

SHARE PLEDGING IN CHINA: FUNDING LISTED FIRMS OR FUNDING ENTREPRENEURSHIP?

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MOTIVATION

❖ **FINANCIAL SYSTEM AND ECONOMIC GROWTH**

- ❖ Evaluate prospective entrepreneurs, finance productive projects, diversify risks, and encourage innovation (King and Levine, 1993; Rajan and Zingales, 1998)

❖ **SHARE PLEDGING**

- ❖ Shareholders obtain loans with their shares as collateral: the intersection of the banking system and the stock market
- ❖ Prevalent across the globe, huge in China
 - ❖ Notable deals in the US market: Elon Musk's recent acquisition of Twitter
 - ❖ Dominates direct equity financing: 2007-2020, per year: pledging loans 0.7 trillion, 128% of direct equity financing (0.5 trillion)

❖ **GROWTH OF THE PRIVATE SECTOR**

- ❖ An upsurge in recent decades, driving economic growth (Allen et al., 2005)
- ❖ Unlikely to be financed by the banking system; share pledging could be an important financing source

❖ **SHARE PLEDGING AND ENTREPRENEURSHIP?**

- ❖ How do major shareholders use the share pledging funds?
 - ❖ Common perception: pledging funds circle back to the listed firms
- ❖ Do they use the share pledging funds in entrepreneurial activities?

MAIN RESULTS

❖ PLEDGING FUND USAGES

- ❖ The majority is used outside listed firms
 - ❖ Public disclosures: funds from 92.2% of transactions
 - ❖ Survey: Firms' largest shareholders
 - ❖ Total 67.3% outside listed firms
 - ❖ Repay personal debts (25.3%), personal consumption (13.6%), financial investments (5.2%); **create new firms (33%)**

❖ PLEDGING AND ENTREPRENEURSHIP

- ❖ Baseline results
 - ❖ #add-on firms held by a pledging shareholder exceeds that of a non-pledging shareholder by 81% of national average #add-on per person
- ❖ DiD results: the launch of the exchange market in 2013
 - ❖ Help private shareholders more than state-owned shareholders, suggesting a causal relation
- ❖ Industry of add-on firms
 - ❖ Invest in PE/VC firms and spawn more real-sector firms
 - ❖ A momentum-like strategy that invests in past winners
- ❖ Potential risks
 - ❖ Price risk
 - ❖ Maturity risk

LITERATURE REVIEW

❖ FINANCE AND ENTREPRENEURSHIP

- ❖ Financial constraints impede entrepreneurship (Blanchflower and Oswald, 1998; Anderson and Nielsen, 2012)
- ❖ Alternative financing tools (Harding and Rosenthal, 2017; Schmalz et al. 2017)

❖ CAUSES AND CONSEQUENCES OF SHARE PLEDGING

- ❖ Causes: reduce financial constraints of non-listed holdings (Guo et al., 2020); diversify risks (Larcker and Tayan, 2010)
- ❖ Consequences: firm value (Li et al., 2020; Dou et al. 2020; Pan and Qian, 2024); other decisions (e.g., share repurchases (Chan et al., 2019); earnings management (DeJong et al., 2020); innovation (Pang and Wang, 2020); M&A (Zhu et al., 2021)

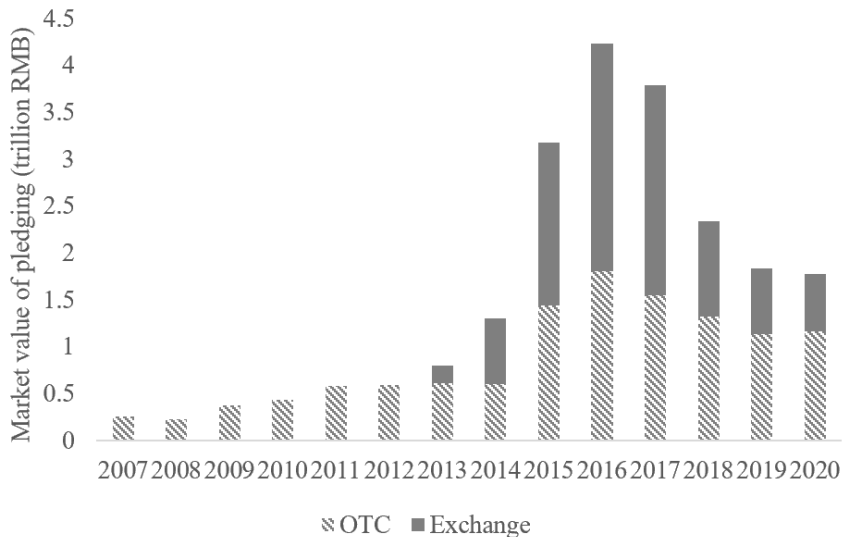
❖ CHINA'S DEVELOPING FINANCIAL MARKETS

- ❖ Stock market (Hu and Wang, 2021; Carpenter et al., 2021)
- ❖ Bond market (Chen et al., 2020; Amstad and He, 2021)

