State Ownership and the Term Structure of Yield Spreads: Evidence from China *

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Abstract

We investigate how state ownership affects a firm's term structure of yield spreads by examining three types of firms in the Chinese bond market: local state-owned enterprises for government financing purposes (Policy-SOEs), local state-owned enterprises with regular businesses (Regular-SOEs), and non-state-owned enterprises (NSOEs). We find that in both primary and secondary markets, Regular-SOEs and Policy-SOEs have substantially lower yield spreads than NSOEs, and Policy-SOEs have even lower yield spreads than Regular-SOEs at short maturities, but their advantage weakens at longer maturities. The potential borrowing cost savings of Policy-SOEs from short-term financing can account for as large as 40% of their operating income. The shrinking of borrowing advantage cannot be explained by firm credit profiles, market liquidity, or political uncertainties from market-wide political events and local politician turnover. Instead, evidence indicates a "window dressing" channel, where Policy-SOEs with low profitability are "window dressed" for bond issuance and experience a decline in government support afterwards.

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1 Introduction

The existing literature has found that government connection is valuable for firms in various ways such as preferential access to finance (e.g., Claessens, Feijen and Laeven, 2008; Khwaja and Mian, 2005), lower cost of debt (e.g., Lim, Wang and Zeng, 2018), and higher government bailout possibility (e.g., Faccio, Masulis and McConnell, 2006). On the other hand, politicians themselves extract some of the rent from this closer relationship (Shleifer and Vishny, 1994), and asset prices of firms with closer connection with governments can also become more sensitive to political uncertainty (Kaviani, Kryzanowski, Maleki and Savor, 2020; Liu, Shu and Wei, 2017a). Furthermore, the increase in risk premium due to political uncertainty might be temporary (Pan, Wang and Weisbach, 2015) and time-varying (Pástor and Veronesi, 2013), and investor expectations of the net cash-flow benefits from political relationships may also differ in the short- and long-term. The overall impact of government relationships on the shape of the corporate bond term structure is unclear.

We examine this impact based on evidence from the Chinese bond market because the comparison between SOEs and NSOEs in U.S. cannot disentangle government background from the nature of activities, and is subject to the limitation of a small sample size of SOEs.[1] In the Chinese bond market, from May 2006 to December 2018, Regular-SOEs and Policy-SOEs have substantially lower yield spreads than NSOEs, and Policy-SOEs have even lower yield spreads than Regular-SOEs in the short-term, but their advantage weakens in the long-term. Compared with NSOEs in the same city, the borrowing cost of Policy-SOEs and Regular-SOEs are around 125 bps and 100 bps lower than NSOEs with similar credit profiles. Given the large scale of debt financing and the weak

[1]The SOEs in U.S. mostly operate in few industries related to public services, such as TVA in electric utility, Amtrak in passenger railroad, USPS in postal service. To the contrary, in China, SOEs play a major role in the economy and compete with NSOEs in a wide range of industries.

profitability of Policy-SOEs, if they only borrow with maturities less than 3 years, the cost savings will amount to around 30% to 50% of their operating income.[2] This number is around 15% for Regular-SOEs. However, at longer maturities, the advantage of Policy-SOEs over NSOEs weakens to around 40 bps, whereas that of Regular-SOEs over NSOEs stays the same. In the secondary market, we find a similar term structure pattern for the two types of SOEs.

Although Policy-SOEs differ systematically from Regular-SOEs, and their bonds are usually thought to have similar features as municipal bonds (Chen, He and Liu, 2020; Ang, Bai and Zhou, 2018; Liu, Lyu and Yu, 2017b), few existing China studies differentiate these two types of SOEs when analyzing the role of political institutions on firm behavior (e.g., Wang, Wong and Xia, 2008; Jin, Wang and Zhang, 2018; Geng and Pan, 2019). Different from Regular-SOEs, which invest in regular businesses and are self-contained, Policy-SOEs are typically established by local governments to raise capital for city infrastructure construction, which without the support of local governments can barely survive. Often local governments support their affiliated Policy-SOEs by providing subsidies, injecting capital, or rendering special permissions to government projects. In return, Policy-SOEs invest in public projects with low NPVs and therefore have very low profitability.

Since local governments set up Policy-SOEs and Regular-SOEs for different reasons, their closeness to governments and the level of government support will also differ. The borrowing advantage of Policy-SOEs in short-term financing can be explained by Policy-SOEs' closer relationships with local governments. However, the fact that this advantage weakens at longer maturities seems puzzling. We explore three possible explanations. (1) In a political uncertainty channel arising from

[2]In this calculation, we assume that the borrowing advantage can be applied to all forms of debt financing. This assumption is reasonable based on several official investigations, such as the 2020 Chinese NSOE Financing Environment Report by the Evergrande Research Institute, and the 2019 Investigation of Chinese Firms' Cost Reduction by the Chinese Academy of Fiscal Sciences.

market political events, since Policy-SOEs are more sensitive to government policies, investors will demand a higher yield for holding long-term Policy-SOE bonds given their concern about potential government support uncertainty. (2) In a political uncertainty channel arising from local politician turnover, investors worry that the replacement of local politicians may cause uncertainty in government support. (3) In the third channel with only a cash flow effect, investors may anticipate that on average, the government support of Policy-SOEs will diminish in the future. The discount rate effect alone from the political uncertainty channel is unlikely to explain the shrinking funding advantage of Policy-SOEs versus Regular-SOEs at longer maturities. This is because similar to the CEO turnover effect on stock volatility as addressed in Pan, Wang and Weisbach (2015), in the absence of cash flow effects, as uncertainties are gradually resolved, bond yield spreads will revert to normal levels after reacting to certain events. Therefore, knowing that political uncertainties can only cause a temporary reaction, investors are unlikely to charge a higher spread on long-term bonds. In the empirical analysis, we find that the "window dressing" effect from the third channel holds the most promise.

We first show that the political uncertainty arising from market-wide political events is not the explanation. The investor expectation of potential government support can change dramatically in response to major market events. This is because the support is not legally protected in bond covenants and is solely based on investor beliefs. As Policy-SOEs are closer to governments, their bonds should be more sensitive to political events and thus should incur a higher spread in the long end. Many political events occurred during the sample period from May 2006 to December 2018, of which the two most important ones are the Yunnan Highway default and the enforcement of Directive No. 43 (see details in Liu, Lyu and Yu, 2017b). We test the market reaction to these two events and find that the price reaction of Policy-SOE bonds is temporary and not significantly

larger than that of NSOE bonds in both cases. Investors are often found to flock to SOE bonds to seek the protection provided by potential government support in turbulent times (Geng and Pan, 2019).

Another source of political uncertainty is from local politician turnover. Consistent with personnel promotion being linked to economic performance and bank loans being a critical funding source for city infrastructure investment, Ru (2018) finds that the borrowing behavior of local politicians relates to their turnover cycles. Specifically, their borrowing amount decreases monotonically over their tenure. In the corporate world, Pan, Wang and Weisbach (2016) find disinvestment decreases and investment increases over a CEO's tenure. Some evidence indicates that local government politicians are reluctant to pay back the debt borrowed by their predecessors, because their predecessors are likely to have excessively borrowed and invested in city infrastructure for their personal promotion purposes. Therefore, investors may expect local politician replacement to be associated with a permanent reduction in future government support. However, empirical results show that the pricing effect of official turnover on Policy-SOE bonds is relatively temporary and the magnitude is too small to explain the over 60 bps yield reduction at longer maturities.

In the last cash flow channel, we find that Policy-SOEs with low profitability are "window dressed" for bond issuance and experience a decline in government support afterwards. Consequently, the credit profiles of Policy-SOEs deteriorate after bond issuance. Due to the lack of analyst coverage in the Chinese bond market, we could only proxy investor expectation of future government support using realized data, which may be subject to look-ahead bias. We find a significant decline in government support of Policy-SOEs in terms of both subsidies and capital injection after the bonds are issued, while this trend is much weaker for Regular-SOEs. At the same time, compared to Regular-SOEs, the credit profiles of Policy-SOEs, as measured by profitability, cash

generating ability, and financial leverage, generally deteriorate after issuance.

The contribution of this paper is threefold. First, in addition to the static view adopted by many prior studies in examining the pricing effect of government relationships, this study offers a dynamic perspective and investigates how the expectation of government support influences yield spreads across different maturities. Second, this research separates Policy-SOEs from Regular-SOEs and shows the importance of this distinction in understanding the impact of political institutions. This distinction can likely explain why SOE label started to crumple post 2018Q2 as documented in Geng and Pan (2019), during which a series of Regular-SOEs declared default. Last but not least, this paper contributes to the emerging literature on the Chinese credit market (e.g., Ang, Bai and Zhou, 2018, Ru, 2018, Chen, He and Liu, 2020, and Ding, Xiong and Zhang, 2020). It documents the shrinking of Policy-SOEs' funding advantage at longer maturities, which is of significant economic importance in the Chinese bond market, and finds evidence supporting the "window dressing" explanation. State ownership is a double-edged sword: it gives Policy-SOEs a borrowing advantage in the short term, but since Policy-SOEs are mandated to invest in public projects with low NPVs, their profitability is severely impaired. Therefore, when government support diminishes at longer maturities, the side effect of state ownership dominates.

The rest of the paper is organized as follows. Section 2 describes the institutional background and the magnitude of borrowing cost savings due to state ownership. Section 3 develops testable hypotheses. Section 4 describes the data and main variables. Section 5 presents the empirical results and Section 6 concludes.

