

KDI Conference on Current Issues and Future  
Development of China's Financial System

# FINANCING PATTERNS OF CHINESE FIRMS: MICRO EVIDENCE FROM SURVEY DATA

Dongsoo Kang (姜東秀)  
Korea Development Institute

Jun Yeop Lee (李準曄)  
Inha University of Korea

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**Part-01** | **Questions**

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# Financing Constraints of Chinese Firms

- ◆ **Finance has greatly affected the enterprise growth and economic development in China after the opening-up and reform policy**
  - Yasheng Huang (2008)
  - *Wenzhou Model*
- ◆ **To look into financing patterns of Chinese firms after the 2008 Global Financial Crisis, this study constructs survey data and asks following questions:**
  - Does the financing condition of Chinese firms differ before and after the crisis?
  - What are salient features of Chinese firms' financing patterns?

# Literature Survey

## ● SMEs' funding difficulties

- Prior to global crises, SMEs' funding difficulties had been reported in very serious level (梁冰, 2005; 翁振荣, 2007; 樊勇, 2009)

## ● Size bias in the corporate funding

- The smaller the firm size, the more difficult in their corporate funding (中国工商联课题组, 2010; 陈敏菊, 2009)

## ● Regional Bias in the corporate funding

- Based on survey for SMEs in the 18 cities in China, funding patterns of SMEs had regional different (Ayyagari et al., 2008)

## ● Ownership Bias in the corporate funding

- The private firms are inferior in raising funds (Allen et al., 2005; 卢群娥 · 李爱喜, 2007)

# Financial Policies after the Crisis

## • Supporting SMEs as a key policy goal

- In the Central Economic Work Conference(中央經濟工作會議) in 2009, supporting SMEs was declared as a key policy goal for 2010
- By the aggressive pro-SME financial policies, loan balance for SMEs has increased rapidly
  - Outstanding loan in 2010Q3, loan balance (trillion *yuan*)  
Small: 5.8 → 7.12, Medium: 8.9 → 9.86, Large firms: 11.4 → 13.15

## • Mandatory financial policies for supporting SMEs since 2009

- Banks was instructed to build SME-specialized department.
- ‘Two not to be lower’ rules: 1) *Growth rate for SMEs loans cannot be lower than the growth rate for overall loans for every banks, 2) growth rate for SMEs loans cannot be lower than that of the previous year.*

**Part-02** | **Survey**

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# Objective of Survey

- ❖ **Official statistics only carries snapshot of financial transaction**
  - Financial data of PBoC, CBRC, etc., supply aggregate and pooling information
  - It is hard to discuss financial aspects of demanders (firms) with supply-side database
- ❖ **NBS collects financial statements of individual enterprises, but does not release them in public**
  - NBS collect the data of *guimo-yishang* enterprises (of which annual sales turnover is over 5 million *yuan*)
- ❖ **This study constructs **firm-level database** with which to look into various financing characteristics of Chinese firms**



# Designing Survey

## • Firms

- Zhejiang (360): Aug to Sept in 2010
- Liaoning (233) and Shaanxi (200): March in 2011

