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Abstract

This study examines how state versus private ownership and political participation by private entrepreneurs affect access to financing through the corporate bond market in China. We find that state ownership is positively related to the likelihood that a firm issues bonds and that firms controlled by ultimate owners who participate in politics are significantly more likely to issue bonds. We also show that state ownership as well as political participation by the ultimate owner is positively associated with the amount firms raise in bond offerings. Moreover, state firms characterized by over-investment tend to increase their excess investments after a bond offering. For under-investing private firms, existing suboptimal investment levels are alleviated by bond offerings. In addition, we find that private firms significantly increase their R&D investments after a public bond offering, especially those controlled by owners who participate in politics. Finally, bond offerings are associated with a significant decline in market value for SOEs. For firms controlled by an owner who participates in politics, the opposite holds true. These findings highlight the need to improve the existing credit allocation via the bond market and the important role political capital plays for private firms in China.

JEL Classification: G10; G30; G32; L33; P20
Keywords: corporate bonds; bond issuance; SOEs; private firms; political participation; political connections; access to finance; China

1 Introduction

It is commonly argued that private firms in China have to face substantial discrimination. Studies have shown that state-owned enterprises (SOEs) enjoy preferential treatment in a variety of ways, including better access to finance, access to regulated industries, lower taxes, more government subsidies, and a lower risk of political extraction (e.g. Feng and Johansson, 2014; Feng et al., 2014). One strategy for private firms to get around discriminatory practices is to develop close ties with politicians, and through these ties obtain favors that level the playing field vis-à-vis SOEs. Studies have shown how private firms' political connections result in higher firm value, better access to the equity market, and so on (Fisman, 2001; Johnson and Mitton, 2003; Khwaja and Mian, 2005; Leuz and Oberholzer-Gee, 2006; Faccio, 2006; Faccio et al., 2006). A few studies within economics have taken this analysis one step further by focusing on how entrepreneurs build up political capital by becoming politically active, and how this process affects their firms (e.g. Li et al., 2006; Feng et al., 2014, 2015). Building on research within political science that highlights the increasingly intertwined relationship between the Chinese Communist Party (CCP) and the private sector (e.g., Dickson, 2008; Chen and Dickson, 2010) these studies have shown that there are significant economic effects resulting from Chinese private business owners participating in politics.

This paper builds on that research by exploring how state versus private ownership and political participation by private entrepreneurs affect access to financing through the growing corporate bond market and its potential economic effect. Our aim is to examine and shed light on how obtaining finance via bond offerings varies based on whether a firm is controlled by private owners or by the state and, more importantly, if

political participation by controlling ultimate owners influences financing of private firms via bond offerings. To the best of our knowledge, this is the first comprehensive study that employs a rigorous empirical analysis on state and private ownership, political participation by private entrepreneurs, and the burgeoning Chinese bond market. Our initial working hypotheses are that SOEs have better access to bond financing and can raise larger amounts of capital in the bond market. We make these hypotheses based on the often-observed phenomenon of discriminatory practice against the private sector in China. We also hypothesize that private firms can overcome some of this discrimination when the ultimate owner participates in high-level politics. This hypothesis is based on the premise that political participation enables entrepreneurs to develop strong political ties, thereby building up political capital that they can then use to obtain favors such as, in this case, preferential access to financing via the bond market.

We also aim to analyze the economic implications these phenomena have for firms in the form of firm investment and market reaction. A priori, it is not clear that access to the bond market would affect firms' investments. Firms without access to capital through bond issuance could shift to alternative financing instead. That is, the source of funding could be limited to the capital structure and would thus not affect investment policy (Modigliani and Miller, 1958). Absent such a shift, access to bond markets may influence investment decisions. Here, we hypothesize that bond offerings result in SOEs worsening their over-investment problems, while it helps remedy inferior access to capital and related levels of under-investment among private firms. We base the first part of this hypothesis on research that has shown that Chinese SOEs often must take on a so-called policy burden, i.e. to make sure certain state objectives are met (Lin et

al., 1998; Lin and Li, 2008; Lin and Tan, 1999). In practice, a policy burden can result in over-investments and additional access to finance via the bond market may therefore exacerbate the problem of over-investment. Previous studies support this argument. For example, Chen et al. (2011) show that state ownership distorts firms' investment behavior and is detrimental to investment efficiency. In addition, SOEs with lower productivity often have ample access to finance to support their activities even if they are suboptimal from an economic perspective. For example, Firth et al. (2008) argue that state-owned banks must support poorly performing SOEs and then fail to monitor them properly, thereby increasing the likelihood of over-investment. Overall, differential treatment of firms based on ownership has resulted in significant distortions in terms of resource allocation in the Chinese economy as found by, among others, Hsieh and Klenow (2009). For private firms, on the other hand, it is typically a lack of capital that hinders development (Allen et al., 2005; Hale and Long, 2011). Under-investment due to lack of access to capital may therefore be alleviated if private firms find more efficient ways to obtain financing via the bond market.

To shed further light on the real effects this has on firm activities, we examine the relationship between access to bond market, type of firm ownership, and research and development (R&D) investments. Hypothetically, access to finance via the bond market can help firms improve their competitiveness as they may be able to engage in investment activities that have long-term positive effects, such as R&D activities. Based on our previous reasoning on access to finance and under- and over-investment, we hypothesize that bond offerings result in a positive effect on R&D investment overall, but that the effect is significantly greater for private firms. We also expect that the effect on R&D investments is significantly larger for private firms controlled by entrepreneurs

who participate in politics compared to other private firms. If these hypotheses are supported by the data, the consequences of discriminatory practices in terms of access to finance have important economic implications as they hold back activities related to innovation at the firm level.

Finally, we hypothesize that the effect of a new bond offering on market performance is negative for SOEs, but positive for private firms with ultimate owners who participate in politics. These hypotheses are linked to our previous discussion on over- and under-investment. SOEs typically exhibit very high investment levels. To further increase investments is likely to lead to a negative effect on firm value, and we expect that this effect is identified by the market. For private firms, on the other hand, a bond offering may help alleviate the challenge of dealing with insufficient capital, which in turn results in private firms being able to operate at a more optimal level of investment. Earlier research has also shown that access to other financing channels is associated with significant increases in market value of private firms in China. For example, Feng et al. (2014) show that private firms controlled by private entrepreneurs who participate in politics exhibit much stronger market returns after their IPO compared to regular private firms.

Our empirical results support all of these hypotheses. We first show that state ownership is positively associated with the likelihood that a firm issues bonds. When we focus on private firms, we find that firms controlled by entrepreneurs who participate in politics are significantly more likely to issue bonds. We also find that state ownership is positively related to the amount firms raise in bond offerings. When we analyze private firms, we find that political participation by the controlling entrepreneur is positively related to the amount of funds raised through bond offerings. These

findings suggest that SOEs have significantly better access to funds via bond offerings and that they are able to raise more funds when they issue bonds compared to private firms. For private firms, political participation helps gaining access to financing via the bond market and makes it possible to raise larger amounts of capital.

When we analyze over- and under-investment, we find that SOEs tend to increase their excess investments after a bond offering. This is not the case for private firms that over-invested before the bond offering. This finding indicates that the governance role of public bonds is generally not effective for SOEs. Instead, the free cash flow from a bond offering worsens their over-investment. For under-invested SOEs, additional financing via a bond offering does not alleviate their suboptimal investment levels. For private firms, on the other hand, previous suboptimal investment levels are alleviated as a result of a bond offering. It thus indicates that constrained access to the bond market leads to under- investment for private firms. Overall, these findings show the importance of improving credit allocation via the bond market as well as how political participation by entrepreneurs can help private firms move closer to an optimal investment level. Finally, we find that bond offerings are associated with a significant negative effect on market value for SOEs after bond offerings. For firms controlled by private entrepreneurs who participate in politics, the opposite holds true as we find that a bond offering on average is followed by these firms outperforming the market.

This study relates to several strands of literature. First, it contributes to the literature on political connections in general, and to a subset of that literature that focuses on political participation in particular. A large body of literature has provided evidence that political connections can be used by firms to gain favors and special treatment, typically resulting in improved firm performance (e.g., Fisman, 2001; Johnson and

Mitton, 2003; Faccio, 2006; Faccio et al., 2006; Claessens et al., 2008; Ferguson and Voth, 2008; Li et al., 2008). More recent studies have focused on how political ties are developed through political participation. An early study by Li et al. (2006) shows that the institutional environment encourages entrepreneurs to participate in politics and that this action can be seen as a response to market failures in transition economies such as China. Feng et al. (2014) find that political participation results in better performance by newly listed firms in China. Similarly, Feng et al. (2015) show that political participation allows entrepreneurial firms to get better access to finance and regulated industries, lower taxes and more government subsidies. Similarly, Johansson and Feng (2016) find that such firms received preferential access to finance during the 2008 stimulus program in China. Moreover, Feng and Johansson (2014) find that firms controlled by entrepreneurs who participate in politics can hold more cash as they face a lower risk of political extraction. In addition to this, there are a few studies that examine political connections and bond markets. Du (2011) finds that political connections are positively related to debt offering amounts and issuer credit ratings, but only in environments characterized by poor information. Ho et al. (2015) find that political connections is positively associated with higher at-issue spreads on corporate bonds, and Schweizer et al. (2017) show that politically connected firms are more likely to issue corporate bonds than other private firms. We contribute to this burgeoning literature in several ways. First, we find that political participation helps dealing with shortage of capital by providing access to public bond offerings and thereby help alleviating significant levels of under-investment in the Chinese private sector. Second, we show that political participation is positively associated with R&D expenditures after public bond offerings, suggesting that political ties enables private firms to expand

their R&D activities. We believe these findings have substantial social-economic implications as political participation represents an explicit commitment and direct involvement in a country's political process. This is perhaps especially important in transition and developing economies, where entrepreneurs are often motivated to participate in politics (e.g. Li et al., 2006).

