The Impact of Political Connections on Corporate Tax Burden: Evidence from the Chinese Market

Abstract

This paper investigates how political connections affect corporate tax burden. We construct two multi-tiered political connections series and employ the Propensity Score Matching approach. We find that stronger political connections lead to a lower corporate tax burden in Chinese listed firms. Specifically, the nominal (effective) tax rate decreases by an average of 1.03% (0.33%) as the hierarchical position of Chairman or CEO in the government rises by one rank (e.g., from a sub-provincial to provincial minister), and by an average of 0.99% (0.98%) as the administrative level of the government where the Chairman or CEO holds the position rises by one level (e.g., from a provincial to a central government). Our further analysis shows that political connections reduce the tax burden for both SOEs and non-SOEs, especially for the latter.

Key words: Political Connections, Corporate Tax Burden, Propensity Score Matching, China,

JEL Classifications: C61, M41, G31, H25

1. Introduction

How do political connections affect corporate tax burden? Politically connected firms could be more tax aggressive as they may benefit from lower detection risk, better tax regulation or enforcement information, and lower capital market pressure for transparency (Kim and Zhang, 2016). Although the link between the two seems intuitive and has been extensively investigated, existing empirical examinations do not reach consistent results. The majority finds politically connected firms have lower tax rates (e.g., Brown et al., 2015; Sudibyo and Sun, 2016; Wahab et al., 2017; Chen et al., 2018; Hanny and Niandari, 2018; Romero, 2019), whilst others find no such association (e.g., Forman, 1988; Drope and Hansen, 2008; Bertrand et al., 2018). Many studies investigating US firms document that political connected firms enjoy lower tax burden

(e.g., Brown et al., 2015; Kim and Zhang, 2016; Barrick and Brown, 2019). For developing economies, Adhikari et al. (2006) and Minh et al. (2021) analyze Malaysian and Vietnamese firms, respectively, and confirm the tax-reduction effect of political connections. However, Zaitul and Ilona (2019) find no such evidence for Indonesian firms. Wu et al. (2012) reveal this to be the case for private firms but not for State-Owned Enterprises (SOEs) in China.

This paper investigates the impact of political connections on corporate tax burden and makes two contributions. First, previous studies often classify firms as with and without political connections (e.g., Wu et al., 2012; Kim and Zhang, 2016; Lin et al., 2018; Zaitul and Ilona, 2019). However, among politically connected firms, some might have much stronger connections than others. Therefore, we measure political connections in a tiered manner. Employing a dataset of over 1500 Chinese listed firms, we utilize information on 1) 10 layers of the hierarchical position of the Chairman or CEO in the Chinese Communist Party (CCP) or government, and 2) 5 administrative levels of CCP or government where the Chairman or CEO holds the position. Various hierarchical layers and administrative levels indicate different political influence that Chairmen and CEOs have. By assigning different numerical values in 1) and 2) (see Section 2.2.2), we capture how strong the political connections are.

Second, we adopt the Propensity Score Matching (PSM) approach which has several advantages over the widely employed Ordinary Least Square (OLS) regression (e.g., Adhikari et al., 2006; Wu et al., 2012; Kim and Zhang, 2014; Francis et al., 2016). A firm's establishment of political connections represents self-selection behavior. The PSM method provides the corresponding Average Treatment effects on the Treated (ATT) to inform on how the multi-tiered political connections affect corporate tax burden when both the treatment group (firms with political connections) and the control group (firms without politically connections) are considered. Furthermore, PSM eliminates the influence of characteristic factors on dependent variables and makes the treated variables as random as possible. Additionally, PSM reduces

the severity of potential endogeneity and allows multiple matching methods for robustness checks (Wang and Anwar, 2019).

The remainder of the paper is organized as follows. Section 2 describes the data. Section 3 outlines the model and reports the main results. Section 4 illustrates the robustness checks. Section 5 carries out further analysis. The final section concludes.

2. Data

2.1. Sample

Our paper employs a dataset of over 1500 firms listed on the Shanghai (SSE) and Shenzhen Stock Exchanges (SZSE) in China during 2008-2016. The data source is the China Securities Market and Accounting Research (CSMAR) which has been widely used (e.g., Liu et al., 2017; Deng et al., 2018; Lennox et al., 2018; Bradshaw et al., 2019; He et al., 2019; Jia et al., 2019). We cover the period 2008-2016 as CSMAR started to report the relevant data in 2008 and stopped publishing the data after 2016. We clean the data by excluding missing values. There are 1592 and 1565 firms included for political connections–Nominal Tax Rates (*NTRs*) and political connections–Effective Tax Rates (*ETRs*) analysis, respectively. Financial firms are excluded given the disparity in accounting standards between them and other firms. 22 industries are covered representing all major sectors in the economy.

