

Determinants of credit-constrained status:
Evidence from the Vietnamese
manufacturing SMEs

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Motivation

- Rapid economic growth since the Doi Moi started in 1986
- Limited understandings on the dynamism of domestic SMEs in Vietnam
- Credit-constraint is an important issue

Contributions

- The types of credit-constraints
- The impact of land reform on access to credit from the non-agricultural perspectives.
- Household vs non-household firms in the Vietnamese context

Outline

- Data
- Conceptual framework
- Definitions of credit-constraints
- Gap in the land literature
- Background
- Descriptive statistics
- Methodology
- Empirical results
- Conclusion

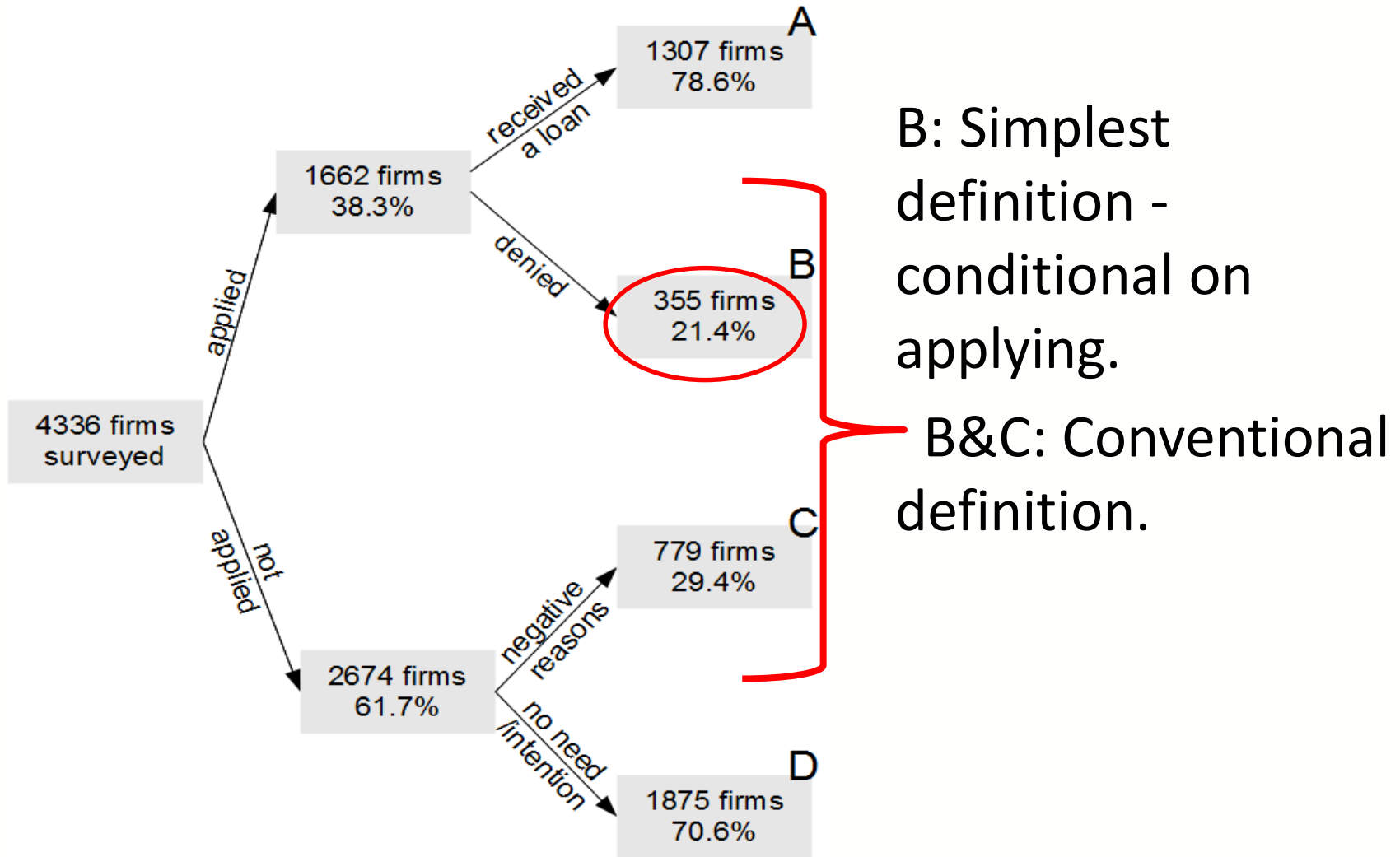
Data

- SME survey collected in 2007 and 2009 (panel)
- Approximately 2500 non-state SMEs:
[Micro (1-10), small (11-50) and medium (51-300)]
- Non-registered (aka informal) firms
- 19 sectors in manufacturing, 10 provinces
- 5 ownership forms: household and non-household firms
- Detailed finance section: formal and informal credit

