Master's Thesis in Finance
Stockholm School of Economics

COMPANY OWNERSHIP, DEBT LEVELS AND CREDIT ALLOCATION EFFICIENCY – THE CASE OF CHINA

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ABSTRACT

This thesis examines the extent to which firm ownership matters for Chinese domiciled firms' access to long-term debt funding on the one hand, and long-term credit allocation efficiency in China on the other. In order to do this, panel regressions on company capital structures and credit allocation efficiency are performed, using a dataset covering 15,682 firms over three years. In contrast to some previous findings, the empirical results of this study gives little indication that either firms' access to long-term debt funding or the efficiency of long-term credit allocation would be systematically influenced by firm ownership. The exception is firms with foreign ownership, which have less access to long-term debt and to which long-term credit is relatively inefficiently allocated compared to firms of other ownership categories. Given these results, it seems that access to long-term debt given ownership is not an important determinant of growth for most firms in China, as more debt does not translate into higher growth. Moreover, considering the overall low long-term debt levels of Chinese domiciled companies, the theories of capital allocation efficiency and the law-finance-growth nexus, long-term credit markets in China seem to have some way to go before they can be considered to be functioning satisfactorily.

Tutor: Associate Professor Mariassunta Giannetti
Presentation: 11 June 2007 at 10:30 am, Room 750
Discussants: Juliana Garbalinska and Katarina Gustafsson

Acknowledgements: We would like to thank Associate Professor Mariassunta Giannetti for valuable guidance and feedback throughout the process of researching and writing this thesis. We would further like to express our gratitude towards Assistant Analyzer Marcelo Costa Carvalho for answering questions regarding statistical and econometrical procedures.

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1. INTRODUCTION

At present, China's financial system is dominated by an underdeveloped banking system that is mainly controlled by the four largest state-owned banks. Even though China's two stock exchanges have been growing very fast since their inception in 1990, their scale and importance are still not comparable to other channels of financing, in particular the banking sector, for the entire economy (Allen et al 2005, p. 60). It has been estimated that in 2006, only 21 percent of funding for Chinese companies came through the country's share and debt markets (Economist 2006, p. 78). This can be put in relation to for instance the United States, where the debt markets alone supplied about 30 percent of the funding for the average company in 1991 (Rajan and Zingales 1995).[1]

According to Wurgler (2000), a fundamental role of the economy is to allocate capital efficiently. In his study, he finds that developed financial markets, as measured by the size of the domestic stock and credit markets relative to GDP, are associated with a better allocation of capital. In China, the combination of an underdeveloped banking sector, relatively small equity and debt markets and an ever-lingering planned economy has resulted in dysfunctional financial markets. The largely state-controlled banking sector still constitutes the main official channel of firm financing, and the efficiency of China's financial markets has been the subject of several studies over recent years. Research has repeatedly pointed to one main problem: It appears that China's banking system does not allocate capital to its most efficient use. Instead, it seems to be over-investing in certain types of companies while under-investing in others, thus wasting financial resources. A possible reason for this allocation inefficiency is that the ownership of firms stands out as an important determinant of firms' access to bank loans, seemingly irrespective of other suitability measures such as firm performance and overall firm quality. In particular, it has been shown that China's state-owned banks have a systematic lending bias towards state-owned enterprises (SOEs) (Li et al 2007, Lu et al 2005, Shirai 2002). Since firm growth should be partly determined by the availability of credit (Giannetti and Onega 2007, p. 15), it has been suggested that non-state firms suffer disadvantages in accessing credit

[1] Even though this figure has probably changed since 1991, it should still give an indication of the limited size of China's share and debt market.

as compared to SOEs and that overall debt funding in China is inefficiently allocated (e.g. Li et al 2007).

However, the Chinese economy is booming and it is currently one of the fastest growing economies in the world (e.g. Allen et al 2005, Guariglia and Poncet 2006). A potential explanation why this is possible despite the financing bias towards state-owned firms is offered by Allen et al (2005): There might be alternative financing channels available in China, working as complements to regular bank loans and bonds, which are available to a wider array of firms. If this is true, and given that one takes a less narrow view of Chinese financial markets, ownership types may not be as significant for firms' access to debt funding as previously thought. Instead, a broader spectrum of firm variables may be of a substantially larger importance for firms' access to debt financing.

Therefore, this thesis sets out to challenge the view that ownership systematically determines Chinese domiciled firms' access to long-term credit on the one hand and how efficiently long-term credit is allocated on the other. The analysis is carried out in two steps. Firstly, we analyze the capital structure of firms, primarily in order to examine if and to what extent firm ownership determine long-term leverage but also to see whether alternative credit channels might in fact be available. Secondly, we examine the importance of the combination of firm ownership and long-term debt for explaining performance, and thus also the efficiency of long-term credit allocation in China.

This study considers a total sample of 13,573 (15,682 prior to the removal of outliers) firms over three years, of which 3,185 have been identified as belonging to one of four specific ownership categories. 1,087 of the firms are listed. Furthermore, rather than looking only at the part of firms' long-term debt financing that is made up of bank loans, we consider total long-term liabilities.[2] We do this in order to control for firms' access to long-term debt financing from other channels than banks. By doing this, we hope to provide a more general idea of the availability of long-term debt financing and its implications for firm performance in China given ownership.

[2] Although the term "debt" usually refers only to loans and obligations accompanied by interest payments, it will in this thesis be used interchangeably with both "credit" and the broader term "liabilities", for the sake of terminological simplicity and consistency.

It should be noted that previous studies that have investigated the links between ownership and debt funding or allocation efficiency in China have mainly used samples consisting of listed firms only (e.g. Shirai 2002, Lu et al 2005, Hovey 2006). Thus, the non-listed sector has to a large extent been left out of the analyses. However, given the fact that the non-listed sector has grown at an annual rate of 20 percent since 1978, far above the economy's 8 percent average annual growth for the same period (Tsai, 2002), it seems that omitting it would give an incomplete view of the situation. We will however also, in line with previous studies, look at listed versus non-listed firms as separate sub-samples, as it is likely that these firm categories might differ considerably from each other.

This thesis is in some respect an extension of the ideas provided by Allen et al (2005). To our knowledge, this study is unique in the way in which it addresses the dual issue of credit availability and credit allocation efficiency for a broad sample of firms in China. It is our hope that our work will contribute to the ongoing discussion about the implications of ownership for Chinese domiciled companies, and, from a wider perspective, add to the research about the current state of Chinese credit markets at this stage of China's economic development. Our findings are interesting, not only in themselves but also because of the increasing importance of the Chinese economy at the global level.

1.1. Purpose

The purpose of this thesis is to examine, by using a dataset covering 15,682 firms over three years, to what extent firm ownership matters for Chinese domiciled firms' access to long-term debt funding on the one hand, and for long-term credit allocation efficiency in China on the other.

1.2. Outline

This thesis proceeds as follows. Section 2 gives some background, partly consisting of previous empirical findings on related topics. The analytical foundation is presented in section 3 and section 4 discusses the data. Our hypotheses, methodology, empirical findings and validity are then discussed in section 5-7. Finally, section 8 concludes.

2. BACKGROUND

The implications of ownership for the financing of Chinese domiciled firms have been a recurring topic of discussion in recent finance-growth literature. China is and has for the past half-century been ruled by a Communist government, whose ideology advocates that the state should take a large and active role in providing employment for its citizens through SOEs. For this and other reasons, SOEs have enjoyed preferential treatment as compared to other firms, in particular by having easier access to debt financing stemming from the Chinese banking system. Simply put, Chinese SOEs enjoy the benefits of cheap debt funding, solely on the basis of the specific ownership category they belong to. However, SOEs have generally underperformed firms of other types of ownership (e.g. Shirai 2002). Therefore, the Chinese credit market is carrying a label of bias and inefficiency and these phenomena have been researched in a number of studies. In order to give some background to the analysis conducted in this thesis, some of these studies are briefly presented in the following subsection.

2.1. Related Findings

Shirai (2002) studies a dataset covering 1,098 publicly listed enterprises over the period 1994-2000, and finds that there are significant lending biases among Chinese banks. These biases have been present especially towards large, less profitable firms, firms with greater state ownership, and old firms. Shirai further argues that since most of these companies have been poorer performers than other companies, the results indicate the presence of a soft budget constraint.

Lu et al (2005) use a panel dataset of publicly listed companies in China to explore the relationship between banks' lending behavior and non-performing loans. Their results are in line with those of Shirai's, and support their hypothesis that Chinese banks have a systematic lending bias in favor of SOEs in relation to other firms, other things being equal.

Li et al (2007) argue that access to bank loans is one of the key differences between SOEs and privately owned enterprises in transition economies. This has been particularly evident in China, as state banks were not allowed to make loans to private companies until 1997. Thus, a credit market in which state banks are almost the only source of bank credit has meant virtual exclusion for private companies. Although the

situation has improved since 1997, Li et al argue that private firms are still treated unfavorably in state-dominated credit markets as there is continuing ideological discrimination against private ownership. In the light of this, the authors examine the value of political connections, in particular Communist Party memberships, for private entrepreneurs in China. They find that political connections help private companies as they make it possible to avoid discrimination by the government.

Thus, there seems to be some consensus in that SOEs have enjoyed important advantages in relation to firms of other ownership categories, due to the way in which state ownership gives companies easier access to debt funding in terms of bank loans. However, less has been said about the implications of this imbalance on the actual performance across firms of different ownership types. Nevertheless, there are some studies that have focused specifically on the links between ownership and performance.

Hovey (2006) investigates whether the ownership structure of listed firms in China has a significant effect on their performance, as measured by Tobin's Q.[3] Among other things, he finds that both firm size and leverage are negatively correlated with performance, thus suggesting that the market identifies high debt levels and the large size of many listed SOEs to be an obstacle to performance.

Allen et al (2005) take the discussion one step further when they examine the role of ownership in accessing financing as well its implications for firm performance under given ownership structures. The authors conduct a study of Chinese companies belonging to three different sectors, namely the State Sector, the Listed Sector and the Private Sector, from a law-finance-growth perspective. They argue that the Private Sector is not necessarily disadvantaged by its limited access to standard financing channels as compared to the other two sectors. Conversely, the Private Sector has in fact been growing much faster than the State and Listed Sectors and contributed to most of the economy's growth. Their conclusion for the imbalance among the three sectors is that there exist alternative financing channels and corporate governance mechanisms, such as those based on reputation and relationships, to support the growth of the Private Sector.

[3] Tobin's Q is defined as the *market value/replacement value* of a company's assets.

The arguments of Allen et al are interesting, since they offer a tentative explanation for how China has managed to keep up its astonishing growth rates despite the documented shortcomings in its financial system. This paper will therefore to some extent proceed along the findings of Allen et al. An analytical foundation is presented in further depth in the next section, and our results are outlined and discussed in subsequent sections.

3. ANALYTICAL FOUNDATION

A fundamental function of the economy is to allocate capital efficiently (Wurgler 2000). Poor capital allocation and inefficient credit markets work as obstacles for economic growth, as capital is not put to use where it is most needed. In the case of China, it has previously been shown that the availability and allocation of credit from public sources are largely dependent on company ownership. However, despite important financial market inefficiencies, China is one of the world's fastest growing economies. In this section, some related theories are introduced in an attempt to shed some light on the situation and to provide a solid analytical foundation for this thesis. Due to the complex nature of the Chinese economy, the theoretical considerations are in some cases complemented by related China-specific research, in order to improve the overall analytical fit.

3.1. The Firm's Financing Decision and Capital Allocation Efficiency

3.1.1. The Firm's Cost of Capital and Models of Financing Decisions

According to the classic Miller and Modigliani (1958) theorem, in the absence of taxes, bankruptcy costs, asymmetric information and in an efficient market where investors are risk neutral, the value of a firm is unaffected by the way in which the firm is financed. However, these assumptions are not applicable to the real world, in which debt financing is often a more attractive and cheaper option for companies than equity financing, mainly for three reasons. First, investors are not risk neutral in reality, for example due to imperfect information. This is important, since the risk to the providers of debt financing (lenders) is lower than that for shareholders due to the fact that lenders get first call on a company's cash flows and, in the event of default, on its assets. Given that the risk levels are lower for lenders, risk aversion among

investors implies that lenders would require lower levels of return as compared to shareholders, which in turn is advantageous for firms in need of financing. Second, interest payments are a tax deductible expense for companies. Therefore, debt financing has the significant advantage of acting as a tax shield, since a company is taxed on its profits after interest payments. Third, debt might act as a substitute for dividends, thus reducing the agency problem arising from companies being reluctant to pay out dividends.[4] There are however disadvantages with debt financing as well. For instance, the use of debt instruments often impose restrictions on the company's activities and require fixed repayments. If a company acts in the interest of its shareholders after debt is in place, the company might be unwilling to undertake investments with positive net present value if the debt burden is too high since there is the risk that the returns from the investments mainly go to the debt holders.[5] Moreover, the higher the debt-equity ratio, the more risky the company is considered to be by creditors and investors, and therefore both lenders and shareholders will require a higher return.

The advantages and disadvantages of debt financing constitute crucial factors in one of the finance literature's two major models of the firm financing decision, the trade-off model. In the trade-off model, firms determine their optimal leverage by weighing the costs and benefits of an additional unit of debt against each other. At the optimal level of leverage, the benefit and cost of the last unit of debt exactly offset each other. Thus, the trade-off model predicts that debt is more attractive than equity up to a certain point, after which equity becomes more attractive than debt (Fama and French 2002). The predictions of the main competing model of the firm financing decision, the pecking order model (Myers 1984), are slightly different. The pecking order model states that companies prioritize their sources of financing as follows: Internal funds are used first, thereafter debt funding is raised, and lastly equity is issued. According to the pecking order model, therefore, debt will always be preferred over equity.

Irrespective of which model one prefers, firms should consider debt to be a more desirable means of firm financing than equity at least up to the point where the costs of debt outweigh the benefits. One should keep in mind, however, that these are

[4] For a more elaborate discussion, please refer to Fama and French (2002).
[5] This is known as the debt overhang problem.

general theories and that the relative attractiveness of debt and equity also depends on factors such as industry belonging and firm maturity. In addition, it is crucial to note that some firms, for instance due to them not being listed on a public exchange, have a limited ability to issue equity as an alternative to debt even if doing so would have positive effects on their capital structure. In this thesis, therefore, it will henceforth be assumed that the availability of debt financing is of a large importance to companies in general, but that the relative importance of debt and equity may vary depending on individual firm characteristics.

3.1.2. Efficient Capital Allocation

Given that debt is an important means of financing for firms in general, one would expect debt capital to be allocated to those companies that deserve it the most. In a world of perfect capital allocation, therefore, firm competition for capital would be harsh and debt funding would be directed towards those companies in which it would enjoy the highest possible return or contribute to sustainable growth.

