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Fiscal centralization and corporate leverage in emerging markets: Evidence from the merger of tax bureaus in China

Jin Lv
Institute of Law-based Government Research, Jiangxi University of Finance and Economics

Xinyu Ren
The International School, Jiangxi University of Finance and Economics

Wendy (Hong) Wang
School of Accountancy, Jiangxi University of Finance and Economics

Rufen Zheng
School of Finance, Jiangxi University of Finance and Economics

Abstract

This study investigates how fiscal centralization influences corporate leverage in China by exploiting the 2016 consolidation of the National Tax Bureau (NTB) and Local Tax Bureaus (LTBs). Using a difference-in-differences design, we find that affected firms—local enterprises newly subject to NTB oversight—cut leverage by 0.107 standard deviations relative to unaffected peers. The reduction is larger for firms that maintained close ties with local governments before the reform, indicating that centralization improves corporate governance and mitigates center–local agency frictions. The results offer policy guidance for China's ongoing deleveraging initiative.

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Contact: Jin Lv - 1202200063@jxufe.edu.cn, Xinyu Ren - 2020014307@qq.com, Wendy (Hong) Wang - 39186104@qq.com, Rufen Zheng - zhengrufen2022@163.com.

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1. Introduction

Fiscal decentralization gives sub-national officials strong incentives to expand output, yet it often erodes central oversight (Zhang 2006; Martinez-Vazquez 2011; Jalil et al. 2014; Arends 2020). During the past four decades, China's tax system has oscillated between decentralized and centralized arrangements. The most recent recentralization occurred in 2016, when the National Tax Bureau (NTB) and the Local Tax Bureaus (LTBs) were functionally integrated.[1] Although the reform is macro-economically important, its impact on firm behavior remains understudied (Gao et al. 2019). We fill this gap by analyzing how the NTB-LTB merger influences corporate leverage.

The NTB-LTB merger affects only a proportion of firms in China, providing a unique opportunity for the empirical evaluation of fiscal centralization's economic effect. In China, two of the most important corporate taxes are income and value-added taxes. In the pre-merger period, non-local firms and local firms established after 2002 paid both their income and value-added taxes to the NTB; however, local firms established before 2002 paid their income and value-added taxes to LTBs and the NTB, respectively.[2] When LTBs merged with the NTB, local firms established before 2002 began to pay both taxes to the NTB. Therefore, the NTB-LTB merger affects mainly local firms established before 2002, which are defined as the treatment group in our research design. All other listed firms constitute the control group because they were already under NTB oversight for both taxes before the reform. Using a difference-in-differences framework, we find that treated firms reduce leverage by 0.107 standard deviations relative to the control group. The decline is more pronounced for firms with close pre-merger ties to local governments, consistent with the view that stronger central monitoring improves corporate governance and mitigates center–local agency frictions.

The remainder of this paper is organized as follows: Section 2 presents the hypothesis development; Section 3 explains our research design, data, and sample; Section 4 discusses the empirical results; and Section 5 concludes the paper.

2. Hypothesis development

2.1. Institutional background

China's tax administration has oscillated between decentralization and recentralization, tracking broader shifts in the country's political economy. Before the market-oriented reforms launched in 1978, nearly all tax revenue was collected from state-owned enterprises (SOEs) by local governments and then remitted to the central government under a "unified collection and spending" regime. Because local officials had no claim on the proceeds, they had little incentive to widen the tax base, and the central government had limited visibility into subnational finances.

In 1980 the authorities replaced that system with a "divide-revenue, assign-spending" framework—popularly called "eat from separate kitchens." Provinces negotiated fixed remittance quotas with the Ministry of Finance and kept any revenue above those quotas, rewarding them for stimulating local growth. The arrangement's weakness soon emerged: the sharing rule covered only on-budget items, so provincial tax bureaus shifted money off budget. National tax revenue fell from roughly 23 percent of GDP in 1983 to 11 percent in 1993, while the central share of that shrinking pool dropped from 41 percent to 22 percent. Facing a fiscal

[1] The formal announcement of the NTB-LTB merger was issued in 2018, but operational integration began at the end of 2016 (Liu et al. 2023).