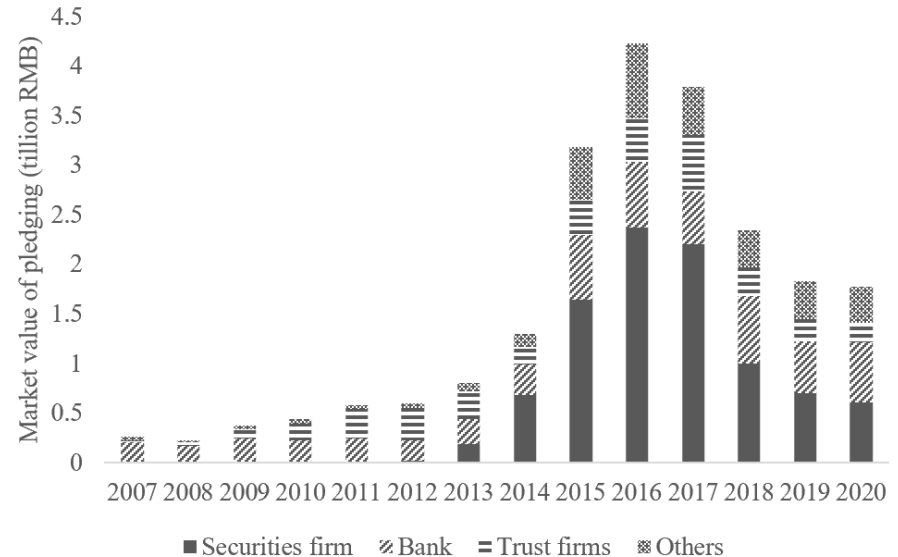
INSTITUTIONAL BACKGROUND

❖ THE CHINESE SHARE PLEDGING MARKET

- ❖ Established by the 1995 Guarantee Law
- ❖ Two markets: **OTC** (1997), **Exchange** (2013)
- ❖ Peak in 2017: 95% firms, 6.15 trillion (10% of market cap)
- ❖ Risks and tightening regulations since 2017



Panel A: OTC and exchange market ◦



Panel B: Different types of lenders ◦

Figure: Shares pledged in the Chinese market during 2007-2020

INSTITUTIONAL BACKGROUND

❖ THE OTC AND EXCHANGE MARKET

- ❖ OTC: banks as major lenders; negotiated terms; relatively costly (interest, time); difficult to sell collateral
- ❖ Exchanges: securities firms as major lenders; standardized terms; more accessible and attractive to shareholders; competition among lenders



Panel A: OTC market



Panel B: Exchange market

Figure: Shares pledging procedures in the OTC and exchange market

DATA AND SAMPLE

❖ DATA SOURCE

- ❖ Share pledging transactions: CSMAR
- ❖ Usages of pledging funds
 - ❖ Firm disclosures: CSMAR and RESSET
 - ❖ Tsinghua PBCSF - CSRC joint survey in 2019
- ❖ Entrepreneurial activities
 - ❖ SAIC firm registration data
- ❖ Others:
 - ❖ CEIC, CBRIC, Wind, AMAC