2.2. Variable Measurement

Table 1 summarizes the measurements of all variables. Table 2 reports their descriptive statistics, and the information does not raise any particular concern.

2.2.1. Tax Rates

We use both *NTRs* and *ETRs* to capture corporate tax burden. *NTRs* are the regulatory tax rates that are applicable to a firm; *ETRs* are the actual tax that a firm ends up paying. The concept of *NTRs* is less used but is particularly relevant to China. Chinese firms designated as high-tech

often enjoy lower applicable tax rates. As firms often try to influence regulation/policy for tax exemption (Hillman et al., 2004, Bertrand et al., 2018), better politically connected firms are more likely to gain high-tech status and receive reduced applicable tax rates. *ETRs* are more widely employed (e.g., Kim and Zhang, 2014; Francis et al., 2016; Lin et.al, 2018; Bradshaw et.al, 2019). We define *ETRs* as the ratio of the total current income tax expense to the pre-tax income following Bradshaw et al. (2019).

2.2.2. Political Connections

Political connections have been defined using various criteria including whether large shareholder or top manager has or had political positions such as a member of parliament, minister or head of state (e.g., Faccio, 2006), president or presidential candidate (e.g., Goldman et. al., 2009), city-level government agency or CCP member (e.g., Lin et al., 2018) or member of the government or military (e.g., Fan et al., 2007).

In contrast to the above studies categorizing firms into with or without political connections, we provide two alternative measures that reflect the multi-layeredness of political connections. The first is according to the 10 hierarchical positions that the CEO or Chairman serve in the CCP or government. It is denoted as *fgo_InstiTp*. We assign "1" to the top hierarchy (i.e., national leader) and increase by one unit for each hierarchy below: national leader=1; sub-national leader=2; provincial minister=3; sub-provincial minister=4; bureau director=5; deputy bureau director=6; division head=7; deputy division head=8; section head=9; deputy section head=10.

The second measure corresponds to the 5 administrative levels of the CCP or government where the CEO or Chairman serves. It is denoted as *fgo_InstiLvs*. We assign "1" to the highest administrative level (i.e., central CCP or government) and increase by one unit for each level below: central CCP or government=1; provincial CCP or government=2; municipal CCP or government=3; county CCP or government=4; town CCP or government

and lower=5. Firms without any political connections are given a value of zero.

When a firm's CEO or Chairman serves in a higher hierarchical position in the CCP or government (i.e., a lower numerical value of $fgo\_InstiTp$), or serves in CCP or government with higher administrative level (i.e., a lower numerical value of $fgo\_InstiLvs$), the political connections grow stronger, and they are expected to have greater tax-reduction effect and *vice versa*.

2.2.3. Control Variables

We introduce several control variables to reflect the firm characteristics. They include return on assets (ROA), ownership patterns (*Ownership*), Cash holdings (*Cash*), liquidity (*Liquidity*), leverage ($Leverage$), inventory ($Inventory$), capital expenditure (PPE) and size (*lnSize*) (e.g., Desai and Dharmapala, 2008; Frank et al., 2009; McGuire et al., 2012; Lin et al., 2018). We consider R&D expenses ($R\&D$) and intangible assets ($Intangible$) as they often lead to favorable tax rates or tax relief (Hanlon and Heitzman, 2010; Lin et al., 2018). To encourage R&D expense and intangible assets investment, the Chinese government issued several policies granting them lower tax rates in 2007. To reflect the over/undervaluation of the equity, we also include the market-to-book ratio (*MB*) (following Bradshaw et al., 2019).

