Dilemma of Mandated Transparency: From the Perspective of International Trade

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Motivation

Tax evasion is a prevailing problem globally

- **Opaque** about activities to evade
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Research Question:

- Does the mandated transparency at Customs affect export decisions?
- If so, how does it alter firms' strategy?

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Evidence from China

- An institutional reform in tax enforcement: quasi-experiment (RDD);
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Preview of Findings

- Export intensity $\searrow$ 3 p.p.t; export volume $\searrow$ 30 %; intensive margin;
- Product mix difference: lower product scope in export markets;
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A Toy Model to Rationalize

- Heterogeneous firms: different patterns of tax enforceability;
- Firms' ability to hide domestic sales depends on export value;

Relation with the Literature

- **International Trade and Tax Enforcement**
  - ▶ Martin S. Feldstein 1990; Devereux and Maffini 2007; Feld and Heckemeyer 2011; Davies et al. 2018; Dharmapala 2019; Marco Battaglini et al. 2019; Liu et al. 2020; Benzarti and Tazhitdinova 2021; **Flach et al. 2021**; Basri et al. 2021
    - ▶ Corporate income taxes under info-dependent enforcement

- **Transparency and Informal Economy**
  - ▶ Edwards et al. 2007; Fox and Van Weelden 2012; Tong and Wei 2014; **Sudhir and Talukdar 2015**; Ellul et al. 2016; Shambaugh and Shen 2018; Antunes and Cavalcanti 2007; Capasso and Jappelli 2013
    - ▶ Mandated disclosure and transparency at Customs

- **Interconnection of Domestic and Foreign Market**
  - ▶ Salomon and Shaver 2005; Clougherty and Zhang 2009; Vannoorenberghe 2012; Blum et al. 2013; Berman et al. 2015; Fan et al. 2020; Almunia et al. 2021
    - ▶ Novel evidence and mechanism of information spillover

Evidence from China: A Quasi-Experiment
2002 Corporate Income Tax Sharing Reform

- *West China Development Drive* and *Rise of Central China Strategy*
- Changed Corporate Income Tax from Local Tax to Shared Tax
- Accompanying tax agency changes:
  - Firms est. before 1st Jan 2002 (old firms): LTB collects CIT
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Cost-sensitive LTBs in **coastal provinces** for **manufacturing CIT**

- Fiscal stress: Local governments funds LTBs
  - ▶ 100 rmb ↗ in collected CIT = 50 (40) rmb ↗ in local fiscal income
  - ▶ *...tax revenues are used for transfer payment, mainly to middle and western provinces...*

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  - *...tax revenues are used for transfer payment, mainly to middle and western provinces...*
- Outside option: Sales tax that is still local tax (Xiao, 2020)
  - 100 rmb ↗ in collected ST = 100 rmb ↗ in fiscal income
  - Specific to service industry while manufacturing firms pay VAT

Evidence from China: Empirical Strategy

Regression Discontinuity Design (RDD):

- Firms only differing marginally in entry time face distinct enforcement
    - "Old" firms: stricter enforcement when they export (customs info)
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- Mandated Transparency matters for "Old" but not "New" firms:

$$Y_{it} = \alpha_0 + \beta_0 \cdot \mathbf{1}(t_i < 0) + f(t_i) + X_{it}\gamma + \varepsilon_{it}$$

where $f(t_i) = \sum_{k=1}^{K}(\alpha_k \cdot t_i^k + \beta_k \cdot t_i^k \cdot \mathbf{1}(t_i < 0))$

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- Data: Annual Survey of Industrial Firms; Customs Transaction Records

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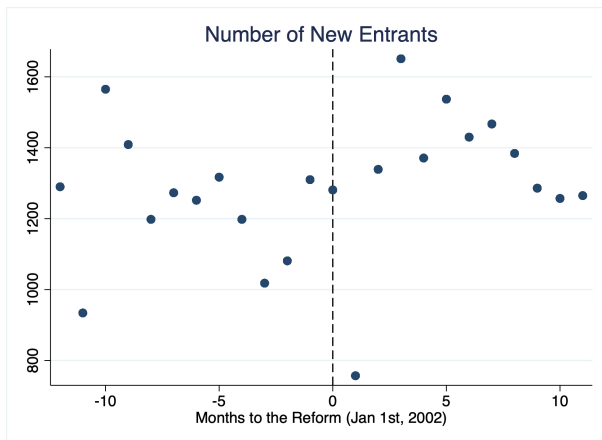
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Identification Assumptions:

