

Biased Bank Loan Expansion and Firm Political Connection: Evidence from China's 2009 Stimulus Program

Jialin Gong*

January 13, 2024

Abstract

This paper investigates the dynamics of credit allocation among firms and dissects the aftermath of China's 2009-10 economic stimulus plan. By matching data on firm-level bank loans with detailed curricula vitae of CEOs/chairmen in publicly listed firms, the study reveals that the credit expansion triggered by the stimulus plan exhibits a disproportionate bias towards firms with political connections, particularly those tied to local authorities or actively engage in other rent-seeking activities. Further analysis, based on bank loan announcements/-contracts, shows that the stimulus program sends a false signal to firms lacking political connections, indicated by an increase in bank loan applications that are associated with a higher rejection rate. Even when these firms successfully secure loan contracts with banks, the terms of their contracts are less competitive compared to politically connected peers. These findings signal an upswing in credit misallocation during and post-stimulus, potentially contributing to the subsequent slowdown of the Chinese economy in the past decade.

JEL classification: E51,G32, G34

Keywords: Economic stimulus, Bank loan supply, Bank lending, Political connections

*Ph.D. student at Department of Economics, Adam Smith Business School, University of Glasgow, G12 8QQ, UK. Email: j.gong.1@research.gla.ac.uk

1 Introduction

In response to the 2008 global financial crisis, governments around the world have introduced expansive stimulus programs, aiming to mitigate the adverse effects of the crisis. These initiatives often involve substantial injections of liquidity into the financial systems, as access to capital and credit availability play pivotal roles in economic recovery. The long-term consequences of these initiatives and the measures taken to manage them are subjects of ongoing discussion and analysis among economists and policymakers. One way of testing the effectiveness of these stimulus programs is to examine whether the increased supply of bank loans is allocated to different types of firms fairly, subsequent to the implementation of the stimulus program.

In November 2008, in the depths of the world financial crisis, China announced to great fanfare a 4 trillion Yuan economic stimulus ("4 trillion package") to be spent by 2010, aiming to counter the impact of the global financial crisis and stimulate economic growth by encouraging lending and investment. As part of the stimulus, Chinese authorities encouraged banks to lend more money and set specific loan quotas and targets for banks to meet in order to ensure that credit was flowing into the economy. Banks were under pressure to increase lending to meet these targets. According to the estimate, a total of RMB 4.7 trillion "extra" new bank loans was extended to the Chinese economy in 2009 ([Chen et al., 2020](#)).

As an emerging economy, bank loans are essential for corporate financing in China ([Allen et al., 2005, 2012](#); [Cull and Xu, 2000](#)). However, most banks are still owned or involved by the government. The government continues to exert significant influence on the decision-making of credit lending.

The literature has extensively documented that China is characterized by relatively weak investor protection and severe government intervention in business activities ([Allen et al., 2005](#)). For example, [Wei et al. \(2005\)](#) remark that "politics trumps economics" in the country. Since the late 1970s, China has carried out

economic reforms to open up its centrally planned economy and foster a market-oriented one, but the government still retains the power to allocate key resources. To access these resources, it is critical for firms to maintain good relationships with the government. [Li et al. \(2008\)](#) find that entrepreneurs' affiliation with the Chinese Communist Party has a positive effect on firm performance.

There are reasons to suspect that political connections may be more valuable during times of financial crisis. A primary rationale stems from the fact that amid economic downturns, uncertainties and risks tend to escalate, prompting businesses to seek stability and support beyond their usual strategies. In such circumstances, having political ties can provide access to resources, information, and potential assistance that could prove pivotal for a firm's survival and success. Moreover, firms with political connections might be better positioned to influence stimulus measures in their favor or to secure favorable treatment, such as access to emergency funding or regulatory exemptions. This potential advantage further underscores the value of political connections in times of financial distress.

In the context of China's economic stimulus measures, state ownership, as a prevalent form of political connection, has consistently been observed to influence the allocation of credit resources in the aftermath of the 4 trillion package. This phenomenon is characterized by a tendency to channel more credit towards SOEs, which demonstrate lower average productivity levels compared to private firms ([Deng et al., 2015](#); [Liu et al., 2018](#)). As estimated by [Cong et al. \(2019\)](#), the effect of the credit supply increase on firm borrowing is 38% larger for SOEs relative to private firms in the period 2009-2010. This change in capital allocation toward less productive firms holds also when focusing exclusively on private firms: [Bai et al. \(2016\)](#) argue that financial resources are disproportionately allocated toward low-productivity but local-government-favored private firms, thereby reducing the efficiency of capital allocation and harming economic growth.

It's worth mentioning that the current body of research has predominantly focused on how political affiliation plays a role in allocating resources post-stimulus.

While an understanding prevails regarding the propensity of certain privately owned firms preferred by the government to gain greater advantages within the private sector, there remains a notable absence of empirical evidence at the firm level when it comes to precisely defining and identifying the mechanisms by which these advantages are bestowed by governmental bodies. This study aims to fill this gap by providing fresh evidence on this issue using a sample of Chinese-listed firms.

The focus of this study is to shed light on this issue to gain an understanding of how a bank loan supply shock, resulting from the Chinese economic stimulus package, influences bank lending in varying firms with and without political connections. Political connection is defined as having the CEO/chairman holding a political or regulatory position in the government department, manually collected by the author from their curriculum vitae.

Matching this unique political connection data with the data of Chinese listed firms spanning from 2003 to 2018, the author finds that following the economic stimulus package, firms with political connections obtain larger sizes of bank loans. This result is robust after employing several IVs to address the endogeneity issues and applying alternative definitions of key variables. Mechanism analysis reveals that the influence of political connections is more pronounced for firms characterized by lower levels of audit quality and located in regions with higher corruption levels. This further strengthens the validity of the findings that bank loans driven by political connections are a kind of rent-seeking activity.

Additional analysis, based on the individual bank loan contract announcements, enriches the discussion of this misallocation process. Firms lacking political connections are encouraged to make more applications after 2009. However, the stimulus program seems to be a "false hope" for them as their increased application is associated with a lower approval rate compared to their politically connected peers. Even when they successfully secure loan contracts with banks, the terms of their contracts are less competitive.

There are two bodies of literature to which this paper contributes. Foremost is

the growing literature that examines the impact of government interventions on firm bank financing during periods of economic instability. This paper combines the micro-level, political-connection effects (Houston et al., 2014; Pan and Tian, 2020) when the macro-level, stimulus-year effect (Liu et al., 2018) on bank financing. While the result has confirmed the existing findings that political connections lead to more bank loans, it indicates that political connections distort capital allocation.

Secondly, this research provides a comprehensive point of view on the determinants of the bank loan allocation process. Both the supply-side (bank-selection process), and demand-side (self-selection process) processes are discussed with the support of the bank loan contract announcement data set. This enriches the existing literature, which generally lacks exploration on the demand side due to data limitations.

The remainder of the paper is organized as follows. Section 2 reviews relative literature. Section 3 introduces China's institutional background. Section 4 describes the sample, variables, and model specification. Section 5 provides empirical results including baseline regressions, strategies addressing the endogeneity issues, mechanism analysis, and robustness checks. Section 6 applies individual contract data and does some further analysis. Section 7 concludes.

2 Literature Review

2.1 Determinants of firm loan access

2.1.1 Definition of capital structure

From the definitions given by many economists, a firm's capital structure refers to the way in which a firm raises the capital required to initiate and expand its business activities. It is a combination of various types of equity and debt capital resulting from the firm's financing decisions. The amount of debt that a firm utilizes to finance its assets is known as leverage, with highly levered firms having a substantial amount

of debt in their capital structure, and unlevered firms having no debt.

Various leverage measures are used in capital structure studies, as discussed in [Rajan and Zingales \(1995\)](#). Broad leverage refers to the ratio of total liabilities to total book assets, whereas narrow leverage is defined as the amount of debt (both long-term and short-term debt).

2.1.2 Theoretical background: Capital structure theory

The capital structure of a firm has significant implications for its value and cost of capital, making the determination of the optimal capital structure a crucial issue in the academy. Firms typically use more debt capital in their capital structure as the interest paid on debt is tax-deductible, reducing its effective cost, and equity holders do not have to share their profits with debt holders who receive a fixed return.

However, the higher the debt capital, the riskier the firm, hence the higher its cost of capital. Therefore, it is important to identify the key elements of capital structure and determine the best capital structure for a particular firm at a particular time.

To this end, various capital structure theories have been developed, seeking to explain the factors that influence a firm's capital structure decisions.

Capital structure irrelevance theory Capital structure irrelevance theory, the starting point of the modern theory of capital structure, begins with the premise that financing decisions do not have any impact on the cash flow stream.

Specifically, [Modigliani and Miller \(1958\)](#) demonstrate that the firm value remains constant to the changes in capital structure when certain idealized conditions are met. These conditions include perfect capital markets with no transaction costs, bankruptcy costs, or corporate or personal taxes; all relevant information is available for insiders and outsiders to make the decision (without information asymmetry); and the firm's financing and investment decisions are independent. In this case, managers should not be concerned about the capital structure and they can freely select the composition of debt to equity.

However, when one or more of these unrealistic assumptions are relaxed, three major theories emerge that have shown how firm value may vary with changes in the debt-equity mix.

Static trade-off theory The static trade-off theory proposes that a firm is able to trade off the benefits and costs of debt and equity financing, set a target debt-to-equity ratio, and gradually move towards it. This implies that there exists some form of optimal capital structure that can maximize the firm value while simultaneously minimizing the cost of prevailing market imperfections, such as taxes, bankruptcy costs, and agency costs.

The extension of the static trade-off theory is contingent upon the definition of costs and benefits. For instance, [Myers \(1977\)](#) argues that the application of debt up to a certain level offsets the cost of financial distress and interest tax shields. The agency cost approach proposed by [Jensen and Meckling \(1976\)](#) predicts that the value of the firm is maximized when total agency costs of debt and external equity are minimized, by issuing both debt and equity. In a similar vein, [Fama and French \(2002\)](#) put forward that the optimal capital structure can be identified through a consideration of the benefits of debt, such as tax deductibility of interest, and the costs of bankruptcy and agency costs.

Pecking order theory Assuming the perfect capital market as proposed by [Modigliani and Miller \(1958\)](#), [Myers and Majluf \(1984\)](#) suggests that firms do not have a well-defined target capital structure. Instead, they prefer internal such as retained earnings or excess liquid assets, to external financing; and debt to equity if it issues securities.

There are two explanations for this preference for debt over equity. The traditional view argues that the pecking order applies in situations with high transaction costs, taxes, and agency costs. Internal funds are regarded as “cheap” and not subject to any outside interference, followed by external debt that is perceived as cheaper and

less restrictive than issuing new equity. Issuing external equity is deemed the most expensive way of financing a firm (Myers and Majluf, 1984).

The other explanation proposed by Myers (1984) assumes the problem of information asymmetry between the managers/insiders and shareholders/outside investors and the separation of ownership, which explains why firms avoid the capital market. To avoid paying too much for new financing (or underpricing new issues), managers choose to rely on the pecking order and prioritize internal financing over external financing.

Market timing theory The market timing theory states that a firm's current capital structure is the cumulative outcome of past attempts to time the equity market. Specifically, firms tend to issue new shares when they perceive they are overvalued and repurchase their own shares when they consider these to be undervalued. This fluctuation in the price of shares affects the corporate financing decisions and finally the capital structure of the firm (Baker and Wurgler, 2002).

Moreover, consistent with the pecking order theory, market timing theory suggests that firms do not necessarily aim to achieve a target leverage ratio as equity transactions are completely time to stock market conditions. As a result, changes in capital structure persuaded by market timing are likely to have long-lasting effects.

Summary In summary, based on Modigliani and Miller (1958)'s theorem of capital structure irrelevance, the trade-off theory suggests that a firm should strive for an optimal debt-to-equity mix that maximizes value and minimizes costs, while the pecking order theory explains how a firm raises funds following a hierarchy.

Differences in capital structure theories stem from the explanations of the significance of taxes and changes in information and agency costs. For instance, the trade-off theory assumes perfect information and eliminates the impact of information asymmetry. The pecking order theory assumes that all financing is either internal or external, but in practice, firms may use hybrid securities or other complex

instruments that do not fit neatly into the pecking order framework. The market timing theory does not offer a single theory of capital structure and suggests that capital structure is the outcome of various decisions taken by the firm over time.

Consequently, there is no single theory of capital structure that incorporates all the important factors, and the capital structure puzzle remains unresolved.

2.1.3 Proxies for the determinants of capital structure

There have been many empirical studies attempting to test the explanatory power of capital structure models on corporate behavior in developed countries, particularly in a U.S. setting. Most of the work has been to identify the determinants of capital structure based on theoretical background. The main determinants of capital structure tested include risks, age, the collateral value of assets (tangibility), growth opportunities, profitability, and size. Generally, these variables relate to the value and risks of the firm as faced by bondholders, equity holders, and managers. Each variable can be traced back to one or more of the many theories on capital structure.

This section reviews the findings of previous theoretical and empirical studies on these factors and summarizes the proxies utilized to measure them.

Profitability One theoretical controversy in capital structure literature pertains to the relationship between leverage (capital structure) and profitability (a measure of a firm's earning power, which is also the fundamental concern of its shareholders).

The trade-off theory posits that firms need to pay taxes on their profits and thus prefer to incorporate more debt in their capital structure since interest payments on debt are generally tax deductible. Therefore, the more profitable a firm is, the more debt it will incorporate into its capital structure.

Alternatively, the pecking order theory proposes that firms have a preference for financing ordered as retained earnings as their primary source of funds for investment, followed by debt, and finally by equity (Myers and Majluf, 1984). A

firm that generates substantial profits has the capacity to utilize retained earnings to fulfill its financing requirements (Myers, 1984). As a result, it is anticipated that such firms will exhibit a lower debt-to-asset ratio.

Empirical evidence generally uses operating income over total assets or sales as the proxy for profitability (Li et al., 2009; Rajan and Zingales, 1995; Titman and Wessels, 1988) or EBITDA divided by book value of assets (Rajan and Zingales, 1995), and most results support the pecking order theory, suggesting that highly profitable firms have lower leverage ratios (Frank and Goyal, 2009; Wald, 1999; Rajan and Zingales, 1995).

Tangibility/Liquidity Tangibility, also referred to as the collateral value of assets or asset composition, pertains to those assets that creditors can accept as security for issuing debt. In an uncertain world with asymmetric information, a firm's asset structure significantly influences its capital structure since its tangible assets are the most widely accepted sources for bank borrowing and secured debts.

The trade-off theory posits that tangibility is positively linked to leverage. Jensen and Meckling (1976) point out that tangible assets of a firm can be pledged as collateral, thereby reducing the lender's risk of agency costs of debt. Thus, a high proportion of tangible assets is expected to be associated with a higher degree of leverage. Furthermore, in the event of bankruptcy, the value of tangible assets should exceed that of intangible assets.

In contrast, the pecking order theory maintains that firms possessing few tangible assets encounter greater monitoring costs and asymmetric information problems. This prompts them to accumulate more debt over time and become more highly leveraged, as a means of curbing the managerial behavior (Frank and Goyal, 2003).

In empirical studies, the estimated model generally incorporates the ratio of inventory plus gross plant and equipment to total assets for the tangibility (Titman and Wessels, 1988) or the ratio of fixed assets to the book value of total assets (Rajan and Zingales, 1995). And the results have found support for both theories. For

example, research by [Titman and Wessels \(1988\)](#), [Frank and Goyal \(2009\)](#), and [Rajan and Zingales \(1995\)](#) are consistent with the trade-off theory, indicating that tangible assets are appropriate for raising debt since they act as good collateral, reduce the cost of financial distress, and increase the likelihood of debt issuance. On the other hand, research by [Li et al. \(2009\)](#) indicates that firms with fewer tangible assets are more likely to experience information asymmetry problems, leading to higher levels of debt financing.

Growth The relationship between growth opportunities and the debt ratio is also quite conflicting. Firms with high-growth opportunities tend to face minimal free cash flow constraints but incur high costs of financial distress on account of their greater vulnerability.

The trade-off theory, in general, suggests that firms with extensive growth prospects would raise less debt. [Myers \(1977\)](#) argues that high-growth firms are endowed with real options for future investment that low-growth firms do not possess. In the event that these high-growth firms need additional equity financing to exercise these options, a firm with outstanding debt may decline this opportunity because such an investment effectively transfers wealth from stockholders to debtholders. Therefore, firms with substantial growth opportunities may not issue debt in the first place, and the degree of leverage is expected to be negatively related to growth opportunities. [Titman and Wessels \(1988\)](#) further suggest that growth opportunities represent capital assets that contribute value to a firm but cannot be used as collateral and do not generate current taxable income, reinforcing the arguments for a negative correlation between debt and growth opportunities.

However, the pecking order theory proposes the opposite. Firms with rapidly growing sales often require the expansion of long-term operating assets, and given that internal resources are insufficient, firms are compelled to resort to external sources of finance, resulting in higher levels of debt.

The present empirical discussion revolves around various indicators of growth in

the context of capital structure, including capital expenditures over total assets, the growth of total assets measured by the percentage change in total assets (Titman and Wessels, 1988), Tobin's Q (Bhabra et al., 2008; Rajan and Zingales, 1995), and the five-year average of sales growth (Wald, 1999).