[2] The 2002 tax-sharing reform reclassified corporate income tax as a shared levy; only firms incorporated after 1 January 2002 immediately switched to NTB filing (Liu et al. 2023).

squeeze, the central government concluded that it needed tighter control over both revenue streams and collection agencies.

The 1994 tax-sharing reform met both needs. Taxes were reclassified as central, local, or shared. Value-added tax (VAT) became the largest shared levy, assigned 75 percent to the center and 25 percent to the provinces, whereas customs duties, excise taxes, and the corporate income tax (CIT) on centrally owned and foreign-funded firms were declared central. Equally important, the reform created two separate bureaucracies. A vertically managed NTB collected all central and shared taxes, shielding them from provincial interference; LTBs remained under provincial and municipal governments and handled strictly local levies such as personal income and property taxes.

Although the redesign halted the slide in central revenue, the central government soon required additional resources. In 2002, to finance the "Go West" initiative, CIT on local firms and personal income tax were reclassified as shared. Local firms refer to the firms that are controlled by local investors, who could be local states or other types of investors. On the other hand, non-local firms are controlled by central states or foreign investors. To avoid migrating millions of legacy files, only firms incorporated on or after 1 January 2002 switched to NTB filing; older firms remained with LTBs. Two enforcement regimes therefore coexisted in every province, fragmenting databases and staff assignments.

By the mid-2010s, three systemic problems had become evident: (i) uneven enforcement let local governments trade lax audits for investment and headline GDP growth, a key promotion metric for officials; (ii) redundant staffing and incompatible IT systems inflated administrative costs; and (iii) data gaps invited evasion. Advances in e-invoicing and big-data analytics suggested that a single, vertically managed authority could harness technology more effectively while curbing local favoritism. Consequently, in March 2018 the Communist Party's Central Office and the State Council ordered the merger of all provincial and sub-provincial NTB and LTB branches into one agency. Operational integration, however, had already begun at the end of 2016.

Early evidence indicates sizable economic effects. Local enterprises founded before 2002 (hereafter "affected firms") lost the ability to negotiate with locally controlled collectors and faced a sudden rise in audit intensity. Feng et al. (2023) show that proxies for tax evasion—overstated costs, unexplained inventory changes, and fictitious related-party payments—declined once these firms fell under NTB oversight. The same study documents fewer accounting irregularities and more complete social-security contributions, implying that tighter tax enforcement spills over into broader compliance.

Stronger oversight also appears to improve corporate governance. Liu et al. (2023) report that financial statements became timelier and more accurate after the merger, attributing the change to managers' heightened perception that misinformation would be detected and penalized. Cleaner reporting enhances external stakeholders' ability to evaluate performance, which, according to Ye et al. (2024), translates into lower borrowing costs and easier access to bank credit. By reducing information asymmetry and signaling lower regulatory risk, the new tax environment improves firms' creditworthiness.

2.2. Corporate leverage

Capital structure—the mix of debt and equity a firm employs—remains central to modern finance because of its implications for performance and valuation. Scholarly interest in this topic dates back to Modigliani and Miller's (1958) seminal "irrelevance" proposition, which shows

that, in frictionless markets, leverage does not affect firm value. Because real markets contain numerous frictions, subsequent research has explored factors that shape financing decisions. These include tax shields (Graham et al. 1998; Kemsley and Nissim 2002; Hasan et al. 2014; Doidge and Dyck 2015; Faccio and Xu 2015; Fleckenstein et al. 2020), transaction and adjustment costs (Kochhar 1996; Gilson 1997; de Miguel and Pindado 2001; Dangl and Zechner 2004), and investor-clientele considerations (Zechner 1990; Huang and Petkevich 2016; Runger et al. 2019; Ginglinger and Moreau 2023).

Among theoretical extensions that incorporate these frictions, Myers's (1984) pecking-order framework is particularly influential. Emphasizing agency conflicts and information asymmetries, the model predicts a financing hierarchy: internal funds are preferred to debt, and debt is preferred to equity. Empirical findings support this ordering. For example, An et al. (2016) show that stronger earnings-management incentives—an indicator of information asymmetry—are associated with higher leverage, while Nguyen and Phan (2020) show that information asymmetry amplifies the adverse effect of carbon risk on debt ratios.

