used by Faccio (2010), which could also be seen as good proxies for the firm's accumulated stock of social capital, have been used in the Chinese context and related to firm performance (see for instance Chen, Sun, Yang, & Wu., 2011b; and Xu, Xu, & Yuan, 2011). As these measures are not available in our data set, we were unable to use them in this particular paper.

Table A1 in Appendix A presents a summary of the relationships between leverage and the control, independent, and interaction variables considered in this paper, as predicted by the TOT, the traditional POT, and our proposed modified POT.

### **Error Term and Estimation Methodology**

The error term in Equation (1) is made up of a time-specific component ( $v_t$ ) accounting for possible business cycle effects; an industry-specific component ( $v_j$ ); a province-specific component ( $v_p$ ); and an idiosyncratic component. We take into account the  $v_t$ ,  $v_p$ , and  $v_j$  components of the error term by including time, industry, and provincial dummies in all our specifications. It is important to include industry dummies in all specifications, considering that levels of leverage vary across industries. For instance, capital intensive manufacturing firms typically have high leverage, while high-tech and mining companies are generally characterized by low leverage (Qian et al., 2009).

Focusing on total and short-term leverage, we estimate Equation (1) using Ordinary Least Squares (OLS). For long-term leverage, we use a Tobit model, because long-term debt is equal to 0 in a large number of cases. In both cases, we control for unobserved heterogeneity by using cluster-robust standard errors, clustered by firm; and for endogeneity, by lagging all potentially endogenous regressors once.

## **DATA AND SUMMARY STATISTICS**

### **Data**

We use data drawn from the annual accounting reports filed by industrial firms with the Chinese National Bureau of Statistics (NBS) over the period 2000-2006. All state-owned enterprises and

other types of enterprises with annual sales of more than five million RMB (about \$650,000) are covered. These firms operate in the manufacturing and mining sectors and come from all 31 Chinese provinces or province-equivalent municipal cities. Because our focus is limited to small and medium-sized private firms, we restrict our attention to those firms with sales less than 30 million RMB and fewer than 300 employees that are registered as private. This way of defining SMEs is suggested by the NBS. All state, foreign, and collectively-owned firms were removed from the dataset. Observations with negative sales, as well as observations with negative total assets minus total fixed assets, and total assets minus liquid assets were dropped. Firms that did not have complete records on our main regression variables were also removed. To control for the potential influence of outliers, we excluded observations in the one percent tails of each of the regression variables. This left us with a final panel covering 65,485 unlisted firms and corresponding to 110,633 firm-year observations. Our panel is unbalanced, with number of observations ranging from a minimum of 4,370 in 2000 to a maximum of 43,103 in 2006. The exact structure of the panel is described in Appendix B.

### **Summary Statistics**

Table 1 presents descriptive statistics relative to the main variables used in our regression analysis. We can see that the mean total leverage to total assets ratio is generally quite high (58.7 per cent). Most of this debt is short-term, as only 24.4 per cent of our firm-years hold long-term debt, and the mean ratio of long-term liabilities to total assets is only 3.8 per cent. This finding is in line with Demirgüç-Kunt and Maksimovic (1999), who show that firms in developing countries tend to depend more on short-term debt. The firms in our sample perform well in terms of growth: their mean fixed asset growth rate is in fact 7.6 per cent. Their average profitability is

also high (7.5 per cent), which suggests good overall performance. Investment in social capital appears to be important for private SMEs, as entertainment expenditure accounts, on average, for around 6.7 per cent of their total assets. 30.9 per cent of enterprises in our sample are affiliated to government authorities.

*“Insert Table 1 Here”*

The correlations between variables are tabulated in Table 2. As can be observed, the correlation coefficients between regressors are not large enough to indicate any collinearity problem.

*“Insert Table 2 Here”*

## **EMPIRICAL RESULTS**

### **Total and Short-Term Leverage**

Tables 3 and 4 present the OLS estimates of Equation (1) for total leverage and short-term leverage respectively.