2 Institutional Background and Economic Importance

The Chinese bond market has strong politicized feature with SOEs issuing 92.3% of the total volume of nonfinancial corporate bonds in the market in 2019[3], while in contrast, SOEs' share of equity financing volume in stock market is only 36% in 2019[4]. Policy-SOEs and Regular-SOEs are distinct participants in the bond market. Regular-SOEs in the corporate bond market are similar to those SOEs with regular operating business in the equity market. Although legally identical and share the same state ownership, Policy-SOEs, the so-called local government financing vehicles, are built by local governments for public projects financing purpose and therefore are closer to local governments.

Before the enforcement of the new Chinese Budget Law in 2015, according to the 1994 Budget Law, municipalities are not allowed to raise debt on their own without the approval of the State Council. Due to the promotion pressure linked to regional economic growth (Li and Zhou, 2005), local government officials set up SOEs as financing vehicles to bypass the legal restriction. The funds financed through Policy-SOEs become an essential source for city infrastructure development, and therefore largely contribute to regional economic growth. Concerning about local government financial risk, the central government has come up with several regulations to govern local government borrowing behavior, the most important of which is the No. 43 policy directive from the State Council in October, 2014.[5] In this directive, the State Council requires local governments to classify their debt into government debt or corporate debt by whether the debt could be fully repaid by the project it is invested into. Since most of public projects are on the balance sheets of Policy-SOEs,

[3]The data is from the Chinese Bond Market 2019 Annual Report by the China Central Depository & Clearing Corporation.

[4]The data is from 2020 the Chinese NSOE Financing Environment Report by the Evergrande Research Institute.

[5]See `http://www.gov.cn/zhengce/content/2014-10/02/content_9111.htm`, last retrieved on November 27, 2020.

investors have strong beliefs that local governments will offer more support to Policy-SOEs than Regular-SOEs through asset injection, subsidiaries or debt bailouts. Indeed, till November 2020, even though the profitability of Policy-SOEs is much weaker than that of Regular-SOEs, there was only one actual Policy-SOE default but it was quickly repaid by the local government owner via another controlled SOE[6], while in contrast, a series of Regular-SOEs have declared default and the outstanding amount has not been fully repaid to date[7].

As can been seen from the results based on bond issuance sample in Table (3), Policy-SOEs and Regular-SOEs both have significant borrowing advantages over NSOEs. However, the borrowing advantage of Policy-SOEs weakens in the long term while that of Regular-SOEs stays relatively stable. This pattern can also be clearly observed in Figure (1). Moreover, the profitability of Policy-SOEs is weaker than that of Regular-SOEs in all duration brackets. The borrowing cost savings in bond financing on average account for 9% of Policy-SOEs' operating income and this ratio is as large as 18% in the short-term. Since most of investors in the bond market are banks which overlap the investors in the bank loan market, some investigations find that SOEs have borrowing advantage over NSOEs in both markets.[8] Then it is reasonable to believe that this borrowing advantage can be applied to all forms of interest-bearing debt. Given the large amount of debt financing, and the relatively weak profitability among Policy-SOEs, if Policy-SOEs only raise short- and medium-term debt, this debt borrowing savings amount to around 30% to 50% of their operating income. In the case where Policy-SOEs only borrow over a long term, the borrowing cost savings still account for on average 15% of their operating profits. In total, although Regular-SOEs have a larger borrowing

[6]Shenyang Shengjing Energy Development Group (see `https://finance.ifeng.com/c/80yRkG2B7xF`, last retrieved on November 18, 2020).

[7]Such as Dongbei Special Steel Group, Sichuan Coal Industry Group, Yongcheng Coal & Electricity Corporation, Brilliance Auto Corporation and so on.

[8]See the 2020 Chinese NSOE Financing Environment Report by the Evergrande Research Institute, and the 2019 Investigation of Chinese Firms' Cost Reduction by the Chinese Academy of Fiscal Sciences.

advantage in terms of spread difference, Polciy-SOEs actually benefit more from state ownership.

Due to closer relationships with local governments, Policy-SOEs save in a large magnitude in debt financing. However, leaning on governments is not at no cost. Due to the many public low-NPV projects those Policy-SOEs are mandated to undertake, the profit generating abilities of their assets are significantly undermined. On average, the operating income to total assets ratio is 1.02% for Policy-SOEs which is half of the ratio for Regular-SOEs and a quarter for NSOEs. For this reason, investors have to balance the expected firm credit profiles with the expected government support in doing bond valuation. Table (3) shows that investors value these two factors differently in the short term and at longer maturities.

3 Hypothesis Development

Several studies examine the cross-sectional determinants of the pricing of SOE bonds (e.g., Ang, Bai and Zhou, 2018, Liu, Lyu and Yu, 2017b, and Jin, Wang and Zhang, 2018). They find that government support in the form of implicit guarantee is a very important factor. Broadly speaking, given the politicized feature of the Chinese corporate bond market, the pricing of Chinese corporate bonds is mainly determined by the risk-free rate, firm credit profiles, market liquidity, and government support. The persistently different term structures of Policy-SOEs and Regular-SOEs suggest that investor expectations about future government support of these two types of SOEs might be different.[9] Government support may appear in various forms, and it is usually difficult to disentangle their individual effects on bond pricing. For example, if a local government

[9]Government support is determined by the willingness and ability of a local government to support its affiliated SOEs. Previously, investors were more concerned with the government's ability to provide support. However, recent default in November 2020 by Yongcheng Coal & Electricity Corporation raised investors' concern with the government's willingness to provide support: just days before the bond's maturity date, some valuable liquid assets previously under the control of the firm was gratuitously transferred to other SOEs controlled by the same government.

is willing to bail out its SOEs, it will probably inject funds before a default event actually happens. Therefore, this paper attempts to understand the effect of government support as a whole. The short-term borrowing advantage of Policy-SOEs can be explained by their closer relationships with local governments. But the fact that this advantage weakens at longer maturities is puzzling.

Kaviani, Kryzanowski, Maleki and Savor (2020) find that political uncertainty significantly increases credit spread, especially for firms with greater exposure to government policies. As Policy-SOEs are more politically sensitive, we expect the pricing of Policy-SOE bonds to be more responsive to political events. Liu, Lyu and Yu (2017b) show that investor faith about future government support was undermined by a default event in April 2011, when a Policy-SOE, Yunnan Highway Development and Investment Co. Ltd., defaulted on the principal payment of its bank loan. Although this default was later resolved by the Yunnan provincial government, it triggered a wave of panic among investors. Later in October 2014, Directive No. 43 put forth by the State Council strengthened investor expectation of future government support. This directive required local governments to include debt raised for public projects in their budget, and encouraged the replacement of high-yield Policy-SOE debt with low-yield long-term municipal bonds issued by provincial governments. Although it remains unclear from an investor's perspective to what extent Policy-SOE debt was covered by government budget, the market generally interpreted the directive as a signal for more government support in the future.

Hypothesis 1: If market-wide political uncertainty is the reason for the weakening of Policy-SOEs' borrowing advantage in the long run, the spread of Policy-SOE bonds should be more responsive than NSOE and Regular-SOE bonds to the Yunnan Highway default event in 2011 and the enforcement of Directive No. 43 in 2014, and those reactions should persist afterwards.

Pan, Wang and Weisbach (2015) find that stock return volatility increases after CEO turnover and this volatility declines with CEO tenure in a convex manner as investors learn more about CEO ability. Moreover, Pan, Wang and Weisbach (2014) show that CEO uncertainty affects the cost of borrowing in a similar way. Therefore, we expect local politician turnover to affect the bond price of its affiliated SOEs. The political uncertainty arising from local politician turnover may come from two sources. First, some evidence indicates that government officials are reluctant to pay back the debt borrowed by their predecessors, because their predecessors are likely to have excessively borrowed and invested in city infrastructure for their personal promotion purpose.[10] Second, government official turnover in general may cause policy uncertainty, which increases the variance of government support and affects the pricing of SOEs' bonds. While the second source may produce a temporary effect on the bond price as political uncertainty dissipates over time, the effect from the first source is likely to be more permanent.

Hypothesis 2: If political uncertainty arising from local politician turnover is the reason for the weakening of Policy-SOEs' borrowing advantage in the long run, the spread of Policy-SOE bonds should significantly increase around local official turnover, and this reaction should persist afterwards.

Lastly, we can examine the expected government support after bond issuance. Local governments set up Policy-SOEs for fund raising purposes, and therefore lack motivation to maintain support in order to expand their business after the initial bond issuance. Hence, it is likely that a

[10] According to a news report published in the People's Daily on November 21, 2016, more than 1100 cases related to government official dishonesty are included in the list of dishonest persons subject to enforcement nationwide by the People's Court. Many of these cases are due to the fact that new officials fail to meet the commitment undertaken by their predecessors. (See `http://cpc.people.com.cn/n1/2016/1121/c64387-28882993.html`, last retrieved on August 20, 2021.) In December 2019, to address this problem, a judicial interpretation issued by the Supreme Court stipulated that local governments should be held liable for breach of contract or infringement of rights regardless of who takes office. (See `https://www.sohu.com/a/436110936_770237`, last retrieved on August 20, 2021.)

local government will provide considerable support to Policy-SOEs to "dress them up" for investors before bond issuance and later reduce support. Given Policy-SOEs' weak ability to generate profits on their own, they heavily rely on local governments to maintain regular operation. If government support is expected to decrease in the long run after issuance, Policy-SOEs' credit profiles will deteriorate, and investors will charge additional spread in holding long-term Policy-SOE bonds.