Empirical studies have found mixed results regarding the relationship between leverage and growth. Some studies support the trade-off theory, finding a negative relationship between leverage and growth opportunities (see Frank and Goyal (2009), Bhabra et al. (2008), Booth et al. (2001), Kim (1978), Smith and Watts (1992), and Wald (1999)), while others support the pecking order theory, finding a positive relationship between leverage and growth opportunities. The conflicting results may be due to differences in the sample characteristics, measurement of variables, and economic conditions.

Size Many studies support the proposition that there is a positive relationship between leverage and firm size.

According to the trade-off theory, leverage is positively correlated with firm size, and negatively correlated with firm bankrupt risk. This is mainly because larger firms tend to have more valuable and diverse assets, which can serve as collateral for securing debt financing and decrease the possibility of bankruptcy (Rajan and Zingales, 1995). As a result, lenders are more willing to provide larger loans to larger firms, which can lead to higher levels of debt (Warner, 1977).

Alternatively, the pecking order theory suggests that firm size has a negative effect on leverage, as larger firms tend to have more internal resources and more financing alternatives than smaller firms. Specifically, large firms are expected to have lower information asymmetries making equity issues in public markets more attractive than small firms (Akhtar and Oliver, 2009), which could help reduce their reliance on debt. Conversely, small firms may face more difficulty in obtaining external financing due to their limited access to capital markets and asymmetric information problems, leading them to rely more heavily on debt financing, resulting in higher

leverage levels (Smith, 1977).

The natural logarithm of sales (Booth et al., 2001; Li et al., 2009; Rajan and Zingales, 1995), the natural logarithm of assets (Akhtar and Oliver, 2009; Delcours, 2007), and the number of employees have been employed in empirical results, and the empirical evidence is mixed. Several studies support the trade-off theory's predictions that firm size is positively related to leverage, such as Rajan and Zingales (1995), Frank and Goyal (2009), and Marsh (1982). However, other studies provide evidence that supports the pecking order theory's prediction of a negative relationship between firm size and leverage. For instance, Titman and Wessels (1988) find that leverage increases with firm size for U.S firms.

Age The pecking order theory and trade-off theory provide different explanations for the relationship between leverage and the age of a firm.

According to the trade-off theory, age is usually seen as a proxy for a range of issues relevant to capital structure choice. This includes agency costs, default risks, and information asymmetries. Older firms are expected to face lower debt-related agency costs (Frank and Goyal, 2009). Lower debt-related agency costs result in greater access to debt and hence a higher leverage ratio for older firms is expected. Older firms generally face lower default risks due to more stable earnings and this also implies a higher leverage ratio for older firms (Myers, 1977).

On the other hand, age may also proxy for lower internal resources and lower information asymmetries. The pecking order theory suggests that firms prefer to use internal financing before external financing, and they have a hierarchy of financing sources (Myers and Majluf, 1984). Accordingly, younger firms have fewer internal resources, and they are more likely to rely on external financing sources such as debt. Additionally, in the presence of information asymmetries, firms should finance with relatively value-insensitive securities like debt, rather than by issuing value-sensitive securities like equity (Akhtar and Oliver, 2009). Consequently, according to pecking order theory, managers will prefer debt over equity, and therefore with

less information asymmetry, older firms are expected to have less leverage.

Empirical studies have found mixed evidence on the relationship between leverage and age. Some studies support the pecking order theory, showing that younger firms have higher leverage ratios than older firms. Other studies provide evidence for the trade-off theory, showing that older firms have higher leverage ratios than younger firms. Overall, the relationship between leverage and age appears to be complex and may be influenced by various factors, such as the industry, the business cycle, and the availability of financing options.

Risk/volatility Risk is associated with the future operations of the business. Firms with higher risks tend to have volatile cash flows and face higher expected costs of financial distress.

Generally, it is expected that there is an inverse relation between leverage and risks due to the associated increase in bankruptcy risks. More volatile cash flows reduce the probability that tax shields will be fully utilized and increase the risk of bankruptcy (Akhtar and Oliver, 2009). Thus higher risk should result in less debt under the trade-off theory.

By contrast, the pecking-order theory predicts that risky firms have high leverage if firms with volatile stocks have a severe adverse selection.

Empirically, possible indicators include the variance of stock returns (Frank and Goyal, 2009), the standard deviation of return on sales (Booth et al., 2001), and the standard deviation of the percentage change in operating income (Titman and Wessels, 1988). Among them, Frank and Goyal (2009) and Marsh (1982) report a negative relationship between firm risk and leverage, lending support to the trade-off theory.

Non-debt tax shield DeAngelo and Masulis (1980) present a model of optimal capital structure that incorporates the impact of corporate taxes, personal taxes, and non-debt-related corporate tax shields. They argue that tax deductions for

depreciation and investment tax credits are substitutes for the tax benefits of debt financing. As a result, firms with large non-debt tax shields relative to their expected cash flow include less debt in their capital structures.

Indicators of non-debt tax shields include the ratios of investment tax credits over total assets, depreciation over total assets, and a direct estimate of non-debt tax shields over total assets. However, the finance literature is inconclusive as to whether the non-debt tax shield associated with depreciation expenses exhibits a positive (Wald, 1999) or a negative (Titman and Wessels, 1988) relation with the debt/asset ratio.

Summary Table 1 provides a summary of the implications and empirical evidence of two prominent capital structure theories, trade-off and pecking order, in relation to the determinants of capital structure. Notably, the two theories generally offer inconsistent expected relations between leverage and its determinants. This makes what relation is expected between each determinant and leverage still a puzzle.

2.1.4 Determinants of firm loan access: Cross-country evidence

The determinants of firm loan access include both macro-level factors and firm-level factors (Rajan and Zingales, 1995). From a macro perspective, institutions, financial liberalization, and the economic environment are important for the development of credit markets.

Bae and Goyal (2009) conduct an investigation of the impact of legal protection, creditor rights, and property rights protection, on loan characteristics across 48 countries based on individual bank contract data. It aims to determine whether differences in legal frameworks affect loan size, maturity, and interest rate spread. The findings suggest that the enforceability of contracts has a significant impact on loan characteristics. Specifically, the average loan amount will increase by about \$57 million if a borrower moves from a country in the sample with the weakest protection of property rights to a country with the strongest protection of property

rights, all else equal. Similarly, the average loan maturity will increase by 2.5 years and the average loan spread will decline by 67 basis points in moving from a country with the weakest protection of property rights to the strongest protection of property rights.

[Gopalan and Sasidharan \(2020\)](#) study the impact of financial liberalization, in the form of greater foreign bank presence, on the credit constraints of firms in emerging markets and developing economies (EMSEs). Using a firm-level dataset spanning 60 EMDEs over the period of 2006-2014, they employ an ordered probit model to empirically examine the relationship between foreign banks' presence and firms' access to credit. The empirical result suggests that greater foreign bank presence tends to ease firms' credit constraints in the sample of EMDEs. Additionally, firms with audited financial statements tend to experience a reduction in credit constraints. Furthermore, for micro, small, and medium-sized firms, greater information availability through audited financial statements, in combination with greater foreign bank presence, is found to be jointly associated with a reduction in credit constraints.

2.1.5 Determinants of firm loan access: China-specific evidence

One of the most widely studied determinants of Chinese firm loan access ownership structure. State-owned enterprises (SOEs) have historically enjoyed preferential access to credit compared to private enterprises.

[Cull et al. \(2009\)](#) posit that formal credit allocation in China is biased towards relatively unprofitable SOEs and private firms are denied access to bank loans. To investigate this issue, they employ a large panel dataset of Chinese industrial firms from 1998 to 2003. The findings of their analysis reveal that less profitable firms tend to receive more loans than others, indicating a lack of efficiency in the credit allocation process. When controlling for profitability, SOEs are found to be the primary beneficiaries of formal credit, followed by collective and legal-person firms, and then by domestic private and foreign firms. This trend demonstrates an

institutional bias in favor of SOEs and against private enterprises,

[Firth et al. \(2009\)](#) investigate the determinants of loan allocation by Chinese state-owned banks to private firms. They utilize survey data from the World Bank in 2002 to confirm that lending decisions are based on commercial judgments. Specifically, banks tend to lend to financially healthier and better-governed firms. Furthermore, state ownership positively impacts firms' access to bank finance. The study highlights the variation in lending determinants across industries, firm size, and level of market development. In particular, commercial judgments play a more significant role in lending to manufacturing firms, larger firms, and firms in regions with a more liberalized banking sector. On the other hand, political connections are more important for firms in the service industry, larger firms, and firms in regions with a less liberalized banking sector. The study provides evidence of the market orientation of the Chinese banking system as reforms take effect.

[Lin \(2011\)](#) explores the impact of foreign bank entry on access to bank credit for Chinese non-financial publicly-traded firms between 2002 and 2005. The study finds that, on average, foreign bank entry in its early stage does not have a significant impact on either the incidence or the amount of long-term bank loans. However, the impact of foreign bank entry varies with firm heterogeneity: profitable firms tend to rely more on long-term bank loans, which supports the portfolio composition hypothesis; non-state-owned firms are able to substitute more expensive trade credit with long-term bank loans. Interestingly, firms with a higher value of potential collateral do not use more bank loans after foreign bank entry. In conclusion, the findings highlight that the banking sector liberalization policy on foreign bank lending helps alleviate the financial constraints of firms, especially those that are less connected to the government.

2.1.6 Summary

The literature on the determinants of firm loan access starts from the various theoretical frameworks of capital structure. These theories suggest that factors such as a firm's financial condition, growth prospects, and the agency costs associated with the relationship between managers and shareholders influence a firm's decision to seek external financing. Based on the theoretical support, empirical studies have used various proxies to examine the determinants of capital structure.

When focusing on bank loan access, an important source of external financing, cross-country evidence has found that institutional factors, such as the quality of the legal system and creditor protection, have a significant impact on a firm's ability to access credit. Studies in the context of China have highlighted the importance of the government's role in shaping firms' financing decisions. SOEs have easier access to credit than their private counterparts, as the government provides them with implicit guarantees.

2.2 Impact of political connections on firm loans access

Political connections are prevalent in the worldwide context, particularly in developing and transitional economies ([Adhikari et al., 2006](#)). In general, as indicated by [Berkman et al. \(2010\)](#), a firm's political connection may stem from its ownership structure and the background of its executives. The former refers to government ownership, whereas the latter pertains to executives' prior or current work experience, relationship with political parties, senior government officials, and politicians ([Fisman, 2001](#); [Johnson and Mitton, 2003](#)).

It is well established that politically connected firms enjoy various benefits, including preferential treatment from governments ([Faccio et al., 2006](#); [Fisman, 2001](#)). One of the main channels through which political connections work is access to credit loans ([Claessens et al., 2008](#); [Giannetti and Ongena, 2009](#); [Khwaja and Mian, 2005](#); [Sapienza, 2004](#)). Existing studies have investigated how political connections

may affect the availability of bank loans in terms of size, maturity, and cost.

2.2.1 Theoretical background

The impact of political connections on firm credit availability can be understood through several economic theories. This context highlights the potential benefits and drawbacks of political connections for firms seeking credit.

Positive effect: Resource-based theory Drawing on resource-based theory, a firm's competitive advantage is established by the possession of tangible and intangible resources that are costly or difficult for competitors to obtain ([Barney, 1991](#)). The earning potential of some of these resources is relationship-based, as firms rely on relationships with stakeholders to leverage these assets. The intangible relational asset of a firm's political connections is a form of such resources, and its value is primarily driven by the firm's ties with the government, which enables it to acquire vital resources and subsequently improve its value ([Pfeffer and Salancik, 1978](#)).

In the context of political connections and firm bank loans, this theory posits that firms with political connections possess unique resources and capabilities that give them an advantage in obtaining bank loans. The theory argues that political connections provide firms with unique information, contacts, and political influence, which enhance their reputation and credibility in the eyes of banks. This, in turn, increases their likelihood of obtaining bank loans on favorable terms.

Additionally, political connections may help firms access government resources, such as subsidized loans, which can further enhance their ability to obtain bank loans. Overall, resource-based theory suggests that political connections can provide firms with a valuable resource that enhances their ability to obtain bank loans.

Previous studies have reported that politically connected managers can assist their firms in obtaining crucial government resources and support ([Adhikari et al., 2006](#); [Claessens et al., 2008](#)). Therefore, the positive influence of political connections is primarily due to their ability to obtain essential resources from the government.

Positive effect: Stewardship theory Stewardship theory suggests that politically connected managers may have a positive impact on a firm's access to bank loans. According to this theory, managers who are connected to political elites may act in the best interests of the firm and its stakeholders, including its lenders (Donaldson, 1990; Donaldson and Davis, 1991). Politically connected managers may be able to use their relationships with government officials to secure favorable loan terms, provide valuable information to lenders, and help mitigate the risks associated with lending to the firm. As a result, firms with politically connected managers may have an easier time obtaining loans and may be viewed as less risky borrowers by lenders.

Negative effect: Agency theory Despite the apparent benefits of political connections for firms, their impact on firm performance is not always positive. This is often attributed to the agency problem, which arises from the separation of control and ownership of a firm.

As posited by Jensen and Meckling (1976), the agency problem stems from conflicting interests between owners (shareholders) and agents (managers), where managers may prioritize their own interests at the expense of shareholders (Fama and Jensen, 1983a,b; Jensen and Meckling, 1976). Since the monitoring of managers is costly and difficult due to information asymmetry, such opportunistic behavior can occur.

As a result, political connections may be used to extract private benefits, such as obtaining preferential access to bank loans. In this view, political connections may not benefit the firm's performance or long-term interests, but instead, serve the interests of the politically connected manager. Hence, agency theory suggests that political connections may lead to the misallocation of capital and hinder economic development.

In addition to the agency problem, the political aspirations and career concerns of government officials also play a significant role in shaping the relationship between firms and the government. Local governments, for instance, are motivated to

intervene in the operations of firms to achieve political and social objectives such as reducing unemployment, which, in turn, can impact firm value (Jin et al., 2005). Politically connected managers often act as the bridge to fulfill such goals. This can create a policy burden for the firm, leading to negative effects on firm value and performance (Li and Zhou, 2005).

2.2.2 Cross-country evidence

Khawaja and Mian (2005) analyze a loan-level data set of more than 90,000 firms in Pakistan from 1996 to 2002 to investigate the impact of political connections on firm credit. The authors define a politically connected firm as having a politician on its board and find that such firms receive significant preferential treatment in terms of borrowing, with 45% more loans obtained and 50% higher default rates compared to non-politically connected firms. This preferential treatment is observed exclusively in government banks and increases with the strength of the politician and whether they or their party are in power, while it decreases with the degree of electoral participation in the politician's constituency. However, due to data limitations, the authors use interest rates categorized by loan size in each bank branch as a proxy for individual loan contract interest rates rather than actual interest rates.

Houston et al. (2014) conducts an empirical analysis to examine whether political connections of listed firms in the U.S. have an impact on the cost and terms of loan contracts. Using a hand-collected dataset of the political connections of S&P 500 companies over the 2003-08 period, the study finds that politically connected firms receive significantly lower costs of bank loans, and these effects are stronger for firms with stronger connections. The study also shows that political connections reduce the likelihood of capital expenditure restriction or liquidity requirement imposed by banks at loan origination, which results in lower monitoring costs and credit risk faced by banks, ultimately leading to lower borrowing costs for the firm. In addition, the authors use multiple measures to differentiate the strength of political

connections, such as the number of connected board members, years of political positions held, and the relevance of the political position held in the banking sector.

In recent years, there has been a surge of scholarly interest in exploring the intricate relationship between political connections and access to credit financing in the context of exogenous shocks. Researchers have conducted an in-depth analysis to better understand how exogenous shocks influence the impact of political connections on firms' access to credit financing.

One study by [Chen et al. \(2014\)](#) investigate the effects of political connections on firms' access to financing and whether such firms receive preferential treatment during election periods. The study used individual bank-loan contracts for listed firms in Taiwan from 1991 to 2008 and constructed a political connection proxy that considered both the political affiliation and political appointment of top managers. The results showed that politically connected firms were able to obtain preferential treatment, including lower interest rates, longer loan periods, larger numbers of lenders, and a higher likelihood of obtaining non-secured loans. Moreover, connected firms were found to benefit more from government-owned banks than from privately owned banks. Finally, the study demonstrated that connected firms, especially those connected to the party in power, were able to obtain lower loan rates from government-owned banks during election years compared to non-election years.

At the firm level, [Claessens et al. \(2008\)](#) present an innovative approach that utilizes campaign contribution data to construct indicators of political connections in Brazil. They explore potential channels politicians employ to repay these contributions, and utilize bank leverage growth as a proxy for access to finance due to data limitations. While they do not provide direct evidence of preferential lending and associated benefits for contributing firms, their findings reveal that firms that made contributions to elected federal deputies experienced a significant increase in bank leverage over the four-year period following the election. These results suggest that finance serves as a critical channel through which contributing firms reap benefits from political connections.

[Infante and Piazza \(2014\)](#) contribute to the literature by examining the impact of political connections at all levels of government on interest rates on overdrafts in Italy. They identify politically connected firms as those with either a board member or top executive who is a member of a political body. Using bank-firm-quarter observations from 2005 to 2009, they find that politically connected firms enjoy lower interest rates when the political connection is at a local level. This effect is stronger when borrowing from politically influenced banks, which are those with politicians on their boards, as well as local banks. Furthermore, the effect is more pronounced in areas with higher levels of corruption.

In summary, cross-country literature on the impact of political connections on firm loan access suggests that political connections can affect access to financing in various ways depending on the institutional context. Studies have found that political connections with government officials or politicians can facilitate access to credit in countries with weak rule of law, high levels of corruption, and poorly developed financial markets. In contrast, this may not be the case in countries with stronger legal and financial institutions. Political connections may have a negative impact on firm financing and performance due to the potential for rent-seeking behavior and lack of transparency.

