

Tax Administration System Reform and Corporate Tax Burden Stickiness: Empirical Evidence From the Merger of National and Local Tax Bureaus

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Abstract

Based on data of Chinese A-share listed companies from 2013 to 2022, this paper tests the impact of the merger of national and local tax bureaus on corporate tax burden stickiness. The merger significantly reduces stickiness through the "tax burden reduction effect" (reducing tax collection intensity, enhancing debt tax shields) and the "governance effect" (restraining collusion, improving internal control). Effects are stronger among private firms and those with lower financing constraints. The merger reduces effective tax rates and improves performance but increases local fiscal pressure.

Keywords: Merger of national and local tax bureaus, Tax burden stickiness, Tax burden reduction effect, Governance effect

1. Introduction

For a long time, the business community has reported heavy tax burdens. Recent years have seen growing calls for tax reduction. However, temporary tax concessions alone are insufficient. China has actively promoted tax administration reform, notably the 2018 merger of national and local tax bureaus. This reform unified tax collection standards, ensured independence of tax authorities, and provided institutional guarantees for reducing tax burdens (Zhao Y. and Sun X., 2022; Lu Z. et al., 2018).

Tax burden stickiness refers to the asymmetric response of tax payments to revenue increases versus decreases (Anderson et al., 2003; Cheng H. and Yang Y., 2022), widely used to measure tax burden pain (Hu H. and Wu S., 2022). Main influencing factors include government tax activities, corporate tax planning, and external market environment (Hu H. and Wu S., 2022;

Fan Z. et al., 2022). This paper examines how the merger affects stickiness through burden reduction and governance mechanisms (Lin Z. and Wang M., 2022).

2. Research Hypotheses

2.1 Tax Burden Reduction Effect

The merger enhanced tax collection independence. First, contraction of local fiscal autonomy weakened tax collection incentives (Zhou L. et al., 2011; Li J. and Liu J., 2022). Second, collection intensity decoupled from local government behavior (Gao P., 2006; Yang X. et al., 2022). Third, the merger eliminated "target escalation" caused by the dual tax system (Zhou L. et al., 2022a). The merger transformed tax enforcement from "task-driven" to "rule-compliance," systematically reducing stickiness.

Second, the merger enhanced corporate debt tax shields. Unified credit rating rules reduced information asymmetry (Shleifer and Vishny, 1998; Zingales, 1998), lowering financing costs. More reliable tax records increased loan approval rates (Yu W. et al., 2018; Gillan and Starks, 2000), expanding financing scale. Larger debt scales meant greater interest deduction and tax shields (Williamson, 1988).

2.2 Governance Effect

The merger improved standardization and suppressed government-enterprise collusion (Fan Z. and Tian B., 2013; Liu G. et al., 2022). Increased transparency raised collusion costs. Stricter external governance prompted firms to strengthen internal controls. Higher violation risks (Kedia and Philippon, 2009) forced management to improve governance (Liu G. et al., 2022), enhancing tax savings and reducing stickiness (Hu S. and Jin L., 2022; Yang G. et al., 2017).

H1: The merger can significantly reduce corporate tax burden stickiness through the tax burden reduction effect and the governance effect.

3. Research Design

3.1 Model

Following (Anderson et al., 2003; Fan Z. et al., 2022), a DID model is constructed: $\ln Tax = \beta_0 + \beta_1 \ln Rev + \beta_2 \ln Rev \times D + \beta_3 \ln Rev \times D \times Treat \times Post + \sum \gamma Controls + \mu + \lambda + \epsilon$. $\ln Tax$ measures CIT, VAT, and total tax changes. $\ln Rev$ is revenue change. D is revenue decline dummy. $Treat$ identifies firms paying income tax to local bureaus before reform (Fan Z. et al., 2022; Zhao Y. and Sun X., 2022). $Post=1$ from 2018 onward.

3.2 Data

Data from 2013-2022 for A-share listed firms from CSMAR. Excluding financial, ST, insolvent firms. Winsorized at 1%/99%. Final sample: ~22,000 firm-year observations.