Second, we contribute to the literature on bond markets, in particular China's emerging corporate bond market which has grown fast in recent years (Allen et al., 2017). While several studies have examined the Chinese government bond market (e.g., Fan and Johansson, 2010; Fan et al., 2012; Luo et al., 2012; Löchel et al., 2016), only a few have analyzed bonds issued by the corporate sector (Pessarossi and Weill, 2013; Klein and Weill, 2015, 2018; Luo et al., 2016; Xu et al., 2017). A few studies have looked at firm ownership and the corporate bond market. Pessarossi and Weill (2013) find that central government ownership is a key determinant of corporate bond issuance, while Klein and Weill (2018) find that state ownership has a positive impact on the value of bond offerings. Our findings of preferential access to public bond offerings for state-controlled firms support previous findings in this literature. More importantly, we show that state ownership is also tied to worsening levels of over-investments and that bond offerings by SOEs is related to negative firm value effects. The global role of the Chinese economy is growing, and its financial markets are developing rapidly. Moreover, the Chinese authorities have shown a clear interest in opening up the country's corporate bond market to foreign investors. A broader understanding of how China's corporate bond market functions and how institutional features influence its development is therefore becoming increasingly important.

In addition, we contribute to the literature on the governance role of debt and the economic consequences of corporate bonds. Economists (Jensen and Meckling, 1976; Jensen, 1986; Grossman and Hart, 1982; Harris and Raviv, 1990) argue that debt can constrain the over- investment by managers due to future payment requirements. However, we find that this is not the case for SOEs in China. Instead, capital via the bond market worsens their over-investment. One plausible explanation for this phenomenon is that a government bailout protects SOEs in case of default. For private firms, access to the bond market reduces the financial constraints and thus alleviates their under-investment problem. Thus, the irrelevance of financing for investments does not apply to private firms. As it affects investment decisions, bond market access has a real effect on firms. Last but not least, we contribute to the literature on corporate innovation, especially on the effect of access to finance on corporate innovation. Financial economists have explored a wide spectrum of firm-, market-, as well as country-level determinants of corporate innovation over the past few decades. We contribute to this literature by discussing a specific driver and financing source of corporate innovation.

The rest of the paper is organized as follows. Section 2 discusses the data and introduces the measure for political participation. Section 3 presents the empirical results and Section 4 concludes the paper.

2 Data

We first use the WIND database to collect data on public bond offerings by listed Chinese firms. Our data on bond offerings cover the period 2006-2016 and include all public bond offerings by firms listed on one of China's stock exchanges. Annual

aggregate data for bond offerings by listed firms are presented in Table 1. The table shows that there has been a steady increase in the amount raised via public bond offerings by listed firms during the sample period. In 2006, as little as 1.138 billion Renminbi (RMB) was raised by listed companies via bond offerings. In 2016, a total of 14.401 billion RMB was raised through the same channel. One reason for the increase is the overall growth in the number of listed companies over these eleven years. Another reason is that the Chinese government has slowly but steadily been promoting the growth of the domestic corporate bond market.

[TABLE 1 HERE]

To get a better understanding of the sample, Panel A in Table 2 shows descriptive statistics for all listed firms during the sample period. In 2006, there were 1,285 firms listed in China. In 2016, the total number of listed firms had increased to 2,258. When we look at ownership, 763 or 59.38 percent of all listed firms in 2006 were controlled by the central or local governments, while 522 or 40.62 percent were controlled by private entrepreneurs. In 2016, the number of SOEs had increased to 957. However, the proportion of listed SOEs to all listed firms had dropped to 42.38 percent. In the same year, there were 1,301 privately controlled firms listed on the Chinese stock exchanges, constituting 57.62 percent of the total number of listed firms. As noted earlier, there was a significant increase in the total number of listed firms between 2006 and 2016 and, as can be seen in this panel, there was also a significant shift in type of ownership.

Panel B of Table 2 provides the distribution of listed firms by industry during the sample period. Most of the firms operate in the manufacturing industry, for which we have a total number of 11,569 firm-year observations. Other notable industries include whole sale and retail (1,365 observations), real estate (1,318 observations), and utilities (936 observations). Columns 2 to 5 provide information on ownership across industries. Most of the industries are relatively evenly balanced between state- and privately controlled firms. However, a few industries stand out. For example, all listed firms in the education sector being controlled by the state and all listed firms in hygienism and social work being controlled by private entrepreneurs.

[TABLE 2 HERE]

Panel A of Table 3 presents the annual number of listed firms under the control of private entrepreneurs. Column 2 shows the number of private firms controlled by an owner who is participating in politics. There are a few previous studies on political participation, including Feng et al. (2014, 2015) and Johansson and Feng (2016). We use a similar approach and define political participation as the controlling entrepreneur (or his or her family members) being a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of the Chinese Communist Party (CCCP). The proportion of firms controlled by politically participating private entrepreneurs to all private firms was low in the beginning of the sample but increased quite significantly towards 2016. One reason for the fast increase in the share of private firms that are controlled by private entrepreneurs who are active in politics is that private entrepreneurs were welcomed into the Chinese

Communist Party (CCP) and politics since the beginning of the 2000s (Feng et al., 2014).

Panel B of Table 3 provides information on the industry distribution of common private firms and private firms controlled by an entrepreneur who is participating in politics. Again, the sample is distributed relatively even across industries with a few exceptions. One such exception is real estate, in which the proportion of private firms controlled by an entrepreneur who participates in politics is much higher (23.69 percent).[2] Other industries with similar but lower share of firms controlled by such entrepreneurs include hotel and catering (17.50 percent) and wholesale and retail (15.65 percent).

[TABLE 3 HERE]

3 Empirical Analysis

3.1 Bond Issue Choice

We begin the empirical analysis by examining the choice to issue bonds. To do this, we look at all the listed firms in our sample and whether they issued bonds in a certain year. We create a dummy variable that equals one if the firm in question issued a bond in year *t* and zero otherwise. Panel A of Table 4 presents the mean and median of bond issue choice with the firm sample divided into SOEs and private firms. Listed SOEs issued bonds in 15.7% of the firm observations, while private firms only issued

[2] Deleting the sample from real estate does not change our results in the following sections. We appreciate the recommendation from an anonymous referee to test this for robustness.

bonds in 9.2%. T-value tests and Wilcoxon-Mann-Whitney tests for differences in the mean and median show that the difference in bond issuance between the two firm samples is significant at the 1% level.

Panel B of Table 4 presents logit regression results with bond issue choice as the dependent variable. The main explanatory variable in the regression is SOE, a dummy variable that equals one if the firm is ultimately owned and controlled by the central or local governments and zero otherwise. To control for other firm-specific characteristics that may drive bond issuance, we include the following variables: *firm size*, *Tobin's Q*, *ROE*, *firm leverage*, *tangibility*, and *largest ownership*.[3] Detailed definitions of the control variables are found in Appendix 2. The first column in the Panel shows the results for an initial regression with only SOE as the dependent variable, while the regression in the second column includes all the control variables. In both cases, SOE is positive and significant at the 1% level, supporting the initial finding that SOEs are significantly more prone to issue bonds. We also use a firm-fixed effect model to control for the unobserved firm characteristics that may endogenously affect the results. Our findings remain qualitatively the same and we therefore leave them out for the sake of brevity.

[TABLE 4 HERE]

[3] The coefficients of these control variables are not shown in the multivariate regressions for the sake of brevity.

3.2 Bond Financing Amount

Next, we examine the amount raised through bond issues. To analyze what determines how much firms raise through bond offerings, we look at two alternative measures: *Log(1+bond)*, which is the natural logarithm of one plus the amount of bond financing for a firm in a certain year in Renminbi (RMB), and *Bond/Assets*, the ratio of bond financing to the firm's total assets. Panel A of Table 5 presents the descriptive statistics for the two measures with the sample once more divided into SOEs and private firms. The mean and median are larger for SOEs for both measures. Tests for differences in the mean and median show that the difference is significant at the 1% level, indicating the bond offerings by SOEs are significantly larger than those carried out by private firms.

Panel B of Table 5 provides multivariate regressions with the two measures for bond offering amounts as the dependent variables. Column 1 presents the results for *Log(1+bond)* with only the key explanatory variable SOE, while Column 2 also include the same set of control variables as in the previous section. While the coefficient for SOE decreases in size when taking the full set of control variables into account, it still remains positive and significant at the 1% level. The results for regressions with Bond/Asset in Columns 3 and 4 are similar, with SOE once more positive and significant at the 1% level. It could be argued that including the full data set of firm observations without taking actual bond offerings into consideration may bias these results. We therefore run additional regressions in which we only include firm observations with bond financing. The results of the regressions for the two measures of bond offering amount in which we include all control variables are presented in

Columns 5 and 6. The key explanatory variable SOE is once more positively significant at the 1% level, support previous findings indicating that SOEs raise larger amounts of capital through bond offerings compared to privately controlled firms.

[TABLE 5 HERE]

3.3 Political Participation and Bond Issue Choice for Private Firms

So far, we have seen that SOEs are more likely to raise funds via bond offerings and that their offerings are larger compared to offerings made by private firms. Next, we examine the potential role of political capital for private firms. To do this, we follow previous studies and look at whether the ultimate owner of the firm in question is politically active (e.g., Feng et al., 2014, 2015, Johansson and Feng, 2016). More specifically, we check if the ultimate owner (most often also the founder of the firm as well as its board chair) or at least one of his or her family members is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC) or the National Congress of the Chinese Communist Party (CCP) at the national or provincial level. We then create *political participation*, a dummy variable that equals one if the ultimate owner is participating in politics by being a member of any of these political bodies and zero otherwise.