*“Insert Table 3 Here”*

*“Insert Table 4 Here”*

In Models 1 (for total leverage) and 4 (for short-term leverage), only the control variables are included in the regression. The lagged dependent variable has a positive and significant coefficient in both models, indicating that around 30 per cent of the deviation of the actual total leverage to assets ratio from its optimal level is eliminated within a year (Qian et al., 2009). This adjustment speed is similar to that found by Flannery and Rangan (2006) for US firms. In both



models, depreciation is positively related to leverage. However, when the independent and interactive variables are added to the regression in later models, its effect on leverage becomes statistically insignificant. This can be seen as evidence against the TOT. In accordance with both the POT and the TOT, fixed asset growth is positively related to total and short-term leverage, suggesting that the higher the firm's investment opportunities, the more leverage it will take. Profitability exhibits a negative and significant coefficient in both models. This is in line with the hypothesized predictions of the POT that more profitable firms will tend to reinvest their profits first, before resorting to external financing.

Contrary to the predictions of both the POT and the TOT, the firm's asset structure attracts a negative and statistically significant coefficient for both total and short-term leverage. The significant proportion of short-term over long-term debt in the capital structure of Chinese SMEs most likely explains this negative relationship, as short-term debt is generally unsecured, or secured against the current assets of the firm. This is consistent with the findings of previous research and provides evidence that firms match the duration of their assets and liabilities (Cassar & Holmes, 2003). The greater use in China compared to the West of forms of financing which are secured against the 'social capital' inherent in social and business networks, as opposed to fixed assets, might also explain these findings.

A positive relationship is found between firm size and both total and short-term leverage, which is consistent with the predictions of both the TOT and the POT. Yet, the relationship between age and both total and short-term leverage is not found to be significant.

In Models 2 (for total leverage) and 5 (for short-term leverage), the independent (social capital) variables are added to the regression. We report joint significance tests ( $F$ -tests) for the two added variables in each model compared to the base model. Specifically, these tests are

aimed at verifying whether the coefficients associated with the additional variables are jointly equal to 0. In all cases, the hypothesis is soundly rejected, which justifies the presence of these additional variables in the model. Furthermore, in line with Hypotheses 1a and 1b, we can see that in both models 2 and 5, firms' short-term investment in social capital building, as measured by their entertainment expenditure, attracts a positive and precisely determined coefficient. In addition to being statistically significant, the effects of changes in entertainment expenditure on total and short-term leverage are also economically significant. The estimates in Model 2 (Table 3) suggest in fact that, if all variables are evaluated at sample means, a change in entertainment expenditure from the 5<sup>th</sup> to the 95<sup>th</sup> percentile (change of 0.195) is related to a 1.5% increase in the total leverage to assets ratio. Similarly, the estimates in Model 5 (Table 4) indicate that increasing the entertainment expenditure to assets ratio from the 5<sup>th</sup> to the 95<sup>th</sup> percentile raises the short-term debt to assets ratio by 2.5%<sup>8</sup>. These are non-trivial effects, which suggest that in addition to enhancing firm performance (Zhang & Fung, 2006), increasing entertainment expenditure enhances firms' ability to obtain leverage.

Although the relationship between political affiliation and total leverage is insignificant in Model 2, a negative and statistically significant relationship between political affiliation and short-term leverage is uncovered in Model 5. These findings go against Hypotheses 2a and 2b, revealing that politically affiliated firms do not necessarily have greater leverage in their capital structure, especially in the short-term. The negative relationship can be explained considering that politically affiliated firms may actually substitute short- with long-term leverage. This

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<sup>8</sup> These numbers are obtained from the following formula:  $[0.195 * (\text{coefficient on entertainment expenditure in the total/short-term debt regression})] / (\text{mean of total/short-term leverage})$ .

explanation is consistent with our findings reported below, according to which politically affiliated firms are more likely to obtain long-term leverage than their unaffiliated counterparts<sup>9</sup>.

In Models 3 (for total leverage) and 6 (for short-term leverage), the interactive term between entertainment expenditure and political affiliation is added to the regression. In line with Hypothesis 3, affiliation is found to negatively moderate the relationship between entertainment expenditure and total and short-term leverage, suggesting that non-affiliated firms, which have limited social capital to start with, may benefit more from investment in social capital building, in terms of accessing external debt<sup>10</sup>.