Table 1. Descriptive Statistics

Variable	Definition	N	Mean	Std Dev	Min	Max
lnTax_CIT	CIT change (log ratio)	21,883	0.065	0.123	-3.10	3.02
lnTax_VAT	VAT change (log ratio)	21,532	0.023	0.045	-2.12	2.45
lnTax_Total	Total tax change (log ratio)	21,875	0.024	0.064	-1.75	2.64
lnRev	Revenue change (log ratio)	21,765	0.057	0.035	-0.35	1.35
Treat	Treatment group dummy	22,217	0.567	0.453	0	1
Post	Policy implementation dummy	22,686	0.567	0.464	0	1
Decline2	Two consecutive years decline	22,875	0.146	0.334	0	1
D	Revenue decline dummy	22,325	0.434	0.464	0	1
Size	Firm size (log assets)	22,786	22.244	1.253	19.01	26.45
Indep	Independent director ratio	21,356	0.355	0.034	0.333	0.245
Lev	Asset-liability ratio	22,854	0.422	0.214	0.046	0.352
Intang	Intangible asset ratio	22,357	0.045	0.067	0	0.445
Tang	Tangible asset ratio	22,267	0.964	0.089	0.468	0.666
Opr	Operating profit ratio	21,774	0.646	0.965	-8.216	0.36

4. Empirical Results

4.1 Baseline Results

Table 2 presents baseline results. $\ln\text{Rev} \times D$ is significantly negative, confirming tax burden stickiness. $\ln\text{Rev} \times D \times \text{Treat} \times \text{Post}$ is significantly positive across all three tax measures, indicating the merger significantly reduced stickiness.

Table 2. Baseline Regression Results

Variable	$\ln\text{Tax_CIT}$	$\ln\text{Tax_VAT}$	$\ln\text{Tax_Total}$
	(1)	(2)	(3)
$\ln\text{Rev}$	1.025*** (26.64)	0.532*** (19.12)	0.633*** (20.15)
$\ln\text{Rev} \times D$	-0.533*** (-27.53)	-0.532*** (-28.45)	-0.512*** (-28.64)
$\ln\text{Rev} \times D \times \text{Treat} \times \text{Post}$	0.234** (2.13)	0.5443** (1.64)	0.532** (1.24)
Controls/Industry/Year FE	Yes	Yes	Yes

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. t-statistics in parentheses. Standard errors clustered at firm level.

4.2 Robustness Checks

Placebo tests, excluding other policies (VAT reform, Golden Tax Phase III (Fan Z. and Peng F., 2017)), excluding pandemic period (2020+), and excluding Shanghai/Tibet samples all confirm the baseline results are robust.

5. Mechanism Tests

5.1 Tax Burden Reduction Effect

Table 3. Mechanism - Reducing Tax Collection Intensity

Variable	TE	lnTax_CIT		lnTax_VAT		lnTax_Total
	(1)	Low TE(2)	High TE(3)	Low TE(4)	High TE(5)	
Treat×Post	-0.035***					
	(-17.89)					
lnRev		1.132***	1.033***	0.432***	0.443***	
		(18.24)	(19.12)	(11.22)	(10.24)	
lnRev×D		-0.454***	-0.523***	-0.522***	-0.454***	
		(-20.22)	(-18.35)	(-19.54)	(-17.23)	
lnRev×D×Treat×Post		0.332**	0.132	0.534**	0.143	
		(2.32)	(0.32)	(2.14)	(0.76)	

Note: *** p<0.01, ** p<0.05, * p<0.1. TE = tax collection intensity.

Table 4. Mechanism - Enhancing Debt Tax Shields

Variable	Debt	lnTax_CIT		lnTax_VAT		lnTax_Total
	(1)	High Debt(2)	Low Debt(3)	High Debt(4)	Low Debt(5)	
Treat×Post	0.143***					
	(4.54)					
lnRev		1.034***	0.934***	0.578***	0.457***	
		(11.12)	(10.86)	(8.46)	(8.43)	
lnRev×D		-0.446***	-0.524***	-0.498***	-0.523***	
		(-16.34)	(-15.24)	(-15.56)	(-14.64)	
lnRev×D×Treat×Post		0.233**	0.123	0.454**	0.156	
		(2.68)	(0.43)	(2.32)	(0.53)	

Note: Debt = corporate borrowing scale (log).