However, as shown by Wurgler (2000), the efficiency of capital allocation might be affected by several factors: It is negatively correlated with the extent of state ownership in the economy, but positively correlated with both the amount of firm-specific information in domestic stock returns and with the level of legal protection of minority investors. Since China is an economy with a large share of state ownership, immature stock markets and low levels of legal protection by minority investors,[6] one would expect all three factors to have a negative impact on overall capital allocation efficiency in the economy. Furthermore, Bertrand et al (2004, p. 2) state that a high level of state intervention in the banking sector in a country is accompanied by a less efficient allocation of bank loans. Given that governments seldom use economic performance as their sole performance measure, it seems reasonable to assume that state ownership and state intervention in the credit market could lead to overinvestment from an economic point of view. Thus, it seems like the Chinese economy might be failing in allocating capital efficiently, which in turn might be hindering long run economic growth in China. Capital allocation efficiency hence becomes a highly interesting issue when studying the Chinese economy.

[6] The legal framework in China will be described and discussed in further depth in section 3.2.2.

3.2. The Law-Finance-Growth Nexus

3.2.1. Theoretical Framework

The law-finance-growth literature focuses on the links between a country's legal framework and its financial market efficiency and growth. Simply put, a country with a developed legal structure is expected to have well-functioning financial markets, which in turn should lead to higher growth. According to Levine (1999), financial intermediaries are better developed in countries with legal and regulatory systems that [1] have strong creditor protection, [2] enforce contracts effectively, and [3] promote comprehensive and accurate financial reporting by firms.

With regards to creditor protection [1], Levine shows that legal systems with strong creditor rights are, all else equal, more likely to promote the growth of financial intermediaries in general, commercial banks relative to the central bank, and financial intermediaries that allocate more credit to private firms as opposed to SOEs compared to legal systems that hinder the seizure of collateral or limit the role of creditors in reorganizations. Furthermore, contract enforcement [2] matters as much as the formal legal environment. Countries that impose compliance with laws efficiently and enforce contracts effectively tend to have much better developed financial intermediaries than countries where enforcement is weak. Finally, with regards to financial accounting standards [3], Levine states that information about firms is critical for exerting corporate governance and identifying the best investments. These activities will be made easier by accounting standards that facilitate the interpretability and comparability of information. In addition, accounting measures are widely used in financial contracting as triggers of particular actions. However, contracts of these types can only be used if accounting measures are reasonably unambiguous. In conclusion, Levine states that financial intermediary development is critically dependent on the quality of the legal and regulatory environment and that it in turn is positively associated with economic growth.

The links between law, finance and growth have also been studied by for instance Beck and Levine (2002), Beck et al (2000) and Demirgüç-Kunt and Maksimovic (1998). Among other things, Demirgüç-Kunt and Maksimovic argue that, depending on the nature of the firm, access to long-term external financing may be crucial for realizing the growth opportunities of a firm if its internal cash-flows are

scarce or expensive. This is in line with the reasoning in section 3.1.1, where it was assumed that the availability of credit can be of crucial importance for company success.

3.2.2. Implications for China

Given China's extraordinary growth over recent years, a reverse application of the law-finance-growth nexus would suggest that the Chinese financial markets should be well functioning and its legal institutions well developed. However, Allen et al (2005, p. 64 ff.) examine measures of China's legal system and compare them to the average measures of 49 countries studied in a paper by La Porta et al (1998). The authors put specific emphasis on Levine's (1999) three legal factors mentioned above ([1] strong creditor protection, [2] efficient enforcement of contracts, and [3] comprehensive and accurate financial reporting by firms), which underlie the development of efficient financial intermediaries.

Allen et al show in their study that China currently has an underdeveloped judicial system and a severe undersupply of legal professionals,[7] and argue that this has negative implications for the legal environment as outlined by Levine. With regards to creditor rights [1], Allen et al find that a majority of the sample countries has better creditor protection than China. Also for the level of law enforcement [2], China's measures are considerably below all average measures of the sample countries. Finally, the promotion of accurate financial reporting [3] has not yet had much effect in China. Although China is trying to move its accounting standards for listed companies towards the International Accounting Standards (IAS), there is a big lack of accounting professionals. Xiang (1998, p. 118) even argues that the detailed IAS-based standards may in fact be counterproductive in the specific context of China: Given the lack of professional auditors, in combination with China's weak legal system, appropriation of company assets and other forms of fraud could occur more frequently under IAS-based standards as compared to an alternative system with a simpler set of accounting rules.

Thus, the findings of Allen et al go against the intuitive reverse reasoning above, which suggests that China's strong growth would be contingent on developed

[7] It has been estimated that there are 150,000 lawyers in China, a number roughly corresponding to the number of licensed attorneys as in the state of California (Orts 2001).

financial markets and an effective legal framework. Instead, the legal environment in China is evidently poor and, as discussed in section 2.1, several studies have confirmed that there are severe inefficiencies in the Chinese credit markets (e.g. Shirai 2002, Li et al 2007). Thus, it appears that China is growing for reasons other than financial market efficiency and it is plausible that China's growth would be more sustainable with a stronger financial system.

A potential explanation why China can maintain its high growth rates despite documented financial market inefficiencies suggests that there might be an unofficial network of credit channels that have helped promoting China's growth. These channels would act as an alternative to the official credit markets and offer financing to a wider range of firms than the Chinese banking system. The conclusions of Allen et al (2005), as presented in section 2 of this paper, are largely in line with this reasoning. The potential availability of alternative debt financing channels is of interest to this thesis, as it might provide some important explanations for the results of the forthcoming empirical findings. If alternative credit channels do not exist, and given general companies' preference for debt over equity funding, one would expect SOEs to be higher leveraged than other types of companies. However, if one instead supposes that alternative credit channels are in fact available, it is plausible that companies' access to long-term debt funding would be independent of ownership, and thus long-term leverage ratios should be more similar.

3.3.Alternative Financing Channels

3.3.1. The Existence of Alternative Financing Channels

Building on section 2, which among other things discussed the prevalence of a strong bank lending bias towards SOEs in China, one may introduce the term "connected lending". In the literature, this term is normally used in a context such as the one described in section 2, in which firms with connections to banks and politicians are preferentially treated when it comes to obtaining long-term financing relative to firms without such ties (Charumilind et al 2006, La Porta et al 2003). These firms are simply referred to as being "connected", a characteristic that can be substantially more important than actual firm quality for obtaining financing in emerging economies.

Although the expression connected lending is normally used to describe a situation where banks lend to firms controlled by the bank owners (La Porta et al 2003), it could potentially be more broadly interpreted in the case of China. The Chinese business culture is very different from that of the Western world, and business is to a large extent conducted on the basis of relationships. The term for this important personalized social networking is *gūanxi*, which can be translated into both "connections" and "relationships". However, neither of these terms sufficiently reflects the wide cultural implications that *gūanxi* describes, and therefore it is more common to use the term *gūanxi* directly. Bearing *gūanxi* in mind, one would expect connected lending to have a larger impact on market behavior in China than general literature on the topic would suggest. For instance Braendle et al (2005) argue that in China, personal relationships are still one of the most important factors influencing business conduct, and that *gūanxi* might even take precedence over legitimate decisions based on laws and regulations. Further, Martin and Larsen (1999) argue that Chinese business people may place Western priorities such as efficiency and profit beneath social values and goals.

If one considers this cultural context in combination with China's relatively small equity and debt markets, astonishing growth rates and the limited access of non-state firms to standard financing channels such as banks, the existence of alternative financing appears plausible. Tsai (2002) argues that private entrepreneurs throughout China have responded to discriminatory government policies by creating and using an intricate system of "back-alley banking" in order to get better access to financing for their business ventures. According to Tsai, "the stubborn persistence of informal interactions and informal finance is how China's economic miracle has been financed" (Tsai 2002, p. 23).

Thus, the alternative financing channels that might be active in China would probably be a result of a biased and inefficient credit market on the one hand, and of the importance of close relationships in the economy on the other. These two factors are to a large extent interconnected, as it should at least in part be the prevalence of strong relationships in the economy that have lead to the discriminatory lending practices.

3.3.2. The Efficiency of Alternative Financing Channels

Given the possible existence of alternative credit channels, it becomes interesting to briefly discuss whether they are likely to contribute positively to capital allocation efficiency in the Chinese economy as compared to the official financial system.

In theory, the prevalence of connected lending should reduce information asymmetries since the parties are assumed to know each other well (La Porta et al 2003). This does however not seem to be the case in reality. For instance Charumilind et al (2006) show that connected lending may instead be associated with vast amounts of non-performing loans (NPLs), possibly because lending decisions are made on a more arbitrary basis than they would be in an unconnected context.

However, it is not obvious that China's alternative credit channels would solely consist of inefficient connected lending, such as that between banks and SOEs. If one instead supposes that at least parts of the alternative funding are channeled by private investors towards healthy companies of different ownership types in order to provide the highest possible returns, the alternative credit channels should be more efficient than the biased bank credit market.

Thus, there is no unambiguous answer to whether the prevalence of alternative financing channels improves the efficiency of total capital allocation in an emerging economy. One can assume, however, that since ownership should be of limited importance for the access to alternative financing, credit allocation efficiency should not differ systematically between firms of different ownership types.

4. DATA

This section of the paper discusses the data in some detail. We obtain our dataset from the Orbis database, published by Bureau van Dijk Electronic Publishing (BvDEP). To the best of our knowledge, Orbis provides the most comprehensive currently available coverage of companies in China. Giannetti and Onega (2007) and Giannetti (2003) also employ datasets extracted from information services provided by BvDEP.

4.1. Sample Choice

We extract financial statements and other firm-specific information, including for instance ownership information and various size and performance measures, for 15,682 listed and non-listed companies domiciled in China. To ensure a consistent

coverage of financial information, the sample includes firms that meet the following dual criteria:

(i) The firm is classified according to the NACE Rev 1.1 industry classifications[8], but does not fall into the categories 65 or 66[9]; and

(ii) the firm's financial accounts are available for all three years 2002, 2003 and 2004.

The former criterion is motivated by the fact that financial firms tend to differ considerably from other types of companies in terms of capital structures, thus making them unsuitable for comparative purposes. The latter criterion, on the other hand, deserves some special attention. By restricting the study to focus only on firms whose accounts are available for all three years 2002-2004, the sample will most likely contain a survivorship bias. In addition, it means that we disregard all new firms that might have joined the sample during these three years. There are however specific reasons to why we have chosen to impose this constraint. Despite the fact that Orbis' Chinese coverage actually stretches from 1997 to 2006, the availability of information has not been steady throughout this period. For instance, in 1997, only 10 firms were included in the database. Although coverage improved over the years 1997-1999 (1998 [808 firms in the database], 1999 [906 firms], 2000 [996 firms], 2001 [1,154 firms]), a major expansion of the Chinese dataset did not occur until 2002, when 17,295 Chinese domiciled firms were included in the database. For this reason, we decided to use 2002 as our starting year.

Another data shortage affecting our selection is that there is only limited information available on the firms' incorporation dates. This makes it impossible to determine which firms are actually new market entrants and which firms are merely new to Orbis, thus creating another type of bias. This bias could potentially be as large as or even larger than the survivorship bias that might prevail in the sample of our choice. Therefore we decided instead to use a balanced panel, despite the survivorship bias that this probably entails.

[8] Please refer to e.g. Fifo Ost (2007) for a complete list of NACE Rev 1.1 industry classifications and corresponding ISIC-classes.
[9] NACE 65: Financial intermediation, except insurance and pension funding; NACE 66: Insurance and pension funding, except compulsory social security.

We then considered using all information available from 2002-2006, in order to include the most recent available observations in our sample. However, choosing the time period 2002-2004 turned out to give us the largest sample possible for any combination of periods of three years or more. For instance, the inclusion of the accounts for 2005 would reduce our sample to 8,677 firms, most likely due to a lag in the reporting of accounts.

4.2. Ownership Classification

Other than financial information, Orbis provides more qualitative firm-specific information such as ownership data. The five main ownership categories that we use are:

(i) Firms owned by the Chinese state (*state*)

(ii) Firms owned by Chinese individuals or families (*individual*)

(iii) Firms owned by Chinese industrial owners (*industrial*)

(iv) Firms owned by foreigners / non-Chinese owners (*foreign*)

(v) Firms owned jointly by the Chinese state and foreigners / non-Chinese owners (*state_foreign*)[10]

However, there are substantial limitations in the extent to which one can get access to comprehensive ownership data for Chinese companies. In our sample, shareholder data is given for 3,638 firms before the removal of outliers. Of these, only 527 have been explicitly classified by Orbis as falling into one of our main ownership categories. We were therefore left to manually go through the remaining firms for which shareholder data was available, and to classify each firm as belonging to one of our ownership categories. It should be noted that both Taiwan and Hong Kong are in this study treated as being Chinese. In short, a firm has been classified as belonging to a specific category if it meets one of the following four criteria:

(a) The firm's majority owner or global ultimate owner belongs to that category;[11] or

[10] These joint ownership structures may for instance be in the form of 50/50 joint ventures. Note that these firms also fall into the pure *state* and *foreign* categories in order not to distort the analysis.

[11] Definition of the global ultimate owner (as defined by Orbis): i) minimum percentage that must characterize the path from a subject company up to its ultimate owner is 25.01 percent; and ii) at least one of its shareholders must be known and it cannot own more than 25.01 percent.

(b) in the absence of a recognized majority owner or global ultimate owner, at least 25.01 percent of the firm is owned by owners belonging to that category;[12] or

(c) in the absence of information about ownership stake sizes, at least one of the three largest owners of the firm belongs to that category; or

(d) it is in other ways obvious that the firm belongs to a certain category, for instance due to the term "state-owned" being included in its name.

For the 12,044 firms for which shareholder information is missing, we use the following, sixth ownership category:

(vi) Firms with unspecified ownership (*unspecified*)

We are aware of the shortcomings that this lack of information entails, as manual data classification and simplifying assumptions may give rise to some subjectivity in the determination of ownership types. We reason, however, that since China is still a relatively closed economy in terms of information availability, problems of this nature are difficult to circumvent in quantitative studies of firm-level data.

5. HYPOTHESES

If there exist plausible alternatives to bank loans for long-term financing needs in China, SOEs would not necessarily be enjoying advantages when it comes to obtaining long-term credit. Thus, ownership might not be as important a determinant of firms' access to long-term credit as previously thought. If this is true, it also follows that firm ownership should be of little importance for explaining long-term credit allocation efficiency in China, since long-term debt would not be allocated on the basis of ownership status. Thus, we can formulate our two main hypotheses:

H1: Firm ownership has no systematic impact on Chinese domiciled firms' access to long-term debt funding, when one considers a measure of long-term debt that is broader than bank loans.

[12] Following the logic of Orbis' definition of the global ultimate owner (please refer to the previous footnote).

H2: Firm ownership does not systematically influence long-term credit allocation efficiency in China.

6. METHODOLOGY

In this section the methodological approach is outlined. In general, all regressions are balanced panel regressions and they are performed using a fully robust pooled ordinary least squares (OLS) method, clustered by firm. By doing this, we assume that the error term is uncorrelated with the explanatory variables and that the relationship between the dependent and independent variables does not vary cross-sectionally or over time. These assumptions are feasible since various dummy variables are introduced for the specific reason of capturing potential cross-sectional variation in the data and, due to the short time period analyzed, the time-dimension can be disregarded.