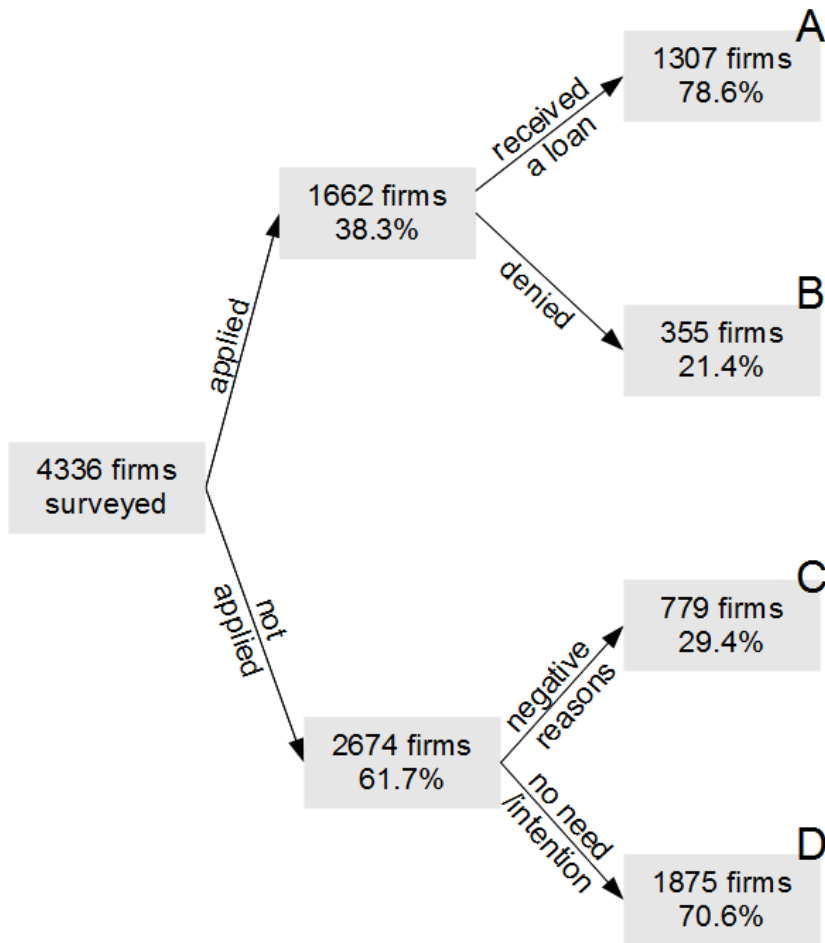
Conceptual framework

- The financial market imperfections [Hoff and Stiglitz (1993)]:
 - asymmetric information [Stiglitz and Weiss (1981)]
 - weak contract enforcement
- Lenders need various **observable attributes** of a borrower for better and effective screening and monitoring
- The existing literature uses an overly simplistic definition of credit-constraints.

Definition of credit-constraints in the literature



My Definition



Received (30.1%)

access to credit

Denied (8.2%)

Types of credit-constraints

Discouraged (18%)

No demand (43.2%)

Gap in the land literature

- Three main effects of land reform:
 - Agricultural investment/productivity
 - Land rental market
 - Access to credit (but little evidence!)
- **Land is also important for SMEs** as land can be used as collateral in accessing formal credit
- Little evidence from non-agricultural perspectives

Background (1)

The results of 1993 land law:

5 rights [to inherit, transfer, exchange, lease, and mortgage]

– Increased **long-term** investment in agriculture

– Led to the development of land market

– Increased non-farm activities [Labour diversification]

➤ **Emergence of SMEs**

➤ First Enterprise Law in 2000

[A land title is required to start a business]

➤ Land owning status:

[purchased, inherited, informal arrangement, rented and other]

Background (2)

- Uneven process and Shortage of land
 - High fee and tax for residential land, while free for agricultural land
 - High tax for converting land
 - Surge in non-agricultural land prices
 - Informal land rental market
- Disadvantage for firms **renting** a land title
- The 2003 land law
 - A mutual asset of the husband and wife
 - A welcome feature for household businesses
- Difference between household and non-household firms

Descriptive statistics (1)

[Conventional definition vs. my definition]

