Fiscal Support and Earnings Management

Guanming He*
University of Warwick, United Kingdom

* Corresponding author. Tel: 44-7570184501. Email: guanming.he@wbs.ac.uk. This paper won a best paper award at the 24th International Business Conference in Las Vegas. I gratefully acknowledge the helpful comments from two anonymous reviewers, Phyllis Mo, Kenny Lin, Agnes Lo, Yuan Ding, Siew Hong Teoh, Thomas Omer, In-Mu Haw, Kiridaran Kanagaretnam, Steve Young, Pauline Weetman, Daniel Ho, Christina Dargenidou, and workshop and conference participants at the 24th International Business Research conference, American Accounting Association annual meeting, and Lingnan University. All errors are my own.

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Abstract: It is well documented that firms tend to manipulate earnings before IPO (initial public offerings) and SEO (seasoned equity offerings). This study contributes to the literature by providing the first evidence on whether and how fiscal support in the form of preferential tax treatment and financial subsidy affects a firm's earnings management behaviors. Using data for Chinese firms that have conducted IPO and SEO, I find that firms have a lower level of earnings management prior to the offerings if they enjoy more preferential tax treatment or more financial subsidies from local governments. My results are consistent with the view that firms that receive stronger fiscal support have smaller demand for earnings management, which is a costly tool for a firm to achieve its desired earnings targets.

JEL classification: M41; M48; G14; G15; G18; H32

Keywords: Fiscal support; Earnings management; Financial subsidy; Income tax preference

1. Introduction

Officially opened in the early 1990s, China's stock exchanges were established as an experiment in combining a market economy with central planning. As most listed Chinese companies are sponsored and controlled by government-related entities, governmental intervention in the stock market has dominated throughout. The quotas of IPOs distributed across the nation are allocated by a local government to firms selected from its jurisdiction. The local government deems the listed firms within its jurisdiction a symbol of wealth and prestige as well as a potent tool to promote territorial economic growth (Chan, Lin, & Mo, 2006). While local firms finance investments and business expansion through equity offerings, more foreign capital resources would be absorbed to the municipal jurisdictions for local businesses, thereby stimulating economic development in the territory. However, the regulations require firms to attain a minimum rate of return on equity (ROE) to be qualified for rights offerings. Furthermore, investors tend to rely on earnings more than any other summary measures of firm performance to make their investment decisions (Biddle, Seow, & Siegel, 1995; Francis, Schipper, & Vincent, 2003; Graham, Harvey, & Rajgopal, 2005; Liu, Nissim, & Thomas, 2002). Therefore, to facilitate financing, both the local governments and their listed firms aim for a high level of corporate reported earnings prior to equity offerings. On the one hand, local governments compete to lend fiscal support (i.e., preferential tax treatment and financial subsidy) to local firms in support of their financing (Chen & Lee, 2001), thus inducing drastic competition for capital resources among the local governments.[1] On the other hand, firms that desire low financing costs tend to manipulate earnings to a high level.

This paper aims to investigate whether and how fiscal support in the form of preferential

[1] Chen and Lee (2001) provide descriptive statistics and univariate tests on the fiscal support for Chinese listed firms during 1997–1999. They show that in order to compete for capital resources from the capital market, local governments generally grant income tax preferences and financial subsidies to firms listed under their jurisdictions.

tax treatment and financial subsidy affects a firm's earnings management behaviors in China. My investigation is motivated by the growing interests in the influence of political forces on firm activities in a transitional economy such as China (e.g., Gul, 2006; Leuz & Oberholzer, 2007; Piotroski, Wong, & Zhang, 2015; Hung, Wong, & Zhang, 2012). Fiscal support from local governments is one source of political force that prevails in the transitional economy yet has remained unexplored by researchers. This study fills this void in the literature. Given the privatization through sales of government-owned enterprises and the increased opportunities for global investors (especially those from Europe and the United States) to purchase shares in China's stock market, understanding the role of fiscal support in a firm's financial reporting incentive is important to the market participants.[2] This practical implication can be generalized to other institutional settings where there are varied fiscal policies implemented across jurisdictions within a country (e.g., the United States) or across different countries within a politico-economic union (e.g., the European Union).

Both earnings management and fiscal support could help a firm achieve its desired earnings targets. However, earnings inflated by a firm would reverse and decline in the subsequent periods, which induces high risks of subsequent detection and hence reputational loss along with litigation and regulatory actions to a firm (e.g., Ball & Shivakumar, 2008; He, 2015). Hence, earnings management is a very risky and costly tool for a firm to boost its reported earnings. In contrast, while substituting for earnings management in propping up earnings numbers, fiscal support brings about real cash benefits for a firm. Thus, given a firm's desired level of reported earnings, fiscal support reduces the firm's demand for earnings management. Accordingly, I hypothesize that firms that receive stronger fiscal

[2] Many transitional economies such as China, India, and Vietnam have been privatizing their state-owned enterprises by either selling government-owned shares in the domestic market or listing in developed overseas markets. The capital-raising activities of the state-owned enterprises have triggered fierce competition among global stock exchanges to attract new listings from Chinese firms (Kissel & Santini, 2004), notably for the world's biggest IPO by the Industrial & Commercial Bank of China Ltd. (ICBC)'s $19-billion share issuance.

support from local governments have a lower level of earnings management.

Equity offerings in China provide an ideal setting to test this hypothesis. The reasons are two-fold. First, the hypothesis is based on the premise that managers have a desire to achieve certain earnings targets. Chinese equity issuers generally target a particular high level of reported earnings that appeal to investors so that they can manage to raise full capital as planned (Aharony, Lee, & Wong, 2000). Second, local governments in China tend to fiscally support local firms for their financing such that more capital resources and foreign investments would be attracted to their jurisdictions. As a result, Chinese firms, to a varied extent, enjoy fiscal support from local governments during equity offerings.

Using data for Chinese firms that conducted IPO (initial public offerings) and SEO (seasoned equity offerings), I find strong evidence in support of the hypothesis. In particular, I find that firms have a smaller magnitude of earnings management prior to equity offerings if they enjoy more financial subsidies or more income tax savings attributed to income tax preferences granted by local governments. I also find that income tax preference mitigates a firm's earnings management to a larger extent than financial subsidy does. Prior research (e.g., Aharony *et al.*, 2000; Chen, Firth, Gao, & Rui, 2006; Haw, Qi, Wu, & Wu, 2005; Liu & Lu, 2007) documents that listed Chinese companies mainly use accruals to manipulate earnings. Hence, I use abnormal accruals as the proxy for earnings management, which is estimated based on the modified Jones model. The results are robust to using other discretionary accrual models such as the one developed by Ball and Shivakumar (2006). My main test treats fiscal support as exogenous to earnings management. However, if local governments tend to offer fiscal support to firms that have poor earnings performance, firms who wish for stronger fiscal support will lack incentive to manipulate earnings. This alternatively explains the negative association between fiscal support and earnings management. To address this potential self-selection and endogeneity problem, I use a two-stage least squares estimation

procedure. The results of the test are similar to my main findings.

This paper contributes to the literature in several aspects. First, to my knowledge, this study is the first to examine the impact of fiscal support on a firm's earnings management behaviors. The findings suggest that institutional factors such as fiscal support that bear the political incentives of local governments should be accounted for in studying earnings management in China's or other East Asian emerging markets in which fiscal support from local government prevails and government intervention into firm's reporting practices predominates (e.g., Bushman, Piotroski, & Smith, 2004; Gul, 2006; Leuz & Oberholzer, 2007; Piotroski *et al.*, 2015; Hung *et al.*, 2012).

Second, Chen, Lee, & Li (2008) find that local governments offer financial subsidies to help their local firms achieve their earnings targets for rights offerings, and they compare the subsidy grants to a sort of "real earnings management" directed by local governments. But Chen *et al.* (2008) do not investigate how the governmental subsidy affects managerial incentives and firm-level activities. This is the focus of my study. I account for a broader range of fiscal support including income tax preference and explore whether the fiscal support affects the firm-level earnings management behaviors.

To the extent that fiscal support is a sort of government-directed "real earnings management," this study contributes to the recent strand of earnings management literature (e.g., Cohen, Dey, & Lyz, 2008; Bhojraj, Hribar, Picconi, & McInnis, 2009; Jian & Wong, 2010; Zang, 2012; Cohen & Zarowin, 2010; Badertscher, 2011; Gunny, 2010; Burnett, Cripe, Martin, & McAllister, 2012; Chan, Chen, Chen & Yu, 2015), which documents a substitutive relationship between real and accrual-based earnings management for achieving earnings targets. In essence, these recent studies show that each of the real and accrual-based earnings management activities decreases with its own costs and increases with the costs of the other. Different from the firm-level real earnings management that has suboptimal business

outcomes or negative economic consequences for a firm, government-directed "earnings management," the fiscal support I focus on in this study, has positive real cash benefits for a firm. Hence, given a desired level of reported earnings to achieve, fiscal support is a robust substitutive mechanism for firm-level earnings management.

Third, there is growing evidence that government intervention and political forces shape financial reporting incentives of firms. For instance, Bushman *et al.* (2004) and Leuz and Oberholzer (2007) document that firms facing increased government intervention have an incentive to reduce financial reporting transparency and tilt the reported valuation to minimize the political costs. The political costs include an increase in tax burdens as well as a host of indirect taxes, such as tightened regulation or threat of greater government intervention into a firm's business activities. Piotroski *et al.* (2015) provide evidence that firms are inclined to suppress negative financial information in view of the expected political costs from the governments. This strand of literature focuses on the expected political costs associated with the given financial outcome of a firm to investigate the issue of how a firm's financial reporting practice is shaped by government intervention. In contrast, my study sheds light on this issue from a new perspective, that is, the benefits rather than the costs of political forces to a firm, and sees how a firm's financial reporting incentives are affected by fiscal support from local governments.