Hypothesis 3: If "window dressing" is the reason for the weakening of Policy-SOEs' borrowing advantage at longer maturities, the government support of Policy-SOEs will decrease and their credit profiles will deteriorate after bond issuance, while this trend will be weaker for Regular-SOEs.

4 Data and Variable Description

Bond transaction and politician turnover are in monthly frequency, while fiscal, economic and financial data are in annual frequency. Bond transaction, bond characteristics and firm financial numbers are extracted from WIND database. Prefecture-city-level (city-level hereafter) fiscal and economic data are downloaded from CEInet Statistics Database. We classify Policy-SOEs as the SOEs which have issued at least one Chengtou bond during the sample period from May 2006 to December 2018.[11] We match a county-level city to the prefecture-level city it belongs to and exclude bonds issued by SOEs owned by the central government or provincial governments, which means that we are comparing term structure differences among NSOEs, Policy-SOEs and Regular-SOEs all at city level. Also we exclude bonds in floating rate or with embedded options. What remain are

[11]The classification of Chengtou bond is from WIND database where they use bond samples from Chinese Chengtou index developed by China Central Depository & Clearing Co., Ltd, which is the most renowned Chengtou bond index in China.

fixed-rate bonds issued by NSOEs and city-level SOEs.[12] Many bonds are issued in both interbank and exchange markets. In this case of dual market issuance, we only keep those bond samples issued in interbank market, because trading volumes in interbank market are usually higher. We exclude those bond-month observations with monthly trading volume less than 1 million RMB.

City-level official profile data is retrieved from Chinese Research Data Services Platform and checked manually with the China Economic Net, the People's Daily and other public web sources in case of missing observations. Top officials in a city are its city governor and party secretary. I identify unexpected turnover by checking irregular reasons for officials living office. Those reasons include corruption, failure to resolve major incidents or sudden death, among which corruption accounts for the vast majority.

We closely follow the procedure in Ang, Bai and Zhou (2018) to compute yield spreads in order to adjust the effect of cash flow structures on yield-to-maturity. Specifically, we use zero curves in Svensson (1994) and estimate the parameters monthly using actively traded Chinese central government bonds to compute the yield-to-maturity on a hypothetical central government bond with the same cash flow payment feature as the bond under examination. The difference between the bond yield and the yield on this hypothetical central government bond is our yield spread measure.

[12]Those fixed-rate bonds include bullet bonds and amortized bonds with determined amortization schedule. Given the different cash flow structures of these two types of bonds, we use duration instead of maturity in the following analysis.

5 Results

5.1 State Ownership and Term Structure

Table (4) presents the benefits from being labelled a SOE. Compared to a NSOE with similar characteristics in the same city, a Policy-SOE has spread around 120 bps lower in both primary and secondary market, while a Regular-SOE has spread around 100 bps lower. Increase in government subsidies can strongly reduce yield spreads. A standard error increase in subsidies can reduce yield spreads by about 6 bps. Amortized bonds generally have a larger spread than bullet bonds in both primary and secondary markets. This is likely due to the fact that firms often choose to issue amortized bonds in order to release investor concern when there is unfavorable news about the company. So this $IfAmort$ measures other pricing-related factors that are not directly captured by firm fundamentals or city characteristics. This also explains why the coefficients of $IfAmort$ in trading sample is less than those in issuing sample. The signs of liquidity measures, $IfNew$ and $Turnover$, look strange at first glance. Banks are the main participants in the Chinese bond market (Amstad, Sun and Xiong, 2020), and they usually invest bonds by holding to maturity similar to the strategy they use when investing in bank loan. So market liquidity is low in most times during the life of a bond and bonds are often heavily traded when banks start to dump their inventories in case of severe negative news about certain companies in their portfolios. Besides, high-yield bonds are favored by yield-chasing investors who trade more actively in the market (Liu, Wang, Wei and Zhong, 2019).

Next, we explore the term structure difference between the two types of SOEs. As can been seen from Table (5) excluding NSOE observations, coefficients of $IfPolicy$ are significantly negative, which means that Policy-SOEs earn a lower spread when the duration is near zero. But from the

coefficients of $D*IfPolicy$, we know that this spread advantage quickly disappears when duration grows to around 2 to 3 years.

Furthermore, we follow the piecewise linear maturity function approach in Yu (2005) and pick up three knots at durations equal to zero, three, five and fifteen years. We pick up those knots because the average bond duration in Chinese bond market is relatively shorter than that in U.S. market, and the spread advantage of Policy-SOEs over Regular-SOEs is shown to disappear when duration is over 3 years. The piecewise linear term structure can be represented as:

$$Spread = a_0 m_0 + a_1 m_1 + a_2 m_2 + a_3 m_3.$$

$$m_0 = \begin{cases} 1 - \frac{1}{3}m & \text{if} \quad m \in [0,3] \\ 0 & \text{if} \quad m \in (3,15] \end{cases}$$

$$m_1 = \begin{cases} \frac{1}{3}m & \text{if} \quad m \in [0,3] \\ \frac{5}{2} - \frac{1}{2}m & \text{if} \quad m \in (3,5] \\ 0 & \text{if} \quad m \in (5,15] \end{cases}$$

$$m_2 = \begin{cases} 0 & \text{if} \quad m \in [0,3] \\ \frac{1}{2}m - \frac{3}{2} & \text{if} \quad m \in (3,5] \\ \frac{3}{2} - \frac{1}{10}m & \text{if} \quad m \in (5,15] \end{cases}$$

$$m_3 = \begin{cases} 0 & \text{if} \quad m \in [0,5] \\ \frac{1}{10}m - \frac{1}{2} & \text{if} \quad m \in (5,15] \end{cases}$$

where m is the bond duration measured in years; a_0, a_1, a_2, a_3 are the levels of the term structure at the knots in zero-, three-, five- and fifteen-year maturity respectively.

To compare the spread difference between Policy-SOE bonds and Regular-SOE bonds at different duration knots, we can simply interact m_i with Policy-SOE bonds dummy $IfPolicy$ and estimate the linear model below:

$$Spread = \beta_0 m_0 + \beta_1 m_1 + \beta_2 m_2 + \beta_3 m_3 + \beta_4 m_0 IfPolicy$$
$$+ \beta_5 m_1 IfPolicy + \beta_6 m_2 IfPolicy + \beta_7 m_3 IfPolicy + \text{Controls} + \varepsilon.$$

Following Liu, Lyu and Yu (2017b), we pick up two landmark events cutting the sample into three subperiods, May 2006 to March 2011, April 2011 to September 2014 and October 2014 to December 2018. Firstly, the default of Yunnan Highway in April 2011 on the principal payments of its bank loan triggered a wave of panic among investors. According to Table (6), before the event, it seems that investors do not differentiate the two types of SOEs in the near term. But Policy-SOEs have spread 14 bps higher than Regular-SOEs in the five-year knot, which reflects the expected reduction in government support we will discuss later. After the event, investors began to worry about future government support of SOEs in general, and since Policy-SOEs have weaker fundamentals than Regular-SOEs, this effect became stronger among Policy-SOEs. In the second column in Table (6), even though Policy-SOEs have lower spread in the short-term, their spread advantage quickly disappears even within 3-year duration. The results on the 15-year knot are generally insignificant due to a small sample size of long-term bonds.

Secondly, Directive No. 43 in October 2014 changed investor perception of future local government support. Therefore, in Table (6), Policy-SOEs have a larger spread advantage in the short term, and this advantage lasts even into durations more than 3 years. Overall, we show that the shrinking of Policy-SOEs' funding advantage at longer maturities is robust across different

subsamples and the results are consistent with those reported in Table (5).

5.2 Political Uncertainty Channel

Market-wide political uncertainty The results in Table (6) shed light on the pricing effect of market-wide political uncertainty: since investors expect that government support will be weaker after the Yunnan Highway default event and stronger after the enforcement of Directive No. 43, the term structure of Policy-SOEs steepens after the first event and flattens after the second event compared to that of Regular-SOEs.

However, when examining the results about the market reaction to these two events, we find that the market-wide political uncertainty is unlikely to explain the positive term structure slope. Table (7) shows that the bonds issued by NSOEs and Regular-SOEs are more affected by the Yunnan Highway default event. In Table (8), since time fixed effect is unable to be controlled, the bond spread changes of the three types of firms compared to May 2014 are likely due to other macroeconomic factors. Although Policy-SOEs are more responsive to the policy change in those months around October 2014, the magnitude of the spread change difference between Policy-SOEs and NSOEs is similar five months after the enforcement. If the market-wide uncertainty was priced in among Policy-SOEs, NSOEs should have had a term structure with a steeper slope than that of Policy-SOEs. But this is not the case based on the data.

Local politician turnover The political uncertainty arising from local politician turnover is unlikely to cause the positive slope either. Those turnovers with irregular reasons are supposed to be a subsample of all unexpected turnovers, because it is possible that some replacements are unexpected but not due to those irregular reasons. Therefore, we as well include market reaction

analysis around all government official turnover events.

Table (9) and Table (10) report results with turnovers due to irregular reasons. According to the hypothesis, the yield spreads of Policy-SOEs are supposed to increase at a higher magnitude than Regular-SOEs or NSOEs, and this reaction should be persistent. However, empirical results indicate a contrary story. In Table (9), the yield spreads of Policy-SOEs significantly decrease. This is likely due to the fact that the removal of corrupted officials improves governance capacities. In contrasting, the yield spreads of NSOEs increase which implies possible connections between those corrupted officials and local NSOEs. If irregular turnovers of all officials during the life of bonds are included, Table (10) indicates a similar story, except that it is in response to the turnover of city party secretaries that the yield spreads of SOE bonds significantly decrease.