Building on this literature, we investigate how China's 2018 consolidation of the NTB and LTBs affects corporate leverage. Prior work indicates that the merger strengthened tax enforcement and improved corporate governance. We argue that these changes reduce information asymmetry and agency costs, thereby decreasing firms' reliance on debt relative to equity. Accordingly, we state the following hypothesis:

H1: The NTB-LTB merger reduces corporate leverage in treated firms.

3. Empirical method

3.1. Research design

We evaluate the effect of fiscal centralization on capital structure with the following difference-in-differences specification:

$$Leverage_{it} = \beta_0 + \beta_1 * Treat_i * Post_t + \sum_{j=1}^{J} \gamma_j * Control_{jit} + \theta_i + \delta_t + \varepsilon_{it} \qquad (1)$$

where $Leverage_{it}$ represents corporate leverage for firm i in year t, which is defined as the total debt divided by the total assets (e.g., see Lemmon et al. 2008; Im et al. 2020; Lim et al. 2020; Wang et al. 2021; Li and Zhang 2023).$Treat_i$ is a dummy variable, which is equal to one if firm i remitted corporate income tax to an LTB prior to 2016—that is, if the firm is locally owned and was incorporated before 2002; otherwise, $Treat_i$ is equal to zero. $Post_t$ is a dummy variable equal to one if the observation is from the post-2017 period, reflecting that the NTBs and LTBs began to interoperate at the end of 2016 (Liu et al. 2023). Moreover, $Control_{jit}$ represents a set of control variables, and their definitions are provided in Appendix A. θ_i and δ_t represent the sets of firm and year indicators, respectively.[3] The interaction term, $Treat_i$*$Post_t$, is the variable of interest, with a negative coefficient consistent with our hypothesis, indicating that the NTB–LTB merger lowers leverage among treated firms.[4]

[3] Due to the collinearity issue, we do not include $Treat_i$ and $Post_t$ in our regressions after controlling for firm and year fixed effects.

[4] It is noted that the difference-in-differences specification does not require the observations from the control and treatment groups to share the same distributions. Indeed, when we partition the sample into two groups with *Treat* = 0 and *Treat* = 1, the differences in many variables between these two groups are statistically significant (as shown in Appendix).

3.2. Data and sample

Our initial sample comprises all listed firms in the China Stock Market & Accounting Research Database (CSMAR) from 2014 to 2020. Because the merger became operational in late 2016, we treat 2017 as the event year and retain three pre-event years (2014–2016) and three post-event years (2018–2020). We exclude (i) firms under special treatment (ST and *ST), (ii) firms with unidentified ultimate ownership, and (iii) observations with missing values for any regression variable. The final panel contains 18,293 firm-year observations, 11,932 of which (65.2%) belong to the treatment group (Table 1). It is noted that the number of observations increases over time, mirroring the surge in initial public offerings in China during the late 2010s.

Table 1: Sample summary

This table presents a summary of observations by year. There are a total of 18,293 firm-year observations, and 65.23% of them have *Treat* = 1.

Year	Total	*Treat* = 0	*Treat* = 1	Percent
2014	1982	542	1440	72.65%
2015	2072	588	1484	71.62%
2016	2282	700	1582	69.33%
2017	2553	858	1695	66.39%
2018	3007	1114	1893	62.95%
2019	3080	1169	1911	62.05%
2020	3317	1390	1927	58.09%
Full Sample	18293	6361	11932	65.23%

Table 2 reports descriptive statistics. The mean (median) leverage ratio is 0.417 (0.393); the 25th and 75th percentiles are 0.260 and 0.562, respectively. Control variables resemble those in prior studies (e.g., Wang et al. 2021; Liu et al. 2022; Li and Zhang 2023; Ye et al. 2024). For example, firm size (*Log(Assets)*) has a mean of 22.313 and a median of 22.132, while the market-to-book ratio (*MB*) averages 2.095 with a standard deviation of 1.352. Pairwise correlations in Table 3 show that leverage is positively related to firm size, cash-flow volatility, and state ownership, and negatively related to market-to-book ratio, operating cash flow, and the cash-to-sales ratio—patterns consistent with the extant literature (e.g., see Lemmon et al. 2008; Im et al. 2020; Lim et al. 2020; Wang et al. 2021; Li and Zhang 2023).