3. The Model and Empirical Results

3.1. The Model

Our empirical model takes the following form:

$$\begin{Bmatrix} NTRs_{i,t} \\ ETRs_{i,t} \end{Bmatrix} = \alpha_0 + \beta_1 \begin{Bmatrix} fgo\_InstiTp_{i,t} \\ fgo\_InstiLvs_{i,t} \end{Bmatrix} + \beta_2 ROA_{i,t} + \beta_3 \text{Ownership}_{i,t} + \beta_4 \text{Cash}_{i,t} +$$

$$\beta_5 \text{Inventory}_{i,t} + \beta_6 \text{Liquidity}_{i,t} + \beta_7 \text{PPE}_{i,t} + \beta_8 \text{Intangible}_{i,t} + \beta_9 \text{R\&D}_{i,t} + \beta_{10} \text{Leverage}_{i,t} +$$

$$\beta_{11} \text{lnSize}_{i,t} + \beta_{12} \text{MB}_{i,t} + \gamma_i + \zeta_t + \mu_{i,t} \qquad (1)$$

where *i* and *t* indicate the firm and time, respectively; $NTRs_{i,t}$ and $ETRs_{i,t}$ denote the nominal and effective tax rates, respectively; $fgo\_InstiTp_{i,t}$ and $fgo\_InstiLvs_{i,t}$ represent the two measures of political connections; $\beta_i (i = 1 \cdots 12)$ are the coefficients; γ_i and ζ_t denote individual- and time-fixed effects, respectively; α_0 represents the constant; $\mu_{i,t}$ is the error term.

3.2. Empirical Results

Table 3 summarizes the PSM analysis of Equation (1). In Columns (1) and (3), *NTRs* and *ETRs* are the dependent variables, respectively, and *fgo_InstiTp* is the independent variable. The *t*-statistics for ATT are 1.81 in Column (1) and 4.28 in (3), confirming that firms with political connection (the treatment group) enjoy significant tax-reduction effect compared to ones without (the control group). Coefficients of *fgo_InstiTp* are positive and significant (at 10% significance level in Column (1) and 1% in (3)), suggesting both *NTRs* and *ETRs* decline when political connections become stronger (i.e., *fgo_InstiTp* decreases). Specifically, when the hierarchical position of CEO or Chairman in CCP or government rises by one rank (i.e., *fgo_InstiTp* declines by one), *NTRs* and *ETRs* fall by an average of 1.03% and 0.33%, respectively.

In Columns (2) and (4), *fgo_InstiLv* is the independent variable. The *t*-statistics of ATT are 2.88 for *NTRs* (Column (2)) and 1.92 for *ETRs* (Column (4)), suggesting significant tax-reduction effect for politically connected firms compared with ones without the connections. The coefficients for *fgo_InstiLv* are positive and significant at 1% and 10%, respectively, indicating that stronger political connections (i.e., smaller *fgo_InstiLv*) lower *NTRs* and *ETRs*. When the administrative level of the CCP or government where the CEO or Chairman serves rises by one level (i.e., *fgo_InstiLv* drops by one), *NTRs* and *ETRs* decrease by an average of 0.99% and 0.98%, respectively.

For the control variables, coefficients of *ROA*, *Ownership* and *Leverage* are negative at 1% significance level whilst that of *Cash*, *Intangible* and *lnsize* are positive at 5%. All others

are insignificant expect *Liquidity* under the cases of *fgo_InstiLv*.

We demonstrate how tax rates are reduced when political connections become stronger (as captured by *fgo_InstiTp* and *fgo_InstiLv*). This is a step further than previous studies comparing only between politically connected and not connected firms (e.g., Brown et al., 2015; Kim and Zhang, 2016; Sudibyo and Sun, 2016; Barrick and Frischmann, 2017; Wahab et al., 2017; Chen et al., 2018; Hanny and Niandari, 2018). We also employ the PSM approach which has several advantages over the conventional OLS method.

We used lagged (by one year) political connections to explain the tax rates. We find positive but insignificant coefficients of political connections, implying the tax-reduction effect of political connections does not have a one-year lag. We also exclude R&D and intangible assets as they have been less frequently employed in previous studies. Our results remain roughly unchanged as *fgo_InstiTp* and *fgo_InstiLv* continue to be positive and significant.

4. Robustness Checks: Alternative Matching

As robustness checks, we employ alternative pair-matching to improve the comparability of the sample and to increase the range of common values (Abadie, 2004; Wang and Anwar, 2019).