2.2.3 China-specific evidence

A number of cross-country studies document the value of political connections in credit access in emerging economies. There is also a large body of literature that focuses on China and shows that political connections and affiliation with the communist party give greater access to loans, especially for private firms.

[Li et al. \(2008\)](#) conduct an empirical investigation on the impact of political connections, defined as the role of affiliation with the ruling Communist Party, in the operations of private firms in China. The study employs a nationwide survey conducted in 2002, which covers a sample of 3,258 private enterprises. The results

of the study indicate a positive association between the membership of private entrepreneurs in the ruling Communist Party and their firm performance, after controlling for relevant factors such as human capital. Additionally, the study finds that political connections enable private entrepreneurs to secure loans from banks or other state institutions and gain greater confidence in the legal system. Moreover, the study shows that the significance of political connections for firm performance is more pronounced in regions with weaker market institutions and legal protection.

In light of the presence of both government-owned firms and politically connected executives, several studies aim to distinguish the effect of political connections from state ownership and explore whether the impact of a politically connected manager on firm performance varies across different ownership structures.

[Johansson and Feng \(2016\)](#) undertake an empirical investigation by leveraging the launch of a large stimulus program in the fall of 2008. Analyzing a dataset of listed firms, the study reveals that state-owned enterprises (SOEs) exhibit a superior ability to maintain leverage levels and have better access to both short- and long-term debt relative to private firms following the introduction of the stimulus program. However, the study further demonstrates that preferential access to debt financing does not translate into improved performance for SOEs, as they perform significantly worse than private firms in the post-stimulus period. In contrast, political connections gained through political participation are found to alleviate the discrimination faced by private firms from Chinese banks and lead to enhanced firm performance.

[Pan and Tian \(2020\)](#) examine the impact of executives' connections with banks or governments on bank lending decisions using a sample of bank loans granted to Chinese-listed non-SOEs from 2003 to 2010. The study employs the sensitivity of the amount of bank loans to firm profitability as a proxy for bank lending decisions. The results indicate that bank loans are positively associated with profitability for firms with banking connections, whereas political connections have an adverse effect on bank lending decisions. These findings are more pronounced in industries with less support and regions with lower development levels.

Moreover, borrowers with bank connections are less likely to face financial distress and exhibit higher future stock returns once their bank loans are initiated, while borrowers with political connections are more prone to financial distress and exhibit lower future stock returns. The results suggest that bank connections can serve as a substitute for legal protection, alleviate information asymmetry, and enhance capital allocation efficiency. In contrast, political connections are utilized by exerting political pressure, which may not mitigate credit risk and could lead to the misallocation of capital.

To sum up, China-specific literature suggests that political connections can facilitate access to financing, especially for private firms facing institutional constraints. However, their impact on firm performance and capital allocation efficiency remains controversial in the Chinese context.

2.2.4 Summary

Existing literature suggests that politically connected firms receive preferential treatment such as lower interest rates, longer loan periods, greater numbers of lenders, and a higher probability of obtaining non-secured loans as compared to their non-politically connected counterparts. This phenomenon is more prevalent in less developed countries where political connections are highly correlated with political power, which is a crucial component in the financial markets of many transitional and developing economies ([Faccio et al., 2006](#)).

However, some studies posit that politically connected firms have a lower quality of reported earnings ([Chaney et al., 2011](#)), and high information asymmetry ([Boubakri et al., 2012](#)), all of which reduces the firms' access to bank credit.

3 Institutional Background

3.1 China’s banking sector and its lending behavior

China’s financial system is dominated by the banking system. As shown in Figure 1, bank lending has been the largest resource of external finance in China since 2002.

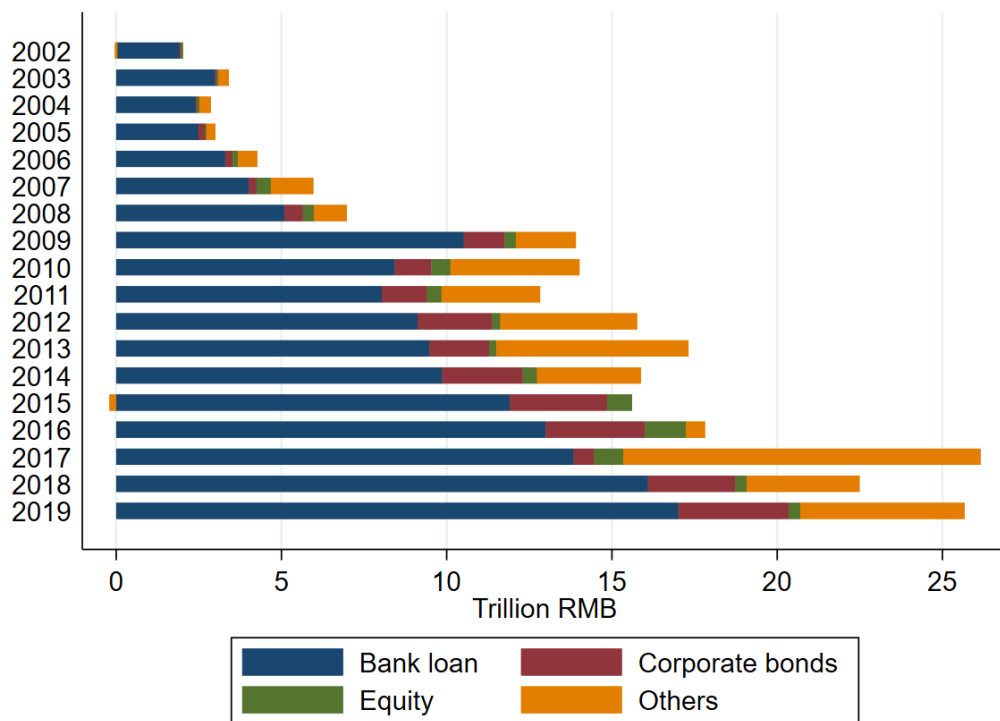


Figure 1: Resource of External Finance in China, 2002-19

China’s banking sector is dominated by four state-owned banks (the Big Four) that were commercialized in 1995¹. To establish a modern financial system, reforms are introduced on several fronts, including establishing commercial banks and opening it banking sector to foreign banks. However, most banks are still owned or involved by the government, which holds a dominant position in controlling bank assets and making lending decisions. Therefore, the government continues to exert significant influence on the decision-making of credit lending.

¹They are the Bank of China, the China Construction Bank, the Industrial and Commercial Bank of China, and the Agricultural Bank of China.

One major concern regarding China's banking sector performance is the significance of the banks' lending bias in favor of SOEs (Allen et al., 2005; Cull et al., 2015; Firth et al., 2009). Historically, a large share of bank funding has gone to state-controlled companies, leaving companies in the private sector to rely more heavily on alternative financing channels. The banks would prefer lending to SOEs either out of government policy priority or due to implicit government guarantees. In addition, the state banks have established stronger long-term customer relationships with the SOEs than with private businesses, which makes it transaction-cost effective for these banks to channel more loans to the former.

3.2 Political connections of Chinese firms

Hiring politicians as directors is prevalent in China. According to statistics, in 2013, 31.84% of the listed firms were visited by government officials (firms have vigorously publicized this), and 12.08% of the CEOs used to work in the government. Regarding the political ties of the chairman, the proportion is higher. Additionally, some firms will appoint more than one executive with political connections ².

Notably, although according to the existing laws and regulations in China, current government officials are prohibited from serving as managers, directors, or supervisors in an enterprise, the employment of retired government officials as directors is popular among China's listed companies.

3.2.1 Political connections in listed state-controlled firms

The Chinese domestic stock market remains dominated by former SOEs that became listed through a share issuing privatization (SIP). Since the 1990s, many profitable SOEs have been 'corporatized' and introduced to the stock exchange. Thereby, the Chinese state has adopted a policy of privatizing all but the largest and

²Source: Reform of China's State-owned Monopoly Enterprises and Executive Compensation. C.Du, 2015

strategically important SOEs and has typically retained a significant ownership stake after SIP (Zhou and Zhou, 2010).

Although the corporatization reform aims to build a modern governance structure in listed SOEs, in practice, large owners tend to appoint new directors, resulting in Chinese boards being well dominated by insiders such as senior managers and representatives of major shareholders. As a result, more than half of directors are appointed by the Chinese state in listed SOEs (Bai et al., 2004). Among them, many are retired government officials. These directors are likely to interpret their fiduciary duties in the light of the interest of the state. The problem is more severe in listed SOEs controlled by the local government. To be promoted, local government officials have a high incentive to use SOEs to achieve their own political or social goals, e.g., by asking a local SOE to over-invest to boost regional GDP or to hire a surplus of labor to reduce the unemployment rate. Due to the opacity of the political environment and of government control over major presses, SOEs, particularly SOEs controlled by the local government, are able to hide these activities in pursuit of political and social goals at the expense of small stock market investors.

3.2.2 Political connections in listed privately controlled firms

Privately controlled firms in China have grown substantially since 1987 when the 13th National Congress of the Communist Party of China admitted their legal status. In 2012, there are more than six million privately controlled business entities, accounting for nearly 80% of total companies and providing nearly 20 million jobs (see the China Statistical Yearbook 2012). There is no doubt that the private sector has become an important pillar of China's economy.

Despite its rapid growth, due to historical and ideological reasons, privately controlled firms in China remain discriminated against both politically and economically. It is only in 2000 that privately controlled firms began to float their shares on a more regular basis. However, unlike listed SOEs with a blood tie with the

government, listed privately controlled firms face a hostile institutional environment and are often subject to arbitrary harassment by government cadres.

A potential way out for private entrepreneurs is to assign politically affiliated persons as directors to foster connections with the state. As a result, many retired politicians and members of CPC or CPPCC are hired by Chinese-listed privately controlled firms as directors because their (previous) work experience in the government enables them to establish important connections with key party and government officials (Fan et al., 2007). These connections with the government grant private entrepreneurs certain advantages over their non-connected counterparts such as, for example, easing access to bank loans, tax benefits, and operating licenses. Thus, political connections are considered a valuable resource for Chinese-listed privately controlled firms.

4 Data and Methodology

4.1 Data source and variables

4.1.1 Data collection process

The sample covers all A-share³ companies listed on the Shanghai and Shenzhen Stock Exchanges (SHSE and SZSE) from 2003 to 2018. The sampling period starts in 2003 because the new accounting and auditing standards are implemented for all listed firms in China in 2002.

The annual firm-level observations are drawn from three resources of *China Stock Market and Accounting Research* (CSMAR) database: corporate governance data from the Corporate Governance Research Database on China's listed firms,

³Currently, most Chinese companies listed and traded on the Shanghai Stock Exchange (SHSE) or Shenzhen Stock Exchange (SZSE) issue two classes of shares: A- and B-shares. A-shares are domestic shares quoted in Chinese yuan that are restricted to domestic investors and Qualified Foreign Institutional Investors (QFII). B-shares, on the other hand, are foreign shares quoted in foreign currencies (U.S. dollars for Shanghai B-shares and Hong Kong dollars for Shenzhen B-shares). Until February 2001, B-shares were exclusively available to foreign investors.

executive characteristics data from China's Listed Firm Characteristics Database, firm characteristic data from the China Stock Market Financial Statement Database. In addition, provincial financial environment data from the National Economic Research Institute.

Following previous studies, first, financial firms (China Securities Regulatory Commission [CSRC] code J) are removed because their investment activities differ in nature. Second, firms with Special Treatment (ST, or *ST)⁴ status is discarded according to standard data processing methods. Third, firms with missing or incomplete financial or governance data are excluded⁵. Finally, firms with less than 3 years of consecutive observations are deleted.

The final sample comprises 16,108 firm-year observations, representing 1,784 listed firms. It is unbalanced, with the number of firm-year observations of each firm varying from 3 to 16. Table 3 presents a detailed overview of the sample selection process.

To minimize the impact of outliers, the data is winsorized following the approach used in the literature (e.g., Guariglia and Yang (2016)). Specifically, values in the tails of the distribution, corresponding to the 1st and 99th percentiles, are replaced with the values at the 1st and 99th percentiles, respectively. All variables are deflated using the producer price index (PPI) deflator (National Bureau of Statistics of China).

4.1.2 Definition of Political connections

Information on executive characteristics is sourced from various databases. The CSMAR database offers executive profiles of listed firms, including details such as age, gender, education, professional background, and employment history. Utilizing these profiles, I trace the political connections of executives by analyzing their

⁴ST stands for special treatment and refers to listed firms that have already had negative net profits for two consecutive years. *ST refers to listed firms that already had negative net profits for three consecutive years and thus have the probability of being delisted from the stock exchanges.

⁵I delete observations that exhibit the following issues: missing or zero values for total assets, the number of board of directors, number of employees, equity nature, and Tobin's Q.

work experience. In instances where specific records are unavailable in the CSMAR database, I manually collect their curriculum vitae from sources such as Sina, Google, or their firms' official websites and annual reports.

In the empirical analysis, the political connections of a listed firm are defined based on whether the CEO/chairman has previously served as a government official, as current government officials in China are legally prohibited from acting directors of executives of listed companies.

The author focuses on CEOs and chairmen due to the following reasons ⁶:

First, the composition of boards in China's listed firms typically lacks directors who represent public stock investors (Fan et al., 2007). This suggests that insiders with connections to government officials or other influential individuals may dominate the board. Consequently, many studies employ the CEO's political ties as an indicator of political connections, rather than relying on the largest shareholders (Fan et al., 2007, 2014).

Second, the chairman of the board and the general manager (CEO) are widely recognized as the top two executives in Chinese firms. Studies have shown that both the chairman and the CEO play crucial roles in driving the effects of political connections on firm value and performance (Hung et al., 2012; Wu et al., 2012a). The general manager is elected by and accountable to the board (Fan et al., 2007), while the chairman holds the highest authority and serves as the firm's legal representative responsible for overall operations. Hence, the CEO and chairman are key decision-makers, and their political connections can significantly impact the company's performance.

Third, according to Fan et al. (2007), firms led by politically connected CEOs are more likely to appoint other bureaucrats to the board of directors rather than directors with relevant professional backgrounds.

⁶Although it is acknowledged that this measure has certain limitations. One limitation is that connections can also be established through relatives, business partners, or figureheads, which may not be captured by this measure. However, using the CEO/chairman's political ties as a proxy for political connections provides a conservative estimate of the true extent of political influence.

Finally, the general manager is elected by and responsible for the board and, according to the literature, is essentially what is regarded in the United States as the CEO (Fan et al., 2007). However, in contrast to the Chairman role in the US, under Chinese corporate law, the chairman is the legal representative of the firm with the highest authority in the firm; therefore, this person is endowed with the highest level of authority in the firm and bears the overall responsibility for firm operations. In most cases, the chairman is also the highest-paid employee. For these reasons, some studies regard the position of chairman, rather than that of general manager, as the top management post in a firm (Firth et al., 2006). Moreover, Wu et al. (2012a) find that neither the chairman nor the CEO alone drives the effects of political connections on firm value and performance, and suggest that it is better to regard both as top management in Chinese listed firms.

Firms with and without political connections are hereafter referred to as PC and Non-PC firms respectively.

4.1.3 Sample structure

Table 4 and 5 summarize the distribution of the sample according to the number of observations of each year and industry. Among the 16,108 observations, there are 2,493 (15.48%) with politically connected CEO or/and chairman.

Table 4 demonstrates that firms in the sample are unevenly distributed across the sample period. The sample coverage improves over time, with the number of observations ranging from a minimum of 194 in 2003 to a maximum of 1,716 in 2018.

Table 5 provides a distribution of firms with political connections by industry. The industry classification is based on specifications of the 2017 China Securities Regulatory Commission (CSRC). In general, firms in residential services, repairs, and other services (65.85%), transportation, warehousing, and postal services (53.58%), environment and public facilities management (46.74%), and electricity, heat, gas,

and water (37.89%) are more likely to have political connections. These industries are all heavily controlled by the government because they are strategic sectors in China.

4.2 Model Specification

Since the economic stimulus package constitutes a nationwide exogenous shock, a dummy variable, denoted as *Stimulus*, is introduced in the baseline model. Dummy *PC_Dummy* is added to gain an understanding of the potential difference in bank lending incentives between firms with and without political connections. The fundamental specification for this analysis is captured by the following regression equation, referred to as Equation 1:

$$LoanSize_{it} = \alpha_0 + \alpha_1 Stimulus_t \times PC_{it} + \alpha_2 PC_{it} + \alpha_3 Stimulus_t + \alpha_4' X_{it} + \alpha_5' Z_{pt} + \mu_i + \mu_j + \mu_p + \mu_t + \epsilon_{i,j,p,t} \quad (1)$$

where the subscripts *i*, *j*, *p*, and *t* indicate firm, industry, province, and year, respectively. μ_i , μ_j , μ_p and μ_t denote firm-, industry-, province-, and year-fixed effects, respectively. $\epsilon_{i,j,p,t}$ is the error term. Industry-fixed effect controls 21 industries with non-manufacturing industries given a one-digit code and manufacturing industries a two-digit code.

The dependent variables are the size of bank loans, defined as the natural logarithm of bank loan size plus one since the value of bank loan size in some observations is zero. *Stimulus* is a dummy variable equal to 1 for firm-year observations falling in the post-stimulus period and 0 otherwise. In the empirical regression, this variable is omitted to avoid collinearity issues, given that the presence of year fixed effect has already controlled for changes across years. *PC* is a dummy variable equal to 1 for politically connected firms and 0 otherwise. The variable of interest in this study is the interactive term *Stimulus* × *PC*, which examines whether political connections play a role in allocating bank loan resources under the credit expansion caused by

the 2009 stimulus program.