❖ SAMPLE CONSTRUCTION

- ❖ 2009 – 2018
- ❖ Major shareholders with 5% ownership or more

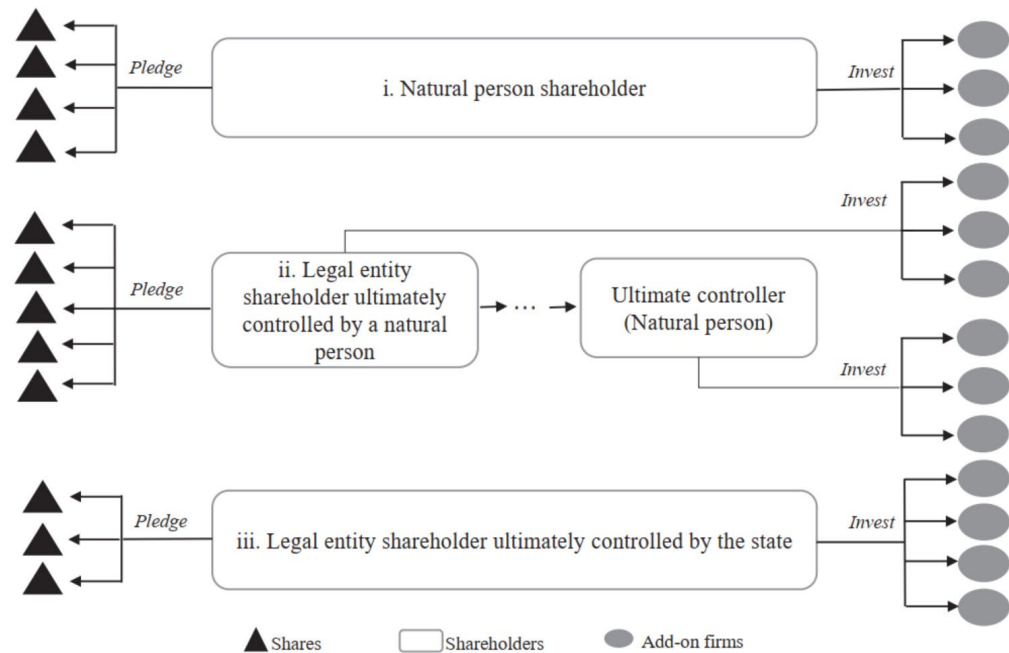


Figure: Sample construction based on ultimate ownership of shareholders of listed firms

DATA AND SAMPLE

❖ SAMPLE SUMMARY STATISTICS

	Mean	STD	P5	P25	Median	P75	P95
<i>Panel A: Share pledging, shareholders, and listed firms</i>							
Pledging dummy	0.34	0.47	0.00	0.00	0.00	1.00	1.00
Shares newly pledged out of shares held (%)	17.08	30.5	0.00	0.00	0.00	24.1	93.65
Shares newly pledged out of total shares (%)	3.97	7.97	0.00	0.00	0.00	4.43	22.37
Loans from pledging (million RMB)	140.38	351.75	0.00	0.00	0.00	95.08	816.61
Shareholder financial wealth (billion RMB)	2.94	5.93	0.13	0.41	1.00	2.55	12.54
Shareholder financial wealth growth potential	2.11	1.31	1.04	1.31	1.68	2.4	4.65
No. of firms invested in	7.75	11.08	0.00	1.00	3.00	10.00	32.00
Firm market capitalization (billion RMB)	10.57	16.78	1.26	2.65	5.09	10.7	38.51
Firm shares outstanding (million shares)	529.89	851.18	25	91	263.74	591.49	1887.73
Firm dividend dummy	0.75	0.43	0.00	1.00	1.00	1.00	1.00
<i>Panel B: Entrepreneurial activities by shareholders</i>							
No. of add-on firms	0.68	1.30	0.00	0.00	0.00	1.00	3.00
- New firms	0.55	1.09	0.00	0.00	0.00	1.00	3.00
- Existing firms	0.12	0.40	0.00	0.00	0.00	0.00	1.00
No. of add-on firms scaled by the national average	5.06	9.74	0.00	0.00	0.00	7.61	24.56
Amount of new paid-in capital (million RMB)	63.91	233.48	0.00	0.00	0.00	10.00	363.6
- Follow-on investments in existing firms	6.35	40.21	0.00	0.00	0.00	0.00	4.90
- New investments in existing firms	8.13	45.77	0.00	0.00	0.00	0.00	20.00
- Investments in new firms	49.43	205.42	0.00	0.00	0.00	3.00	227.70
Amount scaled by the national average	462.06	1698.50	0.00	0.00	0.00	71.46	2504.06

USAGES OF PLEDGING FUNDS

❖ FIRM DISCLOSURES

- ❖ Combine pledging data and related-party transaction data
- ❖ 7.8% of transactions, funds were used for the listed firms: 1.8% in guarantees; 3.5% in SEO shares; and 2.7% in direct loans
- ❖ Similar results on # of firms (14.2%) and loan amount (10.1%)