Table 4 reports the effects of *fgo_InstiTp* and *fgo_InstiLv* on *NTRs* (Panel A) and *ETRs* (Panel B) using 1:2 (n(2)), 1:3 (n(3)), 1:4 pair-matching(n(4)) and 1:4 pair-matching within caliber 0.01(n(4) cal(0.01)). All coefficients of *fgo_InstiTp* and *fgo_InstiLv* remain positive and significant at least at 10% significance level. In both Panels, the sizes of coefficients across n(2) to n(4) cal(0.01) are very similar to the primary results under n(1). Therefore, our results are robust regardless of the choice of alternative pair-matching.

5. Further Analysis

Ownership is an important factor influencing firms' tax avoidance outcomes (Chen et al., 2010). We further investigate the effect of political connections under different types of ownership, namely SOEs and non-SOEs. Adjusting Equation (1) slightly (i.e., removing *Ownership*) gives:

$$\begin{Bmatrix} NTRs_{i,t} \\ ETRs_{i,t} \end{Bmatrix} = \alpha_0 + \beta_1 \begin{Bmatrix} fgo_{ServisTp_{i,t}} \\ fgo_{InstiLvs_{i,t}} \end{Bmatrix} + \beta_2 ROA_{i,t} + \beta_3 Cash_{i,t} +$$

$$+\beta_4 Inventory_{i,t} + \beta_5 Liquidity_{i,t} + \beta_6 PPE_{i,t} + \beta_7 Intangible_{i,t} + \beta_8 R\&D_{i,t} + \beta_9 Leverage_{i,t}$$

$$+\beta_{10} lnSize_{i,t} + \beta_{11} MB_{i,t} + \gamma_i + \zeta_t + \mu_{i,t} \qquad (2)$$

Table 5 reports the results. For SOEs (Panel A), in Columns (1) and (2), both *fgo_InstiTp* and *fgo_InstiLv* are positive but insignificant. Hence political connections do not reduce *NTRs* for SOEs. For the *ETRs* (Columns (3) and (4)), both political connections are positive and significant. *ETRs* decrease by an average of 0.11% and 0.08% when the political connections rise by one hierarchical rank and one administrative level, respectively (i.e., *fgo_InstiTp* and *fgo_InstiLv*, respectively, decline by one,).

Panel B shows the results for non-SOEs. When *NTRs* are considered (Columns (1) and (2)), the coefficients of *fgo_InstiTp* and *fgo_InstiLv* are positive (1.35% and 0.91%, respectively) and significant. This finding contrasts with that of the SOEs. Regarding *ETRs* (Columns (3) and (4)), although only the coefficient of *fgo_InstiTp* (Column (3)) is positive and significant at 1%, the coefficient (0.29%) is larger than that of the SOEs (0.11%).

Therefore, political connections present tax-reducing opportunities for both SOEs and non-SOEs; such effect is more profound for non-SOEs. For SOEs, as state ownership generates an innate tie with the government, the value-added of politically connected managers in pursuing lower tax rates may be weakened (Hanlon and Heitzman, 2010). In contrast, missing such inherent government relationship, having political connections presents a valuable asset for non-SOEs. Our results are different from Wu et al (2012) but both emphasize the importance of political connections for non-SOEs.

6. Conclusions

Employing the multi-tiered political connections and PSM method, our first main finding is that stronger political connections lead to a lower corporate tax burden. Specifically, the nominal (effective) tax rates fall by an average of 1.03% (0.33%) as the hierarchical position of Chairman or CEO in the CCP or government rises by one rank (e.g., from a sub-provincial to provincial minister), and by an average of 0.99% (0.98%) as the administrative level of the CCP or government where the Chairman or CEO serves rises by one level (e.g., from a provincial to central government) for Chinese listed firms. Our second finding is that political connections have tax-reduction effect for both SOEs and non-SOEs, and such impact is stronger for non-SOEs than for SOEs.

Our findings have important policy implications. First, given the tax-reduction effect of political connections, when relevant authorities are allocating the nominal tax rates or monitoring the effective tax rates, they need to consider the political background of firms' CEOs or Chairmen to prevent any unfair competitive advantages. Second, as political connections generate more tax benefit for non-SOEs than for SOEs, close supervision on non-SOEs is needed to ensure they do not overinvest in political connections in exchange for tax benefit.

References

Abadie, A., Drukker, D., Herr, J. L., Imbens, G. W. 2004. Implementing matching estimates for average treatment effects in STATA. *The Stata Journal*. 4, 290-311.