Panel A of Table 6 presents descriptive statistics for bond issue choice, this time with the subsample of private firms divided into two groups based on political participation by the ultimate owner. The mean of the dummy variable bond issue choice for firms characterized by an ultimate owner who participates in politics is larger than

the sample of the rest of private firms. The tests for the difference in mean and median show that firms characterized by an ultimate owner who participates in politics is positively significant at the 1% level. Panel B of Table 6 presents multivariate logit regression results with bond issue choice as the dependent variable for the subsample of listed private firms. Column 1 presents results with only the key explanatory variable political participation included in the regression, and Column 2 presents the results for a logit regression that includes the full set of control variables. The coefficient for political participation is positively significant at the 1% level in Column 1. While somewhat smaller in size, its coefficient remains positively significant at the 1% level in Column 2. Political participation is thus a significant determinant of bond issue choice. Overall, the findings in Table 6 suggest that listed firms controlled by an owner who is participating in politics are significantly more likely to issue bonds.

[TABLE 6 HERE]

3.4 Bond Financing Amount for Private Firms and Political Participation

Next, we examine the amount of capital private firms raise through bond offerings. Panel A of Table 7 displays the descriptive characteristics for the two alternative measures of bond offering amount introduced in Section 3.2. Once more the sample is split in two groups, one with firms controlled by an ultimate owner who participates in politics, and one with the remaining private firms. The means of the two measures clearly suggest that the average amount of capital raised through bond offerings is larger for firms controlled by an owner who participates in politics. Tests for differences in

the mean and median in Column 3 show that those firms raise significantly more capital through bond offerings.

Panel B of Table 7 proceeds with multivariate regressions with the two alternative measures of bond financing amount as the dependent value. Here, the key explanatory variable is political participation, and the results in Columns 1-4 clearly show the influence of political capital in the form of the ultimate owner participating in politics. Even when taking the full set of control variables in to account, the coefficient for political participation remains positively significant at the 1% level for both Log(1+bond) and Bond/Assets. We again run separate regressions in which we only include observations in which bond financing was carried out. The results of these regressions are presented in Columns 5 and 6. Once again, the coefficient for political participation is positive and significant at the 1% level. We can thus conclude that political participation by the controlling ultimate owner is positively associated with the amounts listed private firms are able to raise through bond offerings.

[TABLE 7 HERE]

3.5 The Endogeneity Problem of Political Participation

The effect of political participation on public bond financing in Tables 6 and 7 is interesting, but potential endogeneity problems may give cause for concern. For example, the political regime may invite the most capable entrepreneurs or entrepreneurs in firms characterized by high-growth prospects to become members of different political bodies. To control for this alternative explanation, we include Tobin's Q in our estimations. To further alleviate the concern for endogeneity with respect to

political participation, we run two-stage least square regressions in which we first construct a selection model for entrepreneurs and their potential to be invited to participate in politics. In the second-stage regression, we then include predicted political participation as an independent variable. Panel A in Table 8 provides summary statistics for the variables used in the first-stage regression: *CCP*, an indicator for CCP membership; *entrepreneur age*, the entrepreneur's age the year of the public bond financing; *entrepreneur edu*, the entrepreneur's education (ranging from below secondary school to doctorate level); *entrepreneur gender*; *firm age*, the number of years since the firm was established. All these variables may play a role in the political selection process. As shown in Panel A, entrepreneurs who participate in politics are more prone to be members of the CCP. Furthermore, the entrepreneurial educational level is significantly higher in the group of firms controlled by entrepreneurs who also participate in politics. There is no significant difference between the two groups when it comes to entrepreneurial age and gender.

Panel B in Table 8 presents the results of the first- and second-stage regressions with public bond offering as the dependent variable in the second-stage regression. The dependent variables in the second-stage regression are Bond Issue Choice, Log(1+bond), and Bond/Assets, respectively. Supporting the initial results in Panel A, the coefficients for CCP membership and education are both statistically significant and positive in the first stage regression, suggesting that these are important determinants when inviting entrepreneurs to participate in politics. In addition, the results suggest that firm size is also a significant factor in the selection process. Finally, the coefficient for the predicted value of political participation is significant and positive. We also report a number of diagnostics to show the validity of the instrumental variables (IVs). Bound et al. (1995)

show that when IVs are weakly correlated with the endogenous explanatory variable, even a small correlation between the instruments and the error can result in biased estimates and lead to a large inconsistency in the IV estimates. They therefore suggest reporting partial *F*-statistics and R^2 on the instruments in the first stage regression model. We find that the probability of political participation is highly significant, with an *F*-statistics of 31.927 and a partial R^2 of 0.318. Based on the analysis of Stock et al. (2002), these results alleviate our concern for potential weaknesses of the instruments. Since we have multiple instruments for the endogenous variable, we can compute the test of instrument exogeneity using over-identifying restrictions. The Sargan test (Hansen test or J-test) shows that our IVs jointly pass the exogeneity requirement. Finally, the Hausman test strongly rejects the exogeneity of political participation.

Next, we focus on the second-stage regressions. As can be seen in Columns 2-4, the second-stage regression results indicate that political participation remains significantly and positively associated with access to bond market and the size of public bond offerings even after controlling for the endogenous selection of political participation. The two-stage regression analysis thus lends further support for the positive relationship between political participation and public bond offerings and the size of such offerings that were found in the baseline results.

[TABLE 8 HERE]

It is always difficult to find a good instrument variable for a two-stage analysis. To take this into account, we use propensity score matching to conduct an additional robustness test. We identify a sample of control firms with similar propensity of

political participation by their ultimate owners but without actual political participation. If the prediction model is well designed, the difference between the treatment sample and the control sample should be driven by the interest variable. We use the same prediction model as in the first-stage regression in Table 8. Based on the propensity score, we construct our control sample with both calliper matching and kernel matching criteria. The analysis of difference in access to bond market as well as the size of public bond offering is reported in reported in Table 9. Once again, the findings are consistent with the baseline results. That is, firms characterized by owners who participate in politics exhibit preferential access to bond market and obtain more capital via public bond offerings.

[TABLE 9 HERE]

3.6 Post-Issuance Investment

Having established that firm ownership as well as political participation have a significant influence on both the likelihood of bond issuance and the amount of capital issued through bond issues, we now turn to the question of how firms use capital to invest. There is an extensive literature within economics and finance that analyzes firm-level investment decisions (e.g., Hubbard, 1998). To examine firm investing decisions, we follow the approach used in several previous studies. More specifically, we estimate firms' expected investments according to the following regression specification (Richardson, 2006):

$$INV_{i,t} = \beta_1 Tobin's\ Q_{i,t-1} + \beta_2 Firm\ Leverage_{i,t-1} + \beta_3 Cash_{i,t-1} + \beta_4 Firm\ Age_{i,t-1} + \beta_5 Firm\ Size_{i,t-1} + \beta_6 Stock\ Return_{i,t-1} + \beta_7 INV_{i,t-1} + \sum Industry\ Dummies + \sum Year\ Dummies + \varepsilon_{i,t}$$

Here, the dependent variable $INV_{i,t}$ is the new investment of firm *i* in year *t*. This variable is defined as the sum of the net cash for purchasing fixed assets, intangible assets, and other long-term assets, as well as the net cash paid for the acquisition of subsidiaries and other business units divided by total assets at the start of year *t*. Definitions for all explanatory variables are found in Appendix 2.[4] The fitted value from the regression is our estimate of the expected level of new investment for firm *i* in year *t*. The unexplained portion, i.e. the residual from the regression, is then the estimate of the firm's over- or under-investment.

Panel A in Table 10 presents the results of the estimation of firms' normal investment based on the regression above. Having estimated the regression model, we then use the residual to divide the sample in two groups depending on their levels of investment. If a firm has a residual that is greater than zero, it is defined as an over-investing firm and if the residual is smaller than zero, it is an under-investing firm. For the sake of brevity, we do not include descriptive statistics for over- and under-investment among SOEs and private firms. However, it turns out that for the total

[4] When factors such as shareholding structure and corporate transparency are also controlled for in the investment estimation, our findings remain qualitatively the same. We thank a anonymous referee for pointing out the need to check for this.

sample, SOEs are significantly more prone to over-investment, while private firms on average under-invest.[5]

Panel B of Table 10 displays results for regressions with *Excess Investment*, defined as the residual from the regression in Panel A, as the dependent variable. To analyze the effects of firm ownership and bond issuance, we include the variables *SOE* and *Post-bond*, a dummy variable which equals one if the firm issues bonds in year *t*-1 and zero otherwise. We also include the interaction variable between the two, *Post-bond*SOE*. We run regressions on the two subsamples with over- and under-investing firms in the year before they issue bonds, respectively. Only firms that issue bonds at least once in the sample period are included in the regressions. We first run regressions with *SOE*, *Post-bond*, and *Post-bond*SOE* as explanatory variables. To account for the potential effect that previous excess investment and free cash flow may have on firm investment (Jensen, 1986; Fazzari et al., 1988; Richardson, 2006), we also run additional regressions in which we include lagged excess investment and free cash flow as explanatory variables.

Looking first at the over-investment subsample, SOE and Post-bond*SOE are both positively significant at the 5% level. This suggests that for over-investing SOEs, bond financing merely accelerates their over-investment in the following year.

[5] In descriptive statistics for our total firm sample that we leave out for brevity, we find that 64.1% of SOEs are characterized by over-investment, compared to only 38.6% of the private firms. A T-test shows that this difference is significant at the 1% level.

However, bond financing does not accelerate over-investment among private firms that have over-invested in the previous year. For the under-investment sample, the picture is different, with *Post-bond* instead being positively significant at the 5% and 1% level depending on model specification. This indicates that for under-investing private firms, bond financing alleviates their under-investment in the following year. However, bond financing does not alleviate under-investment for SOEs that have under-invested in the last year. Issuing bonds thus has an overall positive effect on private firms as it can help them alleviate under-investment due to limited access to capital, but a negative effect on SOEs as it merely intensifies the problems among those firms that are already over-investing.