In line with previous studies (Firth et al., 2009; Liu et al., 2018; Zheng and Zhu, 2013), two sets of firm-specific control variables (X_{it}), including firm characteristics, and corporate governance characteristics, are applied in this model.

Firm Characteristic Variable Following the literature summarized in the above section, five key variables, profitability, size, tangible assets, growth opportunities, and risk, have been used in this study. Specifically,

(1) *ROE* is the return on equity, which is the proxy for firm profitability. This variable is typically found to be a significant determinant of a firm's capital structure and is often interpreted to capture its operating cash inflows (Liu et al., 2018; Titman and Wessels, 1988). Better-performing firms are likely to obtain more bank loans, so the coefficient is expected to be positive.

(2) *Tobin_Q* is the value of Tobin's Q, calculated as the ratio of firm market value to replacement value, which is used as a proxy for firm investment opportunities (Chen et al., 2011; Firth et al., 2008; Pan and Tian, 2015). As firms with better investment opportunities are likely to receive greater bank loans, the coefficient is expected to be positive.

(3) *Asset* is the natural logarithm of firm total assets. It captures a firm's access to capital markets and its associated transaction costs (Marsh, 1982; Frank and Goyal, 2009). Banks could find lending for small firms expensive because they typically borrow in small amounts, thus raising the cost of monitoring, enforcement, and other transaction costs. Another reason for controlling for size is to avoid omitted variable bias since larger firms are more likely to have stronger political connections (Faccio et al., 2006).

Since firms with more collateral assets face less difficulty in getting bank loans, (4) *Tangibility*, defined as the ratio of tangible assets to firm total assets, is included to control for collateral information and the sign of the coefficient is expected to be positive (Liu et al., 2018).

And, (5) *Risk*, defined as a dummy variable equal to 1 if the Altman's Z score of the firm is below average, indicating higher risk; while 0 if the Altman's Z score of the firm is above average.

Corporate Governance Variable Good corporate governance can help reduce credit risks by mitigating the agency problems between shareholders and managers and also by improving corporate transparency and the quality of financial information (Shleifer and Vishny, 1997). The following proxies for corporate governance are included in the regression:

(1) *Indep*, the ratio of independent directors to the total number of directors on the boards. Independent directors are more likely to deter top executives from pursuing personal objectives and, instead, force management to focus on firm value. Other stakeholders, including lenders, should benefit from this monitoring (Chen, 2006; Francis et al., 2012).

(2) *Duality*, a dummy variable with a value of 1 if the board chair and CEO are the same person and 0 otherwise. Concentrating power in one person's hands runs the risk that any abuse of power will be harder to prevent (Barth et al., 2009; Jensen and Meckling, 1976).

Provincial Control Variable According to the literature on cross-country studies such as Faccio et al. (2006) the effects of political connections could be shaped by institutional factors, including the prevailing economic conditions, corporate governance practices, institutional and regulatory frameworks, legal environment, and the economic development.

One well-understood characteristic of the reform in China is the very uneven economic and legal development across the country. These differences in regional development could have profound effects on the role of political connections. To explicitly account for market development, this paper uses an index that is designed to capture differences in institutional factors with respect to different regions within

China. Data on the extent of institutional development across regions in China comes from the National Economic Research Institute's marketization index. This index has been used by [Firth et al. \(2009\)](#), [Wang et al. \(2008\)](#), and many others to measure regional institutional development. Higher scores on the index suggest greater institutional development.

Definitions of control variables are shown in [Table 6](#).

5 Empirical Results

5.1 Summary statistics

[Table 7](#) provides the summary statistics of all variables in this study. The data from the table reveals that the average bank loan size in natural logarithm stands at 6.125, comprising 3.589 for long-term bank loans and 5.551 for short-term bank loans. This suggests a notable dependency on bank loans as a financing source among Chinese listed firms. Furthermore, the average Tobin'Q is 1.83, which is similar to the results by [Chen et al. \(2011\)](#) and [Liu et al. \(2018\)](#).

5.2 Univariate test

[Table 8](#) presents the preliminary univariate statistics of bank loan size, by comparing the value before and after the introduction of the stimulus program, for the full sample, firms with and without political connections.

Panel A compares the total bank loan size in the natural logarithm while Panel B compares the long-term bank loan size. In the first column for the full sample, the average bank loan size is observed higher after the introduction of the stimulus program, and the difference is statistically significant (t-value is -6.052, and -8.165, respectively). When splitting the sample into firms with and without political connections, in column 2 and 3, this significant difference still holds. This confirms that all firms in the sample have greater bank loan sizes after the implementation of

the stimulus program. In the last column, the author further reports the univariate test of firms with and without political connections. The statistically significant difference results confirm that firms with political connections receive significantly higher bank loans compared to their peers lacking such connections.

Table 9 presents the univariate test results for control variables in the full sample. On average, politically connected firms are larger and riskier than their peers without these connections. Additionally, they exhibit higher tangibility, worse growth opportunities, and lower profitability.

5.3 Baseline result

In this subsection, the author conducts the multivariate analysis to examine whether and how executive' political connections influence firms' access to bank credit after the 2009 credit expansion using the regression model of Equation 1. The estimation result of fixed effect OLS are presented in Table 10. The constant term, firm, industry, province, and year dummies are included in the regressions but are not reported in the table for brevity. The effects of time dummy *Stimulus* are eliminated due to the year-fixed effects. The p-values in the panel regressions are based on the standard errors corrected for firm clustering (Petersen, 2009)⁷.

The estimated coefficient *PC_Dummy* is insignificant, implying that political connections do not play a role in securing long-term bank loans. However, when interacting with the stimulus program, the coefficient of the interaction term *Stimulus* × *PC_Dummy* is positive and significant at the 10% level in Column (2). This suggests that the relationship between politically connected firms and long-term bank loans becomes more significant under government stimulus measures.

In terms of firm-specific controls, expected signs consistent with previous studies are observed in both columns. Firm size, tangibility, and growth opportunities are

⁷The observations are not independent and the errors are potentially serially correlated, which leads to inflated t-statistics. To overcome this problem, the author clusters observations by firm and commute cluster-robust standard errors.

statistically positively related to firms' access to bank credit, indicating that larger and more tangible firms with better growth opportunities secure more bank loans.

5.4 The Endogeneity Issues

To investigate the causal effect of political connections on firms' bank loan access, it is necessary to address the following potential endogeneity issues. First, a self-selection bias – politically connected executives are not randomly distributed among the sample firms. In other words, a firm may strategically appoint politically connected executives when considering entering external capital markets. If this is a common occurrence, the observed positive association between the presence of political connections and the firm's bank loan access at least partially stems from reverse causality.

Second, omitted variable problem – firms with political connections may possess other firm-specific characteristics that are not accounted for in the model but simultaneously affect both the connection status and access to bank loan financing. This means that firms' political connections might be correlated with unobserved variables, potentially biasing the results. For instance, firms with political connections are those with higher growth or better performance. And thus they are able to obtain more bank credit.

The author delivers two approaches to mitigate concerns about the endogeneity issues affecting the relationship. First, the instrumental variables estimation based on the FE-2SLS method; and second, the long-term tenure of politically connected executives.

5.4.1 IV Construction

In the spirit of [Laeven and Levine \(2009\)](#) and [Lin et al. \(2012\)](#), the author calculates the proportion of connected firms within the industry in the sample and uses it as an instrumental variable. As pointed out by [Agrawal and Knoeber \(2001\)](#),

political connections might be particularly valuable for certain industries or sectors, and as a consequence, firms in these sectors are more likely to bring in politically connected directors. Moreover, the industry trend variable is unlikely to directly influence the loan size of any particular firm except through the borrower's political connections (Lin et al., 2012).

State-Peer Political Connection Specifically, the industry-peer political connections are calculated by the following equation:

$$Peer_PC_{i,j,t} = \sum_{k \neq i}^{n_{j,t}} \frac{PC_Dummy_{k,j,t}}{N_{k,j,t}} \quad (2)$$

in which the numerator $\sum_{k \neq i}^{n_{j,t}} PC_Dummy_{k,j,t}$ captures the total number of other firms ($k \neq i$) building up political connections in the same industry (j). The denominator $\sum_{k \neq i}^{n_{j,t}} N_{k,j,t}$ accounts for the total number of firms in the same industry (j), excluding firm i . This equation represents the ratio of political connections built up by the peers of firm i in the same industry j during the same year t .

Region-Peer Political Connection Moreover, it is notable that firms may also be subject to the influence of geo-neighbouring peers within specific economic regions. This is particularly important in the Chinese context due to large differences in initial economic structure and resource bases among regions.

Specifically, the region-industry peer political connections are calculated by the following equation:

$$Peer_PC_{i,IR,t} = \sum_{k \neq i}^{n_{IR,t}} \frac{PC_Dummy_{k,IR,t}}{N_{k,IR,t}} \quad (3)$$

in which the numerator $\sum_{k \neq i}^{n_{IR,t}} PC_Dummy_{k,IR,t}$ captures the total number of other firms ($k \neq i$) building up political connections in the same industry-region (IR). The denominator $\sum_{k \neq i}^{n_{IR,t}} N_{k,IR,t}$ accounts for the total number of firms in the same industry-

region (IR), excluding firm i .

The industry-region classifications are based on the following economic region divisions, namely: (1) the Northeast economic zone; (2) Northern coastal economic zone; (3) Eastern coastal economic zone; (4) Southeast coastal economic zone; (5) Yellow River upper and middle economic zone; (6) Yangtze River upper and middle economic zone; (7) Pearl River upper and middle economic zone; and (8) Far Western economic zone. The same economic regions are recognized to share similar industrial structures and economic conditions, as shown in Table 11.

Rank-Neighbouring Political Connection In addition to the geo-neighbouring peers, firms are also likely to be influenced by peers with similar characteristics (homogeneity) within the industry groups. Therefore, by sorting firms in the same industry and the same year according to their total market value, the author calculates the ratio of rank-neighbouring political connections, to emphasize the potential influence of firms with similar characteristics on firm i in building up political connections.

$$Rank_Neighbour_PC_{i,j,t} = \sum_{k=\max(1,i-m)}^{\min(n,i+m)} \frac{PC_Dummy_{k,j,t}}{N_{k,j,t}} \quad \text{where } k \neq i \quad (4)$$

in which m represents the distance in the total market value ranking of firm i within the same industry (j) and the same year (t). In the empirical analysis, the term "neighbouring" in ranking is defined as a three-ranking distance. Therefore, the value of 3 is assigned to m to capture the potential rank-neighbouring connections.

Similarly, the ratio of Rank-Non-Neighbouring political connections is calculated by the following equation:

$$Rank_Non_Neighbour_PC_{i,j,t} = \frac{\sum_{k \neq i}^{n_{j,t}} PC_Dummy_{k,j,t} - \sum_{k=\max(1,i-m)}^{\min(n,i+m)} PC_Dummy_{k,j,t}}{\sum_{k \neq i}^{n_{j,t}} N_{k,j,t} - \sum_{k=\max(1,i-m)}^{\min(n,i+m)} N_{k,j,t}} \text{ where } k \neq i \quad (5)$$

5.4.2 IV Empirical Result

To solve the possible endogenous problem, the author further estimates the empirical results of fixed effect two-stage least squares (FE-2SLS) estimation using different IVs. Political connections are instrumented with different measures of peer political connections, including (1) state-level peers in the same sector; (2) region-level peers in the same sector; and (3) rank-(non) neighbouring peers in the same sector.

Table 12 documents the empirical results of FE-2SLS estimation using total bank loan size as the dependent variable. For brevity, only the coefficients in interest are presented. The untabulated results for the other control variables are similar to those presented in Table 10.

The results of the second stage are presented in Panel A. In Table 10, the coefficient of both $Stimulus \times PC$ and PC to total bank loan size is insignificant. After applying different IVs, the fitted values of interest in Table 12 become significantly positive in most cases although the magnitudes are different. This indicates that political connections are beneficial to firm bank loan access after the stimulus period. In particular, the fitted value of PC_Dummy become significantly positive in Column (1) and (3), implying that firms with political connections are able to obtain greater bank loans, though this effect is only significant in the total bank loan regression but insignificant in the long-term bank loan regression (shown in Table 13). This is consistent with the previous study of Liu et al. (2018) that firms' political connections play a more important role in financing short-term resources than long-term resources.

In the first stage results in Panel B, the author regresses the political connection dummy on one of two instrumental variables and other controls and finds that after 2009, the political connections of the firm are significantly positively related to the ratios of their peers' political connections in the sector. This suggests that after the stimulus period, the higher the ratio of peer political connections, the more likely that the firm would build up its political connections.

Moreover, the author runs the weak identification test and the result rejects the null hypothesis that the instruments are weak as the test statistics exceed the critical value based on 5% relative bias. In Column (3) and (4), the author runs the FE-2SLE regressions using two instrumental variables in the first stage, namely peer connections at the state level and peer connections at the regional level and finds consistent results. The result also passes the overidentifying restrictions as the Sargan test result is insignificant (with p. value = 0.243). Therefore, the author fails to reject the null hypothesis that the instrumental variables are uncorrelated with the residuals in the second-stage regression.

Table 13 presents the FE-2SLS result using long-term bank loan size as the dependent variable. The results of the second stage are presented in Panel A. The fitted values of the interactive term $Stimulus \times PC$ are positive and highly significant at the 1% level, with even larger magnitudes than the coefficient estimated from the baseline fixed effect regression in Table 10. As IV regression addresses the downward bias in OLS, it is reasonable that the estimated coefficient in FE-2SLS regression is larger than the coefficient in FE regression.

In addition, under-identification bias, weak-instrument bias, and over-identification bias are not concerns in any case. Nevertheless, it's important to note that the IV estimate in Column (3) is of the highest F statistic value in the weak identification test, indicating that the combination of state- and region-level peer political connections is the most valid IV in this study.

5.4.3 Long-term Tenure of politically connected executives

To further ensure that the results are not driven by reverse causality, the author conducts additional tests using subsamples that are less prone to endogeneity concerns. Following the method applied by [Huang et al. \(2014\)](#) and [Pan and Tian \(2020\)](#), if an executive with political connections is appointed to facilitate bank loan finance, the deal is likely to be announced shortly after this executive's appointment. Therefore, the author limits the empirical sample to observations that are less prone to endogeneity bias by excluding observations in which a politically connected chair or CEO's tenure is less than 2 years.

The subsample consists of 15,325 observations among 1,784 firms. [Table 14](#) reports the empirical results of FE estimation and FE-2SLS estimation using different types of instruments. The coefficients of interest are significantly positive in all regressions. This supports the robustness of the findings that the positive causal effect of the stimulus program and political connections on bank loan access persists even after excluding firms with a short-term tenure politically connected executive.

Table 1: Determinants of Capital Structure: Theoretical Prediction and Empirical Results

Proxy	Theoretical	Major empirical results
Profitability	+ (trade-off)	Bowen et al. (1982) on U.S
	- (pecking order)	Frank and Goyal (2009) on U.S; Rajan and Zingales (1995) on G-7 countries
Size	+ (trade off)	Marsh (1982) on U.K ; Frank and Goyal (2009) on U.S; Rajan and Zingales (1995) on G-7 countries; Booth et al. (2001) on 10 developing countries
	- (pecking order)	Titman and Wessels (1988) on U.S
Growth	- (trade-off)	Frank and Goyal (2009) on U.S; Bhabra et al. (2008) on China; Booth et al. (2001) on 10 developing countries
	+ (pecking order)	Titman and Wessels (1988) on U.S
Tangibility	+ (trade-off)	Titman and Wessels (1988) on U.S; Bhabra et al. (2008) on China Rajan and Zingales (1995) on G-7 countries; Frank and Goyal (2009) on U.S
	- (pecking order)	Li et al. (2009) on China
Risk	- (trade off)	Frank and Goyal (2009) on U.S; Marsh (1982) on U.K; Booth et al. (2001) on 10 developing countries
Non-debt tax shields	- (trade-off)	Titman and Wessels (1988) on U.S

Table 2: Definition of political connections in cross-country literature

Definition	Country	Author
Have a politician on the board of directors	Pakistan	Khwaja and Mian (2005)
Campaign contributions to federal deputy candidates	Brazil	Claessens et al. (2008)
A board member holds or held an important political or regulatory position	U.S.	Houston et al. (2014)
A board member or a top executive is a member of a political body	Italy	Infante and Piazza (2014)
Government affiliation	China	Guariglia and Yang (2016)
Government or military working experience	China	Fan et al. (2007) Wu et al. (2012b) Fan et al. (2014)
Communist Party member	China	Li et al. (2008)
Government intervention in CEO appointment	China	Cull et al. (2015)
Government/military official; Member of the standing committee of NPC; Member of the CPPCC	China	Pan and Tian (2020)

Table 3: Sample selection process

Sample	Size	Firm
Firm-year observations of A-share listed companies	29,714	3,410
Subtract:		
Financial firms	229	31
Special Treatment firms	1,494	19
Observations due to missing information for the main variables	7,086	853
Missing information for executives	1,643	5
Less than 3 years of consecutive observations	1,013	526
Ownership does not consist	2,141	192
Final sample	16,108	1,784
Of which:		
Non-SOEs	8,972	1,157
SOEs	7,136	627

Table 4: Structure of the Unbalanced Panel (by Year)

Year	Firms			Political connected firms	
	#	%	cum %	#	%
2003	194	1.06	1.06	42	21.65
2004	389	2.13	3.19	85	21.85
2005	620	3.4	6.59	128	20.65
2006	787	4.31	10.9	172	21.86
2007	888	4.87	15.77	191	21.51
2008	974	5.34	21.11	217	22.28
2009	1039	5.69	26.8	220	21.17
2010	997	5.46	32.26	189	18.96
2011	1339	7.34	39.6	229	17.10
2012	1450	7.95	47.55	241	16.62
2013	1417	7.76	55.31	214	15.10
2014	1498	8.21	63.52	190	12.68
2015	1592	8.72	72.25	187	11.75
2016	1679	9.2	81.45	199	11.85
2017	1670	9.15	90.6	179	10.72
2018	1716	9.4	100	182	10.61
Total	18249	100		2865	

Notes: *PC* represents politically connected companies. *% of Sample* refers to the percentage of the total sample that each year represents. *% of Year* denotes the proportion of politically connected companies within each year, calculated as a percentage of the total number of observations within that year.