Year	No. Obs/Amount	Used by listed firms				Other purposes (%)
		Subtotal (%)	Guarantee (%)	SEO (%)	Loan (%)	
<i>Panel B: No. of transactions</i>						
2007	502	76 (15.1)	49 (9.8)	18 (3.6)	13 (2.6)	426 (84.9)
2008	703	106 (15.1)	81 (11.5)	14 (2.0)	19 (2.7)	597 (84.9)
2009	877	104 (11.9)	71 (8.1)	9 (1.0)	28 (3.2)	773 (88.1)
2010	969	126 (13.0)	64 (6.6)	30 (3.1)	39 (4.0)	843 (87.0)
2011	1495	129 (8.6)	62 (4.1)	22 (1.5)	50 (3.3)	1366 (91.4)
2012	1901	172 (9.0)	84 (4.4)	53 (2.8)	42 (2.2)	1729 (91.0)
2013	2596	257 (9.9)	69 (2.7)	115 (4.4)	88 (3.4)	2339 (90.1)
2014	3951	500 (12.7)	48 (1.2)	298 (7.5)	166 (4.2)	3451 (87.3)
2015	6403	816 (12.7)	55 (0.9)	600 (9.4)	184 (2.9)	5587 (87.3)
2016	9839	915 (9.3)	119 (1.2)	572 (5.8)	263 (2.7)	8924 (90.7)
2017	12331	781 (6.3)	125 (1.0)	351 (2.8)	322 (2.6)	11550 (93.7)
2018	13646	605 (4.4)	171 (1.3)	73 (0.5)	369 (2.7)	13041 (95.6)
2019	6806	238 (3.5)	136 (2.0)	39 (0.6)	67 (1.0)	6568 (96.5)
Avg. Percent	100%	7.8%	1.8%	3.5%	2.7%	92.2%

USAGES OF PLEDGING FUNDS

❖ SURVEY EVIDENCE

- ❖ The 2019 Tsinghua PBCSF-CSRC survey: covering all A-share listed firms
- ❖ Question: Whether the largest shareholder had ever pledged her shares? If yes, the usages of funds?
- ❖ Respondent: top executives, with a response rate of 99.49%
- ❖ 33.0% firms' largest shareholders invested in existing firms other than the listed firms or in creating new firms