- Firms don't choose entry time strategically (No manipulation)
- No other jumps at entry (No confoundings)
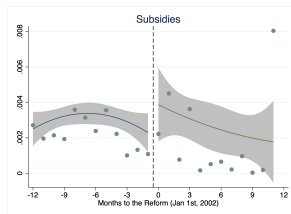
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Number of New Entrants

Months to the Reform (Jan 1st, 2002)

Note: The extreme point at distance of 1 was the month of the Spring Festival (12th February, 2002) in China.
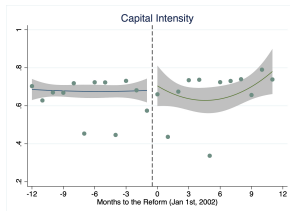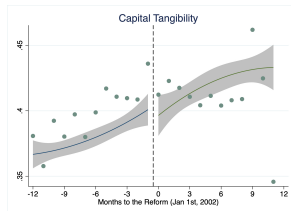
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(a) Entry Asset

(b) Subsidies

(c) Capital Intensity

(d) Capital Tangibility

Evidence from China: Main Results

Transparency trade-offs lead to lower export performance

Panel A:	Total Sales			Export Intensity		
	(1)	(2)	(3)	(4)	(5)	(6)
Reduced Form (β)	0.020	0.001	0.001	-0.031***	-0.034***	-0.034**
	(0.042)	(0.022)	(0.028)	(0.011)	(0.011)	(0.016)
Obs	31,382	31,378	31,378	31,372	31,368	31,368
Adj R2	0.13	0.77	0.77	0.24	0.25	0.25

where *Export Intensity* is defined as the share of export values w.r.t total sales.
Year-Industry and Year-Province fixed effects are controlled. Column (2) and (5) include
additionally firm-level controls. Column (3) and (6) cluster standard errors at firm level.

Evidence from China: Main Results

Higher domestic sales, Lower export volume, mostly in the intensive margin:

Panel B:	Domestic Sales		Export Volume		Export Status	
	(1)	(2)	(3)	(4)	(5)	(6)
Reduced Form (β)	0.355***	0.351***	-0.301**	-0.272**	0.007	0.000
	(0.099)	(0.094)	(0.131)	(0.115)	(0.015)	(0.015)
Obs	31,382	31,378	6,747	6,747	31,382	31,378
Adj R2	0.23	0.30	0.09	0.32	0.19	0.23

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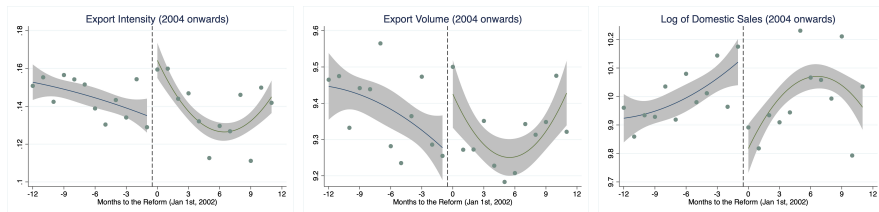
Evidence from China: Main Results

Figure: Discontinuous Changes in Sales Composition

Main Results: Heterogeneity w.r.t Distance to Ports

$$Y_{ijlt} = \alpha + \beta_1 \cdot \mathbf{1}(e_i \leq 0) + \beta_2 \cdot \mathbf{1}(e_i \leq 0) \times Far_i + \beta_3 \cdot Far_i + f(e_i) + \eta_{jt} + \nu_{lt} + \varepsilon_{ijlt}$$

	Minimum Distance to Top 3 Ports				
	Total Sales	Export Intensity	Domestic Sales	Export Volume	Export Status
β_1	0.022	-0.023**	0.346***	-0.258*	0.021
	(0.011)	(0.105)	(0.133)	(0.016)	
β_2	-0.007	-0.013**	0.003	-0.137*	-0.023***
	(0.023)	(0.006)	(0.058)	(0.077)	(0.009)
β_3	0.018	-0.019***	0.066	0.013	-0.037***
	(0.023)	(0.005)	(0.047)	(0.095)	(0.008)
Obs	31,382	31,372	31,382	6,747	31,382
Adj R2	0.13	0.24	0.23	0.09	0.19

where Far_i is equal to 1 if the minimum distance to top ports is greater than the median.