Table (11) and Table (12) report results with all turnover events. Results about initial city official turnover are generally insignificant in Table (11), which implies that in investors' perception, bond payable is considered as liability of local governments instead of the sitting officials at the time when the bond is issued. In Table (12), we do observe significant increase in the yield spreads of Policy-SOE bonds. But this reaction is temporary and disappears four months after the turnover, which is similar to the results in Pan, Wang and Weisbach (2015).

5.3 "Window Dressing" Channel

In Table (13) and Table (14), we explore the "window dressing" hypothesis. We first show that Policy-SOEs are more dressed up than Regular-SOEs before bond issuance. As can be seen in the first panel in Table (13), compared to the equity injection level after issuance, Policy-SOEs get 1.26% more capital as of their total assets in the year before bond issuance, whereas Regular-SOEs

do not get significantly more. Furthermore, in the second panel in Table (14), Policy-SOEs get 0.06% more subsidies as of their total assets before bond issuance.

Given that a firm may have several bonds on its balance sheet, we then explore in general the links among government support, firm credit profiles and bond ages. Those results are reported in Table (14) and the last two panels in Table (13). We calculate the weighted average age of the bonds that a firm issues in a given year and denote it $AvgAge$. It measures on average how many years have passed since a firm issues its bonds. We anticipate that as the age of bonds goes higher, local governments will become less concerned about their Policy-SOEs. Then we regress government support measures and firm credit profile measures on $AvgAge$. The coefficients of $AvgAge$ among results about government support without time fixed effect are much larger than those with time fixed effects. This is due to the fact that most Policy-SOEs are set up in earlier years in the sample period, and there is a time trend of reduction in government support. Even after controlling for time-fixed effects, we still observe that government support of Policy-SOEs is much higher than that on Regular-SOEs in the year before a bond is issued, and the support in forms of equity injection and subsidiaries reduces at a much faster speed for Policy-SOEs than for Regular-SOEs.

The results about credit profiles in Table (14) show that after controlling for time-fixed effects, firm independent cash generating ability keeps decreasing and financial leverage keeps increasing. Although the interaction term about profitability in the first panel on column (6) is significantly positive, the profitability of Policy-SOEs deteriorates almost at the same speed as Regular-SOEs if the time trends of Policy-SOEs and Regular-SOEs are controlled separately in column (4) and (5) in the same panel. In the meanwhile, we also notice that the profitability of Policy-SOEs starts at a very low level at 0.82% as compared to 5.85% for Regular-SOEs. On the other hand, for

Policy-SOEs, higher profitability does not come together with higher cash generating ability, which calls into question about the quality of the projects those Policy-SOEs undertake. Those results indicate that Policy-SOEs will become more vulnerable when government support is cut down.

6 Concluding Remarks

This paper investigates the pricing effect of state ownership on the term structure of yield spreads based on Chinese evidence. The political risk and net rents from government relationships together shape investors' evaluation about the credit risk of corporate bonds. In the Chinese bond market, we show that it is important to differentiate SOEs into Policy-SOEs and Regular-SOEs because of their different relationships with local governments. Since Policy-SOEs have a closer relationship with local governments, they are found to have substantial borrowing advantage over Regular-SOEs and NSOEs in the short term. However, their advantage is not at no cost. Due to closer government relationships, Policy-SOEs are mandated to invest on public projects which undermines their profitability. For this reason, when government support diminishes after bond issuance, the borrowing advantage of Policy-SOEs declines at longer maturities. This borrowing advantage is important from local governments' perspective: the borrowing cost savings on average account for over 20% of Policy-SOEs' operating income, and are even higher at around 40% if only short-run financing is considered, saving them billions of dollars in city infrastructure investment.

The shrinking of Policy-SOEs' funding advantage can not be explained by political uncertainties from market-wide political events or local politician turnover. In two important political events happened in the Chinese corporate market, the price reaction of Policy-SOE bonds to those events is not more sensitive compared to that of NSOEs, and this reaction tends to be temporary as

well. In addition, the price reaction of Policy-SOE bonds to local politician turnover is small and temporary and even becomes positive if only irregular turnover is considered.

Instead, a possible explanation about this phenomenon is that local governments "window dress" their affiliated Policy-SOEs before bond issuance in order to make them more attractive to investors. But after bonds are issued and proceeds are collected, local governments gradually reduce their support and the credit profiles of Policy-SOEs deteriorate over time. This implies that local governments tend to treat those Policy-SOEs as vehicles simply for financing. In contrast, this window dressing effect is found to be much weaker among Regular-SOEs.

The Chinese bond market is significantly biased towards the benefit of SOEs in terms of both the availability and the cost of bond financing. Facing less collateral protection and weaker information environment in bond market than in bank loan market, investors are more inclined to invest in SOE bonds with potential government support even under the fact that NSOEs are four times more profitable than Policy-SOEs and two times more profitable than Regular-SOEs. Moreover, since political events affect investor risk tolerance in general and NSOE bond price is most sensitive to market risk tolerance. Even with less connection to governments, the price of NSOE bonds reacts more dramatically in response to political events in the market. Insecurity may creep in among the managers of NSOEs because of this inequality. This in turn makes NSOEs more aggressive in financing and investing in times with abundant liquidity, and creates more default afterwards. In other words, government support exacerbates capital misallocation which in turn causes additional misallocation from management opportunistic behavior. This mechanism might explain the exploding NSOE bond financing volume in 2015 to 2016 and the subsequent NSOE default wave in 2017 to 2018. The default wave in return made it more difficult for NSOEs to finance in corporate bonds in 2018 and 2019. In this trend of research, the study by Geng and Pan

(2019) is innovative in that they find that government support deepens SOE premium and has real effects on the profitability and efficiency of NSOEs. The heterogeneous effect of state ownership and the aggregate impact of capital misallocation arising from it can be further explored in the future.

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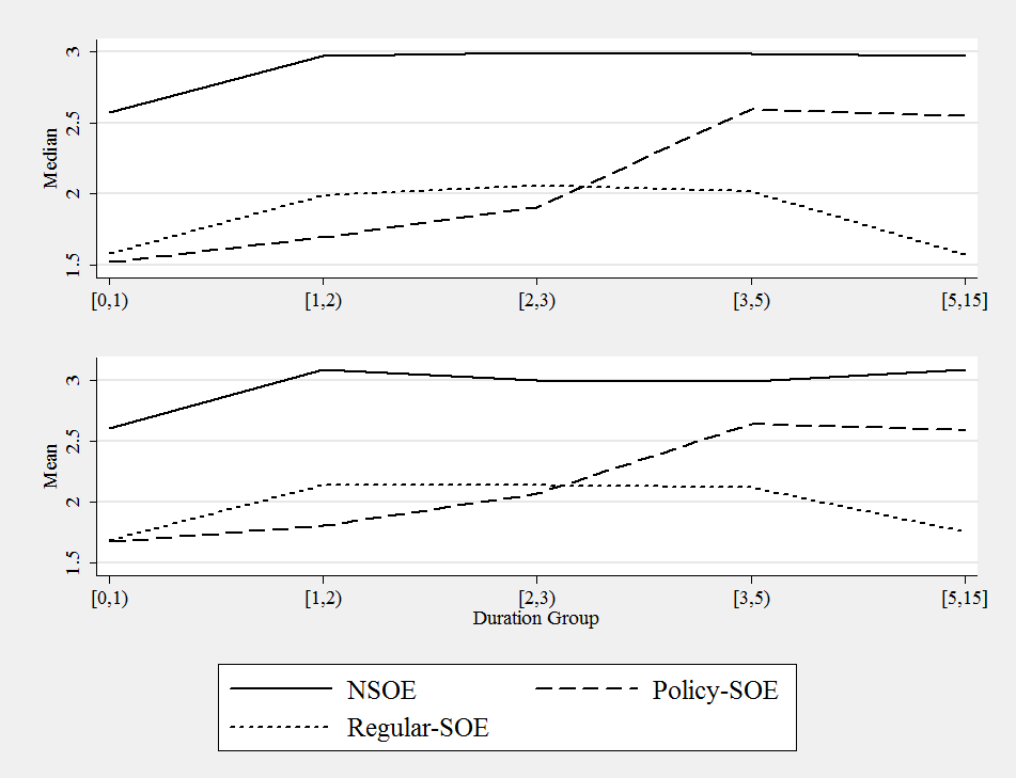

* This table presents the fact that the borrowing advantage of Policy-SOEs in primary market weakens at longer maturities. Y axis denotes the mean or median spread of bonds within a duration bracket. Groups are sorted by bond durations. Given the relative shorter duration in the Chinese bond market than in U.S., most fixed-rate bonds have duration less than 10 years.