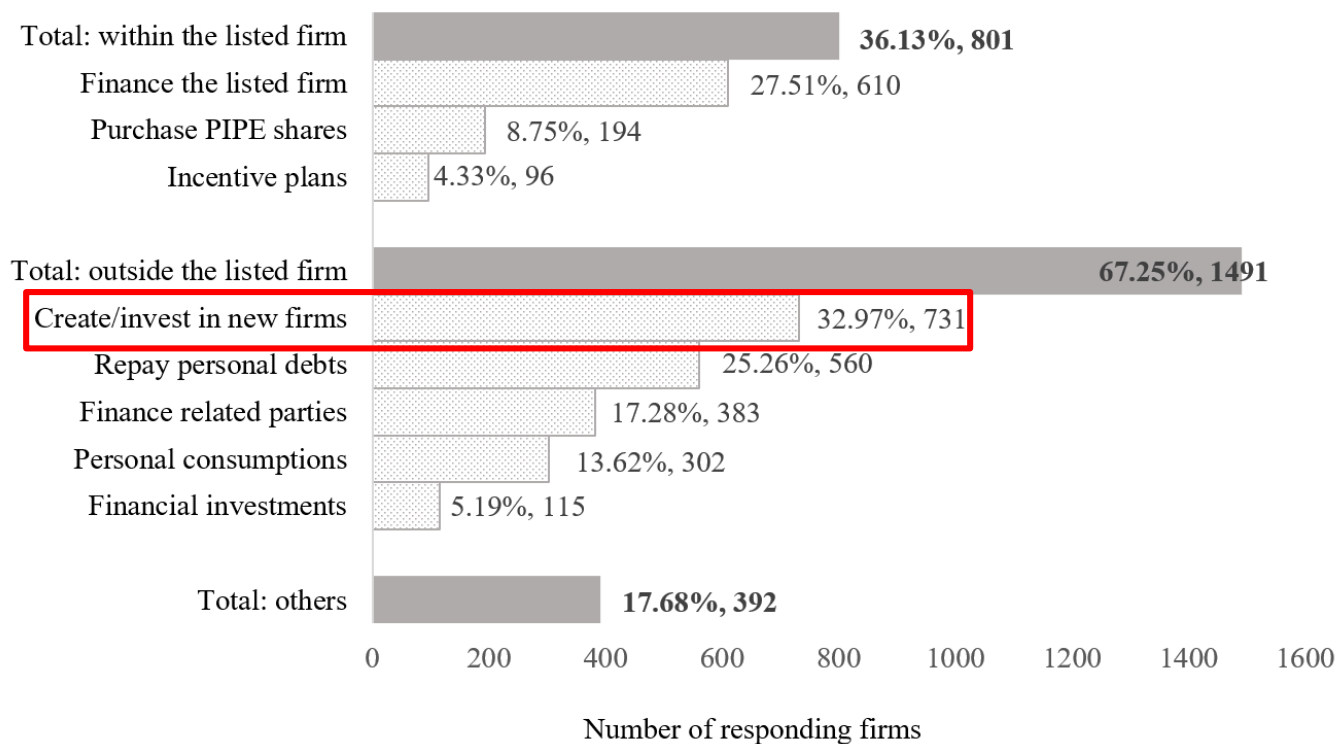


Figure: Survey results on usages of share pledging funds

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ BASELINE RESULTS

- ❖ $\#FirmAdded = \#New + \#Existing$, scaled by the national average
- ❖ #add-on firms held by a pledging shareholder exceeds that of a non-pledging shareholder by 81% of the national average in each year
- ❖ Shareholders spend most funds on creating new firms (55% national average) rather than investing in existing firms (24%)

$$Y_{it} = \alpha + \beta \cdot PledgingDummy_{it} + \gamma \cdot Controls_{it} + \delta_i + \delta_t + \varepsilon_{it}$$

	(1)	<i>Scaled</i> (2)	(3)
	<i>#FirmAdded</i>	<i>#New</i>	<i>#Existing</i>
<i>PledgingDummy</i>	0.814***	0.553***	0.242***
	(4.44)	(3.61)	(3.67)
Controls	Y	Y	Y
Shareholder FE	Y	Y	Y
Year FE	Y	Y	Y
N	19620	19620	19620
Adj. R^2	0.464	0.431	0.236

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ A QUASI NATURAL EXPERIMENT

- ❖ The launch of the exchange market in 2013

❖ TREATMENT: PRIVATE SHAREHOLDERS

- ❖ Discriminated by banks in the OTC market and financially constrained
- ❖ Securities firms in the exchange market are enthusiastic to lend
 - ❖ Decisions based on collateral rather than identities; compete for business
- ❖ Securities firms can use own and external capital

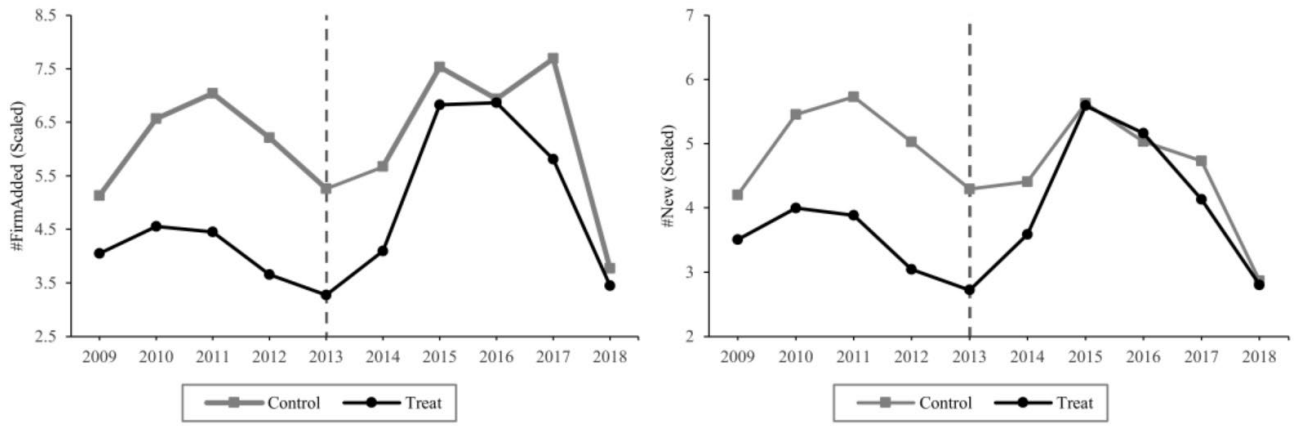
❖ CONTROL: STATE-OWNED SHAREHOLDERS

- ❖ Well served by the banking system and the OTC market
- ❖ Risk of losing state assets