### **Long-Term Leverage**

Table 5 reports our Tobit estimates for long-term leverage. In Model 7, only the control variables are included in the regression. Model 8 also includes entertainment expenditure and political affiliation. As in the other specifications, the lagged dependent variable has a positive coefficient. In contrast with the TOT, depreciation is not significantly related to leverage. In accordance with the POT, profitability is negatively related to long-term leverage, suggesting that it is not necessarily the best performing firms that obtain long-term debt in China. Contrary to the predictions of both the TOT and the POT, fixed asset growth exhibits a negative coefficient, only significant at the 10 per cent level when the independent variables are entered into the regression. Contrary to the case of short-term and total debt, the asset structure variable now attracts a positive coefficient. This is consistent with the findings of previous studies (Cassar & Holmes,

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<sup>9</sup> It should be noted that both entertainment expenditure and political affiliation are likely to be endogenous. We therefore re-estimated models 2 and 5, instrumenting them with two or three of their own lags. The results, not reported for brevity, but available from the authors upon request, were very similar to those reported in Tables 3 and 4.

<sup>10</sup> In both models, a test for the joint significance of all the coefficients associated with the independent variables and interaction terms (*F*-test) was undertaken, and delivered a *p*-value of 0.00, unambiguously rejecting the null hypothesis that the coefficients on these terms are jointly equal to 0.

2003; Chittenden et al., 1996; Hall et al., 2000; Li et al., 2009; Ortqvist et al., 2006; Sorgorb-Mira, 2005), and can be explained considering that because most long-term financing in China is done via the banking sector, firms use fixed assets as a security for it. Furthermore, we can see that both older and larger firms make greater use of long-term debt.

In Model 8, when the independent variables are entered into the regression, the test for joint significance of the coefficients associated with the added variables indicates that these variables are jointly significant. Two findings are worth noting. First, in line with Hypothesis H1c, entertainment expenditure attracts a negative and significant coefficient, suggesting that short-term investment in building social capital does not necessarily improve access to long-term financing. The negative coefficient on entertainment expenditure may be explained considering that spending on entertainment may prevent firms from accumulating asset-based collateral, which is necessary for them to obtain long-term loans (Bhabra et al., 2008; Li et al., 2009).

Second, political affiliation is found to be positively related to long-term leverage to a high degree of significance, proving support for Hypothesis 2c. The marginal effects indicate that, assuming that all the other regressors are taken at their mean, the difference between the long-term leverage to assets ratio of a politically affiliated and a non-affiliated firm, which both have long-term leverage, is 0.00353, while a politically affiliated firm would have a 2.3% higher probability of having long-term debt compared to a non-affiliated firm. This suggests that political affiliation mainly affects the probability of firms gaining access to long-term leverage, rather than the actual amount of long-term leverage of firms who already have access to this type of financing<sup>11</sup>.

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<sup>11</sup> Marginal effects are not reported in Table 5 for brevity, but are available from the authors upon request. All our results in model 8 were robust to using an Instrumental Variable (IV) Tobit model where entertainment expenditure and political affiliation were instrumented using two and/or three of their own lags. Results of the IV estimates are available from the authors upon request.

*“Insert Table 5 Here”*

## DISCUSSION

### Key Findings

The findings of this study suggest that, although some of their predictions hold, neither the POT, nor the TOT are fully supported when tested on our panel of Chinese SMEs. Specifically, a negative relationship is found between asset structure and both total and short-term leverage, which goes against the hypothesized predictions of both the TOT and the POT. This suggests the limited use of asset-based financing by Chinese SMEs, and is consistent with the findings of studies on SMEs from other emerging economies (Klapper et al., 2006; Nguyen & Ramachandran, 2006), and on larger Chinese firms (Chen, 2004; Chen & Strange, 2005). The limited use of asset-based financing by private SMEs in our sample can be explained by the fact that these firms continue to face significant challenges in accessing adequate financing from the capital markets in China, especially in the long-term, as a result of institutional biases against the private sector, and high levels of asymmetric information between firms and their financiers (Allen et al., 2005; Ayyagari et al., 2010; Bai et al., 2006). In the face of such constraints, they utilize the social capital inherent in their network ties with other economic actors to access sources of external financing which do not require collateral to be pledged as security. These sources of finance are typically secured against the social capital inherent in a firm's network ties (*guanxi*) with other economic actors, rather than the pledging of fixed assets (Ayyagari et al., 2010; Ge & Qiu, 2007). Indeed, our findings demonstrate a positive influence of investment in social capital building (in the short-term) and political affiliation (in the long-term) on the capital structure of Chinese SMEs. Hence, in order to better explain the financing decisions of these

firms, one should adopt an eclectic approach, which blends elements taken from traditional theories and from social capital theory. This approach leads to a modified pecking-order applicable in the Chinese context, in which financing mechanisms based on social capital supplant those based on more traditional forms of collateral.