But if issuing bonds has a positive effect on under-investing private firms and no negative effect on over-investing private firms, what is the effect of political participation by the ultimate owner of private firms? To answer this question, we estimate new regressions, this time on private firms that issue bonds only. To examine the effect of political participation on investments, we focus on the explanatory variables *Political Participation*, *Post-bond*, and their interaction variable *Post-bond*Political Participation*. The results of the regressions on private firms divided into subsamples characterized by over- and under-investment are presented in Panel C of Table 8. Looking first at the over-investment sample, none of the key explanatory variables are significant, suggesting that political participation does not amplify problems with over-investment among private firms. For under-investing firms, *Post-bond* is, as expected based on the previous results, positive and significant. More importantly, the interaction variable *Post-bond*Political Participation* is positively significant at the 1% level. This suggests that political participation by the ultimate

owner helps private firms that deals with under-investment issues to access financing via the bond market, thereby alleviating at least some of the problem with under-investment.

[TABLE 10 HERE]

3.7 Post-Issuance R&D Investment

Next, we examine the effect of access to the bond market on a real investment activity that can enhance the long-run competitiveness of firms. Specifically, we investigate whether having access to finance via the bond market influences the size of R&D investment. To do this, we first collect data on R&D for all listed firms in the sample. Information on R&D investment is found in different parts of annual reports in China. We therefore examine various annual report items, including: “research and development expenses” and “technological development” in the notes to the financial statements; "development expenditures" in the balance sheets notes; the sections with management discussion and analysis. We collect the information on R&D investment in all of these sections for each firm and year. The sample we examine here begins in 2007 as listed Chinese firms have been required to disclose their R&D activities since then. In the empirical analysis, we only include firms that have issued public bonds at least once in the sample period.

The results are presented in Table 11. Panel A shows that R&D investment increases for both SOEs and private firms after a public bond offering. However, the increase is significantly larger for private firms. Panel B examines whether this holds

up when controlling for other potential factors. The multivariate regressions show that the overall effect of bond offerings is positive and significant at the 1% level. State ownership is negatively associated with R&D investment. In addition, the negative coefficient for the interaction variable *Post-bond*SOE* suggests that state ownership dampens the effect bond offerings have on R&D investment. Next, we look at the potential effect of political participation. Panel C again shows the positive relationship between public bond offerings and subsequent R&D investment for private firms. The effect is positive for both groups of private firms. However, changes to R&D investment after a public bond offering is on average significantly larger for private firms controlled by owners who participate in politics. Panel D confirms this initial finding. The multivariate regression results show that political participation is positively associated with R&D investment after public bond offerings. In addition, the interaction variable Post-bond*Political participation is positive and significant at the 5% level for R&D/Sales and at the 1% level for R&D/Profits, respectively. This indicates that political participation amplifies the positive effect access to finance via bond offerings has on R&D investment.

[TABLE 11 HERE]

3.8 Market Reaction to Bond Financing for SOEs and Private Firms

Given the findings in the previous sections, it could be expected that bond offerings have a significant effect on stock market prices. We examine this potential relationship by looking at the market reaction to bond financing announcements. During the sample period, there was a total of 3,651 announcements for upcoming bond

offerings made by listed firms. Out of these announcements, 2,270 came from SOEs, while the remaining 1,381 came from private firms. To analyze the market's reaction to bond offering announcements, we calculate cumulative abnormal returns (CARs) between the day of the announcement and three trading days after it. To calculate the CARs, we use the tradable value-weighted index of all A-share stocks on the Shanghai and Shenzhen stock markets.

Panel A of Table 9 presents the descriptive statistics of the immediate stock market reaction to bond financing announcements for the two subsamples. The average market reaction for SOEs is -0.13%, while the reaction for private firms is 1.82%. Tests for differences in the mean and median show that the difference between the two subsamples is significant at the 1% level. Panel B of Table 9 presents the results from a multivariate regression with post-announcement CARs as the dependent variable. A battery of standard control variables for stock market returns are included, all of which are defined in detail in Appendix 2. Here, we focus the discussion on the key explanatory variable, *SOE*. The first column presents the results with only SOE as explanatory variable, while the second presents the results when all control variables are included. As can be seen in the two columns, *SOE* is negatively significant at the 1% and 5% level, respectively.

The results in Table 9 show that there is a significant and negative relationship between firm ownership and market reaction after bond offering announcements. The market price for SOEs reacts negatively to an announcement that the firm is raising more funds via a bond offering. This result relates to our previous findings that SOEs tend to over-invest and that accessing financing via bond offerings exacerbates their problems with over-investment, thereby decreasing their market value.

[TABLE 9 HERE]

3.9 Market Reaction to Bond Financing for Private Firms and Political Participation

In the previous section, we saw that private firms on average experience a positive market reaction when they announce an upcoming bond offering. But is there a difference between regular private firms and firms with an ultimate owner who participates in politics? Our previous findings suggest that political participation helps private firms access capital via the bond market and alleviate their under-investment problems. Given this, it could be expected that there is a relationship between political participation by the ultimate owner and market reactions after bond offering announcements. To test this, we examine market reactions in the form of CARs among private firms. We divide the sample of private firms into regular private firms and private firms with an ultimate owner who participates in politics. Out of the 1,381 bond announcements made by private firms during the sample period, 972 came from firms with an ultimate owner who participates in politics, while the remaining 409 came from regular private firms.

Panel A of Table 10 presents the descriptive statistics for CARs for the two subsamples. The three-day CAR for firms with an ultimate owner who participates in politics was 2.16%, while the three-day CAR for regular private firms was 1.03%. Tests for difference in mean and median between the two subsamples show that the market reaction for firms with an ultimate owner who participates in politics is significantly

more positive than for regular private firms. We once more control for potential firm-specific variables that may drive market reactions by estimating multivariate regressions. Panel B of Table 10 presents the OLS regression with CARs as the dependent variable and Political Participation as the key explanatory variable. Again, Column 1 presents results with only Political Participation as explanatory variable and Column 2 presents results when all control variables are included. The coefficient for Political Participation is positively significant in both cases, albeit only at the 10% level. These findings tie well into our earlier results that show that political participation allows for better access to capital via bond offerings and that raising capital via bond offerings helps alleviate under-investments challenges for private firms.

[TABLE 10 HERE]

4 Conclusion

Bond markets can serve as important channels for firms that need to raise capital. During the last decade, the Chinese corporate bond market has increased rapidly in size and importance. In this study, we examine how state versus private ownership and political participation by private entrepreneurs affect access to financing through the Chinese corporate bond market and its effects on firm investment and market value. Using a complete data set of all bond issuances by Chinese listed firms during 2006-2016, we find that state ownership is positively related to the likelihood that a firm issues bonds. We then show that firms controlled by ultimate owners who participate in politics are significantly more likely to issue bonds. Our results also indicate that

state ownership is positively associated with the amount firms raise in bond offerings. For private firms, political participation by the ultimate owner is positively associated with the amount of funds raised through bond offerings. Our findings indicate that SOEs have better access to funds via the bond offerings and that they are able to raise more funds in their offerings compared to private firms. Private firms, on the other hand improve their access to financing via the bond market and promotes the ability to raise larger amounts of funds when their ultimate owner participate in politics.

There are also important economic implications of the way the Chinese bond market and access to it function. Our results show that SOEs that are characterized by over-investment tend to increase their excess investments after a bond offering. This is not the case for private firms that over-invested before their bond offering. For SOEs that are characterized by under-investment, bond offerings do not alleviate their suboptimal investment levels. For under-investing private firms, existing suboptimal investment levels are alleviated as a result of bond offerings. We also find important long-term implications of these phenomena when we take a closer look at R&D investment. Access to finance via the public bond market is positively associated with R&D investment. More importantly, the increase in R&D investment is significantly larger for private firms than for SOEs. It is also significantly larger for private firms controlled by an owner who participates in politics than for other private firms. Finally, we show that bond offerings are associated with a significant decline in market value for SOEs. For firms controlled by an ultimate owner who participates in politics, we find that the opposite holds true since a bond offering by these firms is followed by their stocks outperforming the market.

We believe that these findings highlight the need to improve the existing credit allocation via the bond market. They also show how political participation by entrepreneurs functions as an important tool that private firms can utilize in an effort to move closer to an optimal investment level.

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Table 1. Public Bond Offerings in China

This table presents public bond offerings by listed Chinese firms used in this study.

	Amount Raised in 100 Million RMB
2006	1138.47
2007	1528.78
2008	2171.35
2009	4121.56
2010	3241.25
2011	4749.50
2012	6701.95
2013	5674.16
2014	7035.68
2015	12443.81
2016	14401.12

Table 2. Sample of SOEs and Private Firms

Panel A: Distribution by Year

This panel presents the annual distribution of SOEs and Private Firms during 2006-2016. SOEs are firms which are ultimately owned and controlled by the central or local governments in China. Private firms are firms which are ultimately owned and controlled by private entrepreneurs.

	Sample	SOEs		Private Firms	
		Number	Percentage	Number	Percentage
2006	1285	763	59.38%	522	40.62%
2007	1349	790	58.56%	559	41.44%
2008	1453	826	56.85%	627	43.15%
2009	1519	842	55.43%	677	44.57%
2010	1585	859	54.20%	726	45.80%
2011	1807	898	49.70%	909	50.30%
2012	1961	911	46.46%	1050	53.54%
2013	2043	928	45.42%	1115	54.58%
2014	2057	932	45.31%	1125	54.69%
2015	2130	944	44.32%	1186	55.68%
2016	2258	957	42.38%	1301	57.62%
Total	19447	9650	49.62%	9797	50.38%

Table 2. Sample of SOEs and Private Firms

Panel A: Distribution by Industry

This panel presents the industry distribution of SOEs and Private Firms during 2006-2016. SOEs are firms which are ultimately owned and controlled by the central or local governments in China. Private firms are firms which are ultimately owned and controlled by private entrepreneurs.