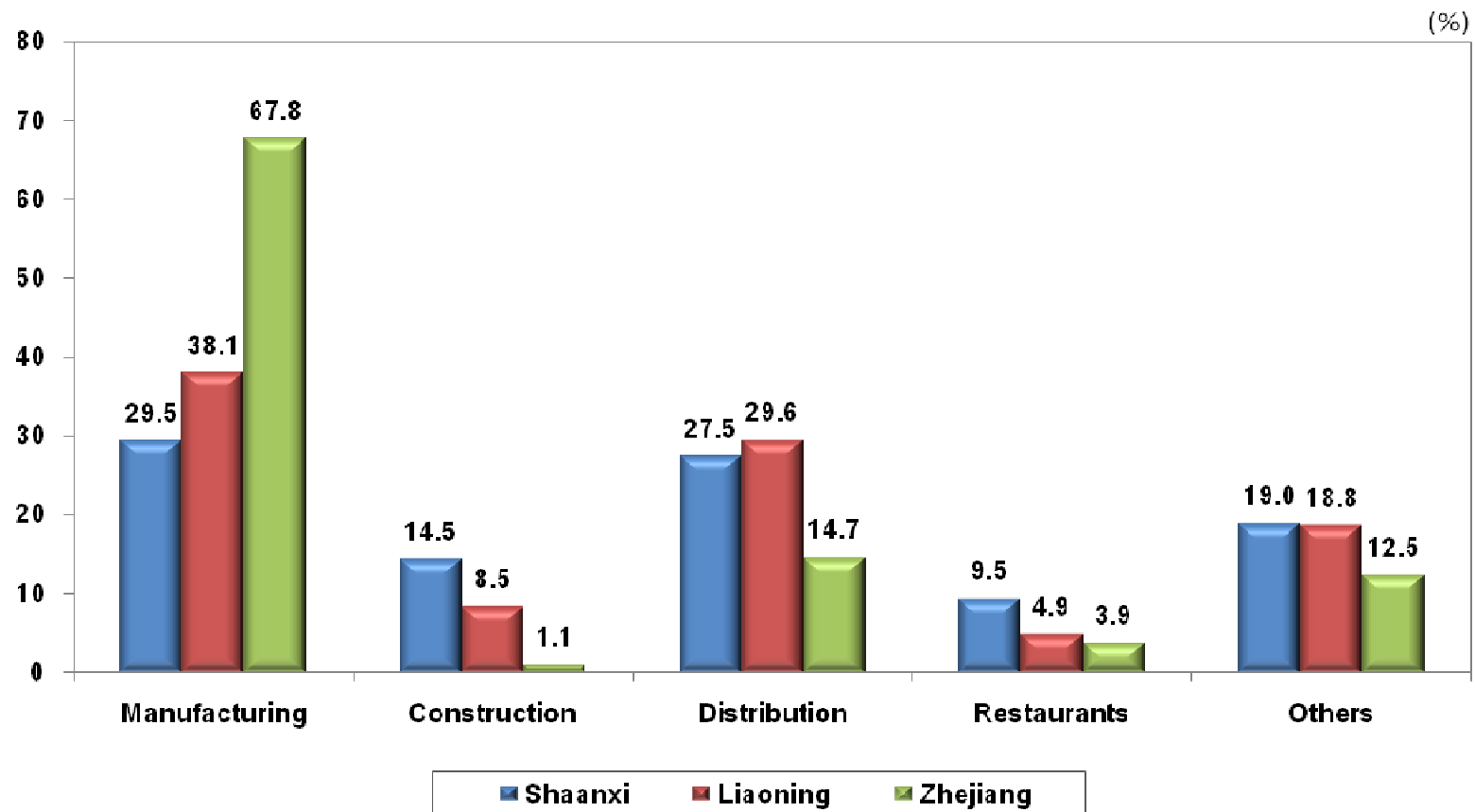
## • Questionnaire consisting of about 50 questions

- Firm characteristics: No. of employees, asset size, industry, Established year, education level of CEO, location, contact with officers and bankers, etc.
- Financing practices: financing difficulty, loan sources, short-term and long-term interest rates, credit guarantee, informal finance, etc.