The remainder of the paper proceeds as follows. Section 2 describes the institutional background. Section 3 develops the research hypothesis. Section 4 presents the research design. Section 5 discusses the empirical results, and Section 6 concludes.

2. Institutional background

2.1. China's tax regimes and fiscal support from local governments

In China, the central government implements a planned quota system for IPOs, under

which a limited listing quota is assigned to the planning commission at the provincial level, and then the local governments make the allocation to IPO candidates within their administrative region. The limited share quota assigned to each firm is usually too small to meet its capital need (Chen & Yuan, 2004). To enhance the firms' capital-raising during IPO as well as their subsequent rights offerings, Chinese local governments compete to lend fiscal support to their local IPO or SEO firms to attract investment that is essential to the territorial economic growth.

Before 2002, there were three avenues for a local government to lend fiscal support to firms within its jurisdiction: preferential income tax rate, income tax refund, and financial subsidy. The first two comprised the income tax preference a firm enjoyed. Nevertheless, since the policy of "first tax last refund" (i.e., income tax refund) was abolished in 2002, there had been only two avenues available (i.e., preferential income tax rate and financial subsidy) for local governments to mitigate the effective tax burden of companies in their administrative regions. After 2007, when most preferential tax provisions were abrogated, local governments mainly resort to subsidy grants to support their listed companies.

Preferential income tax rate policy usually serves as a tax incentive for firms located in special economic zones, fast-developing economic and technologic regions, as well as other designated regions, and it aims at encouraging the development of certain industries such as high-tech, energy, transportation, infrastructures, and agriculture industry. The firms entitled to the tax rate preference pay their income tax at a rate lower than the standard tax rate of 33%, varying between 27% and 0% depending on the firm attributes. The approval of tax rate preferences for companies is up to the discretion of the local tax bureau or local State Administration of Taxation (SAT) office, which is an indispensable affiliated segment of the local government. Most Chinese local governments grant income tax rate preferences to companies that fail to meet the national criteria for granting preferential income tax rate

(Chen & Lee, 2001). Thus, many Chinese companies, to a varied extent, manage to enjoy the benefits from the preferential tax rate policy.

Most listed companies in China were subject to the standard tax rate of 30% plus the local tax of 3% prior to their listing on the stock exchange. Those companies would no sooner be listed than receive approval from local governments to enjoy a preferential income tax rate. The ensuing lower tax burden results in a higher level of reported earnings for the companies, thereby facilitating their financing through the subsequent equity offerings. The 30% standard tax rate could be reduced to 27%, 15%, or even 0% as a tax preference for firms. The specific amount of the 3% local tax to be levied from firms was arbitrarily up to the discretion of local governments. The local governments were prone to waive the 3% local tax to support local firms in their financing and investments. As such, the effective tax rates for most listed Chinese companies fell in the following three intervals: 15%–18%, 24%–27%, and 30%–33%, with some of the firms enjoying an income tax exemption.

Before 2002, local governments could first levy income tax on companies at a rate of 33% and then refund part of the tax to the companies. Which company would be "qualified" for the refund and how much of the refund would be paid were up to the discretion of local governments (Wu, Wang, Lin, Li, & Chen, 2007). When a local government found it hard to get a favorable ground to grant preferential income tax rate to a firm, they used to resort to this "first tax last refund" practice to relieve the tax burden on their listed companies. Local governments that wished to attract foreign investments in local business usually offered large tax refunds to local companies right before the IPO to facilitate their financing (Chen & Lee, 2001).

Financial subsidy is another instrument for a local government to lend support to firms within its jurisdiction. Subsidies from local governments can be exempt from income tax, subject to approval from the Chinese central government. Local Chinese bureaucrats

generally expect firms located in their jurisdictions to produce strong performance results since the provincial leaders' promotions and demotions are significantly associated with the economic performance of the province under their control (Li, 1998; Li & Zhou, 2005; Piotroski *et al.*, 2015). Since local enterprises make up the main forces of promoting the territorial economy, subsidy grants to enterprises prevail in China.[3] In order to attract economic resources and promote territorial economic growth, local governments compete to grant financial subsidies to their local enterprises in support of their financing. Chen *et al.* (2008) show that local Chinese governments tend to use subsidies to help firms boost their reported earnings to meet the regulatory return on equity (ROE) threshold for rights offerings. Without the subsidies, which are being recognized as revenue in the income statements, a number of listed Chinese firms would have failed to meet the regulatory ROE requirement for rights issues (Chen & Lee, 2001).

In China, under the State Council regulations governing the tax revenue sharing regime, enterprise income tax levied by the local SAT offices is shared between central government and local governments in the ratio of 60% to 40% (Liu, 2006). As 60 percent of the income tax levied on companies is assigned as fiscal revenues to the central government, local governments would only suffer 40% loss in fiscal revenues for offering income tax preferences to their local firms. Likewise, local governments also only suffer partial loss of fiscal revenues for granting "first tax last refund" to the local firms. Compared to the tax preference grant, a financial subsidy grant is more costly for a local government as the full amount of subsidies granted to firms is borne by the local government. So the income tax preference grant becomes a more common avenue for a local government to fiscally support

[3] Territorial economic development and competitiveness, to a large extent, depend on performance of firms within the jurisdictions. Hence, local governments compete to afford local firms subsidies to support their investment and operation activities. For instance, in December, 2003, the local government in Liaoning province, where automobile industry is the mainstay of the territorial economy, granted financial subsidies of 100 million RMB to a local listed firm, Songliao Automating Corporation, to support its automotive production. Given varied economic conditions among regions, the incentive scheme of fiscal subsidies for local firms differs among local governments at the provincial level.

its local firms than the financial subsidy grant. This helps explain why in China, enterprises that enjoy income tax preferences from local governments are far more abundant than enterprises that enjoy financial subsidies (Chen & Lee, 2001).[4]

2.2. Earnings management by Chinese companies

Prior empirical evidence indicates that investors rely on earnings more than any other measures of firm performance to assess firm value (Biddle *et al.*, 1995; Liu *et al.*, 2002; Francis *et al.*, 2003). Survey results also indicate that managers view earnings as the key metric for performance evaluation by investors and analysts (Graham *et al.*, 2005). Thus, in order to sell the shares at a higher price and raise capital at a lower cost, U. S. firms tend to manipulate earnings prior to equity offerings (e.g., Teoh, Welch, & Wong, 1998a, 1998b). This motivation behind the earnings management in U. S. firms also applies to Chinese firms that plan on equity offerings (e.g., Aharony *et al.*, 2000; Liu & Lu, 2007). However, the motives for earnings management of Chinese firms differ from those of U. S. firms in two aspects.

First, unlike the agency conflict between shareholders and managers that explains earnings management in most of the U. S. companies, agency conflict between controlling shareholders and minority shareholders accounts for a significant portion of earnings management for Chinese companies (Liu & Lu, 2007). In China, controlling shareholders tend to plunder the wealth of minority shareholders or that of prospective outside investors (Claessens, Djankov, & Lang, 2000; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000; Leuz, Nanda, & Wysocki, 2003; Ding, Zhang, & Zhang, 2007) and manage earnings to conceal their private control benefits from the public (Haw, Hu, Hwang, & Wu, 2004; Leuz *et al.*, 2003). The incentives of large shareholders to manipulate earnings for wealth

[4] Chen and Lee (2001) show that less than 5% of Chinese firms listed during 1997–1999 have no income tax preference, while firms that enjoy financial subsidies from local governments account for 20.19% in 1997, 49.41% in 1998, and 54.66% in 1999.

expropriation are especially conspicuous in the setting of equity offerings among Chinese firms (e.g., Jian & Wong, 2010; Liu & Lu, 2007).

Second, unlike listed U. S. companies, listed Chinese companies must meet certain financial performance criteria to be qualified for seasoned equity offerings. From 1996 to 1998, one of the basic requirements from China Securities Regulatory Commission (hereafter, CSRC) was that companies had to have a minimum of 10% ROE for the three consecutive years prior to rights offerings (CSRC, 1996). In 1999, the rule was modified to require an average ROE of at least 10% as well as a minimum of 6% in each of the three years prior to the offerings (CSRC, 1999). From 2001 onwards, CSRC relaxed the restriction to a minimum of 6% ROE for each of the three years before the offerings (CSRC, 2001). This regulatory requirement incentivizes Chinese firms to inflate earnings to meet the ROE benchmark prior to rights offerings. Consistent with this notion, Chen and Yuan (2004), Haw *et al.* (2005), and Liu and Lu (2007) all find that the listed Chinese firms tend to manipulate earnings to meet the ROE requirements in order to qualify for SEO.[5]

3. Hypothesis development

Prior research (e.g., Shivakumar, 2000) shows that financing at a low cost is one of the major motives for earnings manipulation. However, investors place less value on the earnings that are suspected of manipulation by a firm. Companies identified as earnings manipulators will be subject to a substantial increase in their costs of capital. Shivakumar (2000) provides evidence that investors rationally infer earnings management at the offerings announcements and correct the price accordingly. Haw *et al.* (2005) find that in China, investors are able to see through the managed earnings and to rationally adjust it in their investment decisions during rights offerings. DeFond and Park (2001) focus on the general setting and provide

[5] There is no explicit minimum ROE requirement for a Chinese firm to qualify for IPO, but earnings is the key determinant of the offer price. Thus, Chinese firms generally have an incentive to manipulate earnings to inflate offer price before IPO.

evidence that market participants could anticipate the reversal implication of abnormal accruals. Thus, once a firm's earnings management is undone by outside investors at equity offering announcements, the firm might either fail to raise full capital as planned or be subject to price discount by external investors early around the equity offering dates.