- The smaller firms face greater credit-constraints than larger firms (Bigsten et al 2003. Byiers et al 2010).

| | Credit-constrained status | | | |
|--------------------------|---------------------------|--------|-------------|-----------|
| | Received | Denied | Discouraged | No demand |
| size (total labor force) | 25.5 | 31.3 | 16.0 | 10.1 |

Descriptive statistics (2)

Table 2 Selected disaggregated summary statistics by land owning status, pooled

| | Land owning status (col %) | | | | |
|-----------------|----------------------------|--------------|----------------------|--------------|--------------|
| | Purchased | Inherited | Informal_ arrange | Rented | Other |
| firm_age | 12.3 (5.3)* | 13.1 (5.37)* | 11.7 (5.5)* | 9.6 (5.0)* | 12.2 (5.1)* |
| size | 14.1 (25.7)* | 7.8(14.4)* | 15.4 (28.5)* | 30.4 (40.5)* | 13.5 (28.6)* |
| premises = | | | | | |
| residential | 28.8 | 38.9 | 28.9 | 4.5 | 33.6 |
| production | 47.7 | 42.7 | 39.4 | 41.2 | 37.3 |
| only production | 23.6 | 18.4 | 31.7 | 54.4 | 29.1 |
| education = | | | | | |
| no edu | 3.9 | 3.4 | 3.6 | 1.9 | 5.5 |
| primary | 8.6 | 10.2 | 9.5 | 3.8 | 4.5 |
| low second | 28.8 | 39.2 | 29.2 | 15.2 | 34.5 |
| upp second | 24.8 | 29.3 | 27.0 | 23.5 | 27.3 |
| technical | 16.1 | 11.5 | 14.7 | 18.7 | 13.6 |
| college | 17.8 | 6.3 | 15.9 | 36.9 | 14.5 |

*Values in parenthesis are standard deviations.

Descriptive statistics (3)

Table 3 Selected disaggregated summary statistics by ownership status, pooled

| | Ownership status (Colum %) | |
|----------------------------|----------------------------|---------------|
| | Household | Non-household |
| firm_age | 12.9 (5.2)* | 9.2 (4.9)* |
| size | 7 (8.5)* | 38(44.2)* |
| credit-constraint status = | | |
| Received | 26.2 | 38.1 |
| Denied | 5.6 | 13.3 |
| Discouraged | 17.5 | 19.0 |
| No demand | 50.7 | 29.6 |
| province = | | |
| Ha Noi | 6.6 | 19.7 |
| Phu Tho | 13.8 | 3.5 |
| Ha Tay | 15.7 | 8.7 |
| Hai Phong | 6.2 | 11.6 |
| Nghe An | 17.6 | 8.5 |
| Quang Nam | 7.3 | 3.5 |
| Khanh Hoa | 3.2 | 4.3 |
| Lam Dong | 3.6 | 2.0 |
| HCMC | 20.8 | 34.9 |
| Long An | 5.2 | 3.1 |

Urban cities in bold.

Descriptive statistics (4)

Table 4 Land owning status and credit-constraint status, pooled

| | Credit-constraint status (col %) | | | | All |
|------------------|----------------------------------|--------|-------------|-----------|------|
| | Received | Denied | Discouraged | No demand | |
| land = | | | | | |
| purchased | 42.8 | 30.7 | 36.3 | 45.9 | 41.9 |
| inherited | 14.7 | 10.7 | 13.1 | 17.7 | 15.4 |
| informal_arrange | 11.3 | 14.9 | 14.5 | 13.9 | 13.3 |
| rented | 29.6 | 41.4 | 33.0 | 19.5 | 26.8 |
| other | 1.6 | 2.3 | 3.1 | 3.0 | 2.54 |
| No. of obs. | 1307 | 355 | 779 | 1875 | 4337 |

χ^2 -test was rejected at 1% significant level: Peason $\chi^2(12)=131.57$

Descriptive statistics (5)

Table 5 Land owning status between household and non-household firms, pooled

| | Ownership status (row %) | |
|------------------|--------------------------|---------------|
| | household | non-household |
| land = | | |
| purchased | 73.3 | 26.7 |
| inherited | 89.1 | 10.9 |
| informal_arrange | 70.1 | 29.9 |
| rented | 36.7 | 63.3 |
| other | 76.4 | 23.6 |
| Total | 34.5 | 65.6 |

χ^2 -test was rejected at 1% significant level: Peason $\chi^2(4)=652.54$

Descriptive statistics (6)