Adhikari, A., Derashid, C., Zhang, H. 2006. Public policy, political connections and effective tax rates: Longitudinal evidence from Malaysia. *Journal of Accounting and Public Policy*. 25(5), 574-995.

Barrick, J. A., Brown, J. L. 2019. Tax-related corporate political activity research: A literature review. *Journal of American Tax Association*. 41, 59-89.

Barrick, J., Frischmann, P. 2017. Corporate taxes and lobbying: Getting a seat at the table. Working paper, Brigham Young University and Oregon State University.

Bertrand, M., Kramarz, F., Schoar, A., Thesmar, D. 2018. The cost of political connections. *Review of Finance*. 22(3), 849–876.

Bradshaw, M., Liao, G., Ma., M. 2019. Agency costs and tax planning when the government is a major shareholder. *Journal of Accounting and Economics*. 67(2-3), 255-277.

Brown, J. L., Drake, K., Wellman, L. 2015. The benefits of a relational approach to corporate political activity: Evidence from political contributions to tax policymakers. *Journal of American Tax Association*. 37(1), 69-102.

Chen, S., Chen, X., Cheng, Q., Shevlin, T. 2010. Are family firms more tax aggressive than nonfamily firms? *Journal of Financial Economics*. 95(1), 41–61.

Chen, Z., Dyreng, S., Li, B. 2018, Corporate political contributions and tax avoidance, earlier version presented at 2014 American Taxation Association Midyear Meeting. Available at http://dx.doi.org/10.2139/ssrn.2403918

Deng, Y., Liu, X., Wei, S. 2018. One fundamental and two taxes: When does a Tobin tax reduce financial price volatility? *Journal of Financial Economics*. 130(3), 663-692.

Desai, M., Dharmapala, D. 2008. Tax and corporate governance: an economic approach. In: Schön, W.(Ed.),*Tax and Corporate Governance*. Springer-Verlag, Berlin, pp.13–30.

Drope, J., Hansen, W. 2008. Futility and free-riding: Corporate political participation and taxation rates in the United States. *Business and Politics.* 10(3), 1–25.

Dyreng, S., Hanlon, M., Maydew, E. 2008. Long-run corporate tax avoidance. *The Accounting Review.* 83(1), 61–82.

Faccio, M. 2006. Politically connected firms. *American Economic Review*. 96(1), 369-386.

Fan, P. H., Wong, T. J., Zhang, T. 2007. Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*. 84(2), 330-357.

Forman, J. 1988. PAC contributions and effective corporate tax rates: An empirical study. *Akron Tax Journal* 5, 65–73.

Francis, B., Hasan, I., Sun, X., Wu, Q. 2016. CEO political preference and corporate tax sheltering. *Journal of Corporate Finance*. 38, 37-53.

Frank, M. M, Lynch L. J., Rego S. O. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review*. 84(2), 467-496.

Goldman, E., Rocholl, J., So, J. 2009. Do politically connected boards affect firm value? The *Review of Financial Studies*. 22(6), 2331-2360.

Hanlon, M., Heitzman. S. 2010. A review of tax research. *Journal of Accounting and Economics.* 50(2-3), 127-178.

Hanny, R., Niandari, N. 2018. Tax avoidance practice: Political connection, firm characteristics and audit quality test at banking industry in Indonesia; *International Journal of Business Management and Economic Research* (IJBMER), 9(3), 1296-1303.

He, X., Yin, H., Zeng, Y., Zhang, H., Zhao, H. 2019. Facial structure and achievement drive: Evidence from financial analysts. *Journal of Accounting Research*. 57(4), 1013-1057.

Hillman, A., Keim, G., Schuler, D. 2004. Corporate political activity: A review and research agenda. *Journal of Management*. 30(6), 837-857.

Jia, N., Mao, X., Yuan, R. 2019. Political connections and directors' and officers' liability insurance: Evidence from China. *Journal of Corporate Finance*. 58, 353-372.

Kim, C., Zhang, L. 2016. Corporate political connections and tax aggressiveness. *Contemporary Accounting Research*. 33(1), 78–114.

Lennox, C., Wang, Z., Wu, X. 2018. Earnings management, audit adjustments, and the financing of corporate acquisitions: Evidence from China. *Journal of Accounting and Economics*. 65(1), 21-40.

Lin, K., Mills, L., Zhang, F., Li, Y. 2018. Do political connections weaken tax enforcement effectiveness? *Contemporary Accounting Research*. 35(4),1941–1972.