Table 5: Structure of the Unbalanced Panel (by industry)

Industry	All firms		Political connected firms	
	#	%	#	%
Residential services, repairs and other services	41	0.22	27	65.85
Transportation, warehousing and postal	642	3.52	344	53.58
Environment and public facilities management	184	1.01	86	46.74
Electricity, heat, gas, and water	541	2.96	205	37.89
Culture, sports and entertainment	121	0.66	40	33.06
Public Administration and Social Organization	402	2.2	129	32.09
Leasing and business services	237	1.3	74	31.22
Agriculture	282	1.55	88	31.21
Wholesale and retail trade	1,096	6.01	238	21.72
Real estate	1,012	5.55	212	20.95
Construction	508	2.78	105	20.67
Mining	427	2.34	72	16.86
Accommodation and Catering	65	0.36	7	10.77
Manufacturing	11,761	64.45	1,163	9.89
Information transmission, computer services	803	4.4	69	8.59
Scientific research, technical services	89	0.49	6	6.74
Education	6	0.03	0	0.00
Health, social security and social welfare	32	0.18	0	0.00
Total	18,249	100	2,865	15.70

Notes: *PC* represents politically connected companies. *% of Sample* refers to the percentage of the total sample that each industry represents. *% of Industry* denotes the proportion of politically connected companies within each industry, calculated as a percentage of the total number of observations within that industry.

Table 6: Definition of control variables

Variable	Definition
Panel A. Firm characteristics	
<i>ROE</i>	Net profit over shareholders' equity
<i>Tobin_Q</i>	Market value over total assets
<i>Tangibility</i>	Property, plant, and equipment plus inventories over total assets
<i>Asset</i>	Natural logarithm of real total assets (Million RMB)
<i>Risk</i>	A dummy variable equals one if the Altman Z score is lower than the average Z score in the sample, and zero otherwise
Panel B. Corporate governance	
<i>Indep</i>	Number of independent directors over number of total directors
<i>Duality</i>	A dummy variable equals one if the CEO is the chairman
Panel C. Institutional feature	
<i>Fin_dev</i>	Financial Marketization Index

Table 7: Summary statistics of firm loans and characteristics

Variable	Observation	Mean	Std. Dev.	Mix	Max
Panel A: firm loans					
$\log(\text{Loan}_{it} + 1)$					
Long-term	16,108	3.589	3.080	0	10.454
Short-term	16,108	5.551	2.063	0	9.877
Total	16,108	6.125	1.926	0.638	10.881
Panel B: firm Characteristic					
State-owned	16,108	0.443	0.497	0	1
Tobin's Q	16,108	1.83	1.012	0.899	6.773
Total asset (logged)	16,108	8.254	1.337	5.752	12.374
ROE	16,108	0.043	0.388	-8.917	0.938
Tangibility	16,108	0.230	0.164	0.000	0.960
Duality	16,108	0.223	0.422	0	1
Indep (%)	16,108	0.37	0.056	0	0.8
Z_Score	16,108	3.345	2.972	0.030	17.864
Risk	16,108	0.345	0.475	0	1

Table 8: Univariate tests: firm bank loans

Variable	Full sample	PC = 0	PC = 1	Difference (t-value) PC = 0 versus PC = 1
<i>log(Loan_{it} + 1)</i>				
Panel A: Total Loan				
Full sample	6.125	6.024	6.677	-0.653*** (-15.685)
Before	5.941	5.847	6.256	-0.409*** (-6.188)
After	6.171	6.063	6.853	-0.790*** (-15.534)
Difference (t-value)	-0.23***	-0.216***	-0.597***	
Before versus After	(-6.052)	(-5.093)	(-7.096)	
Panel B: Long-term				
Full sample	3.580	3.422	4.423	-1.001***(-16.25)
Before	3.224	3.091	3.693	-0.602*** (-0.391)
After	3.675	3.504	4.710	-1.205*** (-16.362)
Difference (t-value)	-0.451***	-.413***	-1.017***	
Before versus After	(-8.165)	(-6.754)	(-8.093)	

Notes: ***, **, * correspond to p-values of 1%, 5%, and 10%, respectively.

Table 9: Univariate tests: firm characteristics

Variable	PC = 0	PC = 1	Difference	Std. Err	t-value
Tobin's Q	1.863	1.675	.189***	.021	9.1
State Own	.388	.741	-.352***	.001	-36.21
Total asset (logged)	8.153	8.539	-.386***	.027	-14.45
ROE	.039	.044	-.005	.008	-.65
Tangibility	.227	.259	-.032***	.004	-9.45
Duality	.251	.104	.148***	.009	17.45
Independent	.370	.367	.003**	.001	2.41
Risk	0.352	0.258	0.095***	0.010	9.922

Notes: ***, **, * correspond to p-values of 1%, 5%, and 10%, respectively.

Table 10: Effects of political connections on firm loan access after the credit expansion

VARIABLES	total	long-term
<i>Stimulus</i> × <i>PC_Dummy</i>	0.075 (0.057)	0.283* (0.147)
<i>PC_Dummy</i>	-0.011 (0.058)	-0.225 (0.143)
<i>ROE</i>	-0.011 (0.020)	-0.046 (0.037)
<i>Tobin_Q</i>	0.454*** (0.025)	0.075** (0.029)
<i>Tangibility</i>	0.897*** (0.147)	1.393*** (0.330)
<i>Asset</i>	1.232*** (0.030)	1.646*** (0.057)
<i>risk</i>	-0.242*** (0.010)	-0.694*** (0.059)
<i>Duality</i>	-0.010 (0.032)	-0.106 (0.070)
<i>Indep</i>	0.189 (0.246)	-0.202 (0.495)
<i>FinDev</i>	-0.005 (0.005)	-0.013 (0.011)
Observations	16,108	16,108
Number of firms	1,784	1,784
R-squared	0.544	0.274
Firm/Industry/Province/Year FE	YES	YES

Notes: The constant term, region dummies, industry dummies, and year dummies are included but not reported. Standing errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses below the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively.

Table 11: Economic regions

Zone	Province	Key Industries
Northeast	Liaoning	Heavy equipment and machinery manufacturing;
	Jilin	Energy and raw materials manufacturing;
Northern Coastal	Heilongjiang	Corn, soybean, and sugar beet agriculture.
	Beijing	High-tech research and manufacturing.
	Tianjin	
	Hebei	
Eastern Coastal	Shandong	Light industrial equipment High-tech R&D and manufacturing
	Shanghai	
	Jiangsu	
Southeast Coastal	Zhejiang	High-end durable and non-durable consumer goods high-tech product manufacturing
	Guangdong	
	Fujian	
Yellow River Upper and Middle	Hainan	Coal mining and processing Natural gas and hydropower development Steel industry, Non-ferrous metal industry, Equipment Manufacturing, high-tech industry
	Shaanxi	
	Gansu	
	Ningxia	
	Shanxi	
Yangtze River Upper and Middle	Henan	Deep processing industries based on agricultural products Raw material base for steel and non-ferrous metallurgy transportation equipment industry
	Sichuan	
	Chongqing	
	Hubei	
	Hunan	
	Anhui	
Pearl River Upper and Middle	Jiangxi	Tourism along the Pearl River R&D and production for traditional Chinese medicine and bioproducts
	Yunnan	
	Guizhou	
Far Western	Guangxi	Agriculture
	Neimenggu	
	Xinjiang	
	Qinghai	
	Tibet	

Table 12: FE-2SLS Result Using IVs (Dependent Variable: Total Bank Loans)

Variables: $\ln(\text{Loans}_{it} + 1)$	(1)		(2)		(3)		(4)		(5)	
Second Stage Result: Bank Loan Access as Dependent Variable										
$\hat{\text{Stimulus}} \times PC$	0.890*** (0.329)		0.588** (0.291)		0.621*** (0.237)		0.889*** (0.316)		0.621** (0.248)	
\hat{PC}	1.310* (0.699)		-0.577 (0.735)		0.270 (0.481)		1.095* (0.588)		-0.633 (0.663)	
Observations	16,086		15,814		15,814		15,978		15,794	
Number of firms	1,784		1,778		1,778		1,784		1,778	
R-squared	0.601		0.714		0.699		0.624		0.713	
Fixed Effects	Firm/Industry/Province/Year fixed effects controlled in all regressions									
Controls	Same as baseline regressions									
	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>
First Stage Result: IV as Dependent Variable										
$\text{Stimulus} \times IV(\text{state})$	-0.072 (0.100)	0.813*** (0.083)			-0.134 (0.146)	0.599*** (0.100)				
Peer_Connection	-0.379*** (0.136)	-0.715*** (0.085)			-0.470*** (0.175)	-0.708*** (0.100)				
$\text{Stimulus} \times IV(\text{region})$			0.031 (0.072)	0.510*** (0.054)	0.077 (0.094)	0.244*** (0.062)			0.005 (0.074)	0.413*** (0.053)
$IV(\text{region})$			0.142** (0.071)	0.215*** (0.035)	0.163* (0.084)	0.006 (0.022)			0.170** (0.070)	-0.147*** (0.030)
$\text{Stimulus} \times IV(\text{neighbor})$							0.060 (0.052)	0.217*** (0.033)	-0.006 (0.059)	0.217*** (0.035)
$IV(\text{neighbor})$							-0.061 (0.048)	-0.158*** (0.020)	0.006 (0.053)	-0.155*** (0.022)
$\text{Stimulus} \times IV(\text{non} - \text{nei})$							-0.141 (0.089)	0.518*** (0.073)		
$IV(\text{non} - \text{neighbor})$							-0.251 (0.092)	-0.457*** (0.057)		
Under identification test	12.414***		9.158***		21.851***		18.570***		10.793**	
Weak identification test	21.192 (7.03)		29.349 (7.03)		30.806 (11.04)		11.389 (11.04)		16.755 (11.04)	
Over identification test	0.000		0.000		7.459**		02.829 (0.243)		4.965*	

Notes: $\hat{\text{Stimulus}} \times PC$ and \hat{PC} are predicted values of $\text{Stimulus} \times PC$ and PC estimated from the first stage regression. The constant term, region dummies, industry dummies, and year dummies are included but not reported. Standing errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses next to the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively. The under identification test reports the Kleibergen-Paap Wald rk LM statistic, with the null hypothesis that the equation is under-identified; the weak identification test reports the Cragg-Donald Wald F statistic and its critical value to pass the weak identification test, with the null hypothesis that the equation is weakly identified by the instruments; the over identification test reports the Hansen-J statistic and its p-value, with the null hypothesis that the instruments are uncorrelated with error term, i.e., valid instruments.

Table 13: FE-2SLS Result Using IVs (Dependent Variable: Long-term Bank Loan)

Variables: $\ln(\text{Loans}_{it} + 1)$	(1)		(2)		(3)		(4)		(5)	
Panel A:	Second Stage Result: Bank Loan Access as Dependent Variable									
$\text{Stimulus} \times PC$	2.098*** (0.626)		2.149*** (0.698)		2.050*** (0.600)		2.412*** (0.681)		2.285*** (0.619)	
\hat{PC}	-1.012 (1.203)		-1.125 (1.441)		-0.919 (0.913)		-1.488 (1.113)		-1.339 (1.282)	
Observations	16,086		15,814		15,814		15,978		15,794	
Number of firms	1,784		1,778		1,778		1,784		1,778	
R-squared	0.531		0.534		0.532		0.53		0.532	
Fixed Effects	Firm/Industry/Province/Year fixed effects controlled in all regressions									
Controls	Same as baseline regressions									
	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>	<i>PC</i>	<i>Sti</i> × <i>PC</i>
	First Stage Result: IV as Dependent Variable									
$\text{Stimulus} \times IV(\text{state})$	-0.072 (0.100)	0.813*** (0.083)			-0.134 (0.146)	0.599*** (0.100)				
<i>Peer_Connection</i>	-0.379*** (0.136)	-0.715*** (0.085)			-0.470*** (0.175)	-0.708*** (0.100)				
$\text{Stimulus} \times IV(\text{region})$			0.031 (0.072)	0.510*** (0.054)	0.077 (0.094)	0.244*** (0.062)			0.005 (0.074)	0.413*** (0.053)
$IV(\text{region})$			0.142** (0.071)	0.215*** (0.035)	0.163* (0.084)	0.006 (0.022)			0.170** (0.070)	-0.147*** (0.030)
$\text{Stimulus} \times IV(\text{neighbor})$							0.060 (0.052)	0.217*** (0.033)	-0.006 (0.059)	0.217*** (0.035)
$IV(\text{neighbor})$							-0.061 (0.048)	-0.158*** (0.020)	0.006 (0.053)	-0.155*** (0.022)
$\text{Stimulus} \times IV(\text{non} - \text{nei})$							-0.141 (0.089)	0.518*** (0.073)		
$IV(\text{non} - \text{neighbor})$							-0.251 (0.092)	-0.457*** (0.057)		
Under identification test	12.414***		9.158***		21.851***		18.570***		10.793**	
Weak identification test	21.192 (7.03)		29.349 (7.03)		30.806 (11.04)		11.389 (11.04)		16.755 (11.04)	
Over identification test	0.000		0.000		0.111 (0.946)		0.757 (0.685)		0.996 (0.608)	

Notes: $\text{Stimulus} \times PC$ and \hat{PC} are predicted values of $\text{Stimulus} \times PC$ and PC estimated from the first stage regression. The constant term, region dummies, industry dummies, and year dummies are included but not reported. Standing errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses next to the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively. The under identification test reports the Kleibergen-Paap Wald rk LM statistic, with the null hypothesis that the equation is under-identified; the weak identification test reports the Cragg-Donald Wald F statistic and its critical value to pass the weak identification test, with the null hypothesis that the equation is weakly identified by the instruments; the over identification test reports the Hansen-J statistic and its p-value, with the null hypothesis that the instruments are uncorrelated with error term, i.e., valid instruments.

Table 14: FE-2SLS Result after Excluding Short-term Tenure Observations

VARIABLE	FE	FE-2SLS estimation			
	(1)	(2)	(3)	(4)	(5)
$\ln(\text{Loan}_{it} + 1)$					
Panel A: Total					
<i>Stimulus</i> × <i>PC_Dummy</i>	0.096 (0.069)	0.832* (0.427)	0.679 (0.437)	0.577* (0.314)	0.912** (0.437)
<i>PC_Dummy</i>	-0.001 (0.074)	1.545* (0.803)	-0.644 (1.082)	0.583 (0.602)	1.440** (0.725)
R-squared	0.546	0.603	0.713	0.689	0.607
Under identification test		13.365***	5.807**	21.142***	17.578***
Weak identification test (Critical Value)		25.136 (7.03)	21.398 (7.03)	28.976 (11.04)	12.372 (11.04)
Over identification test		0.000	0.000	5.60*	2.439
Panel B: Long					
<i>Stimulus</i> × <i>PC_Dummy</i>	0.333** (0.168)	2.818*** (0.818)	2.868*** (1.012)	2.62*** (0.783)	3.250*** (0.877)
<i>PC_Dummy</i>	-0.187 (0.171)	-1.526 (1.360)	-1.475 (2.124)	-0.931 (1.143)	-1.940 (1.312)
R-squared	0.280	0.527	0.526	0.522	0.523
Under identification test		13.365***	5.807**	21.142***	17.578***
Weak identification test (Critical Value)		25.136 (7.03)	21.398 (7.03)	28.976 (11.04)	12.372 (11.04)
Over identification test		0.000	0.000	0.152	1.421
IVs					
Peer(Industry)		YES		YES	
Peer(Region-Industry)			YES	YES	
Peer (Rank-Neighbor)					YES
Peer (Rank-Non-Neighbor)					YES
Observations	15,325	15,325	15,069	15,069	15,211
Number of firms	1,784	1,784	1,777	1,777	1,784
Fixed Effects	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES

Notes: Firm/Industry/Province/Year fixed effects are included in the regressions. The Cragg-Donald Wald F statistic values are well above the corresponding critical value to pass the weak-identification test. The over identification test reports the Hansen J statistic, which is well above the critical value for the overidentification test (0.05). In Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively.

5.5 Mechanism Analysis

5.5.1 Conditional Effects of Political Connections

In the above analysis, the author assumes that all types of political connections have the same effect on bank credit. But in reality, it may not be homogenous. Therefore, in this section, the author aims to provide further evidence to support the main argument by investigating the heterogeneity of political connections.