6.1 Removing Outliers and Creating Sub-Samples

Given the large and heterogeneous nature of the sample, we take some measures to limit the influence of outliers. Firstly, some observations of firm growth seem unreasonably large or small. Therefore we remove all firms with observations of growth in turnover or assets greater than 500 percent or smaller than -100 percent. Similarly, and for the same reasons, we remove all firms with a cash flow margin[13] greater than 1 or smaller than -10. Furthermore, the sample contains a number of firms with negative liabilities and some with negative equity. Since neither of these characteristics is likely from a business perspective, these firms are removed. We also find two firms with observations of negative turnover and one with fixed assets that exceed total assets, and remove these firms from the dataset. Finally, there are several firms with unduly high or low returns on assets. Thus, we remove extreme observations of return on assets at the 1 and 99 percentiles in order to limit their impact on our results. It should be noted that many of the removed observations overlap, i.e. belong to the same firms.

Although we have strived to maintain an economic rationale behind the abovementioned measures, they are admittedly of an *ad hoc* nature. However, given the large number of observations in our sample in combination with the numerous

[13] Cash flow margin is here defined as (*net increase or decrease in cash/turnover)*100.*

control variables included in our empirical models, this should not decrease the validity of our results.

For the full sample, the procedures result in 2,109 firms to be removed from the sample, thus the total sample is reduced to 13,573 companies.

Moreover, we split the data into different sub-samples in order to give a more detailed account of the Chinese market. The sub-samples are compared to each other as well as to the full sample in the subsequent analyses. The sub-samples are categorized as follows:[14]

- Firms with specified ownership (*specified sub-sample*), including firms of all ownership categories except *unspecified*. Before the removal of outliers, the sample holds 3,638 firms, and after removing outliers 3,185 firms.
- Listed firms (*listed sub-sample*); 1,240 firms before removing outliers, 1,087 after.
- Non-listed firms (*non-listed sub-sample*); 14,442 companies before removing outliers, 12,486 after.

6.2. Ownership and Long-Term Debt

To test the impact of firm ownership on long-term indebtedness, we perform the following capital structure regression:[15]

$$\frac{D_t}{A_t} = \alpha + \beta_1 D_{ownership} + \beta_2 \ln size_{t-1} + \beta_3 roa_{t-1} + \beta_4 collateral_{t-1} + \beta_5 growth + \beta_6 D_{industry} + \\ + \beta_7 D_{listed} + \beta_8 D_{year} + \varepsilon$$

The purpose of the capital structure regression is to capture the variations in long-term debt availability between Chinese domiciled firms of different ownership types. Thus, it may give an idea about whether alternative long-term financing channels might in fact exist.

[14] Note that these sub-samples are to some extent overlapping, as a number of firms belong to two sub-samples.
[15] We also perform the regressions year-by-year, with no difference in outcomes.

6.2.1. Dependent Variable

The D/A-ratio is a common indebtedness measure, defined as *(total debt/total assets)*100*, that shows what percentage of a company's assets is being financed through debt.[16] In this analysis, however, the D/A-ratio that is used as dependent variable is defined as *(long-term liabilities/total assets)*100*. Thus, it shows instead what percentage of a company's assets is being financed by long-term liabilities. As explained in the introduction, we use a long-term liability measure rather than just a measure of interest-bearing long-term debt in order to control for firms' access to long-term debt financing from other channels than banks. In accordance with the common definition of long-term liabilities, all types of debt and liabilities with a remaining maturity exceeding one year are included in the numerator. In this thesis, we use the D/A-ratio as a proxy for firms' general long-term credit access, as a higher indebtedness level in a firm can be interpreted as that firm having better access to long-term debt financing. This is obviously not a perfect interpretation, as the D/A-ratio might be affected by a firm's financing needs as well as the availability of funding, for instance depending on firm performance or what industry the company belongs to. We attempt to handle this issue by introducing a number of control variables, which will be discussed in the following subsection.

The main reason why a long-term liability measure is used rather than for instance total liabilities is that long-term alternative credit channels are likely to be the ones that mainly affect long-term growth and expansion opportunities, whereas short-term financing is to a larger extent used to bridge cash shortages and finance daily operations. This reasoning is especially true for firms experiencing financial distress, as short-term funding solutions would be an insufficient tool for solving severe financial problems. Further, short-term debt usually includes a non-negligible amount of trade credit. According to Petersen and Rajan (1997), trade credit from suppliers is the most important source of capital for non-listed small and medium sized companies, particularly in transition economies. Allen et al (2005) confirm that trade credit from business partners is an important source of financing for Chinese private companies, in particular during their growth period. Thus, trade credit should by no means be disregarded as a method of funding for firms. Moreover, given the

[16] Please refer to Investopedia (2007) for a more thorough description of the standard D/A-ratio.

possibility to repeatedly roll it over, trade credit may not even be limited to short-term financing needs but can be eligible to cover also capital requirements over a sustained period of time. Despite this, trade credit is often excluded from company capital structure analyses as it is of a different nature than other types of debt. In this thesis, however, we are unable to determine the magnitude of trade credit as a fraction of short-term liabilities, since Orbis does not offer any detailed data when it comes to the constituent parts of short-term liabilities of Chinese domiciled firms. This data shortage in combination with the fact that our sample is dominated by non-listed medium sized companies imply that trade credit could make up an important part of short-term liabilities in our sample. Thus, looking at short-term liabilities or total liabilities (defined as *short-term liabilities* + *long-term liabilities*) without removing trade credit from the measure could potentially result in an inaccurate capital structure analysis. For this reason we remove the influence of trade credit on our analysis by omitting short-term liabilities in their entirety; hence we consider only long-term liabilities. We recognize that we thereby exclude also other types of short-term debt, but we reason that this is outweighed by the fact that the basis of our analysis becomes less ambiguous. This approach is in line with Allen et al (2005), who measure companies' leverage ratio by using long-term debt over common equity.

6.2.2. Independent Variables and Expected Outcomes

As main explanatory variable, we use an ownership dummy variable that was created in accordance with the ownership categories that were outlined in section 4.2 above. For any given firm, the dummy variable takes the value 1 for the ownership category to which that specific company belongs and 0 for the rest.[17] Hence, the purpose of introducing the ownership dummy is to determine the effect different types of firm ownership may have on company debt levels and thus give an idea of its implications for firms' access to debt funding.

In order to control for other factors that may influence company debt levels, in terms of both credit availability and financing needs, we introduce a number of control variables. These include variables controlling for size, profitability, collateral, growth, industry belonging and listing status.

[17] Note that the dummy variables for some companies take on the value 1 for more than one ownership category, due to the overlaps between the *state*, *foreign* and *state_foreign* ownership categories.

With regards to firm size, we use the natural logarithm of total assets (*size*) as our main size measure. We also perform regressions using the natural logarithms of total sales and number of employees in order to take into account the fact that firm size may be determined in different ways, without any major changes in the results. We therefore do not comment on them further, and proceed by using total assets as our only size measure. We expect that higher values for firm size would add to loan security and therefore the coefficient for *size* should be positive (Lu et al 2005). Profitability is measured by return on assets (*roa*), which is a generally applied method when looking at profitability for companies in emerging markets (e.g. Allen et al 2005, McMillan and Woodruff 2001, Bertrand et al 2004). *Roa* (%) is defined as (*profit before tax and extraordinary items/total assets)*100.* The impact *roa* should have on company indebtedness is slightly ambiguous. One the one hand, a high *roa* would make the company more able to use retained earnings as a means of financing, which would decrease the firm's financing needs. Given the pecking order theory (Myers 1984), companies would prefer this alternative to debt financing, and hence the coefficient for *roa* should be negative. On the other hand, a high *roa* implies that the company is profitable and therefore more likely to be able to repay loans. Thus, firms with higher *roa* should have better access to debt and, according to the cost of capital theories and assuming that the company is limited in its possibilities to use retained earnings, firms should prefer debt over equity financing (Myers 1984, Fama and French 2002). Thus, in contrast to the previous reasoning, one would expect the company's debt levels to be higher and the coefficient for *roa* to be positive.

Collateral (*collateral*), defined as (*fixed assets/total assets)*100*, is used as a credit risk proxy. All else equal, a firm with higher collateral should have greater access to debt since collateral can be used as security for the loan. Thus, the coefficient for *collateral* should be positive.

For company growth, we use growth in turnover (*growthturnover*), defined as $ln(turnover_t/turnover_{t-1})*100$ as our main measure. We also try growth in assets as an alternative growth measure, but with no major implications for our results. High growth rates imply that the company is facing expansion opportunities, which are likely to require capital and thus increase the firm's needs for debt funding. According to Lu et al (2005), a high growth rate adds to loan security, hence increasing financing availability. However, according to Myers (1977), the agency cost arising from debt

overhang increases with the firm's growth opportunities, and if both the firm and creditors anticipate this behavior from the equity holders the firm will take on less debt. Hence the expectations on the coefficient for *growthturnover* are somewhat ambiguous.

We then add 28 industry dummy variables to control for what industry each company belongs to, since it is likely that credit needs and availability differ between industries.[18] We also include a listing status dummy, which takes the value 1 for *listed* firms. In order to fulfill the listing requirements in China a company must, among other things, have been in business for at least three years, had net profits during the last three consecutive years of an aggregated amount of minimum RMB 30M ($3.9M[19]) and adhere to a number of corporate governance, accounting and disclosure requirements (PriceWaterhouseCoopers 2006).[20] Also Chinese domiciled companies listed on foreign stock exchanges are subject to specific requirements. Due to this quality screening, listed companies in general should be of an overall higher quality than non-listed companies. In addition, listed firms are different in the sense that they have easier access to equity as a source of long-term funding. Finally a year dummy is included in order to control for year-specific events.

Since a constant term is included in the regressions, we exclude one dummy variable for each dummy category used. The dropped dummy variable thus becomes the base case for each category, against which the other dummy variables are assessed. We do this in order to avoid the dummy variable trap, i.e. perfect multicollinearity. This approach is valid also for subsequent sections.

Finally, all independent variables of a financial nature, with the exception of *growth* which is calculated year-on-year, are lagged in order to measure the impact they have on the following year's D/A-ratio.[21] None of the dummies are lagged, since Orbis provides no data of changes in ownership, industry belonging and listing status.

[18] The dummy variables controlling for industry belonging were created in accordance with the main industry classifications as provided by NACE Rev 1.1 (Fifo Ost 2007). For the full list, please refer to Appendix I.
[19] Exchange rate provided by Bank of China as of 16 May 2007.
[20] Special requirements apply for companies in high and new technology sectors.
[21] All lagged variables are hereafter referred to as such, e.g. a lagged *roa* variable is referred to as *lagroa*, a lagged *collateral* variable is referred to as *lagcollateral* and so forth. The expected outcomes as discussed in section 6.2.2 remain the same.

6.3. Credit Allocation Efficiency

Given the aforementioned importance of an economy's ability to allocate capital efficiently (Wurgler 2000) in combination with the documented limitations of the Chinese financial markets, it becomes interesting to test the efficiency of long-term credit allocation in China. Inspired by Wurgler (2000), the following credit allocation efficiency regression is therefore performed:

$$performance_t = \alpha + \beta_1 D_{ownership} * \left(\frac{D}{A}\right)_{t-1} + \beta_2 \left(\frac{D}{A}\right)_{t-1} + \beta_3 \ln size_{t-1} + \beta_4 cashflowmgn +$$
$$+ \beta_5 D_{industry} + \beta_6 D_{listed} + \beta_7 D_{ownership} + \beta_8 D_{year} + \varepsilon$$

The aim of the credit allocation efficiency regressions is to give an idea of how efficiently long-term credit given ownership types is allocated in China, by measuring how efficiently firms of different ownership use long-term debt.

6.3.1. Dependent Variable

We use *performance* as the dependent variable in the regressions under the assumption that a higher level of capital efficiency in the economy has a positive impact on firm performance. The effect on performance of long-term debt levels given ownership types thus becomes a proxy for credit allocation efficiency. We define performance in two different ways; in terms of profitability and in terms of growth. As profitability measure we use return on assets (*roa*), for the same reasons as in section 6.2.2. Our main growth measure is growth in turnover (*growthturnover*). However, in line with the reasoning in section 6.2.2 we also try growth in assets as an alternative growth measure but without any major changes in the results, and therefore proceed by using *growthturnover* as our only growth measure.

Both *roa* as a measure of profitability as well as measures of company growth are of interest as indicators of firm performance. While profitability might be the most commonly used performance measure, one must take into account that China is a growth market and thus profitability might to some extent be subordinated to growth rates in expectation on future profits. The use of *growthturnover* as a measure of performance is in line with Giannetti and Onega (2007).

If debt capital is efficiently allocated, it should have a positive effect on both our performance measures. By regressing the dependent variable against company indebtedness given ownership type as well as against a number of control variables,

we expect to be able to make some conclusions about credit allocation efficiency across different firm segments in China.

6.3.2. Independent Variables and Expected Outcomes

In order to analyze long-term credit allocation efficiency, an interaction variable is introduced: $D_{ownership} * \left(\frac{D}{A}\right)_{t-1}$

The interaction variable captures the level company indebtedness for any given ownership type, and its coefficient shows what impact it has on firm performance. Therefore, the interaction variable captures the way in which long-term credit allocation efficiency varies across companies of different ownership. If the coefficient for an interaction variable turns out to be positive (negative), the level of indebtedness for the ownership category that it represents has a positive (negative) effect on performance, and the allocation of debt funding can thus be regarded as being efficient (inefficient) for that particular ownership category. The level of efficiency (inefficiency) increases with the magnitude of the positive (negative) coefficient.

As in section 6.2.2, a number of control variables are also introduced in order to control for other factors that may have an impact on company performance. These include variables controlling for long-term indebtedness, size, cash flow margin, industry belonging, listing status and ownership.

Long-term indebtedness as captured by the long-term D/A ratio should be positively correlated with performance when debt capital independent of ownership is efficiently allocated but negatively if it is inefficiently allocated.

It seems reasonable to assume that firm size might have some impact on firm performance. In line with the discussion in 6.2.2 we use the natural logarithm of total assets (*size*) as our main size measure. We also run the regressions using the natural logarithm of turnover and employees, but do not report the results since they are more or less in line with the results for total assets. The effect of firm size on performance might be slightly ambiguous depending on what performance measure is used. For *roa*, *size* should have a positive coefficient if economies of scales are important. If economies of scale are unimportant, *size* should not have a major impact on performance. When a growth measure is used as the dependent variable, *size* should

have a negative coefficient, as one would normally expect small firms to grow faster than large ones.

A perhaps more important determinant of performance is a company's cash flow margin (*cashflowmgn*), here defined as (*net increase or decrease in cash/turnover)*100*. If a company has an insufficient cash flow, it might have difficulties carrying out everyday operations and thus performance would be held back. In addition, if cash is scarce, the company may have to forego profitable investment opportunities, which would impede performance further. Hence, *cashflowmgn* should be positively correlated with performance and its coefficient should therefore be positive.