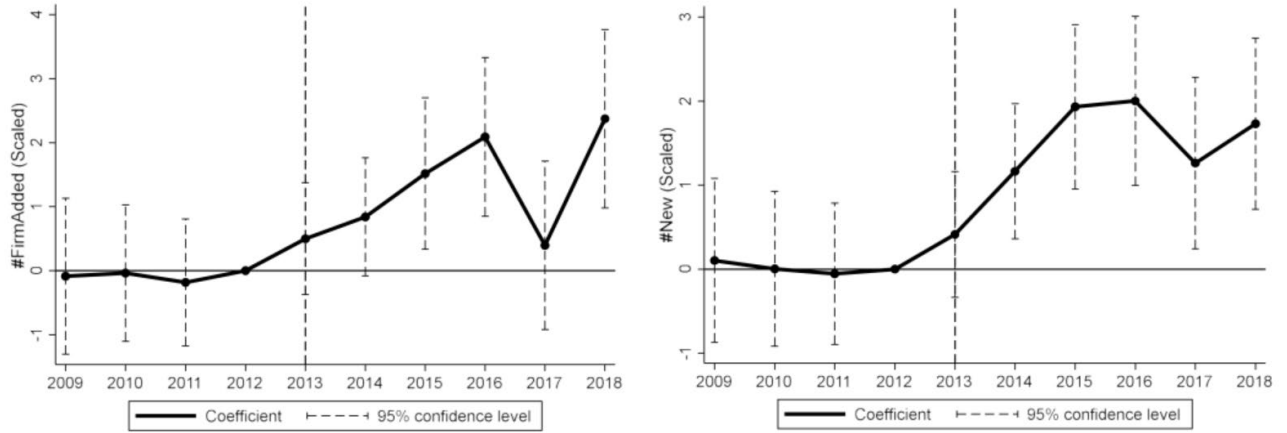
❖ IDENTIFICATION

- ❖ Relative to state-owned shareholders, private shareholders are more exposed to the positive supply shock
- ❖ Shares pledged by private (state-owned) shareholders grew by 310% (145%) during the three years after the launch

SHARE PLEDGING AND ENTREPRENEURSHIP



Panel A: The number of add-on firms around the 2013 reform, scaled by the national average



Panel B: Coefficient estimates on Treat*Year from dynamic regressions

Figure: Parallel pretreatment trends

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ DID TESTS

- ❖ After 2013, the increase in *#FirmAdded* by a private shareholder exceeds that by a state-owned shareholder by 123% of national average
- ❖ The increase in *#New* by a treated private shareholder exceeds that by a state-owned shareholder by 102% of national average
- ❖ Insignificant increase in *#Existing*

$$Y_{it} = \alpha + \beta \cdot \text{Treat}_i \times \text{After}_t + \gamma \cdot \text{Controls}_{it} + \delta_i + \delta_t + \varepsilon_{it}$$

	(1)	(2)	(3)
	<i>#FirmAdded</i>	<i>#New</i>	<i>#Existing</i>
<i>Treat</i> × <i>After</i>	1.234*** (3.38)	1.017*** (3.29)	0.133 (1.04)
Controls	Y	Y	Y
Shareholder FE	Y	Y	Y
Year FE	Y	Y	Y
N	14551	14551	14551
Adj. R^2	0.438	0.410	0.214

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ ALTERNATIVE SPECIFICATION

- ❖ *Treat1*: Natural person shareholders
- ❖ *Treat2*: Legal entity shareholders ultimately controlled by natural persons
- ❖ *Control*: State-owned shareholders
- ❖ # of Add-on firms held by *Treat1* and *Treat2* groups exceeds that by the *Control* group by 151% and 108% of the national average

$$Y_{it} = \alpha + \beta_1 \text{Treat1}_i * \text{After}_t + \beta_2 \text{Treat2}_i * \text{After}_t + \gamma \text{Controls}_{it} + \delta_i + \delta_t + \varepsilon_{it}$$

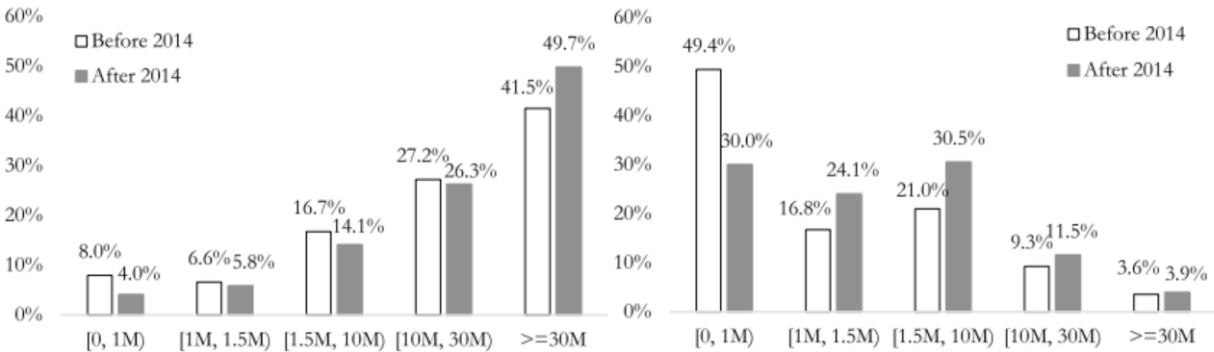
	(1)	<i>Scaled</i> (2)	(3)
	<i>#FirmAdded</i>	<i>#new</i>	<i>#existing</i>
<i>Treat1*After</i>	1.508*** (4.07)	1.482*** (4.67)	0.022 (0.18)
<i>Treat2*After</i>	1.076** (2.58)	0.749** (2.13)	0.196 (1.34)
Controls	Y	Y	Y
Shareholder FE	Y	Y	Y
Year FE	Y	Y	Y
N	14551	14551	14551
Adj. R^2	0.438	0.410	0.215
Diff in Coef.	0.432	0.733**	-0.174