### **Managerial and Policy Implications**

Our findings have significant managerial implications. When operating in countries with weak institutional frameworks such as China, senior managers should recognize the benefits that can be obtained through short-term investments in building social capital, especially as regards improving access to non asset-based external debt financing. This has important implications concerning firm performance, growth, and survival (Alsos et al., 2006; Carter & Van Auken, 2005; Chandler & Hanks, 1998; Coleman, 2000; Gaskill et al., 1993). Our findings also demonstrate that such strategies are most important for non-affiliated firms who have limited social capital to start with. However, senior managers must also be aware of potential negative consequences of investments in developing social capital: spending on entertainment may prevent them from accumulating asset-based collateral. This may impact on their financial position and limit their ability to obtain long-term debt (Bharba et al., 2008; Li et al., 2009).

Policy makers need to recognize the importance of improving the ability of privately owned SMEs to access bank financing, especially in the long-term. This might be done through the development of effective credit-rating and guarantee schemes and, more generally, through an improvement of the regulatory environment surrounding the financial markets (including governance and accounting standards). Financing mechanisms based on social capital, coupled with the high productivity and ability of Chinese private enterprises to generate huge profits,

might have supported the growth of Chinese SMEs until the present day (Guariglia, Liu, & Song, 2011), but are arguably not appropriate if China is to develop world-class private enterprises able to compete globally. If Chinese firms' competitive advantage were to be eroded, due for instance, to increasing raw materials or labor costs, a realignment of the exchange rate, and/or increased competition, then private firms' ability to generate profits would be reduced, which, without a substantial reform of the financial sector, could seriously hamper their growth.

### **Limitations and Suggestions for Future Research**

This study suffers from a number of limitations. First, the fact that the dataset used in this research contains secondary financial data means we only have limited variables which can be used as proxies for social capital. Our first variable, entertainment expenditure, does not measure social capital itself but a firm's short-term investment in social capital building, and our second variable, political affiliation, only measures the formalization of social ties between the firm and government authorities, not the strength of such ties. Future research might consider utilizing survey questionnaires in addition to using financial data in order to measure the strength of social capital inherent in a firm's network ties with other economic actors.

Second, the use of secondary data means we are unable to distinguish between investment in building internal and external social capital through the proxy entertainment expenditure. In addition to building social relationships with external economic actors, firms may spend a significant proportion of their entertainment expenses on building relationships with employees, which is unlikely to have a significant effect on their financing. Entertainment expenditure may therefore also be viewed as a non-pecuniary compensation, i.e. a perk of the job, rather than solely as a resource that may be utilized in the development of external networks.

Third, the extent to which our findings can be generalized to all sectors of the Chinese economy may be questioned due to the fact that only manufacturing and mining enterprises are present in the NBS dataset. In order to test the generalisability of our findings to the wider population, future research should be extended to less mature, faster growing sectors of the economy such as the dynamic service sector, which has fuelled China's economy growth over the last few years. Previous research shows significant differences in the capital structures adopted by SMEs across industries (Hall et al., 2000). Compared to capital intensive manufacturing and mining firms, we might expect social and physical capital to be less important for firms operating in the service sector.

Finally, future research might also examine how the strategic objectives and personal characteristics of entrepreneurs (such as, for instance, their optimism) impact on the way SMEs are financed. Theoretical work (Schwienbacher, 2007) and empirical research in Western settings suggests that such factors might play an important role in explaining the capital structures that SMEs adopt (Romano et al., 2000).

## **CONCLUSION**

Using a panel of 65,485 firms over the period 2000-2006, we examined the determinants of Chinese SMEs' financing decisions. To this end, we first investigated the extent to which existing theories of capital structure apply to these firms. Contrary to the predictions of existing theories, asset structure was found to negatively influence short-term and total leverage. We then investigated the role played by financing mechanisms based on social capital. Proxies for a firm's short-term investment in social capital building (entertainment expenditure) and



accumulated stock of social capital (political affiliation) were found to influence the leverage of sampled firms in different ways. Specifically, entertainment expenditure has a positive effect on total and short-term leverage, whereas political affiliation influences long-term leverage positively. Further interactive regressions indicated that short-term investment in building social capital is more important in accessing short-term finance for non-affiliated firms.