Following the same logic as in section 6.2.2, the independent variables of a financial nature are lagged. The only exception is *cashflowmgn*, since it is likely that an insufficient cash flow would have an immediate (same-year) impact on company performance.[22]

Finally, as in section 6.2.2, a number of dummy variables are used in order to control for firm-specific characteristics which may affect performance. These include the same industry, ownership, listing status and year dummies that were included in the capital structure regression.

7. EMPIRICAL FINDINGS, ANALYSIS AND DISCUSSION

In this section, the empirical findings from our regression analyses are presented and discussed. Prior to that, some descriptive statistics for the full sample will be considered. It should be noted that *n* in all cases henceforth refers not to the number of firms but to the number of observations in the sample.

7.1. Descriptive Statistics

Table 1 below reports some descriptive statistics for the full sample. For each regression variable, we report mean, median, minimum and maximum values, as well as standard deviations, in order to give a comprehensive overview of the sample characteristics.

[22] As previously (please refer to footnote 21), all lagged variables are hereafter referred to as such and the expected outcomes as discussed in section 6.2.3 remain the same.

Table 1 – Descriptive statistics full sample

	Full sample - descriptive statistics (n=40,719)				
Variables/Statistics	mean	median	max	min	stdev
LT DA-ratio (%)	8.47	0.79	100.00	0.00	13.99
ST DA-ratio (%)	47.73	47.88	100.00	0.00	21.97
Equity ratio (%)	43.77	42.00	100.00	0.00	21.46
roa (%)	5.52	3.16	63.60	-21.70	9.19
growthturnover (%)	19.76	17.14	451.22	-100.00	35.77
growthasset (%)	14.74	9.67	427.12	-99.95	30.78
collateral (%)	46.26	45.73	100.00	0.00	20.94
tot assets tusd	96 707	19 710	73 700 000	61	881 959
turnover tusd	75 557	19 479	69 500 000	68	642 923
employees	1 435	619	424 175	1	6 263
cashflowmgn (%)	8.13	6.23	99.34	-375.69	12.29

Looking at the statistics for the long-term D/A-ratio in Table 1, we can conclude that overall long-term indebtedness in China is low. When looking at the mean value, only 8.47 percent of the assets of the sample firms are financed by long-term liabilities. The median value is even lower, with merely 0.79 percent of the assets of the median firm being financed by long-term liabilities. In contrast, we can see that the short-term D/A-ratio is remarkably high, with a mean value of 47.73 percent and a median value of 47.88 percent. Thus it appears that short-term credit is of large importance to Chinese companies, perhaps, as argued in section 6.2.1, due to the sizable amounts of trade credit that can be expected in a transition economy. With regards to *roa*, we cannot make any strong conclusions from the descriptive statistics, due to the highly heterogeneous nature of the sample in terms of for instance industry categories. One should however note the large differences in *roa* between different companies in the sample, with the maximum value being 63.60 percent as compared to the minimum value of -21.70 percent. As for the two growth measures, *growthturnover* and *growthasset*, average growth rates are on relatively unsurprising levels considering the growth rate of the overall Chinese economy, but the maximum and minimum values are more extreme. Size-wise our sample ranges from very small companies to very large ones. The average firm in the sample is one with a total asset base of USD 96.71 million, total turnover of USD 75.56 million and 1,435 employees. However, the median firm differs substantially from this, with a total asset base of USD 19.71 million, total turnover of USD 19.48 million and 619 employees. This indicates that, even after removing firms in the 1st and 99th percentile in terms of asset size, we have a number of firms that are remarkably larger in terms of both assets and turnover

compared to the median Chinese domiciled firm. Finally, the *cashflowmgn* varies considerably within the sample, but both the mean and median values are positive.

The main conclusion from looking at the descriptive statistics is that our sample is a highly heterogeneous one, with important differences in firm characteristics. Due to the large sample size in combination with the emerging nature of the Chinese market, this comes as no surprise. It is also the main reason why we have split the sample into different sub-samples, thus allowing us to perform a more comprehensive analysis. Tables 2-4 below display the descriptive statistics for the three sub-samples. For a breakdown of descriptive statistics by ownership category for the full sample, please refer to Appendix II. It is worth noting that, in line with previous studies, firms with *state* ownership on average use more long-term and less short-term credit compared to the other ownership categories. However, we cannot determine by looking only at descriptive statistics whether this discrepancy is due to differences in ownership status or if other factors, such as for instance firm size or collateral, may be of greater explanatory value.

Table 2 – Descriptive statistics specified sub-sample[23]

	Specified sub-sample - descriptive statistics (n=9,555)				
Variables/Statistics	**mean**	**median**	**max**	**min**	**stdev**
LT DA-ratio (%)	9.36	4.14	91.63	0.00	13.09
ST DA-ratio (%)	44.98	44.66	100.00	0.00	20.15
Equity ratio (%)	45.61	44.07	100.00	0.00	19.80
roa (%)	6.33	4.47	62.71	-21.63	8.79
growthturnover (%)	21.53	19.84	346.52	-99.72	33.01
growthasset (%)	14.80	11.25	315.11	-99.95	26.11
collateral (%)	46.42	46.07	98.55	0.02	21.16
tot assets tusd	314 340	100 691	73 700 000	764	1 796 293
turnover tusd	245 556	82 624	69 500 000	1 549	1 306 170
employees	3 299	1 346	424 175	1	12 609
cashflowmgn (%)	9.97	8.09	90.96	-252.93	15.01

[23] *Equity ratio* is defined as *(shareholders funds / total assets)*100*. For definitions of other variables, please refer to sections 6.2 and 6.3.

Table 3 – Descriptive statistics listed sub-sample

Ownership category	**Listed (n=3,261)**				
Variables/Statistics	mean	median	max	min	stdev
LT DA-ratio (%)	10.22	7.24	62.74	0.00	10.22
ST DA-ratio (%)	39.86	39.07	93.46	0.00	17.42
Equity ratio (%)	49.85	48.76	99.19	0.00	18.41
roa (%)	4.03	3.79	37.24	-21.63	5.80
growthturnover (%)	20.54	18.90	342.70	-99.72	33.86
growthasset (%)	13.51	10.56	231.39	-76.03	21.45
collateral (%)	47.71	47.06	96.99	0.54	20.01
tot assets tusd	505 849	182 903	73 700 000	3 962	2 951 861
turnover tusd	321 917	90 115	69 500 000	1 922	2 116 612
employees	4 340	1 726	424 175	5	19 583
cashflowmgn (%)	11.35	10.63	90.96	-252.93	19.74

Table 4 – Descriptive statistics non-listed sub-sample

	Non-listed sub-sample - descriptive statistics (n=37,458)				
Variables/Statistics	**mean**	**median**	**max**	**min**	**stdev**
LT DA-ratio (%)	8.32	0.16	100.00	0.00	14.27
ST DA-ratio (%)	48.42	48.75	100.00	0.00	22.19
Equity ratio (%)	43.25	41.42	100.00	0.00	21.62
roa (%)	5.65	3.09	63.60	-21.70	9.42
growthturnover (%)	19.69	16.98	451.22	-100.00	35.94
growthasset (%)	14.85	9.54	427.12	-99.95	31.46
collateral (%)	46.14	45.62	100.00	0.00	21.02
tot assets tusd	61 088	16 828	12 600 000	61	267 148
turnover tusd	54 098	17 511	8 651 114	68	231 274
employees	1 195	588	137 962	1	3 183
cashflowmgn (%)	7.84	5.94	99.34	-375.69	11.35

7.2. Results and Analysis – Ownership and Long-Term Debt

The tables in this section outline the results of the capital structure regressions:

$$\frac{D_t}{A_t} = \alpha + \beta_1 D_{ownership} + \beta_2 \ln size_{t-1} + \beta_3 roa_{t-1} + \beta_4 collateral_{t-1} + \beta_5 growth + \beta_6 D_{industry} +$$
$$+ \beta_7 D_{listed} + \beta_8 D_{year} + \varepsilon$$

At the end of the section, we also briefly comment on the results from the capital structure regression when the short-term D/A-ratio is used as dependent variable. In order to increase readability of the tables in this section, the intercept as well as the control variables for year and industry belonging have been omitted from the presentation as they add little value to the discussion. Ownership variable coefficients with significance levels below 10 percent are highlighted in the tables.

7.2.1. Empirical Results Using Long-Term D/A-ratio as Dependent Variable

Table 5 below contains the empirical findings from the regression run on the full sample.

Table 5 – Capital structure regression, full sample

Full sample - D/A-ratio				
R-sq= 0.21		**n=** 27 116		
Variables/results	coefficient	robust st error	t-value	p-value
growthturnover (%)	0.00	0.00	-1.22	0.22
lagcoll (%)	14.21	0.53	26.82	0.00
lagsize (laglnasset)	1.56	0.09	18.27	0.00
lagroa (%)	-0.09	0.01	-9.52	0.00
listed	-0.87	0.38	-2.28	0.02
state	-0.07	0.51	-0.14	0.89
unspecified	1.29	0.37	3.50	0.00
individual	0.28	0.86	0.33	0.74
foreign	-1.90	0.43	-4.42	0.00
state_foreign	2.19	1.60	1.37	0.17

In the full sample, as can be seen in Table 5, the long-term indebtedness increases significantly with the ownership category *unspecified*. We can however not conclude much from this, as the *unspecified* category most likely contains firms of various ownership types. On the other hand, we can make some conclusions from the results for the ownership category *foreign,* for which the coefficient is negative and significant at the 1 percent level. However, for firms that are owned jointly by the Chinese *state* and *foreign* owners (*state_foreign*) this effect cannot be identified. The coefficients of the *state* and *individual* ownership categories are both highly insignificant. Recalling that the descriptive statistics for firms with *state* ownership showed that these firms on average have higher levels of long-term debt, the regression results indicate that, when taking all control variables into account, we can no longer see such a pattern. Instead, as previously mentioned, it is likely that for instance *size*, *collateral* and industry belonging are of larger importance for explaining the higher long-term debt levels of firms with *state* ownership.

When looking at the control variables, we can see that four out of five are significant at the 1 percent level. The variables for both *lagcollateral* and *lagsize* are positive, with *lagcollateral* having a particularly large impact on long-term indebtedness: On average, a 1 percentage point increase in *lagcollateral* would imply a 14.21 percentage point increase in the D/A-ratio. The impact of *lagcollateral* is not surprising, since collateral is an effective means of increasing creditor security. That

lagsize has a positive impact on firm indebtedness is because large-sized firms are in general considered to be less likely to default. The importance of *lagsize* in determining company indebtedness is in line with the results of Shirai (2002), which were outlined in section 2. Conversely, *lagroa* and *listed* have negative coefficients, indicating that firms with higher returns and listed firms are less reliant on long-term debt funding as compared to less profitable firms and non-listed companies. It can be noted that our result for *lagroa* is similar to that of Shirai (2002), although it should be kept in mind that only listed firms are included in Shirai's study. The negative coefficients of *lagroa* may be explained by the fact that firms with higher returns on assets have greater opportunities to use retained earnings as a means of financing, which would be preferred over debt according to the pecking order theory. Further, the reason why *listed* firms use less long-term debt on average is likely to be that they have easier access to equity financing than non-listed firms, and use this option as an alternative to long-term credit. Thus, in the cases of firms with high returns on assets and listed firms, the negative coefficients are presumably due to them being more prone to use alternative means of financing. It is notable, however, that despite the negative coefficient for *listed*, the descriptive statistics in section 7.1 show that listed firms have a higher mean long-term D/A-ratio than non-listed firms (10.22 percent and 8.32 percent respectively) and that the median long-term D/A-ratio is considerably higher for listed firms than for non-listed firms (7.24 percent and 0.16 percent respectively). The explanation for this may also be found in the descriptive statistics, where one can see that listed firms on average are of a much larger size than non-listed firms. The difference in long-term D/A-ratios between listed and non-listed firms is therefore likely to be captured to a large extent by the *lagsize* variable, which would help explaining *listed* firms' negative coefficient. Another possible explanation, although not presented in the tables, could be that there is an overrepresentation of industries with generally higher long-term debt levels among the listed companies.

One should however be careful with interpreting too much into the results from the ownership variables when considering the full sample, since a majority of the firms in the full sample belong to the *unspecified* category. We therefore proceed by looking at the *specified* sub-sample, which contains only firms that belong to specified ownership categories.

The results from the regressions performed on the *specified* sub-sample are presented in table 6 below.

Table 6 – Capital structure regression, specified sub-sample

Specified sub-sample - D/A-ratio				
R-sq= 0.30		**n=** 6 361		
Variables/results	coefficient	robust st error	t-value	p-value
growthturnover (%)	0.01	0.00	3.03	0.00
lagcoll (%)	16.56	1.01	16.46	0.00
lagsize (laglnasset)	2.04	0.17	11.91	0.00
lagroa (%)	-0.10	0.02	-4.91	0.00
listed	-0.82	0.45	-1.82	0.07
state	-0.22	0.52	-0.43	0.67
individual	0.59	0.85	0.69	0.49
foreign	-1.55	0.44	-3.53	0.00
state_foreign	1.79	1.56	1.14	0.25

Again, as for the full sample, the coefficient for *foreign* is significant, this time at the 1 percent level. The coefficient is of the same order of magnitude as in Table 5. The coefficients for *state, individual* and *state_foreign* are all insignificant, thus not providing any explanatory value for the firms' access to debt funding. As for the control variables, we see that all five coefficients are significant. *Lagroa* and *listed* are negative at the 1 percent and 10 percent levels respectively, with their coefficients being quite similar to those in Table 5. As compared to the full sample, the coefficients for both *lagcollateral* and *lagsize* have increased. That *growthturnover* has a positive impact on company indebtedness is in line with the possibility that higher growth would require more capital. The coefficients for *lagcollateral, lagsize* and *growthturnover* are all significant at the 1 percent level.

Since the tables of the descriptive statistics showed substantial variations in firm characteristics between the different sub-samples, we progress by looking also at *listed* firms and *non-listed* firms separately. Table 7 below displays the results for the *listed* sub-sample.

Table 7 – Capital structure regression, listed sub-sample

Listed sub-sample - D/A-ratio				
R-sq= 0.29		**n=** 2 165		
Variables/results	coefficient	robust st error	t-value	p-value
growthturnover (%)	0.02	0.01	3.58	0.00
lagcoll (%)	14.72	1.42	10.36	0.00
lagsize (laglnasset)	2.83	0.30	9.31	0.00
lagroa (%)	0.06	0.04	1.61	0.11
state	-0.51	0.62	-0.81	0.42
unspecified	-1.05	0.66	-1.59	0.11
individual	0.02	2.04	0.01	0.99
foreign	0.60	1.21	0.50	0.62
state_foreign	1.72	3.41	0.50	0.61

Recalling the results for the full sample, when taking all the control variables into consideration, *listed* firms in general use less long-term debt funding in comparison to *non-listed* firms. This is interesting given that the descriptive statistics showed that *listed* firms on average had much higher debt levels than *non-listed* firms without taking all the controls into account. However, as Table 7 shows, we can not find any systematic differences in debt access within the *listed* firm category that is explained by ownership. It should be noted that *lagroa* now has a positive coefficient, thus going against the findings of Shirai (2002), but this is insignificant even at the 10 percent level. Further, *growthturnover* is significant and positive. This indicates that listed firms have a higher long-term D/A-ratio if they have higher turnover growth, but that previous year's return on assets provides poor explanatory power. Finally, in table 8, we consider the results for the *non-listed* sub-sample.