Even if, using earnings manipulation, a firm might manage to deceive the outside stakeholders at the offering announcements, the firm would still bear high risks of subsequent detection. Earnings management is just like borrowing future earnings for current use and thus would reverse and decline in the subsequent periods. Prior studies (e.g., Teoh *et al.*, 1998a, 1998c) provide evidence that earnings management prior to equity offerings is responsible for poor earnings performance after the offerings. This earnings reversal leads outside investors to suspect that earnings have been managed upwards before the equity offerings (e.g., Ball & Shivakumar, 2008). Accordingly, investors adjust for their earlier mispricing and further impose a price discount on firms for their earnings manipulation. Consistent with this notion, prior research (e.g., Rangan, 1998; Teoh *et al.*, 1998a) documents that pre-offerings earnings management explains the long-term stock underperformance after equity offerings. The subsequent detection of earnings management results in reputational loss for a firm and hence increases its costs of capital and impairs its capability to raise future financing (He, 2015).

Earnings management also increases a firm's litigation risks. Firms might suffer from lawsuits and regulatory actions for their earnings management and hence bear the litigation costs. Ducharme, Malatesta, and Sefcik (2004) find that abnormal accruals are particularly high for SEO firms that are subsequently sued, and the settlement amounts are positively associated with the level of abnormal accruals. Their evidence implies that the earnings management drives the post-SEO litigation. Also, Billings and Lewis-Western (2015) find that aggressive pre-IPO financial reporting triggers legal consequences. Similar to SEC in the

United States, CSRC in China regularly carries out investigation to identify and prosecute financial frauds among equity issuers. Any regulatory enforcement action taken against a firm that engages in fraudulent financial reporting would have negative economic consequences for the firm. Chen, Firth, Gao, and Rui (2005) provide evidence that firms that are subject to CSRC enforcement actions experience a drastic decline in stock price, a greater rate of auditor change, a much higher incidence of qualified audit opinions, increased CEO turnover, and wider bid-ask spreads.

In sum, earnings management is a risky and costly instrument for a firm to boost its reported earnings. In contrast, fiscal support per se not only is costless for a firm but also increases the firm's real cash flows. Recent literature (e.g., Cohen & Zarowin, 2010; Zang, 2012; Chan *et al.*, 2015) documents that firms tend to use multiple earnings management tools as substitutes to achieve their desired earnings targets. These studies show that when discretion is more (less) costly for one earnings management tool, firms will make more (less) use of others. In a similar vein, while substituting for earnings management to boost the reported earnings, fiscal support adds real cash benefits to a firm. As such, given a firm's desired level of reported earnings, fiscal support should reduce the firm's demand for earnings management. This argument is in line with the incentive theory (e.g., Kerr, 1995), which contends that one would be less likely to commit malpractice to reap its private benefits if it is given an economic incentive. Fiscal support is one such incentive that reduces the likelihood that firms venture upon earnings manipulation to achieve their earnings targets. The discussion above leads to the hypothesis formulated in an alternative form as follows.

H1: *Ceteris paribus, firms that obtain stronger fiscal support from local governments have a smaller magnitude of earnings management.*

4. Research design

4.1. Sample selection

The data are obtained from both the China Stock Market and Accounting Research (CSMAR) database and the Wind database. Panel A of Table 1 describes the sample selection procedure. Sample selection starts with the entire population of both IPO firms and SEO firms on the Shenzhen and Shanghai stock exchanges over 1997–2006. The new Chinese Enterprise Income Tax Law promulgated in March 2007 abrogated the original tax regime that allowed varied income tax rates applicable for different types of firms, and it stipulated a 25% enterprise income tax rate applied to almost all firms in China from 1 January 2008 onwards. As such, in 2007, when the new income tax law was promulgated, firms that had an income tax rate above 25% under the old tax regime would have an incentive to manage earnings downwards in 2007. In this way, the firms could reduce income tax expenditure by reserving more earnings to be recognized after 2008 when they would enjoy the lower level of income tax rate (i.e., 25%) under the new tax regime. In a similar vein, firms that were subject to an income tax rate below 25% under the old tax regime had an incentive to manage earning upwards to take advantage of the lower tax rate that was still available in 2007. Since the earnings management in 2007 enables firms to minimize tax costs, I expect it to prevail among Chinese firms in 2007. This would cause confounding effects to my results if firms in 2007 are included in my sample. Hence, the sample period ends in 2006.

Following the sample selection method proposed by Rangan (1998), if listed companies have equity offerings more than once within any three years during the sample period, I choose only the earliest equity offering to trim measurement errors arising from the iterative offerings. Financial institutions are removed because the financial variables for financial institutions are not comparable to those for non-financial firms. I further eliminate firms whose listings had been postponed and firms that lack industry information from the

databases. The final sample consists of 3,290 firm-year observations for the selected firms that have complete financial information during the three years prior to the year of equity offerings.[6] Panel B of Table 1 summarizes the distribution of the final sample across fiscal years and industries.[7]

4.2. Variable measures

4.2.1. Earnings management

While I use different models of abnormal accruals in my sensitivity tests, the main tests are based on the following cross-sectional version of the industry-specific modified Jones model (e.g., Dechow, Sloan, & Sweeney, 1995; Hunt, Moyer, & Shevlin, 1996; Peasnell, Pope, & Young, 2000):

$$TA_{i,t} / A_{i,t-1} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t}) / A_{i,t-1} + \alpha_3(PPE_{i,t} / A_{i,t-1}) + \varepsilon_{i,t} \quad (1)$$

where $TA_{i,t}$ is total accruals for firm *i* in fiscal year *t*;[8] $\Delta REV_{i,t}$ is change in revenues for firm *i* in fiscal year *t*; $A_{i,t-1}$ is total assets for firm *i* at the end of fiscal year *t*-1; $\Delta REC_{i,t}$ is change in accounts receivable for firm *i* at the end of fiscal year *t*. The model assumes that no systematic earnings management occurs for the cross-sectional estimation sample. So I exclude the IPO and SEO firm-year observations when using model (1) to do the cross-sectional parameter estimates. The parameter estimation incorporates a constant term, α_0, since doing so mitigates the model misspecification problem (Kothari, Leone, & Wasley, 2005). Abnormal accruals (*DA*) for firm *i* in fiscal year *t* are measured by the residual value

[6] I focus on the three-year pre-offerings period for my sampling because firms that conduct equity offerings are required to publicly disclose their financial performance for the most recent three years prior to the offerings.

[7] I use the industry classification provided by CSRC, which classifies firms into 13 major industries such as manufacturing, real estate, commercial, etc.

[8] For post-1998 data, *TA* is computed as the difference between operating net income and operating cash flows. For other years when cash flow statement data are not available, I compute *TA* as: (change in current assets – change in cash – change in short-term lending) – (change in current liabilities – change in short-term borrowings – change in accrued income taxes – change in current portion of long-term debts) – depreciation expense – amortization expense, where the change is computed between year *t* and *t*-1.

from the model.

There has been growing evidence (e.g., Roychowdhury, 2006; Zang, 2012; Chan *et al.*, 2015) of how firms manage earnings through real activities manipulation in addition to the accruals-based method. For instance, Cohen and Zarowin (2010) provide evidence that SEO firms in the United States engage in real earnings management in addition to accruals-based earnings management prior to the offerings. Following Roychodhury (2006) and Cohen and Zarowin (2010), I calculate real earnings management for my sample firms through three metrics: abnormal cash flows from operations, abnormal discretionary expenses, and abnormal production costs. In results not reported, however, I do not find significant positive abnormal production costs, negative abnormal discretionary expenses, nor negative abnormal cash flows from operations prior to equity offerings. This suggests that equity issuers in China do not engage in real earnings management that is more costly for a firm than accruals-based earnings management. Though real earnings management is less likely to be scrutinized and detected by outsiders (e.g., Cohen *et al.*, 2008; Cohen & Zarowin, 2010), the Chinese issuers still rely primarily on the accruals-based method, probably in the belief that they could still fool some less-sophisticated investors who are not capable of undoing the accruals manipulation. A statistically significant variance of real earnings management (relative to 0) for the sample is requisite for the empirical analysis of the substitutive relationship between real earnings management and fiscal support. Hence, I do not account for real earnings management in this study.

4.2.2. Fiscal support variables

Fiscal support from local governments includes preferential income tax rate, income tax refund, and financial subsidy. Companies with a preferential income tax rate have reduced income tax expense. So I estimate a firm's income tax savings attributed to preferential

income tax rate as the difference between the standard income tax expense (i.e., 33% of pre-tax income) and the actual income tax expense. The total amount of income tax savings equals the income tax refund plus the income tax savings ascribed to preferential income tax rate. Income tax savings rate (*TAXSAV*) is then calculated as the total amount of the income tax savings deflated by net income, which reflects the extent to which income tax preference contributes to boosting a firm's reported earnings.[9] Financial subsidy is derived from the account of "subsidy income" in a firm's income statement. The subsidy rate (*SI*), calculated as subsidy income divided by net income, is used to measure the extent to which a firm benefits from financial subsidies in achieving its earnings performance.

4.3. Multivariate regression analysis

The following pooled OLS regression model is conducted to test H1.

$$DA = \beta_0 + \beta_1 TFI + \gamma_1 MKT + \gamma_2 LEV + \gamma_3 SIZE + \gamma_4 EXP + \gamma_5 ROA + \gamma_6 \Delta ROA + (year\ \ fixed\ \ effects) + (region\ \ fixed\ \ effects) + \varepsilon \quad (2)$$

The dependent variable, *DA*, is the abnormal accruals estimated using the industry-specific modified Jones model with IPO and SEO observations deleted in the cross-sectional estimation of normal accruals.[10] *TFI* is defined as the sum of subsidy rate (*SI*) and tax savings rate (*TAXSAV*), where *SI* equals subsidy income divided by net income for a firm over a fiscal year and *TAXSAV* equals 33% of pre-tax income minus income tax expense and plus tax refund, deflated by net income for a firm over a fiscal year.[11]

[9] Observations are eliminated if net income is equal to zero or negative.