Our results suggest that Chinese SMEs are generally reliant on unsecured short-term credit, or that secured against social capital. In other words, they are unable to move up the pecking-order of financing sources as envisioned by Myers (1984) due to institutional factors which make it difficult for them to access financing based on more traditional forms of collateral, especially in the long-term. For these SMEs, it is particularly important to invest significant resources in the development of social capital with other economic actors in order to obtain adequate sources of external finance.

We conclude that in emerging and transition economies with weak institutional frameworks and underdeveloped financial systems, existing theories of capital structure are unlikely to fully explain how SMEs are financed, while financing mechanisms based on social capital are particularly important to firms. This leads to a modified pecking-order theory applicable to these countries, in which, financing mechanisms based on social capital supplant those based on more traditional forms of collateral. This modified theory has important implications for business venturing, as it gives guidance to the managers of firms operating in those countries on ways to gain access to finance, which is fundamental for survival and growth. It is also useful to policy makers looking to support the development of SMEs in transition economies.

## Appendix A: Relationships between Variables Predicted by the Traditional TOT, the Traditional POT, and our Proposed Modified POT

Table A1 presents a summary of the relationships between leverage and the control, independent, and interaction variables considered in this paper, as predicted by the traditional TOT, the traditional POT, and by our proposed modified POT.

**Table A1: Predicted signs of regression variables**

Dependent variable	TOT	POT	Proposed modified POT (total leverage)	Proposed modified POT (short-term leverage)	Proposed modified POT (long-term leverage)
<b>Control variables</b>					
<i>Leverage</i> $i(t-1)$	N.A.	N.A.	+	+	+
<i>Depreciation</i> $i(t-1)$	-	N.A.	-	-	-
<i>Asset growth</i> $i(t-1)$	+	+	+	+	+
<i>Profitability</i> $i(t-1)$	+	-	-	-	-
<i>Asset structure</i> $i(t-1)$	+	+	-	-	+
<i>Size</i> $i(t-1)$	+	+	+	+	+
<i>Age</i> <sub><i>it</i></sub>	N.A.	N.A.	+	+	+
<b>Independent variables</b>					
<i>Entertainment exp.</i> $i(t-1)$ ( <i>EE</i> $i(t-1)$ )	N.A.	N.A.	+ (H1a)	+ (H1b)	- (H1c)
<i>Political affiliation</i> $i(t-1)$	N.A.	N.A.	+ (H2a)	+ (H2b)	+ (H2c)
<b>Interactive effect</b>					
<i>EE</i> $i(t-1)$ * <i>Affiliation</i> $i(t-1)$	N.A.	N.A.	- (H3)	- (H3)	N.A.

Notes: TOT stands for the static trade-off-theory and POT, for the pecking-order theory. N.A. stands for “not applicable”.

**Appendix B: Panel Structure**

<i>Number of years per firm</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative Percentage</i>
1	35,050	31.68	31.68
2	21,716	19.63	51.31
3	18,002	16.27	67.58
4	17,397	15.72	83.31
5	7,744	7.00	90.31
6	4,500	4.07	94.37
7	6,224	5.63	100
<b>Total</b>	<b>110,633</b>	<b>100</b>	

<i>Year</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative Percentage</i>
2000	4,370	3.95	3.95
2001	4,899	4.43	8.38
2002	7,325	6.62	15
2003	14,760	13.34	28.34
2004	15,656	14.15	42.49
2005	20,520	18.55	61.04
2006	43,103	38.96	100
<b>Total</b>	<b>110,633</b>	<b>100</b>	

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**Table 1: Summary statistics**