CSRC industry	Sample	SOEs		Private Firms	
		Number	Percentage	Number	Percentage
Agriculture, forestry, livestock farming and fishery	322	146	45.34%	176	54.66%
Mining	625	426	68.16%	199	31.84%
Manufacturing	11569	4877	42.16%	6692	57.84%
Utilities	936	792	84.62%	144	15.38%
Construction	560	327	58.39%	233	41.61%
Wholesale and retail	1365	777	56.92%	588	43.08%
Transportation	764	663	86.78%	101	13.22%
Hotel and Catering industry	113	73	64.60%	40	35.40%
Information transmission, software and information technology service	744	233	31.32%	511	68.68%
Real estate	1318	668	50.68%	650	49.32%
Leasing and commerce service	262	126	48.09%	136	51.91%
Scientific research and technology service	75	36	48.00%	39	52.00%
Water conservancy, environment and Public facilities management	200	145	72.50%	55	27.50%
Education	22	22	100.00%	0	0.00%
Hygienism and social work	44	0	0.00%	44	100.00%
Culture, sports and entertainment	275	185	67.27%	90	32.73%
Comprehensive	253	154	60.87%	99	39.13%
Total	19447	9650	49.62%	9797	50.38%

Table 3. Sample of Private Firms and Political Participation
Panel A: Distribution by Year
This panel presents the annual distribution of private firms, distinguished by political participation. Political participation is defined as the controlling entrepreneur (or his or her family members) being a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of the Chinese Communist Party (CCCP).

Year	Private Firms	Private Firms with Political Participation		Private Firms without Political Participation	
		Number	Percentage	Number	Percentage
2006	522	46	8.81%	476	91.19%
2007	559	51	9.12%	508	90.88%
2008	627	76	12.12%	551	87.88%
2009	677	87	12.85%	590	87.15%
2010	726	109	15.01%	617	84.99%
2011	909	130	14.30%	779	85.70%
2012	1050	159	15.14%	891	84.86%
2013	1115	179	16.05%	936	83.95%
2014	1125	186	16.53%	939	83.47%
2015	1186	183	15.43%	1003	84.57%
2016	1301	188	14.45%	1113	85.55%
Total	9797	1394	14.23%	8403	85.77%

Table 3. Sample of Private Firms and Political Participation
Panel B: Distribution by Industry
This panel presents the industry distribution of private firms, distinguished by political participation. Political participation is defined as the controlling entrepreneur (or his or her family members) being a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of Chinese Communist Party (CCCP).

CSRC industry	Private Firms	Private Firms with Political Participation		Private Firms without Political Participation	
		Number	Percentage	Number	Percentage
Agriculture, forestry, livestock farming and fishery	176	22	12.50%	154	87.50%
Mining	199	18	9.05%	181	90.95%
Manufacturing	6692	983	14.69%	5709	85.31%
Utilities	144	19	13.19%	125	86.81%
Construction	233	15	6.44%	218	93.56%
Wholesale and retail	588	92	15.65%	496	84.35%
Transportation	101	10	9.90%	91	90.10%
Hotel and Catering industry	40	7	17.50%	33	82.50%
Information transmission, software and information technology service	511	43	8.41%	468	91.59%
Real estate	650	154	23.69%	496	76.31%
Leasing and commerce service	136	10	7.35%	126	92.65%
Scientific research and technology service	39	2	5.13%	37	94.87%
Water conservancy, environment and Public facilities management	55	6	10.91%	49	89.09%
Hygienism and social work	44	5	11.36%	39	88.64%
Culture, sports and entertainment	90	6	6.67%	84	93.33%
Comprehensive	99	2	2.02%	97	97.98%
Total	9797	1394	14.23%	8403	85.77%

Table 4. Bond Issue Choice of SOEs and Private Firms

Panel A: Univariate Tests

This panel reports the descriptive statistics of bond issue choice for SOEs and private firms during 2006-2016. Bond issue choice is a dummy variable which equals one if firm *i* issues bonds in year *t* and zero otherwise. The mean values of bond issue choice are provided for the different firm samples and their corresponding median values are also given in parenthesis. T-tests and Wilcoxon-Mann-Whitney tests are provided for the comparison of the mean and median of bond issue choice between SOEs and private firms. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	SOEs	**Private firms**	**T-Value (Wilcoxon-Mann-Whitney tests)**
Bond issue choice	0.157	0.092	13.79***
	(0.000)	(0.000)	(13.72***)

Table 4. Bond Issue Choice of SOEs and Private Firms
Panel B: Multivariate Tests

This panel reports logit regression results for SOE and bond issue choice. The dependent variable is bond issue choice, which equals one if firm *i* issues bonds in year *t* and zero otherwise. The main explanatory variable is SOE, which equals on if the firm is ultimately owned and controlled by the central or local governments in China and zero otherwise. All control variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and Chi-square statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	Bond Issue Choice	
	(1)	**(2)**
SOE	0.518***	0.159***
	(115.426)	(8.02)
Firm size		0.986***
		(1172.73)
Tobin's Q		-0.593***
		(351.752)
ROE		0.793***
		(15.73)
Firm leverage		0.941***
		(51.63)
Tangibility		0.489***
		(9.65)
Largest ownership		-1.146***
		(47.40)
Intercept	-3.629***	-23.537***
	(276.06)	(1273.41)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Listing board dummies	Yes	Yes
Observations	19447	19447
Pseudo R^2	0.271	0.396

Table 5. Bond Financing Amount of SOEs and Private Firms
Panel A: Univariate Tests

This panel reports the descriptive statistics of bond financing amount for SOEs and private firms during 2006-2016. Log(1+bond) is the natural logarithm of one plus the RMB amount of bond financing for firm *i* in year *t*. Bond/Assets is the ratio of RMB amount of bond financing to the firm's total assets. The mean values of bond financing amount are provided for different samples and their corresponding median values are given in parenthesis. T-tests and Wilcoxon-Mann-Whitney tests are provided for the comparison of the mean and median of bond financing amount between SOEs and private firms. All continuous variables are winsorized at the top and bottom 1%. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	SOEs	**Private firms**	**T-test (Wilcoxon-Mann-Whitney tests)**
Log(1+bond)	3.285	1.872	14.47***
	(0.000)	(0.000)	(14.46***)
Bond/Assets	0.014	0.010	7.23***
	(0.000)	(0.000)	(13.08***)

Table 5. Bond Financing Amount of SOEs and Private Firms
Panel B: Multivariate Tests

This panel reports OLS regression results for SOE and bond financing amount during 2006-2016. Log(1+bond) is the natural logarithm of one plus the RMB amount of bond financing for firm *i* in year *t*. Bond/Assets is the RMB amount of bond financing over total assets. Bond/Assets is the ratio of RMB amount of bond financing to total assets. The dependent variables are log(1+bond) in (1), (2) and (5), bond/Assets in (3), (4) and (6), respectively. The key explanatory variable is SOE, which equals on if the firm is ultimately owned and controlled by the central or local governments in China and zero otherwise. All control variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and *t* statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively. The total sample is used in regressions (1)-(4), and only observations with bond financing are used in regressions (5) and (6).

	Total sample				**Subsample with bond financing**	
	Log(1+bond)		**Bond/Assets**		**Log(1+bond)**	**Bond/Assets**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
SOE	1.141***	0.275***	0.003***	0.002***	0.070***	0.005**
	(11.43)	(3.76)	(4.74)	(3.49)	(2.95)	(2.00)
Firm size		2.379***		0.010***	0.893***	0.013***
		(43.94)		(29.10)	(47.80)	(9.18)
Tobin's Q		-0.494***		-0.002***	-0.218***	-0.010***
		(-21.14)		(-13.66)	(-13.71)	(-8.95)
ROE		0.078		0.003**	0.632***	0.048***
		(0.34)		(2.07)	(2.75)	(2.83)
Firm leverage		2.687***		0.007***	0.791***	0.093***
		(15.74)		(6.70)	(7.00)	(11.21)
Tangibility		1.380***		0.005***	0.455***	0.001
		(4.73)		(3.00)	(4.65)	(0.15)
Largest ownership		-1.818***		-0.010***	0.239	-0.002
		(-5.84)		(-5.40)	(1.35)	(-0.26)
Intercept	-0.385	-49.718***	0.004	-0.190***	0.169	0.445***
	(-1.03)	(-42.47)	(1.62)	(-26.98)	(0.40)	(14.45)

Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Listing board dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19447	19447	19447	19447	2415	2415
Adjusted R^2	0.080	0.171	0.031	0.083	0.204	0.219

Table 6. Bond Issue Choice for Private Firms and Political Participation
Panel A: Univariate Tests

This panel reports the descriptive statistics of bond issue choice for private firms with and without political participation during 2006-2016. Bond issue choice is a dummy variable which equals one if firm *i* issue bond in year *t*, and zero otherwise. The mean values of bond issue choice are provided for different samples and their corresponding median values are also given in parenthesis. T-tests and Wilcoxon-Mann-Whitney tests are provided for the comparison of the mean and median of bond issue choice between private firms with and without political participation. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	Political participation		**T-Value**
	Yes	**No**	**(Wilcoxon-Mann-Whitney tests)**
Bond issue choice	0.156	0.082	8.81***
	(0.000)	(0.000)	(8.77***)

Table 6. Bond Issue Choice for Private Firms and Political Participation
Panel B: Multivariate Tests

This panel reports logit regression results for political participation and bond issue choice for private firms. The dependent variable is bond issue choice, a dummy variable which equals one if firm *i* issue bond in year *t*, and zero otherwise. The key explanatory variable is political participation, which equals one if the controlling entrepreneur (or his or her family members) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of the Chinese Communist Party (CCCP), and zero otherwise. All control variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and Chi-square statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	Bond Issue Choice	
	(1)	**(2)**
Political participation	0.663***	0.368***
	(56.89)	(13.49)
Firm size		1.336***
		(603.56)
Tobin's Q		-0.553***
		(166.11)
ROE		0.353
		(1.08)
Firm leverage		0.828***
		(14.46)
Tangibility		0.759 ***
		(7.11)
Largest ownership		-0.779***
		(8.63)
Intercept	-3.365***	-30.894
	(94.31)	(654.83)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Listing board dummies	Yes	Yes
Observations	9797	9797
Pseudo R^2	0.315	0.429