5.2 Governance Effect

Table 5. Mechanism - Restraining Government-Enterprise Collusion

Variable	EAE	lnTax_CIT		lnTax_VAT		lnTax_Total
	(1)	Low EAE(2)	High EAE(3)	Low EAE(4)	High EAE(5)	
Treat×Post	-0.003*** (-18.05)					
lnRev		1.134*** (22.56)	0.946*** (18.22)	0.551*** (14.46)	0.462*** (11.53)	
lnRev×D		-0.442*** (-22.66)	-0.575*** (-19.65)	-0.458*** (-18.53)	-0.562*** (-16.69)	
lnRev×D×Treat×Post		0.326** (2.58)	0.135 (0.68)	0.543** (2.38)	0.052 (0.42)	

Note: EAE = entertainment and administrative expenses / management expenses (collusion proxy).

Table 6. Mechanism - Improving Internal Control

Variable	IC	lnTax_CIT		lnTax_VAT		lnTax_Total
	(1)	High IC(2)	Low IC(3)	High IC(4)	Low IC(5)	
Treat×Post	12.892*** (6.82)					
lnRev		1.065*** (18.66)	0.965*** (15.52)	0.577*** (10.88)	0.453*** (8.55)	
lnRev×D		-0.456*** (-18.52)	-0.467*** (-16.87)	-0.592*** (-17.06)	-0.449*** (-15.43)	
lnRev×D×Treat×Post		0.258** (2.62)	0.089 (0.66)	0.572** (2.46)	0.166 (0.91)	

Note: IC = internal control index (DIB).

6. Heterogeneity Analysis

6.1 Ownership

Group regressions by ownership show the stickiness-reducing effect is more pronounced among non-state-owned enterprises, indicating the merger promotes equal market treatment (Luo D. and Yang Y., 2022; Lin et al., 2008).

6.2 Financing Constraints

Using the SA index (Whited and Wu, 2006; Ju X. et al., 2013), group regressions show the stickiness-reducing effect is significant only among firms with lower financing constraints (Table 7).

Table 7. Heterogeneity by Financing Constraints (SA Index)

Variable	lnTax_CIT		lnTax_VAT		lnTax_Total	
	Low SA(1)	High SA(2)	Low SA(3)	High SA(4)	Low SA(5)	High SA(6)
lnRev	1.045***	0.962***	0.502***	0.481***	0.598***	0.572***
	(16.55)	(14.82)	(10.12)	(9.95)	(12.36)	(11.82)
lnRev×D	-0.486***	-0.542***	-0.492***	-0.508***	-0.486***	-0.502***
	(-18.95)	(-16.52)	(-18.56)	(-14.89)	(-16.82)	(-13.56)
lnRev×D×Treat×Post	0.318**	0.165	0.582**	0.186	0.562**	0.215
	(2.18)	(0.72)	(2.85)	(0.78)	(2.32)	(0.95)

Note: SA index measured following Whited and Wu (2006).

7. Extended Analysis

The merger significantly reduced the actual-vs-statutory tax rate gap, improved tax compliance, and significantly improved business performance (operating profit growth, ROE). However, it also significantly increased local fiscal pressure, measured by fiscal gap indicators (Chen X., 2016), revealing the trade-off between tax reduction and fiscal sustainability.

Table 8. Extended Analysis - Effective Tax Rate, Performance, and Fiscal Pressure

Variable	Effective Tax Rate	Operating Profit Growth	Fiscal Pressure
Treat×Post	-0.035*** (-4.62)	0.134*** (5.55)	0.176*** (6.56)
Controls/FE	Yes	Yes	Yes
R ²	0.174	0.144	0.157

Note: Effective tax rate = |actual rate - statutory rate|. Fiscal pressure = fiscal gap ratio.

8. Conclusions and Policy Implications

The merger of national and local tax bureaus significantly alleviates tax burden stickiness through burden reduction and governance mechanisms, with stronger effects among private firms and those with lower financing constraints. While improving performance and compliance, it increases local fiscal pressure in the short term.

Policy implications: (1) Tax authorities should continue reform to improve collection efficiency, shifting to tax base reconstruction and collection coordination. (2) Central-local fiscal relations should be rationalized, with short-term liquidity tools and long-term "blockchain + tax" ecosystem construction. (3) Enterprises should establish tax risk management mechanisms and utilize tax savings for productive investment.

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