Political Connections conditional on Length and "Freshness" In addition to simply measuring the presence of political connections, it is interesting to discuss whether the intensity of such connections holds significance. Accordingly, the author calculates a set of measures to explore the potential influence of connection strength on loan size. The measures include (1) the length of political connection, measured by the total tenure that connected executive served in the government; and (2) the freshness of political connection, measured by the maximum ratio of one over one plus the number of elapsed years since the most recent departure of either the politically connected CEO or chairman. Specifically,

$$Freshness_T = \frac{1}{1 + \max(T - T_{CEO_Departure}, T - T_{Chair_Departure})} \quad (6)$$

in which T represents the current year, $T_{Departure}$ represents the departure year of politically connected executive. The \max function is used to select the most recent departure year between the CEO and Chairman. The resulting freshness ratio ranges between 0 and 1, with a higher value of fresher connections.

Information on executives' government experience is manually collected by the author. The final dataset comprises 105 observations for the length and 605 observations for the freshness of political connections. The summary statistics are shown in Table 15. The minimum and maximum values of the length of political connections range from 0.693 to 3.850, revealing a certain level of variability among the observed executives.

Turning attention to the freshness of political connections, the mean value is found to be 0.050, with minimum and maximum values tightly grouped at 0.050 and 0.051, respectively. The standard deviation is reported as 0, indicating that the 'Freshness' values are exceptionally consistent across the 605 observations. This can be attributed to the limited sample range, covering the years 2003 to 2018.

Table 16 provides the regression results employing alternative measures of political connections. In Panel A, firms characterized by stronger political connections, as gauged by the tenure of executives in political roles (expressed in the form of the natural logarithm plus one), tend to secure heightened volumes of bank loans following the 2009 credit expansion. Beyond the strength, one may posit that the temporal proximity of an executive's tenure in a political role might amplify their value. Panel B underscores this point by indicating that the "fresher" the political connection, the more bank loans are received.

Table 15: Summary Statistics: Length and "Freshness" of Political Connections

VARIABLE	Obs	Mean	Std. Dev.	Mix	Max
$\ln(\text{Length} + 1)$	105	2.059	0.668	0.693	3.850
<i>Freshness</i>	605	0.050	0.000	0.050	0.051

Table 16: Mechanism Analysis: Length and "Freshness" of Political Connections

Variables:	FE Estimation		FE-2SLS Estimation							
			State-		Region-		State- plus Region-		Rank-(non) Neighbour	
$\ln(Loan_{it} + 1)$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Length	Total	Long-	Total	Long-	Total	Long-	Total	Long-	Total	Long-
$Stimulus \times PC$	0.097 (0.109)	0.547** (0.254)	1.568 (5.137)	11.565** (4.792)	2.100 (1.366)	7.659** (3.341)	2.348* (1.331)	8.515** (3.449)	3.212 (4.546)	13.958 (10.992)
PC	-0.084 (0.088)	-0.432* (0.228)	-9.107 (6.225)	-4.023 (6.943)	-1.151 (1.592)	-3.611 (3.179)	-1.930 (1.485)	-4.527 (3.213)	-7.638 (7.705)	-18.069 (17.811)
Observations	13,704	13,704	13,684	13,684	13,487	13,487	13,487	13,487	13,606	13,606
Number of Firms	1,730	1,730	1,730	1,730	1,719	1,719	1,719	1,719	1,729	1,729
R-squared	0.549	0.283	0.238	0.403	0.704	0.493	0.703	0.488	0.489	0.236
Under identification test			1.553	1.553	8.558***	8.558***	8.837**	8.837**	1.864	1.864
Weak identification test (critical value)			3.035 (7.03)	3.035 (7.03)	30.202 (7.03)	30.202 (7.03)	15.664 (11.04)	15.664 (11.04)	1.429 (11.04)	1.429 (11.04)
Over identification test			0.000	0.000	0.000	0.000	8.109**	0.490	5.004*	0.788
Panel B: Freshness	Total	Long-	Total	Long-	Total	Long-	Total	Long-	Total	Long-
$Stimulus * PC$	4.649 (2.864)	10.868* (6.347)	51.561*** (19.017)	66.321* (34.715)	15.277 (15.769)	72.487** (32.860)	28.029** (11.586)	76.974** (30.886)	45.711*** (16.428)	70.841* (36.653)
PC_Dummy	-4.606* (2.731)	-12.132* (6.282)	32.486 (23.565)	-71.659* (39.005)	-28.116 (25.889)	-32.161 (48.386)	-3.157 (18.235)	-47.033 (34.097)	23.809 (21.607)	-64.157* (36.856)
Observations	14,127	14,127	14,107	14,107	13,882	13,882	13,882	13,882	14,022	14,022
Number of firms	1,728	1,728	1,728	1,728	1,720	1,720	1,720	1,720	1,728	1,728
R-squared	0.547	0.280	0.592	0.531	0.711	0.527	0.704	0.530	0.631	0.531
Under identification test			9.962***	9.962***	5.402**	5.402**	13.670***	13.670***	13.598***	13.598***
Weak identification test (critical value)			17.901 (7.03)	17.901 (7.03)	29.810 (7.03)	29.810 (7.03)	27.639 (11.04)	27.639 (11.04)	8.504 (11.04)	8.504 (11.04)
Over identification test			0.000	0.000	0.000	0.000	7.429**	0.221	2.852	0.800

Notes: Control variables, and firm/industry/province/year fixed effects are included. Others are the same as Table 14.

Political Connections Conditional on Firm Ownership According to the resource-based theory of the firm, the value of political connections is mainly driven by ties with the government. Among privately owned firms that operate in weak institutional environments and which lack ties with the government, having a politically connected manager helps them to overcome market and institutional barriers and to seek favorable treatment from the government (Firth et al., 2009; Li et al., 2008). However, government ownership represents a much more direct tie with the government than having a politically connected manager. Hence, the value of connected managers among state-owned enterprises (SOEs) may be diluted by government ownership and a firm's having a connected manager may not ensure that it will obtain favorable treatment from the government.

To verify whether the effect of political connections on bank loans differs in varying ownership types, the author divides the sample into two groups: SOEs and private firms. The outcomes for these two subsets are outlined in Table 17. Notably, the coefficients of $Stimulus \times PC_Dummt$ are only significant for private firms, lending empirical support to the premises of the resource-based theory. This confirms that the effect of political connections is subject to firm ownership.

Table 17: Mechanism Analysis: SOE versus Non-SOE

Variables:	FE Estimation		FE-2SLS Estimation							
			State-		Region-		State- plus Region-		Rank-(non) Neighbour	
$\ln(Loan_{it} + 1)$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Total	SOE	Non-	SOE	Non-	SOE	Non-	SOE	Non-	SOE	Non-
$Stimulus \times PC$	-0.016 (0.067)	0.259** (0.119)	0.373 (0.385)	2.817* (1.493)	0.478 (0.512)	2.761 (1.994)	0.551* (0.297)	2.309* (1.186)	0.442 (0.358)	2.953 (2.117)
PC	-0.006 (0.069)	0.025 (0.113)	1.351** (0.643)	1.007 (2.157)	-0.507 (1.112)	0.472 (1.233)	-0.436 (0.692)	0.289 (0.939)	1.173 (1.167)	-1.336 (2.732)
R-squared	0.505	0.582	0.607	0.484	0.697	0.482	0.720	0.589	0.621	0.639
Under identification test			15.936***	2.062	6.153**	1.994	14.278***	6.311*	5.510	3.297
Weak identification test (critical value)			20.555 (7.03)	3.683 (7.03)	12.846 (7.03)	5.918 (7.03)	13.327 (11.04)	4.805 (11.04)	2.461 (11.04)	1.682 (11.04)
Over identification test			0.000	0.000	0.000	0.000	2.203	1.42	0.474	7.80
Panel B: long-term	SOE	Non-	SOE	Non-	SOE	Non-	SOE	Non-	SOE	Non-
$Sitmulus * PC$	0.13 (0.169)	0.756*** (0.274)	1.669** (0.746)	8.048* (4.690)	1.592 (1.035)	10.136 (6.501)	1.631** (0.732)	10.139** (4.353)	1.962** (0.769)	14.907* (6.516)
PC_Dummy	-0.243 (0.169)	-0.180 (0.263)	0.312 (1.065)	-6.700 (4.105)	-1.218 (2.204)	-3.038 (4.503)	-0.662 (0.928)	-3.028 (2.936)	0.464 (1.074)	-8.256 (5.015)
R-squared	0.257	0.308	0.546	0.358	0.590	0.155	0.584	0.154	0.522	0.091
Under identification test			15.936***	2.062	4.613**	0.905	25.388***	7.245*	18.699***	7.836**
Weak identification test (critical value)			20.555 (7.03)	3.683 (7.03)	9.598 (7.03)	2.587 (7.03)	20.222 (11.04)	4.089 (11.04)	7.955 (11.04)	4.325 (11.04)
Over identification test			0.000	0.000	0.000	0.000	1.412	0.000	1.036	0.84
Observations	7,136	8,972	7,120	8,966	6,939	8,875	6,939	8,875	7,049	8,929
Number of firms	627	1,157	627	1,157	625	1,153	625	1,153	627	1,157
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	firm/industry/province/year fixed effects are included.									

Notes: "SOE" indicates state-owned firms, while "Non-" indicates non-state-owned firms. Others are the same as Table 14.

Political Connections Conditional on Central and Local Ties Due to the administrative decentralization in China, local governments possess the authority to allocate resources within a particular region and set up more beneficial policies when dealing with enterprise-related affairs (Xu, 2011). To explore whether the effects of political connections are driven by local governments, the author categorizes the appointments of ex-government officials as either central (appointments above the provincial level) or local connections (appointments at or below the provincial level). Two dummy variables, *Central_Dummy* and *Local_Dummy*, are employed to capture these distinctions. These variables take a value of 1 if a firm is politically connected at the central or local level, and 0 otherwise.

Table 18 presents the results of the influence of different levels of political connections on firms' access to bank credit. To enhance the reliability of the regression results, cases, where an executive possesses both central and local government working experience, are excluded. Both *Central_Dummy* and *Local_Dummy* are included in one model⁸. The results indicate that local political connections have a notable impact on firms' ability to secure bank credit in the post-stimulus period.

In contrast, the findings do not demonstrate a significant relationship between central-level political connections and firms' access to bank credit. It is possible that central-level connections may be less influential in terms of resource allocation or may have a more diluted impact on individual firms compared to local-level connections.

Overall, the results highlight the importance of local political connections for firms in securing bank credit. The rationale behind this differentiation is rooted in the notion that local governments possess substantial control over resource allocation within their respective regions, making their influence particularly significant.

⁸The results of including either *Central_Dummy* or *Local_Dummy* separately in the regression model are similar.

Table 18: Mechanism Analysis: Central versus Local Connections

VARIABLES	FE Estimation		PC More than 2 years	
	Total (1)	Long-term (2)	Total (3)	Long-term (4)
$\log(\text{Loan}_{it} + 1)$				
<i>Stimulus</i> × <i>Central_Dummy</i>	-0.169 (0.169)	-0.017 (0.279)	-0.217 (0.153)	-0.036 (0.278)
<i>Central_Dummy</i>	-0.017 (0.142)	-0.097 (0.249)	-0.028 (0.149)	0.004 (0.242)
<i>Stimulus</i> × <i>Local_Dummy</i>	0.095 (0.060)	0.289* (0.158)	0.113 (0.072)	0.342* (0.181)
<i>Local_Dummy</i>	-0.003 (0.063)	-0.21 (0.155)	-0.024 (0.079)	-0.197* (0.184)
Observations	16,051	16,051	15,288	15,288
Number of firms	1,784	1,784	1,784	1,784
R-squared	0.546	0.280	0.547	0.280
Firm/Industry/Province/Year FE	YES	YES	YES	YES
Controls	YES	YES	YES	YES

Notes: The constant term, region dummies, industry dummies, and year dummies are included but not reported. Standing errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses below the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively.

5.5.2 Are political-based loans rent-seeking?

One approach to strengthening the claim that the observed relationship between political connections, stimulus programs, and bank loans is causal is to strengthen its external validity. For example, firms relying on political connections for bank loans also have greater proclivities to engage in other rent-seeking activities (Chen et al., 2023; Fisman et al., 2014). In this subsection, the author makes use of region-level measures of corruption and firm-level measures related to probity to do a set of heterogeneous tests.

The regional-level measure is the average number of prosecuted corruption cases in each province⁹. The measures of a firm's probity are (1) the degree of accounting transparency from an annual survey conducted by the Shenzhen Stock Exchange; and (2) whether the auditor of the firm is one of the Big Four accounting companies.

Table 19 reports the second-stage results of subgroup FE-2SLS estimation based on the corruption level of provinces. The coefficients of $Stimulus \times PC$ are significantly positive in the group of firms located in provinces with a lower corruption level in most cases.

Table 20 presents the results of the subgroups based on the firms' probity.

Table 21 documents the results of the subgroup based on the firms' auditor.

Overall, the positive relationship between political connections and loan size is stronger in provinces with more corruption cases, and among firms with lower transparency and worse auditing quality. This provides robust external checks on the validity of the findings.

⁹This data is obtained from The Procuratorial Yearbook of China for 2003-18.

Table 19: Mechanism Analysis: Scope of Rent-seeking (Region)

Variables:	FE		FE-2SLS Estimation							
	(1)	(2)	State-		Region-		State- plus Region-		Rank-(non) Neighbour	
			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Total	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	0.105	0.044	1.272**	0.625	0.667	1.672	0.997***	0.434	1.138**	0.769*
	(0.073)	(0.091)	(0.549)	(0.461)	(0.421)	(1.723)	(0.384)	(0.398)	(0.506)	(0.436)
<i>PC</i>	-0.072	0.075	2.082	0.927	0.486	-4.009	0.930	-0.359	1.656*	0.612
	(0.065)	(0.101)	(1.387)	(0.720)	(0.695)	(3.334)	(0.649)	(0.723)	(0.865)	(0.788)
R-squared	0.554	0.527	0.417	0.705	0.657	0.514	0.602	0.762	0.501	0.720
Under identification test			6.085**	6.592**	6.697***	1.759	11.716***	10.684**	11.964***	9.548**
Weak identification test			7.949	13.127	22.214	4.627	17.887	10.786	6.031	5.854
(critical value)			(7.03)	(7.03)	(7.03)	(7.03)	(11.04)	(11.04)	(11.04)	(11.04)
Over identification test			0.000	0.000	0.000	0.000	3.247	7.305**	1.859	0.282
Panel B: long-term	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	0.34*	0.221	2.608**	1.017	2.139**	4.483	2.808***	0.793	3.138***	1.272
	(0.197)	(0.21)	(0.996)	(0.797)	(0.990)	(3.430)	(0.886)	(0.839)	(1.045)	(0.868)
<i>PC</i>	-0.191	-0.245	-2.163	0.052	0.485	-8.790	-0.575	-0.697	-1.702	-1.116
	(0.191)	(0.208)	(1.796)	(1.520)	(1.570)	(6.678)	(1.203)	(1.237)	(1.468)	(1.482)
R-squared	0.294	0.253	0.483	0.610	0.438	0.209	0.454	0.621	0.472	0.616
Under identification test			6.085**	6.592**	6.697***	1.759	11.716***	10.684**	11.964***	9.548**
Weak identification test			7.949	13.127	22.214	4.627	17.887	10.786	6.031	5.854
(critical value)			(7.03)	(7.03)	(7.03)	(7.03)	(11.04)	(11.04)	(11.04)	(11.04)
Over identification test			0.000	0.000	0.000	0.000	2.428	8.624***	0.458	2.369
Observations	9,583	6,525	9,567	6,519	9,431	6,383	9,431	6,383	9,507	6,471
No. of Firms	1,662	814	1,667	813	1,650	807	1,650	807	1,658	808
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	firm/industry/province/year fixed effects are included.									

Notes: "High" indicates firms located in high-corruption level provinces, while "Low" indicates that firms located in low-corruption level provinces. Others are the same as Table 14.

Table 20: Mechanism Analysis: Scope of Rent-seeking (Firm's Transparency)

Variables:	FE		FE-2SLS Estimation							
	(1)	(2)	State-		Region-		State+Region		Rank-(non) peer	
			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Total	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	0.007 (0.085)	0.052 (0.073)	0.487 (0.614)	0.833** (0.376)	-0.072 (0.980)	0.807** (0.330)	0.270 (0.561)	0.734** (0.310)	1.915 (0.585)	0.801** (0.326)
<i>PC</i>	0.009 (0.077)	0.013 (0.078)	1.745* (0.993)	0.975 (0.870)	-1.251 (3.994)	0.136 (0.840)	1.296 (1.025)	0.580 (0.640)	1.045 (0.707)	0.560 (0.744)
R-squared	0.568	0.508	0.584	0.638	0.653	0.709	0.639	0.683	0.659	0.680
Under identification test			7.887***	7.804***	0.438	8.335***	7.110*	14.993***	15.278***	12.364**
Weak identification test (critical value)			13.660 (7.03)	9.771 (7.03)	1.615 (7.03)	17.814 (7.03)	7.494 (11.04)	15.959 (11.04)	9.292 (13.97)	10.264 (13.97)
Over identification test			0.000	0.000	0.000	0.000	3.561	0.98	6.249	3.60
Panel B: long-term	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	0.041 (0.197)	0.378* (0.202)	1.491 (1.147)	2.153*** (0.739)	1.222 (1.742)	2.204*** (0.779)	1.563 (1.207)	2.169*** (0.728)	1.983 (1.371)	2.428 (0.733)
<i>PC_Dummy</i>	0.041 (0.195)	-0.373* (0.196)	0.324 (1.656)	-2.108 (1.541)	0.445 (6.089)	-0.929 (1.608)	0.475 (1.747)	-1.142 (1.142)	-0.286 (1.250)	-1.908 (1.846)
R-squared	0.293	0.261	0.475	0.575	0.478	0.572	0.468	0.576	0.476	0.575
Under identification test			7.887***	7.804***	0.438	8.335***	7.110*	14.993***	16.642***	6.842*
Weak identification test (critical value)			13.660 (7.03)	9.771 (7.03)	1.615 (7.03)	17.814 (7.03)	7.494 (7.03)	15.959 (11.04)	11.151 (11.04)	2.980 (11.04)
Over identification test			0.000	0.000	0.000	0.000	0.156	0.23	0.935	0.06
Observations	9,583	6,525	9,567	6,519	9,431	6,383	9,431	6,383	9,507	6,471
No. of Firms	1,662	814	1,667	813	1,650	807	1,650	807	1,658	808
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	firm/industry/province/year fixed effects are included.									