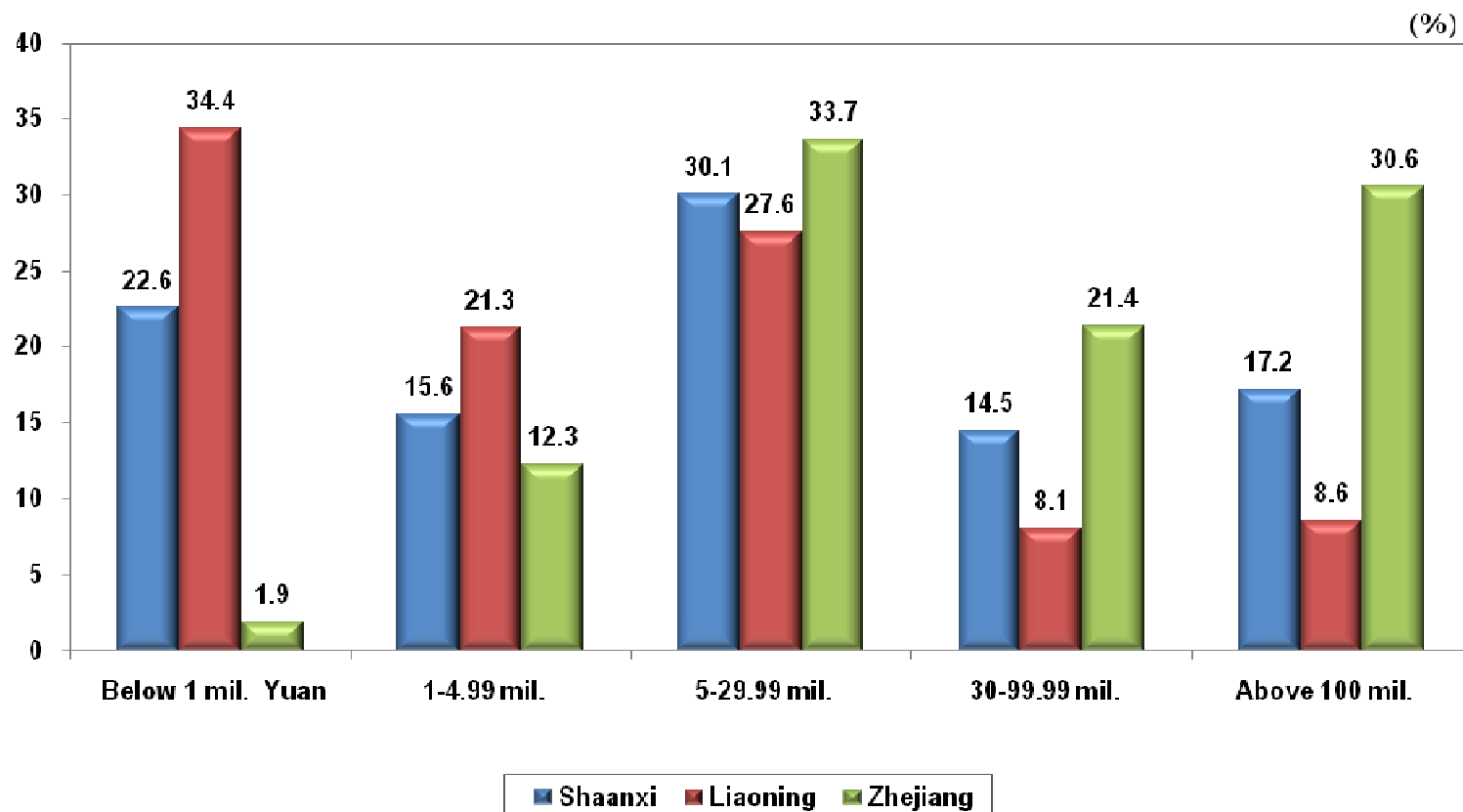
## • Methods

- Telephone survey to executive managers

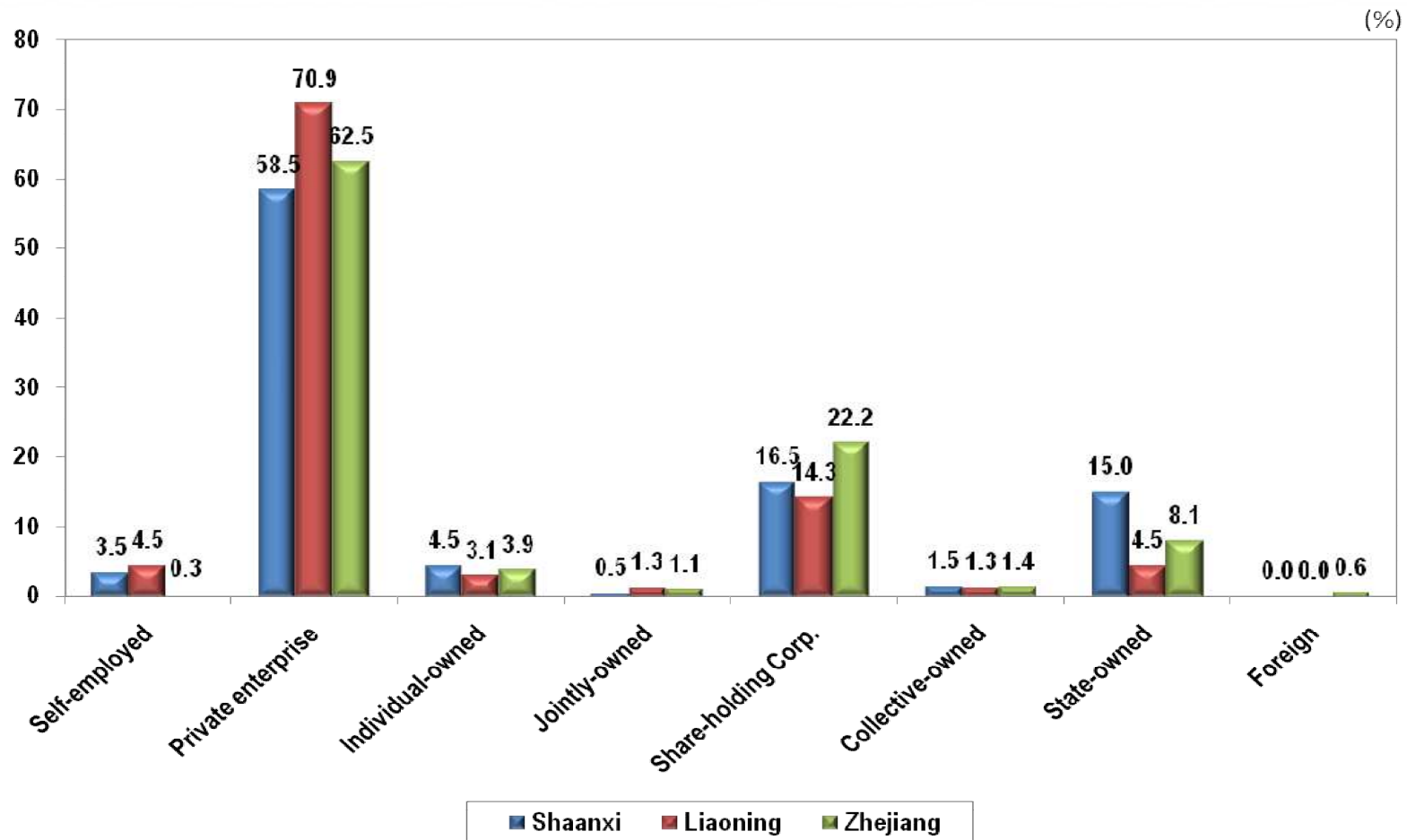