<b>Variables</b>	<b>Description</b>	<b>Mean</b>	<b>S.D.</b>	<b>Min</b>	<b>Max</b>
<i>Total leverage</i>	total liabilities divided by total assets	0.587	0.256	0.002	1.517
<i>Short-term leverage</i>	short-term liabilities divided by total assets	0.533	0.268	0	1.368
<i>Long-term leverage (dummy)</i>	dummy=1 if the firm has long- term liabilities, and 0 otherwise	0.244	0.430	0	1
<i>Long- term leverage</i>	long-term liabilities divided by total assets	0.038	0.099	0	0.677
<i>Size</i>	log (real sales +1)	9.364	0.665	0	10.31
<i>Age</i>	age	8.209	6.025	1	60
<i>Asset structure</i>	net fixed assets divided by total assets	0.322	0.196	0.002	0.901
<i>Asset growth</i>	net fixed asset growth (proxy for growth potential)	0.076	0.499	-2.260	2.486
<i>Profitability</i>	operating profit divided by total assets	0.075	0.113	-0.186	0.744
<i>Depreciation</i>	depreciation divided by total assets	0.0003	0.0003	0.0000	0.002
<i>Entertainment expenditure</i>	entertainment fee divided by total assets	0.067	0.064	0	0.487
<i>Political affiliation</i>	dummy=1 if the firm is affiliated with central, provincial, city/district, county, town/township/street, community/village governments; and 0 otherwise	0.309	0.462	0	1
<b>Observations</b>		110,633			

*Notes:* Real sales are expressed in thousands of yuan, and firm age in years. All other variables, with the exception of the dummy variables, are expressed in percentage terms.

**Table 2: Correlation matrix**

	<i>Total leverage</i>	<i>Short-term Leverage</i>	<i>Long-term leverage</i>	<i>Size</i>	<i>Age</i>	<i>Asset structure</i>	<i>Asset growth</i>	<i>Profitability</i>	<i>Depreciation</i>	<i>Entertainment expenditure</i>	<i>Political affiliation</i>
<i>Total leverage</i>											
<i>Short-term lev.</i>	0.8793*										
<i>Long-term lev.</i>	0.1508*	-0.2113*									
<i>Size</i>	0.0035	0.0101*	-0.0055								
<i>Age</i>	0.0505*	0.0366*	0.0453*	-0.0331*							
<i>Asset structure</i>	-0.2430*	-0.2890*	0.1085*	-0.0274*	-0.0335*						
<i>Asset growth</i>	-0.0122*	-0.0078*	-0.0073*	0.0810*	-0.0384*	0.1778*					
<i>Profitability</i>	-0.3055*	-0.2926*	-0.0239*	0.1585*	-0.0559*	0.1310*	-0.0105*				
<i>Depreciation</i>	-0.0822*	-0.0868*	0.0304*	0.0240*	0.0017	0.3160*	-0.0441*	0.0844*			
<i>Entertainment exp.</i>	0.0215*	0.0538*	-0.0630*	0.0390*	0.0057	-0.0939*	-0.0369*	0.1116*	0.0898*		
<i>Political affiliation</i>	0.0143*	-0.0241*	0.0925*	-0.0478*	0.1374*	0.0306*	-0.0331*	-0.0490*	-0.0383*	-0.0248*	

Note: \* indicates significance at the 5% level.

**Table 3: Dynamic OLS models for total leverage**

Dependent variable	Total leverage		
	Model 1	Model 2	Model 3
<b>Control variables</b>			
<i>Total leverage</i> $i(t-1)$	0.714*** (0.00287)	0.714*** (0.00287)	0.714*** (0.00287)
<i>Depreciation</i> $i(t-1)$	4.063* (2.235)	2.888 (2.245)	2.919 (2.246)
<i>Asset growth</i> $i(t-1)$	0.00657*** (0.00108)	0.00657*** (0.00108)	0.00654*** (0.00108)
<i>Profitability</i> $i(t-1)$	-0.153*** (0.00567)	-0.157*** (0.00576)	-0.157*** (0.00576)
<i>Asset structure</i> $i(t-1)$	-0.0535*** (0.00324)	-0.0518*** (0.00326)	-0.0518*** (0.00326)
<i>Size</i> $i(t-1)$	0.00240*** (0.000875)	0.00250*** (0.000876)	0.00613*** (0.00148)
<i>Age</i> <sub><i>it</i></sub>	5.41e-05 (8.43e-05)	5.59e-05 (8.59e-05)	7.33-e05 (0.000162)
<b>Independent variables</b>			
<i>Entertainment exp.</i> $i(t-1)$ ( <i>EE</i> $i(t-1)$ )		0.0457*** (0.00832)	0.410*** (0.0138)
<i>Political affiliation</i> $i(t-1)$		-0.000220 (0.00117)	0.0263 (0.0167)
<b>Interactive effect</b>			
<i>EE</i> $i(t-1)$ * <i>Affiliation</i> $i(t-1)$			-0.0943*** (0.0167)
<b>Observations</b>	109,686	109,686	109,686
<b>Joint significance test (<i>p</i>-value)</b>		0.00	0.00