Table 2: Descriptive statistics

This table presents descriptive statistics for a list of main variables used in the empirical tests. The variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles.

Variable	N	Mean	Std	p25	Median	p75
Treat	18293	0.652	0.476	0.000	1.000	1.000
Post	18293	0.654	0.476	0.000	1.000	1.000
Leverage	18293	0.417	0.196	0.260	0.410	0.562
Log(1+Age)	18293	2.935	0.295	2.773	2.944	3.135
Log(Assets)	18293	22.313	1.295	21.382	22.132	23.046

MB	18293	2.095	1.352	1.253	1.663	2.406
Cash Flow	18293	0.051	0.066	0.012	0.049	0.090
CF Volatility	18293	0.047	0.034	0.024	0.038	0.059
Capex	18293	0.046	0.043	0.014	0.033	0.064
Cash	18293	0.368	0.407	0.125	0.238	0.446
Dividend	18293	0.349	0.477	0.000	0.000	1.000
SOE	18293	0.334	0.472	0.000	0.000	1.000

Table 3: Correlations

This table presents the correlation matrix for a list of selected variables. The variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	*Treat*	1.000										
(2)	*Post*	-0.090***	1.000									
(3)	*Leverage*	0.137***	-0.011	1.000								
(4)	*Log(1+Age)*	0.652***	0.222***	0.152***	1.000							
(5)	*Log(Assets)*	0.147***	0.035***	0.538***	0.156***	1.000						
(6)	*MB*	-0.063***	-0.236***	-0.315***	-0.095***	-0.409***	1.000					
(7)	*Cash Flow*	-0.040***	0.035***	-0.180***	-0.004	0.037***	0.108***	1.000				
(8)	*CF Volatility*	0.028***	-0.053***	0.112***	0.042***	-0.068***	0.078***	-0.058***	1.000			
(9)	*Capex*	-0.092***	0.007	-0.051***	-0.115***	-0.038***	0.025***	0.194***	-0.100***	1.000		
(10)	*Cash/Sales*	-0.005	-0.045***	-0.287***	-0.010	-0.129***	0.154***	-0.037***	0.027***	-0.093***	1.000	
(11)	*Dividend*	0.143***	-0.063***	0.227***	0.170***	0.299***	-0.108***	-0.024***	-0.007	-0.097***	-0.034***	1.000
(12)	*SOE*	0.318***	-0.072***	0.264***	0.229***	0.379***	-0.155***	-0.025***	-0.041***	-0.115***	-0.013*	0.263***

4. Empirical results

4.1. Baseline regressions

Table 4 presents the estimates from Equation (1). Column (1) includes only the *Treat*Post* interaction along with firm and year fixed effects; Column (2) adds the full set of covariates. In both specifications the coefficient on *Treat*Post* is negative and significant at the 1% level. The estimate in Column (2) implies that, after the NTB–LTB merger, treated firms lower their leverage by 0.107 standard deviations—an economically meaningful change.

The control variables display expected signs. *Log(1+Age)* and *Log(Assets)* enters positively, consistent with the notion that older and larger firms have lower bankruptcy risk and greater capacity to exploit the tax shield from debt (Ang et al. 1982; Warner 1977; Kieschnick and Moussawi 2018; Memon et al. 2019). *Cash* is negatively related to leverage, echoing the view that cash holdings act as "negative debt" (Shenoy and Koch 1996; Opler et al. 1999; Bigelli and Sánchez-Vidal 2012; DeAngelo et al. 2022). Collectively, the results in Table 4 support H1: the NTB–LTB merger leads treated firms to rely less on debt financing.