Notes: "High" indicates firms with a higher degree of transparency, while "Low" indicates that firms with a lower degree of transparency. Others are the same as Table 14.

Table 21: Mechanism Analysis: Scope of Rent-seeking (Firm's Auditor)

Variables:	FE Estimation		FE-2SLS Estimation							
			State-		Region-		State+Region		Rank-(non) peer	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Total	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	-0.118 (0.198)	0.075 (0.057)	1.450 (1.480)	1.068* (0.569)	-0.220 (1.747)	0.622* (0.330)	0.471 (1.033)	0.812*** (0.258)	0.614 (0.788)	1.030*** (0.276)
<i>PC</i>	0.039 (0.217)	-0.011 (0.058)	-2.487 (3.962)	2.125 (6.147)	1.164 (3.115)	-0.212 (0.696)	-0.123 (1.877)	-0.379 (0.635)	0.692 (0.867)	0.061 (1.460)
R-squared	0.491	0.542	0.727	0.382	0.748	0.640	0.787	0.639	0.743	0.619
Under identification test			0.609	0.278	0.987	11.556***	3.582	12.480***	6.837*	3.402
Weak identification test (critical value)			0.639 (7.03)	0.485 (7.03)	1.561 (7.03)	36.338 (7.03)	2.016 (11.04)	20.412 (11.04)	2.423 (11.04)	1.690 (11.04)
Over identification test			0.000	0.000	0.000	0.000	1.03	1.759	2.65	1.257
Panel B: long-term	High	Low	High	Low	High	Low	High	Low	High	Low
<i>Stimulus</i> × <i>PC</i>	0.471 (0.465)	0.199 (0.150)	6.521 (4.695)	1.488 (2.925)	0.827 (5.034)	2.203*** (0.715)	3.304 (2.333)	2.303*** (0.641)	3.005* (1.669)	2.663*** (1.020)
<i>PC_Dummy</i>	-0.420 (0.420)	-0.163 (0.153)	-11.260 (12.034)	-15.216 (27.324)	3.804 (8.913)	-0.416 (1.333)	-1.701 (3.346)	-0.961 (1.192)	0.845 (1.990)	-5.486 (3.403)
R-squared	0.269	0.274	0.103	-1.895	0.421	0.469	0.659	0.478	0.546	0.326
Under identification test			0.609	0.278	0.987	11.556***	3.582	12.480***	6.837*	3.402
Weak identification test (critical value)			0.639 (7.03)	0.485 (7.03)	1.561 (7.03)	36.338 (7.03)	2.016 (11.04)	20.412 (11.04)	2.423 (11.04)	1.690 (11.04)
Over identification test			0.000	0.000	0.000	0.000	1.64	3.172	4.51	1.694
Observations	1,178	14,930	1,178	14,908	1,148	14,666	1,148	14,666	1,166	14,812
No. of Firms	174	1,718	174	1,718	171	1,712	171	1,712	173	1,718
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	firm/industry/province/year fixed effects are included.									

Notes: "High" indicates firms with one of the Big Four auditing companies as the auditor, thereby having a higher auditing quality. while "Low" indicates that firms without any Big Four auditing company as the auditor, thereby having a lower auditing quality. Others are the same as Table 14.

5.6 Robustness Check

In this section, the author aims to provide additional evidence for the main story. In particular, the following questions will be addressed: whether the baseline result is influenced by industry/province trends. To answer these questions, the author conducts the further following tests.

5.6.1 Industry-province cluster standard errors

To ensure the robustness of the findings, the author further conducts estimations using an industry-province cluster, with the results presented in Table 22. By employing this clustering method, the analysis accounts for potential heterogeneity across different industries and provinces, thereby strengthening the reliability of the conclusions drawn.

The estimation results affirm the consistent and robust nature of the relationship between political connections and firms' access to bank credit. Despite the inclusion of industry and province clustering, the overall conclusion remains unchanged.

5.6.2 Alternative Measure of Political Connections

According to Liu et al. (2013), the author applies the founder's connections (*PC_Founder*), defined by a firm having a politically connected founder when it was established, as the new measure of political connections of firms. This variable is exogenous because it cannot be influenced by other factors.

Table 23 provides the summary statistics and univariate test results of bank loan size. It shows that 5.7% of the sample firms have been established by politically connected founders, and the results of the univariate test indicate that firms with politically connected founders have a significantly larger amount of long-term bank loans than firms without.

The regression results in Table 24 show that the interactive term between *Stimulus* and *PC_Founder* is significantly positively associated with the amount of long-term

Table 22: Robustness Check: Standard errors clustered at the industry-province level

VARIABLES $\ln(\text{Loan}_{it} + 1)$	Baseline (1)	IV (2)	PC > 2 Years (3)	Founder's PC (4)
<i>Stimulus</i> × <i>PC</i>	0.286* (0.140)	2.098*** (0.732)	0.333** (0.149)	0.365* (0.213)
<i>PC</i>	-0.221** (0.106)	-1.012 (1.229)	-0.187 (0.135)	
Observations	16,108	16,086	15,325	16,108
Number of firms	1,784	1,784	1,784	1,784
R-squared	0.280	0.531	0.280	0.280
Under identification test (p-value)		9.925 (0.002)		
Weak identification test (critical value)		21.192 (7.03)		
Over identification test (p-value)		0.000 (1.000)		
Controls	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Province FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Notes: Same as Table 10.

bank loans, confirming the robustness of the baseline results.

Table 23: Summary Statistics: Founder's Political Connections

VARIABLE	Obs	Mean	Std. Dev.	[Mix, Max]
<i>PC_Founder</i>	16,108	0.057	0.233	[0, 1]
VARIABLES:	Full	<i>PC_Founder</i> = 0	<i>PC_Founder</i> = 1	Difference (t-value)
$\ln(\text{Loan}_{it} + 1)$ (Total)	6.125	6.118	6.251	-0.133*** (-2.044)
Before	5.941	5.949	5.836	0.113 (1.032)
After	6.171	6.159	6.383	-0.224 (-2.89)
Difference (t-value)	-0.230***	-0.210***	-0.547***	
Before versus After	(-6.052)	(-5.317)	(-3.961)	
$\ln(\text{LongLoan}_{it} + 1)$	3.589	3.578	3.768	-0.190* (-1.821)
Before	3.279	3.296	3.060	0.236 (1.195)
After	3.666	3.647	3.993	0.0346*** (-2.848)
Difference	-0.387***	-0.351	-0.933	
Before versus After	(-6.364)	(-5.581)	(-4.040)	

Notes: This table summarizes the univariate tests between firms with and without politically connected founders. These variables are defined as in the previous tables. ***, **, * correspond to p-values of 1%, 5%, and 10%, respectively.

Table 24: Robustness Check: Founder's Political Connections

VARIABLE	Total	Long-term
$\ln(\text{Loan}_{it} + 1)$	(1)	(2)
<i>Stimulus</i> × <i>PC_Founder</i>	0.094 (0.107)	0.365* (0.219)
Observations	16,108	16,108
Number of firms	1,784	1,784
R-squared	0.545	0.280
Firm/Industry/Province/Year FE	YES	YES
Controls	YES	YES

Notes: The constant term, region dummies, industry dummies, and year dummies are included but not reported. Standard errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses below the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively.

6 Further Analysis

A fair investigation of the determinants of bank credit allocation needs to consider both the demand and supply aspects of the process. Specifically, the self-selection process reflects the demand side of firms applying for credit, whereas the bank-selection process pertains to the supply side of banks selecting which firms to lend to and determining the terms of a bank loan contract. However, due to data limitations, the former has been ignored in existing literature.

In the above analysis, the author has explored whether and how political connections affect bank loan size after the stimulus program. In this section, based on a novel dataset, the author aims to examine the self-selection process of firms and the subsequent selection process of banks. The results will further enhance the understanding of the bank credit allocation process of China's stimulus program.

6.1 Data and Variable

The data on individual bank-loan transactions used in this section comes from the *Bank Loan data set* of the CSMAR database, covering the information for each announcement, such as loan amount, interest rate, loan maturity, lending bank, whether the loan is guaranteed by a third party and whether the loan is secured by collateral. According to the China Securities Regulatory Commission (CSRC), Chinese listed firms are required to disclose those bank loans whose transaction is more than 10% of equity book value and those that are more than 10 million RMB. Therefore, a sample of bank loans includes both large bank loans which are disclosed compulsorily, and small loans which are disclosed voluntarily.

From the *Bank Loan data set* in the CSMAR, the author collects both successful and unsuccessful bank loan announcements (the latter reflects the intention of seeking a loan but without the eventual granting of a loan). The author matches this information with the firm-level dataset used in the baseline regression and proceeds to investigate the following key variables: the number of bank loan announcements

made by each firm, the number of successful bank loan announcements of each firm, and the approval rate. The first of these variables serves as an indicator of firms' willingness to apply for bank loans, while the latter two offer insights into the decisions made by the banks regarding these loan applications. The definition of variables is shown in Panel A, Table 25.

Across the sample, 9,313 firm observations have made bank loan announcements. On average, each firm makes 7 announcements. However, only 569 firms observations have successfully secured bank loan contracts, with an average of 3 contracts per firm. The average approval rate for these loan announcements is 4.85%.

Table 25: Definition of dependent variables

Variable	Definition
Panel A: Firm	
<i>HasLoan</i>	A dummy variable that equals one if the firm intends to apply bank loans
$\ln(\text{HasLoan})$	Natural logarithm of the number of loan announcements made by a firm
<i>GetLoan</i>	A dummy variable that equals one if the firm is successful in receiving loans
$\ln(\text{GetLoan})$	Natural logarithm of the number of loans successfully obtained by a company
<i>Approval</i>	Ratio of loan contracts to loan announcements
Panel B: Individual	
<i>LoanSize</i>	Natural log of the amount of the loan
<i>Spread</i>	Ratio of lending bank interest rate to the benchmark rate issued by PBOC
<i>Maturity</i>	Natural logarithm of the actual term of bank loans in months
$D_{\text{Collateral}}$	A dummy variable that equals one if the loan is secured by collateral

Qian and Strahan (2007) and Graham et al. (2008) point out that bank-loan terms are also vital conditions for firms in bank-loan contracts. Therefore, the author then merges the successful bank loan announcements with the firm-level dataset used in the baseline regression, and investigates the changes in the following five major bank loan terms: interest rate spread, loan size, maturity, whether the loan is secured by collateral, and the number of lenders. The definition and summary statistics of them are shown in Panel B of Table 25 and 26.

The sample consists of 2,586 contract observations where a loan was granted to 358 firms from 2003 to 2018. Among them, 337 (=13.03% of total observations)

Table 26: Summary Statistics of Firm Observations/Contract Terms

Variable	Observation	Mean	Std. Dev.	Mix	Max
Panel A: firm					
<i>HasLoan</i>	18,249	0.510	0.500	0	1
<i>ln_HasLoan</i>	9,313	1.293	1.090	0	5.938
<i>GetLoan</i>	18,249	0.031	0.174	0	1
<i>ln_GetLoan</i>	569	0.641	0.831	0	3.784
<i>Approval</i>	9,313	0.049	0.202	0	1
Panel B: Contract					
<i>Spread</i>	472	1.164	0.362	0.245	3.086
<i>LoanSize</i>	2,586	4.304	1.586	-2.126	10.327
<i>Maturity</i>	1,694	2.860	0.824	-2.120	5.481
<i>D_{Collateral}</i>	2586	0.203	0.402	0	1

observations of firms that have political connections, and 2,134 contract observations are granted after the stimulus program.

6.2 Empirical results

6.2.1 Does Stimulus Package Encourage Firms to Borrow More?

Table 27 provides several univariate tests for these variables. It shows that the stimulus program encourages firms to make more announcements, which is associated with a decrease in the number of successful contracts and a lower approval rate.

Notably, these differences are statistically significant, particularly when comparing firms with and without political connections, especially in the post-stimulus period. Panel B further illustrates that the stimulus program is a "false hope" for firms lacking political connections, as they make more announcements but result in fewer successful contracts and a lower approval rate when compared to firms with political connections.

Table 27: Univariate Test: Firm Level

Variable	Full	<i>PC</i> = 0	<i>PC</i> = 1	Difference (t-value) <i>PC</i> = 0 versus <i>PC</i> = 1
<i>Application_Dummy</i>	0.510	0.525	0.431	0.094*** (9.325)
Before	0.201	0.199	0.207	-0.009 (-0.584)
After	0.593	0.605	0.524	0.080*** (6.841)
Difference(t-value)	-0.393***	-0.406***	-0.317***	
Before versus After	(-45.690)	(-42.181)	(-16.373)	
<i>Secure_Dummy</i>	0.031	0.030	0.036	-0.006 (-1.624)
Before	0.037	0.037	0.036	0.000 (0.039)
After	0.030	0.029	0.036	-0.007* (-1.752)
Difference(t-value)	0.007***	0.008**	0.001	
Before versus After	(2.181)	(2.279)	(0.072)	
<i>Approval</i>	0.049	0.045	0.070	-0.025*** (-4.030)
Before	0.169	0.170	0.165	0.005 (0.155)
After	0.038	0.035	0.054	-0.019*** (-3.297)
Difference(t-value)	0.131***	0.135***	0.111***	
Before versus After	(17.531)	(16.501)	(5.647)	

Notes: This table summarizes the univariate tests between firms with and without political connections. These variables are defined as in the previous tables. ***, **, * correspond to p-values of 1%, 5%, and 10%, respectively.

6.2.2 Do Political Connections Transfer into Better Loan Contract Term?

According to the univariate test in Table 28, in contrast to the pre-stimulus period, there is a significant increase in interest spread post-stimulus. Both loan size and maturity exhibit a significant decrease, and fewer contracts are secured by collateral. Regarding contracts granted to firms with and without political connections, political connections confer several advantages: Firstly, politically connected firms enjoy more favorable pricing terms, leading to lower interest spreads. Secondly, they tend to have fewer lenders, indicating a stable relationship with banks.

It is worth noting that there is no statistically significant difference in loan sizes between politically connected and non-connected firms. Firms with political connections tend to provide more collateral. Moreover, while political connections have been associated with benefits in terms of loan size and maturity in the past, these

Table 28: Univariate Test: Individual Level

Variable	Ful sample	<i>Stimulus</i> = 0	<i>Stimulus</i> = 1	Difference (t-value) <i>PC</i> = 0 versus <i>PC</i> = 1
<i>Spread</i>	1.164	1.185	1.053	0.132*** (2.987)
Before	0.989	0.991	0.976	-0.585*** (-2.885)
After	1.222	1.249	1.080	0.168*** (2.949)
Difference (t-value)	-0.234***	-0.258***	-0.104	
Before versus After	(-6.303)	(-6.454)	(-1.103)	
<i>Maturity</i>	2.860	2.852	2.906	-0.054 (-0.9379)
Before	2.710	2.668	2.906	-0.238** (-2.128)
After	2.895	2.894	2.906	-0.012 (-0.177)
Difference (t-value)	-0.185***	-0.226***	0.000	
Before versus After	(-3.670)	(-4.085)	(0.003)	
<i>LoanSize</i>	4.304	4.296	4.356	-0.060 (-0.645)
Before	3.650	3.554	4.140	-0.585*** (-2.885)
After	4.441	4.445	4.416	0.029 (0.288)
Difference (t-value)	-0.792***	-0.890***	-0.276	
Before versus After	(-9.792)	(-10.107)	(-1.364)	
<i>D_{Collateral}</i>	0.203	0.210	0.154	0.056** (2.368)
Before	0.146	0.136	0.205	0.070 (-1.543)
After	0.214	0.225	0.140	0.084*** (3.143)
Difference (t-value)	-0.067***	-0.089***	0.065	
Before versus After	(-3.232)	(-3.885)	(1.367)	

Notes: This table summarizes the univariate tests between firms with and without political connections. These variables are defined as in the previous tables. ***, **, * correspond to p-values of 1%, 5%, and 10%, respectively.

advantages have diminished following the implementation of the stimulus program. This suggests a changing landscape in the relationship between political connections and the terms of lending agreements, transitioning from non-price benefits to price benefits following the implementation of the stimulus program.

To further explore the effects of political connections on bank loan contract terms, the author replaces the dependent variable in Equation 1 with a dummy variable for the collateral requirement ($D_{Collateral}$), debt maturity (in natural logarithms), loan size (in natural logarithms), and interest rate spread. The OLS regression results are documented in Table 29.