Table 8 – Capital structure regression, non-listed sub-sample

Non-listed sub-sample - D/A-ratio				
R-sq= 0.21		**n=** 24 951		
Variables/results	coefficient	robust st error	t-value	p-value
growthturnover (%)	0.00	0.00	-2.15	0.03
lagcoll (%)	14.11	0.56	25.23	0.00
lagsize (laglnasset)	1.48	0.09	16.55	0.00
lagroa (%)	-0.10	0.01	-9.81	0.00
state	0.38	0.74	0.51	0.61
unspecified	1.36	0.43	3.19	0.00
individual	0.61	0.94	0.65	0.51
foreign	-2.09	0.48	-4.37	0.00
state_foreign	0.65	1.74	0.37	0.71

When looking at *non-listed* firms separately, we find that the ownership category *foreign* has a negative coefficient compared to other *non-listed* firms, and it is significant at the 1 percent level. The coefficient is slightly higher than the

corresponding one for the full sample. Firms with *unspecified* ownership have higher D/A-ratios than firms with *specified* ownership, but as mentioned above it is difficult to conclude anything from this since it is likely that these firms belong to various ownership categories. In contrast to the results from the *listed* sub-sample, *growthturnover* and *lagroa* have negative impacts on the long-term D/A-ratio, significant at the 5 percent and 1 percent levels respectively. The coefficients for *lagcollateral* and *lagsize* are both positive and highly significant, in line with the findings of all the sub-samples.

In summary, we see that ownership has little impact on firms' access to long-term debt financing. In contrast to what related studies have shown, firms with *state* ownership do not seem to be favored in terms of access to long-term debt financing on the basis of their ownership status. This might at least partly be down to the large size and heterogeneity of our sample in combination with the broader definition of long-term debt that we use, as discussed in the introduction. Instead, our main results indicate that firms with *foreign* ownership would be disadvantaged in relation to other firms when it comes to obtaining long-term credit. Possible reasons why firms with *foreign* ownership lend less could be that they lack the connections necessary to be able to exploit the full range of financing channels in China, but also that they are more likely to obtain equity financing from foreign investors as compared to firms of other ownership types and hence rely less than other firms on debt financing. Another explanation could be that it is expensive to repatriate profits from abroad and that firms with foreign ownership therefore resort more to financing through retained earnings than other firms. This reasoning is supported by the descriptive statistics, which show that firms with *foreign* ownership on average have higher equity ratios than firms of other ownership types. For no other ownership types, except firms belonging to the *unspecified* category, does ownership have a significant impact on firms' access to debt financing. Also, the results for the control variables show that several firm-specific factors other than ownership are important for determining long-term firm indebtedness. We see that for instance *listed* firms use less long-term debt financing than *non-listed* firms, presumably due to their superior access to equity capital as a result of their listing status. The descriptive statistics confirm this reasoning, as *listed* firms on average have higher equity ratios than other firms. In conclusion, and in line with H1, ownership does not seem to be an important

determinant of firms' access to long-term credit in China. Moreover, the absence of a lending bias towards firms with *state* ownership when looking at total long-term debt has an interesting implication: Even if SOEs enjoy advantages in obtaining bank loans, they do not appear to be favored in relation to other firms when it comes to accessing other sources of long-term debt financing. Given the limited importance of bond markets in China, this implies that there might actually be alternative channels of long-term financing, available also to non-state firms.

7.2.2. Empirical Results Using Short-Term D/A-ratio as Dependent Variable

For comparative purposes, we perform the same regressions using the short-term D/A-ratio as dependent variable in order to see if ownership has a larger impact on short-term financing. The most interesting results are discussed briefly in this section. One should however keep in mind that large amounts of trade credit may be included in the short-term debt measure, and one should therefore interpret these results with some caution.

For the full sample, we find that the ownership categories *unspecified* and *foreign* have negative coefficients, significant at the 1 percent and 10 percent levels respectively. Recalling the results for the long-term D/A-ratio, the full sample had positive coefficients for the *unspecified* category but negative for the *foreign* category. Thus it seems as though firms with *foreign* ownership use less of both short-term and long-term liabilities as compared to other firms. This further strengthens the explanation that *foreign* firms use more equity compared to firms of other ownership categories. As previously mentioned, it is difficult to make further comments about the *unspecified* category.

Looking at the *listed* sub-sample, the ownership variable for *individually* owned companies has a positive coefficient, significant at the 1 percent level. A possible explanation for this could be that *individually* owned companies use more trade credit than other firms, other things being equal. An additional conjecture that may be made in the context of this thesis is that trade credit could potentially be part of the aforementioned informal credit market in the shorter term. Thus, given the Chinese business environment and the importance of *gūanxi*, it is plausible that Chinese individual owners would enjoy a particular advantage in accessing trade credit if access would be enhanced by for instance personal connections. This

possibility, although interesting, will not be explored further, as the explicit focus of this thesis is on long-term credit financing.

Furthermore, we find negative and highly significant coefficients for the *listed* variable in both the full sample and the specified sub-sample, indicating that *listed* firms use less short-term debt than *non-listed* firms. The coefficient for the *listed* variable in the capital structure regressions using the long-term D/A-ratio as dependent variable was also negative and significant, but of a much smaller magnitude.

Recalling that in the descriptive statistics, we could see that firms with *state* ownership use less short-term liabilities than the other ownership categories. However, when taking all the control variables into account, we find no evidence of this.

Unsurprisingly, it is clear that there are differences in the ways in which firms use short- and long-term debt respectively. However, in order to maintain the focus of this thesis, we will not investigate the reasons behind these differences.[24]

7.3. Results and Analysis – Long-Term Credit Allocation Efficiency

The tables in this section outline the results of the credit allocation efficiency regressions:

$$performance_t = \alpha + \beta_1 D_{ownership} * \left(\frac{D}{A}\right)_{t-1} + \beta_2 \left(\frac{D}{A}\right)_{t-1} + \beta_3 \ln size_{t-1} + \beta_4 cashflowmgn +$$
$$+ \beta_5 D_{industry} + \beta_6 D_{listed} + \beta_7 D_{ownership} + \beta_8 D_{year} + \varepsilon$$

Since we are mainly interested in what impact long-term firm indebtedness given ownership has on company performance, thus measuring long-term credit allocation efficiency, all control variables have been omitted from the tables presented in this section. The only exception is the *listed* variable, due to the special characteristics associated with this particular group of firms. In order to increase readability, the tables for each sample are compilations of the interaction variables taken from the individual regressions. For the complete results from the credit allocation efficiency regressions, please refer to Appendices III-IV. As explained in section 6.3, all

[24] Due to space limitations and given that the focus of this thesis is on long-term credit, the results from the short-term debt regressions have not been included in the appendices. The interested reader is kindly asked to contact the authors for access to the results.

regressions have been run using both a profitability measure (*roa*) and a growth measure (*growthturnover*) as dependent performance variables. Following the same structure as in the previous section, we begin by looking at the results from the full sample in Table 9 below.

Table 9 – Credit allocation efficiency regressions, full sample

Full sample - performance *(roa)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-5.98	2.14	-2.79	0.01	0.18	26311
Individual	-5.16	2.68	-1.92	0.05	0.18	26311
State	-0.01	1.54	-0.01	0.99	0.18	26311
Stateforeign	-6.86	8.26	-0.83	0.41	0.18	26311
Unspecified	2.40	0.93	2.57	0.01	0.18	26311
Industrial	-1.08	1.07	-1.00	0.32	0.18	26311
Listed	6.06	1.33	4.56	0.00	0.18	26311
Full sample - performance *(growthturnover)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	6.63	6.29	1.05	0.29	0.03	26301
Individual	13.96	11.82	1.18	0.24	0.03	26301
State	8.74	7.88	1.11	0.27	0.03	26301
Stateforeign	2.76	24.24	0.11	0.91	0.03	26301
Unspecified	-9.02	3.94	-2.29	0.02	0.03	26301
Industrial	6.67	5.26	1.27	0.21	0.03	26301
Listed	11.05	7.54	1.47	0.14	0.03	26301

Table 9 shows the coefficients, robust standard errors, t-values, p-values, R^2 and the number of observations for the interaction variables between the different ownership types and the lagged D/A-ratio for the full sample, with *roa* and *growthturnover* as dependent variables respectively. When looking at R^2, the dependent variables provide considerably higher explanatory value for the *roa*-regression than for the *growthturnover*-regression. This is valid for the regressions run on all sub-samples. As mentioned above we have also included the interaction variable for listed firms. The interaction variable for the *foreign* ownership category is negative and significant at the 1% level for *roa*, indicating that firms with *foreign* ownership and higher D/A-ratio on average generate a lower *roa*. For *growthturnover*, we cannot make any general conclusions about firms with *foreign* ownership since the interaction variable is not significant at any reasonable level.

The interaction variable for the *individual* ownership category also has a negative coefficient for *roa*, and it is significant at the 5 percent level. This implies, as in the case of firms with *foreign* ownership, that the level of long-term indebtedness

for firms with *individual* ownership has a negative effect on profitability and thus that credit allocation efficiency is relatively low in firms with *individual* and *foreign* ownership. Although the coefficient is positive for the interaction variable for the *individual* ownership category when we use *growthturnover* as dependent variable, it is not significant and we can therefore not conclude anything from this.

For the ownership categories *state* and *state_foreign*, the interaction variable is insignificant for both *roa* and *growthturnover*.

The interaction variable for the *individual* ownership category also has a negative coefficient for *roa*, and it is significant at the 5 percent level. This implies, as in the case of firms with *foreign* ownership, that the level of long-term indebtedness for firms with *individual* ownership has a negative effect on profitability. Thus, credit allocation efficiency seems to be relatively low when it comes to firms with *individual* and *foreign* ownership. Although the coefficient is positive for the interaction variable for the *individual* ownership category when we use *growthturnover* as dependent variable, it is not significant and we can therefore not conclude anything from this.

For the ownership categories *state* and *state_foreign*, the interaction variable is insignificant for both *roa* and *growthturnover*.

The interaction variable for the *unspecified* ownership category has a positive coefficient when it comes to *roa*, but a negative one for *growthturnover*. The coefficients are significant at the 1 percent and 5 percent level respectively but, as mentioned above, it is difficult to conclude anything for this category of firms.

Finally, for *listed* firms, a 1 percentage point increase in the D/A-ratio would on average result in a 6.06 percentage point higher *roa*, and this result is significant at the 1 percent level. Thus long-term credit is relatively efficiently used by *listed* firms when it comes to *roa*. When we use *growthturnover* as dependent variable, the interaction variable for *listed* firms is not significant below the 15 percent level.

We then move on to looking at the sub-sample consisting only of firms with *specified* ownership. The results for the interaction variables are listed in Table 10 below.

Table 10 – Credit allocation efficiency regressions, specified sub-sample

Specified sub-sample - performance *(roa)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-4.36	2.10	-2.07	0.04	0.23	6223
Individual	-3.47	2.86	-1.21	0.23	0.22	6223
State	1.90	1.66	1.15	0.25	0.22	6223
Stateforeign	-2.36	7.48	-0.32	0.75	0.22	6223
Industrial	2.02	1.48	1.37	0.17	0.22	6223
Listed	10.44	1.52	6.88	0.00	0.23	6223
Specified sub-sample - performance *(growthturnover)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-0.47	7.29	-0.06	0.95	0.04	6223
Individual	6.84	12.20	0.56	0.58	0.04	6223
State	-0.32	8.32	-0.04	0.97	0.04	6223
Stateforeign	-3.41	25.12	-0.14	0.89	0.04	6223
Industrial	-0.84	6.78	-0.12	0.90	0.04	6223
Listed	-1.53	8.56	-0.18	0.86	0.04	6223

None of the interaction variables for the *growthturnover* regressions are significant, and we can therefore not say that long-term debt levels given ownership have any systematic impact on *growthturnover* for firms with specified ownership. When using *roa* as dependent variable, the interaction variable for the *foreign* ownership category has a negative coefficient, significant at the 5 percent level. This indicates that firms with *foreign* ownership make less efficient use of long-term credit relative to other firms with specified ownership, which is similar to the result from the full sample. This is a bit surprising, but one possible explanation for this could be that firms with *foreign* ownership are more focused on growth and gaining market share at the expense of profitability. We can however not find any support for such a conclusion in the results of the *growthturnover* regression, since the coefficient for the *foreign* interaction variable is both negative and highly insignificant; hence no explanation for this result seems to be captured by our analysis. Finally, we can see that *listed* firms have an even higher coefficient for the interaction variable when regressed against *roa* as compared to the full sample (10.44 vs. 6.06), significant at the 1 percent level. The coefficient for the *listed* interaction variable is however insignificant for the *growthturnover* regression.

We now progress to the regressions on the *listed* sub-sample. The results for the interaction variables are displayed in Table 11 below.

Table 11 – Credit allocation efficiency regressions, listed sub-sample

Listed sub-sample - performance *(roa)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-5.89	3.61	-1.63	0.10	0.41	2132
Individual	-8.29	8.92	-0.93	0.35	0.41	2132
State	-3.44	2.43	-1.42	0.16	0.41	2132
Stateforeign	2.84	6.89	0.41	0.68	0.41	2132
Industrial	5.67	2.31	2.46	0.01	0.41	2132
Unspecified	3.39	4.39	0.77	0.44	0.41	2132
Listed sub-sample - performance *(growthturnover)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-3.18	15.70	-0.20	0.84	0.03	2132
Individual	-58.10	40.42	-1.44	0.15	0.03	2132
State	-23.95	14.64	-1.64	0.10	0.03	2132
Stateforeign	-5.01	34.18	-0.15	0.88	0.03	2132
Industrial	16.66	14.74	1.13	0.26	0.03	2132
Unspecified	35.59	24.76	1.44	0.15	0.03	2132

Within the *listed* sub-sample, we find some evidence in accordance with previous research on state ownership and performance (i.e. Shirai 2002, Hovey 2006) when looking at the *growthturnover* regression, since the interaction variable for *state* is remarkably negative (-23.95) and significant at the 10 percent level. This indicates that *listed* firms with *state* ownership make less efficient use of long-term debt as compared to other listed firms with respect to *growthturnover*, thus implying that long-term credit is relatively inefficiently allocated to this particular group of firms. The interaction variable for firms with *state* ownership is negative also in the *roa* regression, but the validity of the coefficient is questionable since the p-value is rather high (0.16). It is interesting to note that Shirai only looks at listed firms when she makes the finding that state ownership typically leads to poor performance, and that we find similar results in our *listed* sub-sample but not in our full sample. The coefficient of the *foreign* interaction variable when regressed against *roa* is negative and significant at the 10 percent level, indicating that long-term credit allocation efficiency is relatively poor also for *listed* firms with *foreign* ownership. Moreover, the interaction variable for the *industrial* ownership category is positive and highly significant, indicating that *listed* firms with *industrial* ownership are relatively efficient users of long-term credit.