Table 4: Baseline regressions

This table reports the regression results of two ordinary least squares models of corporate leverage, with *Leverage* as the dependent variable in both columns. The variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level, and the associated p-values are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)
*Treat*Post*	-0.041***	-0.021***
	(0.000)	(0.000)
Log(1+Age)		0.158***
		(0.000)
Log(Assets)		0.071***
		(0.000)
MB		-0.002
		(0.306)
Cash Flow		-0.088***
		(0.000)
CF Volatility		0.012
		(0.839)
Capex		-0.012
		(0.738)
Cash		-0.058***
		(0.000)
Dividend		0.006*
		(0.051)
SOE		0.031***
		(0.004)
Year FE	Yes	Yes

Industry FE	No	No
Firm FE	Yes	Yes
N	18293	18293
Adj. R-squared	0.822	0.843

4.2. Robustness tests

We verify the baseline results with three alternative samples. (i) We drop firms headquartered in Shanghai and Tibet because Shanghai implemented integration earlier and Tibet never maintained a separate LTB. (ii) We exclude foreign-owned enterprises (FOEs) and centrally controlled SOEs, which have always filed taxes with the NTB. (iii) We restrict the panel to firms observed in both the pre- and post-merger periods. (iv) We restrict the sample to firms whose establishment years are between 1997 and 2006, so that firms in the treatment and control groups are more comparable. Across all specifications (Table 5), the coefficients of *Treat*Post* remain negative and significant at the 1% level, confirming that the findings are not driven by sample composition.

Table 5: Robustness tests

This table reports the regression results of four ordinary least squares models of corporate leverage, with *Leverage* as the dependent variable in all four columns. The variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level, and the associated p-values are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Variable	Leverage			
	Exclude Shanghai & Tibet	Exclude CSOEs & FOEs	Require observations in both pre- & post- periods	Require establishment year between 1997 and 2006
*Treat*Post*	-0.020***	-0.019***	-0.023***	-0.019**
	(0.000)	(0.003)	(0.000)	(0.016)
Log(1+Age)	0.159***	0.176***	0.147***	0.302***
	(0.000)	(0.000)	(0.001)	(0.004)
Log(Assets)	0.072***	0.068***	0.070***	0.066***
	(0.000)	(0.000)	(0.000)	(0.000)
MB	-0.002	-0.000	-0.001	-0.001
	(0.305)	(0.800)	(0.675)	(0.432)
Cash Flow	-0.089***	-0.091***	-0.089***	-0.126***
	(0.000)	(0.000)	(0.000)	(0.000)
CF Volatility	0.032	-0.001	0.018	0.017
	(0.610)	(0.994)	(0.783)	(0.840)
Capex	-0.013	0.017	-0.018	0.028
	(0.727)	(0.663)	(0.664)	(0.534)
Cash	-0.061***	-0.058***	-0.060***	-0.062***

	(0.000)	(0.000)	(0.000)	(0.000)
Dividend	0.007**	0.005	0.005	0.003
	(0.035)	(0.143)	(0.112)	(0.426)
SOE	0.033***	0.032***	0.032***	0.030**
	(0.003)	(0.009)	(0.003)	(0.028)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	16776	15615	15552	10780
Adj. R-squared	0.842	0.836	0.838	0.829

4.3. The change in leverage around the merger

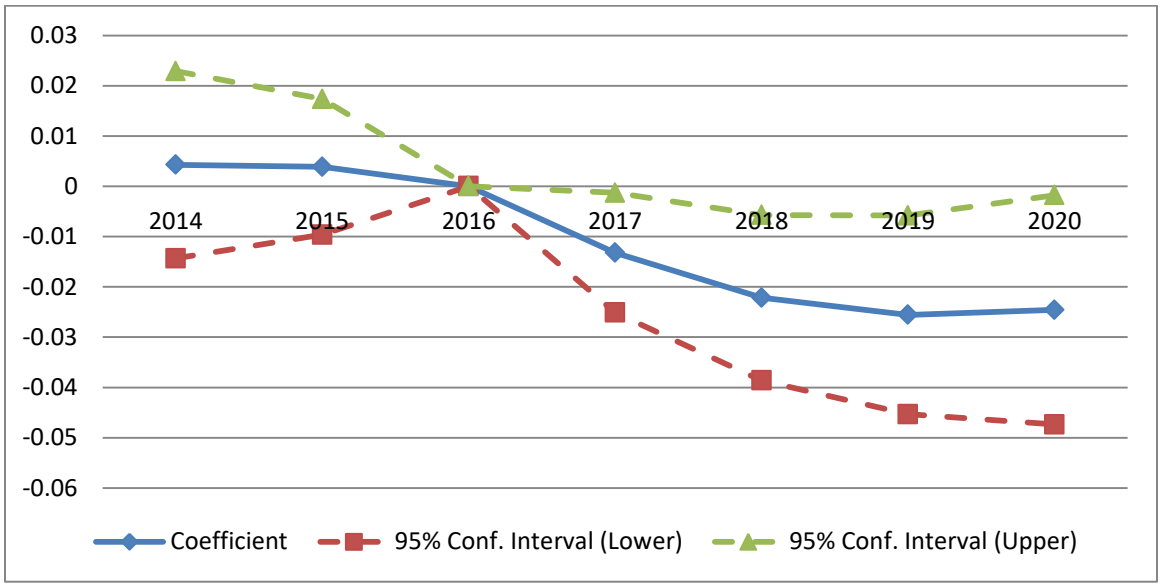
To further investigate the negative effect of the NTB-LTB merger on corporate leverage, we explore the dynamic changes in leverage around the merger. Empirically, we use a vector of time dummy variables to indicate the years around the merger:

$$Leverage_{it} = \beta_0 + \sum_{k \neq 2016} \beta_k * Treat_i * Year\ k + \sum_{j=1}^{J} \gamma_j * Control_{jit} + \theta_i + \delta_t + \varepsilon_{it} \quad (2)$$

where *Year k* is a dummy variable equal to one if an observation is from year *k*. *k* is an integer between 2014 and 2020, with 2016 omitted as the base year. Figure 1 depicts the regression coefficients of *Treat*Year k* and their 95% confidence intervals. While the coefficients *Treat*Year 2014* and *Treat*Year 2015* are not significantly different from zero, the coefficients of *Treat*Year 2017*, *Treat*Year 2018*, *Treat*Year 2019*, and *Treat*Year 2020* are statistically negative at the 95% significance level. The pattern confirms a causal, persistent decline in leverage among treated firms once the merger takes effect.

Figure 1: The change in leverage around the merger

This figure depicts the regression coefficients of *Treat*Year k* and their 95% confidence intervals.



4.4. Cross-sectional variations

Finally, we test whether the leverage response is stronger for firms that enjoyed closer ties to local governments before the merger—relationships often linked to weaker governance. Two proxies are employed. The first one is *SOE*. By nature, SOEs are owned by states and have closer relationships with local governments than do non-SOEs (Piotroski and Wong 2012; Bradshaw et al. 2019; Liu et al. 2023). Second, we use a dummy variable, *Large*, to indicate that a firm is larger than the median in a year. Because large listed firms are important to the development of local economies and local politicians' careers, they generally enjoy better relationships with local governments than small firms do. Table 6 presents the regression results on the cross-sectional variations in the effect of the NTB-LTB merger on corporate leverage. In Columns (1) and (2), both coefficients of *Treat*Post*SOE* and *Treat*Post*Large* are both significantly negative, suggesting that the NTB-LTB merger has a stronger effect on firms with closer pre-merger relationships to local governments, which is consistent with the notion that the NTB-LTB merger reduces corporate leverage by enhancing corporate governance.

Table 6: Cross-sectional variations

This table reports the regression results of two ordinary least squares models of corporate leverage, with *Leverage* as the dependent variable in both columns. The variable definitions are provided in Appendix A. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm level, and the associated p-values are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)
*Treat*Post*	-0.011*	-0.010
	(0.062)	(0.123)
*Treat*Post*SOE*	-0.025***	
	(0.000)	
*Treat*Post*Large*		-0.019***
		(0.000)
Log(1+Age)	0.139***	0.147***
	(0.001)	(0.000)
Log(Assets)	0.070***	0.074***
	(0.000)	(0.000)
MB	-0.001	-0.001
	(0.436)	(0.677)
Cash Flow	-0.089***	-0.087***
	(0.000)	(0.000)
CF Volatility	0.009	0.009
	(0.884)	(0.883)
Capex	-0.005	-0.009
	(0.892)	(0.813)
Cash	-0.057***	-0.058***
	(0.000)	(0.000)

Dividend	0.006*	0.006*
	(0.051)	(0.064)
SOE	0.042***	0.031***
	(0.000)	(0.004)
Year FE	Yes	Yes
Firm FE	Yes	Yes
N	18293	18293
Adj. R-squared	0.843	0.843