Main Results: Source of Effects

Data: Customs Export Transaction Records, aggregated to firm-product-year level

- Lower prices vs. Lower quantities?

Panel A:	Log of Prices		Log of Quantities		Log of Volume	
	Para.	Non-Param.	Para.	Non-Para.	Para.	Non-Para.
Reduced Form (β)	-0.104	-0.052	-0.009	-0.093	-0.112	-0.092
	(0.087)	(0.101)	(0.152)	(0.119)	(0.133)	(0.096)
Obs	24,821	10,247	24,821	18,684	24,821	18,684
Adj R2/bwselect	0.30	cerrd	0.19	cerrd	0.12	cerrd

Main Results: Source of Effects

- Product Mix?

Panel B:	Single-Product		Single-Destination		Single-Market	
	Para.	Non-Para.	Para.	Non-Para.	Para.	Non-Para.
Reduced Form (β)	0.113**	0.086***	0.077*	0.049*	0.073*	0.050**
	(0.047)	(0.030)	(0.041)	(0.025)	(0.037)	(0.024)
Obs	4,517	5,283	4,517	5,283	4,517	4,397
Adj R2/bwselect	0.09	cerrd	0.06	cerrd	0.07	cerrd
Panel C:	Product Scope		Destination Scope		Market Scope	
	Para.	Non-Para.	Para.	Non-Para.	Para.	Non-Para.
Reduced Form (β)	-0.202**	-0.142**	-0.225**	-0.095	-0.302**	-0.191**
	(0.098)	(0.064)	(0.109)	(0.066)	(0.127)	(0.082)
Obs	4,517	4,397	4,517	5,283	4,517	5,283
Adj R2/bwselect	0.30	cerrd	0.19	cerrd	0.12	cerrd

Main Results: Source of Effects

Figure: Source of Effects: Product Mix

Theory: Export-Dependent Evasion

- Key idea: Firms' ability to evade domestic income depends on the export values

$$\max_{q_{i,H}, q_{i,F}} \{[1 - \tau\phi(p_{i,F}q_{i,F})] \cdot p_{i,H}q_{i,H} + (1 - \tau) \cdot p_{i,F}q_{i,F} - ...$$

$$... - (1 - \tau\mu) \cdot c \cdot (q_{i,H} + \delta q_{i,F})\} - f - f_X \mathbf{1}(q_{i,F} > 0)$$

$$s.t. \quad q_{ij} = \frac{p_{ij}^{-\sigma}}{p_{sj}^{-\sigma}} E_{sj} \xi_{ij}^{\sigma-1}, \quad j \in \{H, F\}$$

- $\phi(\cdot)$: the reported share of domestic sales, increasing and convex in exports values

- $\phi(\cdot)$ can be microfounded by assuming that firms additionally choose the fraction of domestic revenues to report to the tax authority, the probability of a tax audit is a function of the export value, and the fine of tax evasion depends on the value evaded.

Conclusion

Does the mandated transparency at Customs affect export decisions?

- Yes. 3 percentage points lower export intensity and 30% lower export volume

- Mainly in the intensive margin. Stronger effects for far-from-ports firms

On what dimensions does it alter firms' export behavior?

- Product mix: more likely to be single-product exporter with smaller product scope

- No effects on pricing, quantities, and quality choice

Thank you for your Attention!

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Appendix: First-Stage Evidence

Variable	Log of Days Spent on Tax Visits							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Export Volume	0.013	0.024***	0.008	0.021***				
	(0.014)	(0.007)	(0.015)	(0.007)				
Export Status					0.092	0.227***	0.059	0.197**
					(0.153)	(0.076)	(0.160)	(0.079)
Firm Controls	No	No	Yes	Yes	No	No	Yes	Yes
Prov FE, Sector FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	New	Old	New	Old	New	Old	New	Old
Obs	322	939	322	939	322	939	322	939
R2	0.12	0.11	0.14	0.12	0.12	0.10	0.14	0.11

Figure: Distinct (CIT) Enforcement Patterns b/w LTBs and STBs in Coastal Provinces