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ FURTHER DISCUSSION ON IDENTIFICATION

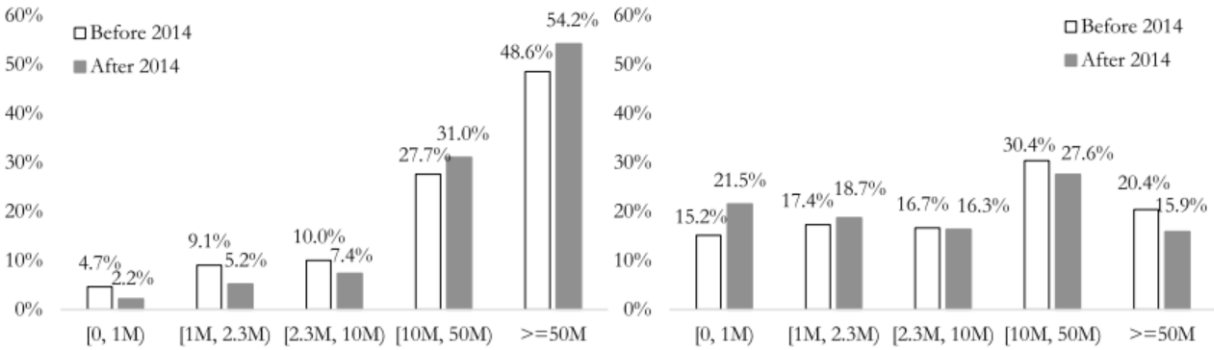
❖ Confounding policies

- ❖ The “Mass Entrepreneurship and Innovation” policy in September 2014
- ❖ The new corporate law enacted in March 2014
- ❖ Target at grassroots entrepreneurs and unlikely drive the results



Panel A1: Natural person shareholders in our sample

Panel A2: Natural person shareholders in the SAIC database



Panel B1: Legal entity shareholders controlled by natural persons in our sample

Panel B2: Legal entity shareholders controlled by natural persons in the SAIC database

Figure: The “Mass Entrepreneurship and Innovation” policy and shareholders’ entrepreneurial activities

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ FURTHER DISCUSSION ON IDENTIFICATION

❖ Omitted variables

- ❖ Industry level shocks: *Industry* × *Year* FE
- ❖ Local economic shocks: *Province* × *Year* FE
- ❖ Qualitatively unchanged results

$$Y_{ijt} = \alpha + \beta_1 \text{Treat}_i * \text{After}_t + \gamma \text{Controls}_{it} + \delta_i + \delta_{jt} + \varepsilon_{ijt}$$

	<i>Scaled</i>			
	(1)	(2)	(3)	(4)
	<i>#FirmAdded</i>	<i>#new</i>	<i>#FirmAdded</i>	<i>#new</i>
	<i>Panel A: Industry*year FE</i>		<i>Panel B: Province*year FE</i>	
<i>Treat*After</i>	0.519*	0.392*	0.431***	0.297***
	(1.76)	(1.91)	(3.20)	(3.07)
Controls	Y	Y	Y	Y
Shareholder FE	Y	Y	Y	Y
Industry/Province * Year FE	Y	Y	Y	Y
N	276469	276469	451081	451081
Adj. R^2	0.072	0.070	0.052	0.043

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ INDUSTRIES OF ADD-ON FIRMS

- ❖ Investing in the financial sector versus in the real sector
 - ❖ Direct investments in the real sector dominate (89.7% vs. 10.3%)
 - ❖ PE/VC firms prefer investing in existing firms to creating new firms
 - ❖ Investments in PE/VC firms are able to spawn additional entrepreneurial firms in the economy