Lastly, we look at the non-listed firms separately. The results are presented in Table 12.

Table 12 – Credit allocation efficiency regressions, non-listed sub-sample

Non-listed sub-sample - performance *(roa)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	-7.20	2.50	-2.88	0.00	0.18	24179
Individual	-4.58	2.77	-1.65	0.10	0.18	24179
State	-1.19	1.98	-0.60	0.55	0.18	24179
Stateforeign	-14.99	7.32	-2.05	0.04	0.18	24179
Industrial	-3.32	1.20	-2.76	0.01	0.18	24179
Unspecified	4.22	1.07	3.95	0.00	0.18	24179
Non-listed sub-sample - performance *(growthturnover)*						
Int. var./results	coefficient	robust st error	t-value	p-value	R-sq	n
Foreign	6.06	6.95	0.87	0.38	0.03	24169
Individual	17.77	12.41	1.43	0.15	0.03	24169
State	12.72	9.59	1.33	0.19	0.03	24169
Stateforeign	-0.82	34.91	-0.02	0.98	0.03	24169
Industrial	4.01	5.66	0.71	0.48	0.03	24169
Unspecified	-8.66	4.30	-2.01	0.04	0.03	24169

Looking at the results in table 12, we can see that the coefficients for the interaction variables for the *foreign* and *industrial* ownership categories are negative and significant at the 1 percent level when regressed against *roa*, indicating that long-term credit allocation efficiency is relatively poor when it comes to these ownership categories. Recalling the results from the *listed* sample, this implies that listing status is of large importance for how efficiently firms of *industrial* ownership use long-term credit. While *listed industrial* firms are relatively efficient users of long-term credit in terms of *roa*, *non-listed industrial* firms are relatively inefficient users. Thus, *industrial* firms that go public on average make a more efficient use of supplied long-term credit than their non-listed peers. The *state_foreign* and *individual* interaction variables are also negative, but with significance levels of 5 percent and 10 percent respectively. The only ownership category with a positive coefficient for the interaction variable is the *unspecified* category. Thus, when looking at the *roa*-measure of performance, it seems that long-term credit allocation is on average not undertaken in an efficient manner for *non-listed* firms, with the exception of firms belonging to the *unspecified* category. Again, we find little evidence that ownership in combination with higher long-term debt levels should have any impact on *growthturnover* as a measure of firm performance, except when it comes to the *unspecified* interaction variable. It is worth noting that the R^2 for all regressions using *growthturnover* as dependent variable are very low, ranging between 3 and 4 percent.

To summarize the results from the credit allocation efficiency regressions, we can see that ownership in combination with long-term leverage seems to be more important when it comes to explaining *roa* than *growthturnover*. However, most of the significant interaction variables have a negative coefficient, indicating that allocation to firms with these ownership types is typically inefficient. Perhaps somewhat surprising is that we see little significant results for the interaction variables for the ownership categories *state* or *state_foreign*. Recalling the results from previous research, as recaptured in section 2, one would expect firms with *state* ownership to use long-term credit less efficiently than other firms if the Chinese banks' lending bias is severe and credit markets are inefficient. Since only the results from the *listed* sample are in line with such results, one could argue that the credit bias in China towards firms with *state* ownership is not as severe when one looks at a wider array of firms. It is notable also that the results consistently show that firms with *foreign* ownership on average use long-term debt financing less efficiently than other firms. Furthermore, for the full sample, *individually* owned firms are relatively inefficient when it comes to using long-term debt financing, possibly due to a potentially limited financial knowledge among the majority of Chinese individuals or families. Finally, when considering our main control variable of interest, the *listed* interaction variable, long-term debt financing seems to be relatively efficiently used by *listed* firms when we use *roa* as a dependent variable. Thus, the use of long-term credit appears to be an important driver of profitability for *listed* firms, especially for firms with *industrial* ownership. In the light of this, it is interesting to note that the results from the capital structure regressions showed that *listed* firms on average were less indebted than other firms. In contrast to other studies, for instance that of Allen et al (2005), our results therefore suggest that China would perhaps gain from channeling more debt capital towards the listed sector.

Overall, and in line with H2, we find little evidence that firm ownership in combination with long-term leverage would be of systematic importance for the efficiency of long-term credit allocation in China. The only ownership category that systematically displays significant results is *foreign*, for which higher levels of long-term credit on average result in lower *roa* compared to firms of other ownership types.

7.4. Summarizing Discussion

Although not clear-cut, the results and analyses in the previous subsections do not give us enough reason to reject the two hypotheses set up in section 5:

H1: Firm ownership has no systematic impact on Chinese domiciled firms' access to long-term debt funding, when one considers a measure of long-term debt that is broader than bank loans.

H2: Firm ownership does not systematically influence long-term credit allocation efficiency in China.

The main conclusions we are able to make from the empirical results is that the firms belonging to the ownership category of least interest, *unspecified,* seem both to have greater access to debt funding and to make more efficient use of the funds in terms of *roa*. This is significant for the full sample as well as for the non-listed sub-sample. However, when it comes to *growthturnover*, the firms in the *unspecified* category on average provide less growth in combination with higher debt levels. Firms with *foreign* ownership generally seem to use less long-term debt funding. As discussed in sections 3.3 and 7.2, this may be due to these firms' lack of profound relationships in the Chinese business environment, superior access to foreign equity or larger propensity to use retained earnings. The view that firms with foreign ownership might be more prone to use more equity other firms is further supported by the descriptive statistics, in which this group of firms has a relatively high equity ratio as compared to other firms. Also, considering the results from the credit allocation efficiency regressions, it seems rational that firms with foreign ownership should have less access to long-term credit, since the performance of these firms as measured by *roa* is negatively correlated with their long-term D/A-ratio. This is valid for both the full sample and for the specified sub-sample.

The fact that *listed* firms make better use of long-term credit as measured by *roa* is not surprising, since *listed* firms should typically be of better quality than the average Chinese domiciled firm considering the watermarks they need to pass in order to get listed. Moreover, after taking all control variables into account, *listed* firms seem to be less reliant on long-term debt financing in relation to other firms. This can presumably be explained by the fact that *listed* firms, due to their listing status, are likely to be better capitalized than other firms, since they have easier access to equity

capital. When looking at the descriptive statistics, *listed* firms do use more equity on average compared to both non-listed firms and the different ownership categories.

In general, our results do not imply that firms with *state* ownership or firms belonging to any other specified ownership type would be systematically favored when it comes to obtaining long-term credit in China. Under the assumption that – in accordance with previous research – firms with *state* ownership do have greater access to bank loans relative to other firms, the lack of ownership-based bias in our results suggests that there might in fact exist alternative financing channels in China. However, since no ownership category of relevance seems to enjoy any advantages in accessing long-term debt financing, the availability of alternative financing might not be explained by ownership.

Furthermore, with the exception of firms with *foreign* ownership, as discussed above, ownership provides poor systematic explanatory value when it comes to determining credit allocation efficiency in China. Despite the results of previous research, and as suggested by our hypotheses, the fact that ownership *per se* cannot explain the allocation of long-term debt financing or its efficiency does not come as a surprise. Given China's prevailing business context, access to financing of any kind could presumably be determined by various factors other than ownership. These might include our control variables, but also other firm characteristics beyond our control. As previously touched upon, examples of these factors might be for instance family relations and political party associations, which could influence a firm's prerequisites for making successful business. Unfortunately, such factors are very hard to measure, and lie beyond the scope of this thesis. An additional conjecture that should be made is that our analysis is based on more recent data than many comparable studies (e.g. Shirai 2002, Lu et al 2005, Hovey 2006). Given that China has worked actively with reforming their financial markets over the last decade (Shirai 2002), it is reasonable to assume that the documented biases in the Chinese credit market might have decreased over recent years and that this might be a contributing reason behind the differences between our results and those of previous research.

Some comments should be made about the validity of our results. Given that China is many senses an emerging economy, for instance when it comes to accounting standards as mentioned in section 3.2.2, it is likely that there are deficiencies in the

available data. This issue is highlighted by the fact that extreme observations, such as negative turnover and growth lower than -100 percent, were included in the dataset prior to the removal of outliers. The manual ownership classification of over 3,000 firms might also result in some minor errors. In addition, the lack of specification of the constituent parts of long-term debt makes our argumentation about the existence of alternative long-term debt financing hard to prove.[25] Unfortunately, given the limited data availability in China, problems of these types are difficult to avoid. However, given our consistent approach to base all decisions on economic reasoning in combination with the large sample size, the validity of our empirical results should not be impaired to any considerable extent.

7.5. Suggested Further Research

A factor likely to open up for interesting research opportunities is that China became a member of the World Trade Organization (WTO) in 2001. China's entrance was conditional on the country complying with a number of specific commitments, of which at least one is of large relevance to the Chinese credit market: In short, China has committed to remove all geographic and customer restrictions on local currency businesses of foreign-invested banks, as well as to eliminate any non-prudential measures restricting the ownership, operation, and operational form of foreign-invested banks. This reform marks the full opening of China's banking sector to foreign companies (Overmyer 2006), and it is likely that the reform of the banking sector will have a significant impact on debt levels and credit allocation efficiency in China. Given that the reform was not scheduled for completion until December 2006, its effects are unlikely to have been fully captured in the results presented in this thesis. Thus, an interesting suggestion for further research would be to investigate how the functioning and efficiency of the Chinese credit market are changing with the Chinese WTO membership, when relevant data has become available.

[25] In case specification would have been available we would have been able to run separate different types of long-term debt from each other, thus allowing us to determine whether non-*state* firms have better access to other types of long-term debt than bank loans.

8. CONCLUDING REMARKS

The purpose of this thesis has been to examine, by using a dataset covering 15,682 firms over three years, to what extent firm ownership matters for Chinese domiciled firms' access to long-term debt funding on the one hand, and for long-term credit allocation efficiency in China on the other.

With regards to the first point, firms' access to long-term debt funding, our results did not suggest ownership to be a particularly important determinant of access to long-term credit. The only exception to this is firms with *foreign* ownership, which seem to have less access to long-term credit as compared to other firms. A potential explanation for the lack of systematic evidence could be the existence of alternative financing channels in China; it would however be presumptuous to make any strong conclusions about this matter based solely on our results. In addition, the results from our capital structure regressions show that the higher debt levels of firms with *state* ownership that were displayed in the descriptive statistics seem to be due to factors other than ownership, such as collateral and firm size.

Neither on the latter point, long-term credit allocation efficiency, does firm ownership have a systematic influence. Firms with *foreign* ownership again prove to be an exception, as they appear to make less efficient use of long-term credit in relation to other firms. Given these results, it seems that access to long-term debt given ownership is not an important determinant of growth for most firms in China, as more debt does not translate into higher growth.

Finally, it should be noted that even though ownership does not systematically influence either firms' access to long-term debt financing or the efficiency of credit allocation, the generally low levels of long-term debt in our sample firms suggest that credit markets in China seem to have a some way to go before they can be considered to be functioning satisfactorily. Recalling the theories of capital allocation efficiency (Wurgler 2000) and the law-finance-growth nexus (e.g. Levine 1999, Allen et al 2005), a process to make financial markets more efficient should start with freeing up markets and making legislative improvements and thereafter proceed from there. Making Chinese financial markets more effective in terms of directing more debt capital towards sound companies could have a positive and qualitative impact on the already booming Chinese growth and thus establish China as a comfortably settled economic superpower.

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10. APPENDICES I-IV

Appendix I: List of NACE Rev 1.1 Industry Classifications

NACE Rev 1.1/ Dummy name	Industry description	No. of firms prior to the removal of outliers	No. of firms after the removal of outliers
A	Agriculture, hunting and forestry	33	24
B	Fishing	4	2
C	Mining and quarrying	-	-
CA	Mining and quarrying of energy producing materials	272	226
CB	Mining and quarrying, except of energy producing materials	197	162
D	Manufacturing	-	-
DA	Manufacture of food products, beverages and tobacco	1150	969
DB	Manufacture of textiles and textile products	1965	1716
DC	Manufacture of leather and leather products	517	437
DD	Manufacture of wood and wood products	96	79
DE	Manufacture of pulp, paper and paper products; publishing and printing	448	391
DF	Manufacture of coke, refined petroleum products and nuclear fuel	162	140
DG	Manufacture of chemicals, chemical products and man-made fibres	1556	1393
DH	Manufacture of rubber and plastic products	478	441
DI	Manufacture of other non-metallic mineral products	842	730
DJ	Manufacture of basic metals and fabricated metal products	1372	1190
DK	Manufacture of machinery and equipment n.e.c.	1218	1040
DL	Manufacture of electrical and optical equipment	2066	1796
DM	Manufacture of transport equipment	916	803
DN	Manufacturing n.e.c.	630	537
E	Electricity, gas and water supply	956	821
F	Construction	52	43
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	460	385
H	Hotels and restaurants	20	17
I	Transport, storage and communication	93	85
J	Financial intermediation	8	5
K	Real estate, renting and business activities	142	115
L	Public administration and defence; compulsory social security	10	9
M	Education	0	0
N	Health and social work	1	1
O	Other community, social and personal service activities	18	16
P	Activities of households	0	0
Q	Extra-territorial organizations and bodies	0	0
Total number of classified firms		**15682**	**13573**

This table presents the main NACE Rev 1.1 Industry Classifications, on which the industry dummy variables are based, as well as the number of firms in the sample belonging to the different industries before and after the removal of outliers.