# Industry of Surveyed Firms



# Asset Size of Surveyed Firms



# Ownership of Surveyed Firms

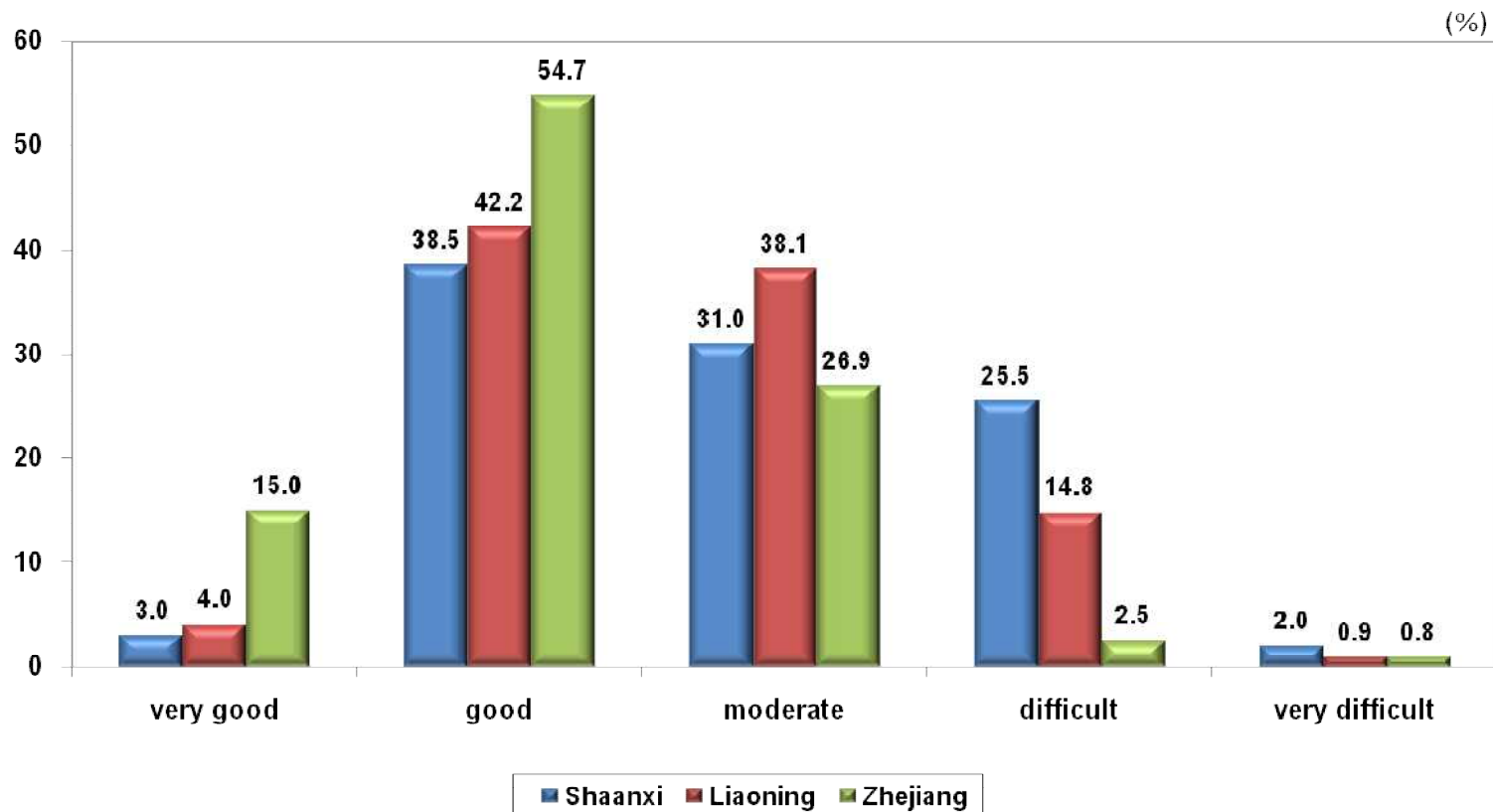