Table 7. Bond Financing Amount for Private Firms and Political Participation
Panel A: Univariate Tests

This panel reports the descriptive statistics of bond financing amount for private firms with and without political participation during 2006-2016. Log(1+bond) is the natural logarithm of one plus the RMB amount of bond financing for firm *i* in year *t*. Bond/Assets is the ratio of RMB amount of bond financing over the firm's total assets. The mean values of bond financing amount are provided for the different samples and their corresponding median values are given in parenthesis. T-tests and Wilcoxon-Mann-Whitney tests are provided for the comparison of the mean and median of bond financing amount between private firms with and without political participation. All continuous variables are winsorized at the top and bottom 1%. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	Political Participation		**T-test**
	Yes	**No**	**(Wilcoxon-Mann-Whitney Test)**
Log(1+bond)	3.202	1.654	9.01***
	(0.000)	(0.000)	(8.93***)
Bond/Assets	0.017	0.009	7.04***
	(0.000)	(0.000)	(8.72***)

Table 7. Bond Financing Amount for Private Firms and Political Participation
Panel B: Multivariate Tests

This panel reports the OLS regression results about the effect of political participation on bond financing amount for private firms during 2006-2016. Log(1+bond) is the natural logarithm of one plus the RMB amount of bond financing for firm *i* in year *t*. Bond/Assets is the ratio of RMB amount of bond financing over the firm's total assets. The dependent variables are log(1+bond) in (1), (2) and (5), bond/Assets in (3), (4) and (6), respectively. The independent variable is political participation, which equals one if the controlling entrepreneur (or his or her family members) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of Chinese Communist Party (CCCP), and zero otherwise. All other variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and *t* statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively. The total sample is used in (1)-(4), and only observations with bond financing are used in (5) and (6).

	Total sample				Subsample with bond financing	
	Log(1+bond)		Bond/Assets		Log(1+bond)	Bond/Assets
	(1)	(2)	(3)	(4)	(5)	(6)
Political participation	1.398***	0.730***	0.007***	0.004***	0.084***	0.003***
	(8.15)	(4.47)	(6.40)	(3.48)	(4.24)	(5.12)
Firm size		2.354***		0.012***	0.786***	0.012***
		(30.99)		(23.39)	(20.39)	(3.74)
Tobin's Q		-0.373***		-0.002***	-0.131***	-0.008***
		(-14.82)		(-9.67)	(-6.83)	(-5.35)
ROE		-0.124		0.001	1.514***	0.037
		(-0.47)		(0.15)	(3.53)	(1.08)
Firm leverage		2.173***		0.008***	0.585***	0.100***
		(11.47)		(6.20)	(3.19)	(6.75)
Tangibility		1.084***		0.004	0.325*	-0.014
		(2.78)		(1.55)	(1.82)	(-0.98)
Largest ownership		-1.563***		-0.008***	0.041	0.006

		(-4.01)		(-3.04)	(0.25)	(0.47)
Intercept	0.897**	-48.264***	0.008**	-0.236***	2.895***	0.447***
	(1.96)	(-29.41)	(2.56)	(-21.73)	(3.44)	(6.60)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Listing board dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9797	9797	9797	9797	902	902
Adjusted R^2	0.038	0.144	0.023	0.083	0.509	0.173

Table 8. Two-stage Regressions for Political Participation and Public Bond Offerings

Panel A: Summary Statistics for Instrumental Variables

In this panel, CCP is a dummy variable that equals one if the entrepreneur is a member of the Chinese Communist Party and zero otherwise. Entrepreneur Age is the entrepreneur's age in the IPO year. Entrepreneur Edu is the entrepreneur's educational background, set to 5 for a doctoral degree, 4 for a master degree, 3 for a bachelor degree, 2 for a junior college degree, 1 for a secondary technical school degree, and 0 otherwise. Entrepreneur Gender is set to one for men and zero for women. Firm Age is the number of years since the firm was founded. All continuous variables are winsorized at the top and bottom 5%. T-tests and Wilcoxon-Mann-Whitney tests are provided for the comparison of the mean and median of private firms with and without political participation. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	Political participation			No political participation		
	N	Mean	Median	N	Mean	Median
CCP	1394	0.689***	1.000***	8403	0.095	0.000
Entrepreneur Age	1394	49.176	48.000	8403	50.786	49.000
Entrepreneur Edu	1394	3.981***	4.000***	8403	2.886	3.000
Entrepreneur Gender	1394	0.981	1.000	8403	0.892	1.000
Firm Age	1394	5.502	5.175	8403	5.397	5.076

Table 8. Two-stage Regressions for Political Participation and Public Bond Offerings (continued)

Panel B: Multivariate Test

This panel presents the two-stage regression results of political participation on public bond offerings. Predicted political participation is the predicted probability of political participation based on the estimation in the first-stage model. Column (2) analyzes access to the bond market, and the dependent variables in the second stage models are Bond issue choice, which is a dummy variable that equals one if firm *i* issues bonds in year *t*, and zero otherwise. Column (3) and (4) examines the size of bond financing, and the dependent variables in the second stage models are Log(1+bond) and Bond/Assets, respectively. The lower part of the panel presents the partial *F*-statistic and the partial R^2 from the first stage regression and the values for the two specification tests (the test of over-identifying restrictions using Sargan test and the Hausman test).

	First stage	Second Stage		
	Political participation	Bond Issue Choice	Log(1+bond)	Bond/Assets
	(1)	(2)	(3)	(4)
Predicted political participation		0.481*** (21.05)	0.851*** (6.94)	0.006*** (5.91)
CCP	3.081*** (53.27)			
Entrepreneur Age	-0.016 (0.82)			
Entrepreneur Edu	1.172*** (8.91)			
Entrepreneur Gender	2.286 (1.28)			
Firm Age	1.075 (0.93)			
Firm size	1.386*** (7.94)	1.295*** (417.98)	2.354*** (30.99)	0.010*** (18.79)
Tobin's Q	-0.028 (0.91)	-0.417*** (120.64)	-0.519*** (-11.04)	-0.002*** (-6.28)
ROE	-0.491 (0.28)	0.453 (1.38)	-0.113 (-0.84)	-0.002 (0.47)
Firm leverage	1.491 (1.25)	0.704*** (12.93)	2.006*** (6.48)	0.006*** (5.38)
Tangibility	0.227 (0.84)	0.585 *** (5.70)	0.869*** (3.51)	0.005 (1.08)
Largest ownership	-7.543*** (8.21)	-0.636*** (7.49)	-1.371*** (-2.94)	-0.009*** (-4.36)
Intercept	Yes	-37.862 (487.05)	-59.397*** (-32.70)	-0.258*** (-25.48)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes

Listing board dummies	Yes	Yes	Yes	Yes
N	9797	9797	9797	9797
Adjusted/Pseudo R^2	0.429	0.486	0.175	0.095
Partial F-statistic:	31.927			
First Stage Partial R^2:	0.318			
First Stage Over-identifying Restrictions		1.071	0.987	1.201
Hausman test		38.654	24.072	22.347

Table 9. Propensity score matching method for effects of political participation on public bond offering

This table presents average treatment effects, i.e. the difference between outcomes of treated and control firms with similar propensity scores. The propensity score is estimated using the prediction model in the first stage as seen in Table 8. "Caliper matching" presents the treatment effect using caliper matching with a caliper of 0.05. "Kernel matching" gives the treatment effect using kernel matching. *T*-statistics are calculated using bootstrapping. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	Caliper matching	Kernel matching
Bond Issue Choice	0.039***	0.032***
	(3.78)	(2.97)
Log(1+bond)	1.409***	1.397***
	(7.82)	(8.91)
Bond/Assets	0.006***	0.006***
	(3.67)	(4.18)

Table 10. Post-Issuance Investment
Panel A. Estimating Normal Investment
This panel presents the estimation of firms' normal investment using Richardson (2006) methodology. The dependent variable is $INV_{i,t}$, new investments in year *t*, defined as the sum of the net cash for purchasing fixed assets, intangible assets and other long-term assets, and the net cash paid for the acquisition of subsidiaries and other business units divided by total assets at the start of the year *t*. The explanatory variables include *Tobin's Q*, calculated as the sum of total market value and total net liabilities divided by total assets at the end of the year *t-1*; *Firm leverage*, measured as the ratio of total liabilities to total assets at the end of the year *t-1*; *Cash*, measured as the sum of the cash and cash equivalent divided by total assets at the end of the year *t-1*; *Firm age*, measured as the number of years since a firm went public at the endof the year *t-1*; *Log(assets)*, measured as the natural logarithm of total assets at the end of the year *t-1*; *Stock return*, the stock returns over year *t-1*, i.e. the change in market value of the firm before investment; INV_{t-1}, new investments in year *t*-1. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	Dependent variable: $INV_{i,t}$
Tobin's Q	0.001**
	(2.30)
Firm leverage	-0.053***
	(-11.26)
Cash	0.016***
	(3.56)
Firm age	-0.003***
	(-10.49)
Log(assets)	0.010***
	(8.98)
Stock return	0.004**
	(2.06)
$INV_{i,t-1}$	0.016***
	(4.23)
Intercept	-0.133***
	(-4.73)
Year dummies	Yes
Industry dummies	Yes
Listing board dummies	Yes
Observations	19447
Adjusted R^2	0.340

Table 10. Post-Issuance Investment

Panel B. Bond Financing and Over- or Under-investment by SOEs and Private Firms

This panel presents the OLS regression results on how bond financing affects the investment behavior for SOEs and private firms. The dependent variable is *Excess investment* $_t$, which is the residual obtained from the regression model in Panel A of Table 7. The explanatory variables include *SOE*, a dummy variable which equals on if the firm is ultimately owned and controlled by the central or local governments in China, and zero otherwise; *Post-bond*, a dummy variable which equals one if the firm issues bonds in year *t*-1 and zero otherwise; *Post-bond*SOE*, the interaction term of *Post-bond* and *SOE*; Control variables are *Excess investment* $_{t-1,}$ which is used to control for the possibility of investment persistence, and *Free cash flow*, defined as cash flow from operations less capital expenditure, divided by total assets. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively. The over-investment subsample in (1) and (2) refers to observations for which excess investment for firm *i* in year *t*-1 is larger than zero. The under-investment subsample in (3) and (4) refers to observations for which excess investment for firm *i* in year *t*-1 is less than zero.