[10] The deleted IPO and SEO observations include those that have IPOs or SEOs either at the current fiscal year or in the future two fiscal years.

[11] In China, either a non-tax-deductible expense item or a tax-exempt income item generates book-tax difference for a firm. So, a firm needs to adjust its pre-tax income upwards by the non-tax-deductible expense and downwards by the tax-exempt income to obtain its taxable income number. However, on the one hand, expenses not necessarily incurred to generate revenue are treated by China's enterprise income tax law as a non-tax-deductible expense. In this sense, the non-tax-deductible expense should not constitute a source of income tax savings attributed to income tax preference. On the other hand, the tax exemptions for some income items, such as interest income from state-issued bonds, constitute a source of income tax savings attributed to income tax preference for a firm. Therefore, I use 33% of pre-tax income

I control for several firm characteristics that prior studies find to be related to the magnitude of earnings management. These firm characteristics include financial leverage (*LEV*) (e.g., DeFond & Jiambalvo, 1994; Klein, 2002), firm size (*SIZE*) (e.g., Haw *et al.*, 2004), market-to-book ratio (*MKT*) (e.g., Young, 1999; McNichols, 2000; Kothari *et al.*, 2005), and capital intensity (*EXP*) (e.g., Burgstahler & Dichev, 1997; Young, 1999; Klein, 2002), which are defined in the Appendix. I also control for year and region fixed effects, since the incentive schemes of fiscal support vary among local governments at the provincial level and differ across fiscal years (Chen & Lee, 2001). I do not account for corporate governance characteristics in the regression because corporate governance data for most of the Chinese IPO and SEO firms prior to their offerings are not available.[12] Last, I cluster the standard errors by industry to correct for the industry effects (e.g., Williams, 2000; Petersen, 2009).[13]

The estimated abnormal accruals for IPO and SEO firms contain abnormal accruals purely correlated with performance in addition to the accruals related to equity offerings. To alleviate the concern that the modified Jones model provides biased estimates of abnormal accruals when firms experience extreme earnings performance (Dechow *et al.*, 1995), I further include two earnings performance-related variables, operating return on assets (*ROA*) and absolute value of change in operating return on assets (ΔROA), in the regression. These two control variables purge the earnings management measure of a firm's inherent accruals, reversal of lagged-year accruals, and growth in earnings, thus reducing measurement errors

rather than 33% of taxable income as the benchmark to estimate *TAXSAV*.

[12] Around 80% of the IPO and SEO firm-years in my sample do not have corporate governance information. Thus, controlling for corporate governance would have substantially reduced the power of the tests.

[13] When robust standard errors clustered by industry are applied to correct for the industry effects, the firm effects are also addressed given that a firm's industry affiliation does not vary across periods. I do not include industry dummies in the regression to correct for the industry effects because, in the case of industry effect not fixed, the dummies would not fully capture the within-industry dependence, and hence the standard errors are still biased downwards (Petersen, 2009). Still, I obtain almost identical results if I include industry dummies in the regression and then cluster the standard errors by firm.

(e.g., Kasznik, 1999; Frankel, Jonson, & Nelson, 2002; Klein, 2002; McNichols, 2000; Haw *et al.*, 2004).

Kothari *et al.* (2005) argue that a performance-matched accruals measure mitigates type I errors. Nevertheless, I do not use this approach in this study for three reasons. First, due to the limited sample size, a great value discrepancy exists between ROA of the treatment firm-years and ROA of the matched firm-years. Thus, just as with Haw *et al.* (2005), I am unable to form a meaningful performance-matched sample within industry-years for the Chinese equity offerings firms. Second, the superiority of the performance-matching approach in addressing biased estimates of abnormal accruals of a firm with extreme earnings performance lies in the assumption that, on average, treatment sample and matched firms have the same estimated non-event abnormal accruals and that, at the portfolio level, the impact of performance on accruals should be identical for the treatment and matched sample (Kothari *et al.*, 2005). Nonetheless, the homogeneity in the relation between accruals and performance for treatment firms and matched firms is not always warranted. Third, a recent study by Keung and Shih (2014) finds that the performance-matching approach systematically underestimates the abnormal accruals and that using the performance-matched abnormal accruals for regression analyses will bias the regression coefficients towards zero.

5. Empirical results

5.1. Descriptive statistics

Table 2 reports descriptive statistics of the main variables used for the hypothesis tests. The average abnormal accruals are significantly above zero; so are all the quartiles, including the median of abnormal accruals. This implies that equity issuers tend to manage reported earnings by altering discretionary accruals prior to the offerings, which is consistent with prior research. The mean subsidy rate is 4.6% with a standard deviation of 19.8%, indicating

that an average of 4.6% of net income stems from financial subsidies from local governments. The mean income tax savings rate reaches 17.1%. This suggests that income tax preference is generally more significant in upgrading a firm's earnings performance than financial subsidy. The mean *TFI* amounts to 21.7%, suggesting that an average of 21.7% of net income of the sample firms is ascribed to fiscal support from local governments. In addition, it can be inferred from the quartiles that the income tax preference grant is more prevalent than the financial subsidy grant for equity issuers in China. Table 3 reports Pearson (Spearman) correlations among the variables used in regression model (2). The correlation coefficients are all below 0.50, suggesting that no significant multicollinearity problem exists for model (2).

5.2. Regression results

5.2.1. Test of H1: The effect of fiscal support on earnings management

Table 4 presents the results for the test of H1. The coefficient on *TFI* is negative and highly significant at the 1% level, which supports H1 that fiscal support reduces earnings management. Consistent with prior studies, the coefficients on the control variables, *LEV*, *MKT*, *SIZE*, *EXP*, *ROA*, and ΔROA, are all statistically significant in the expected sign. This indicates that firms with higher financial leverage, higher market-to-book ratio, smaller size, less capital expenditure, or stronger earnings performance have higher abnormal accruals. The results are robust to winsorizing the observations with extreme variable values (1% at both tails) and to excluding the outliers from the sample using Cook's (1977) distance statistics.

5.2.2. The differential effects of income tax preference and financial subsidy on earnings management

Fiscal support can be classified into the categories of preferential tax treatment and financial subsidy on account of their distinct attributes. The distinction is three-fold. First, as noted in Section 2.1, an income tax preference grant is less costly for local governments than a financial subsidy grant. Second, income tax preference barely changes across fiscal periods once granted to a firm by a local government, whereas the scheme of a financial subsidy grant can vary to a large extent across fiscal years. In this sense, preferential tax treatment serves more of a relatively stable and long-term economic incentive to a firm compared to a subsidy grant that varies across fiscal years. Third, unlike preferential tax treatment, financial subsidy grant is virtually unregulated by any law or regulation in China. When and how much financial subsidies would be granted to firms are arbitrarily at the discretion of local governments. Thus, compared to preferential tax treatment, the subsidy grant is a more flexible instrument for local governments to help boost reported earnings of the IPO and SEO firms across fiscal periods. To test the differential effects of income tax preference and financial subsidy on earnings management, I employ a pooled OLS regression for model (2), where *TFI* is replaced with *SI* and *TAXSAV*.

Table 5 presents the regression results. The coefficients on financial subsidy rate (*SI*) and on tax savings rate (*TAXSAV*) are both negative and significant at the 1% level. This indicates that firms are less likely to engage in earnings management if they enjoy more income tax savings attributed to preferential income tax treatments or enjoy more financial subsidies from local governments. The absolute value of the beta coefficient for tax savings rate (*TAXSAV*) is significantly larger than that for subsidy rate (*SI*) (F-stat. = 3.53), indicating that the attenuating impact of income tax preference on earnings management is stronger than that of financial subsidy. This is probably because preferential tax treatment is more of a stable and long-run economic incentive to a firm compared to a subsidy grant that varies across fiscal years, thus making the firm less motivated to manage earnings to window-dress

its performance.

Corporate income tax preference takes the form of tax refunds and preferential income tax rate. To further probe the effect of preferential income tax rate on earnings management, I deduct the tax refund from the total tax savings to construct the preferential income tax rate variable, with which I replace *TAXSAV* to re-run the regression.[14] The results (not tabulated) suggest that preferential income tax rate alone significantly reduces earnings manipulation activities of a firm prior to its equity offerings.

5.2.3. Separate IPO firms from SEO firms for test of H1

Since the motivation for earnings management of IPO firms likely differs from that of SEO firms (Teoh *et al.*, 1998a; Haw *et al.*, 2005), I partition my sample into IPO firm-years and SEO firm-years for the hypothesis test. When testing H1 using the SEO sub-sample, I include the absolute difference between pre-subsidy ROE and regulatory ROE threshold (*DistanceROE*) to control for a firm's potential incentives for meeting the ROE threshold for rights offerings. Table 6 reports the regression results based on the partitioned samples. The coefficients on *TFI*, *TAXSAV*, and *SI* for both the IPO and SEO subsamples are all negative and statistically significant, which supports H1.

5.3. Robustness check

5.3.1. Alternative measure of income tax savings attributed to preferential tax treatment

To highlight the income tax savings reflected on current tax liabilities, I exclude deferred tax from income tax expense and employ an alternative measure of income tax savings as follows: 33%* [net income + (income tax expense – deferred income tax)] – (income tax expense – deferred income tax) + tax refund, namely, *TAXSAV′*. I repeat my regression

[14] Firms that have tax refunds only account for a very small percentage in my sample (46 out of 3290 firm-years). So it is hard to test the effect of tax refund on earnings management in this study.

analysis using *TAXSAV′*. The results (available upon request) are similar in all respects to those reported in Table 5.