**Part-03 | Statistics**

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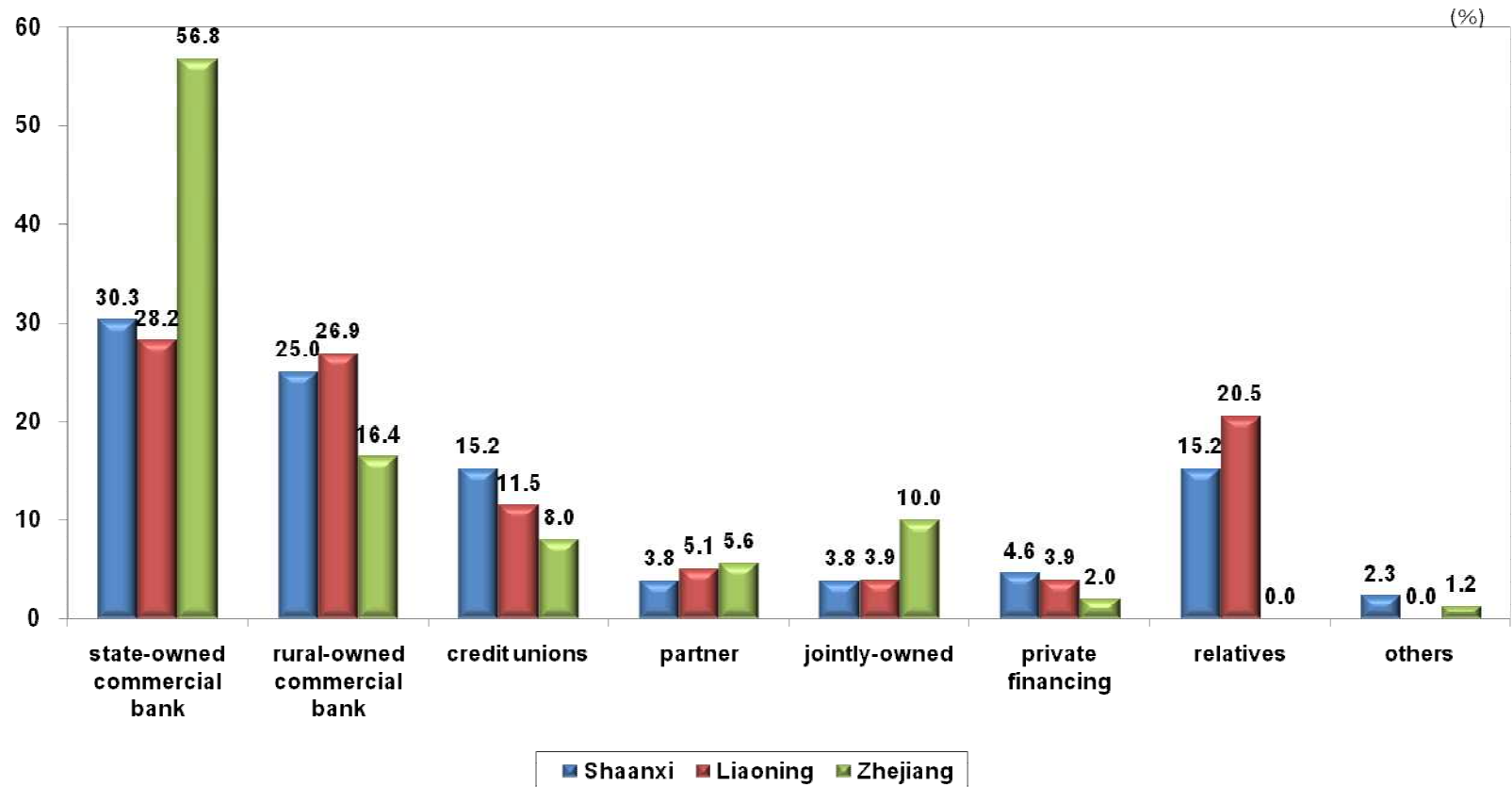
# Financing Difficulty