Liu, X., Shu, H., Wei, K. 2017. The impacts of political uncertainty on asset prices: Evidence from the Bo scandal in China. *Journal of Financial Economics*. 125(2), 286-310.

McGuire, S. T., Omer, T. C., Wang, D. 2012. Tax avoidance: does tax-specific industry expertise make a difference? *The Accounting Review*. 87(3), 975–1003.

Minh, T., Kim, V. Ngoc. A. 2021. Political connections, government support and SME tax payments: A note from fixed-effect quantile regression. *Finance Research Letters*. 40, 101771.

Romero, J. A. 2019. Corporate lobbying and political contributions and their effects on tax avoidance, *Journal of Public Affairs*. 19(2), 1-8.

Sudibyo, Y. A., Sun, J. 2016. Political connections, state owned enterprises and tax avoidance: An evidence from Indonesia, *Corporate Ownership and Control* 13(3), 279-283.

Wahab, E. A. A., Ariff, A., Marzuki, M. M., Sanusi, Z. M. 2017. Political connections, corporate governance, and tax aggressiveness in Malaysia, *Asian Review of Accounting* 25(2), 424-451.

Wang L., Anwar, S. 2019. Vat rebate policy and export performance: a case study of china's mechanical goods industry. *Emerging markets Finance and Trade*. 58(1), 180-194.

Wu, W., Wu, C., Zhou, C., Wu, J. 2012. Political connections, tax benefits and firm performance: Evidence from China, *Journal of Accounting and Public Policy*, 31(3), 277-300.

Zaitul, Z., Ilona, D. 2019. Tax aggressiveness and politically connected company, in Social Sciences on Sustainable Development for World Challenge: The First Economics, Law, Education and Humanities International Conference, KnE Social Sciences, 10–19. DOI 10.18502/kss.v3i14.4294.

Table 1. Variable definitions

Variables	Definitions
Dependant variable	
NTRs	Nominal tax rates: Minimum nominal tax rate that a firm is designated to by the tax authority
ETRs	Effective tax rates: The ratio of annual income tax expense to annual pre-tax income
Independent variable	
fgo_InstiTp	First measurement for political connections of firms. It is based on the hierarchies of the positions that firms' CEOs or Chairmen serve in the CCP or government. Please see Section 2 for the allocation of numerical values based on the hierarchy of positions.
fgo_InstiLv	Second measurement for political connections of firms. It is based on the administrative level of the CCP or government where the CEOs or Chairmen serve, Please see Section 2 for the allocation of numerical values based on the hierarchies of positions.
Control variable	
ROA	Operating income divided by total assets at the end of the year.
Ownership	A dummy variable for ownership of enterprises. It equals to one if the firm is a state-owned enterprise, and zero otherwise.
Cash	Year-end cash holdings divided by total assets at the end of the year.
Inventory	Year-end inventory divided by total assets at the end of the year.
Liquidity	Ratio of current asset to current total assets.
PPE	Year-end fixed assets divided by total assets at the end of the year.
Intangible	Ratio of intangible assets to total assets.
RD	Research and development expense divided by total assets at the end of the year
Leverage	Ratio of total debt to total assets at the end of the year.
lnSize	Natural logarithm of year-end total assets (in RMB).
MB	Market to book ratio. It equals the sum of market value of equity at the end of the year, divided by the book value of equity at the end of the year.

Note: All data are collected from the China Securities Market and Accounting Research (CSMAR). The data is annual, and the sample period is 2008-2016.

Table 2. Descriptive statistics

Variables	Mean	Std. Dev.	Max.	Median
NTRs	0.1818	0.0565	0.3300	0.1500
ETRs	0.0960	0.0810	0.2960	0.0780
fgo_InstiTp	1.0288	2.4127	10.0000	0.0000
fgo_InstiLv	0.4566	1.0393	5.0000	0.0000
ROA	0.6845	0.5999	10.5858	0.5539
Ownership	0.4655	0.4988	1.0000	0.0000
Statelevel	2.2155	0.8559	3.0000	2.0000
Cash	0.1873	0.1447	1.0000	0.1461
Inventory	0.1779	0.1635	0.9426	0.1340
Liquidity	2.3112	2.6914	18.1719	1.4915
PPE	0.2336	0.1693	0.9709	0.2013
Intangible	0.0505	0.0672	0.8521	0.0347
RD	0.0013	0.0075	0.2768	0.0000
Leverage	0.4694	0.2272	1.1088	0.4677
lnSize	21.9742	1.5975	29.3987	21.8566
MB	0.0032	0.0862	2.0008	0.0027

Note: Please see Table 1 for definition of each variable.