5.3.2. Alternative measures of earnings management

Ball and Shivakumar (2006) argue that the conventional linear accruals models (e.g., the modified Jones model), which ignore the roles of accruals in timely loss recognition, misspecify the accounting accruals process and misestimate the abnormal and normal components of accruals. They find that piecewise linear regression that incorporates the asymmetric gain and loss recognition role of accruals substantially increases the explanatory power of the accruals model. Following the abnormal accruals model developed by Ball and Shivakumar (2006), I use both book-based and market return-based proxies for gain and loss to construct the piecewise-linear regression estimates for an alternative measure of abnormal accruals. I re-run model (2) using this alternative specification of abnormal accruals. The results (available upon request) are similar to those reported in Table 4 and 5. Adjusted R^2 increases to around 42%, confirming that the Ball and Shivakumar (2006) accruals model is superior over the traditional modified Jones model in capturing earnings management.

5.3.3. Correct for endogeneity using 2SLS model

Thus far, I assume that fiscal support is exogenous to firm-level decisions and activities. However, in the context of equity offerings during which local governments desire as much capital inflows to their jurisdictions as possible, their decisions on whether and how to subsidize SEO firms or IPO firms might vary across years depending on a firm's financial performance. If local governments tend to lend fiscal support to firms that have poor earnings performance, firms that wish to obtain fiscal support from local governments would lack incentives to manipulate earnings. Thus, reverse causality and self-selection issues arise in

the way that a lesser extent of earnings management results in stronger fiscal support from local governments. Or rather, in the case that less earnings management is motivated by a firm's desire to obtain stronger fiscal support from local governments, we could also find a negative association between earnings management and fiscal support.

However, this endogeneity concern is likely minimal because my multivariate tests are based on a contemporaneous relation between fiscal support and earnings management. Note that fiscal support granted on any date during a fiscal year would be reported in a firm's financial statements for this fiscal year, which is captured by my fiscal support measure at the end of this fiscal year. After the fiscal year-end but before the earnings announcement date, managers can still artificially adjust accruals by changing the accounting estimates or methods, which can still be captured by the *DA* measure for this fiscal year-end (Zang, 2012). In this regard, firms can engage in earnings management (to adjust their current year's ROA) in response to the fiscal support they receive from local governments during the year. However, by the time local governments provide their firms with fiscal support, the local governments cannot anticipate the coming earnings management activities and final reported earnings of the firms. In this connection, the fiscal support event is exogenous to earnings management of a firm.

Still, it is possible that both fiscal support (*TFI*) and earnings management (*DA*) are endogenously determined by some unobservable firm characteristics, which biases the coefficient estimates in model (2). To address this potential endogeneity problem, I employ a two-stage least squares (2SLS) estimation procedure. Two instruments are used. The first is GDP of a region (divided by national GDP) for a fiscal year, which is an inverse measure of the budget tightness of a local government. A wealthier local government characterized by higher territorial GDP is less likely to face budget constraints and hence likely more generous in affording fiscal support to local firms. On the contrary, firms would be less likely to

receive fiscal support if their local governments face budget constraints in that fiscal year. However, the budget tightness of local governments is unlikely to directly affect a firm's earnings management, making it a valid instrument for the 2SLS estimates. The second instrument is the industry median of pre-subsidy ROA in a firm's region for a fiscal year (*INDSUBSI*). It satisfies the conditions for a valid instrument for two reasons. First, if industrial financial performance in a region is already strong for a fiscal year, firms within the industry would be less likely to further receive fiscal support from their local governments. Second, it is less likely that a firm whose financial performance falls short of its industry level would inflate earnings to chase the industry benchmark because earnings inflated by the firm would reverse and fall back to its original level in the subsequent periods. Hence, *INDSUBSI* affects fiscal support decisions but has little direct impact on the firm-level earnings management activities.

Table 7 presents the results for the two-stage least squares regressions, where the endogenous variables, *TFI*, *SI*, and *TAXSAV*, are instrumented respectively. The Basmann statistics of the over-identifying restriction test for *TFI* ($\chi^2 = 1.0125$, $p = 0.314$), *SI* ($\chi^2 = 0.9272$, $p = 0.336$), and *TAXSAV* ($\chi^2 = 1.1756$, $p = 0.278$) models are all statistically insignificant, which implies that the instruments (i.e., *GDP* and *INDSUBSI*) I construct are exogenous and uncorrelated with the error terms. The partial F-statistics are all well above the cutoff point of 11.59 and statistically significant at the 1% level—further support that the models are not subject to weak instrument problems (Stock, Wright, & Yogo, 2002; Larcker & Rusticus, 2010).[15] In the first-stage estimation, *INDSUBSI* takes on a negative and significant coefficient, consistent with the notion that firms whose industrial financial performance in the region is strong would less likely be fiscally supported by their local

[15] According to Stock *et al.* (2002), when there are two instrumental variables in the first-stage regression, the F-statistic for the instruments needs to be above 11.59 to reject the null hypothesis that the instruments are weak.

governments. A significantly positive coefficient on *ROA* implies that local governments tend to fiscally support firms that have a good earnings performance. As there is no evidence that local governments tend to lend fiscal support to poorly performing firms, I refute the self-selection possibility that lack of earnings management activities is driven by firms' desire for stronger fiscal support from local governments. The second-stage regression results show a significantly negative coefficient for the fitted *TFI*, *SI*, and *TAXSAV*, respectively. This further corroborates the conclusion that the regression results shown in Table 4 and 5 are free from the potential endogeneity bias.

In addition, it could be argued that firms' close relationship with the government induces a mechanical, negative association between fiscal support and earnings management. On the one hand, an IPO/SEO firm that has a closer relationship with its government is more likely to be fiscally supported. On the other hand, a better firm-government relationship might make a firm more likely to be successful in IPO or SEO, and consequently, the firm is less likely to manipulate earnings. In an effort to rule out this alternative explanation, I do the following analyses. First, I control for firm-government relationship in the first and second stage of the 2SLS model, and the results still persist. An indicator variable for whether a firm is a state-owned enterprise is used as the proxy for firm-government relationship, since state-owned enterprises tend to have a closer relationship with the government than do non-state-owned enterprises (e.g., Wu, 2009; Wang, Wong, & Xia, 2008). Second, I conduct a falsification test. Specifically, I run a moderated regression analysis by interacting the government relationship measure with the fiscal support variable for model (2). If the alternative explanation holds, the negative impact of fiscal support on earnings management would be more pronounced for firms that have a stronger relationship with the government. Nonetheless, I fail to find such evidence, as indicated by a statistically insignificant coefficient on the interaction term. These results are not surprising because the alternative explanation is premised on the assumption

that good firm-government connection is negatively associated with earnings management. Some prior studies (e.g., Aharony *et al.*, 2000; Liu & Lu, 2007; Jian & Wong, 2010), however, allude to the opposite, showing that government-controlled firms tend to engage in earnings management and tunneling activities.

5.3.4. Firm-fixed effect regression of fiscal support on earnings management

Though the pooled OLS estimation of equation (2) yields results consistent with H1, it cannot identify whether the impact of fiscal support comes from explaining variation in earnings management across firms (i.e., cross-sectional variation) or variation in earnings management within firms (i.e., time-series variation). The distinction between variation across firms and variation within firms is important because theoretical and conceptual arguments as regards how fiscal support is related to earnings management predict that (1) firms with high fiscal support are less likely to manage earnings than firms with low fiscal support, which is a cross-sectional prediction, (2) a firm that enjoys an increase in fiscal support is less likely to manipulate earnings, which is a time-series prediction. The firm-fixed effect model serves to distinguish these two types of variations (Wooldridge, 2000).

To determine whether within-firm variation in fiscal support explains within-firm variation in earnings management, I estimate a firm-fixed effect model for equation (2).[16] This research design removes most of the cross-sectional variation in fiscal support and relies primarily on the within-firm (i.e., time-series) variation in fiscal support. If the negative association between fiscal support and earnings management is driven mainly by cross-sectional differences, then using the firm-fixed effect model, we expect to find no evidence of a relationship between fiscal support and earnings management. On the contrary, if within-firm variation in fiscal support explains within-firm variation in earnings management, we

[16] The chi^2 statistic for the Hausman test (not tabulated) is positive and statistically significant, suggesting that the firm-fixed effect model is preferred over the random effect model in controlling for firm-specific effects.

expect to find an association between fiscal support and earnings management when including firm-fixed effects in the regression.

Table 8 presents the results for the firm-fixed effect regression of fiscal support on earnings management. The relationship between financial subsidy and earnings management is insensitive to including firm-fixed effects. In particular, the coefficient for subsidy rate (*SI*) is negative and significant at the 1% level. This suggests that variation in financial subsidy explains not only the variation in earnings management across firms, but also the time-series variation in earnings management within a firm. However, the coefficient for tax savings rate (*TAXSAV*) is statistically insignificant. This suggests that the significant result for *TAXSAV* in Table 5 is primarily driven by the cross-sectional variation in preferential tax treatment, not by the time-series variation. This is not surprising because unlike the scheme of financial subsidy grant, which may vary substantially across fiscal years, income tax preference barely changes over time once granted to a firm by a local government. The lack of time-series variation in preferential tax treatment induces the statistically insignificant coefficient for *TAXSAV* estimated by the firm-fixed effects model.[17]

6. Conclusion

This study is the first to investigate whether fiscal support has an impact on earnings management of a firm. Fiscal support could substitute for a firm's earnings management in achieving desired earnings targets. Earnings management is costly and has negative economic consequences for a firm, whereas fiscal support adds up real cash benefits to a firm. Thus, given a firm's desired level of reported earnings, fiscal support reduces the firm's demand for

[17] According to Wooldridge (2000), an effective firm-fixed effect model requires that the independent variable display sufficient variation over time within a firm. From a technical point of view, this is because the time-invariant variable would be perfectly collinear with firm-fixed effect components. From an economic point of view, this is because the firm-fixed effect model is designed to study what causes the dependent variable to change within a given firm. A time-invariant independent variable cannot cause such a change.

earnings management. Accordingly, I hypothesize that the magnitude of earnings management is smaller for firms that enjoy stronger fiscal support from local governments.