Figure 1: Borrowing advantage weakens over duration

Table 1: Main variables description

Items	Description
Sprd	Same as Ang, Bai and Zhou (2018), corporate bond yield spreads equal to the yield-to-maturity of a corporate bond subtracted by the yield-to-maturity of a hypothetical government bond with the same cash flow structure. The risk-free rate term structure is estimated using the monthly prices of actively traded Chinese sovereign bonds.
IfPolicy	Equals to 1 if the issuer of a bond is a Policy-SOE.
IfRegular	Equals to 1 if the issuer of a bond is a Regular-SOE
Duration	Macaulay duration, the weighted average years to maturity of the cash flows from a bond.
lgGDP	The logarithm of the local GDP (in millions RMB) in a city-year.
GDPGrowth	Real local GDP growth in a city-year.
FisBalance	Local government budget income divided by budget expenditure in a city-year.
Subsidy	Since government subsidy is included in non-operating revenue, and there is no separate disclosure for subsidy, we use the difference between non-operating revenue and non-operating expense in a firm-year, scaled by total assets at year end.
EqtyInj	Government capital injection in a firm, equals to the change in the total of common equity, paid-in capital and special account payable, scaled by total assets at year end. Special account payable usually records funds given by local governments as company owners to SOEs in developing certain public projects.
Profbi	Independent profit generating ability of a firm, equals to operating income after interest expense divided by total assets.
Cashbi	Independent cash generating ability of a firm, equals to the difference between net operating cash flow and government subsidy divided by total assets.
FinLev	Financial leverage, equals to the sum of long-term debt, current portion of long-term debt, short-term debt, bond payable and other operating liabilities divided by total assets. The funds raised from super & short-term commercial papers (or SCPs) in some cases are separately reported but often are reported in other operating liabilities. If the amount of SCPs is not separately reported, we use the value of other operating liabilities; if separately reported, we use the separately reported amount.
lgAsset	The logarithm of the total assets (in millions RMB) in a firm-year.
lgScale	The logarithm of the outstanding amount (in millions RMB) of a bond.
IfGuarant	Equals to 1 if a bond is issued with legal guaranty.
IfAmort	Equals to 1 if a bond is an amortized bond.
Turnover	The ratio of trading volume to outstanding amount in a bond-month.
IfNew	Equals to 1 if a bond is issued no earlier than 3 months before a bond-month.

Table 2: Summary statistics

(a) Summary statistics of the issuance sample

	count	mean	sd	p5	p25	p50	p75	p95
Sprd	12789	2.309	1.077	0.805	1.512	2.129	2.985	4.343
IfPolicy	12789	0.470	0.499	0.000	0.000	0.000	1.000	1.000
IfRegular	12789	0.289	0.453	0.000	0.000	0.000	1.000	1.000
Duration	12789	2.140	1.716	0.493	0.740	1.000	4.301	4.604
lgGDP	12789	12.579	1.394	10.253	11.393	12.677	13.773	14.649
GDPGrowth	12789	0.103	0.155	0.055	0.074	0.089	0.109	0.155
FisBalance	12789	0.808	0.204	0.461	0.677	0.830	0.938	1.102
Subsidy	12789	0.006	0.012	-0.001	0.000	0.003	0.009	0.023
EqtyInj	12789	0.028	0.096	-0.076	-0.001	0.005	0.044	0.206
Profbi	12789	0.025	0.036	-0.009	0.003	0.015	0.037	0.090
Cashbi	12789	0.011	0.066	-0.103	-0.014	0.013	0.044	0.108
FinLev	12789	0.349	0.139	0.110	0.252	0.353	0.449	0.572
lgAsset	12789	10.141	1.159	8.368	9.304	10.083	10.909	12.180
lgScale	12789	6.566	0.723	5.298	6.215	6.551	6.908	7.650
IfGuarant	12789	0.102	0.303	0.000	0.000	0.000	0.000	1.000
IfAmort	12789	0.151	0.358	0.000	0.000	0.000	0.000	1.000

(b) Summary statistics of the trading sample

	count	mean	sd	p5	p25	p50	p75	p95
Sprd	148423	2.265	1.028	0.882	1.525	2.091	2.835	4.201
IfPolicy	148423	0.589	0.492	0.000	0.000	1.000	1.000	1.000
IfRegular	148423	0.243	0.429	0.000	0.000	0.000	0.000	1.000
Duration	148423	2.027	1.453	0.211	0.685	1.887	3.252	4.330
lgGDP	148423	12.503	1.406	10.201	11.336	12.547	13.683	14.649
GDPGrowth	148423	0.100	0.142	0.051	0.074	0.089	0.109	0.151
FisBalance	148423	0.790	0.212	0.417	0.654	0.821	0.925	1.101
Subsidy	148423	0.007	0.012	-0.001	0.000	0.004	0.009	0.024
EqtyInj	148423	0.026	0.087	-0.070	-0.001	0.005	0.044	0.186
Profbi	148423	0.019	0.033	-0.012	0.001	0.009	0.028	0.082
Cashbi	148423	0.005	0.064	-0.110	-0.022	0.008	0.038	0.100
FinLev	148423	0.349	0.131	0.133	0.257	0.348	0.440	0.564
lgAsset	148423	10.233	1.075	8.619	9.480	10.147	10.927	12.132
lgScale	148423	6.764	0.687	5.704	6.215	6.867	7.237	7.937
IfGuarant	148423	0.164	0.370	0.000	0.000	0.000	0.000	1.000
IfAmort	148423	0.310	0.462	0.000	0.000	0.000	1.000	1.000
Turnover	148423	0.407	0.820	0.020	0.077	0.177	0.401	1.490
IfNew	148423	0.188	0.391	0.000	0.000	0.000	0.000	1.000

Table 3: The economic significance of borrowing cost savings

Borrowing Advantage (%)						
Duration	[0,1)	[1,2)	[2,3)	[3,5)	[5,15]	Average
Policy-SOEs	1.00	1.22	1.02	0.11	0.59	0.60
Regular-SOEs	0.90	0.98	0.82	0.72	1.28	0.93
Operating Income/Total Asset (%)						
Duration	[0,1)	[1,2)	[2,3)	[3,5)	[5,15]	Average
NSOEs	4.09	5.15	4.99	6.24	7.87	4.74
Policy-SOEs	1.14	0.94	0.86	1.00	0.88	1.02
Regular-SOEs	2.03	2.66	2.36	3.45	1.86	2.37
Bond Borrowing Savings/Operating Income (%)						
Duration	[0,1)	[1,2)	[2,3)	[3,5)	[5,15]	Average
Policy-SOEs	16.27	20.02	20.65	1.49	8.19	9.45
Regular-SOEs	8.59	5.84	5.49	2.33	7.97	6.75
Debt Borrowing Savings/Operating Income (%)						
Duration	[0,1)	[1,2)	[2,3)	[3,5)	[5,15]	Average
Policy-SOEs	37.43	56.62	53.67	4.15	28.91	24.66
Regular-SOEs	20.24	15.45	14.20	7.70	23.14	16.96

⋆ This table presents the economic significance of borrowing advantage using bond issuance data. Groups are sorted by bond durations. Borrowing advantage is the bond-scale-weighted average spread difference between SOEs and NSOEs within the same duration bracket. Bond borrowing savings ratio is calculated as the product of borrowing advantage and bond payable sum divided by operating income sum within the same duration bracket. We treat all of the current maturities of long-term debt as bond payable due within one year, since we cannot further disentangle the bond portion from it. Debt borrowing saving ratio is computed based on the assumption that the borrowing advantage in other debt markets is the same as that in bond market. The average ratios are calculated as size-weighted averages: for instance, average debt borrowing savings/operating income is the ratio of the sum of debt borrowing savings to the sum of operating income.

Table 4: Pricing of state ownership in samples with three types of firms

	(1)	(2)	(3)	(4)	(5)	(6)
	Iss_Sprd	Iss_Sprd	Iss_Sprd	Trd_Sprd	Trd_Sprd	Trd_Sprd
IfPolicy	-1.177***	-1.219***	-1.230***	-1.231***	-1.251***	-1.246***
	(-46.62)	(-43.91)	(-39.80)	(-135.42)	(-118.96)	(-112.09)
IfRegular	-0.974***	-1.009***	-0.982***	-1.005***	-1.011***	-0.997***
	(-38.40)	(-42.91)	(-37.87)	(-112.59)	(-115.80)	(-108.84)
Duration	0.067***	0.062***	0.061***	0.094***	0.092***	0.090***
	(14.32)	(13.29)	(13.22)	(60.15)	(57.99)	(58.23)
lgGDP	-0.199***	-0.095***	-0.200***	-0.189***	-0.082***	-0.186***
	(-3.40)	(-14.88)	(-3.46)	(-10.03)	(-44.51)	(-9.94)
GDPGrowth	0.024	0.057	0.035	0.038***	0.025**	0.039***
	(0.54)	(1.46)	(0.81)	(2.77)	(2.08)	(2.90)
FisBalance	-0.028	-0.328***	-0.033	-0.029	-0.227***	-0.033
	(-0.31)	(-7.65)	(-0.36)	(-1.08)	(-18.84)	(-1.23)
Subsidy	-5.697***	-4.414***	-4.765***	-5.098***	-4.374***	-4.368***
	(-6.66)	(-4.63)	(-5.81)	(-18.42)	(-14.59)	(-16.32)
Profbi	-4.799***	-5.244***	-4.816***	-6.093***	-6.446***	-6.151***
	(-15.57)	(-17.16)	(-15.74)	(-55.88)	(-59.80)	(-56.67)
Cashbi	-0.661***	-0.406***	-0.470***	-0.281***	-0.080**	-0.109***
	(-5.47)	(-3.48)	(-3.85)	(-7.96)	(-2.27)	(-3.03)
FinLev	0.546***	0.666***	0.603***	0.306***	0.380***	0.338***
	(8.87)	(11.34)	(9.66)	(16.78)	(21.86)	(18.38)
lgAsset	-0.228***	-0.217***	-0.241***	-0.220***	-0.209***	-0.231***
	(-22.28)	(-21.39)	(-23.25)	(-70.07)	(-67.24)	(-70.86)
lgScale	-0.121***	-0.131***	-0.120***	-0.042***	-0.048***	-0.043***
	(-8.77)	(-9.62)	(-8.78)	(-10.29)	(-11.95)	(-10.44)
IfGuarant	-0.081***	-0.029	-0.093***	0.035***	0.080***	0.025***
	(-2.86)	(-1.05)	(-3.28)	(5.40)	(12.91)	(3.97)
IfAmort	0.710***	0.686***	0.669***	0.339***	0.297***	0.294***
	(24.81)	(24.49)	(23.15)	(57.80)	(50.34)	(48.85)
IfNew				0.014***	0.007	0.015***
				(2.83)	(1.44)	(2.93)
Turnover				0.058***	0.064***	0.057***
				(20.61)	(22.29)	(20.43)
Constant	7.965***	7.131***	8.307***	7.081***	6.018***	7.290***
	(11.66)	(55.47)	(12.19)	(29.92)	(59.81)	(30.69)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
City FE	Yes	No	Yes	Yes	No	Yes
R Square	0.549	0.501	0.555	0.482	0.446	0.487
Obs	12789	12789	12789	148423	148423	148423