Table 3. PSM analyses on the impact of political connections on corporate tax burden

	Dependent Variables			
	NTRs	*NTRs*	*ETRs*	*ETRs*
Independent Variables	(1)	(2)	(3)	(4)
fgo_InstiTp	0.0103*		0.0033***	
	(1.81)		(4.28)	
fgo_InstiLv		0.0099***		0.0098*
		(2.88)		(1.92)
ROA	-0.2107***	-0.2429***	-0.2253***	-0.2540***
	(-4.54)	(-5.19)	(-4.78)	(-5.36)
Ownership	-0.8885***	-0.9087***	-0.8967***	-0.9177***
	(-16.81)	(-17.39)	(-16.88)	(-17.45)
Cash	0.4486**	0.4898**	0.4137**	0.4336**
	(2.17)	(2.39)	(1.97)	(2.09)
Inventory	0.2880	0.2306	0.2052	0.1698
	(1.62)	(1.32)	(1.14)	(0.95)
Liquidity	-0.0175	-0.0195*	-0.0171	-0.0201*
	(-1.56)	(-1.75)	(-1.51)	(-1.78)
PPE	0.0566	0.0741	0.0316	0.0331
	(0.33)	(0.43)	(0.18)	(0.19)
Intangible	1.6564***	1.5448***	1.5876***	1.5024***
	(5.28)	(4.95)	(4.95)	(4.70)
RD	0.8097	0.3424	0.3261	-0.1207
	(0.28)	(0.12)	(0.11)	(-0.04)
Leverage	-0.7979***	-0.7157***	-0.7113***	-0.6900***
	(-5.56)	(-5.09)	(-4.78)	(-4.69)
lnSize	0.1945***	0.1874***	0.1779***	0.1750***
	(9.83)	(9.62)	(8.67)	(8.62)
MB	0.6554	0.5796	0.1674	0.1675
	(1.05)	(0.97)	(0.40)	(0.41)
firm_id	*YES*	*YES*	*YES*	*YES*
year	*YES*	*YES*	*YES*	*YES*
constant	144.8096***	149.1148***	145.2745***	149.8600***
	(7.34)	(7.65)	(7.33)	(7.64)
Observations	14328	14328	14084	14084
ATT	1.81	2.88	4.28	1.92
On Support (Off Support)	13170 (1158)	14243 (85)	13143 (941)	14017 (67)

Note: Please see Table 1 for definition of each variable. The *t*-statistics are reported in parentheses. "***", "**" and "*" refer to two-tailed significance at the 1%, 5% and 10% level, respectively.

Table 4. The results of robustness tests

			Dependent Variables		
Panel A	*NTRs*	*NTRs*	*NTRs*	*NTRs*	*NTRs*
Independent Variable: *fgo_InstiTp*	n(1)	n(2)	n(3)	n(4)	n(4) cal(0.01)
ATT	0.0103*(1.81)	0.0091*(1.86)	0.0095**(2.07)	0.0091**(2.06)	0.0091**(2.06)
Panel B	*NTRs*	*NTRs*	*NTRs*	*NTRs*	*NTRs*
Independent Variables: *fgo_InstiLv*	n(1)	n(2)	n(3)	n(4)	n(4) cal(0.01)
ATT	0.0099***(2.88)	0.0090***(2.93)	0.0097***(3.34)	0.0089***(3.17)	0.0089***(3.17)
Panel C	*ETRs*	*ETRs*	*ETRs*	*ETRs*	*ETRs*
Independent Variable: *fgo_InstiTp*	n(1)	n(2)	n(3)	n(4)	n(4) cal(0.01)
ATT	0.0032***(4.28)	0.0025***(3.56)	0.0023***(3.68)	0.0026***(4.07)	0.0026***(4.07)
Panel D	*ETRs*	*ETRs*	*ETRs*	*ETRs*	*ETRs*
Independent Variables=*fgo_InstiLv*	n(1)	n(2)	n(3)	n(4)	n(4) cal(0.01)
ATT	0.0010*(1.92)	0.0013***(2.83)	0.0011***(2.67)	0.0012***(2.92)	0.0012***(2.92)

Note: 1:1 to 1:4 pair matching are under n(1) to n(4) respectively. n(4) cal(0.01) indicate 1:4 pair matching within caliber 0.01. Results under n(1) are identical to ones in Table 3. The *t*-statistics are reported in parentheses. "***", "**" and "*" refer to two-tailed significance at the 1%, 5% and 10% level, respectively.