Table 6 Land owning status and credit-constraint status between household and non-household firms, pooled

| | household (row %) | | | |
|------------------|-------------------|--------|-------------|-----------|
| | Received | Denied | Discouraged | No demand |
| Land = | | | | |
| purchased | 27.5 | 5.0 | 15.8 | 51.7 |
| inherited | 28.3 | 5.4 | 15.6 | 50.8 |
| informal_arrange | 22.3 | 7.2 | 18.6 | 52.0 |
| rented | 25.2 | 5.7 | 24.3 | 44.8 |
| other | 14.5 | 7.2 | 19.3 | 59.0 |

χ^2 -test was rejected at 1% significant level: Peason chi2(12)=47.03

| | non-household (row %) | | | |
|------------------|-----------------------|--------|-------------|-----------|
| | Received | Denied | Discouraged | No demand |
| Land = | | | | |
| purchased | 40.2 | 8.7 | 15.1 | 36.0 |
| inherited | 34.2 | 8.2 | 13.7 | 43.8 |
| informal_arrange | 33.9 | 14.0 | 22.2 | 29.8 |
| rented | 38.2 | 16.8 | 21.0 | 24.0 |
| other | 34.6 | 7.7 | 30.8 | 26.9 |

χ^2 -test was rejected at 1% significant level: Peason chi2(12)=31.05

Methodology

- A multinomial logit model
[Received, Denied, Discouraged, and No demand]
- Independent variables:
 - Firm characteristics:
Land owning status, premises, firm_size, firm_age, taxcode, membership, ownership, province and sector
 - Firm's owner/manager's characteristics:
Gender, ethnicity and education

Empirical results (1)

Table 7 Multinomial logit estimates, pooled

| | Received vs No demand | | | Denied vs No demand | | | Discouraged vs No demand | | | Base |
|------------------|-----------------------|-------|----------|---------------------|-------|--------|--------------------------|-------|--------|--------|
| | C | s.e. | M | C | s.e. | M | C | s.e. | M | M |
| land = | | | | | | | | | | |
| purchased | § | § | § | § | § | § | § | § | § | § |
| inherited | 0.035 | 0.138 | 0.000 | 0.069 | 0.253 | 0.002 | 0.095 | 0.164 | 0.012 | -0.014 |
| informal_arrange | -0.169 | 0.150 | -0.052 | 0.226 | 0.241 | 0.015 | 0.219 | 0.163 | 0.042 | -0.004 |
| rented | -0.068 | 0.130 | -0.045 | 0.507* | 0.198 | 0.031* | 0.342* | 0.144 | 0.051* | -0.036 |
| other | -0.618 | 0.364 | -0.134 | 0.429 | 0.466 | 0.041 | 0.225 | 0.327 | 0.062 | 0.030 |
| premises = | | | | | | | | | | |
| residential | § | § | § | § | § | § | § | § | § | § |
| production | 0.388** | 0.125 | 0.063** | -0.023 | 0.219 | -0.014 | 0.359* | 0.141 | 0.032* | -0.081 |
| only production | 0.555*** | 0.142 | 0.103*** | -0.092 | 0.245 | -0.020 | 0.335* | 0.162 | 0.017* | -0.101 |
| female | 0.048 | 0.102 | 0.012 | 0.282 | 0.161 | 0.019 | -0.131 | 0.118 | -0.026 | -0.005 |
| taxcode | 0.259 | 0.137 | 0.050 | 0.415 | 0.234 | 0.020 | -0.059 | 0.155 | -0.029 | -0.042 |
| Kinh | 0.487* | 0.237 | 0.083* | 0.574 | 0.440 | 0.022 | 0.093 | 0.248 | -0.017 | -0.087 |

N=3109. Pseudo-R2 =0.106 LR chi2(138) = 814.9

Note: Firm_size and firm_age variables, dummies for ownership, province, sector and education are included.

Empirical results (2)