The hypothesis is predicated on the premise that firms have an incentive to achieve certain earnings targets. Equity offerings in China induce such incentives not only for managers but also for a local government that aims to help its listed firms finance their investments. Thus, I focus on the equity offerings setting to test the hypothesis. The empirical results, based on the sample for both IPO firms and SEO firms from 1997 to 2006, are all statistically significant in support of the hypothesis. In particular, I find a lower level of earnings management activities for firms that enjoy more financial subsidies or more income tax savings attributed to preferential tax treatments from local governments. The results are robust to using alternative measures of income tax savings and of abnormal accruals. Also, the results are immune from bias caused by potential endogeneity between fiscal support and earnings management, as evidenced in the 2SLS analyses. I continue to find a negative association between financial subsidy and earnings management when I include firm-fixed effects in the regression. This suggests that variation in financial subsidies explains not only the variation in earnings management across firms, but also the time-series variation in earnings management within a firm.

The findings in this study imply that institutional factors in regard to fiscal support from local governments should be accounted for in earnings management research on China's capital market, in which fiscal support prevails and governmental influence on firms' financial reporting incentives dominates. As fiscal support is compared to a sort of government-assisted earnings management (Chen *et al.*, 2008), this study complements the recent stream of earnings management literature (e.g., Cohen & Zarowin, 2010; Badertscher, 2011; Zang, 2012; Chan *et al.*, 2015), which shows that firms tend to use real and accrual-based earnings management as substitutes to achieve their desired earnings targets.

In addition, I find that preferential tax treatment mitigates earnings management to a larger extent than financial subsidy does. However, the Chinese Enterprise Income Tax Law promulgated in March 2007 abrogated the original tax regime that allowed varied tax rates for different types of firms and legally stipulated a 25% enterprise income tax rate for almost all firms in China. With the repeal of income tax preference, local governments lost a powerful tool of lending fiscal support to their local listed firms. In China, offering financial subsidies to listed firms is more costly for local governments than granting income tax preferences. Funds available for local governments to grant financial subsidies to local firms are usually limited. So the increase in subsidy disbursements to compensate listed firms for the abrogated income tax preference would have been circumscribed. In this scenario, given a desired earnings target, firms might reinforce their earnings management activities. Future research may empirically examine whether earnings management of listed Chinese firms would be aggravated after the enforcement of the new Enterprise Income Tax Law. The main challenge of the research is the controls for other concurrent regulatory or macroeconomic events around 2007 (e.g., financial crisis), which would cause severe confounding effects to the empirical tests. A potential solution to the problem could be to employ a difference-in-difference research methodology and identify a set of control firms that are not subject to the regulatory effect of the new income tax law. Nevertheless, we are unable to find such control firm sample, since the new tax law is applied to almost all public and private firms in China.

Lastly, some caveats need to be noted for this paper. First, as with prior research (e.g., Wu & Zhang, 2009; Beatty, Liao, & Yu, 2013), this study is subject to endogeneity attributed to potentially omitted variables. Despite efforts in addressing the endogeneity, I cannot completely eliminate it. Second, like some prior studies (e.g., Aharony *et al.*, 2000; Liu & Lu, 2007; Jian & Wong, 2010), I focus on Chinese firms that have successfully conducted IPO

and SEO. It would be interesting to account for firms that failed in conducting their IPO or SEO. Due to the data limits, I leave this issue as an avenue for future research.

References

Aharony, J., Lee, C. J., & Wong, T. J. (2000). Financial packaging of IPO firms in China. *Journal of Accounting Research*, *33*(1), 103–125.

Badertscher, B. (2011). Overvaluation and the choice of alternative earnings management mechanisms. *The Accounting Review*, *86*(5), 1491–1518.

Ball, R., & Shivakumar, L. (2006). The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research*, *44*(2), 207–242.

Ball, R., & Shivakumar, L. (2008). Earnings quality at initial public offerings. *Journal of Accounting and Economics*, *45*, 324–349.

Beatty, A., Liao, S., & Yu, J. J. (2013). The spillover effect of fraudulent financial reporting on peer firms' investments. *Journal of Accounting and Economics*, *55*, 183–205.

Bhojraj, S., Hribar, P., Picconi, M., & McInnis, J. (2009). Making sense of cents: An examination of firms that marginally miss or beat analyst forecasts. *Journal of Finance*, *64*(5), 2359–2386.

Biddle, G., Seow, G., & Siegel, A. (1995). Relative versus incremental information content. *Contemporary Accounting Research*, *12*(1), 1–23.

Billings, M. B., & Lewis-Western, M. F. (2015). When does pre-IPO financial reporting trigger post-IPO legal consequences? *Contemporary Accounting Research*, Forthcoming.

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, *24*(1), 99–129.

Burnett, B. M., Cripe, B. M., Martin, G. W., & McAllister, B. P. (2012). Audit quality and the trade-off between accretive stock repurchases and accrual-based earnings management. *The Accounting Review*, *87*(6), 1861–1884.

Bushman, R., Piotroski, J., & Smith, A. (2004). What determines corporate transparency? *Journal of Accounting Research*, *42*(2), 207–252.

Chan, K. H., Lin, K. Z., & Mo, P. L. (2006). A political-economic analysis of auditor reporting and auditor switches. *Review of Accounting studies*, *11*(1), 21–48.

Chan, L. H., Chen, K. C. W., Chen, T. Y., & Yu, Y. (2015). Substitution between real and accrual-based earnings management after voluntary adoption of compensation clawback provisions. *The Accounting Review*, *90*(1): 147–174.

Chen, X., & Lee, J. (2001). Exploring the role of local government fiscal support in

accounting performance of the listed companies. *Accounting Research*, (in Chinese), 20–28.

Chen, X., Lee, J., & Li, J. (2008). Government assisted earnings management in China. *Journal of Accounting and Public Policy*, *27*(3), 262–274.

Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2005). Is China's securities regulatory agency a toothless tiger? Evidence from enforcement actions. *Journal of Accounting and Public Policy*, *24*, 451–488.

Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of Corporate Finance*, *12*(3), 424–448.

Chen, K. C. W., & Yuan, H. (2004). Earnings management and capital resource allocation: evidence from China's accounting-based regulation of rights issues. *The Accounting Review*, *79*(3), 645–665.

China Securities Regulatory Commission (CSRC), (1996). Notice for the issues of additional shares by listed companies --- Notice [1996] No.17 (In Chinese).

China Securities Regulatory Commission (CSRC), (1999). Notice for the issues of additional shares by listed companies --- Notice [2001] No. 12 (In Chinese).

China Securities Regulatory Commission (CSRC), (2001). Notice for the issues of additional shares by listed companies --- Notice [2001] No. 43 (In Chinese).

Claessens, S., Djankov, S., & Lang, L. H. P. (2000). The separation of ownership and control in East Asian corporations. *Journal of Financial Economics*, *58*(1-2), 81–112.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. *The Accounting Review*, *83*(3), 757–787.

Cohen, D. A., & Zarowin, P. (2010). Accruals-based and real earnings management around seasoned equity offerings. *Journal of Accounting and Economics*, *50*(1), 2–19.

Cook, R. D. (1977). Detection of influential observations in linear regression. *Technometrics*, *19*(1), 15–18.

Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, *70*(2), 193–225.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, *17*(1-2), 145–176.

DeFond, M. L., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, *76*(3), 375–404.

Ding, Y., Zhang, H., & Zhang, J. (2007). Private vs. state ownership and earnings management: Evidence from Chinese listed companies. *Corporate Governance: An*

International Review, *15*, 223–238.

DuCharme, L. L., Malatesta, P. H., & Sefcik, S. E. (2004). Earnings management, stock issues, and shareholder lawsuits. *Journal of Financial Economics*, *71*(1), 27–49.

Francis, J., Schipper, K., & Vincent, L. (2003). The relative and incremental explanatory power of earnings and alternative (to earnings) performance measures for returns. *Contemporary Accounting Research*, *20*(1), 121–164.

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, 39(2), 295–327.

Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review*, *77* (Supplement), 71–105.

Graham, J., Harvey, C., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1-3), 3–73.

Gul, F. (2006). Auditors' response to political connections and cronyism in Malaysia. *Journal of Accounting Research*, *44*(5), 931–963.

Gunny, K. A. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, *27*(3), 855–888.

Haw, I. M., Hu, B., Hwang, L., & Wu, W. (2004). Ultimate ownership, income management, and legal and extra-legal institutions. *Journal of Accounting Research*, *42*(2), 423–462.

Haw, I.M., Qi, D., Wu, D., & Wu, W. (2005). Market consequences of earnings management in response to security regulations in China. *Contemporary Accounting Research*, *22*(1), 95–140.

He, G. (2015). The effect of CEO inside debt holdings on financial reporting quality. *Review of Accounting Studies*, *20*(1), 501–536.

Hung, M., Wong, T. J., & Zhang, T. (2012). Political consideration in the decisions of Chinese SOEs to list in Hong Kong. *Journal of Accounting and Economics*, *53*, 435–449.

Hunt, A., Moyer, S. E., & Shevlin, T. (1996). Managing interacting accounting measures to meet multiple objectives: a study of LIFO firms. *Journal of Accounting and Economics*, 21, 339–374.

Jian, M., & Wong, T. J. (2010). Propping through related party transactions. *Review of Accounting Studies*, *15*(1), 70–105.

Kasznik, R. (1999). On the association between voluntary disclosure and earnings management. *Journal of Accounting Research*, *37*(1), 57–81.

Kerr, S. (1995). On the folly of rewarding A, while hoping for B. *Academy of Management*

Executive, *9*(1), 7–14.