	Dependent Variable: *Excess investment* $_{i,t}$			
	Over-investment Subsample		**Under-investment Subsample**	
	(1)	**(2)**	**(3)**	**(4)**
Post-bond*SOE	0.00034**	0.00030**	0.00002	0.00001
	(3.80)	(4.11)	(1.10)	(0.63)
SOE	0.00013**	0.00010**	0.00006	0.00004
	(2.17)	(2.04)	(0.84)	(1.21)
Post-bond	0.00004	0.00002	0.00011**	0.00017***
	(1.04)	(1.35)	(2.32)	(3.29)
Excess investment $_{i,t-1}$		0.10765***		0.08016***
		(5.12)		(7.33)
Free cash flow		0.00256**		0.00231**
		(2.27)		(11.38)
Intercept	-0.01986***	-0.03039***	-0.02876***	-0.03039***
	(-12.97)	(-9.43)	(3.29)	(-9.43)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Listing board dummies	Yes	Yes	Yes	Yes
Observations	4654	4654	3826	3826
Adjusted R^2	0.257	0.296	0.183	0.207

Table 10. Post-Issuance Investment
Panel C. Bond Financing and Over- or Under-investment by Private Firms, Distinguished by Political Participation.

This panel presents OLS regression results for bond financing and investment behavior of private firms. The dependent variable is *Excess investment* $_{i,t}$, which is the residual obtained from the regression model in Panel A of Table 7. The explanatory variables include *Political participation*, a dummy variable which equals one if the controlling entrepreneur (or his or her family members) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of the Chinese Communist Party (CCCP), and zero otherwise; *Post-bond*, a dummy variable which equals one if the firm issues bonds in year *t*-1 and zero otherwise; *Post-bond*Political participation*, the interaction term of *Post-bond* and *Political participation*. Control variables include *Excess investment* $_{i,t-1}$, which is used to control for the possibility of investment persistence, and *Free cash flow*, defined as cash flow from operations less capital expenditure, divided by total assets. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively. The over-investment subsample in (1) and (2) refers to observations for which excess investment for firm *i* in year *t*-1 is larger than zero. The under-investment subsample in (3) and (4) refers to observations for which excess investment for firm *i* in year *t*-1 is less than zero.

	Dependent Variable: *Excess investment* $_{i,t}$			
	Over-investment subsample		**Under-investment subsample**	
	(1)	**(2)**	**(3)**	**(4)**
Post-bond*Political participation	0.00012	0.00009	0.0011***	0.00018***
	(0.71)	(0.49)	(3.49)	(3.14)
Political participation	0.00026	0.00014	0.00032	0.00025
	(0.39)	(0.52)	(0.37)	(0.31)
Post-bond	0.00011	0.00010	0.00016**	0.00019**
	(0.12)	(0.29)	(2.08)	(2.27)
Excess investment $_{t-1}$		0.09182**		0.00581***
		(2.53)		(3.16)
Free cash flow		0.00164*		0.00108***
		(1.71)		(3.54)
Intercept	-0.01271***	-0.04682***	-0.06782	-0.05608**
	(-4.60)	(-3.27)	(-1.25)	(-2.04)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Listing board dummies	Yes	Yes	Yes	Yes
Observations	1318	1318	2299	2299
Adjusted R^2	0.267	0.295	0.330	0.358

Table 11. Post-Issuance R&D investment
Panel A: Univariate Tests
This panel presents descriptive statistics for R&D investment of SOEs and private firms, respectively. The SOEs sample is composed of SOE firms controlled by the central or local governments in China. The private firm sample is composed of firms controlled by private entrepreneurs. *R&D/SALES (%)* is the ratio of three-year averaged R&D investment over corresponding sales after access to the bond market. *R&D/PROFITS (%)* is the ratio of three-year averaged R&D over corresponding profits (net income) after access to the bond market. ***, ** and * denote significance for the difference between the two samples at 1%, 5%, and 10%, respectively.

	SOEs	**Private Firms**	**T-Value (Wilcoxon-Mann-Whitney tests)**
R&D/SALES (%)	0.304%	0.743%	18.96***
R&D/PROFITS (%)	0.165%	0.305%	21.07***

Table 11. Post-Issuance R&D investment
Panel B: Multivariate Tests

This panel presents OLS regression results for SOEs and R&D investment. The dependent variables are *R&D/SALES (%)* in column (1) and (2), and *R&D/PROFITS* in column (3) and (4), respectively. The explanatory variables include *SOE*, a dummy variable which equals on if the firm is ultimately owned and controlled by the central or local governments in China, and zero otherwise; *Post-bond*, a dummy variable which equals one if the firm issues bonds in year *t*-1 and zero otherwise; *Post-bond*SOE*, the interaction term of *Post-bond* and *SOE*. All control variables are defined in Appendix 2. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	R&D investment			
	R&D/SALES (%)		*R&D/PROFITS (%)*	
	(1)	(2)	(3)	(4)
Post-bond*SOE	-0.094***	-0.056***	-0.065***	-0.031***
	(-3.71)	(-3.20)	(-4.59)	(-3.20)
SOE	-0.124**	-0.106*	-0.105**	-0.112*
	(-2.16)	(-1.91)	(2.42)	(1.83)
Post-bond	0.245***	0.206***	0.194***	0.173***
	(5.60)	(4.37)	(3.97)	(3.17)
Firm Size		0.099***		0.053***
		(6.01)		(6.87)
Tobin's Q		0.051***		0.016***
		(4.92)		(3.32)
ROE		0.258***		0.047
		(2.61)		(2.02)
Leverage		-0.048		-0.033
		(-0.70)		(-1.03)
Cash		0.684***		0.337***
		(7.60)		(7.94)
Largest ownership		-0.572***		-0.242***
		(-5.92)		(-5.30)
Intercept	0.309	0.247	0.298	0.180
	(0.67)	(1.12)	(1.34)	(0.95)
Listing board dummies	Yes	Yes	Yes	Yes
Observations	8598	8598	8598	8598
Adjusted R^2	0.187	0.224	0.203	0.240

Table 11. Post-Issuance R&D investment
Panel C: Univariate Tests

This panel presents descriptive statistics for R&D investment of private firms with and without political participation. *R&D/SALES (%)* is the ratio of three-year averaged R&D investment over corresponding sales after access to the bond market. *R&D/PROFITS (%)* is the ratio of three-year averaged R&D over corresponding profits (net income) after access to the bond market. ***, ** and * denote significance for the difference between the two samples at 1%, 5%, and 10%, respectively.

	Political participation		**T-Value**
	Yes	**No**	**(Wilcoxon-Mann-Whitney tests)**
R&D/SALES (%)	0.897%	0.601%	12.85***
R&D/PROFITS (%)	0.438%	0.217%	11.91**

Table 11. Post-Issuance R&D investment
Panel D: Multivariate Tests

This panel presents OLS regression results for SOEs and R&D investment. The dependent variables are *R&D/SALES (%)* in column (1) and (2), and *R&D/PROFITS* in column (3) and (4), respectively. The explanatory variables include *Political participation*, a dummy variable which equals one if the controlling entrepreneur (or his or her family members) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of the Chinese Communist Party (CCCP), and zero otherwise; *Post-bond*, a dummy variable which equals one if the firm issues bonds in year *t*-1 and zero otherwise; *Post-bond*Political participation*, the interaction term of *Post-bond* and *Political participation*. All control variables are defined in Appendix 2. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	R&D investment			
	R&D/SALES (%)		*R&D/PROFITS (%)*	
	(1)	(2)	(3)	(4)
Post-bond* Political participation	0.107**	0.098**	0.063***	0.049***
	(2.32)	(2.17)	(5.84)	(4.52)
Political participation	0.061**	0.065*	0.019**	0.014*
	(2.23)	(1.84)	(2.08)	(1.77)
Post-bond	0.152***	0.143**	0.092***	0.081***
	(3.90)	(2.35)	(4.25)	(3.39)
Firm Size		0.189***		0.108***
		(5.75)		(7.33)
Tobin's Q		0.046***		0.010
		(3.10)		(1.56)
ROE		0.134		0.090
		(0.81)		(1.22)
Leverage		-0.092		0.025
		(-0.93)		(0.56)
Cash		0.677***		0.216***
		(3.97)		(2.82)
Largest ownership		-0.563**		-0.181**
		(-3.37)		(-2.42)
Intercept	-1.895***	-1.419*	-1.607***	-1.172***
	(-2.86)	(-1.78)	(-2.95)	(-3.28)
Listing board dummies	Yes	Yes	Yes	Yes
Observations	3720	3720	3720	3720
Adjusted R^2	0.240	0.276	0.285	0.306

Table 12. Market Reaction to Bond Financing for SOEs and Private Firms
Panel A: Univariate Tests

This panel presents descriptive statistics for the immediate stock market reaction to bond financing announcements of SOEs and private firms, respectively. The SOEs sample is composed of SOE firms controlled by the central or local governments in China. The private firm sample is composed of firms controlled by private entrepreneurs. *CARs[0,3]* is the cumulative abnormal return from the bond announcement until three trading days after it. The market return is measured as the tradable value-weighted index of all A-share stocks in the Shanghai and Shenzhen security markets. All variables are winsorized at top and bottom 1%. ***, ** and * denote significance for the difference between the two samples at 1%, 5%, and 10%, respectively.