How do you assess the financing condition of your firm at present?



# Financing Source

## Where do you borrow funds at present?



# Bank Borrowing by Province

Province	Shaanxi	Liaoning	Zhejiang
Loan Application	102	68	214
	51.0%	30.5%	59.4%
Successful Loan Application (out of applied firms)	89	51	203
	87.3%	75.0%	97.6%
Easiness of Loan (out of successful loan applicants)	38	48	192
	53.9%	74.5%	94.6%
Total No. of firms	200	223	360



**Part-04 | Analysis**

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# Null Hypotheses

## • H1. Size Bias

- Chinese firm's financing conditions are irrelevant to the size of firm

## • H2. Ownership Bias

- Chinese firm's financing conditions are irrelevant to the ownership of firm

## • H3. Regional Bias

- Chinese firm's financing patterns are not different by region

## • H4. Informal Finance

- The usage of informal finance is similar across firms

# Methodology

## • Ordered Logistic Regression

$$- \Pr(y_j = i) = \Pr(\text{cut}_{i-1} < \sum_{m=1}^N \beta_m X_{im} + U_j < \text{cut}_i)$$

## • Dependent Variable (y)

- Choice to Questions such as financing difficulties, liability-to-asset ratio, usage of informal finance, etc.

## • Explanatory Variables (x)

- Firm Characteristics such as size, ownership, location, industry, etc.
- Controls: education-level of CEO, contact with officers and bankers, establishment year, export, etc.

# Dependent Variables

Variable	Explanation	Definition
fin_cond	current financing condition	① very difficult ② relatively difficult ③ mediocre ④ relatively easy ⑤ very easy
asset_debt	debt/asset	① 0% ② 0.1~19.9% ③ 20~39.9% ④ 40~59.9% ⑤ over 60%
bankloan_diff	difficulty in bank loan	① very difficult ② relatively difficult ③ mediocre ④ relatively easy ⑤ very easy
D_fl_loan	dummy of bank loan	1=Yes 0=No
inf_fin_diff	difficulty in informal finance	① very difficult ② relatively difficult ③ mediocre ④ relatively easy ⑤ very easy
D_inf_fin	dummy of informal finance	1=Yes 0=No

# Explanatory Variables

Variable	Explanation	Definition
size	firm size	No. of employees
D_manuf	manufacturing dummy	manufacturing=1, otherwise=0
D_private	private firm dummy	private firm=1, otherwise=0
D_export	export firm dummy	export firm=1, otherwise=0
pop	population in located city	1=one 10,000, 2=10,000~100,000, 3=100,000~500,000, 4=500,000~1000,000, 5=over 1 million
province	province of firm	1=Shaanxi, 2=Liaoning, 3=Zhejiang
his	firm history	2010 - establishment year
his_squared	firm history <sup>2</sup>	firm history <sup>2</sup>
D_pol	contact with gov't officers	over once = 1,
education	education level of CEO	1=no education, 2=primary school, 3=middle or high school, 4=community college, 5=university, 6=master, 7=Ph.D.
D_Flcon	contact with bankers	over once=1,