Keung, E., & Shih, M. S. H. (2014). Measuring discretionary accruals: Are ROA-matched models better than the original Jones-typed models? *Review of Accounting Studies*, *19*(2), 736–768.

Kissel, M., & Santini, L. (2004). Global stock exchanges vie for a slice of China's IPO pie. *The Wall Street Journal*, December 2.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*(3), 375–400.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched abnormal accruals measures. *Journal of Accounting and Economics*, *39*(1), 163–197.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, *58*(1-2): 3–27.

Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, *49*, 186–205.

Leuz, C., Nanda, D., & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, *69*(3), 505–527.

Leuz, C., & Oberholzer, F. (2007). Political relations, global financing, and corporate transparency: evidence from Indonesia. *Journal of Financial Economics*, *81*(2), 411–439.

Li, D. (1998). Changing incentives of the Chinese Bureaucracy. *American Economic Review 88*(2): 393–397.

Li, H., & Zhou, L. (2005). Political turnover and economic performance: the incentive role of personnel control in China. *Journal of Public Economics*, *89*(9-10), 1743–1762.

Liu, Z. (2006). Taxation in China, Singapore, Seng Lee Press.

Liu, J., Nissim, D., & Thomas, J. (2002). Equity valuation using multiples. *Journal of Accounting Research*, *40*(1), 135–172.

Liu, Q., & Lu, Z. (2007). Corporate governance and earnings management in the Chinese listed companies: a tunneling perspective. *Journal of Corporate Finance*, *13*(5), 881–906.

McNichols, M. F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, *19*(4-5), 313–345.

Peasnell, K. V., Pope, P. F., & Young, S. (2000). Detecting earnings management using cross-sectional abnormal accruals models. *Accounting and Business Research*, *30*(4), 313–326.

Petersen, M.A. (2009). Estimating standard errors in finance panel data sets: comparing

approaches. *Review of Financial Studies*, *22*(1), 453–480.

Piotroski, J. D., Wong, T. J., & Zhang, T. (2015). Political incentives to suppress negative information: evidence from Chinese listed firms. *Journal of Accounting Research*, *53*(2), 405–459.

Rangan, S. (1998). Earnings management and the performance of seasoned equity offerings. *Journal of Financial Economics*, *50*(1), 101–122.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42, 335-370.

Shivakumar, L. (2000). Do firms mislead investors by overstating earnings before seasoned equity offerings? *Journal of Accounting and Economics*, *29*(3), 339–371.

Stock, J. H., Wright, J. H., & Yogo, M. (2002). A survey of weak instruments and weak identification in generalized method of moments. *Journal of Business and Economic Statistics*, *20*(4), 518–529.

Teoh, S. H., Welch, I., & Wong, T. J. (1998a). Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics*, *50*(1), 63–99.

Teoh, S. H., Welch, I., & Wong, T. J. (1998b). Earnings management and the long-run market performance of initial public performance. *Journal of Finance*, *53*(6), 1935–1975.

Teoh, S. H., Wong, T. J., & Rao, G. (1998c). Are accruals during initial public offerings opportunistic? *Review of Accounting Studies*, *3*(1-2), 175–208.

Wang, Q., Wong, T. J., & Xia, L. (2008). State ownership, the institutional ownership, and auditor choice: evidence from China. *Journal of Accounting and Economics*, *46*(1), 112–134.

Williams, R. (2000). A note on robust variance estimation for cluster-correlated data. *Biometrics*, *56*, 645–646.

Wooldridge, J. (2000). *Introductory econometrics: a modern approach.* Location: South-Western College Publishing.

Wu, L. (2009). State ownership, preferential tax policy, and debt. *Economic Research*, *10*, 109–120.

Wu, L., Wang, Y., Lin, B., Li, C., & Chen, S. (2007). Local tax rebates, corporate tax burdens, and firm migration: evidence from China. *Journal of Accounting and Public Policy*, *26*(5), 555–583.

Wu, J. S., & Zhang, I. X. (2009). The voluntary adoption of internationally recognized accounting standards and firm internal performance evaluation. *The Accounting Review*, *84*(4), 1281–1309.

Young, S. (1999). Systematic measurement error in the estimation of discretionary accruals:

an evaluation of alternative modelling procedures. *Journal of Business Finance and Accounting*, *26*(7-8), 833–862.

Zang, A.Y. (2012). Evidence on the trade-off between real activities manipulation and accruals-based earnings management. *The Accounting Review*, *87*(2), 675–703.

Table 1
Sample selection and distribution

Panel A: Sample selection procedure	n
Total number of firms that conducted equity offerings from 1997 to 2006	1838
Less: firms that have iterative rights offerings within three years during the sample period	385
Less: financial institutions with equity offerings	18
Less: firms whose listing had been postponed	24
Less: firms that lack the industry information in the databases	10
Selected equity issuers	1401
Sample firm-year observations during the most recent three years prior to equity offerings by the selected equity offerings firms	4203
Exclude firm-year observations without complete financial accounting information	913
Final sample firm-year observations	3290

Panel B: Distribution of sample firm-year observations across years and industries													
Industry	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	1994–2005
Agriculture, forestry and fishing	2	9	13	7	14	12	4	7	9	8	4	3	92 (2.79%)
Mining	0	2	5	5	6	4	2	4	6	4	4	4	46 (1.40%)
Manufacture	65	233	313	232	216	195	149	139	141	121	79	67	1950(59%)
Utilities	8	20	27	16	18	16	11	10	12	14	7	5	164 (4.98%)
Construction	1	5	9	6	5	3	3	7	9	5	5	4	62 (1.88%)
Transportation	5	17	22	13	20	17	13	13	10	8	6	7	151 (4.62%)
Information technology	6	25	32	18	19	20	15	21	16	9	9	9	199 (6.04%)
Wholesale and retail	16	45	50	32	21	17	10	10	9	8	4	4	226 (6.87%)
Real estate	11	21	25	15	15	15	10	5	3	8	8	8	144 (4.37%)
Social service	6	13	16	12	14	12	3	3	2	4	4	4	93 (2.83%)
Communication and literature	0	2	3	2	1	2	0	0	0	0	0	0	10 (0.30%)
Conglomerate	10	29	33	23	14	11	10	7	4	4	4	4	153 (4.65%)
Total	130	421	548	381	363	324	230	226	221	193	134	119	3290 (100%)
% of population	3.95	12.79	16.68	11.6	11.03	9.84	6.99	6.87	6.71	5.86	4.07	3.61	100

Table 2
Descriptive Statistics

Variable	Mean	25%	Median	75%	Std. Dev
DA	0.011	0.029	0.008	0.015	0.012
TFI	0.217	0.142	0.214	0.294	0.233
SI	0.046	0	0	0.018	0.198
TAXSAV	0.171	0.087	0.211	0.249	0.127
MKT	2.220	0	1.473	3.122	3.371
LEV	0.516	0.412	0.533	0.642	0.155
SIZE	8.789	8.467	8.716	9.042	0.465
EXP	0.105	0	0	0.165	0.189
ROA	0.112	0.065	0.095	0.138	0.079
ΔROA	0.037	0.009	0.022	0.045	0.035

Notes: This table presents the descriptive statistics of the main variables used in the regression analyses. The sample contains 3,290 firm-year observations. *DA* is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals. *SI* refers to the subsidy rate. *TAXSAV* refers to the income tax savings rate ascribed to both preferential income tax rate and income tax refund for a firm. *TFI* is the sum of subsidy rate (*SI*) and income tax savings rate (*TAXSAV*). All the variables, including *DA*, *SI*, *TAXSAV*, and *TFI* are defined in the Appendix.

Table 3
Pearson (Spearman) correlations on the upper (lower) triangle

	DA	*TFI*	*MKT*	*LEV*	*SIZE*	*EXP*	*ROA*	Δ*ROA*
DA	1	-0.028	0.036**	0.013	-0.138***	-0.074***	0.160***	0.158***
TFI	0.009	1	0.063***	-0.082***	-0.048***	-0.095***	0.120***	0.082***
MKT	-0.030*	0.066***	1	-0.189***	0.074***	-0.037**	-0.069***	0.021
LEV	0.003	-0.126***	-0.347***	1	0.116***	0.070***	-0.294***	-0.115***
SIZE	-0.141***	-0.042**	0.238***	0.125***	1	0.230***	-0.354***	-0.130***
EXP	-0.038**	-0.118***	0.084***	0.076***	0.157***	1	-0.164***	-0.082***
ROA	0.162***	0.235***	-0.192***	-0.324***	-0.443***	-0.186***	1	0.339***
Δ*ROA*	0.136***	0.124***	-0.037**	-0.100***	-0.144***	-0.101***	0.286***	1

Notes: This table reports the results for the Pearson (Spearman) correlation tests. All the variables are defined in the Appendix. ***, **, * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 4
Test of H1: The effect of fiscal support on earnings management

$$DA = \beta_0 + \beta_1\, TFI + \gamma_1 MKT + \gamma_2 LEV + \gamma_3 SIZE + \gamma_4 EXP + \gamma_5 ROA + \gamma_6 \Delta ROA + (year\ fixed\ effects) + (region\ fixed\ effects) + \varepsilon$$

Variable	Pred. sign	Dep. = *DA*
Constant	?	0.0312 (5.07)***
TFI	-	-0.0033 (-3.05)***
MKT	+	0.0002 (3.11)***
LEV	+	0.0058 (4.27)***
SIZE	-	-0.0026 (-5.38)***
EXP	-	-0.0052 (-1.98)**
ROA	+	0.0184 (3.89)***
Δ*ROA*	+	0.0271 (11.91)***
Adj. R^2 (%)		6.58
Observations		3290