⋆ Column (1)-(3) use full bond issuance sample and the time fixed effect controls for the calendar year in which a bond is issued. Column (4)-(6) use full bond-month trading sample and the time fixed effect controls for the calendar month in which a bond is traded. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 5: State ownership and the term structure of yield spreads

	(1) Iss_Sprd	(2) Iss_Sprd	(3) Iss_Sprd	(4) Trd_Sprd	(5) Trd_Sprd	(6) Trd_Sprd
IfPolicy	-0.217***	-0.129***	-0.130***	-0.337***	-0.283***	-0.253***
	(-8.44)	(-4.58)	(-4.29)	(-38.69)	(-30.01)	(-25.10)
D*IfPolicy	0.035***	0.029***	0.033***	0.096***	0.095***	0.092***
	(3.61)	(2.97)	(3.44)	(29.13)	(28.62)	(28.42)
Duration	0.029***	0.030***	0.028***	0.014***	0.016***	0.015***
	(3.54)	(3.69)	(3.43)	(5.01)	(5.68)	(5.38)
lgGDP	-0.395***	-0.089***	-0.384***	-0.369***	-0.074***	-0.362***
	(-6.24)	(-13.03)	(-6.11)	(-19.33)	(-39.80)	(-19.15)
GDPGrowth	0.100**	0.079*	0.111**	0.084***	0.034***	0.085***
	(2.00)	(1.92)	(2.29)	(6.76)	(3.01)	(6.92)
FisBalance	0.027	-0.385***	0.036	0.005	-0.255***	0.013
	(0.27)	(-7.98)	(0.37)	(0.18)	(-20.46)	(0.45)
Subsidy	-5.601***	-5.393***	-4.580***	-5.380***	-5.695***	-4.637***
	(-7.92)	(-7.32)	(-6.20)	(-23.12)	(-25.17)	(-19.84)
Profbi	-4.090***	-5.352***	-4.112***	-5.338***	-6.253***	-5.390***
	(-12.61)	(-15.41)	(-12.93)	(-47.83)	(-55.88)	(-48.77)
Cashbi	-0.490***	-0.250**	-0.321***	-0.171***	-0.011	-0.049
	(-4.25)	(-2.18)	(-2.75)	(-5.00)	(-0.31)	(-1.42)
FinLev	0.350***	0.455***	0.362***	0.242***	0.288***	0.257***
	(5.56)	(7.66)	(5.70)	(13.60)	(16.99)	(14.42)
lgAsset	-0.253***	-0.237***	-0.270***	-0.235***	-0.226***	-0.248***
	(-24.94)	(-22.90)	(-25.83)	(-77.31)	(-75.17)	(-77.97)
lgScale	-0.077***	-0.098***	-0.078***	-0.014***	-0.033***	-0.018***
	(-5.66)	(-7.14)	(-5.78)	(-3.47)	(-8.31)	(-4.38)
IfGuarant	-0.077***	-0.020	-0.095***	0.058***	0.100***	0.049***
	(-2.76)	(-0.74)	(-3.45)	(9.45)	(16.67)	(8.02)
IfAmort	0.610***	0.628***	0.585***	0.292***	0.271***	0.262***
	(21.36)	(22.00)	(20.31)	(51.40)	(46.93)	(45.17)
IfNew				0.020***	0.015***	0.019***
				(3.95)	(2.77)	(3.82)
Turnover				0.047***	0.054***	0.046***
				(17.25)	(19.32)	(17.36)
Constant	9.313***	6.217***	9.567***	8.254***	5.237***	8.535***
	(12.63)	(48.14)	(12.97)	(34.69)	(55.94)	(35.81)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	No	Yes	Yes
City FE	Yes	No	Yes	Yes	No	Yes
R Square	0.587	0.524	0.594	0.517	0.474	0.523
Obs	9699	9699	9699	123455	123455	123455

⋆ Column (1)-(3) use SOE bond issuance sample and the time fixed effect controls for the calendar year in which the bond is issued. Column (4)-(6) use SOE bond-month trading sample and the time fixed effect controls for the calendar month in which the bond is traded. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 6: Piecewise approach on term structure effects

	(1)	(2)	(3)	(4)
	Sprd	Sprd	Sprd	Sprd
m0	2.157***	1.739***	0.620	1.472***
	(5.39)	(2.95)	(0.50)	(2.94)
m1	3.282***	1.874***	0.925	2.001***
	(8.61)	(3.18)	(0.75)	(3.97)
m2	2.539***	1.824***	0.606	1.620***
	(6.24)	(3.06)	(0.49)	(3.22)
m3	1.388***	2.033**	35.390	13.968
	(3.95)	(2.43)	(1.11)	(1.21)
m0*IfPolicy	-0.053	-0.105***	-0.340***	-0.173***
	(-1.25)	(-4.46)	(-8.79)	(-7.31)
m1*IfPolicy	0.116	0.109***	-0.316***	-0.044
	(0.74)	(5.29)	(-7.01)	(-0.76)
m2*IfPolicy	0.147*	0.265***	0.198***	0.201***
	(1.90)	(8.63)	(3.60)	(5.90)
m3*IfPolicy	0.125	0.132	-35.901	-12.997
	(0.43)	(0.18)	(-1.13)	(-1.12)
Controls	Yes	Yes	Yes	Yes
Avg R Square	0.703	0.620	0.346	0.548
No. of Periods	47	42	51	140
Obs	5578	30572	87305	123455

⋆ We break down the SOE sample into three subperiods, May 2006 to March 2011, April 2011 to September 2014, October 2014 to December 2018. Column (1) (2) (3) (4) report the results on the first, second, third subperiod and the whole period respectively. According to Fama-Macbeth approach, cross-sectionally regressions are run in each month, and then we calculate the average coefficients and report them in the table. The corresponding time-series t-statistics are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 7: Market reaction to Yunnan Highway default in April 2011

	(1)	(2)	(3)	(4)	(5)	(6)
	N_Sprd	P_Sprd	R_Sprd	N_Sprd	P_Sprd	R_Sprd
Event_t-4	-0.091	0.026	-0.079	-0.047	0.021	-0.083
	(-0.46)	(0.38)	(-1.38)	(-0.41)	(0.41)	(-1.58)
Event_t-3	0.009	0.015	-0.111**	0.001	-0.016	-0.118**
	(0.05)	(0.23)	(-2.12)	(0.01)	(-0.32)	(-2.44)
Event_t-2	0.293	0.269***	0.103*	0.283**	0.208***	0.091*
	(1.62)	(4.06)	(1.80)	(2.49)	(4.45)	(1.76)
Event_t-1	0.445***	0.325***	0.320***	0.423***	0.312***	0.297***
	(2.78)	(5.37)	(6.14)	(3.90)	(6.44)	(5.98)
Event_t	0.438***	0.256***	0.337***	0.419***	0.251***	0.328***
	(2.87)	(4.12)	(6.67)	(4.01)	(5.34)	(7.13)
Event_t+1	0.349**	0.367***	0.188***	0.522**	0.361***	0.233***
	(2.36)	(6.07)	(3.57)	(2.03)	(4.02)	(3.11)
Event_t+2	0.410***	0.250***	0.249***	0.599**	0.257***	0.269***
	(2.82)	(4.03)	(4.55)	(2.26)	(2.83)	(3.61)
Event_t+3	0.465***	0.363***	0.467***	0.632**	0.388***	0.489***
	(3.04)	(5.53)	(7.21)	(2.31)	(4.09)	(5.87)
Event_t+4	0.746***	0.577***	0.712***	0.943***	0.592***	0.699***
	(4.63)	(9.11)	(12.59)	(3.55)	(6.53)	(9.13)
Event_t+5	1.544***	1.047***	1.224***	1.683***	1.048***	1.224***
	(9.20)	(15.03)	(18.00)	(6.45)	(11.31)	(14.21)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	Yes	Yes	Yes
R Square	0.399	0.752	0.499	0.738	0.881	0.666
Obs	600	1422	1537	600	1422	1537

⋆ Column (1)(4), (2)(5) and (3)(6) report the results of NSOEs, Policy-SOEs and Regular-SOEs respectively. $Event\_t + i$ denotes the time dummy i month after the month when Yunnan Highway defaulted. The benchmark used for this comparison is the bond spread in month $t - 5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 8: Market reaction to Directive No. 43 in October 2014