5. Conclusion

China's 2016 integration of the NTB and LTBs constitutes one of the largest recent episodes of fiscal recentralization in an emerging market. Exploiting the deterministic assignment of tax jurisdictions that hinges on firms' incorporation dates, we build a difference-in-differences framework that isolates the causal impact of this institutional shock on capital structure. The evidence is unambiguous: relative to firms that had always reported to the NTB, those formerly overseen by LTBs cut their leverage by 0.107 standard deviations in the post-merger period. Dynamic-effect tests show that the decline begins in the first year after the reform and intensifies over time, suggesting a persistent rather than transitory adjustment. Heterogeneity analyses reveal that state-owned enterprises and large local champions—firms whose fortunes were most closely aligned with provincial authorities—experience the sharpest reductions. Together, the results imply that recentralization curtails the scope for informal local tax leniency, tightens external monitoring, and lowers firms' appetite for debt. For policymakers concerned with financial stability, the findings highlight an alternative lever for deleveraging: institutional changes that strengthen central oversight can achieve material balance-sheet improvements without resorting to direct credit quotas or monetary tightening.

This study advances several research streams. First, by documenting a direct link between China's intergovernmental fiscal architecture and firm-level leverage, we introduce fiscal centralization as a macro-institutional determinant of capital structure, complementing traditional explanations that focus on taxes, bankruptcy costs, and information asymmetry. Second, we extend the growing literature on the NTB-LTB merger. Earlier work shows improvements in tax compliance, disclosure quality, and social-security contributions; we add a novel outcome—leverage—and trace it to a governance mechanism, thereby connecting public-finance reforms to corporate-finance decisions. Third, the paper enriches the political-economy debate on central–local agency conflicts. Our cross-sectional evidence that firms with stronger local ties react more strongly provides rare firm-level confirmation that recentralization mitigates local favoritism. Fourth, the research contributes methodologically by leveraging a clean quasi-natural experiment that satisfies the parallel-trends condition without relying on staggered adoption or instrumental variables, offering a template for future evaluations of institutional shocks. Finally, the policy relevance extends beyond China: many developing economies grapple with high leverage and fragmented fiscal authority; our findings suggest that consolidating tax administration can indirectly but effectively temper corporate indebtedness.

Several caveats warrant mention. First, the study focuses on leverage levels but does not disentangle the channels through which debt falls—lower new borrowing, faster repayment, or equity issuance. A more granular investigation using bond issuance records and bank-loan

contracts would refine the mechanism. Second, while we attribute the effect to improved governance and reduced local favoritism, alternative pathways—such as changes in credit supply from locally controlled banks—cannot be fully ruled out. Incorporating lender-side information or exploiting bank-branch variations could help isolate these channels. Third, the long-run consequences for investment efficiency, innovation, and firm value remain unexplored; tracing the dynamic interaction between leverage reduction and real outcomes would deepen our understanding of welfare implications. Finally, comparative studies across provinces or countries undergoing similar fiscal reforms could reveal whether the observed effects are unique to China's institutional context or reflect a broader principle applicable to other emerging and developed economies.

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Appendix A. Variable definitions

Variables	Definition
Treat	A dummy variable, which is equal to one if the observation involves a local firm established before 2002.
Post	A dummy variable, which is equal to one if the observation is from 2017 or later.
Leverage	Total debt divided by total assets.
Log(1+Age)	The natural logarithm of one plus the number of years since a firm's establishment.
Log(Assets)	The natural logarithm of total assets.
MB	The market-to-book ratio, which is equal to the sum of total equity value and debt value divided by total assets.
Cash Flow	Cash flow from operating activities divided by total assets.
CF Volatility	Standard deviation of *Cash Flow* in the past five years, from year -4 to year 0 (the current year).
Capex	Capital expenditures divided by total assets.
Cash	The cash and short-term investment divided by sales.
Dividend	A dummy variable, which is equal to one if the firm pays dividends in a year.
SOE	A dummy variable, which is equal to one if the firm is a state-owned-enterprise.
Large	A dummy variable, which is equal to one if the firm's total assets is greater than the median total assets in a year.