Appendix II: Descriptive Statistics by Ownership Category

Ownership category	**Foreign (n=2,610)**					**Individual (n=486)**				
Variables/Statistics	mean	median	max	min	stdev	mean	median	max	min	stdev
LT DA-ratio (%)	6.07	0.00	89.31	0.00	11.63	9.15	3.46	70.66	0.00	13.17
ST DA-ratio (%)	46.57	46.42	100.00	0.00	21.29	48.96	49.11	98.78	3.42	19.28
Equity ratio (%)	47.34	45.92	99.97	0.00	20.73	41.89	40.94	95.90	1.14	18.86
roa (%)	8.89	6.67	62.71	-21.63	10.42	7.42	5.30	48.21	-8.64	8.16
growthturnover (%)	21.97	19.65	225.92	-95.53	31.59	20.73	22.15	125.32	-89.94	31.62
growthasset (%)	15.34	11.83	193.59	-99.66	27.33	23.19	23.09	165.75	-86.14	30.63
collateral (%)	41.19	39.82	98.05	0.02	21.13	46.76	46.18	96.28	4.72	19.81
tot assets tusd	250,565	65,244	49,800,000	2,200	1,653,114	127,378	70,931	3,196,119	3,548	225,566
turnover tusd	230,463	71,114	19,500,000	2,886	772,142	132,697	81,036	3,760,485	3,045	238,895
employees	2,130	860	253,050	4	7,386	1,946	1,301	13,016	82	1,924
cashflowmgn (%)	10.51	8.16	75.18	-193.85	12.01	8.59	6.55	61.51	-9.57	8.78
Ownership category	**State (n=2,127)**					**Industrial (n=4,467)**				
Variables/Statistics	mean	median	max	min	stdev	mean	median	max	min	stdev
LT DA-ratio (%)	12.34	7.88	91.63	0.00	14.26	9.90	5.40	89.45	0.00	12.87
ST DA-ratio (%)	42.40	41.75	99.30	0.00	19.86	44.96	44.54	99.46	0.00	19.57
Equity ratio (%)	45.17	43.05	99.19	0.00	19.90	45.09	43.87	100.00	0.00	19.24
roa (%)	5.40	3.82	60.32	-21.43	8.13	5.20	3.80	60.59	-21.63	7.74
growthturnover (%)	21.59	19.83	318.25	-93.80	31.40	21.50	19.85	346.52	-99.72	34.65
growthasset (%)	12.76	10.02	157.38	-76.63	23.40	14.59	11.03	315.11	-99.95	25.76
collateral (%)	51.92	52.58	98.55	0.98	21.69	46.72	46.47	97.40	0.66	20.37
tot assets tusd	652,232	201,444	73,700,000	4,405	3,271,069	216,373	106,633	8,793,557	764	408,894
turnover tusd	470,618	123,000	69,500,000	1,922	2,572,216	166,873	76,371	8,651,114	1,549	372,791
employees	6,369	2,026	424,175	10	24,441	2,661	1,448	101,375	1	4,409
cashflowmgn (%)	11.27	8.45	88.25	-189.79	17.02	9.18	8.13	90.96	-252.93	16.00
Ownership category	**Unspecified (n=31,164)**					**Stateforeign (n=135)**				
Variables/Statistics	mean	median	max	min	stdev	mean	median	max	min	stdev
LT DA-ratio (%)	8.20	0.06	100.00	0.00	14.25	9.76	5.49	62.74	0.00	12.48
ST DA-ratio (%)	48.58	49.04	100.00	0.00	22.44	48.64	49.43	93.17	4.54	21.08
Equity ratio (%)	43.21	41.36	100.00	0.00	21.91	41.60	41.15	89.82	1.47	20.80
roa (%)	5.27	2.79	63.60	-21.70	9.30	7.83	7.10	46.04	-15.77	8.37
growthturnover (%)	19.22	16.06	451.22	-100.00	36.56	27.12	22.41	201.28	-26.25	30.96
growthasset (%)	14.72	9.07	427.12	-99.77	32.07	16.80	14.70	89.79	-23.27	21.35
collateral (%)	46.21	45.65	100.00	0.00	20.88	42.76	39.60	97.24	1.69	22.41
tot assets tusd	29,980	12,562	4,026,191	61	90,225	490,380	144,245	5,692,053	18,983	987,706
turnover tusd	23,408	12,743	4,882,337	68	72,462	490,537	138,891	5,639,117	9,701	888,655
employees	872	537	72,220	1	1,315	2,980	939	34,000	85	5,859
cashflowmgn (%)	7.55	5.75	99.34	-375.69	11.25	9.69	7.93	63.81	-86.19	15.46

These tables present the descriptive statistics by ownership category for the full sample after the removal of outliers. The ownership categories presented are *foreign, individual, state, industrial, unspecified* and *state-foreign*. The mean, median, maximum and minimum values as well as standard deviations for various firm variables are displayed in these tables, along with the number of observations for each ownership category.

Appendix III: Empirical Results from Credit Allocation Efficiency Regressions *Return on Asset (roa)* as Dependent Variable

III.a) Full sample

Full sample - performance=*roa*								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.18			n= 26,311	R-sq= 0.18			n= 26,311
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-5.98	2.14	-2.79	0.01	-5.16	2.68	-1.92	0.05
lagDAratio (%)	-6.30	0.46	-13.79	0.00	-6.53	0.46	-14.27	0.00
laglnasset	-1.00	0.07	-14.54	0.00	-1.00	0.07	-14.56	0.00
cashflowmgn (%)	0.29	0.02	15.12	0.00	0.29	0.02	15.15	0.00
listed	-1.83	0.23	-8.05	0.00	-1.87	0.23	-8.23	0.00
unspecified	-2.18	0.23	-9.56	0.00	-2.20	0.23	-9.65	0.00
individual	0.97	0.55	1.78	0.07	1.41	0.68	2.09	0.04
state	0.38	0.31	1.22	0.22	0.39	0.31	1.25	0.21
foreign	2.28	0.40	5.65	0.00	1.89	0.36	5.30	0.00
state_foreign	0.99	1.06	0.93	0.35	0.80	1.06	0.75	0.45
	State interaction variable				Industrial interaction variable			
	R-sq= 0.18			n= 26,311	R-sq= 0.18			n= 26,311
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-0.01	1.54	-0.01	0.99	-1.08	1.07	-1.00	0.32
lagDAratio (%)	-6.58	0.47	-14.08	0.00	-6.48	0.48	-13.43	0.00
laglnasset	-1.00	0.07	-14.58	0.00	-1.00	0.07	-14.56	0.00
cashflowmgn (%)	0.29	0.02	15.14	0.00	0.29	0.02	15.14	0.00
listed	-1.87	0.23	-8.15	0.00	-1.87	0.23	-8.22	0.00
unspecified	-2.20	0.23	-9.66	0.00	-2.31	0.28	-8.20	0.00
individual	0.96	0.55	1.76	0.08	0.85	0.57	1.50	0.13
state	0.39	0.40	0.97	0.33	0.28	0.35	0.80	0.42
foreign	1.89	0.36	5.30	0.00	1.79	0.39	4.58	0.00
state_foreign	0.80	1.07	0.75	0.45	0.91	1.08	0.84	0.40
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.18			n= 26,311	R-sq= 0.18			n= 26,311
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	2.40	0.93	2.57	0.01	-6.86	8.26	-0.83	0.41
lagDAratio (%)	-8.50	0.83	-10.21	0.00	-6.56	0.46	-14.42	0.00
laglnasset	-1.00	0.07	-14.54	0.00	-1.00	0.07	-14.56	0.00
cashflowmgn (%)	0.29	0.02	15.11	0.00	0.29	0.02	15.15	0.00
listed	-1.88	0.23	-8.25	0.00	-1.86	0.23	-8.22	0.00
unspecified	-2.43	0.26	-9.20	0.00	-2.20	0.23	-9.65	0.00
individual	0.93	0.54	1.71	0.09	0.96	0.55	1.76	0.08
state	0.44	0.31	1.41	0.16	0.39	0.31	1.26	0.21
foreign	1.81	0.36	5.06	0.00	1.89	0.36	5.30	0.00
state_foreign	0.81	1.06	0.76	0.45	1.45	1.40	1.03	0.30
	Listed interaction variable							
	R-sq= 0.18			n= 26,311				
Variables/results	coefficient	robust st error	t-value	p-value				
interaction variable	6.06	1.33	4.56	0.00				
lagDAratio (%)	-6.82	0.47	-14.59	0.00				
laglnasset	-1.00	0.07	-14.63	0.00				
cashflowmgn (%)	0.29	0.02	15.12	0.00				
listed	-2.44	0.26	-9.26	0.00				
unspecified	-2.21	0.23	-9.70	0.00				
individual	0.96	0.55	1.76	0.08				
state	0.37	0.31	1.19	0.23				
foreign	1.87	0.36	5.23	0.00				
state_foreign	0.79	1.06	0.74	0.46				

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *return on asset* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

III.b) Specified sub-sample

Specified sub-sample - performance=roa								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.23			n= 6,223	R-sq= 0.22			n= 6,223
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-4.36	2.10	-2.07	0.04	-3.47	2.86	-1.21	0.23
lagDAratio (%)	-8.35	0.89	-9.41	0.00	-9.18	0.92	-10.02	0.00
laglnasset	-0.58	0.14	-4.17	0.00	-0.58	0.14	-4.18	0.00
cashflowmgn (%)	0.24	0.02	10.07	0.00	0.23	0.02	10.10	0.00
listed	-2.18	0.28	-7.82	0.00	-2.22	0.28	-8.00	0.00
individual	0.96	0.55	1.74	0.08	1.25	0.70	1.79	0.07
state	0.24	0.32	0.75	0.46	0.26	0.32	0.82	0.41
foreign	2.24	0.43	5.22	0.00	1.93	0.37	5.25	0.00
state_foreign	0.94	1.05	0.89	0.37	0.80	1.04	0.77	0.44
	State interaction variable				Industrial interaction variable			
	R-sq= 0.22			n= 6,223	R-sq= 0.22			n= 6,223
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	1.90	1.66	1.15	0.25	2.02	1.48	1.37	0.17
lagDAratio (%)	-9.84	1.00	-9.80	0.00	-10.31	1.25	-8.25	0.00
laglnasset	-0.58	0.14	-4.22	0.00	-0.57	0.14	-4.12	0.00
cashflowmgn (%)	0.24	0.02	10.11	0.00	0.23	0.02	10.09	0.00
listed	-2.20	0.28	-7.89	0.00	-2.22	0.28	-8.01	0.00
individual	0.94	0.55	1.70	0.09	1.13	0.59	1.93	0.05
state	0.04	0.42	0.09	0.93	0.49	0.39	1.25	0.21
foreign	1.90	0.37	5.20	0.00	2.09	0.41	5.11	0.00
state_foreign	0.87	1.05	0.83	0.41	0.60	1.07	0.57	0.57
	Stateforeign interaction variable				Listed interaction variable			
	R-sq= 0.22			n= 6,223	R-sq= 0.23			n= 6,223
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-2.36	7.48	-0.32	0.75	10.44	1.52	6.88	0.00
lagDAratio (%)	-9.32	0.90	-10.40	0.00	-11.19	0.99	-11.25	0.00
laglnasset	-0.58	0.14	-4.18	0.00	-0.60	0.14	-4.37	0.00
cashflowmgn (%)	0.24	0.02	10.10	0.00	0.23	0.02	10.03	0.00
listed	-2.22	0.28	-8.00	0.00	-3.25	0.34	-9.67	0.00
individual	0.94	0.55	1.71	0.09	0.90	0.55	1.64	0.10
state	0.26	0.32	0.83	0.41	0.27	0.31	0.87	0.39
foreign	1.92	0.37	5.24	0.00	1.81	0.37	4.91	0.00
state_foreign	1.02	1.42	0.72	0.47	0.81	1.04	0.78	0.44

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *return on asset* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

III.c) Listed sub-sample

Listed sub-sample - performance=roa								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.41		n= 2,132		R-sq= 0.41		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-5.89	3.61	-1.63	0.10	-8.29	8.92	-0.93	0.35
lagDAratio (%)	-1.34	1.30	-1.04	0.30	-2.01	1.27	-1.59	0.11
lagInasset	0.16	0.18	0.93	0.35	0.14	0.18	0.81	0.42
cashflowmgn (%)	0.18	0.02	10.25	0.00	0.18	0.02	10.26	0.00
unspecified	-0.48	0.36	-1.32	0.19	-0.50	0.36	-1.37	0.17
individual	1.08	1.14	0.94	0.35	1.78	1.55	1.15	0.25
state	0.26	0.29	0.92	0.36	0.28	0.29	0.99	0.32
foreign	2.00	0.82	2.44	0.02	1.32	0.60	2.18	0.03
state_foreign	1.02	1.30	0.78	0.44	0.96	1.31	0.74	0.46
	State interaction variable				Industrial interaction variable			
	R-sq= 0.41		n= 2,132		R-sq= 0.41		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-3.44	2.43	-1.42	0.16	5.67	2.31	2.46	0.01
lagDAratio (%)	-0.94	1.54	-0.61	0.54	-4.78	1.72	-2.78	0.01
lagInasset	0.15	0.18	0.83	0.41	0.16	0.18	0.90	0.37
cashflowmgn (%)	0.18	0.02	10.24	0.00	0.18	0.02	10.22	0.00
unspecified	-0.48	0.36	-1.32	0.19	-0.02	0.42	-0.04	0.97
individual	1.04	1.14	0.92	0.36	1.57	1.16	1.36	0.17
state	0.63	0.37	1.70	0.09	0.84	0.37	2.27	0.02
foreign	1.28	0.61	2.11	0.04	1.91	0.67	2.85	0.00
state_foreign	1.05	1.31	0.80	0.43	0.43	1.33	0.32	0.75
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.41		n= 2,132		R-sq= 0.41		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	3.39	4.39	0.77	0.44	2.84	6.89	0.41	0.68
lagDAratio (%)	-2.34	1.30	-1.81	0.07	-2.16	1.27	-1.70	0.09
lagInasset	0.15	0.17	0.84	0.40	0.14	0.18	0.81	0.42
cashflowmgn (%)	0.18	0.02	10.27	0.00	0.18	0.02	10.27	0.00
unspecified	-0.76	0.48	-1.58	0.12	-0.50	0.36	-1.38	0.17
individual	1.04	1.13	0.92	0.36	1.05	1.13	0.93	0.36
state	0.28	0.29	0.99	0.32	0.28	0.29	0.99	0.32
foreign	1.32	0.60	2.19	0.03	1.32	0.60	2.19	0.03
state_foreign	0.96	1.30	0.73	0.46	0.59	1.72	0.34	0.73

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *return on asset* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

III.d) Non-listed sub-sample

Non-listed sub-sample - performance=roa								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.18		n= 24,179		R-sq= 0.18		n= 24,179	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-7.20	2.50	-2.88	0.00	-4.58	2.77	-1.65	0.10
lagDAratio (%)	-6.44	0.47	-13.56	0.00	-6.69	0.48	-13.99	0.00
lagInasset	-1.12	0.08	-14.68	0.00	-1.12	0.08	-14.67	0.00
cashflowmgn (%)	0.32	0.02	12.99	0.00	0.32	0.02	13.02	0.00
unspecified	-2.46	0.27	-9.23	0.00	-2.46	0.27	-9.24	0.00
individual	1.07	0.60	1.79	0.07	1.47	0.73	2.02	0.04
state	0.26	0.47	0.56	0.58	0.27	0.47	0.58	0.56
foreign	2.22	0.45	4.98	0.00	1.81	0.41	4.43	0.00
state_foreign	0.86	1.31	0.66	0.51	0.68	1.32	0.51	0.61
	State interaction variable				Industrial interaction variable			
	R-sq= 0.18		n= 24,179		R-sq= 0.18		n= 24,179	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-1.19	1.98	-0.60	0.55	-3.32	1.20	-2.76	0.01
lagDAratio (%)	-6.69	0.49	-13.77	0.00	-6.47	0.50	-12.99	0.00
lagInasset	-1.12	0.08	-14.68	0.00	-1.12	0.08	-14.68	0.00
cashflowmgn (%)	0.32	0.02	13.02	0.00	0.32	0.02	13.02	0.00
unspecified	-2.46	0.27	-9.24	0.00	-2.81	0.33	-8.48	0.00
individual	1.07	0.60	1.79	0.07	0.73	0.63	1.17	0.24
state	0.44	0.61	0.72	0.47	-0.08	0.51	-0.16	0.87
foreign	1.81	0.41	4.43	0.00	1.47	0.45	3.29	0.00
state_foreign	0.60	1.33	0.46	0.65	1.02	1.33	0.77	0.44
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.18		n= 24,179		R-sq= 0.18		n= 24,179	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	4.22	1.07	3.95	0.00	-14.99	7.32	-2.05	0.04
lagDAratio (%)	-10.24	0.98	-10.41	0.00	-6.71	0.48	-14.11	0.00
lagInasset	-1.12	0.08	-14.65	0.00	-1.12	0.08	-14.68	0.00
cashflowmgn (%)	0.32	0.02	12.98	0.00	0.32	0.02	13.02	0.00
unspecified	-2.89	0.31	-9.37	0.00	-2.46	0.27	-9.25	0.00
individual	1.02	0.60	1.70	0.09	1.07	0.60	1.79	0.07
state	0.40	0.47	0.86	0.39	0.27	0.47	0.58	0.56
foreign	1.64	0.41	3.99	0.00	1.80	0.41	4.43	0.00
state_foreign	0.63	1.31	0.48	0.63	1.89	1.65	1.14	0.25