	(1)	(2)	(3)	(4)	(5)	(6)
	N_Sprd	P_Sprd	R_Sprd	N_Sprd	P_Sprd	R_Sprd
Event_t-4	-0.182**	-0.106***	-0.026	-0.177***	-0.103***	-0.052
	(-2.18)	(-4.53)	(-0.54)	(-3.16)	(-5.86)	(-1.57)
Event_t-3	-0.525***	-0.390***	-0.415***	-0.521***	-0.390***	-0.419***
	(-6.18)	(-17.10)	(-9.25)	(-9.77)	(-23.30)	(-13.67)
Event_t-2	-0.574***	-0.552***	-0.566***	-0.616***	-0.553***	-0.558***
	(-6.83)	(-23.44)	(-11.93)	(-11.89)	(-31.92)	(-17.20)
Event_t-1	-0.525***	-0.523***	-0.468***	-0.551***	-0.526***	-0.458***
	(-6.21)	(-22.59)	(-10.31)	(-10.78)	(-30.75)	(-14.41)
Event_t	-0.681***	-0.669***	-0.593***	-0.717***	-0.684***	-0.569***
	(-7.52)	(-26.93)	(-12.62)	(-11.67)	(-34.85)	(-16.47)
Event_t+1	-0.698***	-0.949***	-0.706***	-0.730***	-0.976***	-0.684***
	(-8.30)	(-39.56)	(-15.48)	(-13.44)	(-49.83)	(-20.01)
Event_t+2	-0.046	-0.206***	0.062	-0.005	-0.222***	0.066*
	(-0.58)	(-8.40)	(1.29)	(-0.09)	(-10.63)	(1.82)
Event_t+3	-0.020	-0.172***	-0.026	0.001	-0.198***	-0.021
	(-0.25)	(-7.37)	(-0.59)	(0.01)	(-10.56)	(-0.63)
Event_t+4	-0.182**	-0.235***	-0.118**	-0.182***	-0.271***	-0.187***
	(-2.07)	(-9.43)	(-2.33)	(-3.16)	(-13.83)	(-5.35)
Event_t+5	-0.398***	-0.322***	-0.097**	-0.332***	-0.353***	-0.131***
	(-5.07)	(-14.24)	(-2.00)	(-6.19)	(-18.78)	(-3.66)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	Yes	Yes	Yes
R Square	0.328	0.532	0.381	0.767	0.748	0.732
Obs	2614	9747	4046	2614	9747	4046

⋆ Column (1)(4), (2)(5) and (3)(6) report the results of NSOEs, Policy-SOEs and Regular-SOEs respectively. $Event\_t+i$ denotes the time dummy i month after the month when Directive No. 43 was enforced. The benchmark used for this comparison is the bond spread in month $t-5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 9: Market reaction to irregular initial city official turnover

	(1) N_Sprd	(2) P_Sprd	(3) R_Sprd	(4) N_Sprd	(5) P_Sprd	(6) R_Sprd
IntTurn_t-4	0.633*	-0.146	-0.272	-0.412	0.002	0.069
	(1.89)	(-1.16)	(-1.59)	(-1.30)	(0.03)	(0.34)
IntTurn_t-3	0.696*	-0.097	-0.196	-0.187	-0.010	0.039
	(1.94)	(-0.74)	(-1.02)	(-0.55)	(-0.13)	(0.20)
IntTurn_t-2	1.040**	-0.260*	-0.260	0.133	-0.026	0.055
	(2.46)	(-1.76)	(-1.33)	(0.33)	(-0.38)	(0.33)
IntTurn_t-1	0.269	-0.230	-0.111	-0.245	-0.030	-0.128
	(0.61)	(-1.45)	(-0.54)	(-0.56)	(-0.41)	(-0.67)
IntTurn_t	0.814*	-0.270*	-0.240	0.015	-0.070	-0.204
	(1.69)	(-1.65)	(-0.82)	(0.03)	(-0.92)	(-1.17)
IntTurn_t+1	1.505***	-0.382**	-0.314	0.293	0.121	-0.192
	(3.48)	(-2.25)	(-1.07)	(0.45)	(1.55)	(-1.01)
IntTurn_t+2	0.638*	-0.299	-0.195	0.374	0.093	-0.189
	(1.86)	(-1.63)	(-0.63)	(0.49)	(1.08)	(-0.91)
IntTurn_t+3	1.088***	-0.350	-0.185	0.382	0.072	-0.094
	(2.74)	(-1.63)	(-0.51)	(0.45)	(0.76)	(-0.39)
IntTurn_t+4	1.256***	-0.504**	-0.036	0.212	0.058	-0.054
	(2.78)	(-2.14)	(-0.09)	(0.24)	(0.59)	(-0.24)
IntTurn_t+5	1.326**	-0.494*	-0.242	0.658	0.097	0.004
	(2.28)	(-1.83)	(-0.55)	(0.82)	(0.90)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.651	0.824	0.691	0.841	0.746	0.649
Obs	340	1096	459	236	1761	576

⋆ Column (1)-(3) and (4)-(6) report the results of irregular initial city governor turnover and initial city party secretary turnover. Irregular turnover includes cases where city officials are removed from office due to corruption, failure to resolve major incidents or sudden death, among which corruption is in the great majority. We compare the market reaction around city governor (party secretary) turnover after controlling for various variables. $IntGov\_t + i$ denotes the time dummy i month after the month when the turnover occurs. The benchmark used for comparison is the bond spread in month $t - 5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 10: Market reaction to irregular city official turnover

	(1) N_Sprd	(2) P_Sprd	(3) R_Sprd	(4) N_Sprd	(5) P_Sprd	(6) R_Sprd
Turn_t-4	0.656**	-0.208	-0.212	-0.313	-0.044	-0.021
	(2.11)	(-1.43)	(-0.93)	(-1.09)	(-0.72)	(-0.12)
Turn_t-3	0.719*	-0.165	-0.092	-0.152	-0.084	-0.154
	(1.90)	(-0.76)	(-0.26)	(-0.46)	(-1.35)	(-0.91)
Turn_t-2	1.107**	-0.407	0.095	0.102	-0.139**	-0.338**
	(2.40)	(-1.38)	(0.20)	(0.25)	(-2.12)	(-2.12)
Turn_t-1	0.310	-0.433	0.165	-0.209	-0.166**	-0.323*
	(0.65)	(-1.15)	(0.28)	(-0.46)	(-2.44)	(-1.80)
Turn_t	0.884*	-0.569	0.029	0.108	-0.213***	-0.417**
	(1.89)	(-1.27)	(0.04)	(0.19)	(-2.90)	(-2.47)
Turn_t+1	1.680***	-0.690	-0.122	0.445	-0.054	-0.563***
	(3.95)	(-1.34)	(-0.14)	(0.64)	(-0.71)	(-3.29)
Turn_t+2	0.792**	-0.609	-0.058	0.447	-0.168*	-0.454**
	(2.35)	(-1.03)	(-0.06)	(0.56)	(-1.92)	(-2.53)
Turn_t+3	1.330***	-0.674	0.169	0.450	-0.196**	-0.417**
	(3.42)	(-0.99)	(0.15)	(0.50)	(-2.11)	(-2.01)
Turn_t+4	1.427**	-0.923	0.323	0.417	-0.251**	-0.522***
	(2.58)	(-1.21)	(0.25)	(0.43)	(-2.45)	(-2.68)
Turn_t+5	1.511**	-0.980	0.337	0.679	-0.239**	-0.470**
	(2.24)	(-1.14)	(0.23)	(0.79)	(-2.06)	(-2.31)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.602	0.804	0.651	0.819	0.727	0.658
Obs	319	1192	527	259	2309	762

⋆ Column (1)-(3) and (4)-(6) report the results of irregular city governor turnover and city party secretary turnover. We compare the market reaction around city official turnover after controlling for various variables. $Turn\_t + i$ denotes the time dummy i month after the month when the turnover occurs. The benchmark used for comparison is the bond spread in month $t - 5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 11: Market reaction to initial city official turnover

	(1) N_Sprd	(2) P_Sprd	(3) R_Sprd	(4) N_Sprd	(5) P_Sprd	(6) R_Sprd
IntTurn_t-4	-0.035	-0.004	0.017	-0.083	-0.013	-0.015
	(-0.54)	(-0.19)	(0.38)	(-1.39)	(-0.67)	(-0.33)
IntTurn_t-3	-0.087	0.017	-0.024	-0.065	-0.013	-0.032
	(-1.40)	(0.95)	(-0.55)	(-1.10)	(-0.65)	(-0.69)
IntTurn_t-2	-0.051	0.023	-0.013	-0.084	-0.012	-0.065
	(-0.79)	(1.31)	(-0.32)	(-1.43)	(-0.63)	(-1.46)
IntTurn_t-1	-0.030	-0.008	0.005	-0.043	0.027	-0.060
	(-0.49)	(-0.46)	(0.13)	(-0.75)	(1.41)	(-1.35)
IntTurn_t	0.037	0.030*	0.019	-0.066	0.000	-0.027
	(0.61)	(1.66)	(0.45)	(-1.14)	(0.02)	(-0.61)
IntTurn_t+1	0.015	0.021	0.052	-0.027	0.006	-0.022
	(0.24)	(1.13)	(1.24)	(-0.46)	(0.34)	(-0.48)
IntTurn_t+2	-0.036	0.039**	0.050	-0.089	0.014	-0.034
	(-0.58)	(2.03)	(1.16)	(-1.49)	(0.71)	(-0.76)
IntTurn_t+3	0.010	0.004	0.026	-0.106*	0.035*	-0.030
	(0.15)	(0.21)	(0.59)	(-1.68)	(1.71)	(-0.63)
IntTurn_t+4	0.004	-0.023	0.081*	-0.071	0.003	-0.007
	(0.07)	(-1.21)	(1.70)	(-1.08)	(0.17)	(-0.15)
IntTurn_t+5	0.051	-0.011	0.030	0.056	-0.030	-0.031
	(0.73)	(-0.58)	(0.62)	(0.80)	(-1.51)	(-0.62)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.553	0.712	0.509	0.529	0.709	0.469
Obs	5173	17944	7279	5536	16841	7006