*Notes:* Time dummies, province dummies, and industry dummies were included in all specifications. The figures reported in parentheses are asymptotic robust standard errors. The joint significance tests are *F*-tests conducted to test if the coefficients associated with the explanatory variables included in addition to the control variables (independent variables and interactive effects) are jointly statistically significant in the regression model. \* indicates significance at the 10% level. \*\* indicates significance at the 5% level. \*\*\* indicates significance at the 1% level.



**Table 4: Dynamic OLS models for short-term leverage**

Dependent variable	Short-term leverage		
	Model 4	Model5	Model 6
<b>Control variables</b>			
<i>Short-term leverage</i> $i_{(t-1)}$	0.674*** (0.00304)	0.673*** (0.00305)	0.673*** (0.00305)
<i>Depreciation</i> $i_{(t-1)}$	3.883* (2.320)	2.150 (2.336)	2.248 (2.336)
<i>Asset growth</i> $i_{(t-1)}$	0.00844*** (0.00116)	0.00837*** (0.00116)	0.00835*** (0.00116)
<i>Profitability</i> $i_{(t-1)}$	-0.180*** (0.00585)	-0.187*** (0.00596)	-0.187*** (0.00596)
<i>Asset structure</i> $i_{(t-1)}$	-0.0741*** (0.00350)	-0.0718*** (0.00351)	-0.0718*** (0.00351)
<i>Size</i> $i_{(t-1)}$	0.00348*** (0.000984)	0.00368*** (0.000985)	0.00370*** (0.000985)
<i>Age</i> <sub>it</sub>	-6.53e-06 (8.95e-05)	3.92e-05 (9.13e-05)	4.64e-05 (9.12e-05)
<b>Independent variables</b>			
<i>Entertain. exp.</i> $i_{(t-1)}$ ( <i>EE</i> $i_{(t-1)}$ )		0.0679*** (0.00883)	0.0906*** (0.0110)
<i>Political affiliation</i> $i_{(t-1)}$		-0.00319** (0.00126)	0.00106 (0.00176)
<b>Interactive effect</b>			
<i>EE</i> $i_{(t-1)}$ * <i>Affiliation</i> $i_{(t-1)}$			-0.0623 * (0.0175)
<b>Observations</b>	110,633	110,633	110,633
<b>Joint significance test</b> ( <i>p</i> -value)		0.00	0.00

Note: see Notes to Table 3.

**Table 5: Dynamic Tobit models for long-term leverage**

Dependent variable	Long-term leverage	
	Model 7	Model 8
<b>Control variables</b>		
<i>Long-term leverage</i> $i_{(t-1)}$	1.135*** (0.00767)	1.131*** (0.00746)
<i>Depreciation</i> $i_{(t-1)}$	-0.985 (3.358)	2.035 (3.284)
<i>Asset growth</i> $i_{(t-1)}$	-0.00322** (0.00164)	-0.00284* (0.00164)
<i>Profitability</i> $i_{(t-1)}$	-0.0408*** (0.00857)	-0.0262*** (0.00828)
<i>Asset structure</i> $i_{(t-1)}$	0.0511*** (0.00512)	0.0474*** (0.00488)
<i>Size</i> $i_{(t-1)}$	0.00757*** (0.00154)	0.00710*** (0.00147)
<i>Age</i> $i_t$	0.00195*** (0.000126)	0.00177*** (0.000113)
<b>Independent variables</b>		
<i>Entertainment exp.</i> $i_{(t-1)}$ ( $EE$ $i_{(t-1)}$ )		-0.122*** (0.0139)
<i>Political affiliation</i> $i_{(t-1)}$		0.0156*** (0.00187)
<b>Observations</b>	110,103	110,103
<b>Joint significance test (<i>p</i>-value)</b>		0.00

Notes: See Notes to Table 3. The joint significance test is a Likelihood Ratio (*LR*) test, which in the case of non-linear models such as the Tobit model is more appropriate than the *F*-test.