Table 5. Results for SOEs (Panel A) and non-SOEs (Panel B)

	Panel A: SOEs				Panel B: Non-SOEs			
	Dependent Variables				Dependent Variables			
	NTRs	*NTRs*	*ETRs*	*ETRs*	*NTRs*	*NTRs*	*ETRs*	*ETRs*
Independent Variables	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
fgo_InstiTp	0.0096		0.0011***		0.0135**		0.0029***	
	(0.30)		(3.26)		(1.97)		(2.80)	
fgo_InstiLv		0.0057		0.0008***		0.0091**		0.0004
		(0.82)		(2.05)		(2.02)		(0.61)
ROA	-0.6598***	-0.6895***	-0.7028***	-0.7356***	-0.0516***	-0.0836	-0.0592	-0.0858*
	(-7.03)	(-7.37)	(-7.34)	(-7.68)	(-1.01)	(-0.107)	(-1.14)	(-1.64)
Cash	2.2431***	2.2322**	2.3729***	2.3915***	-0.1803	-0.1265**	-0.2379	-0.2270
	(5.7)	(5.72)	(5.81)	(5.95)	(-0.74)	(-0.52)	(-0.96)	(0.93)
inventory	0.3594	0.2782	0.2725	0.2178	0.3053	0.2435	0.2357	0.1956
	(1.17)	(0.91)	(0.87)	(0.70)	(1.38)	(1.11)	(1.05)	(0.88)
Liquidity	-0.1170***	-0.1151***	-0.1288***	-0.1313***	0.0023***	0.0004	0.0033	0.0011***
	(-3.14)	(-3.13)	(-2.30)	(-3.39)	(0.19)	(0.03)	(0.01)	(0.09)
PPE	-0.0825	-0.0910	-0.1009	-0.1115	0.2951	0.3345***	0.2587	0.2718
	(-0.29)	(-0.33)	(-0.35)	(-0.39)	(1.29)	(1.48)	(1.11)	(1.18)
Intangible	1.6761***	1.6087***	1.5325***	1.4724***	1.3729***	1.1826***	1.3673***	1.2347**
	(3.95)	(3.82)	(3.57)	(3.45)	(4.74)	(2.38)	(2.61)	(2.38)
RD	15.1550***	14.2782**	15.0292***	14.2818**	-3.2006***	-3.5128**	-3.8971	-4.2201**
	(2.63)	(2.48)	(2.60)	(2.48)	(-0.84)	(-0.92)	(0.315)	(-1.09)
Leverage	-0.6427**	-0.5673**	-0.5556**	-0.5422**	-0.9182***	-0.8254***	-0.8298*	-0.8057*
	(-2.54)	(-2.28)	(-2.13)	(-2.10)	(-5.04)	(-4.62)	(-4.36)	(-4.28)
lnSize	0.2205***	0.2064***	0.2126***	0.2010***	0.1584***	0.1588***	0.1301***	0.1368***
	(7.92)	(7.50)	(7.40)	(7.05)	(5.55)	(5.66)	(4.37)	(4.65)
MB	0.0980	0.0034	-0.1016	-0.1191	0.7503	0.71034	0 .1800	0.1901
	(0.07)	(0.00)	(-0.05)	(-0.06)	(1.09)	(1.05)	(0.42)	(0.44)
firm_id	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
date	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
ownership	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
constant	174.5708***	171.7091***	177.3068***	172.1696***	138.5000***	147.8305***	136.7200***	148.5391***
	(5.25)	(5.24)	(2.53)	(5.50)	(5.35)	(5.79)	(5.27)	(5.79)
Observations	6662	6662	6543	6543	7666	7666	7541	7541
ATT	0.3	0.82	3.26	2.05	1.97	2.02	2.8	0.61
On Support (Off Support)	5978(684)	6570(92)	5898(645)	6450(93)	6767(899)	7575(91)	6834(707)	7473(68)

Note: Same as under Table 3.