	(1) #FirmAdded	(2) #New	(3) #Existing
<i>Panel A: Firms added by PE/VC</i>			
<i>Treat × After</i>	0.359*** (2.77)	0.041 (1.36)	0.353*** (3.39)
Controls	Y	Y	Y
Shareholder FE	Y	Y	Y
Year FE	Y	Y	Y
N	14551	14551	14551
Adj. R ²	0.405	0.213	0.380
<i>Panel B: Total firms added</i>			
<i>Treat × After</i>	1.542*** (3.94)	1.037*** (3.36)	0.466*** (2.89)
Controls	Y	Y	Y
Shareholder FE	Y	Y	Y
Year FE	Y	Y	Y
N	14551	14551	14551
Adj. R ²	0.469	0.408	0.372

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ INDUSTRIES OF ADD-ON FIRMS

- ❖ Investing in risky, technology, and growth firms
 - ❖ Decompose add-on firms into three mutually exclusive categories: *#Risky*, *#HighTech*, and *#Others*
 - ❖ A relatively stronger preference toward high-tech industries, while insignificant for risky industry.
 - ❖ Further decompose *#Others* into: *#HighGwt* and *#LowGwt*
 - ❖ Shareholders use a momentum-like strategy by investing in past winners

	<i>Scaled</i>				
	(1)	(2)	(3)	(4)	(5)
	<i>#Risky</i>	<i>#HighTech</i>	<i>#Other</i>	<i>#HighGwt</i>	<i>#LowGwt</i>
<i>Treat*After</i>	1.911	2.505*	1.120***	1.094***	0.095
	(1.13)	(1.83)	(3.27)	(3.94)	(0.76)
Controls	Y	Y	Y	Y	Y
Shareholder FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
N	14551	14551	14551	14551	14551
Adj. R^2	0.160	0.194	0.388	0.339	0.235

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ PRICE RISK

- ❖ Maintenance ratio: 160% for margin call, 140% for fire sale
- ❖ Margin call risk induced by fluctuations in share prices hinders entrepreneurial activities
- ❖ The dampening effect mainly comes from the margin call experience caused by past pledging transactions

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>#FirmAdded</i>	<i>#New</i>	<i>#Existing</i>	<i>#FirmAdded</i>	<i>#New</i>	<i>#Existing</i>
<i>MarginCall</i>	-0.009** (-2.01)	-0.008** (-2.23)	-0.001 (-0.66)			
<i>MarginCallPast</i>				-0.011** (-2.00)	-0.008* (-1.90)	-0.003 (-1.11)
<i>MarginCallCurrent</i>				-0.004 (-0.74)	-0.006 (-1.11)	0.000 (0.07)
Controls	Y	Y	Y	Y	Y	Y
Shareholder FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
N	7677	7677	7677	7677	7677	7677
Adj.R2	0.408	0.387	0.191	0.408	0.387	0.191

SHARE PLEDGING AND ENTREPRENEURSHIP

❖ MATURITY RISK

❖ Term extension

- ❖ The original median (75% percentile) loan maturity is 1.3 (2) years
- ❖ Of which 8.9% receive term extension from the same lender (with explicit disclosure)
- ❖ After term extension: the median (75th percentile) loan maturities reaches 1.5 (2.1) years

❖ Staggered financing scheme

- ❖ Overlapping pledging transactions in one financing scheme
- ❖ An engaging shareholder's scheme: the median (75% percentile) is 4 (12) for #transaction;
- ❖ Effective maturity: 2.9 (4.1) years
- ❖ The number of transactions and the effective maturity in the financing scheme by a shareholder who engages in entrepreneurial activities is larger than in that by a non-engaging shareholder

CONCLUSION

❖ SHARE PLEDGING FUNDS USAGE

- ❖ Firm disclosures: 7.8% of the pledging transactions are used for the listed firms
- ❖ Survey evidence: 67.3% firms' largest shareholders used funds outside the listed firm; 33.0% invested in new firms

❖ SHARE PLEDGING AND ENTREPRENEURSHIP

- ❖ Share pledging helps entrepreneurial activities
 - ❖ A quasi-natural experiment
- ❖ Industry of add-on firms
 - ❖ Shareholders with better access to share pledging invest more in PE/VC firms which help spawn further entrepreneurial activities
 - ❖ Shareholders follow a momentum-like strategy that invests in past winners
- ❖ Potential financing risks
 - ❖ Shareholders are less likely to engage in entrepreneurial activities if they received margin calls in the past
 - ❖ Loan term extensions and staggered financing schemes to secure a stable financing source