	SOEs	**Private Firms**	**T-Value (Wilcoxon-Mann-Whitney tests)**
CARs[0, 3]	-0.130%	1.821%	3.98***
	(-0.258%)	(1.026%)	(2.70***)

Table 12. Market Reaction to Bond Financing for SOEs and Private Firms
Panel B: Multivariate Tests

This panel presents OLS regression results for SOEs and *CARs[0, 3]*. The dependent variable is *CARs[0,3]*, which is the cumulative abnormal return from the bond announcement until three trading days after it. The market return is measured as the tradable value-weighted index of all A-share stocks in the Shanghai and Shenzhen security markets. The key explanatory variable is *SOE*, which equals on if the firm is ultimately owned and controlled by the central or local governments in China, and zero otherwise. All control variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	CARs[0, 3]	
	(1)	**(2)**
SOE	-0.011***	-0.008**
	(-3.04)	(-2.28)
Bond size		-0.001
		(-0.47)
Firm size		-0.004**
		(-2.52)
Tobin's Q		0.001
		(0.73)
ROE		0.012
		(0.56)
Firm leverage		0.019
		(0.80)
Tangibility		-0.017*
		(-1.83)
Largest ownership		0.010
		(1.11)
Intercept	0.008	0.089**
	(1.52)	(2.37)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Listing board dummies	Yes	Yes
Type of bond dummies	Yes	Yes
Observations	3651	3651
Adjusted R^2	0.019	0.023

Table 13. Market Reaction to Bond Financing for Private Firms and Political Participation

Panel A: Univariate Tests

This panel presents descriptive statistics of the immediate stock reaction to bond financing announcements by private firms, with the firms are distinguished by political participation. *CARs[0,3]* is the cumulative abnormal return from the bond announcement until three trading days after it. The market return is measured as the tradable value-weighted index of all A-share stocks in the Shanghai and Shenzhen security markets. All variables are winsorized at top and bottom 1%. ***, ** and * denote significance for the difference between the two samples at 1%, 5%, and 10%, respectively.

	Political Participation		**T-Value (Wilcoxon-Mann-Whitney tests)**
	Yes	No	
CARs[0, 3]	2.157%	1.026%	2.48**
	(1.291%)	(0.875%)	(1.99**)

Table 13. Market Reaction to Bond Financing for Private Firms and Political Participation

Panel B: Multivariate Tests

This panel presents OLS regression results for political participation and CARs[0, 3]. The dependent variable is *CARs[0, 3]*, which is the cumulative abnormal return from the bond announcement until three trading days after it. The market return is measured as the tradable value-weighted index of all A-share stocks in the Shanghai and Shenzhen security markets. The key explanatory variable is *Political participation*, which equals one if the controlling entrepreneur (or his or her family members) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC), or the Congress of Chinese Communist Party (CCCP), and zero otherwise. All control variables are defined in appendix 2. Year, industry and listing board dummies are included but not reported and *t*-statistics are computed using heteroskedasticity-robust standard errors clustered by firm and year. All continuous variables are winsorized at the top and bottom 1%.***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

	CARs[0, 3]	
	(1)	**(2)**
Political participation	0.006**	0.009*
	(2.14)	(1.91)
Bond size		0.006
		(0.18)
Firm size		-0.007*
		(-1.77)
Tobin's Q		0.000
		(-0.10)
ROE		0.057
		(1.33)
Firm leverage		0.022
		(1.21)
Tangibility		-0.020
		(-1.11)
Largest ownership		0.000
		(0.52)
Intercept	0.046*	0.187**
	(1.77)	(2.24)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Listing board dummies	Yes	Yes
Type of bond dummies	Yes	Yes
Observations	1381	1381
Adjusted R^2	0.011	0.015

Appendix 1. Bond Market Development in China

This appendix presents the evolution of the bond market in China during the sample period. Data is in 100 million RMB and are from the WIND database.

	Total		Corporate Debenture Bonds	
Year	**Issue**	**Outstanding**	**Issue**	**Outstanding**
2006	59400.08	98314.91	13964.08	8566.36
2007	81619.85	128715.36	17555.41	12106.95
2008	73158.05	157127.08	21639.84	19073.59
2009	86925.52	181135.63	30438.31	33300.27
2010	93525.62	206910.19	31377.95	46463.19
2011	78342.60	224318.11	46804.70	63769.88
2012	80984.24	262894.42	64121.98	91061.48
2013	90545.42	300163.56	64380.35	112540.02
2014	121904.45	360042.61	91114.08	151229.18
2015	231984.94	485310.44	119164.97	218476.16
2016	363684.78	643043.75	141675.98	294915.33

Appendix 2. Definition of Variables

This appendix presents the definition of variables used throughout this study.

Variable	Definition
Bond issue choice	A dummy variable which equals one if firm *i* issues bonds in year *t*, and zero otherwise.
Log(1+bond)	The natural logarithm of one plus the RMB amount of bond financing for firm *i* in year *t*.
Bond/Assets	The ratio of RMB amount of bond financing to firm *i* 's total assets in year *t*.
SOE	A dummy variable which equals on if the firm is ultimately owned and controlled by the central or local governments in China, and zero otherwise.
Political Participation	The ultimate owner (most often also the founder and also the board chair) is a member of the National People's Congress (NPC), the Chinese People's Political Consultative Conference (CPPCC) or the National Congress of the Chinese Communist Party(CCP) at the national or provincial level.
Firm size	The natural logarithm of total market capitalization at the start of year *t*.
Tobin's Q	The sum of total market value and total net liabilities divided by total assets at the start of the year *t*
ROE	The ratio of net profits to total equity at the start of year *t*.
Firm leverage	The ratio of total liabilities to total assets at the start of year *t*.
Tangibility	The ratio of tangible assets to total assets at the start of year *t*.
Largest ownership	The percentage ownership by the largest owner at the start of year *t*.
$INV_{i,t}$,	New investments in year *t*, defined as the sum of the net cash for purchasing fixed assets, intangible assets and other long-term assets, and the net cash paid for the acquisition of subsidiaries and other business units divided by total assets at the start of the year *t*.
Log(assets)	The natural logarithm of total assets at the start of the year *t*.
Stock return	Stock returns during year *t-1*, thus measuring the change in market value of the firm before investment.
Cash	The sum of the cash and cash equivalent divided by total assets at the start of year *t.*
Firm age	The number of years since the firm went public at the start of the year *t.*
Excess investment	The residual obtained from the regression model in Richardson (2006).
Post-bond	A dummy variable which equals one if firm *i* issued bonds in year *t*-1, and zero otherwise.
Free cash flow	Cash flow from operations less capital expenditure, divided by total assets.
CARs[0,3]	The cumulative abnormal stock return from the bond announcement until three trading days after it. Here, the market return is measured as the tradable value-weighted index of all A-share stocks in the Shanghai and Shenzhen security markets.

Appendix 3. Summary Statistics

This appendix presents the summary statistics for the variables used in this study. Definitions of the variables are presented in Appendix 2.

	Number	Mean	Median	STD	Q1	Q3
Bond issue choice	19447	0.124	0.000	0.330	0.000	0.000
Log(1+bond)	19447	2.574	0.000	6.848	0.000	0.000
Bond/Assets	19447	0.012	0.000	0.039	0.000	0.000
SOE	19447	0.496	0.000	0.500	0.000	1.000
Political participation	9797	0.142	0.000	0.349	0.000	0.000
Firm size	19447	22.160	22.082	1.084	21.420	22.815
Tobin's Q	19447	2.570	1.896	2.165	1.339	2.956
ROE	19447	0.052	0.064	0.203	0.023	0.109
Firm leverage	19447	0.498	0.491	0.275	0.324	0.642
Tangibility	19447	0.259	0.226	0.181	0.117	0.372
Largest ownership	19447	0.365	0.345	0.155	0.240	0.480
INV	19447	0.047	0.038	0.307	0.012	0.080
Cash	19447	0.150	0.110	0.269	0.061	0.192
Firm age	19447	21.798	21.677	1.343	20.921	22.529
Log(assets)	19447	10.474	10.000	5.818	5.000	15.000
Stock return	19447	0.424	0.186	0.949	-0.177	0.759
Excess investment	19447	0.000	-0.007	0.152	-0.032	0.026
CARs[0, 3]	3651	0.006	-0.002	0.114	-0.030	0.043

Appendix 4. Correlation Matrix

This table presents the correlation matrix of the variables in this study. The upper triangle presents the Pearson correlation coefficient and the lower triangle presents the Spearman correlation coefficient. ***, **, and * denote significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Bond issue choice	1.000***	0.998***	0.839***	0.098***	0.044***	0.305***	-0.145***	0.048***	0.078***	0.054***	0.062***
(2) Log(1+bond)	0.997***	1.000***	0.844***	0.103***	0.044***	0.319***	-0.147***	0.048***	0.081***	0.056***	0.069***
(3) Bond/Assets	0.997***	0.995***	1.000***	0.052***	0.043***	0.224***	-0.093***	0.047***	0.026***	0.038***	0.037***
(4) SOE	0.098***	0.104***	0.094***	1.000***	-0.142	0.141***	-0.190***	-0.016***	0.114***	0.163 ***	0.227***
(5) Political participation	0.044***	0.044***	0.045***	-0.142	1.000***	0.088***	-0.007	0.047	-0.043***	-0.048	-0.018
(6) Firm size	0.295***	0.307***	0.290***	0.123***	0.092***	1.000***	0.123	0.186	-0.110	-0.066	0.221
(7) Tobin's Q	-0.209***	-0.216***	-0.201***	-0.248***	0.022	0.170	1.000***	0.066*	-0.026	-0.133	-0.120
(8) ROE	0.074***	0.076***	0.077***	-0.024***	0.080	0.327	0.214*	1.000***	-0.069	-0.083	0.072
(9) Firm leverage	0.130***	0.135***	0.122***	0.182***	-0.035***	-0.047	-0.341	-0.094	1.000***	0.069	-0.041
(10) Tangibility	0.039***	0.040***	0.039***	0.139***	-0.042	-0.096	-0.149	-0.148	0.039	1.000***	0.050
(11) Largest ownership	0.058***	0.066***	0.056***	0.231***	-0.021	0.195	-0.127	0.140	-0.008	0.046	1.000***