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *return on asset* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

Appendix IV: Empirical Results from Credit Allocation Efficiency Regressions Growth in Turnover (*growthturnover*) as Dependent Variable

IV.a) Full sample

Full sample - performance=*growthturnover*								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.03			n= 26,301	R-sq= 0.03			n= 26,301
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	6.63	6.29	1.05	0.29	13.96	11.82	1.18	0.24
lagDAratio (%)	2.56	1.85	1.38	0.17	2.73	1.81	1.51	0.13
laglnasset	-2.43	0.22	-11.18	0.00	-2.43	0.22	-11.18	0.00
cashflowmgn (%)	0.19	0.03	5.92	0.00	0.19	0.03	5.93	0.00
listed	2.57	0.97	2.65	0.01	2.61	0.97	2.70	0.01
unspecified	-5.58	0.86	-6.50	0.00	-5.56	0.86	-6.48	0.00
individual	-1.12	1.86	-0.60	0.55	-2.33	2.17	-1.07	0.28
state	-0.24	1.21	-0.20	0.84	-0.25	1.21	-0.21	0.83
foreign	-0.54	1.23	-0.44	0.66	-0.12	1.11	-0.11	0.92
state_foreign	6.51	3.91	1.67	0.10	6.73	3.89	1.73	0.08
	State interaction variable				Industrial interaction variable			
	R-sq= 0.03			n= 26,301	R-sq= 0.03			n= 26,301
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	8.74	7.88	1.11	0.27	6.67	5.26	1.27	0.21
lagDAratio (%)	2.41	1.83	1.31	0.19	2.23	1.88	1.19	0.24
laglnasset	-2.44	0.22	-11.23	0.00	-2.43	0.22	-11.17	0.00
cashflowmgn (%)	0.19	0.03	5.91	0.00	0.19	0.03	5.91	0.00
listed	2.69	0.97	2.77	0.01	2.64	0.97	2.73	0.01
unspecified	-5.55	0.86	-6.48	0.00	-4.88	1.07	-4.57	0.00
individual	-1.09	1.86	-0.59	0.56	-0.43	1.96	-0.22	0.83
state	-1.35	1.63	-0.83	0.41	0.43	1.36	0.32	0.75
foreign	-0.11	1.11	-0.10	0.92	0.54	1.26	0.43	0.67
state_foreign	7.01	3.89	1.80	0.07	6.06	3.93	1.54	0.12
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.03			n= 26,301	R-sq= 0.03			n= 26,301
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-9.02	3.94	-2.29	0.02	2.76	24.24	0.11	0.91
lagDAratio (%)	10.06	3.53	2.85	0.00	2.86	1.80	1.59	0.11
laglnasset	-2.44	0.22	-11.25	0.00	-2.43	0.22	-11.17	0.00
cashflowmgn (%)	0.19	0.03	5.88	0.00	0.19	0.03	5.92	0.00
listed	2.68	0.97	2.77	0.01	2.61	0.97	2.70	0.01
unspecified	-4.68	0.97	-4.82	0.00	-5.55	0.86	-6.48	0.00
individual	-1.00	1.86	-0.54	0.59	-1.10	1.86	-0.59	0.55
state	-0.44	1.21	-0.36	0.72	-0.26	1.21	-0.21	0.83
foreign	0.18	1.12	0.16	0.88	-0.11	1.11	-0.10	0.92
state_foreign	6.68	3.89	1.72	0.09	6.47	5.54	1.17	0.24
	Listed interaction variable							
	R-sq= 0.03			n= 26,301				
Variables/results	coefficient	robust st error	t-value	p-value				
interaction variable	11.05	7.54	1.47	0.14				
lagDAratio (%)	2.44	1.83	1.33	0.18				
laglnasset	-2.43	0.22	-11.21	0.00				
cashflowmgn (%)	0.19	0.03	5.90	0.00				
listed	1.57	1.30	1.21	0.23				
unspecified	-5.57	0.86	-6.50	0.00				
individual	-1.10	1.86	-0.59	0.55				
state	-0.29	1.21	-0.24	0.81				
foreign	-0.16	1.11	-0.14	0.89				
state_foreign	6.71	3.89	1.73	0.08				

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *growth in turnover* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

IV.b) Specified sub-sample

Specified sub-sample - performance=growthturnover								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.04		n= 6,223		R-sq= 0.04		n= 6,223	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-0.47	7.29	-0.06	0.95	6.84	12.20	0.56	0.58
lagDAratio (%)	3.53	4.37	0.81	0.42	3.08	3.91	0.79	0.43
laglnasset	0.33	0.48	0.68	0.50	0.33	0.48	0.68	0.50
cashflowmgn (%)	0.15	0.04	3.81	0.00	0.15	0.04	3.82	0.00
listed	0.13	1.17	0.11	0.91	0.12	1.17	0.11	0.92
individual	-0.62	1.88	-0.33	0.74	-1.22	2.21	-0.55	0.58
state	-1.41	1.25	-1.13	0.26	-1.40	1.25	-1.12	0.26
foreign	0.85	1.32	0.64	0.52	0.80	1.13	0.71	0.48
state_foreign	5.96	3.88	1.53	0.13	5.95	3.86	1.54	0.12
	State interaction variable				Industrial interaction variable			
	R-sq= 0.04		n= 6,223		R-sq= 0.04		n= 6,223	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-0.32	8.32	-0.04	0.97	-0.84	6.78	-0.12	0.90
lagDAratio (%)	3.50	4.14	0.85	0.40	3.82	4.92	0.78	0.44
laglnasset	0.33	0.48	0.68	0.50	0.33	0.48	0.67	0.50
cashflowmgn (%)	0.15	0.04	3.82	0.00	0.15	0.04	3.82	0.00
listed	0.12	1.18	0.11	0.92	0.13	1.17	0.11	0.91
individual	-0.62	1.88	-0.33	0.74	-0.70	2.01	-0.35	0.73
state	-1.37	1.70	-0.81	0.42	-1.50	1.54	-0.98	0.33
foreign	0.81	1.13	0.72	0.47	0.74	1.31	0.56	0.57
state_foreign	5.94	3.86	1.54	0.13	6.03	3.93	1.53	0.13
	Stateforeign interaction variable				Listed interaction variable			
	R-sq= 0.04		n= 6,223		R-sq= 0.04		n= 6,223	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-3.41	25.12	-0.14	0.89	-1.53	8.56	-0.18	0.86
lagDAratio (%)	3.46	3.83	0.90	0.37	3.69	4.13	0.89	0.37
laglnasset	0.33	0.48	0.68	0.50	0.33	0.48	0.69	0.49
cashflowmgn (%)	0.15	0.04	3.82	0.00	0.15	0.04	3.82	0.00
listed	0.13	1.17	0.11	0.91	0.28	1.58	0.18	0.86
individual	-0.62	1.88	-0.33	0.74	-0.61	1.88	-0.33	0.74
state	-1.41	1.25	-1.13	0.26	-1.41	1.25	-1.13	0.26
foreign	0.81	1.13	0.72	0.47	0.83	1.13	0.73	0.47
state_foreign	6.27	5.53	1.13	0.26	5.94	3.86	1.54	0.12

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *growth in turnover* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

IV.c) Listed sub-sample

Listed sub-sample - performance=growthturnover								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.06		n= 2,132		R-sq= 0.06		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-3.18	15.70	-0.20	0.84	-58.10	40.42	-1.44	0.15
lagDAratio (%)	6.64	8.85	0.75	0.45	6.87	8.00	0.86	0.39
laglnasset	-1.10	0.98	-1.13	0.26	-1.12	0.97	-1.16	0.25
cashflowmgn (%)	0.23	0.04	5.18	0.00	0.23	0.04	5.22	0.00
unspecified	-5.02	2.12	-2.37	0.02	-5.02	2.11	-2.38	0.02
individual	-8.46	5.30	-1.60	0.11	-3.35	8.03	-0.42	0.68
state	-1.29	2.07	-0.63	0.53	-1.28	2.06	-0.62	0.53
foreign	2.02	3.55	0.57	0.57	1.64	2.59	0.63	0.53
state_foreign	7.93	5.72	1.39	0.17	7.94	5.70	1.39	0.16
	State interaction variable				Industrial interaction variable			
	R-sq= 0.06		n= 2,132		R-sq= 0.06		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-23.95	14.64	-1.64	0.10	16.66	14.74	1.13	0.26
lagDAratio (%)	14.34	9.64	1.49	0.14	-1.62	8.99	-0.18	0.86
laglnasset	-1.10	0.97	-1.13	0.26	-1.07	0.97	-1.10	0.27
cashflowmgn (%)	0.23	0.04	5.20	0.00	0.23	0.04	5.18	0.00
unspecified	-4.89	2.12	-2.31	0.02	-3.60	2.60	-1.38	0.17
individual	-8.50	5.35	-1.59	0.11	-6.94	5.53	-1.25	0.21
state	1.13	2.85	0.39	0.69	0.35	2.79	0.12	0.90
foreign	1.40	2.59	0.54	0.59	3.40	3.23	1.05	0.29
state_foreign	8.54	5.70	1.50	0.13	6.35	5.99	1.06	0.29
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.06		n= 2,132		R-sq= 0.06		n= 2,132	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	35.59	24.76	1.44	0.15	-5.01	34.18	-0.15	0.88
lagDAratio (%)	3.75	8.33	0.45	0.65	6.33	8.06	0.79	0.43
laglnasset	-1.08	0.97	-1.12	0.27	-1.11	0.97	-1.15	0.25
cashflowmgn (%)	0.23	0.04	5.18	0.00	0.23	0.04	5.19	0.00
unspecified	-7.75	2.75	-2.82	0.01	-5.03	2.11	-2.38	0.02
individual	-8.50	5.27	-1.61	0.11	-8.47	5.29	-1.60	0.11
state	-1.28	2.06	-0.62	0.53	-1.29	2.06	-0.62	0.53
foreign	1.68	2.60	0.65	0.52	1.65	2.59	0.64	0.53
state_foreign	7.90	5.70	1.39	0.17	8.56	9.19	0.93	0.35

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *growth in turnover* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.

IV.d) Non-listed sub-sample

Non-listed sub-sample - performance=growthturnover								
	Foreign interaction variable				Individual interaction variable			
	R-sq= 0.03		n= 24,169		R-sq= 0.03		n= 24,169	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	6.06	6.95	0.87	0.38	17.77	12.41	1.43	0.15
lagDAratio (%)	2.39	1.89	1.27	0.21	2.46	1.85	1.33	0.18
lagInasset	-2.53	0.23	-11.14	0.00	-2.53	0.23	-11.15	0.00
cashflowmgn (%)	0.18	0.04	4.84	0.00	0.18	0.04	4.85	0.00
unspecified	-5.58	0.96	-5.81	0.00	-5.58	0.96	-5.81	0.00
individual	-0.16	2.01	-0.08	0.94	-1.72	2.32	-0.74	0.46
state	0.53	1.51	0.35	0.72	0.53	1.51	0.35	0.73
foreign	-0.70	1.34	-0.52	0.60	-0.36	1.24	-0.29	0.77
state_foreign	4.76	4.96	0.96	0.34	4.91	4.95	0.99	0.32
	State interaction variable				Industrial interaction variable			
	R-sq= 0.03		n= 24,169		R-sq= 0.03		n= 24,169	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	12.72	9.59	1.33	0.19	4.01	5.66	0.71	0.48
lagDAratio (%)	2.12	1.87	1.13	0.26	2.32	1.92	1.21	0.23
lagInasset	-2.54	0.23	-11.18	0.00	-2.53	0.23	-11.13	0.00
cashflowmgn (%)	0.18	0.04	4.84	0.00	0.18	0.04	4.84	0.00
unspecified	-5.60	0.96	-5.83	0.00	-5.16	1.19	-4.35	0.00
individual	-0.16	2.01	-0.08	0.94	0.26	2.12	0.12	0.90
state	-1.25	2.03	-0.61	0.54	0.95	1.66	0.57	0.57
foreign	-0.38	1.24	-0.31	0.76	0.05	1.40	0.04	0.97
state_foreign	5.68	4.95	1.15	0.25	4.50	4.99	0.90	0.37
	Unspecified interaction variable				Stateforeign interaction variable			
	R-sq= 0.03		n= 24,169		R-sq= 0.03		n= 24,169	
Variables/results	coefficient	robust st error	t-value	p-value	coefficient	robust st error	t-value	p-value
interaction variable	-8.66	4.30	-2.01	0.04	-0.82	34.91	-0.02	0.98
lagDAratio (%)	9.82	3.92	2.50	0.01	2.64	1.84	1.44	0.15
lagInasset	-2.54	0.23	-11.17	0.00	-2.53	0.23	-11.14	0.00
cashflowmgn (%)	0.18	0.04	4.82	0.00	0.18	0.04	4.84	0.00
unspecified	-4.71	1.09	-4.32	0.00	-5.57	0.96	-5.81	0.00
individual	-0.04	2.00	-0.02	0.98	-0.15	2.01	-0.08	0.94
state	0.26	1.51	0.17	0.86	0.52	1.51	0.35	0.73
foreign	-0.01	1.25	-0.01	0.99	-0.35	1.24	-0.28	0.78
state_foreign	5.00	4.94	1.01	0.31	4.98	6.77	0.74	0.46

These tables present coefficients, robust standard errors, t-values and p-values for the credit allocation efficiency regressions with *growth in turnover* as dependent variable. The regressions are performed using a fully robust balanced panel for the years 2002-2004, clustering by firm. Due to space limitations, the coefficients for the industry and year dummies have been omitted from the tables. The interested reader is kindly asked to contact the authors for access to these results.