Notes: This table reports the regression results for the test of H1. *DA* is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals. *TFI* refers to the sum of subsidy rate (*SI*) and income tax savings rate (*TAXSAV*), where *SI* is the subsidy rate, and *TAXSAV* is the income tax savings rate ascribed to both preferential income tax rate and income tax refund. All the independent variables including *TFI* are defined in the Appendix. The year and region dummies are included in the regressions but are not reported for simplicity. The t-statistics in parentheses are based on clustered standard error adjusted for correlations within industry. ***, **, * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 5
Test of the differential effects of preferential tax treatment and financial subsidy on earnings management

$$DA = \beta_0 + \beta_1 SI + \beta_2 TAXSAV + \gamma_1 MKT + \gamma_2 LEV + \gamma_3 SIZE + \gamma_4 EXP + \gamma_5 ROA + \gamma_6 \Delta ROA + (year\ fixed\ effects) + (region\ fixed\ effects) + \varepsilon$$

Variable	Pred. sign	Dep. = *DA*
Constant	?	0.0316 (5.23)***
SI	-	-0.0026 (-2.65)***
TAXSAV	-	-0.0055 (-3.22)***
MKT	+	0.0002 (3.38)***
LEV	+	0.0056 (4.27)***
SIZE	-	-0.0026 (-5.45)***
EXP	-	-0.0053 (-1.99)**
ROA	+	0.0190 (4.13)***
Δ*ROA*	+	0.0271 (11.86)***
Adj. R^2 (%)		6.61
Observations		3290

Notes: This table reports the regression results for the tests of the differential effects of preferential tax treatment and financial subsidy on earnings management. *DA* is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals. *SI* is the subsidy rate. *TAXSAV* is the income tax savings rate ascribed to both preferential income tax rate and income tax refund. All the independent variables including *SI* and *TAXSAV* are defined in the Appendix. The year and region dummies are included in the regressions but are not reported for simplicity. The t-statistics in parentheses are based on clustered standard error adjusted for correlations within industry. ***, **, * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 6
Test of H1: Segregation of IPO firms from SEO firms

Variable	Pred. sign	SEO firms (Dep. = *DA*)		IPO firms (Dep. = *DA*)	
Constant	?	0.0065 (0.68)	0.0120 (1.28)	0.0273 (3.65)***	0.0272 (3.81)***
TFI	-		-0.0035 (-3.21)***		-0.0033 (-3.02)***
SI	-	-0.0023 (-3.12)***		-0.0032 (-2.27)**	
TAXSAV	-	-0.0071 (-3.05)***		-0.0037 (-1.72)*	
MKT	+	0.0003 (2.25)**	0.0003 (2.18)**	0.0003 (3.12)***	0.0003 (3.10)***
LEV	+	0.0037 (2.87)***	0.0036 (2.88)***	0.0025 (1.36)	0.0026 (1.39)
SIZE	-	-0.0013 (-1.67)*	-0.0013 (-1.69)*	-0.0027 (-3.17)***	-0.0027 (-3.20)***
EXP	-	-0.0062 (-1.82)**	-0.0065 (-1.81)*	-0.0049 (-1.89)*	-0.0049 (-1.86)*
ROA	+	0.0074 (0.82)	0.0059 (0.63)	0.0217 (4.48)***	0.0216 (4.83)***
Δ*ROA*	+	0.0301 (5.45)***	0.0304 (5.36)***	0.0247 (7.51)***	0.0246 (7.65)***
DistanceROE	?	0.0047 (2.12)**	0.0049 (2.16)**		
Adj. R^2 (%)		6.25	6.18	7.85	7.91
Observations		1741	1741	1549	1549

Notes: This table presents regressions results for the tests of H1 for SEO firm-years and IPO firm-years, respectively. The dependent variable is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals. *SI* is the subsidy rate. *TAXSAV* is the income tax savings rate ascribed to both preferential income tax rate and income tax refund. *TFI* refers to the sum of subsidy rate (*SI*) and income tax savings rate (*TAXSAV*). All the independent variables, including *SI*, *TAXSAV*, and *TFI* are defined in the Appendix. The year and region dummies are included in the regressions but are not reported for simplicity. The t-statistics in parentheses are based on clustered standard error adjusted for correlations within industry. ***, **, * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 7
Test of H1: Control for endogeneity

Variable	1st Stage *TFI*	2nd Stage *DA*	1st Stage *SI*	2nd Stage *DA*	1st Stage *TAXSAV*	2nd Stage *DA*
Constant	0.2645	0.0307	0.0472	0.0294	0.2173	0.0340
	(2.17)***	(6.75)***	(0.49)	(6.90)***	(3.18)***	(5.60)***
TFI		-0.0071				
		(-3.38)***				
SI				-0.0099		
				(-3.62)***		
TAXSAV						-0.0251
						(-2.68)***
MKT	0.0037	0.0003	-0.0004	0.0002	0.0041	0.0003
	(2.80)***	(3.80)***	(-0.34)	(2.92)***	(4.28)***	(5.32)***
LEV	-0.0455	0.0056	0.0210	0.0062	-0.0664	0.0043
	(-1.31)	(4.36)***	(0.61)	(4.61)***	(-4.64)***	(3.04)***
SIZE	-0.0096	-0.0026	-0.0019	-0.0026	-0.0077	-0.0028
	(-1.07)	(-5.58)***	(-0.28)	(-5.56)***	(-1.28)	(-5.21)***
EXP	-0.0033	-0.0054	0.0143	-0.0053	-0.0176	-0.0058
	(-0.12)	(-2.26)**	(0.84)	(-2.10)**	(-0.87)	(-2.66)***
ROA	4.5747	0.0195	3.0818	0.0175	1.4929	0.0248
	(8.48)***	(4.41)***	(9.19)***	(4.02)***	(5.88)***	(5.11)***
Δ*ROA*	0.0199	0.0278	0.0074	0.0278	0.0125	0.0280
	(0.19)	(11.88)***	(0.10)	(11.92)***	(0.18)	(11.04)***
INDSUBSI	-5.8220		-4.1907		-1.6313	
	(-8.42)***		(-9.07)***		(-5.26)***	
GDP	-0.0936		0.0702		-0.1638	
	(-0.17)		(0.21)		(-0.47)	
Test of over-identifying restrictions						
Basmann χ^2	1.0125		0.9272		1.1756	
(p-value)	(0.314)		(0.336)		(0.278)	
Partial F-statistic for instruments (p-value)						
	91.57		52.61		25.71	
	(<0.001)***		(<0.001)***		(<0.001)***	
Adj. R^2 (%)	30.22	7.46	18.72	6.35	23.39	4.37
Observations	3290	3290	3290	3290	3290	3290

Notes: This table presents the results for the two-stage least squares regression with *INDSUBSI* and *GDP* used as the instruments. *TFI*, *SI*, and *TAXSAV* are instrumented respectively as the dependent variables in the first-stage regressions. The dependent variable in the second-stage regression is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals. All the independent variables are defined in the Appendix. The year and region dummies are included in the regressions but are not reported for brevity. The t/z-statistics in parentheses are based on clustered standard error adjusted for correlations within industry. ***, **, * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Table 8
Firm-fixed effect regression of fiscal support on earnings management

Variable	Pred. sign	Dep. = *DA*	
TFI	-		-0.0023 (-2.42)**
SI	-	-0.0030 (-5.58)***	
TAXSAV	-	0.0013 (0.46)	
MKT	+	0.0002 (2.35)**	0.0002 (2.43)**
LEV	+	0.0063 (2.11)**	0.0060 (2.20)**
SIZE	-	0.0039 (1.86)**	0.036 (1.74)**
EXP	-	-0.0051 (-1.63)	-0.0050 (-1.58)
ROA	+	0.0022 (0.39)	0.0036 (0.64)
Δ*ROA*	+	0.0173 (2.98)***	0.0176 (3.09)***
Within-R^2 (%)		3.87	3.37
Observations		3290	3290

Notes: This table reports the results for the firm-fixed effect regression of fiscal support on earnings management. *DA* is the abnormal accruals estimated using the industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimates of normal accruals. *SI* is the subsidy rate. *TAXSAV* is the income tax savings rate ascribed to both preferential income tax rate and income tax refund. *TFI* refers to the sum of subsidy rate (*SI*) and income tax savings rate (*TAXSAV*). All the independent variables, including *SI*, *TAXSAV*, and *TFI* are defined in the Appendix. The year dummies are included in the regressions but are not reported for simplicity. The region dummies and the constant term are automatically differenced-out by the firm-fixed effect estimates. The t-statistics in parentheses are based on clustered standard error adjusted for correlations within industry. ***, **, * indicate statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

Appendix
Summary of Variable Definitions

Variable	Definition
DA	Abnormal accruals for a firm for a fiscal year, which is estimated using industry-specific modified Jones model with IPOs and SEOs deleted in the cross-sectional estimation of normal accruals.
SI	Subsidy income divided by net income for a firm over a fiscal year.
TAXSAV	(33%* pre-tax income - income tax expense + tax refund) / net income for a firm over a fiscal year.
TFI	Sum of subsidy rate (*SI*) and income tax savings rate (*TAXSAV*) for a firm over a fiscal year.
MKT	Market value of common equity divided by book value of common equity for a firm at a fiscal year.
LEV	The sum of short- and long-term debt divided by total assets for a firm at a fiscal year.
SIZE	The natural logarithm of total assets for a firm at a fiscal year.
EXP	The ratio of fixed assets to total assets for a firm at a fiscal year.
ROA	Operating return on assets for a firm over a fiscal year.
ΔROA	The absolute value of change in operating return on assets for a firm over a fiscal year.
DistanceROE	The absolute difference between pre-subsidy ROE and regulatory ROE threshold for a firm over a fiscal year.
INDSUBSI	Industry median of pre-subsidy return on assets within a region for a fiscal year, deflated by total assets for a firm at the fiscal year.
GDP	Annual territorial GDP for the province in which a firm is headquartered, divided by annual national GDP.