# Result (1): Financing Difficulty

	Total	Shaanxi	Liaoning	Zhejiang
firm size	0.191*** (0.055)	0.197* (0.118)	0.253** (0.109)	0.077 (0.092)
manufacturing dummy	-0.809*** (0.173)	-0.957*** (0.337)	-0.703* (0.361)	-0.717*** (0.248)
private firm dummy	0.174 (0.264)	0.067 (0.413)	0.708 (0.573)	0.156 (0.393)
export firm dummy	0.180 (0.191)	-0.461 (0.609)	0.585 (0.430)	0.173 (0.238)
population in located city	-0.145* (0.076)	-0.110 (0.161)	-0.157 (0.137)	-0.150 (0.122)
province of firm	0.896*** (0.100)			
firm history	-0.015 (0.011)	0.051 (0.045)	-0.031 (0.060)	-0.022 (0.018)
firm history <sup>2</sup>	0.000 (0.000)	-0.001 (0.001)	0.001 (0.002)	0.000 (0.000)
contact with gov 't officers	0.122 (0.200)	-0.159 (0.467)	-0.166 (0.459)	0.324 (0.255)
education level of CEO	0.148* (0.080)	0.226 (0.155)	-0.004 (0.146)	0.216* (0.125)
contact with bankers	-0.613*** (0.184)	-0.810** (0.410)	-1.172*** (0.340)	-0.238 (0.250)
Log-Likelihood	-881.97	-230.09	-248.86	-381.08
관측치수	769	196	217	356

## Result (2): Leverage

	Total	Shaanxi	Liaoning	Zhejiang
firm size	0.235*** (0.057)	0.173 (0.114)	0.146 (0.126)	0.172* (0.090)
manufacturing dummy	0.456** (0.187)	0.432 (0.318)	1.032** (0.422)	0.256 (0.274)
private firm dummy	-0.096 (0.261)	0.361 (0.546)	-0.633 (0.707)	0.045 (0.345)
export firm dummy	0.344* (0.197)	0.225 (0.605)	-0.377 (0.442)	0.569** (0.248)
population in located city	0.095 (0.076)	0.223 (0.167)	0.353* (0.204)	0.053 (0.111)
province of firm	0.217** (0.104)			
firm history	0.011 (0.013)	0.009 (0.047)	0.192* (0.099)	-0.009 (0.018)
firm history <sup>2</sup>	-0.000 (0.000)	0.000 (0.001)	-0.007* (0.003)	0.000 (0.000)
contact with gov 't officers	-0.336* (0.183)	-0.611 (0.373)	-0.678 (0.463)	-0.125 (0.239)
education level of CEO	-0.053 (0.077)	-0.100 (0.165)	0.383* (0.200)	-0.143 (0.105)
contact with bankers	1.328*** (0.179)	1.160*** (0.357)	1.313*** (0.482)	1.460*** (0.233)
Log-Likelihood	-892.01	-230.75	-156.11	-479.56
관측치수	765	195	215	355

# Result (3): Bank Borrowing Difficulty

	Total	Shaanxi	Laoning	Zhejiang
firm size	0.441*** (0.087)	0.616*** (0.182)	0.432** (0.211)	0.302** (0.134)
manufacturing dummy	0.051 (0.263)	-0.131 (0.519)	0.161 (0.659)	0.578 (0.426)
private firm dummy	-0.857* (0.480)	-2.111** (1.072)	0.378 (0.743)	-0.855* (0.497)
export firm dummy	-0.176 (0.277)	-1.713* (0.927)	-0.842 (0.806)	0.168 (0.366)
population in located city	-0.161 (0.116)	-0.253 (0.244)	0.190 (0.294)	-0.193 (0.191)
province of firm	0.719*** (0.162)			
firm history	0.016 (0.036)	0.068 (0.090)	0.279 (0.170)	-0.037 (0.054)
firm history <sup>2</sup>	-0.000 (0.001)	-0.002 (0.002)	-0.010 (0.007)	0.001 (0.001)
contact with gov 't officers	-0.119 (0.267)	0.346 (0.951)	-0.673 (0.507)	0.053 (0.367)
education level of CEO	0.082 (0.101)	0.033 (0.192)	0.236 (0.236)	0.085 (0.158)
contact with bankers	-0.216 (0.260)	-1.274 (0.961)	-0.259 (0.514)	0.217 (0.362)
Log-Likelihood	-359.97	-94.87	-89.40	-160.62
관측치수	317	80	71	166