Table 8 Multinomial logit estimates, pooled, household firms only

| | Received vs No demand | | | Denied vs No demand | | | Discouraged vs No demand | | | Base |
|------------------|-----------------------|-------|----------|---------------------|-------|--------|--------------------------|-------|--------|--------|
| | C | s.e. | M | C | s.e. | M | C | s.e. | M | M |
| land = | | | | | | | | | | |
| purchased | § | § | § | § | § | § | § | § | § | § |
| inherited | 0.071 | 0.151 | 0.010 | 0.031 | 0.285 | -0.000 | 0.078 | 0.178 | 0.008 | -0.018 |
| informal_arrange | -0.212 | 0.181 | -0.042 | 0.030 | 0.320 | 0.003 | 0.052 | 0.192 | 0.017 | 0.021 |
| rented | -0.070 | 0.180 | -0.023 | 0.050 | 0.320 | 0.001 | 0.196 | 0.190 | 0.033 | -0.012 |
| other | -0.772 | 0.451 | -0.128 | 0.566 | 0.546 | 0.040 | 0.087 | 0.385 | 0.036 | 0.052 |
| premises = | | | | | | | | | | |
| residential | § | § | § | § | § | § | § | § | § | § |
| production | 0.340* | 0.139 | 0.049* | 0.000 | 0.249 | -0.006 | 0.341* | 0.154 | 0.035* | -0.077 |
| only production | 0.640*** | 0.163 | 0.110*** | -0.180 | 0.317 | -0.017 | 0.398* | 0.185 | 0.028* | -0.121 |
| female | -0.132 | 0.130 | -0.015 | 0.058 | 0.235 | 0.006 | -0.246 | 0.145 | -0.030 | 0.039 |
| taxcode | 0.452** | 0.156 | 0.077** | 0.449 | 0.270 | 0.013 | 0.095 | 0.174 | -0.011 | -0.079 |
| Kinh | 0.947** | 0.365 | 0.146** | 0.775 | 0.653 | 0.021 | -0.205 | 0.290 | -0.078 | -0.088 |

N=2058. Pseudo-R2 =0.085 LR chi2(114) = 409.4

Note: Firm_size and firm_age variables, dummies for ownership, province, sector and education are included.

Empirical results (3)

Table 9 Multinomial logit estimates, pooled, non-household firms only

| | Received vs No demand | | | Denied vs No demand | | | Discouraged vs No demand | | | Base |
|------------------|-----------------------|-------|--------|---------------------|-------|---------|--------------------------|-------|--------|--------|
| | C | s.e. | M | C | s.e. | M | C | s.e. | M | M |
| land = | | | | | | | | | | |
| purchased | § | § | § | § | § | § | § | § | § | § |
| inherited | -0.069 | 0.409 | -0.030 | -0.117 | 0.651 | -0.014 | 0.319 | 0.486 | 0.043 | 0.001 |
| informal_arrange | 0.029 | 0.303 | -0.073 | 0.616 | 0.408 | 0.065 | 0.646 | 0.350 | 0.061 | -0.053 |
| rented | 0.048 | 0.211 | -0.076 | 0.897** | 0.296 | 0.091** | 0.626* | 0.254 | 0.047* | -0.062 |
| other | 0.179 | 0.777 | -0.073 | 0.752 | 0.972 | 0.064 | 0.963 | 0.764 | 0.095 | -0.086 |
| premises = | | | | | | | | | | |
| residential | § | § | § | § | § | § | § | § | § | § |
| production | 0.514 | 0.382 | 0.073 | 0.251 | 0.563 | -0.014 | 0.734 | 0.480 | 0.044 | -0.102 |
| only production | 0.587 | 0.397 | 0.097 | 0.228 | 0.577 | -0.019 | 0.651 | 0.494 | 0.031 | -0.109 |
| firm_age | -0.035 | 0.020 | -0.006 | -0.039 | 0.026 | -0.002 | -0.015 | 0.023 | 0.001 | 0.007 |
| female | 0.398* | 0.190 | 0.044* | 0.636* | 0.252 | 0.046* | 0.257 | 0.229 | -0.005 | -0.085 |
| membership | 0.322 | 0.245 | 0.053 | 0.596 | 0.308 | 0.056 | -0.310 | 0.321 | -0.052 | -0.058 |
| Kinh | 0.245 | 0.403 | -0.011 | 0.639 | 0.637 | 0.041 | 0.957 | 0.615 | 0.059 | -0.089 |

N=1003. Pseudo-R2 =0.150 LR chi2(132) = 392.2

Note: Firm_size and firm_age variables, dummies for membership, ownership, province, sector and education are included.

Main findings

- Firms face more credit-constraints if they are **renting** the land title.
- Land owning status matters more for non-household firms, while the premises variable is more important for household firms.
- Household firms operating with a greater **formality** (i.e. with a tax code) were more likely to have received loans.
- Non-household firms owned by **females** are more active than males in the credit market in Vietnam.
- Firms owned by the **Kinh** ethnic majority are more likely to have received loans.

Conclusion

- The land reform has benefited the development of SMEs in Vietnam.
- By using a broader definition of credit-constraint status, the types of credit-constraints were examined.
- Land owning status matters especially for non-household firms.
- The determinants of credit-constraint status are different between household and non-household firms in the Vietnamese context.

Thank you!