In the first two columns with the interest spread as the dependent variable, the coefficients of the interactive term, *Stimulus*PC_Dummy*, are significantly negative. This suggests that firms with political connections tend to secure loans at a lower interest rate, even though the coefficients of *Stimulus* are significantly positive. This indicates that, post the stimulus program, firms in the sample are charged higher loan rates. Regarding loan maturity in Column (3) and (4), the regression results do not reveal significant effects of either political connections or the stimulus program. According to Column (5) and (6), after 2009, the political connections of firms reduce the probability of pledging collateral to obtain bank loans. However, this effect becomes insignificant after controlling for year and industry dummies.

Overall, these additional results provide further evidence supporting the main finding that political connections have a greater impact after the stimulus program not only on accessing bank loans but also on interest cost, and possibly on collateral requirements.

7 Conclusion

This paper provides direct empirical evidence on the effectiveness of relatively the largest stimulus program responding to the 2008 financial crisis, China's 4-trillion package, and especially on its effects on the allocation of resources across firms.

Based on the unique manually-collected data for Chinese listed firms during 2003-18, this paper empirically examines the causal effect of the credit expansion on firm bank loan size and finds that political connections play a vital role in determining firm bank financing during the economic stimulus package led by the Chinese government. New granted credit is allocated relatively more toward firms with political connections, particularly those privately owned and tied with local authorities.

Further analysis, based on firm bank loan announcements and contracts, finds that the stimulus program encourages firms lacking political connections to apply for

Table 29: Further analysis: Political connections, Stimulus program, and Loan contract terms

Variable	<i>Spread</i>		<i>Maturity</i>		<i>D_{Collateral}</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Stimulus*PC_Dummy</i>	-0.137*	-0.163*	-0.075	0.001	-0.532**	-0.377
	(0.082)	(0.093)	(0.129)	(0.129)	(0.216)	(0.236)
<i>PC_Dummy</i>	0.024	0.027	0.181	0.111	0.454**	0.368*
	(0.070)	(0.087)	(0.114)	(0.116)	(0.192)	(0.212)
<i>Stimulus</i>	0.284***	0.386***	-0.071	0.001	0.057	-0.286
	(0.052)	(0.098)	(0.067)	(0.162)	(0.109)	(0.281)
Observations	472	472	1,694	1,694	2,586	2,570
R-Squared	0.461	0.556	0.119	0.203	0.108	0.169
Variable: <i>LoanSize</i>	Total		Short term		Mid-long term	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Stimulus*PC_Dummy</i>	-0.268	-0.170	0.051	1.045*	-0.229	-0.198
	(0.194)	(0.192)	(0.535)	(0.543)	(0.206)	(0.203)
<i>PC_Dummy</i>	0.255	0.116	0.516	0.193	0.193	0.029
	(0.174)	(0.175)	(0.500)	(0.501)	(0.184)	(0.183)
<i>Stimulus</i>	-0.116	-0.327	0.191	0.318	-0.154	-0.372
	(0.095)	(0.252)	(0.257)	(0.718)	(0.103)	(0.268)
Observations	2,586	2,586	247	247	2,339	2,339
R-Squared	0.290	0.349	0.178	0.413	0.289	0.357
Year Dummy	No	Yes	No	Yes	No	Yes
Industry Dummy	No	Yes	No	Yes	No	Yes
Controls	Same as baseline regressions					

Notes: The constant term, region dummies, industry dummies, year dummies, and control variables same as the baseline regression are included but not reported. Standing errors, which are based on robust standard error corrected for clustering at the firm level, are presented in the parentheses below the estimates. Significance levels 0.1, 0.05, and 0.01 are noted by *, **, and *** respectively.

more bank loans. However, it tends to be a "false signal" to them, as their rejection rate is significantly higher compared to their politically connected peers. Even when these firms successfully secure loan contracts with banks, the terms of their contracts are less competitive.

Overall, this paper illustrates how credit expansion leads to potentially unintended consequences when interacting with political links, which can be applied to the case of the stimulus packages in emerging markets in response to the Great Recession.

References

- Adhikari, A., Derashid, C., and Zhang, H. (2006). Public policy, political connections, and effective tax rates: Longitudinal evidence from Malaysia. *Journal of Accounting and Public Policy*, 25(5):574–595.
- Agrawal, A. and Knoeber, C. R. (2001). Do some outside directors play a political role? *Journal of Law and Economics*, 44(1):179–198.
- Akhtar, S. and Oliver, B. (2009). Determinants of Capital Structure for Japanese Multinational and Domestic Corporations. *International Review of Finance*, 9(1-2):1–26.
- Allen, F., Qian, J., and Qian, M. (2005). Law, finance, and economic growth in China. *Journal of Financial Economics*, 77(1):57–116.
- Allen, F., Qian, J., Zhang, C., and Zhao, M. (2012). China's Financial System: Opportunities and Challenges. *SSRN Electronic Journal*.
- Bae, K. H. and Goyal, V. K. (2009). Creditor rights, enforcement, and bank loans. *Journal of Finance*, 64(2):823–860.
- Bai, C. E., Hsieh, C. T., and Song, Z. M. (2016). The long shadow of China's fiscal expansion. *Brookings Papers on Economic Activity*, 2016(FALL).
- Bai, C. E., Liu, Q., Lu, J., Song, F. M., and Zhang, J. (2004). Corporate governance and market valuation in China. *Journal of Comparative Economics*, 32(4):599–616.
- Baker, M. and Wurgler, J. (2002). Market timing and capital structure. *Journal of Finance*, 57(1):1–32.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1):99–120.

- Barth, J. R., Lin, C., Lin, P., and Song, F. M. (2009). Corruption in bank lending to firms: Cross-country micro evidence on the beneficial role of competition and information sharing. *Journal of Financial Economics*, 91(3):361–388.
- Berkman, H., Cole, R. A., and Fu, L. J. (2010). Political connections and minority-shareholder protection: Evidence from securities-market regulation in China. *Journal of Financial and Quantitative Analysis*, 45(6):1391–1417.
- Bhabra, H. S., Liu, T., and Tirtiroglu, D. (2008). Capital structure choice in a nascent market: Evidence from listed firms in China. *Financial Management*, 37(2):341–364.
- Booth, L., Aivazian, V., Demirguc-Kunt, A., and Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance*, 56(1):87–130.
- Boubakri, N., Guedhami, O., Mishra, D., and Saffar, W. (2012). Political connections and the cost of equity capital. *Journal of Corporate Finance*, 18(3):541–559.
- Bowen, R. M., Daley, L. A., and Huber, C. C. (1982). Evidence on the Existence and Determinants of Inter-Industry Differences in Leverage. *Financial Management*, 11(4):10–20.
- Chaney, P. K., Faccio, M., and Parsley, D. (2011). The quality of accounting information in politically connected firms. *Journal of Accounting and Economics*, 51(1-2):58–76.
- Chen, H. (2006). Development of financial intermediation and economic growth: The Chinese experience. *China Economic Review*, 17(4):347–362.
- Chen, S., Sun, Z., Tang, S., and Wu, D. (2011). Government intervention and investment efficiency: Evidence from China. *Journal of Corporate Finance*, 17(2):259–271.

- Chen, T., Han, L., Kung, J., and Xie, J. (2023). Trading Favours through the Revolving Door: Evidence from China's Primary Land Market. *The Economic Journal*, 133(649):70–97.
- Chen, Y. S., Shen, C. H., and Lin, C. Y. (2014). The Benefits of Political Connection: Evidence from Individual Bank-Loan Contracts. *Journal of Financial Services Research*, 45(3):287–305.
- Chen, Z., He, Z., and Liu, C. (2020). The financing of local government in China: Stimulus loan wanes and shadow banking waxes. *Journal of Financial Economics*, 137(1):42–71.
- Claessens, S., Feijen, E., and Laeven, L. (2008). Political connections and preferential access to finance: The role of campaign contributions. *Journal of Financial Economics*, 88(3):554–580.
- Cong, L. W., Gao, H., Ponticelli, J., and Yang, X. (2019). Credit allocation under economic stimulus: Evidence from China. *The Review of Financial Studies*, 32(9):3412–3460.
- Cull, R., Li, W., Sun, B., and Xu, L. C. (2015). Government connections and financial constraints: Evidence from a large representative sample of Chinese firms. *Journal of Corporate Finance*, 32:271–294.
- Cull, R. and Xu, L. C. (2000). Bureaucrats, State Banks, and the Efficiency of Credit Allocation: The Experience of Chinese State-Owned Enterprises. *Journal of Comparative Economics*, 28(1):1–41.
- Cull, R., Xu, L. C., and Zhu, T. (2009). Formal finance and trade credit during China's transition. *Journal of Financial Intermediation*, 18(2):173–192.
- DeAngelo, H. and Masulis, R. W. (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics*, 8(1):3–29.

- Delcours, N. (2007). The determinants of capital structure in transitional economies. *International Review of Economics and Finance*, 16(3):400–415.
- Deng, Y., Morck, R., Wu, J., and Yeung, B. (2015). China's pseudo-monetary policy. *Review of Finance*, 19(1):55–93.
- Donaldson, L. (1990). The Ethereal Hand: Organizational Economics and Management Theory. *Academy of Management Review*, 15(3):369–381.
- Donaldson, L. and Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, 16(1):49–64.
- Faccio, M., Masulis, R. W., and McConnell, J. J. (2006). Political connections and corporate bailouts. *Journal of Finance*, 61(6):2597–2635.
- Fama, E. F. and French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies*, 15(1):1–33.
- Fama, E. F. and Jensen, M. C. (1983a). Agency problems and residual claims. *Journal of Law and Economics*, 26(2):327–349.
- Fama, E. F. and Jensen, M. C. (1983b). Separation of ownership and control. *Journal of Law and Economics*, 26(2):301–325.
- Fan, J. P., Wong, T. J., and Zhang, T. (2007). Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*, 84(2):330–357.
- Fan, J. P. H., Wong, T. J., and Zhang, T. (2014). Politically connected CEOs, corporate governance, and the post-IPO performance of China's partially privatized firms. *Journal of Applied Corporate Finance*, 26(3):85–95.

- Firth, M., Fung, P. M., and Rui, O. M. (2006). Firm performance, governance structure, and top management turnover in a transitional economy. *Journal of Management Studies*, 43(6):1289–1330.
- Firth, M., Lin, C., Liu, P., and Wong, S. M. (2009). Inside the black box: Bank credit allocation in China's private sector. *Journal of Banking and Finance*, 33(6):1144–1155.
- Firth, M., Lin, C., and Wong, S. M. (2008). Leverage and investment under a state-owned bank lending environment: Evidence from China. *Journal of Corporate Finance*, 14(5):642–653.
- Fisman, R. (2001). Estimating the value of political connections. *American Economic Review*, 91(4):1095–1102.
- Fisman, R., Schulz, F., and Vig, V. (2014). The private returns to public office. *Journal of Political Economy*, 122(4):806–862.
- Francis, B., Hasan, I., Koetter, M., and Wu, Q. (2012). Corporate boards and bank loan contracting. *Journal of Financial Research*, 35(4):521–552.
- Frank, M. Z. and Goyal, V. K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67(2):217–248.
- Frank, M. Z. and Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38(1):1–37.
- Giannetti, M. and Ongena, S. (2009). Financial integration and firm performance: Evidence from foreign bank entry in emerging markets. *Review of Finance*, 13(2):181–223.
- Gopalan, S. and Sasidharan, S. (2020). Financial liberalization and access to credit in emerging and developing economies: A firm-level empirical investigation. *Journal of Economics and Business*, 107:105861.

- Graham, J. R., Li, S., and Qiu, J. (2008). Corporate misreporting and bank loan contracting. *Journal of Financial Economics*, 89(1):44–61.
- Guariglia, A. and Yang, J. (2016). A balancing act: Managing financial constraints and agency costs to minimize investment inefficiency in the Chinese market. *Journal of Corporate Finance*, 36:111–130.
- Houston, J. F., Jiang, L., Lin, C., and Ma, Y. (2014). Political connections and the cost of bank loans. *Journal of Accounting Research*, 52(1):193–243.
- Huang, Q., Jiang, F., Lie, E., and Yang, K. (2014). The role of investment banker directors in M&A. *Journal of Financial Economics*, 112(2):269–286.
- Hung, M., Wong, T. J., and Zhang, T. (2012). Political considerations in the decision of Chinese SOEs to list in Hong Kong. *Journal of Accounting and Economics*, 53(1-2):435–449.
- Infante, L. and Piazza, M. (2014). Political connections and preferential lending at local level: Some evidence from the Italian credit market. *Journal of Corporate Finance*, 29:246–262.
- Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4):305–360.
- Jin, H., Qian, Y., and Weingast, B. R. (2005). Regional decentralization and fiscal incentives: Federalism, Chinese style. *Journal of Public Economics*, 89(9-10):1719–1742.
- Johansson, A. C. and Feng, X. (2016). The state advances, the private sector retreats? Firm effects of China's great stimulus programme. *Cambridge Journal of Economics*, 40(6):1635–1668.
- Johnson, S. and Mitton, T. (2003). Cronyism and capital controls: Evidence from Malaysia. *Journal of Financial Economics*, 67(2):351–382.

- Khwaja, A. I. and Mian, A. (2005). Do lenders favor politically connected firms? Rent provision in an emerging financial market. *Quarterly Journal of Economics*, 120(4):1371–1411.
- Kim, E. H. (1978). A mean variance theory of optimal capital structure and corporate debt capacity. *Journal of Finance*, 33(1):45–63.
- Laeven, L. and Levine, R. (2009). Bank governance, regulation and risk taking. *Journal of Financial Economics*, 93(2):259–275.
- Li, H., Meng, L., Wang, Q., and Zhou, L. A. (2008). Political connections, financing and firm performance: Evidence from Chinese private firms. *Journal of Development Economics*, 87(2):283–299.
- Li, H. and Zhou, L. A. (2005). Political turnover and economic performance: The incentive role of personnel control in China. *Journal of Public Economics*, 89(9-10):1743–1762.
- Li, K., Yue, H., and Zhao, L. (2009). Ownership, institutions, and capital structure: Evidence from China. *Journal of Comparative Economics*, 37(3):471–490.
- Lin, C., Ma, Y., Malatesta, P., and Xuan, Y. (2012). Corporate ownership structure and bank loan syndicate structure. *Journal of Financial Economics*, 104(1):1–22.
- Lin, H. (2011). Foreign bank entry and firms' access to bank credit: Evidence from China. *Journal of Banking and Finance*, 35(4):1000–1010.
- Liu, Q., Pan, X., and Tian, G. G. (2018). To what extent did the economic stimulus package influence bank lending and corporate investment decisions? Evidence from China. *Journal of Banking and Finance*, 86:177–193.
- Liu, Q., Tang, J., and Tian, G. G. (2013). Does political capital create value in the IPO market? Evidence from China. *Journal of Corporate Finance*, 23:395–413.

- Marsh, P. (1982). The choice between equity and debt: An empirical study. *The Journal of Finance*, 37(1):121–144.
- Modigliani, F. and Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*, 48(3):261–297.
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2):147–175.
- Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3):575–592.
- Myers, S. C. and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2):187–221.
- Pan, X. and Tian, G. G. (2015). Does banks' dual holding affect bank lending and firms' investment decisions? Evidence from China. *Journal of Banking & Finance*, 55:406–424.
- Pan, X. and Tian, G. G. (2020). Bank work experience versus political connections: Which matters for bank loan financing? *International Review of Finance*, 20(2).
- Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches.
- Pfeffer, J. and Salancik, G. (1978). *A resource dependence perspective*. Cambridge University Press, Cambridge.
- Qian, J. and Strahan, P. E. (2007). How laws and institutions shape financial contracts: The case of bank loans. *Journal of Finance*, 62(6):2803–2834.
- Rajan, R. G. and Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50(5):1421–1460.

- Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of Financial Economics*, 72(2):357–384.
- Shleifer, A. and Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2):737–783.
- Smith, C. W. (1977). Alternative methods for raising capital: Rights versus underwritten offerings. *Journal of Financial Economics*, 5(3):273–307.
- Smith, C. W. and Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32(3):263–292.
- Titman, S. and Wessels, R. (1988). The determinants of capital structure choice. *Journal of Finance*, 43(1):1–19.
- Wald, J. K. (1999). How firm characteristics affect capital structure: An international comparison. *Journal of Financial Research*, 22(2):161–187.
- Wang, Q., Wong, T. J., and Xia, L. (2008). State ownership, the institutional environment, and auditor choice: Evidence from China. *Journal of Accounting and Economics*, 46(1):112–134.
- Warner, J. B. (1977). Bankruptcy costs: Some evidence. *Journal of Finance*, 32(2):337–347.
- Wei, Z., Xie, F., and Zhang, S. (2005). Ownership structure and firm value in China's privatized firms: 1991-2001. *Journal of Financial and Quantitative Analysis*, 40(1):87–108.
- Wu, W., Wu, C., and Rui, O. M. (2012a). Ownership and the value of political connections: Evidence from China. *European Financial Management*, 18(4):695–729.

- Wu, W., Wu, C., Zhou, C., and Wu, J. (2012b). Political connections, tax benefits and firm performance: Evidence from China. *Journal of Accounting and Public Policy*, 31(3):277–300.
- Xu, C. (2011). The Fundamental Institutions of China's Reforms and Development. *Journal of Economic Literature*, 49(4):1076–1151.
- Zheng, Y. and Zhu, Y. (2013). Bank lending incentives and firm investment decisions in China. *Journal of Multinational Financial Management*, 23(3):146–165.
- Zhou, Z. g. and Zhou, J. (2010). Chinese IPO activity, pricing, and market cycles. *Review of Quantitative Finance and Accounting*, 34(4):483–503.