# Result (4): Borrowing Experience

	Total	Shaanxi	Liaoning	Zhejiang
firm size	0.526*** (0.067)	0.390*** (0.112)	0.708*** (0.134)	0.348*** (0.121)
manufacturing dummy	0.511*** (0.195)	0.032 (0.397)	0.555 (0.404)	0.786*** (0.303)
private firm dummy	0.763** (0.308)	0.754 (0.588)	-0.517 (0.771)	1.104** (0.439)
export firm dummy	0.466** (0.219)	0.369 (0.619)	0.160 (0.497)	0.584** (0.277)
population in located city	0.077 (0.086)	0.385** (0.184)	0.046 (0.195)	0.074 (0.136)
province of firm	0.011 (0.114)			
firm history	0.005 (0.015)	0.046 (0.055)	0.133 (0.097)	-0.005 (0.019)
firm history <sup>2</sup>	-0.000 (0.000)	-0.001 (0.001)	-0.004 (0.003)	0.000 (0.000)
contact with gov 't officers	-0.474* (0.248)	-0.768 (0.500)	-0.074 (0.574)	-0.542 (0.337)
education level of CEO	-0.264*** (0.090)	-0.305* (0.164)	-0.312 (0.213)	-0.259* (0.138)
contact with bankers	1.803*** (0.263)	2.046*** (0.536)	1.103* (0.571)	2.123*** (0.391)
Log-Likelihood	-412.87	-112.83	-92.89	-188.02
관측치수	769	196	217	356

# Result (5): Informal Finance Experience

	Total	Shaanxi	Liaoning	Zhejiang
firm size	-0.030 (0.103)	0.036 (0.221)	-0.515** (0.212)	0.846 (0.661)
manufacturing dummy	-0.207 (0.382)	-0.161 (0.567)	0.018 (0.628)	-0.132 (2.673)
private firm dummy	-0.530 (0.490)	0.092 (0.545)	(dropped)	-0.282 (1.924)
export firm dummy	0.285 (0.509)	3.079*** (0.801)	0.554 (0.785)	-0.823 (1.281)
population in located city	-0.080 (0.201)	-0.214 (0.340)	0.311 (0.356)	-0.666 (1.118)
province of firm	0.519** (0.217)			
firm history	0.034 (0.057)	0.050 (0.099)	0.252 (0.238)	-0.265 (0.329)
firm history <sup>2</sup>	-0.002 (0.001)	-0.004* (0.002)	-0.011 (0.011)	0.004 (0.007)
contact with gov 't officers	1.130** (0.560)	0.737 (1.107)	1.940* (1.165)	1.519 (1.425)
education level of CEO	-0.308 (0.199)	-0.649** (0.290)	-0.054 (0.321)	-0.295 (0.486)
contact with bankers	-1.062* (0.584)	-1.673 (1.224)	-0.914 (1.008)	-0.863 (1.631)
Log-Likelihood	-161.42	-61.60	-64.51	-16.12
관측치수	154	71	55	28

**Part-05** | **Concluding Remarks**

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# Size Bias and Ownership Bias

## • Size bias is existing

- The larger the firm size, the better the financing condition
- The larger the firm size, the higher the leverage ratio
- The larger the firm size, the easier the bank borrowing

## • Ownership bias is weakly existing

- Private firms do not face significantly inferior financing condition
- Private firms experience difficulty in bank borrowing

## • SMEs are more likely to be private firms

- About 99% of private firms (*feigongyouqiye*) are SMEs
- Thus, *Siyinqqiye* face higher financing problems than *Guoyouqiye*

# Regional Difference

## ❖ Provincial bias is existing

- The richer the province, the better the financing condition
- The richer the province, the higher the leverage ratio

## ❖ The municipal size of firm location is not very much relevant

- Overall, the size of city where firms are located are not significantly relevant to financing patterns of the firms
- But, the current financing difficulty is higher in relatively more populated cities

## ❖ Province is more important unit in financial policy

- Richer provinces may have liquidity glut, whereas poorer ones should resolve financing difficulties of their enterprises

# Informal Finance

- **Informal finance is more active in economically developed area**
  - The richer the province, the more heavily used the informal finance
- **Firm characteristics are not relevant to informal finance**
  - Smaller firms are more likely to use informal finance but not in a significant way
  - Manufacturing firms are less likely to use informal finance but not in a significant way
- **Informal finance is closely linked to supply condition**
  - Many firms experiencing financing difficulty hope to use informal finance but are constrained by the development of informal finance

# Future Risk Factor

- ❖ **Lessening financing difficulty in Chinese corporation seems greatly affected by credit easing after the Crisis**
  - In 2009 alone, bank loan growth rate and M2 growth rate reached 31% and 26.5%, respectively
  - 4 trillion *yuan* of fiscal stimulus package was provided as well
- ❖ **Cheap credit may convert to be expensive along with forthcoming monetary tightening**
  - Inflation hike has been mainly addressed with higher reserve requirement by PBoC (the State Council), but raising interest rate will be inevitable
- ❖ **Firms facing higher funding costs along with limited borrowing chances will undergo credit risks, potentially leading to banks' asset soundness problem**