* Column (1)-(3) and (4)-(6) report the results of initial city governor turnover and initial city party secretary turnover. Initial city governor (party secretary) is the governor (party secretary) who takes power when the corresponding bond is issued. We compare the market reaction around city governor (party secretary) turnover after controlling for various variables. $IntTurn\_t+i$ denotes the time dummy i month after the month when the turnover occurs. The benchmark used for comparison is the bond spread in month $t-5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 12: Market reaction to city official turnover

	(1) N_Sprd	(2) P_Sprd	(3) R_Sprd	(4) N_Sprd	(5) P_Sprd	(6) R_Sprd
Turn_t-4	-0.048	0.009	0.025	-0.065	-0.019	0.017
	(-0.79)	(0.60)	(0.58)	(-1.21)	(-1.16)	(0.37)
Turn_t-3	-0.073	0.028*	-0.007	-0.033	-0.002	-0.001
	(-1.25)	(1.77)	(-0.16)	(-0.61)	(-0.14)	(-0.02)
Turn_t-2	-0.048	0.032**	-0.000	-0.054	0.003	-0.043
	(-0.79)	(2.11)	(-0.01)	(-1.00)	(0.20)	(-1.01)
Turn_t-1	-0.059	0.027*	0.020	-0.045	0.033**	-0.053
	(-1.00)	(1.72)	(0.48)	(-0.84)	(1.97)	(-1.23)
Turn_t	0.001	0.049***	0.018	-0.043	0.021	-0.029
	(0.02)	(3.17)	(0.44)	(-0.82)	(1.28)	(-0.68)
Turn_t+1	-0.010	0.041***	0.052	-0.007	0.015	0.001
	(-0.17)	(2.62)	(1.26)	(-0.13)	(0.93)	(0.02)
Turn_t+2	-0.091	0.049***	0.031	-0.079	0.023	-0.046
	(-1.56)	(2.98)	(0.77)	(-1.45)	(1.35)	(-1.10)
Turn_t+3	-0.024	0.028*	0.028	-0.089	0.045**	-0.034
	(-0.40)	(1.67)	(0.64)	(-1.56)	(2.56)	(-0.76)
Turn_t+4	-0.031	-0.005	0.100**	-0.052	0.022	-0.011
	(-0.49)	(-0.31)	(2.22)	(-0.87)	(1.23)	(-0.24)
Turn_t+5	0.036	0.002	0.029	0.049	0.002	-0.033
	(0.55)	(0.14)	(0.64)	(0.75)	(0.12)	(-0.71)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
City FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.539	0.678	0.506	0.523	0.669	0.466
Obs	5876	24677	8322	6190	23126	7946

⋆ Column (1)-(3) and (4)-(6) report the results of city governor turnover and city party secretary turnover. We compare the market reaction around city official turnover after controlling for various variables. $Turn\_t+i$ denotes the time dummy i month after the month when the turnover occurs. The benchmark used for comparison is the bond spread in month $t-5$. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 13: "Window dressing" and change in government support

	(1) P_EqtyInj	(2) R_EqtyInj	(3) PR_EqtyInj	(4) P_EqtyInj	(5) R_EqtyInj	(6) PR_EqtyInj
IfBefore	5.802***	1.763***	1.763***	1.262***	-0.041	-0.575***
	(27.89)	(7.74)	(8.28)	(5.85)	(-0.17)	(-2.90)
IfBefore*IfPolicy			4.039***			2.029***
			(13.38)			(7.56)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.370	0.357	0.373	0.513	0.564	0.523
Obs	18088	8241	26329	18088	8241	26329

	(1) P_Subsidy	(2) R_Subsidy	(3) PR_Subsidy	(4) P_Subsidy	(5) R_Subsidy	(6) PR_Subsidy
IfBefore	0.258***	0.053***	0.053***	0.059***	0.007	-0.020
	(17.31)	(2.69)	(2.88)	(3.47)	(0.28)	(-1.02)
IfBefore*IfPolicy			0.205***			0.087***
			(8.57)			(3.72)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.704	0.776	0.726	0.740	0.787	0.755
Obs	18088	8241	26329	18088	8241	26329

	(1) P_EqtyInj	(2) R_EqtyInj	(3) PR_EqtyInj	(4) P_EqtyInj	(5) R_EqtyInj	(6) PR_EqtyInj
AvgAge	-3.784***	-1.421***	-1.421***	-0.526**	-0.594***	-0.034
	(-23.28)	(-7.31)	(-7.27)	(-2.56)	(-3.24)	(-0.19)
AvgAge*IfPolicy			-2.363***			-0.994***
			(-9.30)			(-4.20)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.270	0.154	0.260	0.409	0.447	0.419
Obs	8434	2982	11416	8434	2982	11416

	(1) P_Subsidy	(2) R_Subsidy	(3) PR_Subsidy	(4) P_Subsidy	(5) R_Subsidy	(6) PR_Subsidy
AvgAge	-0.162***	0.005	0.005	-0.074***	0.016	0.008
	(-12.15)	(0.26)	(0.26)	(-4.14)	(0.73)	(0.42)
AvgAge*IfPolicy			-0.167***			-0.077***
			(-7.26)			(-3.58)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.618	0.763	0.672	0.665	0.774	0.705
Obs	8434	2982	11416	8434	2982	11416

⋆ Policy-SOE results are reported in column (1) and (4) in each panel, Regular-SOEs results are reported in column (2) and (5) and the results about both types of SOEs are reported in column (3) and (6). The first two panels compare government support before and after issuance for each bond in its life. The last two panels show the over-time decline of government support. $IfBefore$, equals to 1 if the fiscal year is before bond issuance. $AvgAge$, the weighted average age of bonds a firm issues in a certain year, is calculated as follows: in each firm-year, we calculate the average of the difference between the duration at issuance and current duration weighted by the outstanding amount of each bond in a given month. Note that the financial information used to calculate government support and benefit is from the fiscal year before the trading year. The magnitude of all coefficients are multiplied by 100. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.

Table 14: Firm fundamentals over time

	(1)	(2)	(3)	(4)	(5)	(6)
	P_Profbi	R_Profbi	PR_Profbi	P_Profbi	R_Profbi	PR_Profbi
AvgAge	-0.163***	-0.863***	-0.863***	-0.121***	-0.168*	-0.519***
	(-9.30)	(-10.92)	(-10.88)	(-4.76)	(-1.90)	(-6.47)
AvgAge*IfPolicy			0.700***			0.670***
			(8.62)			(8.44)
Constant	0.960***	4.041***	1.765***	0.817***	5.847***	2.820***
	(33.95)	(36.42)	(49.28)	(2.94)	(12.80)	(9.57)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.753	0.669	0.728	0.771	0.714	0.748
Obs	8434	2981	11415	8434	2981	11415

	(1)	(2)	(3)	(4)	(5)	(6)
	P_Cashbi	R_Cashbi	PR_Cashbi	P_Cashbi	R_Cashbi	PR_Cashbi
AvgAge	-0.074	0.130	0.130	-0.066	0.471***	0.398***
	(-1.01)	(1.00)	(0.99)	(-0.60)	(3.01)	(2.82)
AvgAge*IfPolicy			-0.204			-0.424***
			(-1.36)			(-2.83)
Constant	-1.703***	3.152***	-0.435***	-0.697	7.081***	2.409***
	(-14.28)	(16.29)	(-4.29)	(-1.17)	(11.05)	(5.10)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.501	0.481	0.546	0.507	0.505	0.552
Obs	8434	2981	11415	8434	2981	11415

	(1)	(2)	(3)	(4)	(5)	(6)
	P_Finlev	R_Finlev	PR_Finlev	P_Finlev	R_Finlev	PR_Finlev
AvgAge	2.291***	1.101***	1.101***	1.172***	-0.553***	0.064
	(17.39)	(6.05)	(6.03)	(6.33)	(-2.63)	(0.32)
AvgAge*IfPolicy			1.191***			0.745***
			(5.29)			(3.28)
Constant	28.034***	31.444***	28.924***	27.167***	25.492***	25.208***
	(137.77)	(122.88)	(175.91)	(16.30)	(23.01)	(26.00)
Year FE	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R Square	0.725	0.809	0.749	0.737	0.831	0.757
Obs	8434	2981	11415	8434	2981	11415

⋆ Policy-SOE results are reported in column (1) and (4) in each panel, Regular-SOEs results are reported in column (2) and (5) and the results about both types of SOEs are reported in column (3) and (6). *AvgAge*, the weighted average age of bonds a firm issues in a certain year, is calculated as follows: in each firm-year, we calculate the average of the difference between the duration at issuance and current duration weighted by the outstanding amount of each bond in a given month. Note that the financial information used to calculate government support and benefit is from the fiscal year before the trading year. The magnitude of all coefficients are multiplied by 100. t-statistics calculated from robust standard error are reported in parenthesis. *, **, *** denote statistical significance at 10%, 5%, 1% levels respectively.